

**ILUSTRÍSSIMO SENHOR PREGOEIRO RESPONSÁVEL PELA COMISSÃO DE LICITAÇÃO CORPO DE BOMBEIROS DE BOMBEIROS MILITAR DO DISTRITO FEDERAL.**

**PREGÃO ELETRÔNICO:** N° 43/2020 – CBMDF.  
**PROCESSO ADMINISTRATIVO** N° 00053-00040765/2020-73.  
**OBJETO:** AQUISIÇÃO DE EQUIPAMENTOS DE ECOCARDIOGRAFIA.

**CANON MEDICAL SYSTEMS DO BRASIL LTDA.**, (“**CANON MEDICAL**”), já devidamente qualificada nos autos do processo mencionado em epígrafe vem, respeitosamente a vossa presença, por seu representante legal infra-assinado, apresentar impugnação ao recurso administrativo interposto pela licitante **PHILIPS MEDICAL SYSTEMS LTDA.** (“**PHILIPS**”) com supedâneo (i) nos pertinentes permissivos do instrumento convocatório, bem como (ii) nas pertinentes disposições (a) da Lei nº 10.520 de 17/07/2002 e suas alterações, (b) com aplicação subsidiária da (c) Lei nº 8.666, de 21/06/1993, e demais normas aplicáveis à espécie em forma de,

**CONTRARRAZÕES**

fazendo-o, ainda, com fundamento nos argumentos de fato e de direito que aduz por meio desta, a qual requer seja recebida e processada nos termos seguintes:

**I - DA TEMPESTIVIDADE:**

Antes de adentrarmos no mérito da questão, ressaltamos que a presente contrarrrazões é tempestiva, em obediência aos dispositivos legais supracitados, sendo que os cálculos dos prazos, neste caso, são regulados pelo art. 4º da Lei nº 10.520/02, especificamente pelo disposto em seu inciso XVIII, o qual passamos a reproduzir logo abaixo:

**Art. 4º A fase externa do pregão será iniciada com a convocação dos interessados e observará as seguintes regras:**

...

**XVIII - declarado o vencedor, qualquer licitante poderá manifestar imediata e motivadamente a intenção de recorrer, quando lhe será concedido o prazo de 3 (três) dias para apresentação das razões do recurso, ficando os**

**demais licitantes desde logo intimados para apresentar contrarrazões em igual número de dias, que começarão a correr do término do prazo do recorrente, sendo-lhes assegurada vista imediata dos autos;**

Tomando-se por base as disposições constantes no Instrumento Convocatório, o qual rege o processo em questão, temos o seguinte:

## **15. DOS RECURSOS**

**15.1. Declarado o vencedor, qualquer Licitante poderá, durante o prazo concedido na sessão pública, de forma imediata, em campo próprio do sistema Comprasnet, manifestar sua intenção de recorrer.**

**15.1.1. A ausência de manifestação imediata e motivada do Licitante quanto à intenção de recorrer, nos termos do disposto no subitem 15.1 importará na decadência desse direito.**

**15.1.2. As manifestações de intenção de recorrer devem ser feitas exclusivamente por meio do sistema Comprasnet.**

**15.1.2.1. As manifestações fora do sistema Comprasnet serão desconsideradas.**

**15.1.3. Nesse momento o Pregoeiro não adentrará no mérito recursal, verificando somente as condições de admissibilidade do recurso.**

**15.1.4. A ausência de manifestação ou as manifestações fora do sistema acarretarão no prosseguimento do feito, estando o Pregoeiro autorizado a adjudicar o objeto ao Licitante declarado vencedor.**

**15.2. Recebida a intenção de interpor recurso pelo Pregoeiro, a Licitante deverá apresentar as razões do recurso no prazo de 3 (três) dias úteis, ficando as demais Licitantes, desde logo, intimadas para, querendo, apresentar contrarrazões.**

**15.2.1. O prazo para apresentação de contrarrazões será de 3 (três) dias úteis e começará imediatamente após o encerramento do prazo recursal.** (Grifos nossos).

Dessa forma, considerando-se que o termo final para a apresentação de razões recursais por parte da recorrente deu-se em 15/07/2020, e, por consequência, que o início do prazo para apresentação de contrarrazões deu-se em 16/07/2020, temos que a presente peça, neste caso, mostra-se perfeitamente tempestiva.

## **II – DOS FATOS:**

Constitui o objeto do presente certame, licitação na modalidade Pregão Eletrônico, do tipo “menor preço”, objetivando a aquisição de equipamentos de Ecocardiografia para atendimento às necessidades da Policlínica Médica do Corpo de Bombeiros do Distrito Federal, em conformidade com as especificações constantes do Anexo I – Termo de Referência, parte integrante do Instrumento Convocatório.

Participaram do certame em questão, além desta contrarrazoante, as licitantes IMEX MEDICAL COMÉRCIO E LOCAÇÃO LTDA., PHILIPS MEDICAL SYSTEMS LTDA. e HOSPCOM EQUIPAMENTOS HOSPITALARES EIRELI..

Iniciada a sessão, após as devidas fases do Pregão, restou declarada como vencedora a proposta ofertada pela CANON MEDICAL, o que motivou a interposição de recurso por parte da licitante PHILIPS (classificada como terceiro colocada na competição), em não se conformando com a acertada decisão ora proferida por essa Douta Comissão de Licitação.

Em suas razões recursais, sustenta a recorrente que o equipamento ofertado pela CANON MEDICAL, qual seja, Equipamento de Ecocardiografia de marca Canon, modelo Xario 200G (CUS-X200G) não contempla a requisitos específicos do Edital, os quais foram erroneamente apontados pela recorrente e que serão discutidos a seguir.

Por conseguinte, em que pese as alegações apresentadas pela parte inconformada, considera a CANON MEDICAL que estas não refletem a realidade dos fatos, uma vez a CANON MEDICAL ofertou objeto que atende plenamente ao requerido pelo Edital, razão pela qual vem, com supedâneo na legislação vigente, apresentar a presente peça impugnatória, demonstrando que as alegações da parte inconformada, embora respeitáveis, por serem consideradas inverídicas, não podem prosperar. Assim, temos as seguintes ponderações:

## **III – CONSIDERAÇÕES INICIAIS:**

Inicialmente, importante se faz destacar que a CANON MEDICAL credibiliza, e muito, os trabalhos dessa Douta Comissão de Licitação, considerando que, acaso eventualmente, não houvesse apresentado o objeto conforme solicitado pelo Instrumento Convocatório, ou houvesse apresentado objeto diverso ao requerido, certamente seria considerada inabilitada e, conseqüentemente, desclassificada do procedimento em questão, situação esta não verificada, haja vista que a CANON MEDICAL restou habilitada, classificada e vencedora no certame.

No que se refere às razões de mérito, nota-se flagrantemente uma tentativa desesperada da recorrente em tentar desqualificar o equipamento ofertado pela CANON MEDICAL, de modelo Xario 200G (CUS-X200G), objeto da proposta apresentada pela licitante vencedora. Neste sentido,

temos que as argumentações por aquela apresentadas não constituem a verdade dos fatos, conforme se restará demonstrado a seguir. Em síntese, alega a recorrente em sua peça impugnatória que o equipamento ofertado pela CANON MEDICAL não contempla a requisitos específicos do Edital, desconformidade equivocadamente, e baseada tão somente através de argumentações rasas, bem como de análise comparativa do Instrumento Convocatório juntamente à proposta apresentada pela CANON MEDICAL

Isto posto, há uma clara e única intenção da recorrente, qual seja, tentar impedir, perturbar e preterir a realização dos atos pertinentes a este procedimento licitatório, com a adjudicação para a CANON MEDICAL, licitante classificada em primeiro lugar, fato este ao qual tentamos nos contrapor neste momento, de modo a evitar as intempestividades erroneamente trazidas pela parte inconformada.

#### **IV – NO MÉRITO:**

Inobstante às as razões acima levantadas, observamos que no mérito, de toda sorte, improcedem as pretensões da recorrente formuladas em sua peça recursal. Desta forma, a fim de que seja demonstrado o pleno atendimento pelo Equipamento ofertado pela CANON MEDICAL, passamos a juntar o documento com as informações atualizadas, conforme disposto a seguir:

#### **A) QUANTO AO SUPOSTO NÃO ATENDIMENTO AO QUESITO “SOFTWARE PARA IMAGEM PANORÂMICA”:**

Em suas razões recursais, sustenta a recorrente que a proposta apresentada pela CANON MEDICAL não contempla a oferta de Software de Imagem Panorâmica, tal como requisitado pelo Instrumento Convocatório, estando, deste modo, aquém das exigências do certame.

Neste sentido, temos que, com o devido respeito às argumentações apresentadas pela recorrente, e diferentemente do considerado, o equipamento ofertado pela CANON MEDICAL será devidamente disponibilizado a esse órgão, contemplando o Software necessário a obtenção de imagem panorâmica, que neste caso será o Software denominado “**Panoramic View**”.

O referido Software, de fato, constitui um opcional do equipamento, porém, conforme aqui apresentado, esclarece a CANON MEDICAL que o software em questão será devidamente entregue juntamente ao equipamento a ser fornecido, possibilitando assim ao Corpo de Bombeiros a realização de exames com a utilização do software requisitado, tal como exigido pelo Edital.

Deste modo, com o devido respeito, temos que não assiste razão à recorrente ao afirmar que a proposta apresentada pela CANON MEDICAL não contempla às exigências da competição, uma vez que esta atende integralmente ao requisitado pelo instrumento convocatório.

**B) QUANTO AO SUPOSTO NÃO ATENDIMENTO AO QUESITO “SOFTWARE PARA OPACIFICAÇÃO E SOFTWARE PARA CONTRASTE”:**

Em outra de suas argumentações, sustenta a recorrente que a proposta ofertada pela CANON MEDICAL teria deixado de atender a outros quesitos exigidos para a competição, notadamente Software para o Opacificação do Ventrículo esquerdo com inversão de pulso e Software para contraste em exame de Cardiologia e Imagem Geral.

A esse respeito, esclarece a CANON MEDICAL que a Opacificação do Ventrículo Esquerdo é um tipo de exame que produz imagens das microbolhas no miocárdio, utilizando o agente de contraste para avaliação da Vascularização do VE. Para tal finalidade, faz-se necessário que o equipamento contenha o Software para estudo da vascularização por meio do uso de agente de contraste, sendo que referido Software foi devidamente ofertado na proposta apresentada pela CANON MEDICAL, conforme descrição contida em sua página 3 (“**01 Unidade de Software Harmônica de Contraste, USHI-X200A**”).

Neste sentido, conforme descrito na página 11 de sua proposta, a CANON MEDICAL possui ainda um “**pacote avançado para estudo da vascularização por meio de agente de contraste de última geração**” e “**protocolos programáveis**”, que permitem realização de exames geral e cardiológicos por meio de agente de contrastes.

Assim, resta devidamente demonstrado que, diferentemente do alegado pela recorrente, a proposta apresentada pela CANON MEDICAL atende integralmente ao Edital no que refere aos quesitos aqui mencionados.

**C) QUANTO AO SUPOSTO NÃO ATENDIMENTO AO QUESITO “TRANSDUTOS LINEAR”:**

Outro alegado pela recorrente como supostamente não atendido pelo equipamento ofertado pela CANON MEDICAL é o transdutor linear.

Segundo a recorrente, o transdutor linear ofertado pela CANON MEDICAL não possuiria a faixa de frequência requisitada para o certame, estando deste modo, aquém das exigências mínimas da competição, sobretudo pelo fato de que a frequência solicitada para esse transdutor deveria ser de 4,0 a 13,0 MHz (com variação de 1 MHz para + ou -).

Em que pese as razões declinadas pela recorrente, o equívoco apresentado na proposta ofertada quanto ao transdutor que acompanhará o equipamento, cumpre à CANON MEDICAL esclarecer, neste momento, que o transdutor a ser disponibilizado juntamente ao equipamento será o Transdutor Linear modelo PLU-1005BT. Referido transdutor possui uma faixa de frequência de 5 a 14 MHz, ou seja, encontra-se devidamente alinhado às exigências da competição.

Saliente-se, por oportuno, que o saneamento mencionado acima constitui parte das atribuições do Pregoeiro, tornando-se perfeitamente possível neste caso, em conformidade com a faculdade prevista no parágrafo 3º do art. 43 da Lei nº 8.666/93.

Além disso, cumpre destacar ainda que a proposta ofertada pela CANON MEDICAL mostrou-se a mais adequada às exigências desse respeitável órgão, tanto no que se refere às questões técnicas envolvidas, quanto em relação ao preço apresentado.

Assim, temos mais um fato em decorrência do qual as razões declinadas pela recorrente em sua peça recursal devem ser julgadas totalmente improcedentes.

**D) QUANTO AO SUPOSTO NÃO ATENDIMENTO AOS DEMAIS QUESITOS APONTADOS PELA RECORRENTE:**

Em suas derradeiras alegações, sustentou a recorrente que a CANON MEDICAL teria deixado de comprovar o atendimento a outros pontos, os quais não se encontravam nem em sua proposta e nem no catálogo, como por exemplo a possibilidade de exibição em padrão bull's eye com 17 segmentos, além de calcular Fração de Ejeção do VE, volume sistólico e diastólico. Como também, a quantidade de canais do equipamento, onde constam trechos de uma versão com 36.864 canais digitais de processamento e outra com 52.000 canais digitais de processamento, diferentemente do que informa em sua proposta.

Neste sentido, em que pese as insistentes argumentações apresentada pela parte inconformada, temos que estas, com o devido respeito, padecem do devido respaldo, fato que acarreta uma consequente improcedência do recurso interposto.

Isto porque as Funções de Calcular Fração de Ejeção do VE, Volumes sistólico e diastólico e exibição em padrão *Bull's eye* com 17 segmentos são recursos presentes no Software de análise por *Speckle-Tracking*, devidamente ofertado na proposta apresentada pela CANON MEDICAL, conforme pode se observar a suas páginas 3 e 12 ("**01 Unidade de Software 2D Wall Motion Tracking, USWT-X200A**"). O padrão *Bull's Eye* se trata de um Mapa para melhor visualização dos resultados de *Strain* dos segmentos do ventrículo esquerdo, e também pode ser chamado de **POLARMAP**, sendo que este recurso está presente no Software ofertado pela CANON MEDICAL, cuja comprovação pode ser evidenciada através de breve consulta ao manual de operação do equipamento em sua **página 320 (9.3.4), bem como, é comprovado na página 319 (9.3.3), desse mesmo manual, que os cálculos de Fração de Ejeção, volume sistólico e volume diastólico são disponibilizados**, manual este ora trazido ao conhecimento de V.Sas. (Anexo 1).

No que se refere ao número de canais, diferentemente do alegado pela recorrente, temos que o equipamento ofertado possui 4.718.592 canais, tal como descrito na proposta e conforme certificado anexo emitido pelo fabricante (Anexo 2). Deste modo, temos que as informações apresentadas (especificamente o termo "onde constam trechos de uma versão com 36.864 canais digitais de processamento e outra com 52.000 canais digitais de processamento") estão

desatualizados e não se referem à família Xario G Series, objeto da proposta ofertada, que por sua vez possui 4.718.592 canais, o que demonstra um flagrante desconhecimento por parte da recorrente às especificações técnicas do equipamento ofertado pela CANON MEDICAL.

Conforme se verifica ao longo de todas as razões de mérito aqui apresentadas, o equipamento ofertado pela CANON MEDICAL contempla a todas as exigências realizadas pela competição. Não caberia agora à recorrente, em uma tentativa desesperada, desqualificar uma proposta idônea apresentada pela CANON MEDICAL. Ao contrário disso, deveria a licitante inconformada aprimorar a proposta por ela ofertada, a fim de, com isso, apresentar a essa Douta Comissão uma proposta competitiva, e que melhor atenda às necessidades da Administração, tal como o fez a CANON MEDICAL.

Desta forma, resta comprovado o total atendimento do equipamento ofertado pela CANON MEDICAL ao Edital em sua integralidade. Por consequência, e face ao justo e devido atendimento da CANON MEDICAL ao Instrumento Convocatório em sua integralidade, a melhor decisão por parte dessa Douta Comissão de licitação é a manutenção do resultado que ora se apresenta, qual seja, o vencimento da CANON MEDICAL no procedimento em curso, com a consequente negativa ao provimento do recurso interposto pela licitante PHILIPS, em sua integralidade.

#### **V – DO DIREITO:**

A habilitação da CANON MEDICAL e a declaração de sua proposta como vencedora transcorreram em correta observância aos diplomas legais das licitações públicas, consubstanciados nas Leis nº 8.666/93 e nº 10.520/02 (Legislação que regula a modalidade licitatória do Pregão).

Elencaremos a seguir os princípios norteadores das licitações públicas e os preceitos legais que a regem, os quais foram devidamente observados no julgamento por parte dessa Douta Comissão:

#### **Art. 3º da Lei nº 8666/93:**

**A lei destina-se a garantir a observância do princípio constitucional da Isonomia e a selecionar a proposta mais vantajosa para a Administração e será processada e julgada em estrita conformidade com os princípios básicos da legalidade, da impessoalidade, da moralidade, da igualdade, da publicidade, da probidade administrativa, da Vinculação ao instrumento convocatório, do Julgamento Objetivo e dos que lhe são correlatos. (Grifo nosso)**

Baseado nos princípios de Vinculação ao Instrumento Convocatório e do Julgamento Objetivo, a comissão de licitação deve, para fins de julgamento, considerar os critérios objetivos

definidos no Edital, os quais não devem contrariar as normas e princípios estabelecidos na referida Lei, conforme segue:

**Art. 41 da Lei 8.666/93:**

**A administração não pode descumprir as normas e condições do edital, ao qual se acha estritamente vinculada.**

Logo, neste certame, a comissão de licitação fez cumprir a regra legal, pois, consagrou como vencedora, a licitante que apresentou a proposta mais vantajosa para esta, qual seja: a que conjuga o equipamento total em conformidade com edital, além de atender a normas e condições do instrumento convocatório, atendendo ainda aos requisitos de habilitação.

O julgamento das propostas e de habilitação deve ser de acordo com as normas vigentes do edital conforme nos ensina o mestre Raul Armando Mendes.

***“O instrumento convocatório cristaliza a competência discricionária da administração, que se vincula aos seus termos. Conjugando a regra do Art. 41 da Lei 8.666/93, pode se afirmar a estrita vinculação da administração ao edital seja quanto a regras de fundo quanto aquelas de procedimento sob certo ângulo, o edital é o fundamento da validade dos atos praticados no curso da licitação, na aceção de que desconformidades entre o edital e os atos administrativos praticados no curso da licitação se resolver pela invalidade destes últimos.”***

Desta feita, uma vez que a CANON MEDICAL apresentou objeto em consonância com as especificações editalícias, consagrando a brilhante aplicação dos princípios acima expostos em julgamento pela Douta Comissão, quando da classificação da recorrente, entendemos que tal decisão deve, indubitavelmente, ser mantida, de forma a privilegiar a mais lúdima concepção do senso de justiça.

Com isso, a compilação dessas características objetiva selecionar a proposta mais vantajosa à Administração, o que implica não necessariamente em avaliar somente o preço, ofertado, mas também fatos essenciais tais como qualidade e técnica. Com relação a estes, temos que a proposta ofertada pela CANON se mostra a mais adequada, tendo em vista que a empresa ofertou o melhor equipamento pelo menor preço, atendendo criteriosamente tanto aos ditames legais quanto aos editalícios.

Neste sentido, observemos a regra legal preceituada pelo parágrafo 1º do art. 45 da Lei 8.666/93:



Lei nº 8.666 de 21 de junho de 1993

Art. 45...

...

§ 1º Para os efeitos deste artigo, constituem tipos de licitação, exceto na modalidade concurso:

I - a de menor preço - quando o critério de seleção da proposta mais vantajosa para a Administração determinar que será vencedor o licitante que apresentar a proposta de acordo com as especificações do edital ou convite e ofertar o menor preço. (Grifo nosso)

É como nos ensina o brilhantemente o professor Adilson de Abreu Dallari, ao dissertar que:

***“A doutrina e Jurisprudência já firmaram entendimento no sentido de que contrariamente ao que deve ocorrer na fase de habilitação, um exame efetuado na primeira parte da fase de classificação deve ser bastante amplo e rigoroso. Na fase de classificação, contrariamente deve ser feito um rigoroso e amplo exame da proposta, tendo em vista que tudo aquilo que nela contém vai afetar sensivelmente o futuro contrato. Em síntese, o exame da proposta deve ser muito mais severo do exame da idoneidade do proponente.”*** (Grifo nosso).

Assim sendo, é de vital importância observar-se, além do Princípio da Vinculação ao Instrumento Convocatório, o Princípio do Julgamento Objetivo, cuja previsão expressa pode ser verificada nos artigos 44 e 45 da lei 8666/93, a saber:

Lei nº 8.666 de 21 de junho de 1993

**Art. 44. No julgamento das propostas, a Comissão levará em consideração os critérios objetivos definidos no edital ou convite, os quais não devem contrariar as normas e princípios estabelecidos por esta Lei.**

**§ 1º É vedada a utilização de qualquer elemento, critério ou fator sigiloso, secreto, subjetivo ou reservado que possa ainda que indiretamente elidir o princípio da igualdade entre os licitantes**

....

**Art. 45. O julgamento das propostas será objetivo, devendo a Comissão de licitação ou o responsável pelo**

**convite realizá-lo em conformidade com os tipos de licitação, os critérios previamente estabelecidos no ato convocatório e de acordo com os fatores exclusivamente nele referidos, de maneira a possibilitar sua aferição pelos licitantes e pelos órgãos de controle. (Grifo nosso)**

Por fim, justo e cristalino se faz que, considerando que o Equipamento ofertado pela recorrente deixou de observar a requisitos específicos do Edital, bem como encontrou-se aquém do exigido pelo certame, a proposta apresentada pela CANON MEDICAL deve ser mantida como vencedora, na medida em que esta, por sua vez, atendeu a todos os requisitos do Edital em sua integralidade.

#### **VI – FATO RELEVANTE:**

##### **VI.I – DA OFERTA DO MENOR PREÇO PELA CANON MEDICAL – OBSERVÂNCIA AOS PRINCÍPIOS DA ECONOMICIDADE OU EFICIÊNCIA:**

Não bastasse o total atendimento por parte da proposta ofertada pela CANON MEDICAL às exigências do certame, como demonstrado ao longo desta peça impugnatória, é certo também, e importa observar, que a CANON MEDICAL ofertou uma proposta que atende a todas as exigências do Edital, e que representa o menor preço à Administração, tipo determinante do procedimento de licitatório em discussão.

Neste ponto, há de se observar que o Equipamento ofertado pela CANON MEDICAL, além de atender a todos os requisitos do Edital, constitui o menor preço. Neste sentido, observem V.Sas. que a proposta apresentada pela licitante **PHILIPS, classificada como terceiro colocada da competição** atingiu a importância de R\$ 156.000,00 (Cento e cinquenta e seis mil reais), ao passo que a proposta ofertada pela CANON MEDICAL atingiu a importância da R\$ 137.000,00 (Cento e trinta e sete mil reais), **ou seja, apresentando uma diferença, a menor de R\$ 19.000,00 (Dezenove mil reais)**.

Desta forma, a aquisição do Equipamento fornecido pela CANON MEDICAL, como já dito, representará à Administração o atendimento às suas necessidades, no que tange a desempenhos técnicos, demonstrando economia em uma aquisição que representa a melhor utilização com relação ao Erário Público.

E neste momento em que o Brasil passa por uma grave crise, especialmente na área da saúde, por conta da pandemia COVID-19 (coronavírus), a economia do valor mencionado acima por parte desse Grupamento certamente poderia ser utilizado em outras atividades exercidas por

V.Sas., em benefício da população do Distrito Federal que tanto necessita dos serviços da saúde pública.

Por essas razões, temos que a Administração (neste caso, o Corpo de Bombeiros do Distrito Federal), quando de suas aquisições, deve indubitavelmente observar o princípio da Economicidade ou Eficiência, situação que se verifica apenas com a classificação e escolha da proposta ofertada pela CANON MEDICAL.

**VII – DOS PEDIDOS:**

Face a tudo o quanto fora exposto, são as presentes razões da impugnação para que Vossa Senhoria, em sereno julgamento, declare a total improcedência do recurso interposto pela licitante PHILIPS MEDICAL SYSTEMS LTDA., mantendo a **CANON MEDICAL SYSTEMS DO BRASIL LTDA.** como vencedora no referido certame, dando continuidade aos processos de homologação e adjudicação, tendo em vista que esta empresa apresentou a proposta que mais se adequou aos interesses da Administração, considerando o atendimento aos princípios basilares, bem como aos procedimentos legais supramencionados.

Termos em que,  
Pede Deferimento.

Blumenau-SC, 20 de julho de 2020.



**MARLY SAYURI EISHIMA**

**GERENTE DE VENDAS PUBLICAS**

**RG N° 18.157.997-2 SSP/SP**

**CPF N° 110.896.598-90**

**46.563.938/0013-54**

**CANON MEDICAL SYSTEMS DO BRASIL LTDA**

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**VIII – ANEXOS:**

- 1) Manual de operação do equipamento Xario 200G (CUS-X200G);
- 2) Certificado emitido pelo fabricante do equipamento Xario 200G (CUS-X200G).

**OPERATION MANUAL**  
**FOR**  
**DIAGNOSTIC ULTRASOUND SYSTEM**  
***Xario 200G / Xario 100G***  
**MODELS CUS-X200G/CUS-X100G**  
**APPLICATIONS**  
**(2B771-311EN\*E)**

**IMPORTANT!**

Read and understand this manual before operating the equipment. After reading, keep this manual in an easily accessible place.

**CANON MEDICAL SYSTEMS CORPORATION**

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**NOTE** Xario 100G model CUS-X100G is not available in Canada.

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**1.**

## **Detailed Information Regarding the Patient Registration Screen**

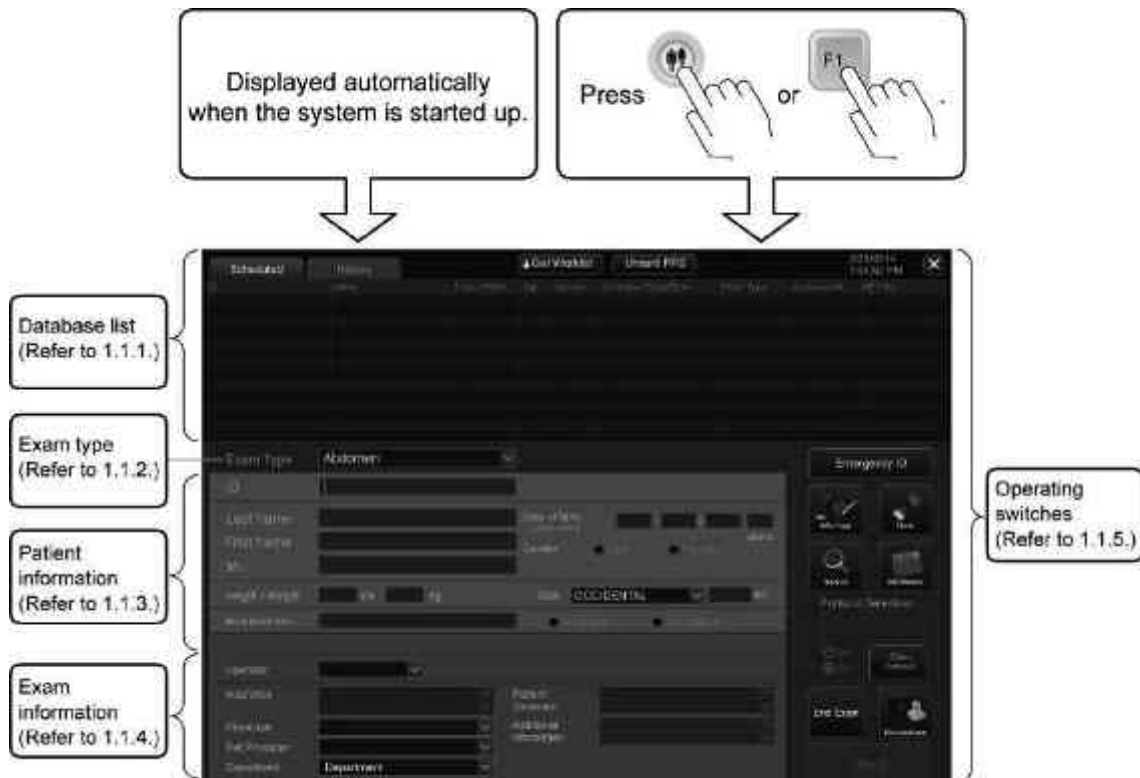
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This section describes the details of the Patient Registration screen. Refer to the Operation Manual <<Fundamentals volume>> for an outline of the patient registration procedures.

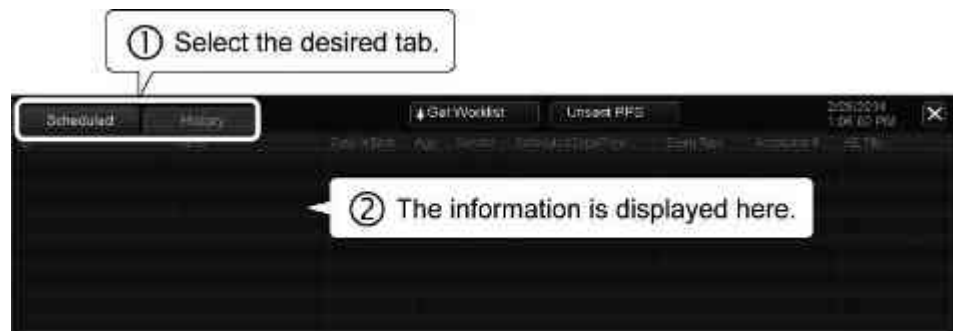
- 
- ⚠ CAUTION**
- 1. Before starting an examination for a new patient, confirm that the patient ID matches the patient to be examined. Otherwise, the images may be recorded with an incorrect patient ID. In addition, the data for two different patients may be inadvertently mixed together, which could result in incorrect diagnosis.**
  - 2. Enter the patient's height and weight correctly. Otherwise, the BSA will not be calculated correctly.**
  - 3. Check the date format before entering the date of birth. If the date is entered incorrectly by failing to follow the proper date format, the age or other information based on the date of birth may be displayed incorrectly.**
- 

- NOTE**
1. Be sure to register and save the patient ID before starting an examination for a new patient. If measurement is performed for a new patient for whom the patient ID has not been registered or saved, the measurement results and other data cannot be saved in the system and the examination may need to be performed again.
  2. Do not enter a patient ID that consists of spaces only. The data for the patient may not be read from or written to media correctly or DICOM transfer of the data may not be performed correctly.
  3. When the patient information is registered and  is then selected, the live image is normally displayed within 10 seconds. However, if relatively high-load processing (such as saving, loading, copying, or conversion of a large amount of data) is performed immediately before this, it may take approximately 30 seconds to display the live image. If the live image is not displayed after 30 seconds, an error message is displayed. Reboot the system.
-

## 1.1 Functions of Each Part of the Patient Registration Screen



### 1.1.1 Database list



Tab	Information to be displayed
Scheduled	Scheduled examinations registered using the hospital information system (refer to 1.1.1.2)
History	Patient information for previous exams (refer to 1.1.1.1)

1.1.1.1 Reusing the patient information for previous exams

It is possible to reuse the patient information for previous exams. Search for the previous exams that satisfy the specified conditions and select the desired exam from among the search results. The patient information for the selected exam is copied to the patient information area.



- NOTE
1. The patient ID, patient name, accession number, or date of birth can be used as the search key.
  2. Fuzzy matching can be used if the complete patient ID, patient name, or date of birth is not known. For the accession number, however, searching can be performed only in exact matching mode.

Search example	Entry
To search for exams belonging to patients whose last name includes "YAMADA"	Last Name : YAMADA First Name : Middle Name :
To search for exams belonging to patients whose first name includes "TARO"	Last Name : First Name : TARO Middle Name :
To search for exams belonging to patients whose middle name includes "J"	Last Name : First Name : Middle Name : J
To search for exams belonging to patients whose last name includes "YAMADA" and first name includes "TARO"	Last Name : YAMADA First Name : TARO Middle Name :
To search for exams belonging to patients whose last name includes "YAMADA" and middle name includes "J"	Last Name : YAMADA First Name : Middle Name : J
To search for exams belonging to patients whose first name includes "TARO" and middle name includes "J"	Last Name : First Name : TARO Middle Name : J
To search for exams belonging to patients whose last name includes "YAMADA", first name includes "TARO", and middle name includes "J"	Last Name : YAMADA First Name : TARO Middle Name : J

3. When CLIN is selected for OB examination, GA is recalculated based on the date of examination (the elapsed number of days after the previous examination are added).




1.1.1.2 Downloading the scheduled examinations

Download the scheduled examinations from the HIS/RIS server and select the desired examination from among those downloaded. The patient information in the selected examination is copied to the patient information area.

\* The optional USDI-X200A is required in order to use this function.






- 
- ⚠ CAUTION**
1. Do not create the data for a new patient by editing the downloaded scheduled examination data for another patient. The images for the new patient may be stored with an incorrect patient ID. In addition, the measurement results for the new patient may mixed together with the measurement results for another patient, leading to misdiagnosis.
  2. When the patient information for a new patient is to be entered, press  . The currently displayed patient information is cleared and the patient information for a new patient can then be entered.
-

- NOTE
1. Refer to section 18 for information on the timing for downloading the scheduled examinations from the HIS/RIS server.
  2. To narrow down the downloaded examinations, use the search function with the patient ID, patient name, or accession number as the search key.
  3. It is possible to preset the system to display the Get Worklist screen. On the Get Worklist screen, the examination schedule (worklist) that meets the entered search conditions can be retrieved from the HIS/RIS server. Refer to section 18 for details.



NOTE



No.	Item	Function
<1>	Search condition	Enter the desired conditions. <ul style="list-style-type: none"> <li>• Patient ID</li> <li>• Patient Name<sup>*1</sup></li> <li>• Accession No.</li> <li>• Modality</li> <li>• Requested Procedure ID</li> <li>• SPS Start Date (use the calendars to set the dates)</li> <li>• Scheduled AE-Title</li> </ul>
<2>		Clears the entered search conditions.
<3>		Retrieves the examination schedule that meets the entered search conditions.
<4>		Cancels retrieval of the examination schedule.

\*1: Fuzzy search is possible for Patient Name by entering the last name, first name, or middle name as a search key. However, combinations of the last name, first name, and middle name cannot be used as a search key.

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- NOTE 4. It is possible to preset the system to display the new information confirmation screen (New Protocol screen) during update of the examination schedule. Refer to section 18 for details.

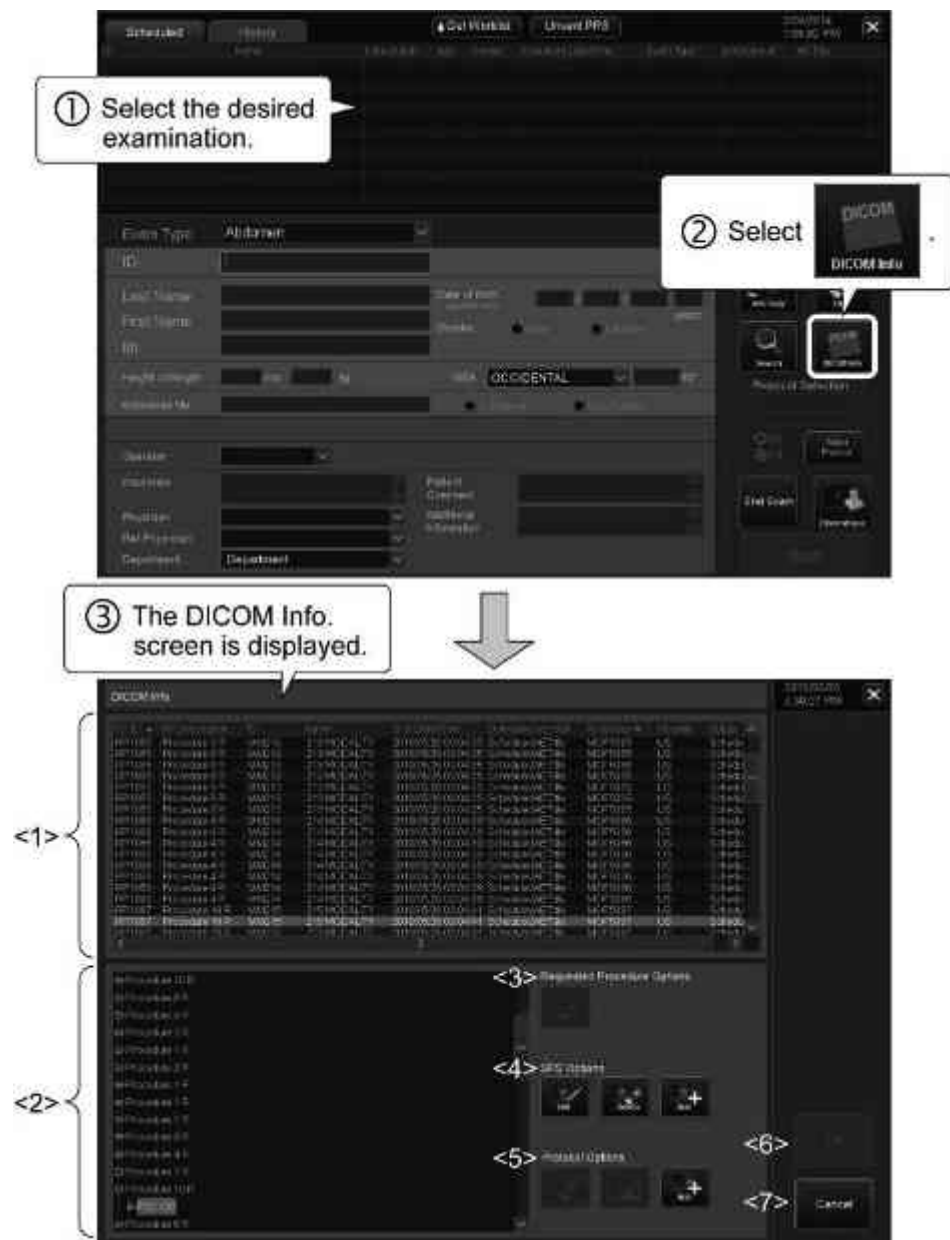


No.	Item	Function
<1>	Search condition	Details of the obtained information is displayed. <ul style="list-style-type: none"> <li>• Requested Procedure</li> <li>• Scheduled Procedure</li> <li>• Code Value</li> <li>• Code Meaning</li> <li>• Coding Scheme Designator</li> <li>• Coding Version</li> </ul>
<2>		The newly obtained examination schedule information is added to the schedule list.
<3>		The newly obtained examination schedule information is not added to the schedule list.




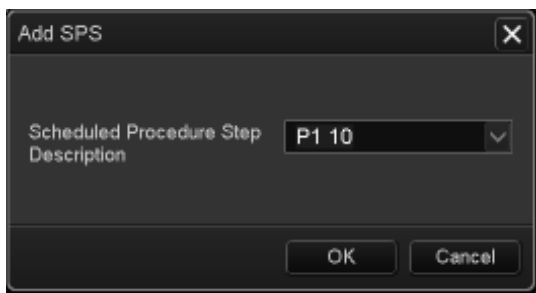
## 1. Detailed Information Regarding the Patient Registration Screen





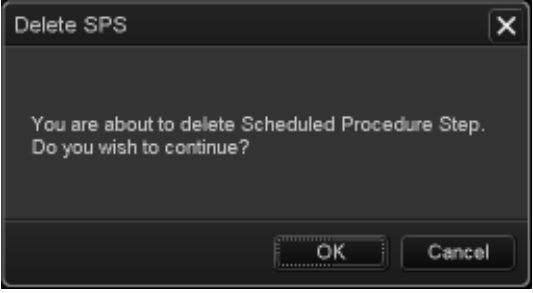
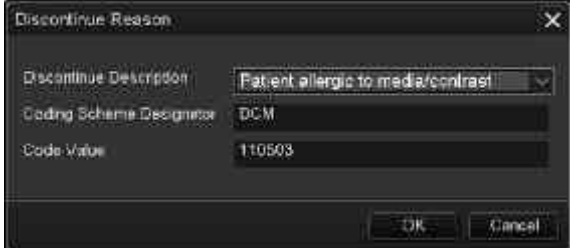
### (1) Displaying the details of the scheduled examinations


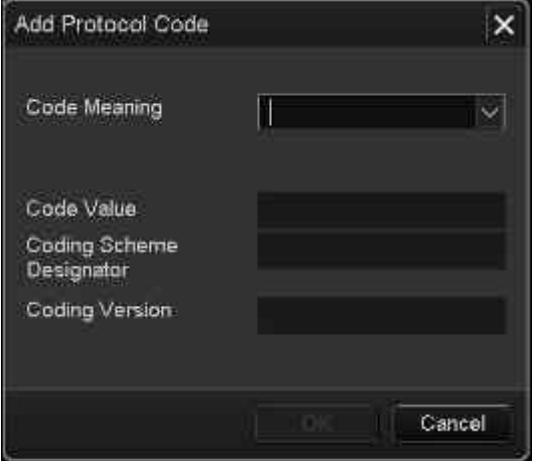

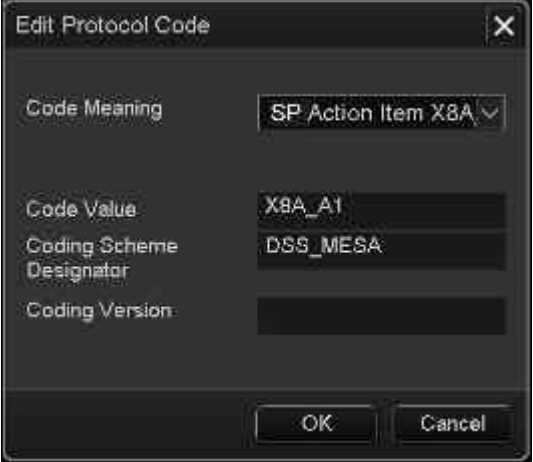
It is possible to display the details of the scheduled examinations and to add, delete, and/or edit the information items on the DICOM Info. screen.




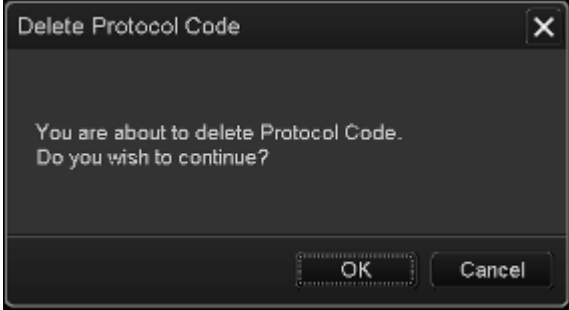
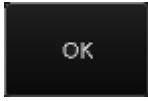
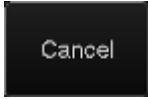
**NOTE** The DICOM Info. screen must be set according to the HIS/RIS server operating procedures. To change the settings of this screen, contact your Canon Medical Systems service representative.

No.	Label	Function
<1>	Upper window	<p>Details of the scheduled examination selected in the lower window are displayed in the upper window.</p> <p>* When an edited scheduled examination is selected in the lower window, the changes in the selected examination can be stored temporarily.</p>
<2>	Lower window	The scheduled examinations downloaded from the HIS/RIS server are displayed in a tree format.
<3>	Requested Procedure Options	<p> : Used to edit the selected Requested Procedure (RP).</p> 
<4>	SPS Options	<p> : Used to add a Scheduled Procedure Step (SPS).</p> 

No.	Label	Function
<4>	SPS Options	<div>  </div> <p>: Used to edit an SPS.</p> <div>  </div> <div>  </div> <p>: Used to delete an SPS.</p> <div>  </div> <p>The dialog below is displayed. If canceling the scheduled examination, select the reason in the subsequent dialog (Discontinue Reason).</p> <div>  </div> <div>  </div>

No.	Label	Function
<5>	Protocol Options	<p>  : Used to add a Protocol Code.                 </p> <div>  <p>The 'Add Protocol Code' dialog box contains the following fields:</p> <ul style="list-style-type: none"> <li>Code Meaning: [Dropdown menu]</li> <li>Code Value: [Text input field]</li> <li>Coding Scheme Designator: [Text input field]</li> <li>Coding Version: [Text input field]</li> </ul> <p>Buttons: OK, Cancel</p> </div> <p>  : Used to edit a Protocol Code.                 </p> <div>  <p>The 'Edit Protocol Code' dialog box contains the following fields:</p> <ul style="list-style-type: none"> <li>Code Meaning: SP Action Item X8A [Dropdown menu]</li> <li>Code Value: X8A_A1 [Text input field]</li> <li>Coding Scheme Designator: DSS_MESA [Text input field]</li> <li>Coding Version: [Text input field]</li> </ul> <p>Buttons: OK, Cancel</p> </div>

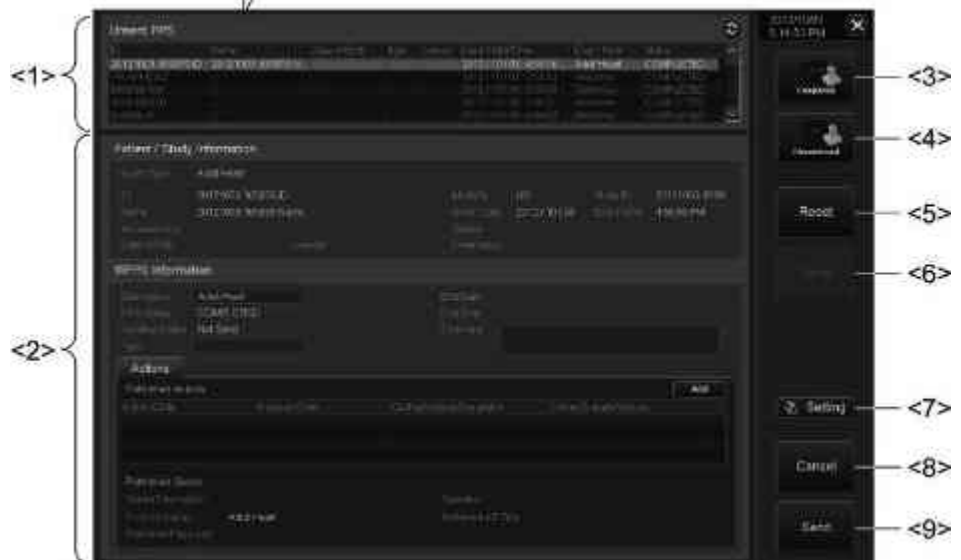


No.	Label	Function
<5>	Protocol Options	 : Used to delete a Protocol Code. 
<6>		Saves the changes.
<7>		Discards the changes and closes the DICOM Info. screen.



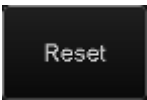
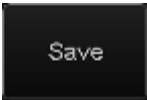

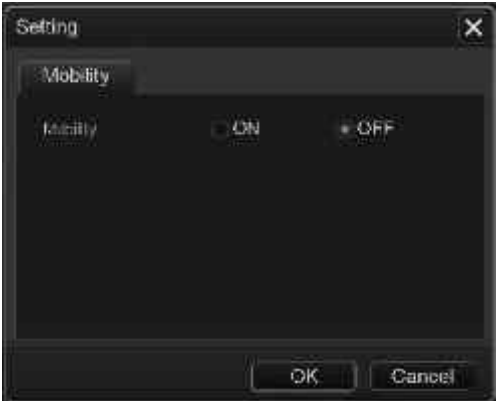
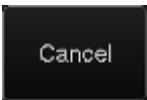
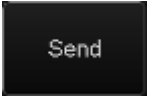
- (2) Displaying the data temporarily stored at the time of a network failure  
 The temporarily stored DICOM data can be displayed.



② The temporarily stored data is displayed.

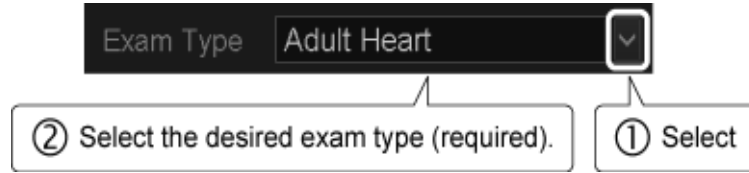


## 1. Detailed Information Regarding the Patient Registration Screen

No.	Label	Function
<1>	Upper window	The temporarily stored datasets are displayed as a list.
<2>	Lower window	Details of the data selected in the upper window are displayed for editing.
<3>		Sets the status of all examinations that have been temporarily stored because of a network failure to "Completed".
<4>		Sets the status of examinations that have been selected from among the examinations temporarily stored because of a network failure to "Discontinued".
<5>		Resets the edited data to the status immediately after [Save] was last pressed or to the original status.
<6>		Saves the edited data.
<7>		Used to specify whether offline mode is set (ON) or not set (OFF) when the network is temporarily unavailable. 
<8>		Closes the screen without changing the status of the temporarily stored examinations.
<9>		Sends the status of the temporarily stored examinations to the HIS/RIS server.

### 1.1.2 Exam type

(1) Select the Exam Type according to the purpose of the examination.



Exam Type	Examination target
Abdomen	Abdomen (general)
Carotid	Carotid arteries
Thyroid	Thyroid gland
Breast	Breast
OB	Obstetrics
GYN	Gynecology
Endo-Vaginal	Endovaginal examination
Fetal Heart	Fetal cardiovascular system
Adult Heart	Cardiovascular system
Pediatric Heart	Pediatric cardiovascular system
Coronary	Coronary arteries
TCD	Transcranial examination

Exam Type	Examination target
Neo-Head	Neonatal head
Neo-General	Neonatal abdomen (general)
Neo-Hip	Neonatal hip joint
PV-Venous	Peripheral veins
PV-Arterial	Peripheral arteries
Digits	Peripheral vessels of the digits
MSK	Orthopedics
Prostate	Prostate gland
Kidney	Kidney
Testes	Testis
OTHER	Other
M-TEE	Transesophageal examination

- (2) The transducer, imaging presets (default values for the image quality adjustment parameters), application presets (body mark and annotation), and measurement presets suitable for the selected exam type are selected automatically.

- 
- NOTE
1. The palm dial can also be used to select the exam type.
  2. It is possible to preset the exam type to be displayed as the initial value at the time the Patient Registration screen is started up and the exam types to be displayed in the pull-down menu for Exam Type on the Patient Registration screen. Refer to section 18 for details.
  3. The exam type cannot be changed after the patient information has been registered.
  4. The selected exam type name is used as the exam information in DICOM transmission.
-

NOTE 5. Refer to the table below for the items that are selected automatically.

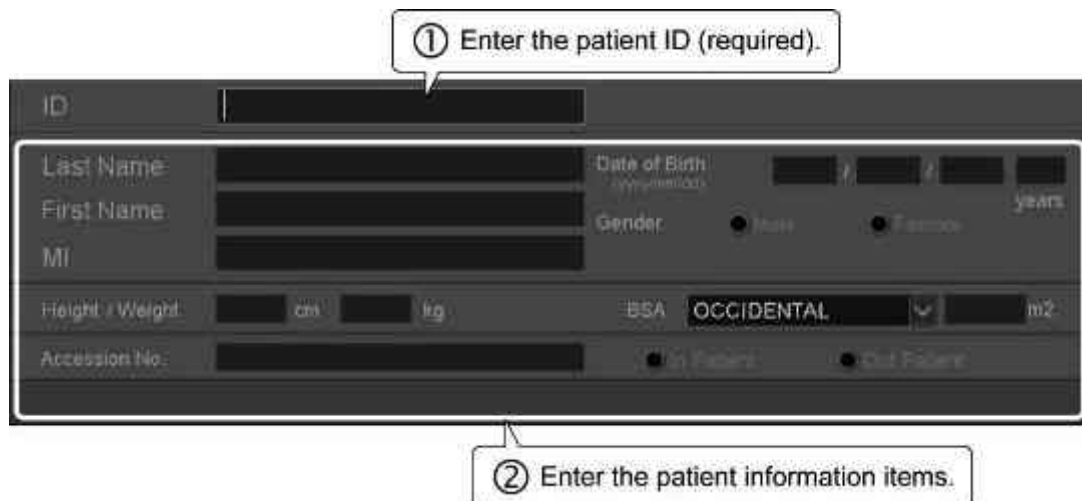
Exam Type	Transducer	Imaging preset	Application preset	Measurement preset
Abdomen	PVU-375BT	Default	Abdomen1	Basic
Carotid	PLU-704BT	Default	Carotid1	Vascular
Thyroid	PLU-1005BT	Default	Thyroid	Basic
Breast	PLU-1005BT	Default	Breast	Basic
OB	PVU-375BT	Default	OB/Gyn	OB
GYN	PVU-375BT	Default	OB/Gyn	Gyn
Endo-Vaginal	PVU-781VT	Default	OB/Gyn	Early
Fetal Heart	PVU-375BT	Default	OB/Gyn	Fetal Heart
Adult Heart	PSU-30BT	Default	Heart1	Cardiac
Pediatric Heart	PSU-30BT	Default	Heart2	Cardiac
Coronary	PSU-30BT	Default	Heart1	Cardiac
TCD	PSU-30BT	Default	TCD	Basic
Neo-Head	PVU-375BT	Default	TCD	Basic
Neo-General	PVU-375BT	Default	Abdomen1	Basic
Neo-Hip	PLU-704BT	Default	Neo-Hip	Basic
PV-Venous	PLU-704BT	Default	PV Upper	Vascular
PV-Arterial	PLU-704BT	Default	PV Lower	Vascular
Digits	PLU-1204BT	Default	PV Upper	Vascular
MSK	PLU-1204BT	Default	MSK	Basic
Prostate	PLU-781VT	Default	Prostate	Basic
Kidney	PVU-375BT	Default	Abdomen1	Basic
Testes	PLU-704BT	Default	Testes	Basic
OTHER	PVU-375BT	Default	Heart1	Cardiac
M-TEE	PET-512MC	Default	Heart1	Cardiac

6. The items that are selected automatically can be edited using the preset editor (the items shown in item 5 above are examples).  
Contact your Canon Medical Systems service representative for preset editing.

### 1.1.3 Patient information

Enter the required patient information items.

- \* It is also possible to copy the patient information for an existing exam (refer to subsection 1.1.1).
- \* The items that can be entered differ depending on the selected Exam Type (refer to subsection 1.1.2).



Label	Information to be entered
ID	Patient ID
Last Name	Last name of the patient
First Name	First name of the patient
Middle Name	Middle name of the patient
Date of Birth	Birth date of the patient * The patient age (at the time of examination) is calculated automatically from the entered date of birth.
Gender	Gender of the patient
Height / Weight	Height and weight of the patient
BSA	The BSA is calculated automatically based on the entered height and weight. * The calculation formula can be selected from among the options provided.
Accession No.	Accession number
In Patient / Out Patient	Inpatient/Outpatient
Blood Pressure	Blood pressure

Label	Information to be entered
EDD	Estimated Date of Delivery
EDD Extended by 1 to 7 day <sup>*1</sup>	
CLIN	Date of examination
LMP	Last Menstrual Period
GA	Gestational Age
GR	Gravida (number of pregnancies)
P	Para (number of pregnancies resulting in live birth)

\*1: Show/hide can be selected by presetting.  
Refer to the operation manual <<Measurements volume>> for details.

- NOTE
1. It is not possible to enter a patient ID that consists of spaces only. In addition, a patient ID that ends with a space is deleted automatically.
  2. The following characters cannot be used for patient IDs or patient names.  
"\*", "?", "^", "=", "\""
  3. The maximum number of characters is 64 for the patient ID and patient name due to DICOM restrictions. The total for the last name, first name, and middle name must not exceed 64 characters.
  4. The maximum value that can be entered for patient height is 299.9 cm (9'10"). If an attempt is made to enter a larger value, "#" is displayed in the field.  
The maximum value that can be entered for patient weight is 499.9 kg (1102.0 lb). If an attempt is made to enter a higher value, "#" is displayed in the field.



### 1.1.4 Exam information

Enter or select the required exam information items.






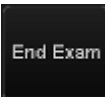

The screenshot shows a dark-themed interface with several input fields. On the left, there are five vertical fields: 'Operator' (a dropdown menu), 'Insurance' (a text input), 'Physician' (a dropdown menu), 'Ref. Physician' (a dropdown menu), and 'Department' (a dropdown menu with 'Department' selected). On the right, there are two text input fields: 'Patient Comment' and 'Additional Information'. Each field has a small arrow icon indicating it is a dropdown or has a specific function.

Label	Information to be entered or selected
Operator	Operator
Insurance	Insurance information
Physician	Physician performing the examination
Ref. Physician	Referring physician
Department	Department requesting the examination
Patient Comment	Comments on the patient (up to 256 characters)
Additional Information	Additional information for the examination

- NOTE**
1. The options last entered in the Operator, Physician, Ref. Physician, and Department fields are displayed as the initial values when the Patient Registration screen is started up next time.
  2. It is possible to preset the options to be displayed in the drop-down lists for Operator, Physician, Ref. Physician, and Department. Refer to section 18 for details.

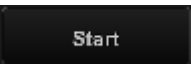

### 1.1.5 Operating switches



No.	Switch	Function
<1>		Used to display an emergency patient ID, name, and exam type automatically.
<2>		Used to copy the patient information of the last patient.
<3>		Used to clear the entered patient information.
<4>		Used to search for patient information in the database.
<5>		Used to confirm or edit details of the scheduled examinations. * The switch is displayed only when MWM is connected.
<6>	Protocol Selection *1	Used to start up Protocol Assistant (refer to section 10 for details).
<7>		Used to terminate the examination.
<8>		Used to discontinue the current examination. * The switch is displayed only when MPPS is connected.

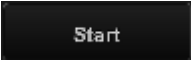

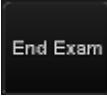
## 1. Detailed Information Regarding the Patient Registration Screen

---

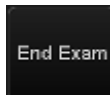
No.	Switch	Function
<9>		Used to start the examination.  * It is possible to preset the system so that the Patient Registration screen is saved automatically as a still image when an examination is started (refer to section 18 for details).
-		Returns to the last examination without performing a new examination.

\*1: The optional USPA-X200A is required in order to use this function.



NOTE

1. Each emergency patient ID and name is a combination of the current date and a unique character string. If there are two or more systems at the hospital, set the character string so that the systems can be identified.
2. The exam type that is selected automatically for emergency patients can be changed using the preset function (refer to section 18 for details).
3. If "#" is displayed for any patient information or exam information items, the examination cannot be started even when  is selected or  is pressed. Check and correct the entries for such information items.
4. The function of the  switch can be assigned to a user function switch on the main panel. Consult your Canon Medical Systems service representative for details.
5. Auto Send to the specified servers at the end of the examination (refer to subsection 2.2.2)
  - (1) The message "End Exam Processing..." is displayed in the message display area at the end of the examination.
  - (2) If the message "Measurement data cannot be saved. Please restart the system." is displayed, restart the system.
    - \* If the worksheet is included in the target data, perform measurement using the saved data to create the worksheet again after the system is restarted.
  - (3) For the following operations, Auto Send is not performed.
    - Shutdown
    - Standby
    - Log off

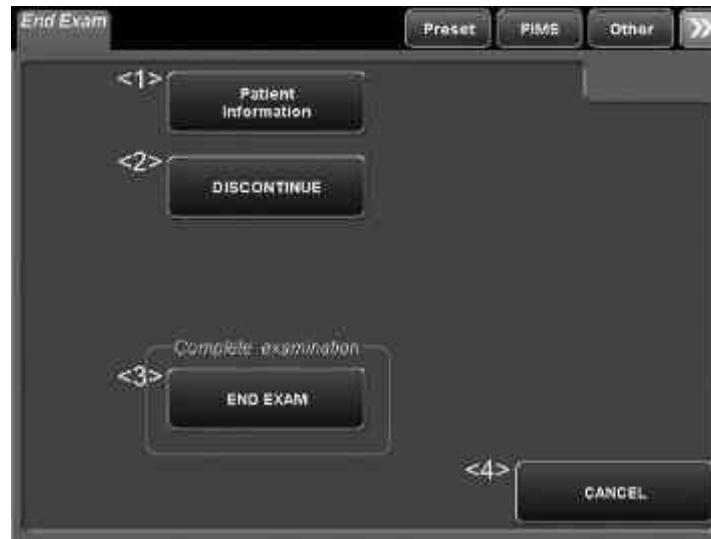
To send the images etc. acquired in the preceding examination, press







before the above operations.

NOTE 6. It is possible to preset the system to display the [End Exam] menu on the touch panel by pressing  or  during the examination.

\* This switch is displayed when "Operation Of New Patient Button" is set to "without END EXAM" in the preset menu (SYSTEM PRESET → [PIMS] tab → [BASIC] tab). (Refer to section 18 for details.)





No.	Switch	Function
<1>		Used to display the information on the current patient.
<2>		Used to discontinue the current examination. * The switch is displayed only when MPPS is connected.
<3>		Used to terminate the examination.
<4>		Used to resume the preceding examination.


## 2. Exam Data File Handling

---

The DICOM format is used as the standard image data format in this system. DICOM-format image data stored in the system hard disk can be handled using the Patient Browser screen.

- 
- NOTICE**
1. Do not turn OFF the power of the system during printing, data saving, or data reading. Doing so may result in failure of printing, data saving, or data reading or damage to the data. In addition, doing so while the media is being accessed may result in damage to the media.
  2. Do not set the system to Standby mode during printing, data saving, or loading. Doing so may result in failure of saving or printing or damage to the data. In addition, doing so during access to media may damage the media.
  3. Do not eject the media using  (Eject) while writing to or reading from the media is in progress. The data on the media may be corrupted.
  4. Do not use media for which writing has been discontinued. The data on the media may be corrupted.
- 


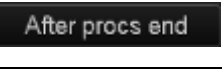


- NOTE**
1. Back up the stored data (image data and examination history) periodically and delete unnecessary data from the hard disk. New data cannot be stored if there is insufficient free space on the hard disk.
  2. The free space on the hard disk is displayed at the top of the screen in the format "". If there is insufficient free space, data storage may not be possible.  
This icon is highlighted in yellow if the free space is less than 35 GB. The color of the icon changes to red when the free space falls below 20 GB. When the free space falls below 1 GB, the message "HDD is full. Please delete some images in Patient Browser and try again." is displayed in the information message area on the screen and no more data can be stored. Verify that there is sufficient free space before storing image data.
  3. If the free space is less than 1 GB at the end of the examination, the message "There is no enough space in Database. Please Delete some data in Patient Browser" is displayed and the examination cannot be terminated. Ensure that there is sufficient free space to terminate the examination.
-

- NOTE
4. When the message "HDD is Full" is displayed, back up the stored data to media using the Patient Browser screen. Then, delete unnecessary exams and images using the Patient Browser screen.
  5. When the message "History Database is full." is displayed, back up the stored data to media using the History Browser screen. Then, delete unnecessary image data using the History Browser screen.
  6. When the message "Failed in starting a New Exam" is displayed, back up the stored data to media using the OB Browser screen. Then, delete unnecessary image data using the OB Browser screen.
  7. A long time may be needed to export images to media, load images from media, or transmit or receive images in DICOM format. In addition, when such operations are running in the background, the operation of other system functions may become sluggish. It is therefore recommended that such operations be performed after all patient examinations have been completed.
  8. Do not disconnect the network cable while the system is transmitting data to or receiving data from the server.
  9. If data selection, data search, or other operations are performed during the list update process after Patient Browser is started up, the update process is discontinued. In this case, select  (Refresh) to update the list. When this switch is active, update the information at appropriate times.
-



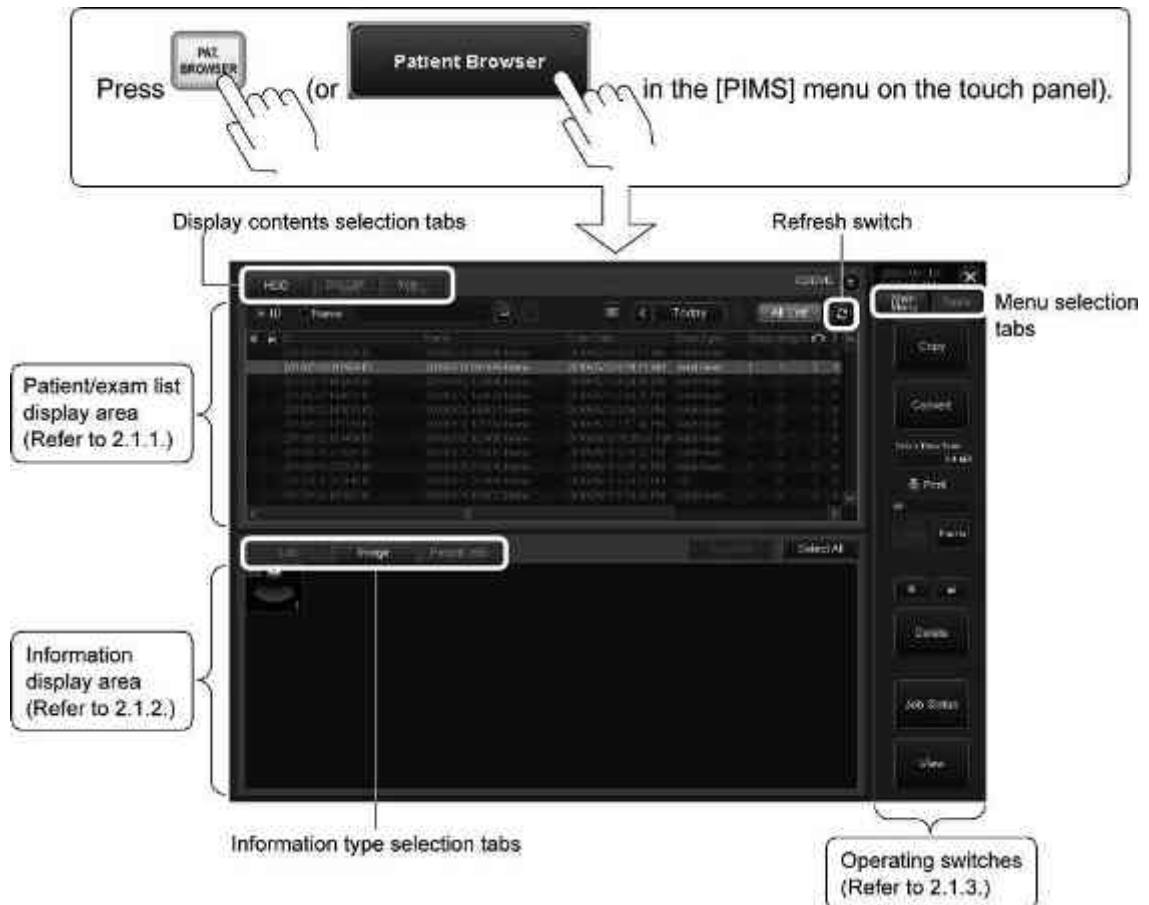
- NOTE 10. When the shutdown operation is performed while copying patient data, transferring patient data, or burning patient data to media, the following dialog is displayed.



No.	Item	Function
<1>	 *1	Discontinues the current process and starts the shutdown process.
<2>		Completes the current process and then starts the shutdown process.
<3>	 *1	Pauses the current process (the process can be resumed later) and starts the shutdown process.
<4>		Closes the dialog and continues the current process.

\*1: If [Continue] or [Save procs] is selected during CD/DVD burning, the media will be damaged. If the system is started up with the damaged media left in the drive, system operation may become unstable and the system may respond slowly. Be sure to remove the media immediately after [Continue] or [Save procs] is selected.

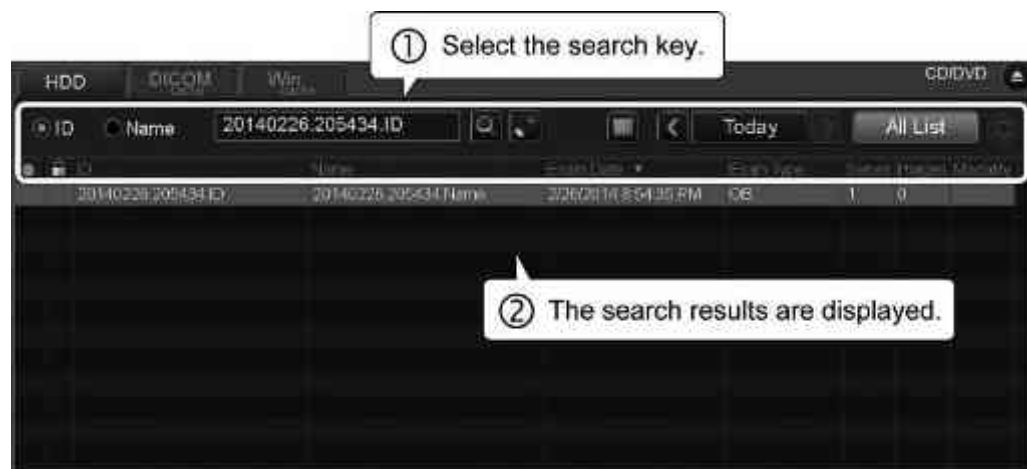
## 2.1 Patient Browser Screen



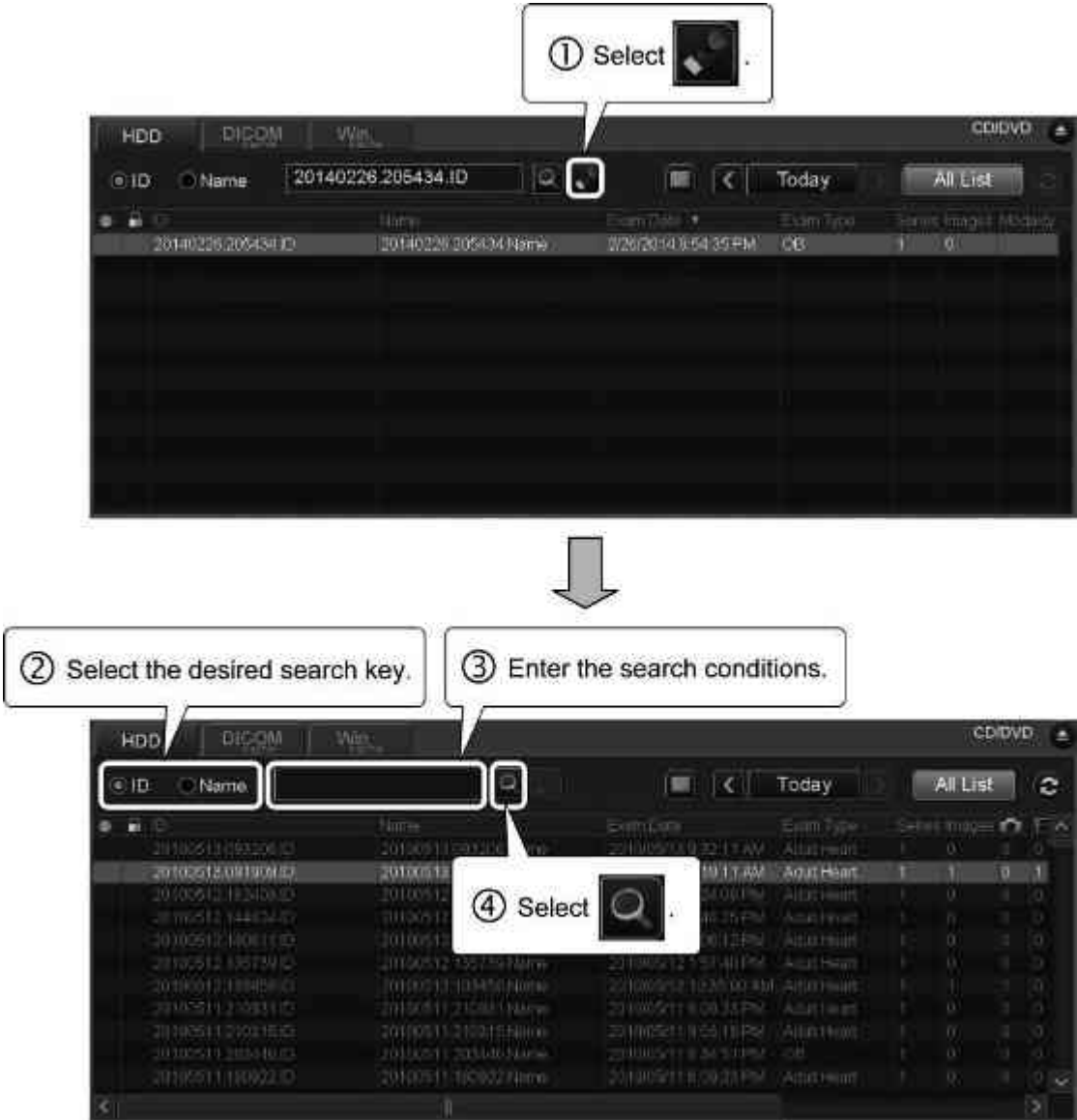
### 2.1.1 Patient/exam display area

The patient data and exam data are displayed in a list.

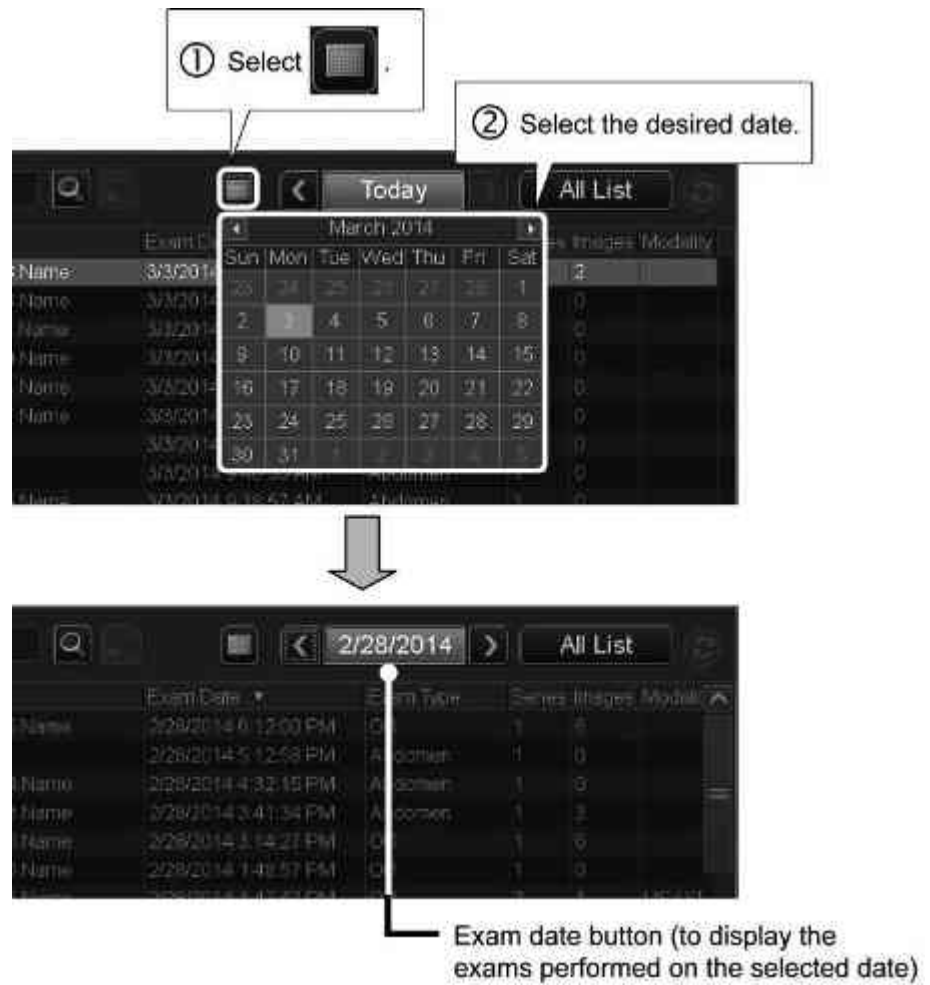
- \* The operation and information items to be displayed when the screen is opened vary depending on the settings. Refer to subsection 2.2.15 for details.



(1) To search for data using the patient ID or patient name as the search key






(2) To search for data using the calendar



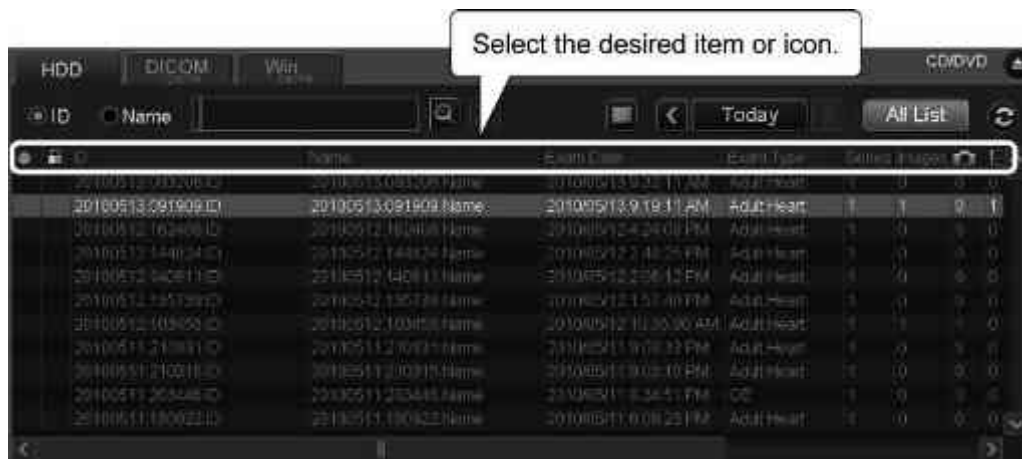
(3) To search for exams performed on the day










NOTE

1. To search for exams by date, select  or  (on the left and right sides of the exam date button).
2. To change to display of all data, select  .

(4) To sort the patient data or exam data



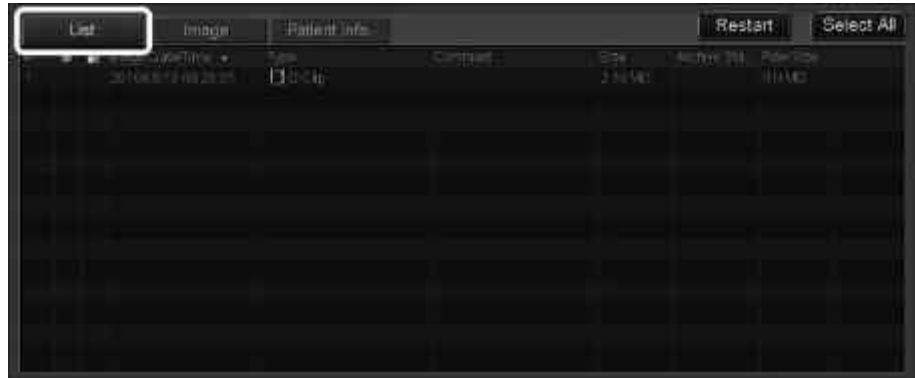
Item/ icon	Description	Item/ icon	Description
	Mark setting		Number of still images
	Protect setting		Number of dynamic images
ID	Patient ID		Number of 4D images
Name	Patient name		Number of Stress Echo images
Exam Date	Registered date		Number of worksheets
Exam Type	Exam type set at the start of examination	Modality	Modality information
Series	Number of series within the exam	Size	Total data size
Images	Total number of images	Arch/ Trans	Data archive/transfer status <ul style="list-style-type: none"> <li>• Archived: When all data in an examination is archived to a CD/DVD</li> <li>• Transferred: When all data in an examination is transferred to a server</li> <li>• Partial: When some data in an examination is archived to a CD/DVD or transferred to a server</li> </ul>

### 2.1.2 Data display area

The contents of the data selected in the patient/exam display area are displayed.

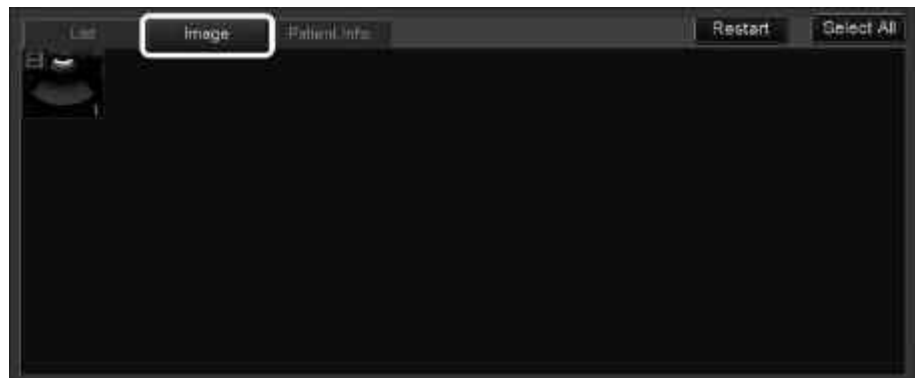
(1) [List] tab

The image data is displayed in a list.



(2) [Image] tab


Thumbnails of the images are displayed.




<<Data type>>

Icon	Description	Icon	Description
None	Still image		Stress protocol image
	Dynamic image		Stress protocol Full Disclosure image
	4D image		Stress protocol Best Loop image
	Image with raw data		Resumed image

&lt;&lt;Data property&gt;&gt;

Icon	Description
	Flagged

Icon	Description
	Protected

## (3) [Patient Info.] tab

The patient information (refer to section 1) registered to the selected data is displayed.

\* Refer to subsection 2.2.6 for the patient information editing procedure.



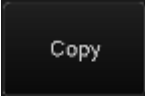
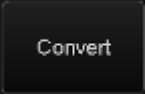
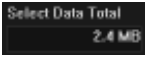




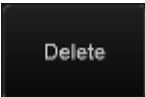
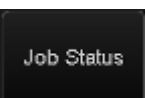

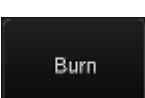
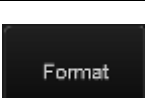




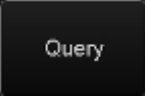
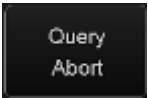
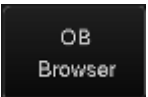
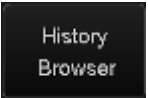

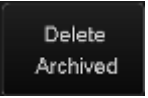

### 2.1.3 Operating switches

The switches in the Main Menu differ depending on the location of the data (HDD, cache, media, or server \*1).



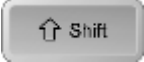
\*1: The optional USDI-X200A is required in order to use this function.




Switch	Function
	Copies the data from the HDD to the external media in the DICOM format.
	Copies the data from the HDD to the external media in the Windows format.
	The total size of the selected data is displayed on this icon.
	Prints the selected data using the displayed printer.
	Displays the Filming screen.
	Sets an identification mark to the selected exam or image data. * To remove the identification mark, select this switch again.
	Protects the selected exam or image data. * To remove protection, select this switch again.
	Deletes the selected data.
	Displays the job status confirmation screen.
	Displays the selected data.
	Writes the data to media.
	Formats the USB flash drive.
	Copies the data to the HDD.

Switch	Function
	Displays a list of the sources from which data can be loaded.
	Displays a screen for searching for data in the DICOM server.
	Aborts data searching.
	Displays the OB Browser screen.
	Displays the History Browser screen.
	Displays the Windows File Browser screen.
	Displays a screen for deleting the exam data in the HDD.
	Displays the Setting screen.

## 2.2 Operations on the Patient Browser Screen

### 2.2.1 Selecting data

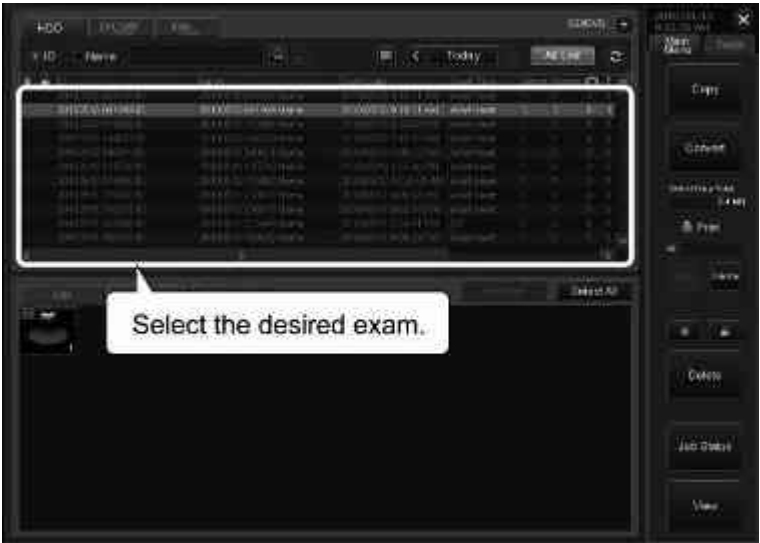
NOTE More than one image or exam can be selected by pressing  +

 or  +  simultaneously.

(1) To select an individual image

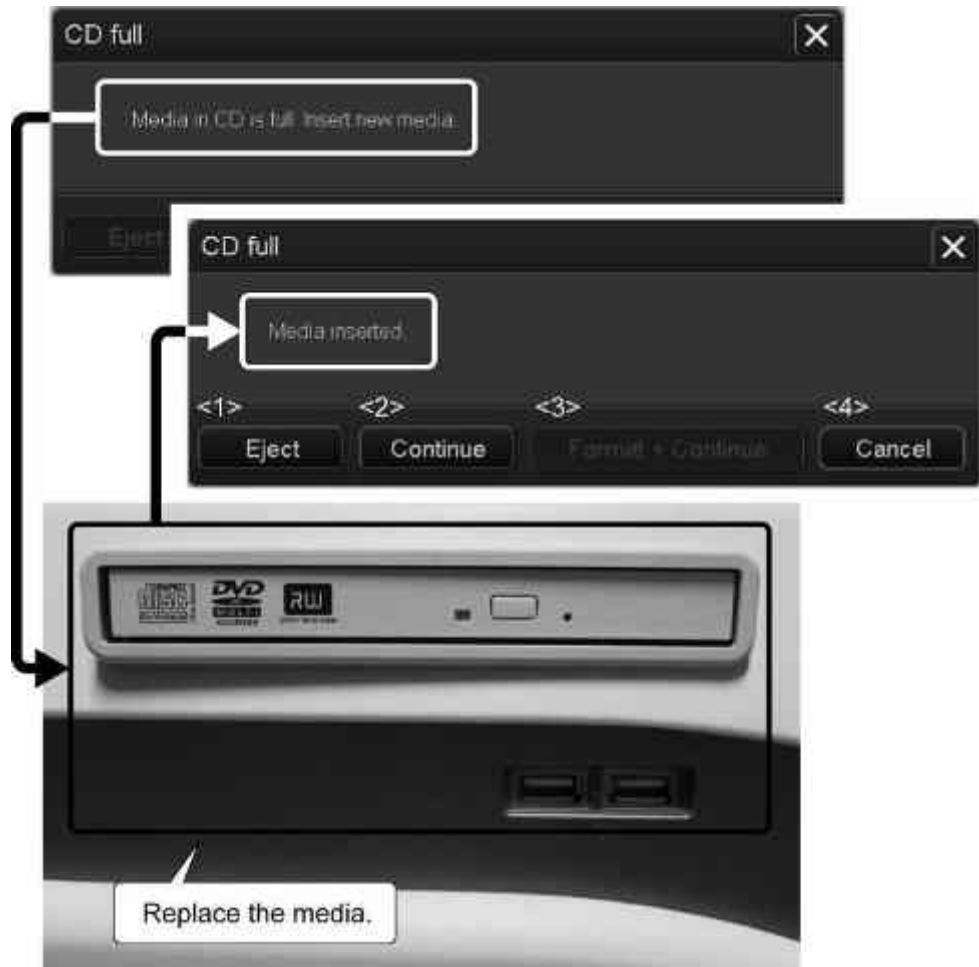


(2) To select an individual exam



## 2.2.2 Copying images

- NOTE 1. If an attempt is made to copy image data with a total size larger than the available storage capacity of the media, the dialog below is displayed (example for CD/DVD). Replace the media with new media and select the desired function.

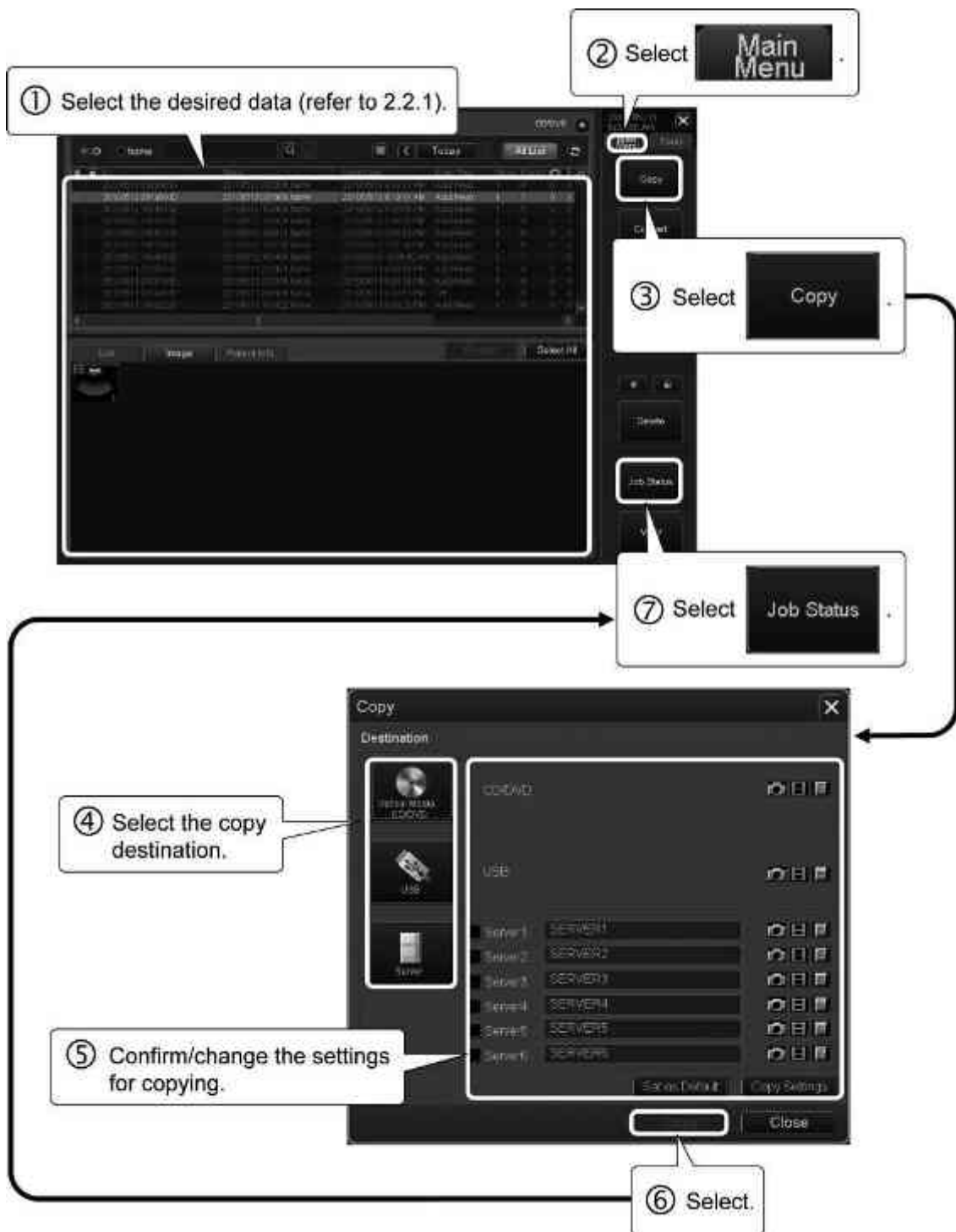


No.	Switch	Function
<1>	<b>Eject</b>	Ejects the media.
<2>	<b>Continue</b>	Continues writing to media.
<3>	<b>Format + Continue</b>	Formats the media and continues writing to media.
<4>	<b>Cancel</b>	Cancels writing to media.

- NOTE
2. To copy only the image data for the target data that includes image data and the worksheet, select the image data in the patient/exam display area (at the bottom of the list).

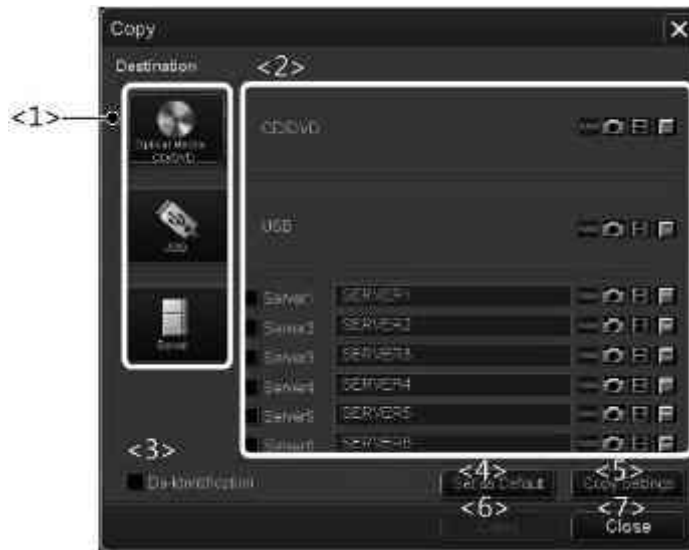


3. When a worksheet is to be saved, save only the latest worksheet if there are multiple worksheets in an examination.  
If there are multiple measurement data for measurement positions (including edited data) in a worksheet, also save only the latest data for each measurement position.  
    - \* If the stored worksheet was created using system version V2.0 or earlier, all worksheets must be saved for each individual examination.
  4. When data that includes worksheet data is saved, confirm that the data has been successfully transferred by checking the destination and the Job Status screen (refer to subsection 2.2.8).
  5. When data for analysis (4D, Wall Motion Tracking, etc.) is saved, be sure to save the data with raw data.  
For image data without raw data, functions other than Exam Review cannot be used.
  6. While creating a copy in the server, if the network is temporarily unavailable, data to be saved in the server is temporarily queued internally.  
    - \* To check the internal queue, refer to the Job Status screen (subsection 2.2.8).
-









(1) Confirming the settings for copying (Copy screen)



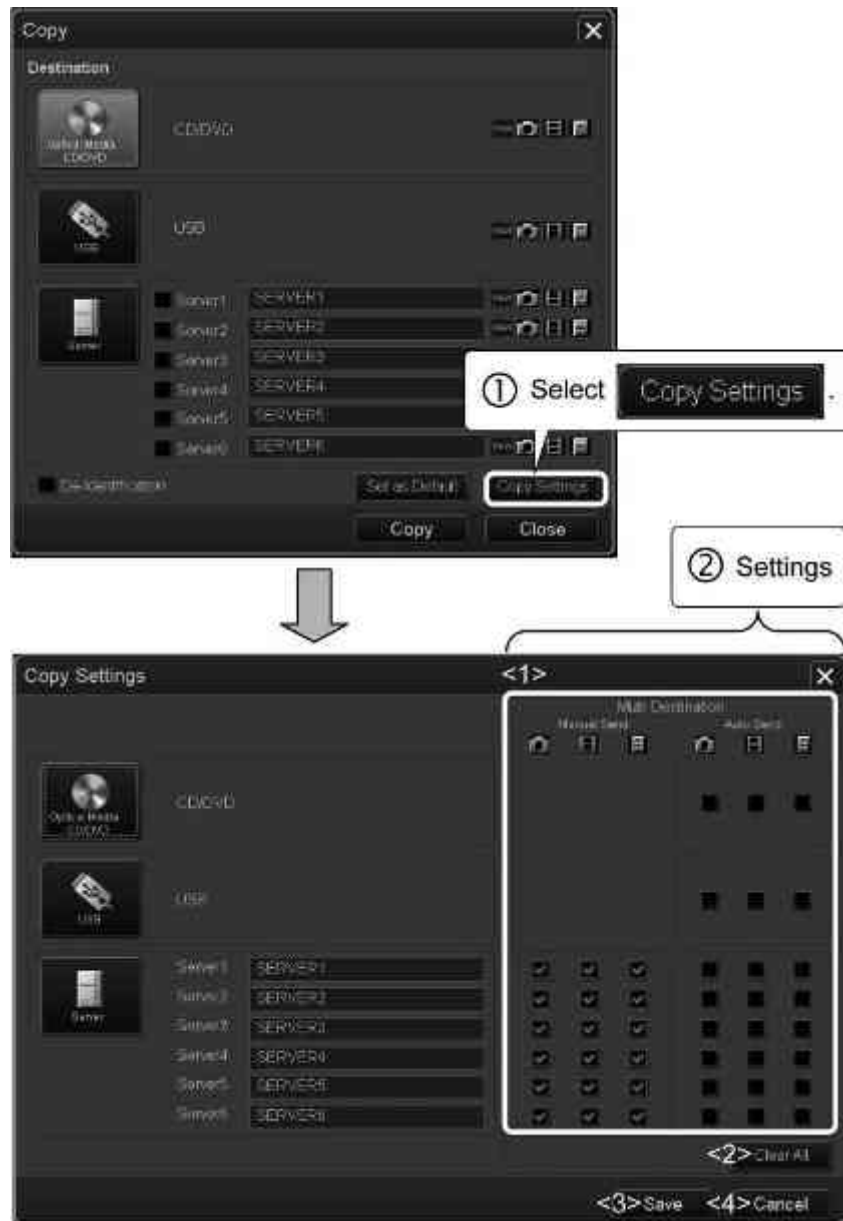
No.	Item/icon	Description
<1>	Destination <ul style="list-style-type: none"> <li>• CD/DVD</li> <li>• USB</li> <li>• Server *1</li> </ul>	Selects the copy destination. * The selected destination is highlighted.
<2>	Settings <ul style="list-style-type: none"> <li>• CD/DVD</li> <li>• USB</li> <li>• Server 1 to 6 *1</li> </ul>	Icons for the copy settings are displayed. <Server setting> <ul style="list-style-type: none"> <li>• <input checked="" type="checkbox"/> : Send to the specified server.</li> <li>• <input type="checkbox"/> : Do not send.</li> </ul> <Settings for Auto Send to the specified server> <ul style="list-style-type: none"> <li>•  : Sends a copy of the still image automatically.</li> <li>•  : Sends a copy of the dynamic image automatically.</li> <li>•  : Sends a copy of the worksheet automatically.</li> </ul>









No.	Item/icon	Description
<3>	De-Identification	<p>Select transfer options.</p> <p>( <input checked="" type="checkbox"/> : Execute / <input type="checkbox"/> : Do not execute)</p> <p>Hides the following information included in the banner in the image data.</p> <p>&lt;a&gt; Patient ID &lt;b&gt; Patient name &lt;c&gt; Sex &lt;d&gt; Age &lt;e&gt; Hospital name &lt;f&gt; Operator name &lt;g&gt; Date &lt;h&gt; Time</p> <p>In addition, patient information included in image data (DICOM data), hospital information, or information related to the physician or operator can be hidden.*<sup>2</sup></p>
<4>		<p>Saves the settings.</p> <p>* The displayed copy settings are saved as the default settings.</p>
<5>		Allows the copy settings to be changed.
<6>		Performs copy.
<7>		Closes the Copy screen.

\*1: To use this function, the optional USDI-X200A is required.

\*2: Do not transfer data which has a checkmark for "De-Identification" to the server unless it is necessary (instead, transfer to media such as USB/CD/DVD, or to an external device). Patient information and the exam date are hidden so that patients cannot be searched for on the server. In addition, do not load data that is output with "De-Identification" into the system. The intended operation may not be performed, because a large amount of information is included in the DICOM data.

(2) Changing the settings for copying (Copy Settings screen)



No.	Item/icon	Description
<1>	Multi Destination *1	<p>Setting for Auto Send to the specified servers (it is possible to set multiple servers)</p> <ul style="list-style-type: none"> <li>• Manual Send : When data is copied from the Patient Browser screen or data is transferred to the DICOM server (refer to subsection 17.4), a copy of the selected item is automatically sent to the specified servers.</li> <li>• Auto Send : A copy of the selected item is automatically sent to the specified servers when the exam is terminated (refer to subsection 1.1.5).</li> </ul> <hr/> <ul style="list-style-type: none"> <li>•  : Still image</li> <li>•  : Dynamic image</li> <li>•  : Worksheet</li> <li>•  : Send</li> <li>•  : Do not send.</li> </ul>
<2>		Removes the check marks from all items (in the Multi Destination area)
<3>		Saves the settings.
<4>		Closes the Copy Settings screen.

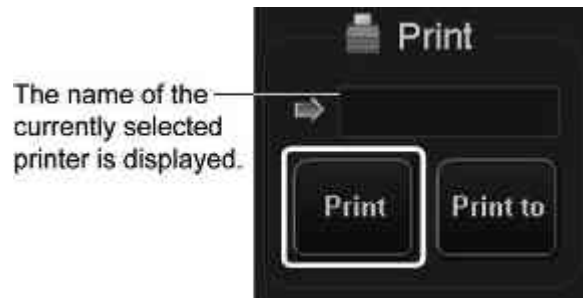
\*1: To use this function, the optional USDI-X200A is required.

### 2.2.3 Printing images

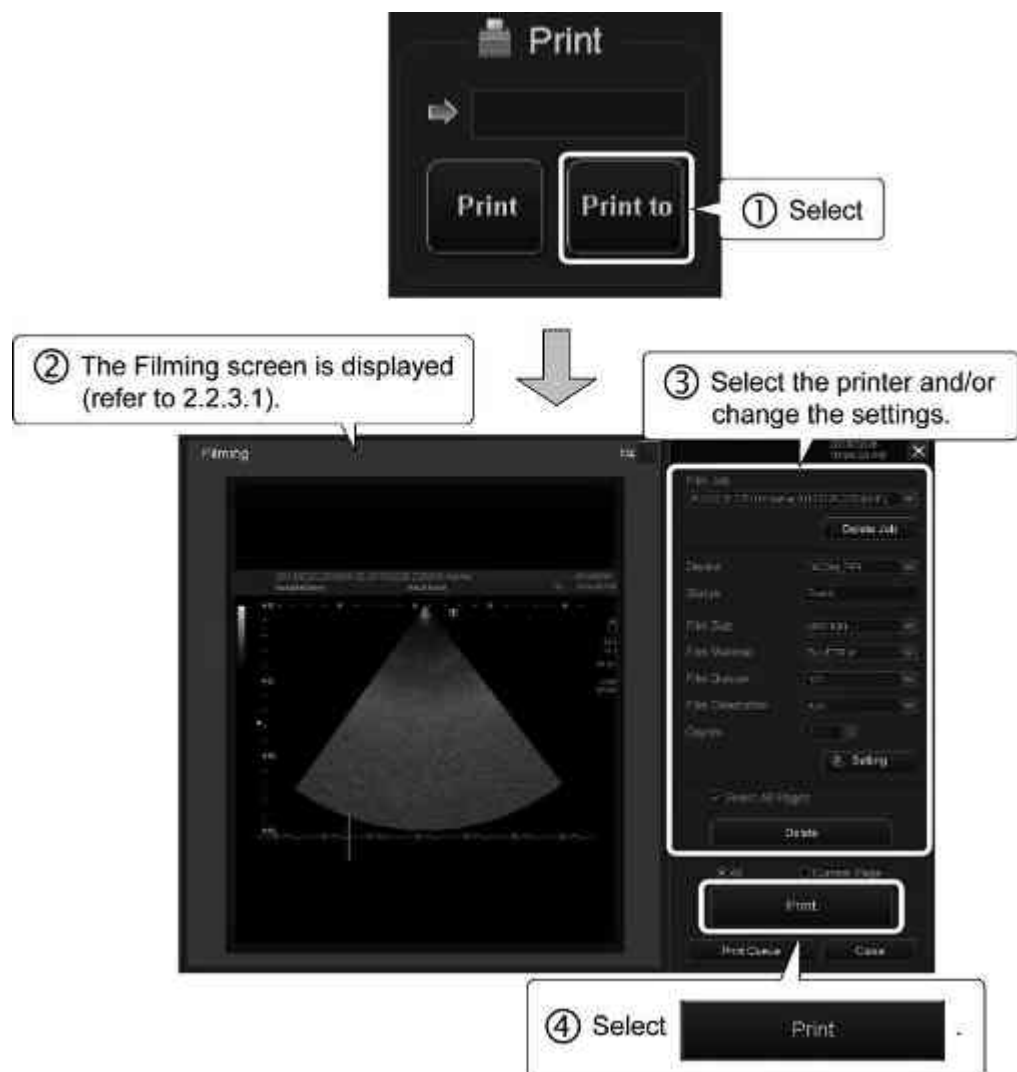
- NOTE
1. Do not display or print images imported from other devices.  
Such images may not be displayed or printed correctly.
  2. Some printers cannot detect print errors.  
Examine the actual printout to confirm that the data has been printed correctly.
- 



- (1) To print the images using the printer displayed in the Print field



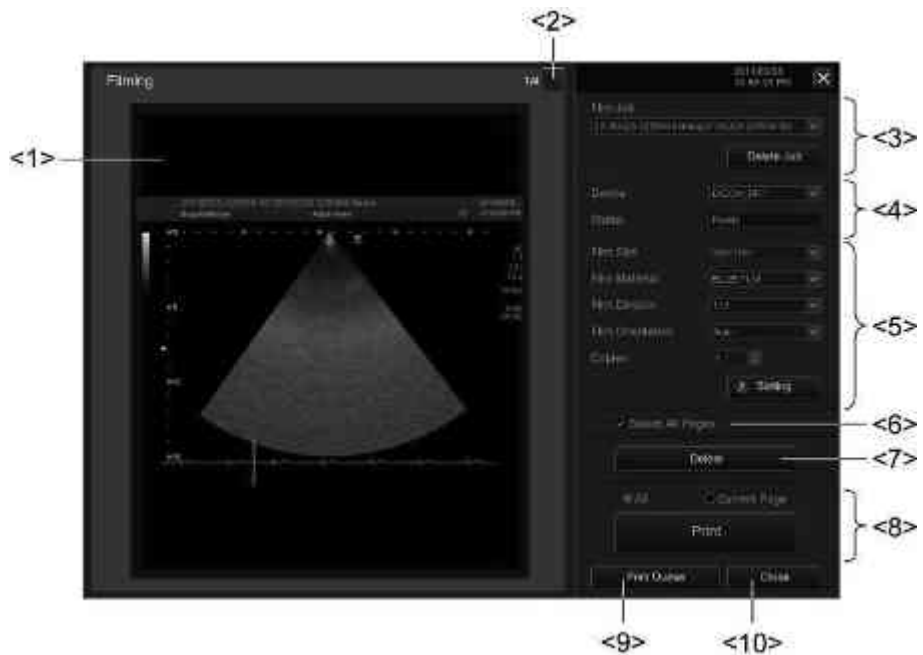
- (2) To print the images using another printer or to change the print settings






2.2.3.1 Filming screen

Editing and printing are possible on the Filming screen while previewing multiple still images stored in the system.



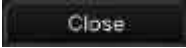
Additionally, the Filming screen can display the default settings of the printer used in the Patient Browser (refer to subsection 2.1) and the print status of the printer connected to the system.



No.	Item	Description
<1>	Virtual film	Displays the print preview.
<2>	Page forward/backward	Feeds the page forward or backward.
<3>	Film Job	Another film job can be selected from the list.
		Cancels data transmission.
<4>	Device	Select the printer from the list.
	Status	Displays the status of the DICOM printer. Ready : Printing is possible. No Ready : Printing is not possible. *This indicates that the system cannot confirm a DICOM printer connection (the power of the DICOM printer is OFF, etc.). * This item is not displayed for the PC printer.

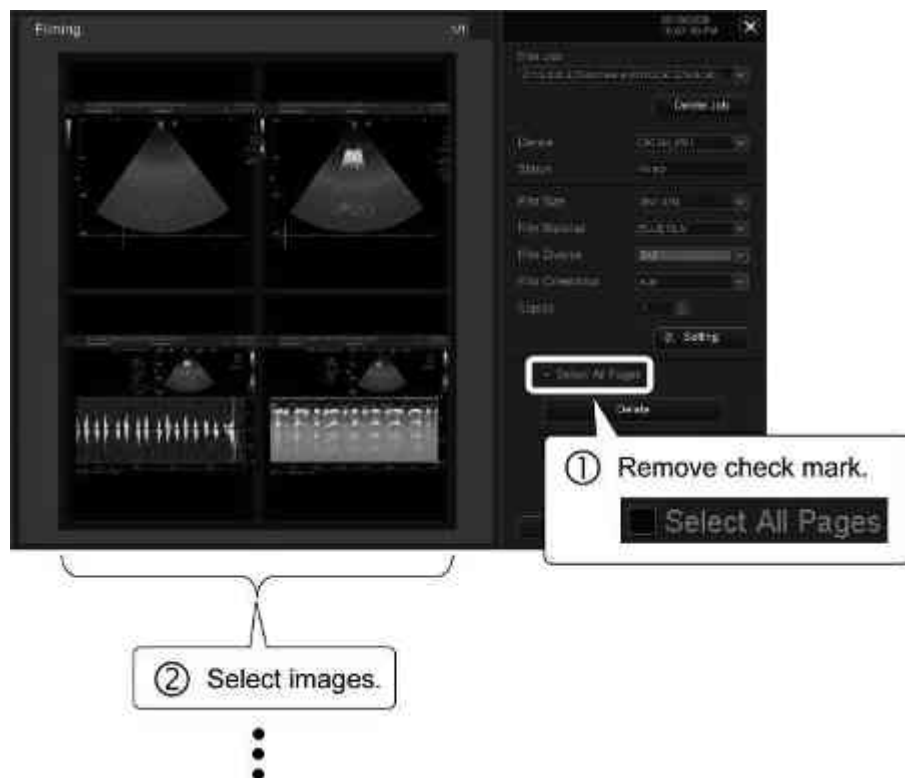
No.	Item	Description
<5>	Film Size	Select the film size from the list. * The film size cannot be selected for a PC printer.
	Film Material	Select the film type. * The film type cannot be selected for a PC printer.
	Film Division	Select the frame format. * The following options are provided for a PC printer. 1×1, 1×2, 2×2, 2×3, 2×4, 3×3, 3×4, 3×5, 4×4, 4×5, 4×6, 5×6, 5×7 * The following options are provided for a DICOM printer. 1×1, 1×2, 2×1, 2×2, 2×3, 3×2, 2×4, 4×2, 3×3, 3×4, 4×3, 3×5, 5×3, 4×4, 4×5, 5×4, 4×6, 6×4, 5×6, 6×5, 5×7
	Film Orientation	Select the film orientation from Portrait, Landscape, and Auto. • Portrait : The vertical sides are longer. • Landscape : The horizontal sides are longer. • Auto : The film orientation is determined automatically according to the setting for Film Division. * When Auto is selected, the film orientation is set to Landscape for 1x1, 2x2, 3x3, or 4x4, and for the other film sizes, the film orientation is set to Portrait. (For a PC printer, the film orientation is determined automatically according to the paper size (aspect ratio).)
	Copies	Select the number of copies from 1 to 9.
		Displays the screen for changing the default settings.
<6>	Select All Pages	Selects images in the virtual film. With a check mark: Images on all pages are selected. Without a check mark: The desired images are selected manually.
<7>		Deletes all the selected images.



No.	Item	Description
<8>	All/Current Page	Selects the pages to print. All : All pages are printed. Current Page : Only the displayed page is printed.
		Starts printing. * A page that has been printed is automatically removed from the print preview area.
<9>		Displays the screen for checking the print status.
<10>		Closes the Filming screen.

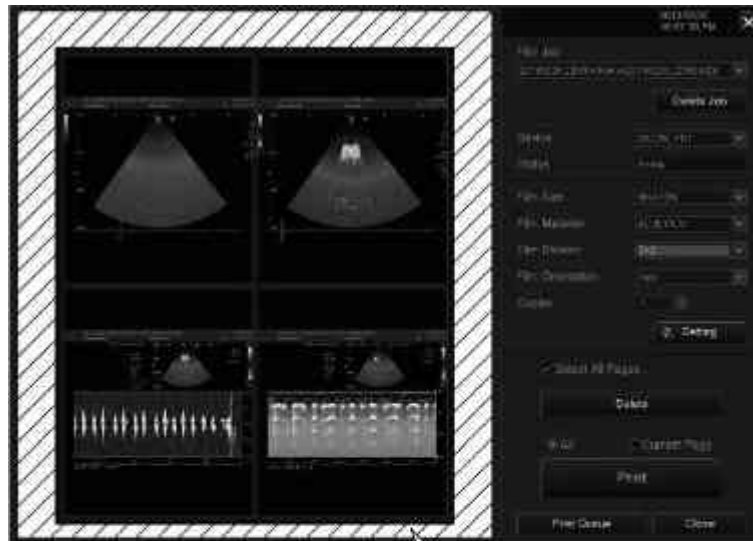
## (1) Details of editing operation


- NOTE
1. On the Filming screen (default), a check mark is initially displayed in the checkbox for **Select All Pages**.
  2. When selecting images manually, multiple images can be selected successively.



3. Selected images are marked with a blue frame (selected status).
  - \* To cancel selection, select the image again.

(a) To select all displayed images at once



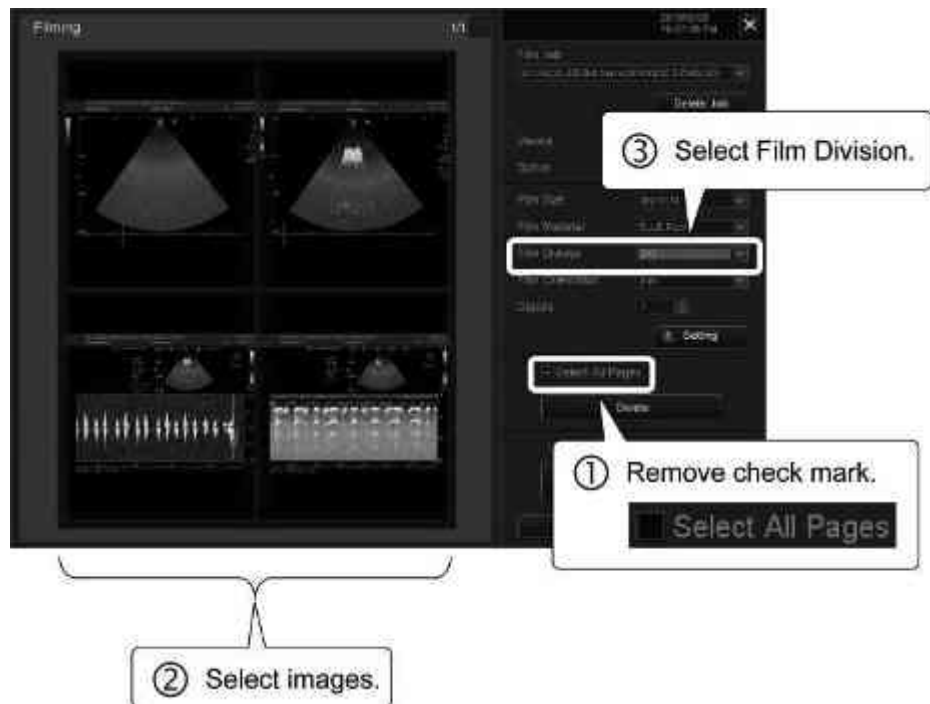
Move the cursor to the frame outside the virtual film (the shaded area), and  .

\* To cancel selection, select the shaded area again.

(b) To select Film Division  
 <1> Images on all pages

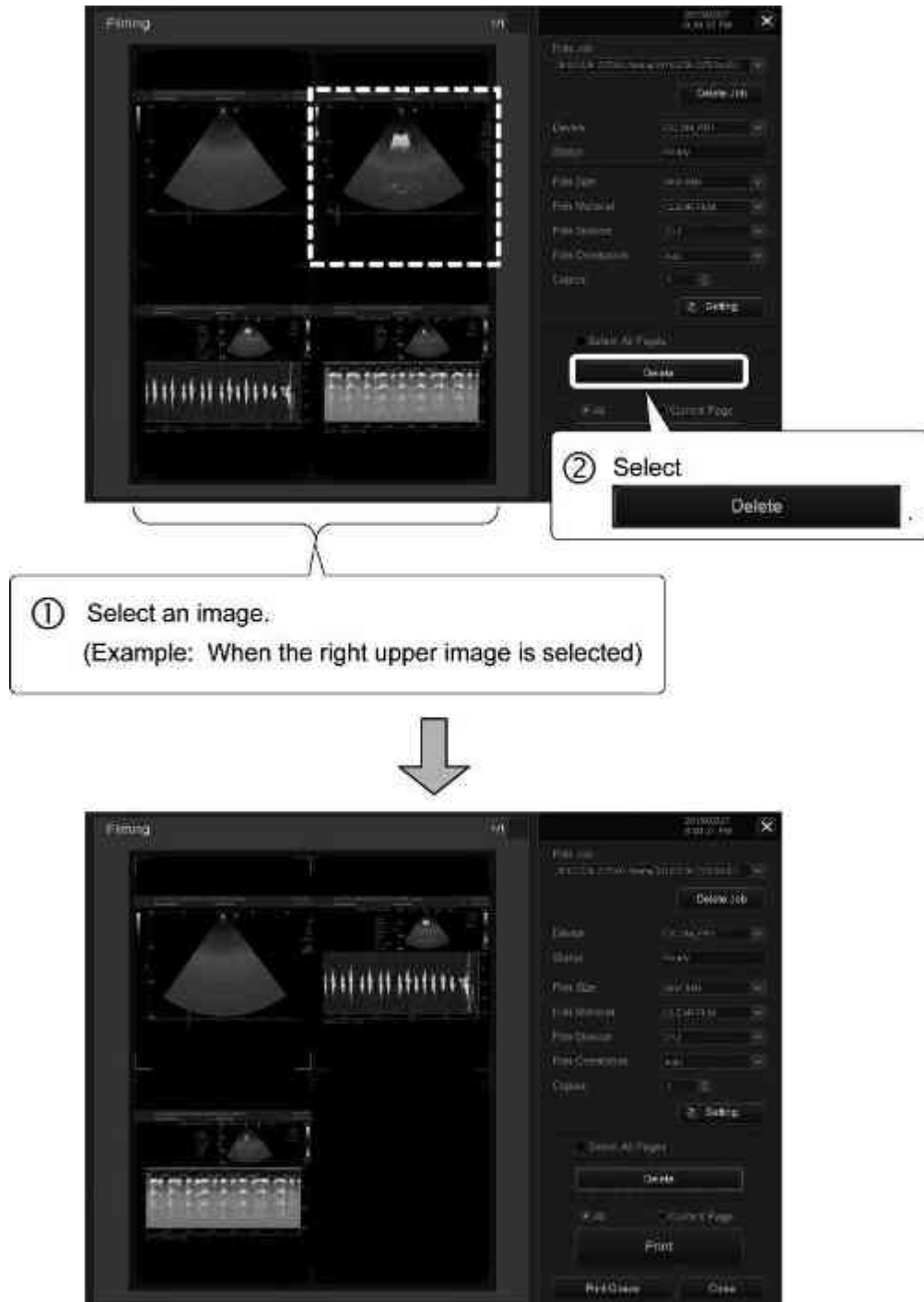


<2> Some images

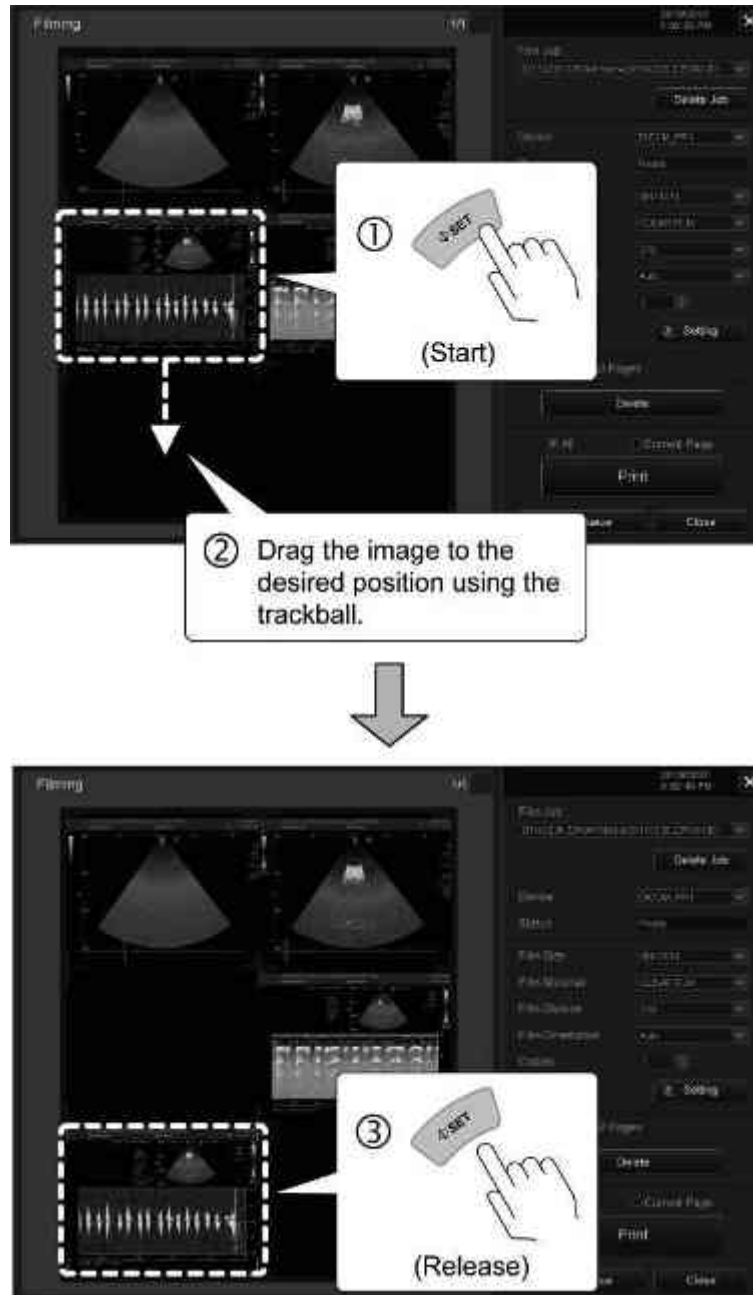


(c) To delete an image

- \* After an image is deleted, the subsequent images shift automatically so that there are no vacant frames.



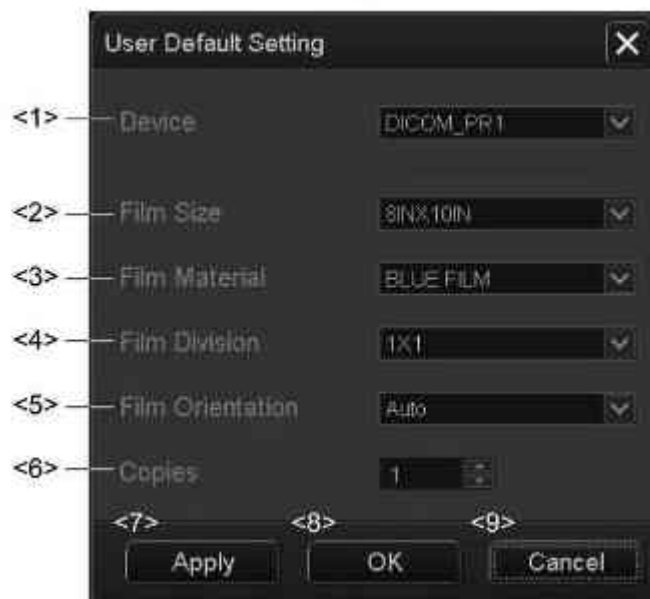
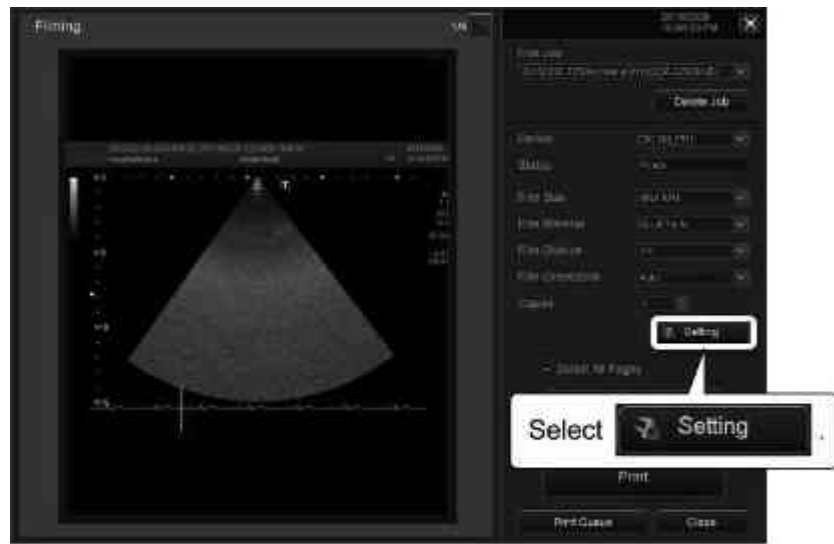
(d) To move an image



(2) Default setting screen





Default parameters for the printer can be set.

When the setting is changed, the changes become effective from the job operated currently.



No.	Item	Description
<1>	Device	Select the default printer from the list.
<2>	Film Size	Select the film size from the list. * The film size cannot be selected for a PC printer.
<3>	Film Material	Select the film type. * The film type cannot be selected for a PC printer.
<4>	Film Division	Select the frame format. * The following options are provided for a PC printer. 1×1, 1×2, 2×2, 2×3, 2×4, 3×3, 3×4, 3×5, 4×4, 4×5, 4×6, 5×6, 5×7 * The following options are provided for a DICOM printer. 1×1, 1×2, 2×1, 2×2, 2×3, 3×2, 2×4, 4×2, 3×3, 3×4, 4×3, 3×5, 5×3, 4×4, 4×5, 5×4, 4×6, 6×4, 5×6, 6×5, 5×7
<5>	Film Orientation	Select the film orientation from among Portrait, Landscape, and Auto. <ul style="list-style-type: none"> <li>• Portrait : The vertical sides are longer.</li> <li>• Landscape : The horizontal sides are longer.</li> <li>• Auto : The film orientation is determined automatically according to the setting for Film Division.</li> </ul> * When Auto is selected, the film orientation is set to Landscape for 1x1, 2x2, 3x3, or 4x4, and for the other film sizes, the film orientation is set to Portrait. (For a PC printer, the film orientation is determined automatically according to the paper size (aspect ratio).)
<6>	Copies	Select the number of copies from 1 to 9.

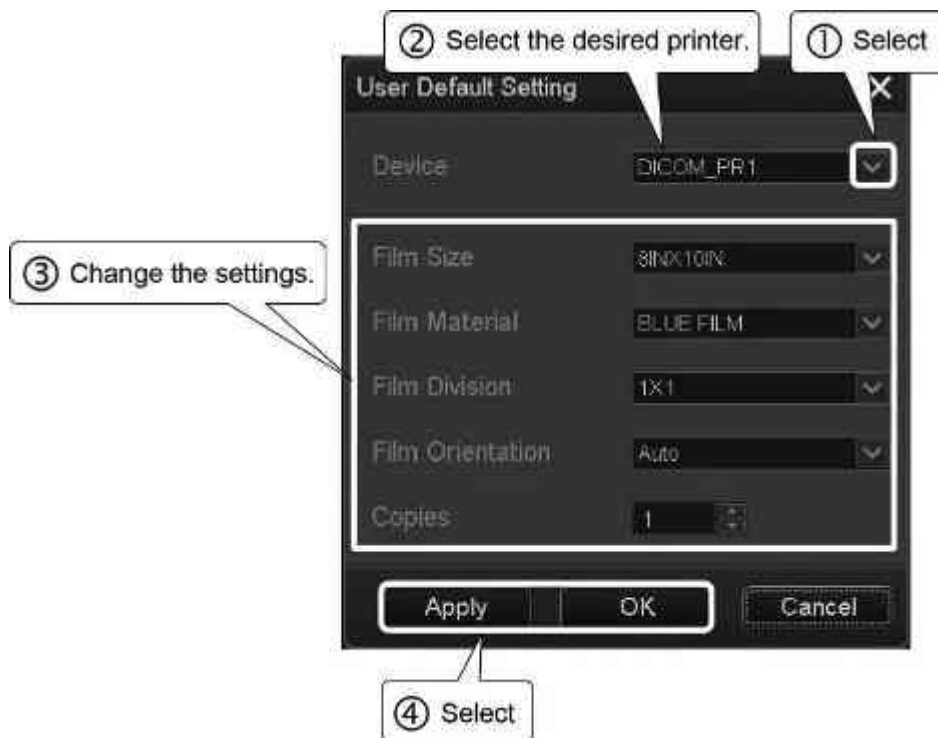


No.	Item	Description
<7>		<p>Storing the set values</p> <ul style="list-style-type: none"> <li>* The entered parameters are stored as default values for the selected device. (After [Apply] is pressed, parameters for other devices can be set successively.)</li> <li>* The device which is selected at the time [Apply] is pressed is stored as the default device that is initially displayed when the Filming screen opens. (The stored default device is displayed automatically in the printer name field of the Patient Browser screen.)</li> </ul>
<8>		<p>Stores the setting (same as  ) and closes the User Default Setting screen.</p>
<9>		<p>Closes the User Default Setting screen without saving the changes.</p>

(a) To set the default printer displayed on the Patient Browser screen

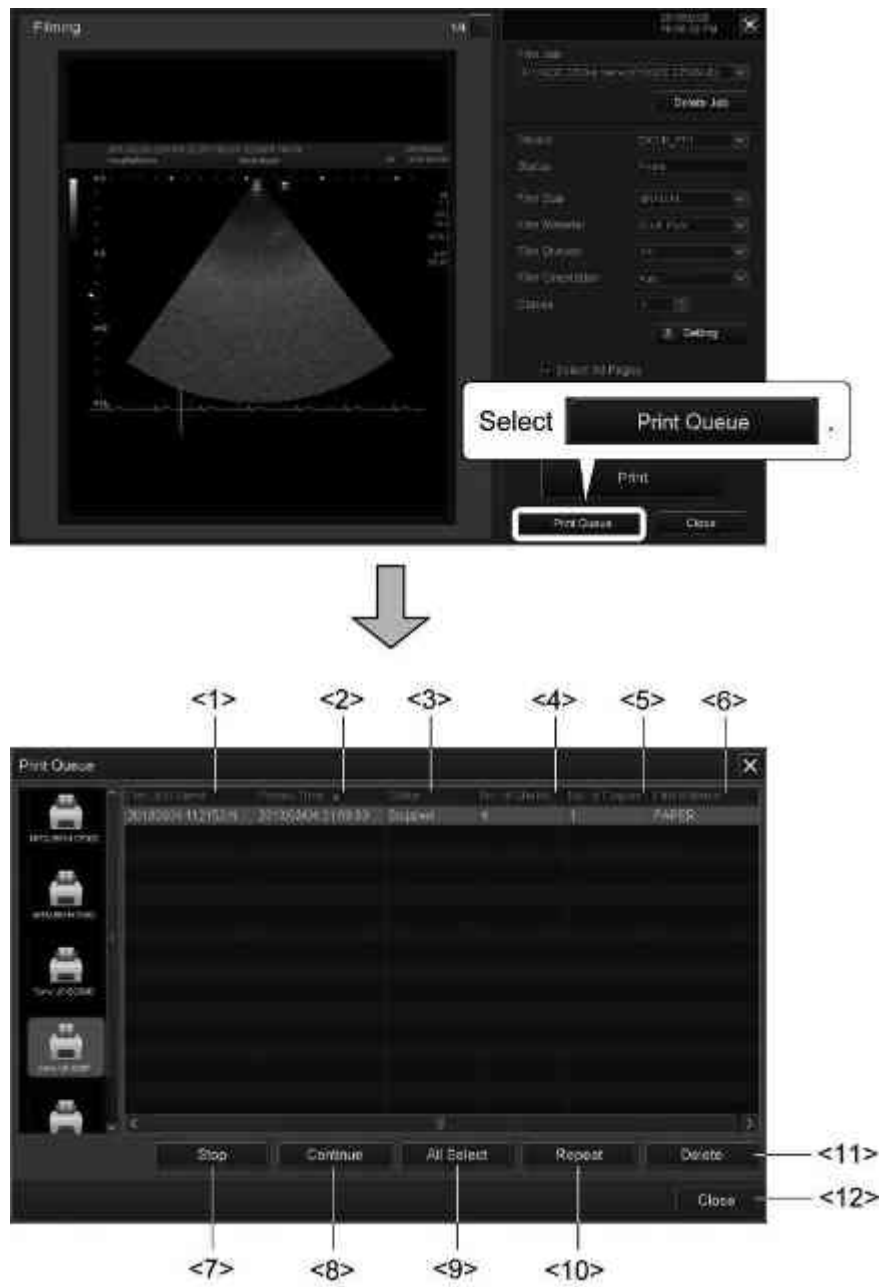








(b) To change the default settings of the printer



(3) Print status check screen

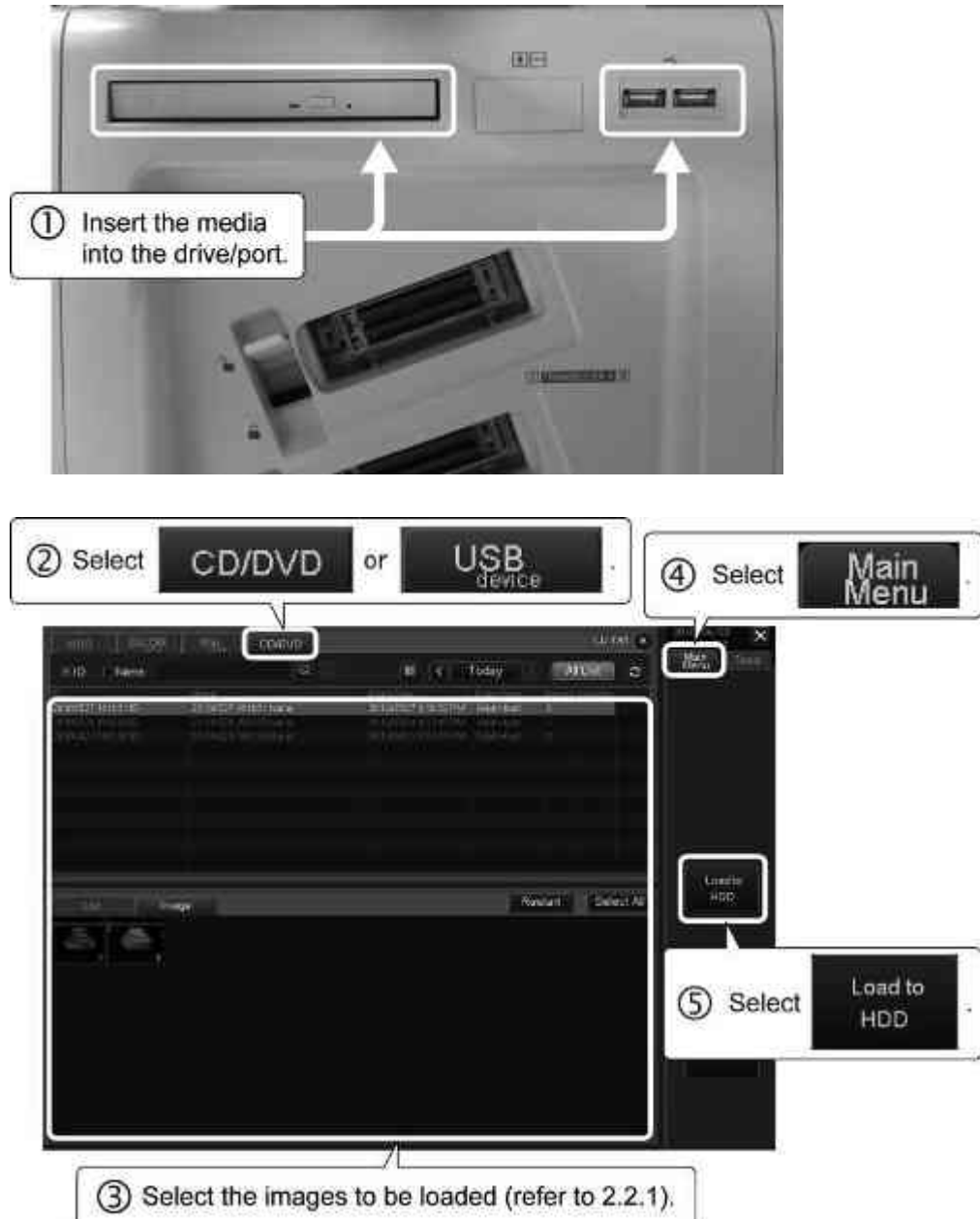
The status of the print jobs can be checked.




No.	Item	Description
<1>	Film Job Name	The film jobs are displayed in a list.
<2>	Posted Time	The time when the job was queued is displayed.
<3>	Status	Indicates the printer status. <ul style="list-style-type: none"> <li>• Spooling : Preparation in progress</li> <li>• Queued : Ready for printing</li> <li>• Printing : Printing in progress</li> <li>• Printed : Completed</li> <li>• Stopped : Discontinued</li> <li>• Failed : Failed due to an error</li> </ul>
<4>	No. of Sheets	The total number of sheets for the film job is displayed.
<5>	No. of Copies	The total number of copies is displayed.
<6>	Film Material	Indicates the film type.
<7>		Stops the printer queue temporarily.
<8>		Resumes the printer queue.
<9>		Selects all of the film jobs displayed in the print queue.
<10>		Repeats printing of the selected film jobs.
<11>		Deletes the selected film jobs.
<12>		Closes the Print Queue screen.

## 2.2.4 Loading images

(1) To load the images from media



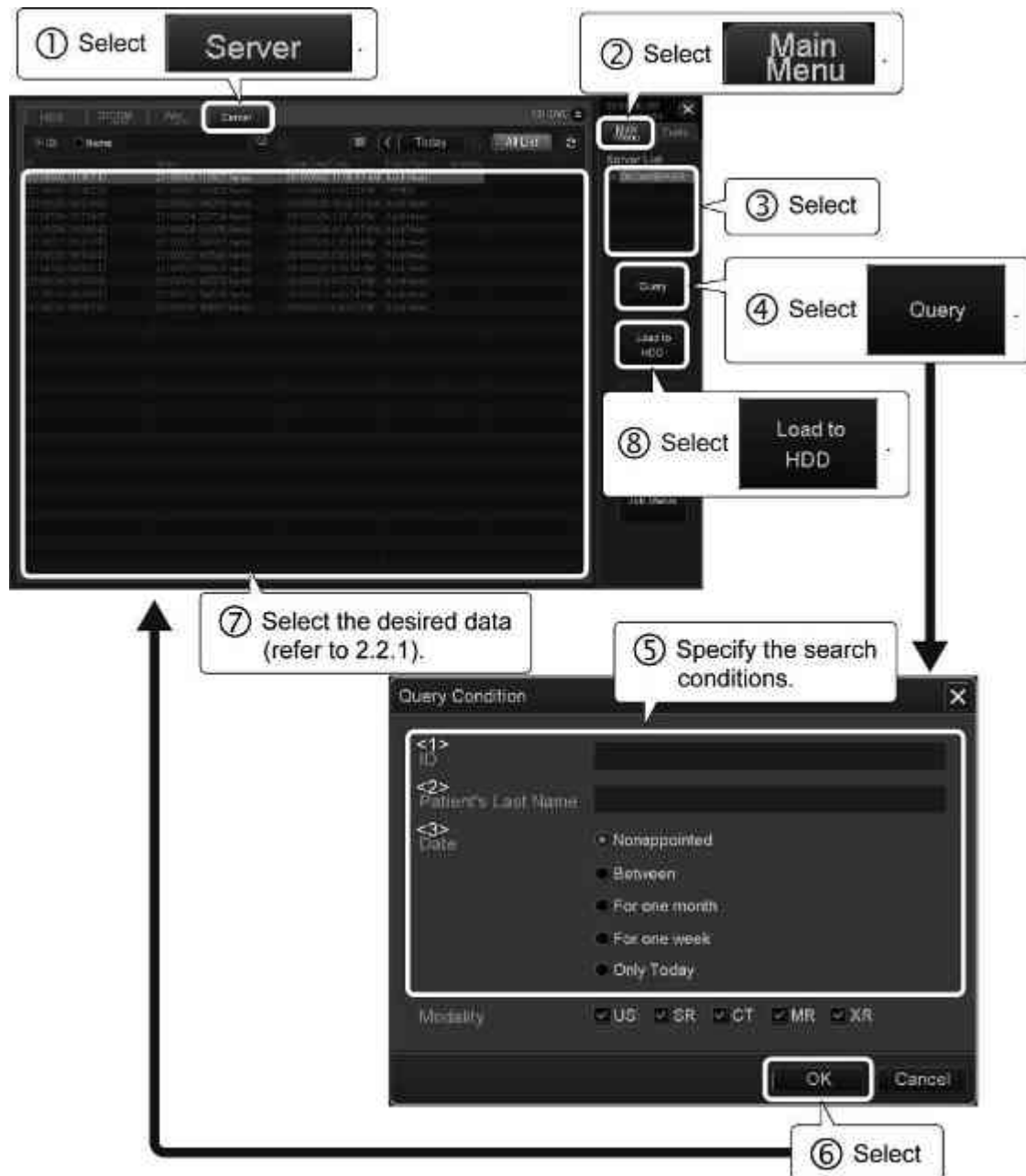
- NOTE
1. When data for analysis (4D, Wall Motion Tracking, etc.) is saved, be sure to save the data with raw data.  
For image data without raw data, functions other than Exam Review cannot be used.
  2. Do not load exams created using other systems into this system. If an exam containing more than one series is loaded, the series may not be displayed correctly in the list.
  3. Use one of the following methods to remove the media from the drive.
    - Select  (Eject) at the top of the Patient Browser screen.
    - Press [CD/DVD Eject] or [USB Disconnect] on the touch panel.

If the media in the DVD/CD drive cannot be removed by the above methods, use one of the following methods to remove the media and then reboot the system.

    - Press the eject button on the DVD/CD drive.
    - Insert the eject pin into the eject hole of the DVD/CD drive.
  4. Data in the media cannot be copied to the HDD if it is already present in the HDD.
  5. Refer to section 3 for the procedure for displaying the image data that has been loaded from the media to the HDD.
  6. While loading the image data, do not perform any operations on the data (delete, etc.). It may cause the system to malfunction.
-


(2) To load the images from the DICOM server

\* The optional USDI-X200A is required in order to use this function.





No.	Search key	Search method
<1>	ID	The data is searched for by the patient ID.
<2>	Patient's Last Name	The data is searched for by the patient name.
<3>	Date	Nonappointed : The search range is not specified.  Between : The data for the specified range of dates is searched.  For one month : The data for the last month is searched.  For one week : The data for the last week is searched.  Only Today : The data for the current day is searched.

- 
- NOTE
1. To search the data by the patient's last name, enter the last name only.
  2. To discontinue searching, select [Query Abort].
  3. If  is displayed for the loaded image data (thumbnail), delete the data.
-

## 2.2.5 Resuming the examination

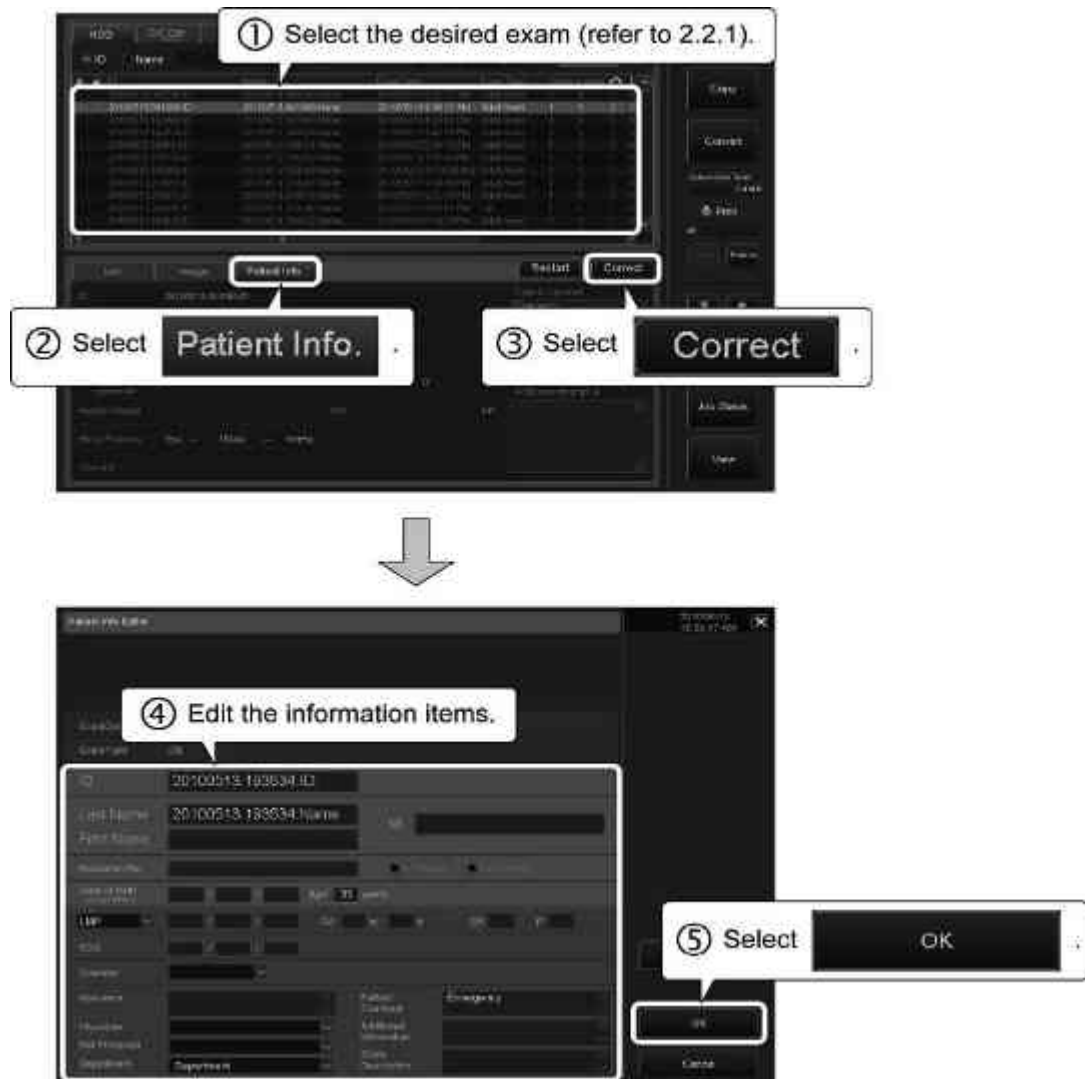
- NOTE
1. If the exam type is OB, GYN, Endo-Vaginal, or Fetal Heart, select the exam that was started on the day.
  2. If the exam type is other than those above, select the exam that was started in the last 24 hours.
  3. MPPS will not be sent when the exam is restarted or terminated.
  4. If the message "Measurement data cannot be loaded. Please restart the system." is displayed when the exam is resumed using the exam data with the worksheet, restart the system.



### 2.2.6 Editing patient information and exam information

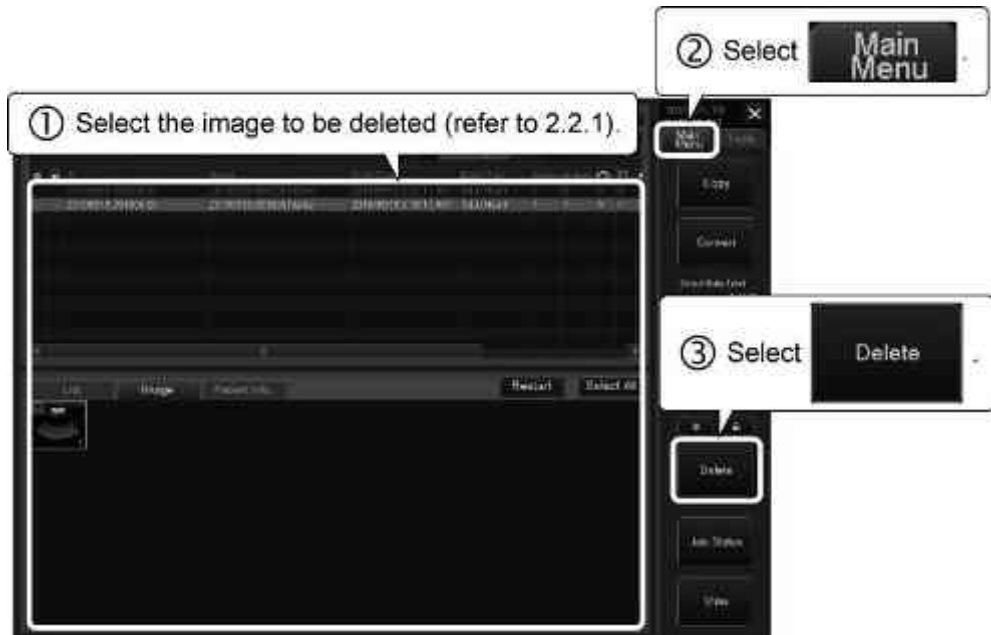
---

- NOTE
1. Be sure to confirm the changes before registering the information. Once the changes have been registered, the original data cannot be restored.
  2. If the patient information or exam information is edited using the patient/exam information editing form after the corresponding image has been stored in the HDD, the patient ID and name displayed on the patient banner for the image may not match the registered patient/exam information. (The edited patient information is displayed on the Exam Review screen in the system. However, when the edited data is retransmitted to a DICOM server or is exported to media (in the DICOM format or Windows format), the patient information before editing is displayed at the destination.)
-




- \* A confirmation dialog is displayed. Select [Confirm] to apply the changes.
- \* To discard the changes and restore the previous setting, select [Reset].

### 2.2.7 Deleting data



\* A confirmation dialog is displayed. Select [OK] to delete the selected image.

- 
- NOTE
1. The data for the current patient cannot be edited or deleted.
  2. Set protection (  ) for important data.
-

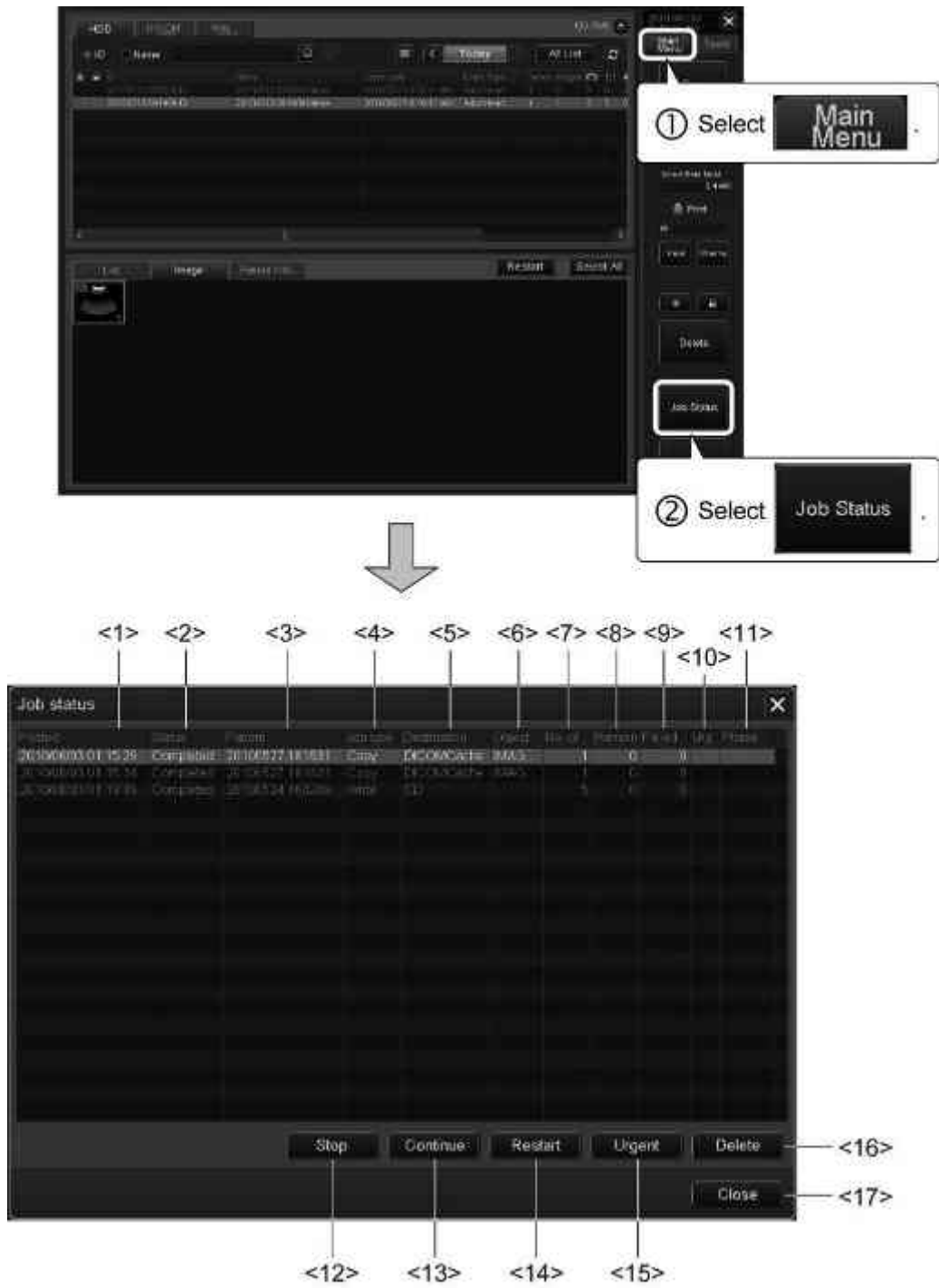
### 2.2.8 Checking the status of file handling






The status of file handling such as image copying and transfer can be checked on the Job Status screen.

---

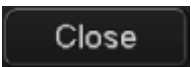
NOTE Before turning OFF the power of the system, confirm the image transfer status on the Job Status screen. "Completed" is shown in the Status column for the jobs that have been completed successfully.

---



No.	Item	Description
<1>	Posted	The start time is displayed.
<2>	Status	The job statuses are displayed. Spooling : Being prepared for queuing Queued : Preparation for queuing completed Active : In progress Completed : Completed normally Pending : Status pending Stopped : Suspended Waiting : Spooled to the queue and waiting for the next operation Receiving : Being received Committing : Being committed Error : Transfer to the queue failed Failed : Transfer to media or other system failed
<3>	Patient	The patient name is displayed.
<4>	Job Type	The job type is displayed.
<5>	Destination	The copy destination is displayed.
<6>	Object	The data description is displayed.
<7>	No. of Image	The total number of images is displayed.
<8>	Remain	The number of remaining images is displayed.
<9>	Failed Objects	The number of images for which copying has failed is displayed.
<10>	Urg	A check mark is displayed for jobs to be copied with priority.
<11>	Phase	The status of jobs whose job type is "Write" is displayed.
<12>		Stops an active or queued job.
<13>		Resumes a stopped job.
<14>		Restarts a completed, stopped, or failed job.
<15>		Copies the selected job to another system with priority.
<16>		Deletes a job in a status other than active, spooling, queued, or committing.



No.	Item	Description
<17>		Closes the Job Status screen.

---

NOTE

1. If "Failed" is displayed in the Status column:
    - (1) If "Failed" is displayed but the copy process is continuing, wait until all of the jobs have been completed with the status shown as "Completed" or "Failed". Then, repeat the copy process for the failed jobs (patients).
    - (2) If both failed jobs and recordable jobs are present on the same media, the "Recordable" image data can be used without problems.
    - (3) If jobs fail repeatedly, there may be a problem with the database. Contact your Canon Medical Systems service representative.
  2. Job Status indications after system reboot

The status of the active jobs and waiting jobs is changed to "Stopped" after the system is rebooted. To restart such jobs, select the job and then select [Restart].
-

## 2.2.9 Writing data to media

---

NOTE Data writing to media

1. When the cache becomes full, the following message is displayed and data storage to the cache is disabled. Replace the media with new media.

There is no disk space is available in the CD/DVD cache.  
Please burn the data to CD/DVD after inserting new media.

2. When a series of data is to be written to more than one media, it is not possible to write it to different types of media. The second and subsequent media must be of the same type as the first media.

If the message below is displayed due to a write error etc. during data writing to more than one media, write to the media again, starting from the first media.

Failed in burning data to CD/DVD.  
Please retry using good quality new media.

3. Use the [Stop] switch on the Job Status screen only in an emergency. If this switch is pressed, the data in the media is corrupted.
- 

(1) To write DICOM-format data to CD/DVD

Data stored in DICOM format can be written to external media without changing the format.

---

NOTE

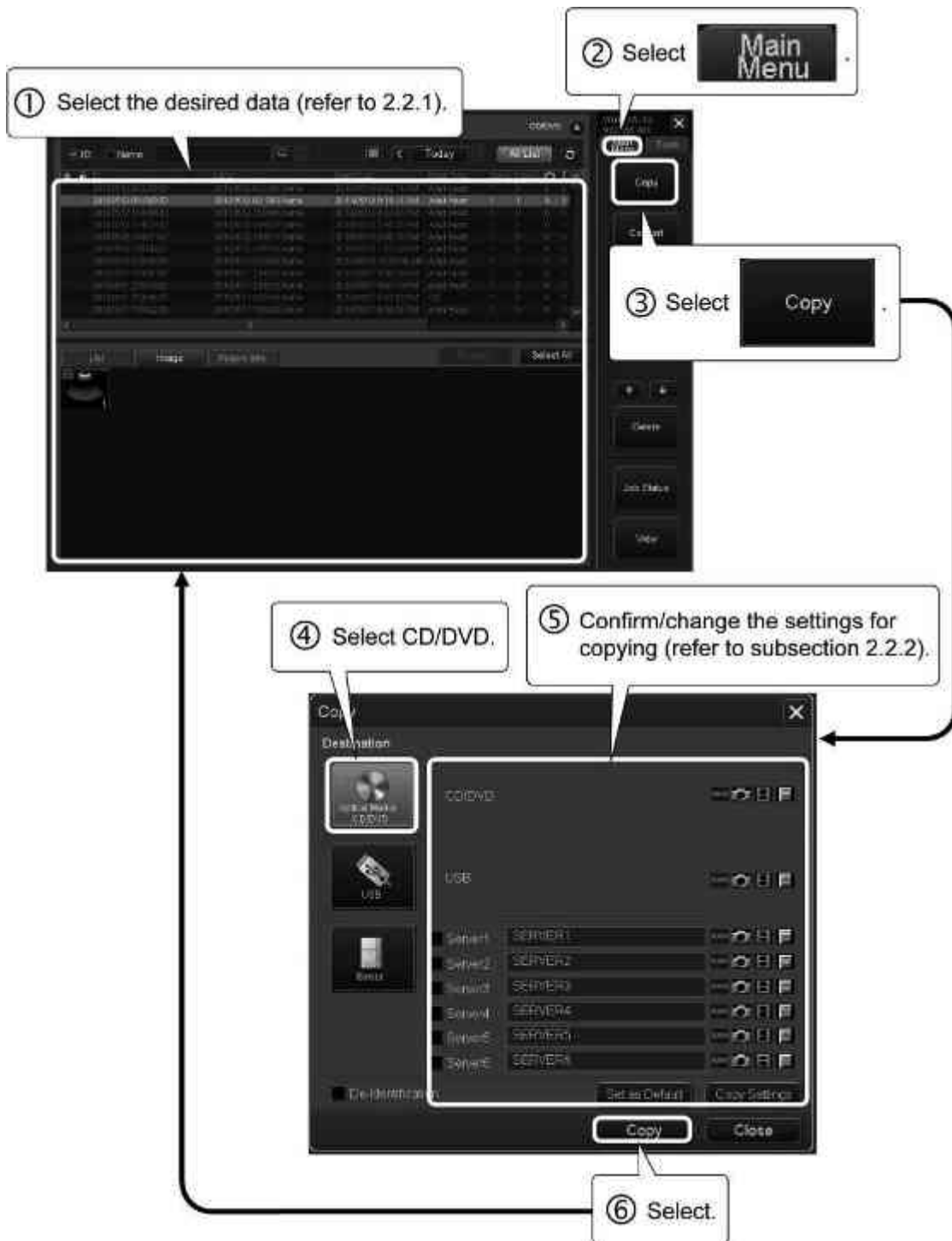
1. If a large volume of data (in particular, dynamic images) is being copied in the background, media writing is not started immediately. Media writing is started automatically when data copying is completed.

2. It may take more than 10 minutes to write data to a single CD-R.

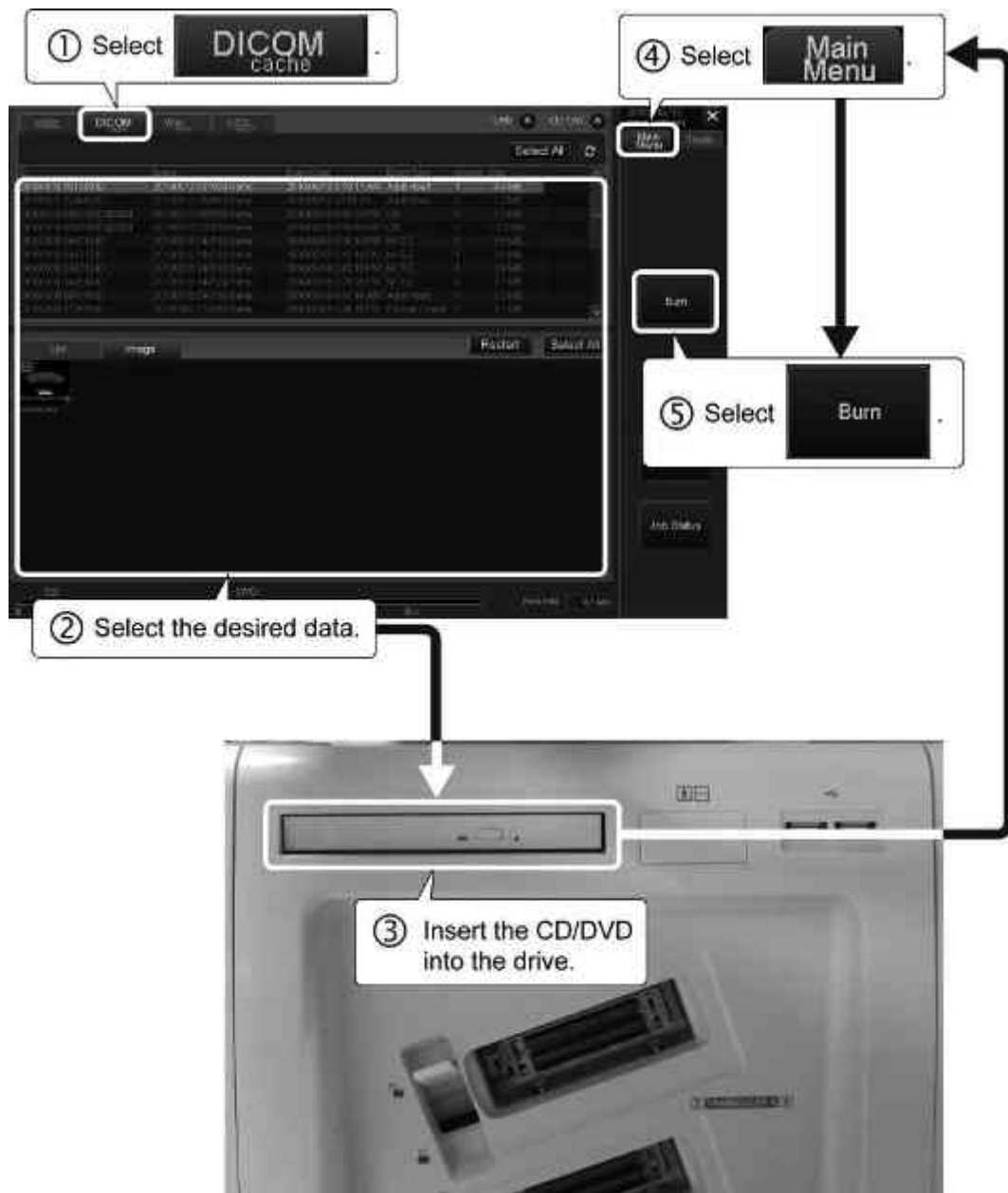
\* Data may not be written correctly depending on the quality of the media. It is recommended that media supporting high-speed writing be used.

---

(a) Repeat copying (temporary storage in the DICOM cache) as required.



(b) Select the data and start writing.




(c) The media is ejected automatically when data writing is completed.

(2) To write DICOM-format data to a USB flash drive

---

**NOTICE**

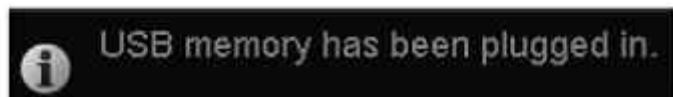
1. Only USB flash drives that are used for storing or reviewing the image data should be connected to the USB ports. Do not connect any other USB device to the system.
2. Do not eject the media using  (Eject) while writing to or reading from the media is in progress. The data on the media may be corrupted.
3. Use USB flash drives only after formatting them using the PC.
4. When multiple USB flash drives are to be used, insert them one by one.

---

**NOTE**

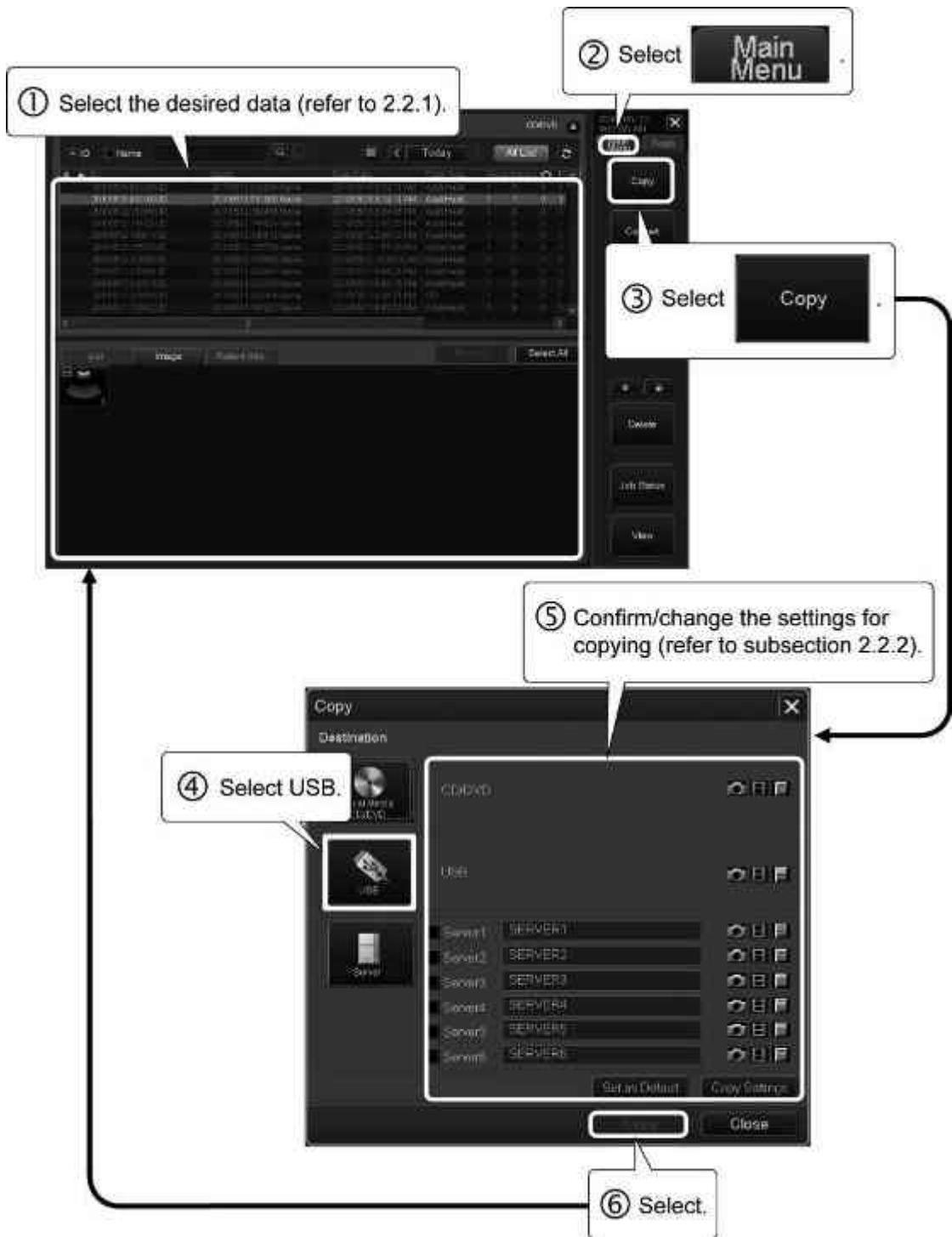
1. Prepare USB flash drives that are to be used solely for the system. Do not store any data other than data from the system in the USB flash drives.
  2. Do not use spaces in the volume names of the USB flash drives to be used for the system.
  3. Do not connect a USB flash drive when an examination is in progress.
-

(a) Insert a USB flash drive into the USB port.

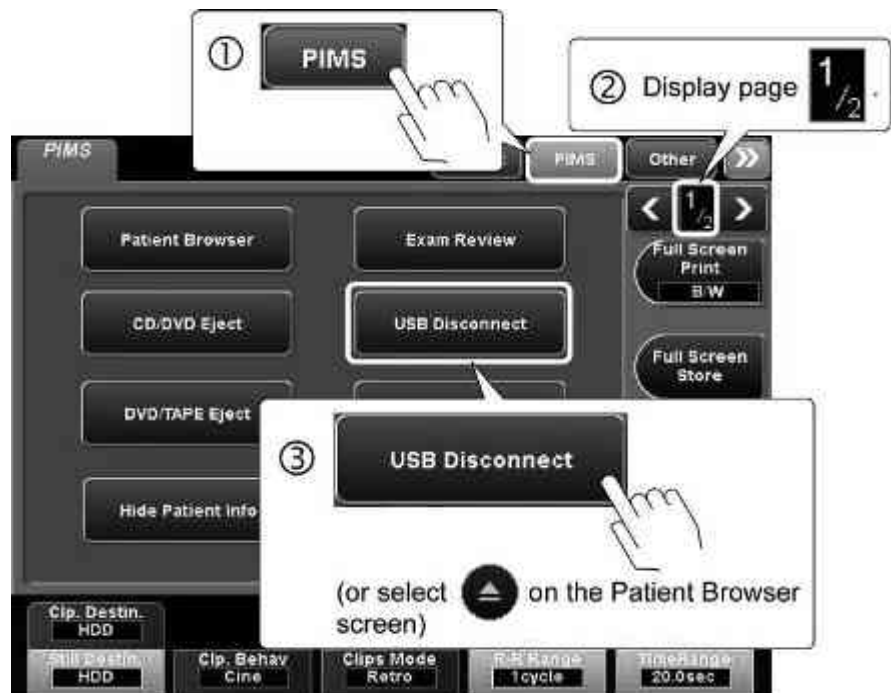


\* The above message is displayed on the screen when the USB flash drive is recognized by the system.

(b) Select the data and start writing.



(c) Remove the USB flash drive from the USB port.



**i** You can unplug the USB memory safely.



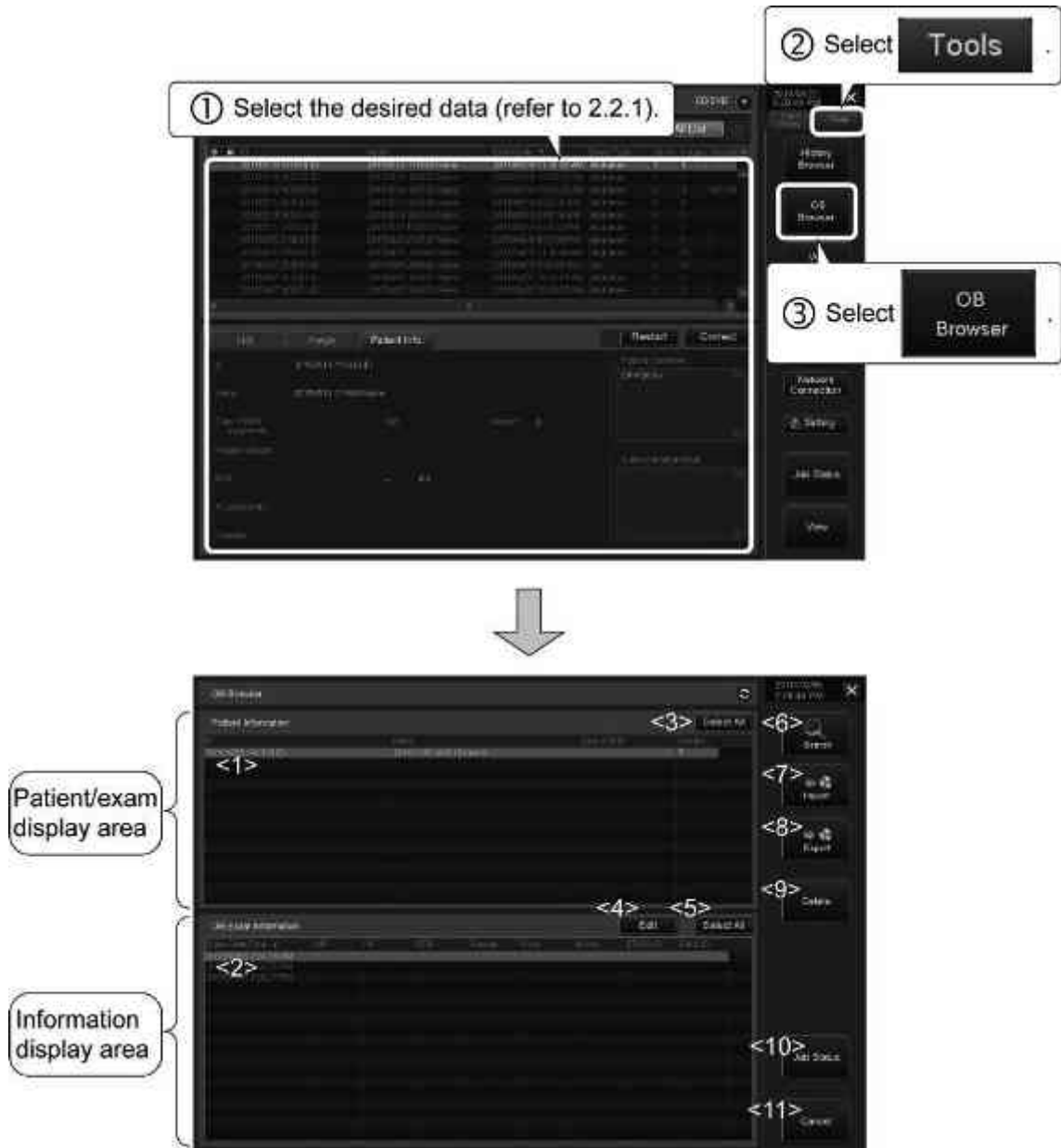
\* The above message is displayed on the screen when the USB flash drive can be disconnected safely.

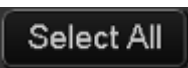





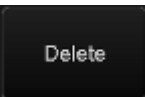


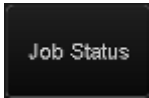
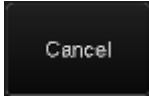


### 2.2.10 OB Browser screen

The obstetric examination history of the patient selected on the Patient Browser screen can be displayed on this screen.



No.	Item	Description
<1>	ID	Patient ID
	Name	Patient name
	Date of Birth	Date of birth of the patient
	Gender	Gender of the patient
<2>	Exam Date/Time	Date and time of the examination
	LMP	Last menstrual period
	IVF	Date of in-vitro fertilization
	EDD	Estimated date of delivery
	EDD Extended by 1 to 7 day *1	
	Gravida	Number of pregnancies
	Para	Number of pregnancies resulting in live birth
	Aborta	Number of pregnancies ending in miscarriage
	EDD(US)	Estimated date of delivery calculated based on ultrasound findings
	Fetus ID	Fetus ID
<3>		Selects all items displayed in the patient/exam display area.
<4>		Displays the Edit screen (refer to 2.2.10.1).
<5>		Selects all items displayed in the information display area.
<6>		Displays the Search screen (refer to 2.2.10.2).
<7>		Displays the file selection screen (refer to 2.2.10.3 (1)).
<8>		Displays the file selection screen (refer to 2.2.10.3 (2)).
<9>		Displays the Delete Confirmation screen (refer to 2.2.10.4).

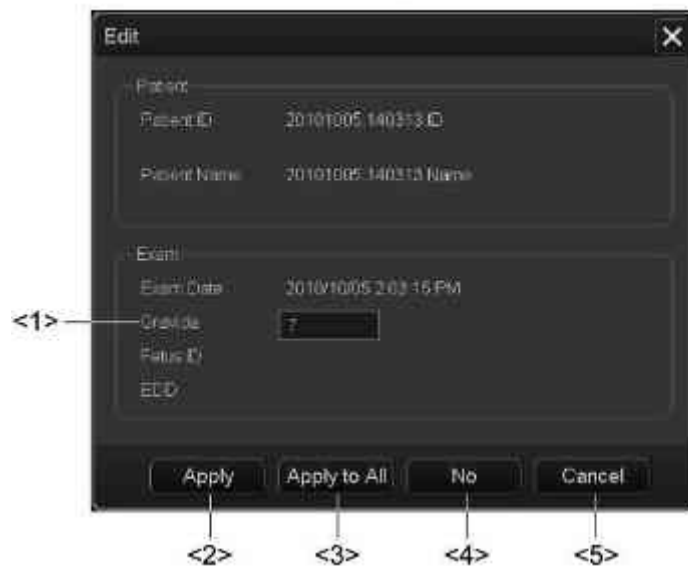
No.	Item	Description
<10>		Displays the Job Status screen (refer to 2.2.8).
<11>		Closes the OB Browser screen.





\*1: Show/hide can be selected by presetting. Refer to the operation manual <<Measurements volume>> for details.

## 2.2.10.1 Edit screen

The number of pregnancies (gravida) for the selected patient or exam can be edited. The list is updated automatically after gravida is changed.

- \* Confirm the patient ID and patient name displayed on this screen before editing the data.

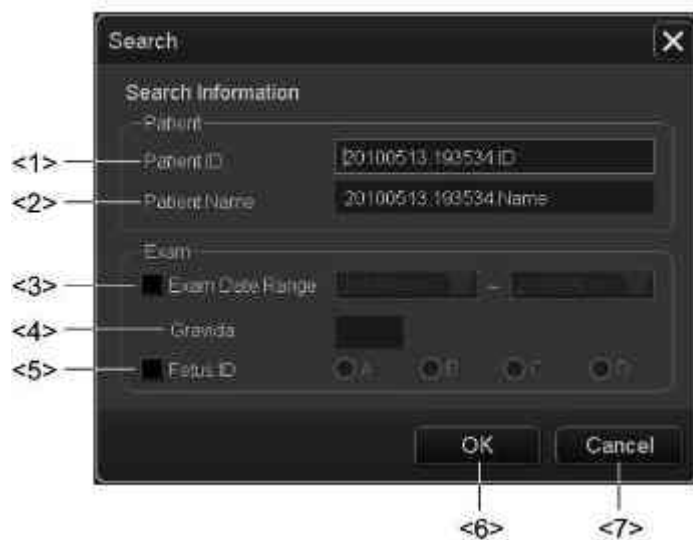
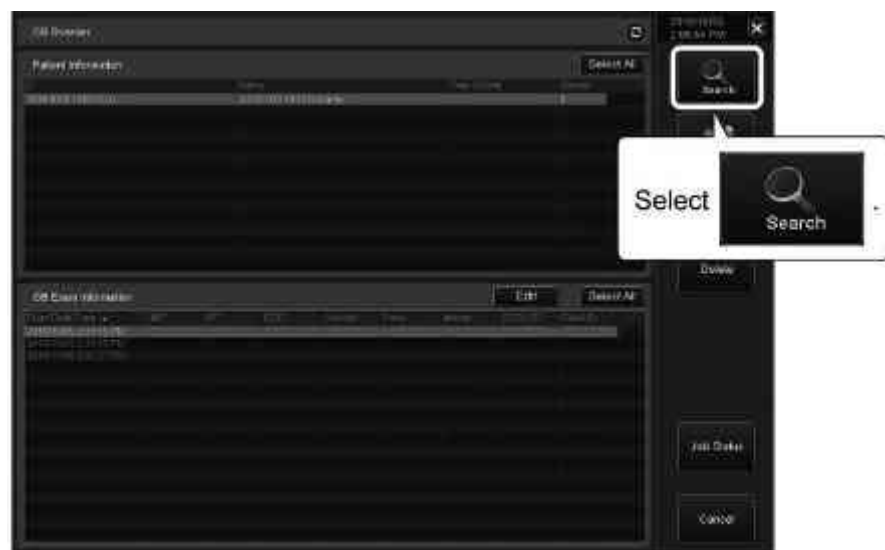




No.	Item	Description
<1>	Gravida	Enter the number of pregnancies.
<2>		Applies the change.
<3>		Applies the change to all exams when more than one exam is selected.
<4>		<p>Cancels the change.</p> <p>* When more than one exam is selected, the change to the exam currently displayed on the Edit screen is canceled and the next exam is displayed for editing.</p>
<5>		Closes the Edit screen.

## 2.2.10.2 Search screen

Patients or exams are searched for according to the specified search conditions and displayed in a list.

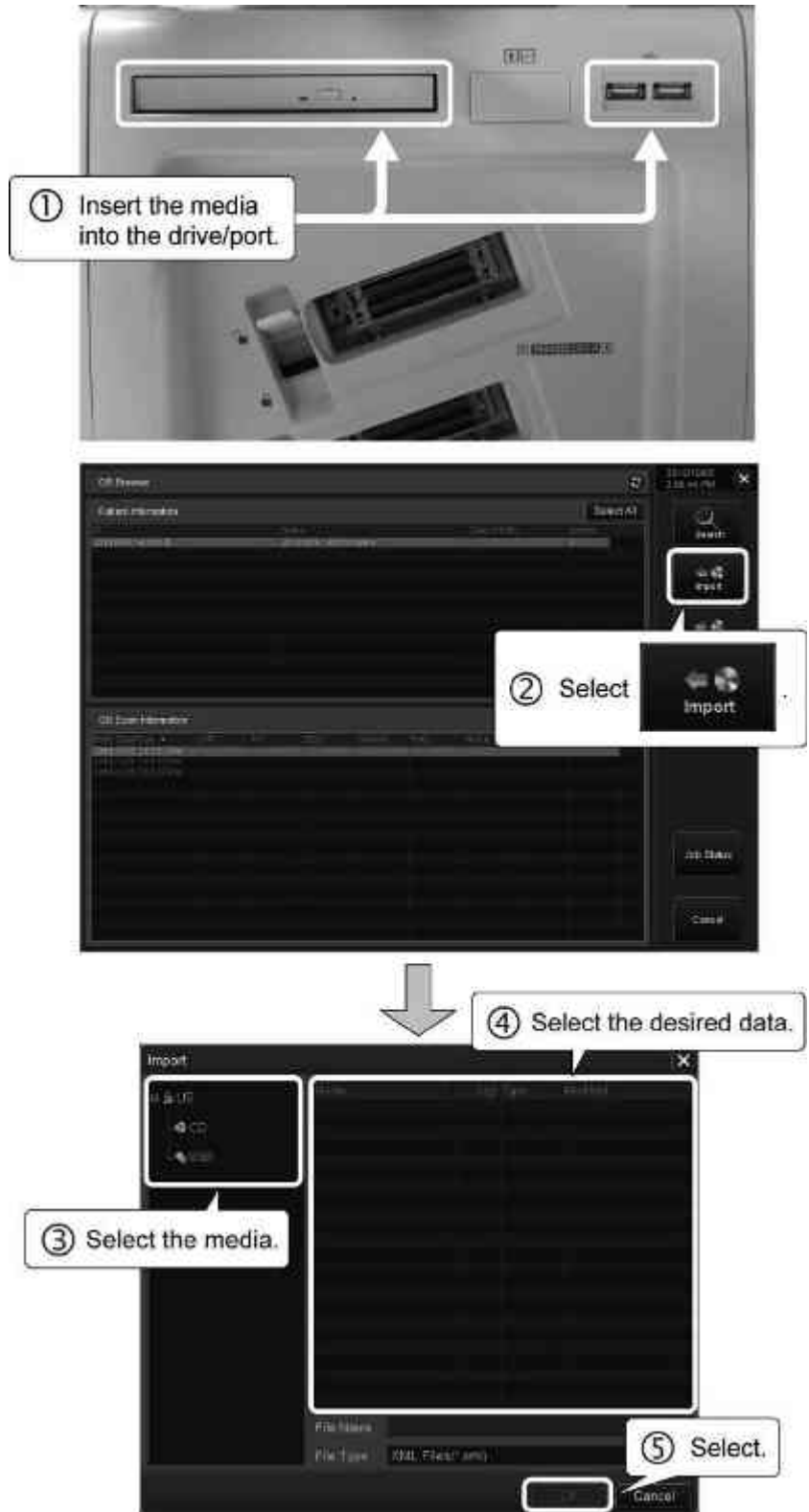
- NOTE
1. Fuzzy matching can be used for the patient ID and patient name (refer to section 1).
  2. When a search key is entered from the keyboard, enter uppercase characters and lowercase characters correctly.



No.	Item	Description
<1>	Patient ID	Enter the patient ID.
<2>	Patient Name	Enter the patient name.
<3>	Exam Date Range	Select the range of dates from the calendar.
<4>	Gravida	Enter the number of pregnancies.
<5>	Fetus ID	Select the fetus ID.
<6>		Starts the search.
<7>		Closes the list search screen.

2.2.10.3 File selection screen

(1) Import

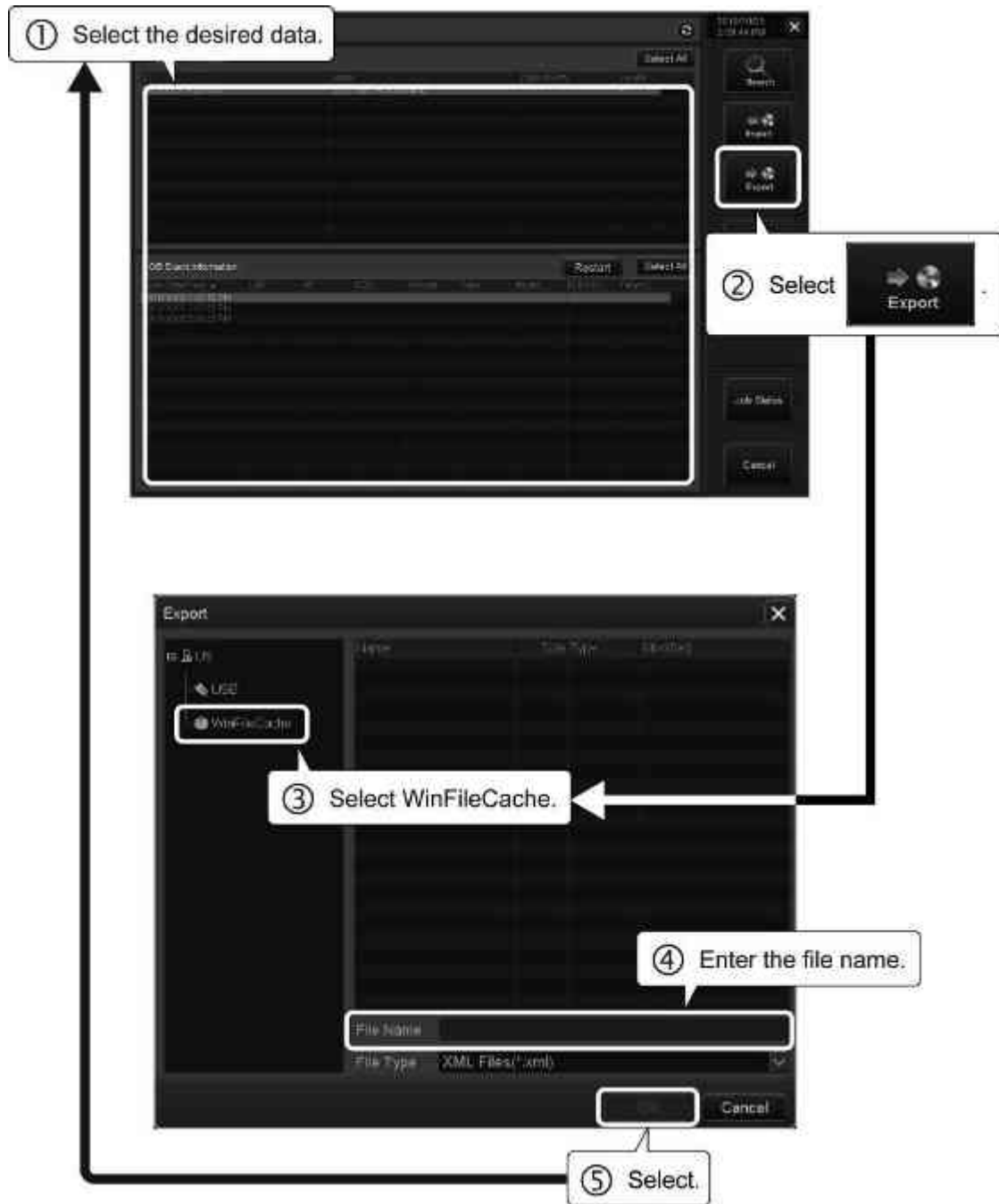


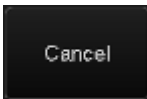


(2) Export

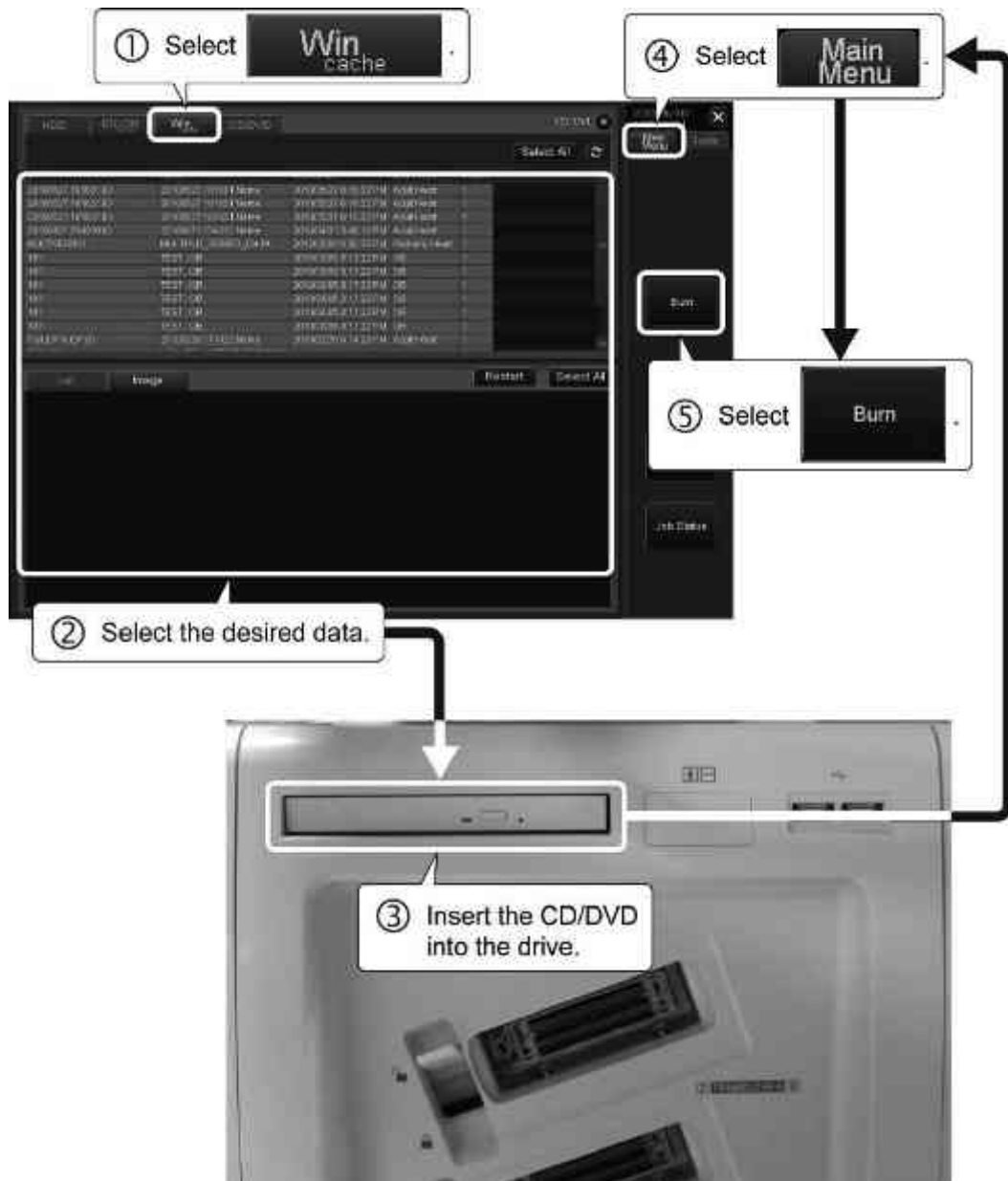
(a) To write data onto a CD/DVD (Windows file format)

<1> Repeat conversion (temporarily storing the data in the Windows cache) if required.



<2> Select  to close the OB Browser screen.

<3> Start data writing from the Patient Browser screen.



<4> When writing is completed, the CD/DVD is ejected automatically.

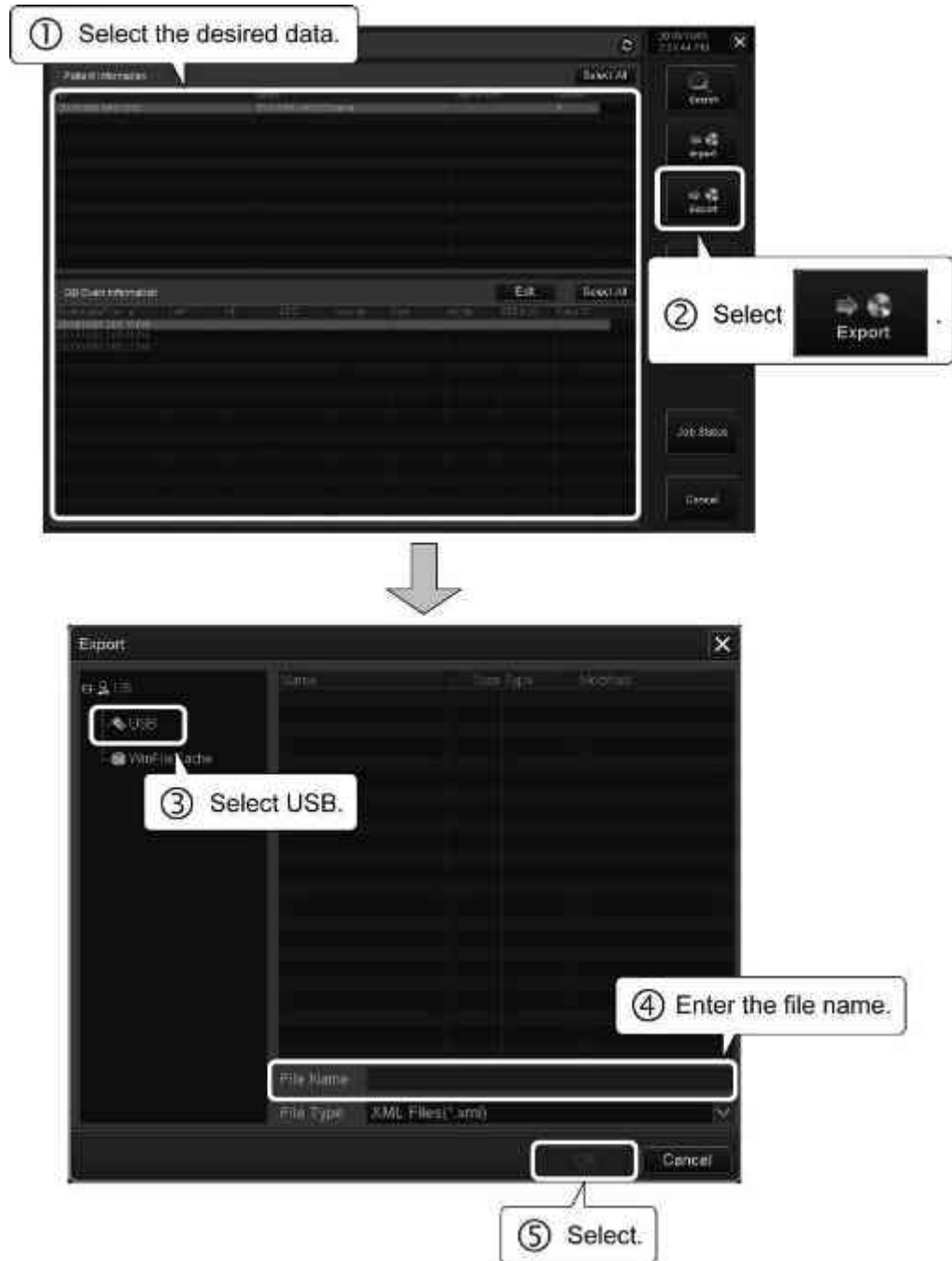
(b) To write data to a USB flash drive

<1> Insert a USB flash drive into the USB port.

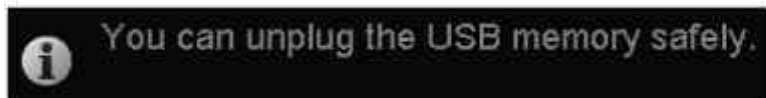
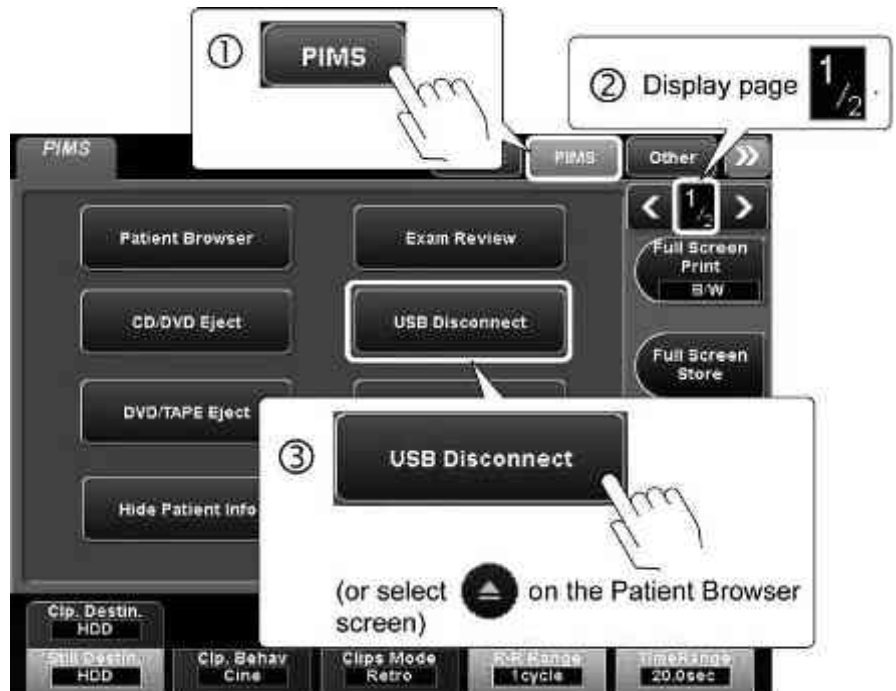


\* The above message is displayed on the screen when the USB flash drive is recognized by the system.

<2> Select the desired data and start the write process.



<3> Remove the USB flash drive from the USB port.



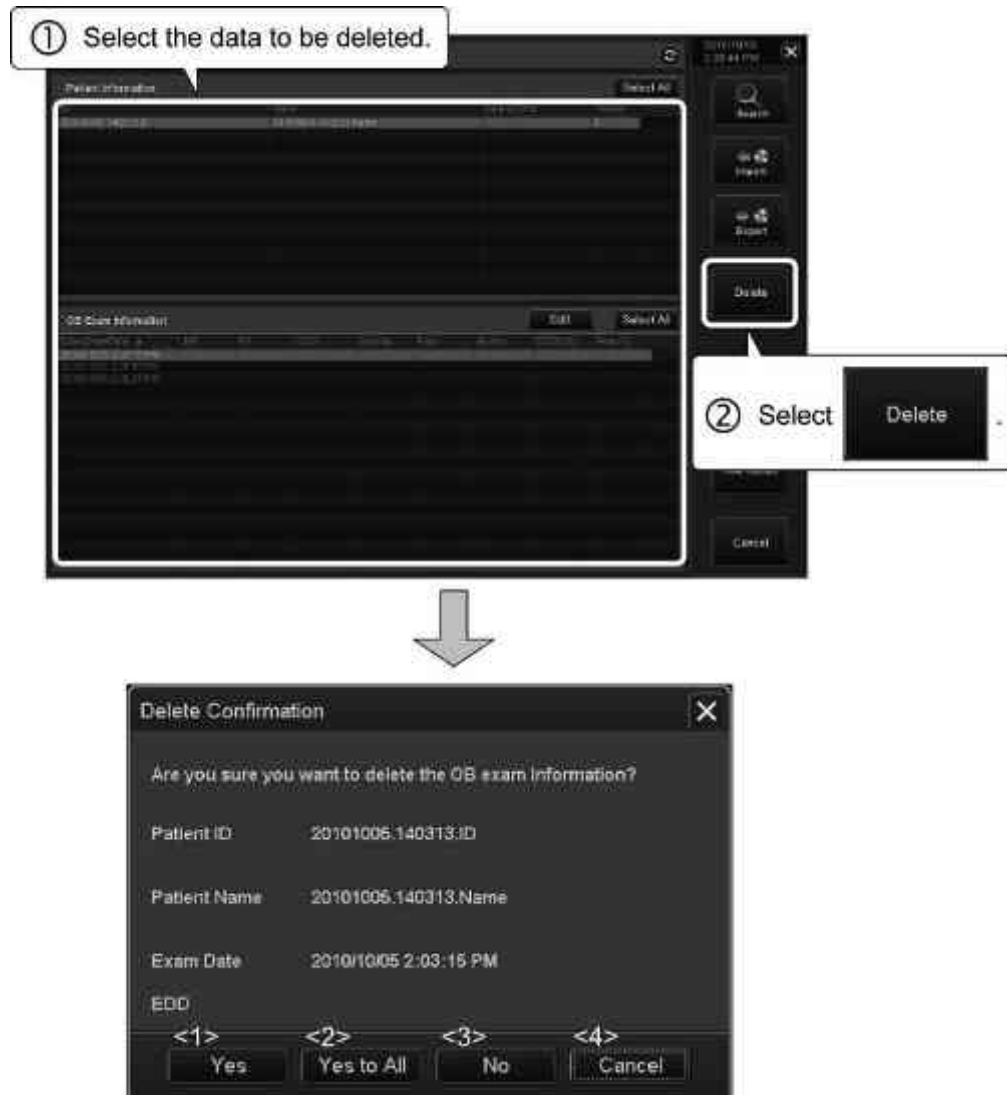
\* The above message is displayed on the screen when the USB flash drive can be disconnected safely.







## 2.2.10.4 Delete Confirmation screen

The data selected on the OB Browser screen can be deleted after confirmation. The list on the OB Browser screen is updated automatically after deletion.

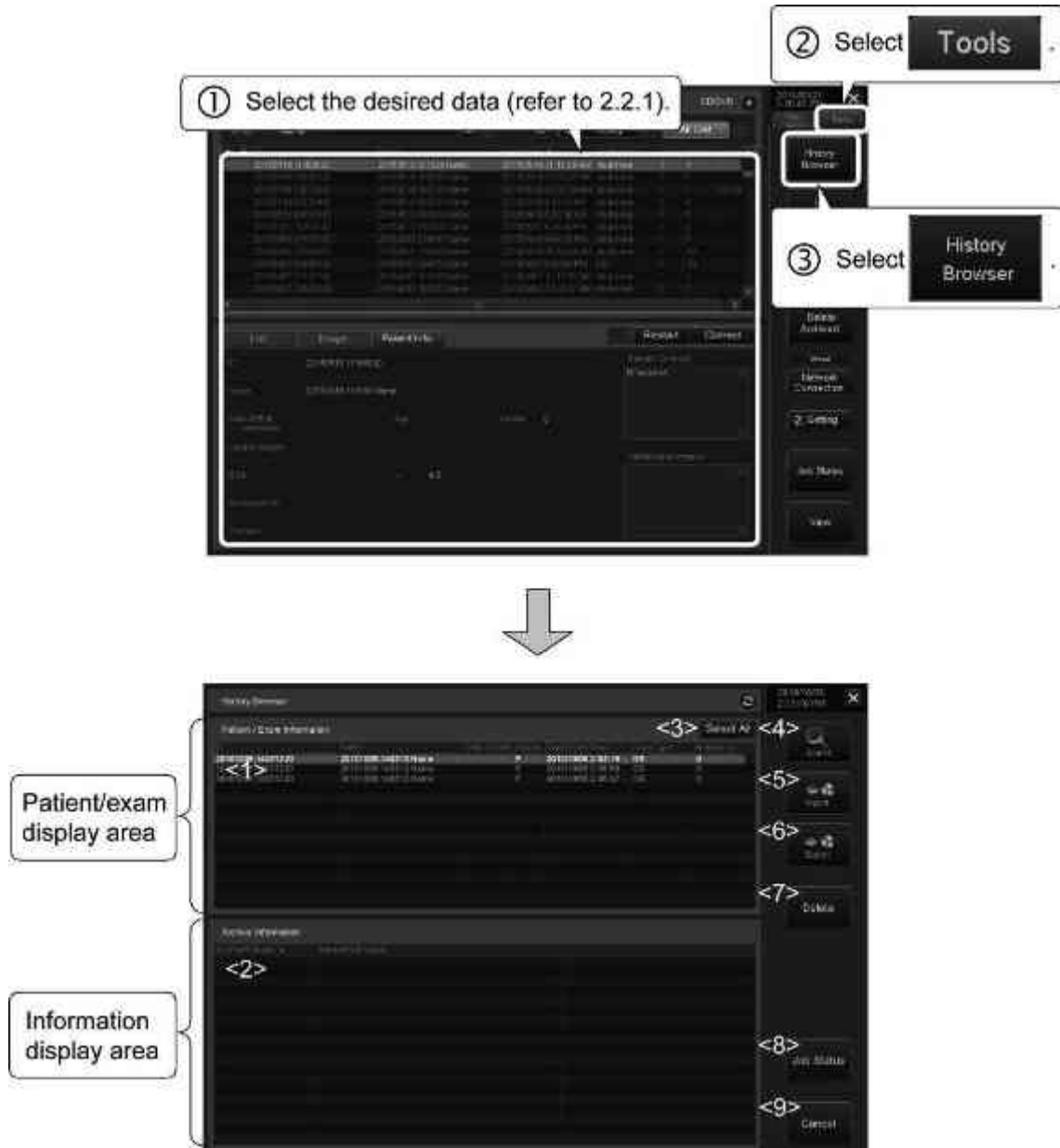
- \* Be sure to confirm the patient ID and patient name displayed on this screen before deleting the data.







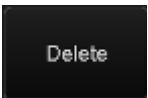
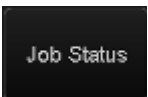
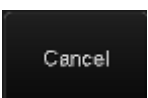
No.	Item	Description
<1>		Deletes the selected data.
<2>		Deletes all the data when more than one exam is selected.
<3>		<p>Cancels the deletion.</p> <p>* When more than one exam is selected, deletion of the currently displayed exam is canceled and the Delete Confirmation screen is displayed for the next exam.</p>
<4>		Closes the Delete Confirmation screen.

### 2.2.11 History Browser screen

The examination history for the patient selected on the Patient Browser screen can be displayed.





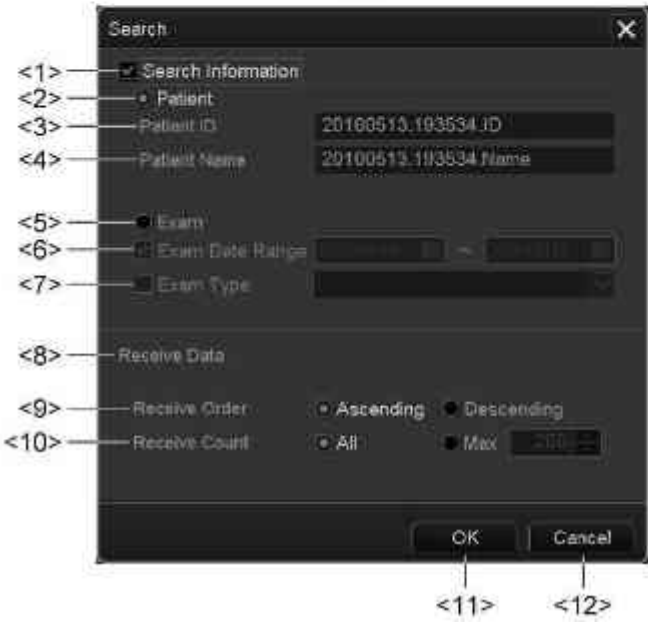
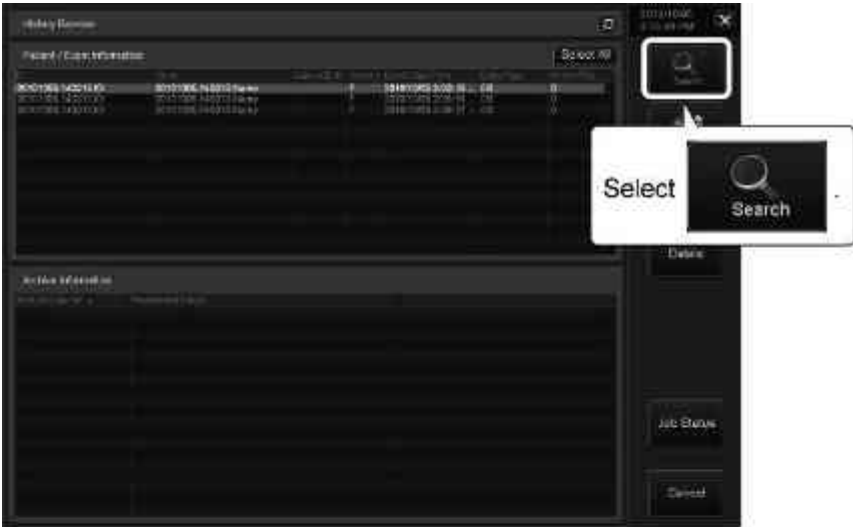


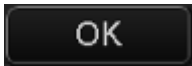

No.	Item	Description
<1>	ID	Patient ID
	Name	Patient name
	Date of Birth	Date of birth of patient
	Gender	Gender of the patient
	Exam Date/Time	Date and time of the examination
	Exam Type	Type of examination
	Arch/Transfer	Number of times archived
<2>	Archive/Transfer	Date of archiving or transfer
	Media/Host Name	Volume label or transfer destination host name
<3>		Selects all items displayed in the patient/exam display area.
<4>		Displays the Search screen (refer to 2.2.11.1).
<5>		Displays the file selection screen (refer to 2.2.11.2 (1)).
<6>		Displays the file selection screen (refer to 2.2.11.2 (2)).
<7>		Displays the Delete Confirmation screen (refer to 2.2.11.3).
<8>		Displays the Job Status screen (refer to 2.2.8).
<9>		Closes the History Browser screen.

### 2.2.11.1 Search screen

Patients or exams are searched for according to the specified search conditions and displayed in a list.

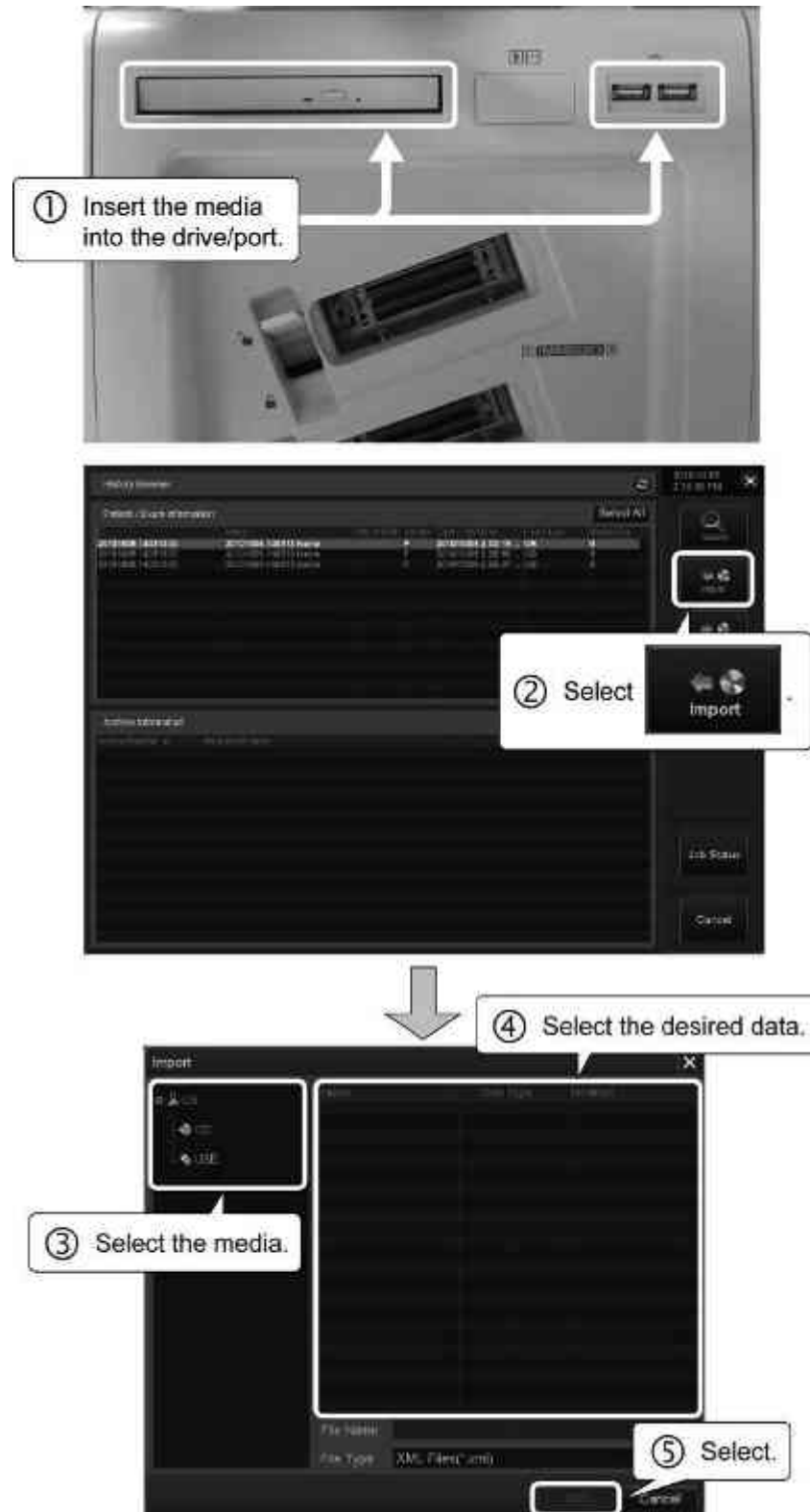
- 
- NOTE
1. Fuzzy matching can be used for the patient ID and patient name (refer to section 1).
  2. When a search key is entered from the keyboard, enter uppercase characters and lowercase characters correctly.
  3. To specify a range of dates, select [Between] and select  on the left. Using the displayed calendar, specify the start date of the search range. Then, select  on the right and specify the end date of the search range.
- \* It is also possible to enter the start and end dates manually.
-



No.	Item	Description
<1>	Search Information	Select this check box to use the search conditions specified in the Patient area or Exam area, whichever radio button is selected.
<2>	Patient	Select this radio button to use the patient information items as the search keys.
<3>	Patient ID	Enter the patient ID.
<4>	Patient Name	Enter the patient name.
<5>	Exam	Select this radio button to use the exam information items as the search keys.
<6>	Exam Date Range	Select the range of dates from the calendar.
<7>	Exam Type	Select the exam type.
<8>	Receive Data	Select the data reception method.
<9>	Receive Order	Select whether to receive the data in ascending or descending order of the exam date.
<10>	Receive Count	Specify whether to receive all the search results (All) or to limit the number of search results to be received (Max).
<11>		Starts the search.
<12>		Closes the list search screen.

2.2.11.2 File selection screen

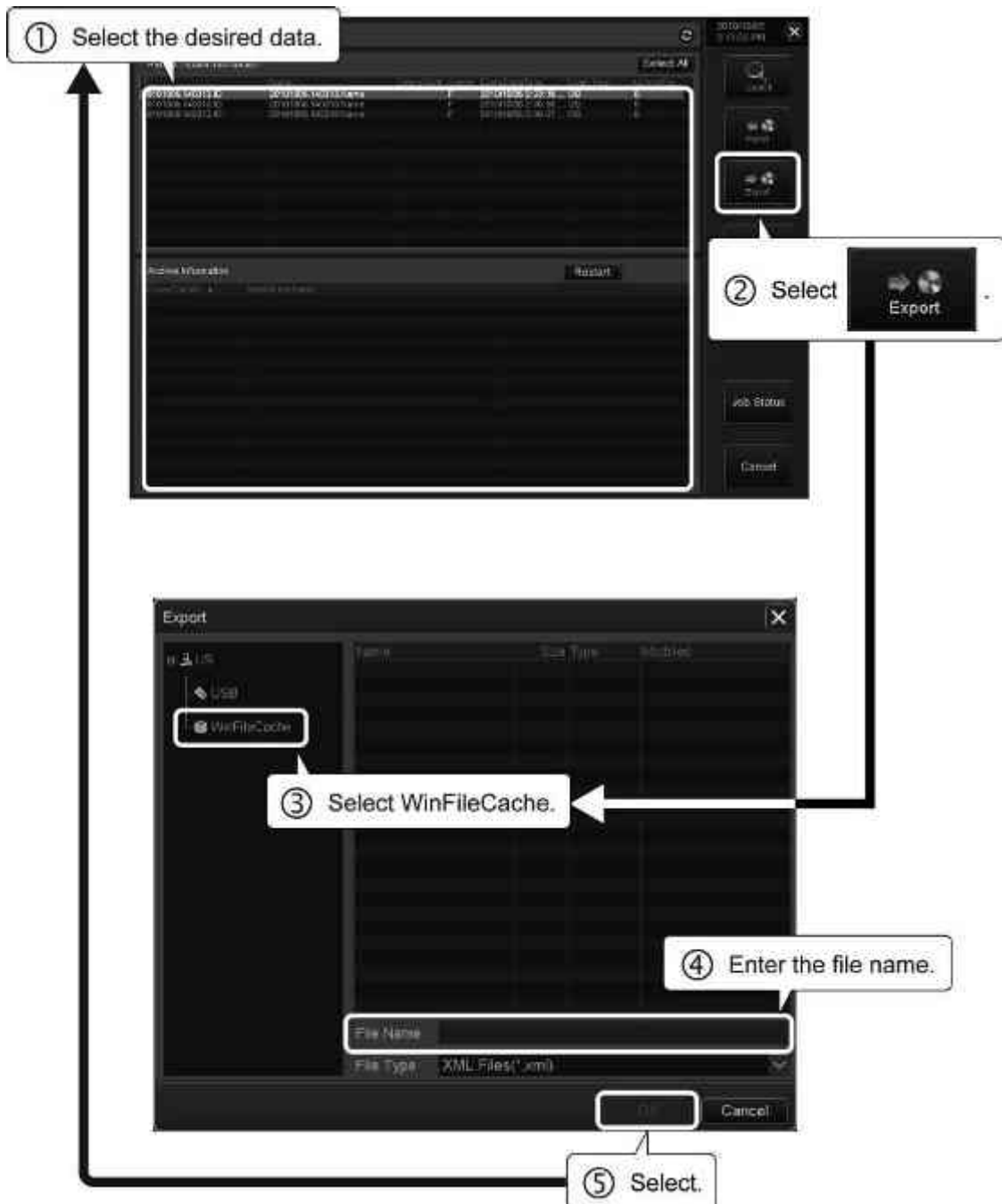
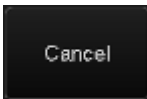
(1) Import



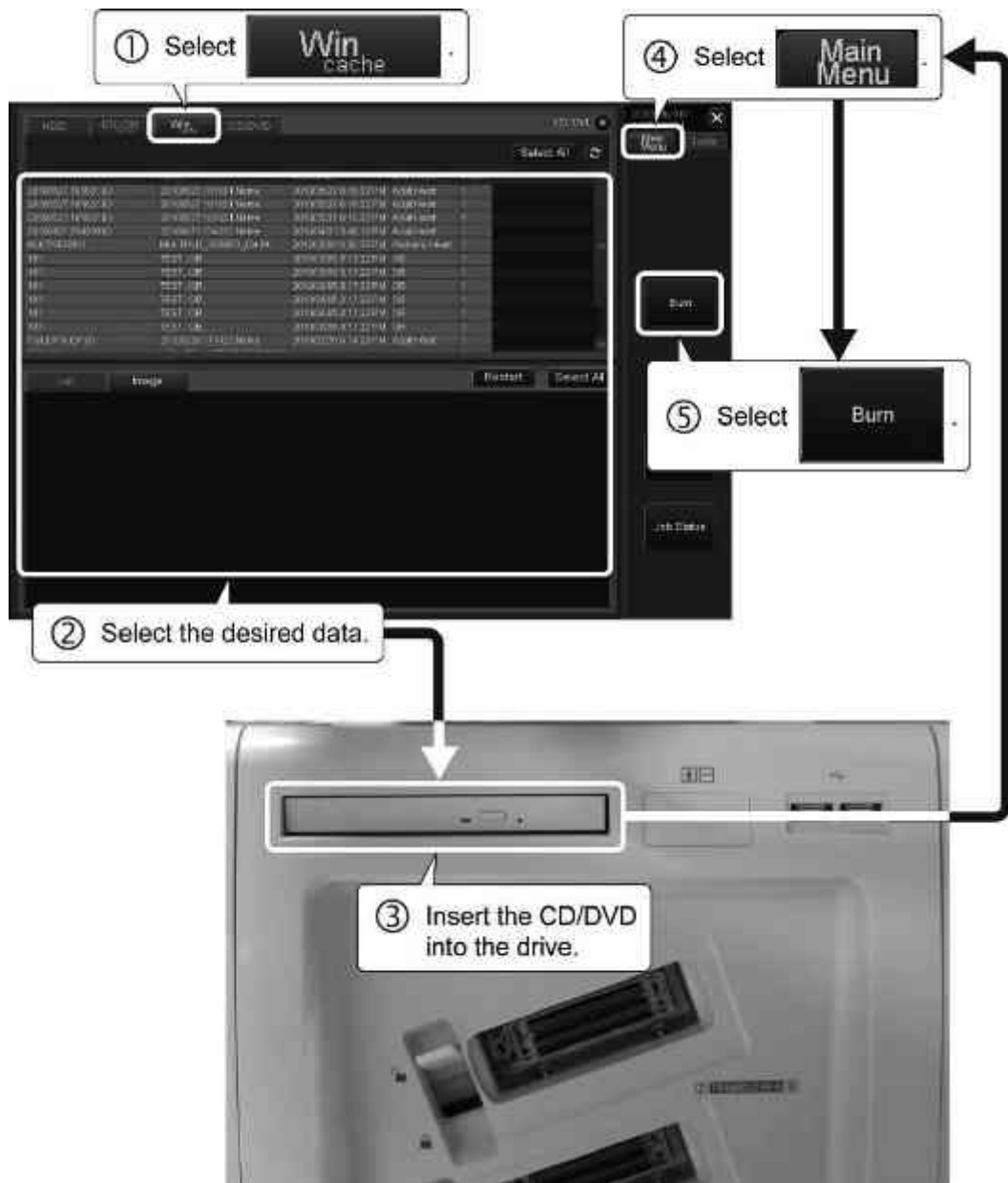
## (2) Export

(a) To write data onto a CD/DVD (Windows file format)

&lt;1&gt; Repeat conversion (temporarily storing the data in the Windows cache) if required.

<2> Select  to close the History Browser screen.

<3> Start data writing from the Patient Browser screen.



<4> When writing is completed, the CD/DVD is ejected automatically.

(b) To write data to a USB flash drive

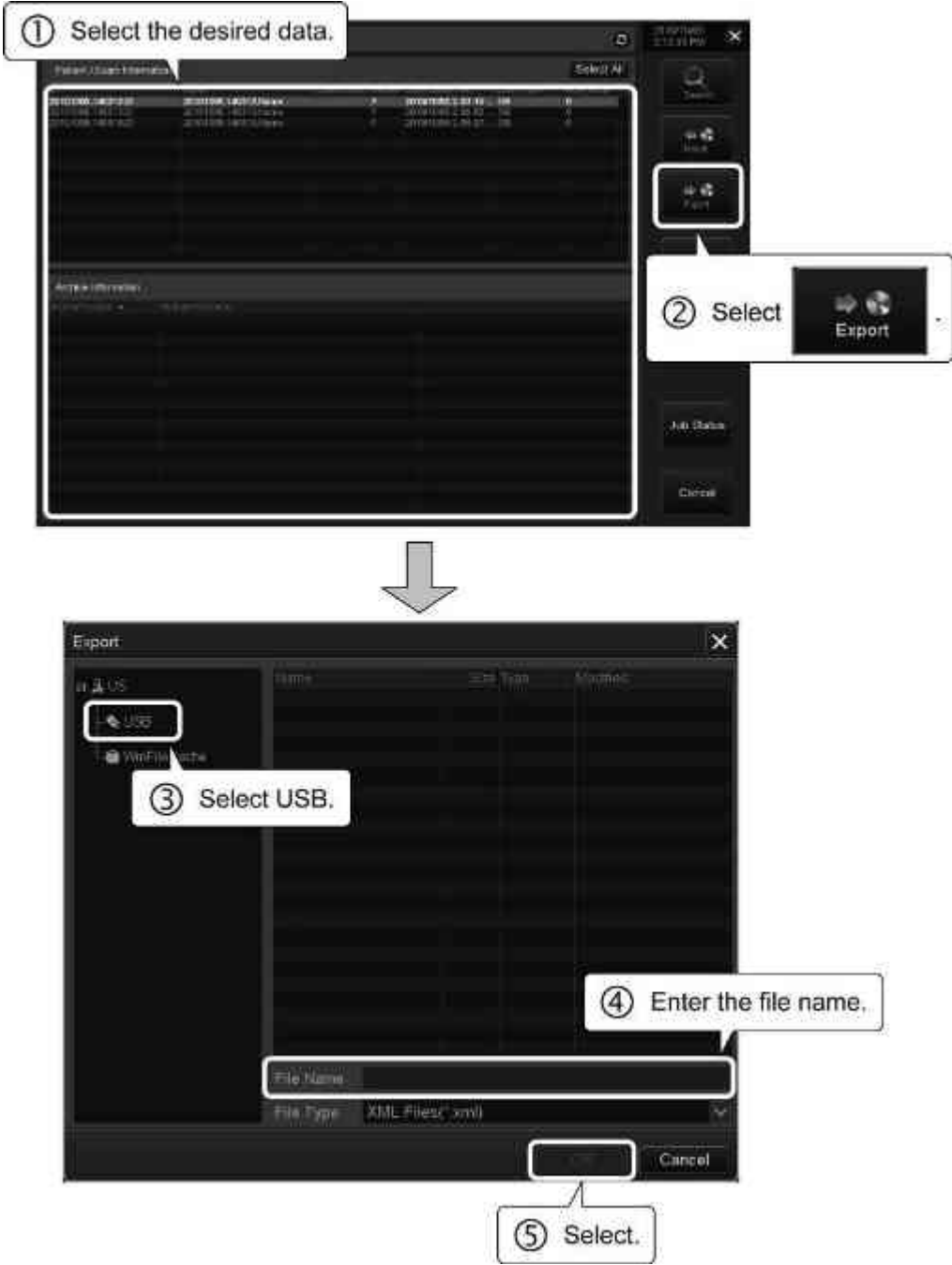
<1> Insert a USB flash drive into the USB port.



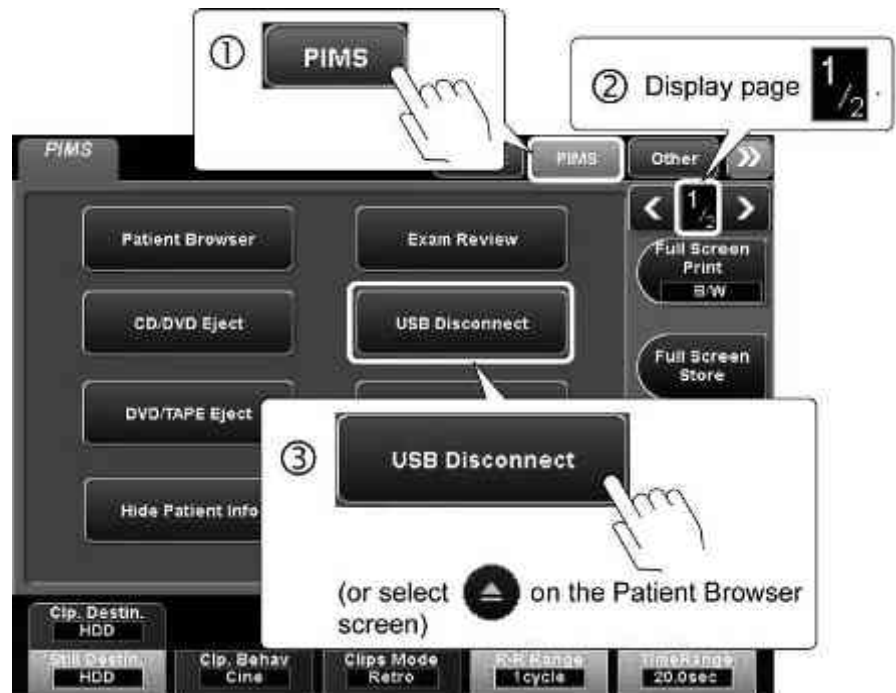
\* The above message is displayed on the screen when the USB flash drive is recognized by the system.



<2> Select the desired data and start the write process.



<3> Remove the USB flash drive from the USB port.



**i** You can unplug the USB memory safely.



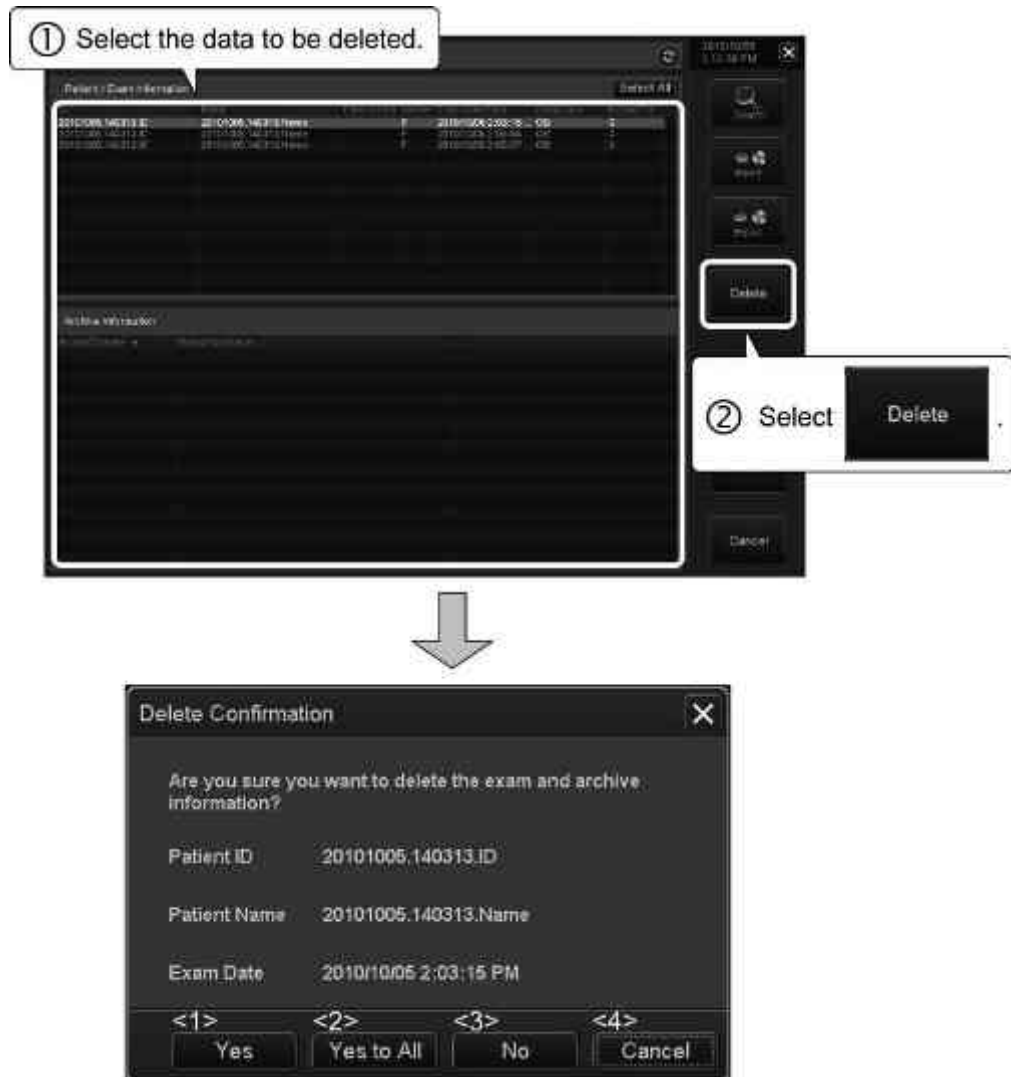
\* The above message is displayed on the screen when the USB flash drive can be disconnected safely.







### 2.2.11.3 Delete Confirmation screen

The data selected on the History Browser screen can be deleted after confirmation. The list on the History Browser screen is updated automatically after deletion.

- \* Be sure to confirm the patient ID and patient name displayed on this screen before deleting the data.

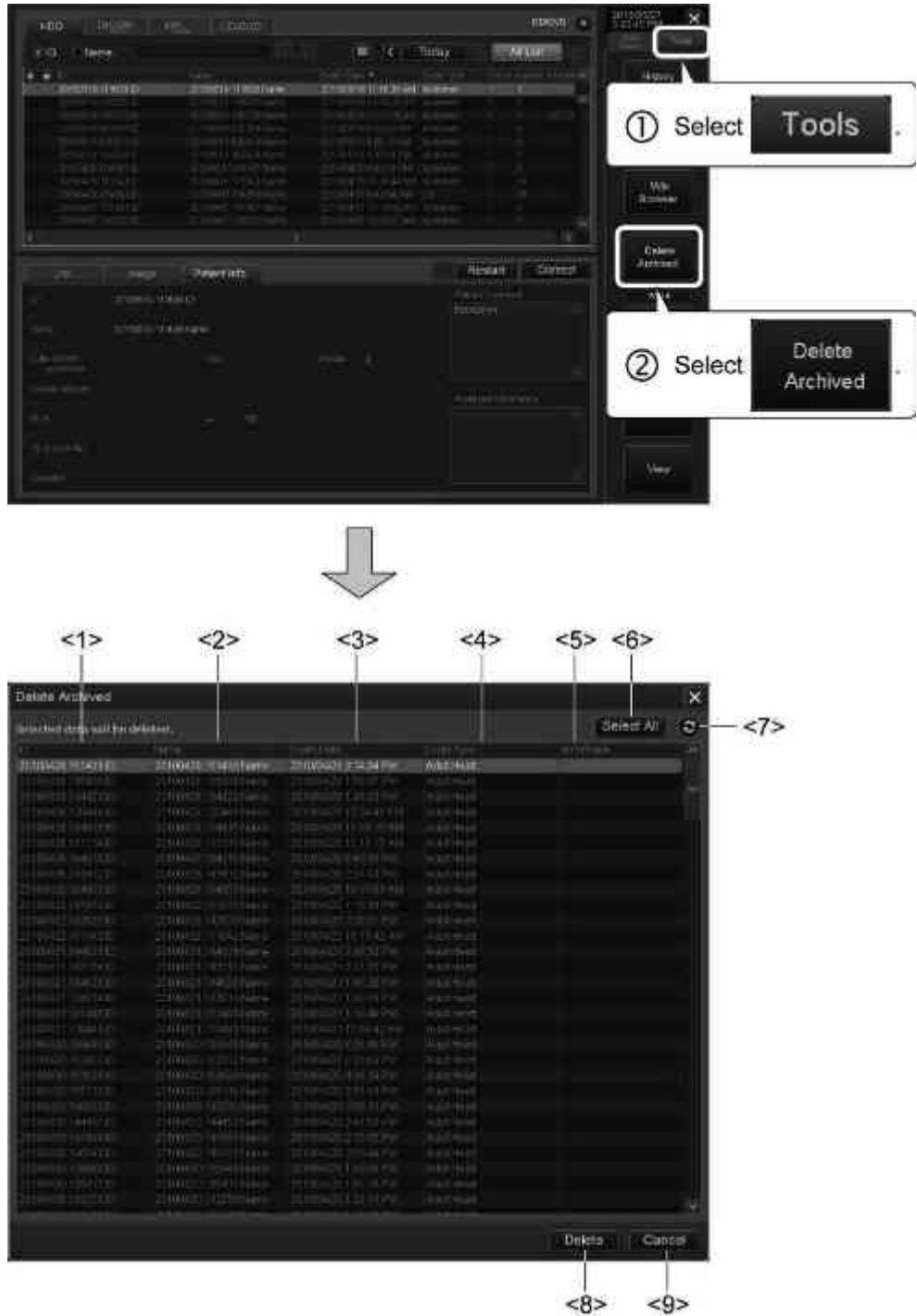




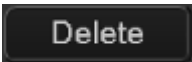

No.	Item	Description
<1>		Deletes the selected data.
<2>		Deletes all the data when more than one exam is selected.
<3>		Cancels the deletion.  * When more than one exam is selected, deletion of the currently displayed exam is canceled and the Delete Confirmation screen is displayed for the next exam.
<4>		Closes the Delete Confirmation screen.

### 2.2.12 Deleting exam data in the HDD

It is possible to delete the exam data in the HDD collectively according to the preset using the Delete Archived screen. Refer to section 18 for details.

- \* Be sure to confirm the date, patient ID, patient name, and other key information items before deleting the data.



No.	Item	Description
<1>	ID	Patient ID
<2>	Name	Patient name
<3>	Exam Date	Date of examination
<4>	Exam Type	Type of examination
<5>	Arch/Trans	Status of the archive/transfer job
<6>		Selects all exams.
<7>	 (Refresh)	Updates the list.
<8>		Deletes the selected exams.
<9>		Closes the Delete Archived screen.

- NOTE
1. Before attempting to delete raw data with Archive/Transfer record, perform backup as required.
  2. When the examination data type to be displayed in the list is set to "Saved (Arch/Trans)" and examination data that includes multiple worksheets or a worksheet that includes multiple measurement data for measurement positions (including edited data) is transferred, the previous data cannot be displayed in the list for only the latest worksheet or the latest examination data for each measurement position is saved.
  3. Examination data that is not displayed in the list can be deleted on the Patient Browser screen (refer to subsection 2.2.7).
  4. More than one image or exam can be selected by pressing

 +  or  +  simultaneously.

5. Set protection (  ) for important data.

### 2.2.13 Data conversion to Windows-format files

DICOM-format images can be converted to Windows-format image data.

---

**⚠ CAUTION** This system is provided with a lossy data compression function. Although this function helps to reduce the size of stored image data, it can cause deterioration in image quality. Use the image compression function in the range in which image quality is maintained at an acceptable level that does not adversely affect image viewing.

---

- NOTE
1. When the cache becomes full, the message below is displayed and data conversion to the Windows file format is discontinued.  
In this case, place a new DVD/CD in the drive and write the image data to the new media.

Medium in Media drive is full.  
Please insert a new medium.

If data conversion is discontinued when more than one file is selected for conversion, identify the files for which conversion has been completed on the Win Cache page of the Patient Browser screen and write them to a new DVD/CD.

After writing, select the remaining files and resume data conversion.

2. If an exam containing worksheet data is selected and an attempt is made to convert all of the data contained in the exam at one time, "Failed" is displayed as many times as the number of worksheet data items in the exam as shown on the Job Status screen (refer to subsection 2.2.8).
-

## (1) Conversion format

The images selected on the HDD page of the Patient Browser screen can be converted to the following formats, which can be handled by a Windows PC.

Image type	Format name	Features
DICOM still image	BMP	Uncompressed
	JPEG	The compression ratio (compared to an uncompressed image) can be specified.
		<ul style="list-style-type: none"> <li>• High (default) : Compression ratio of approx. 1/10</li> <li>• Middle : Compression ratio of approx. 1/20</li> <li>• Low : Compression ratio of approx. 1/30</li> </ul>
Multiframe image (dynamic image)	Cinepak Codec by Radius Inc.	Medium compression, longest conversion time * Supported by many software programs, but takes a longer time than other methods.
	Microsoft MPEG-4 Video Codec	High compression, short conversion time * Suitable for presentations at academic conferences.
	WMV 9	High image quality, high compression, multifunction * Next-generation CODEC available in Windows Media Player 9 series



- NOTE
- The table below shows the data sizes of multiframe images after conversion and the conversion times.  
The data size after compression differs depending on the image mode etc. of the original data.

Conversion type	Original data size	Data size after conversion	Conversion time
Cinepak Codec by Radius Inc.	50 MB	Approx. 16 MB	Approx. 110 seconds
Microsoft MPEG-4 Video Codec	50 MB	Approx. 3.5 MB	Approx. 15 seconds
WMV 9	50 MB	Approx. 9 MB	Approx. 35 seconds

- If data with a patient ID that includes a special character such as ":", ";", "(", or ")", or a reserved DOS word such as LPT or COM1 is converted, these characters are automatically changed as follows in the folder name.
  - Special characters are converted to the "%nn" format (where "nn" is a hexadecimal number).  
<Example> ":" → "%3B"
  - The character "^" is added to the end of a reserved word.  
<Example> "LPT" → "LPT^"

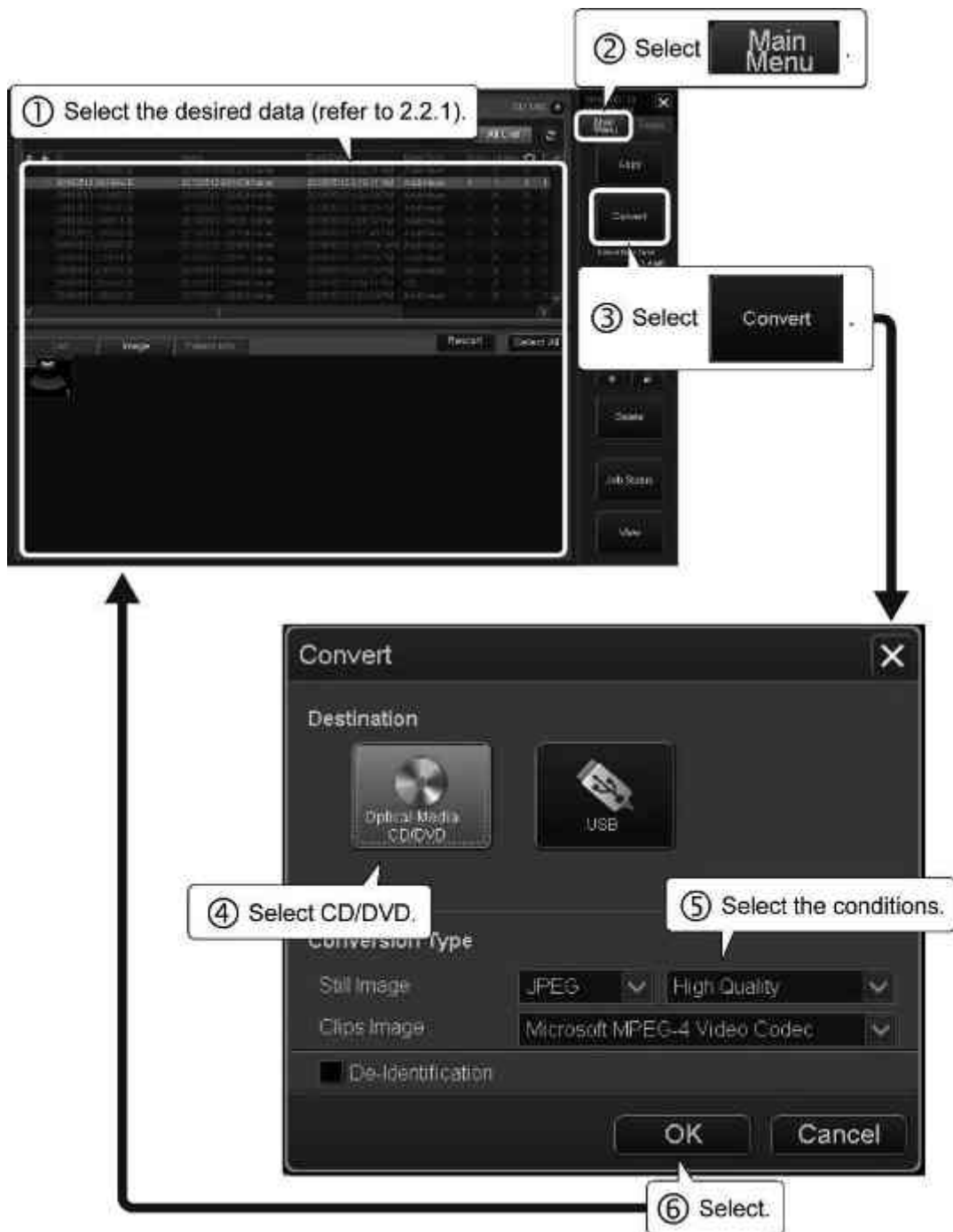
---

(2) Writing Windows-format data to CD/DVD

It is possible to write data converted to Windows file format, data exported to the Windows cache, and stored worksheet data to external media.

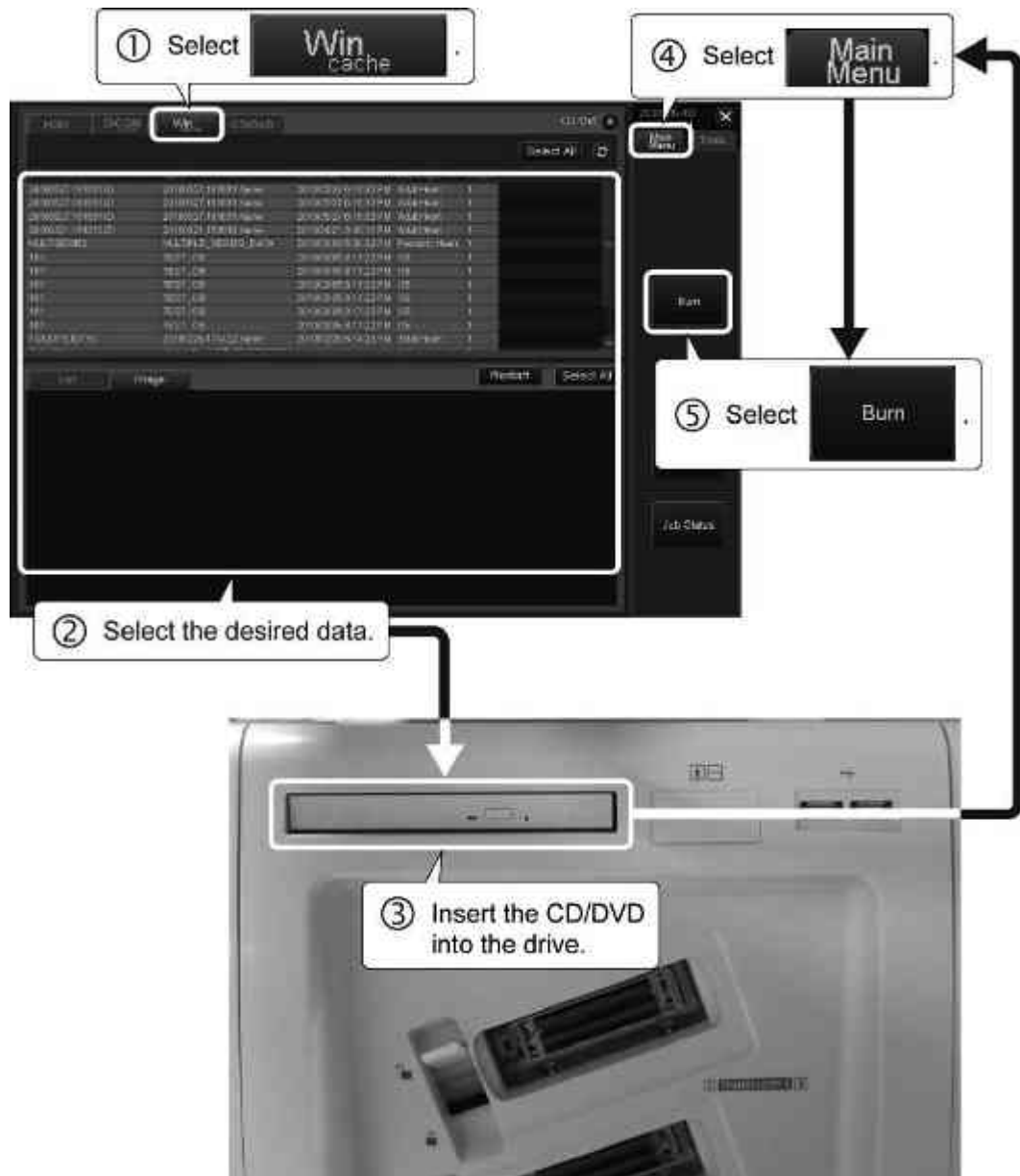
- NOTE
- If a large volume of data (in particular, dynamic images) is being copied in the background, media writing is not started immediately. Media writing is started automatically when data copying is completed.
  - It may take more than 10 minutes to write data to a single CD-R.
    - \* Data may not be written correctly depending on the quality of the media. It is recommended that media supporting high-speed writing be used.
  - Converted images cannot be reviewed on the system. Review them on a PC.
-

- (a) Repeat conversion (temporary storage into the Windows cache) as required.



Item/icon	Description
De-Identification	<p>Select transfer options.</p> <p>( <input checked="" type="checkbox"/> : Execute / <input type="checkbox"/> : Do not execute)</p> <p>Hides the following information included in the banner in the image data.</p> <ul style="list-style-type: none"><li>&lt;a&gt; Patient ID</li><li>&lt;b&gt; Patient name</li><li>&lt;c&gt; Sex</li><li>&lt;d&gt; Age</li><li>&lt;e&gt; Hospital name</li><li>&lt;f&gt; Operator name</li><li>&lt;g&gt; Date</li><li>&lt;h&gt; Time</li></ul> <p>* Images using some applications (4D/Stress Echo/Wall Motion Tracking etc.) are not supported.</p>

(b) Select the data and start writing.




(c) The media is ejected automatically when data writing is completed.

(3) To write Windows-format data to a USB flash drive

---

**NOTICE**

1. Only USB flash drives that are used for storing or reviewing the image data should be connected to the USB ports. Do not connect any other USB device to the system.
2. Do not eject the media using  (Eject) while writing to or reading from the media is in progress. The data on the media may be corrupted.
3. Use USB flash drives only after formatting them using the PC.
4. When multiple USB flash drives are to be used, insert them one by one.

---

**NOTE**

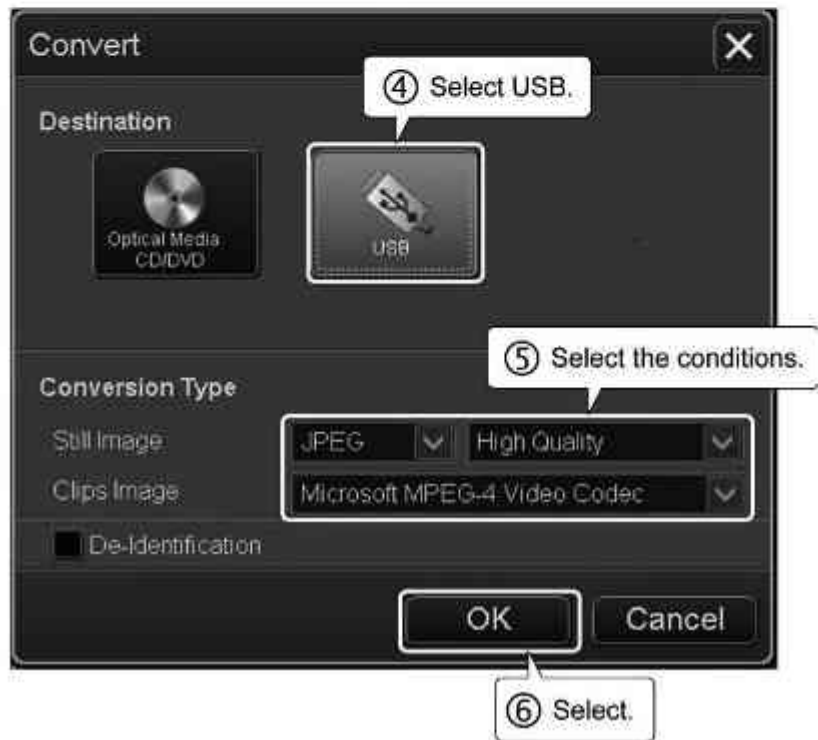
1. Prepare USB flash drives that are to be used solely for the system. Do not store any data other than data from the system in the USB flash drives.
  2. Do not use spaces in the volume names of the USB flash drives to be used for the system.
  3. Do not connect a USB flash drive when an examination is in progress.
-

(a) Insert a USB flash drive into the USB port.



\* The above message is displayed on the screen when the USB flash drive is recognized by the system.

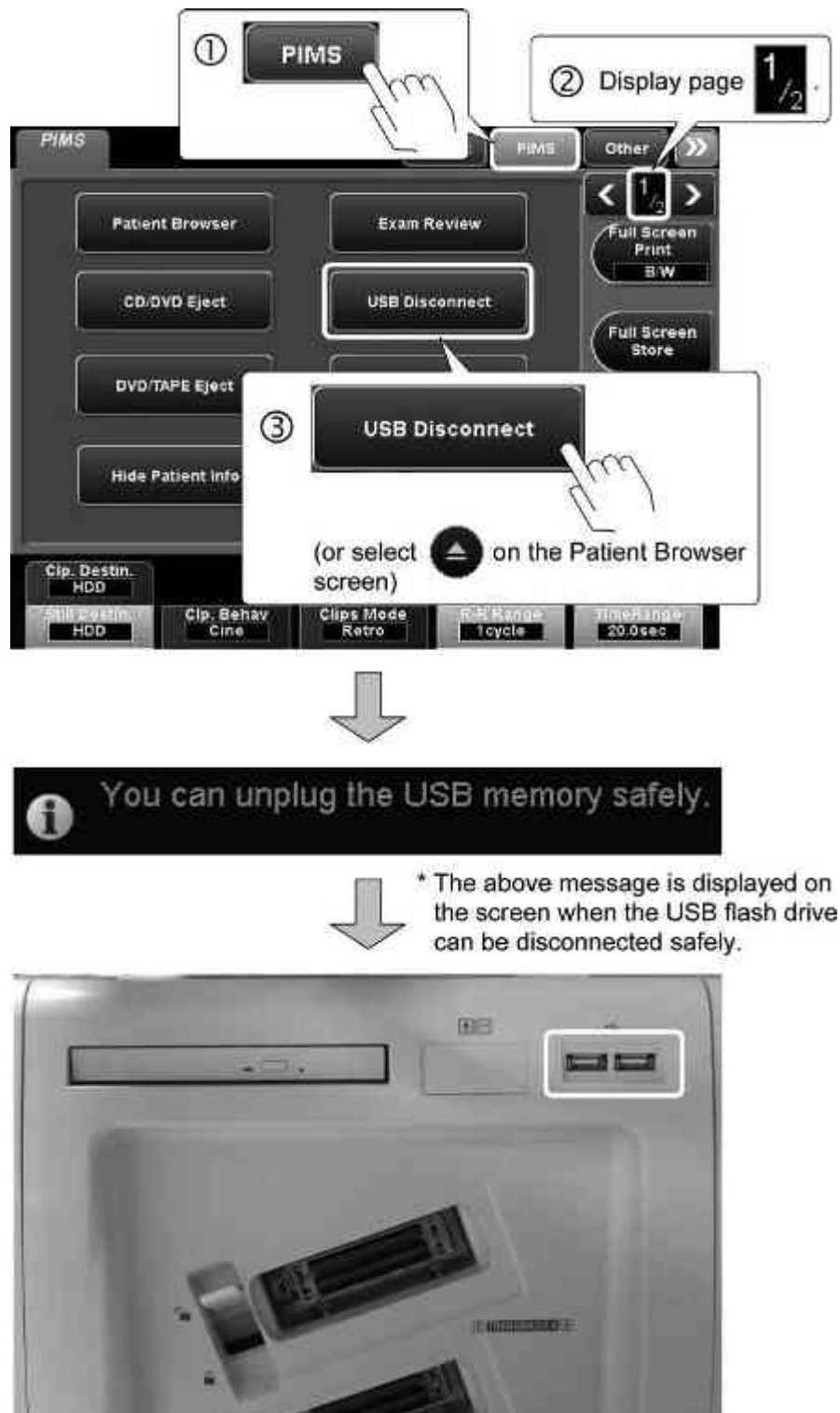
(b) Select the data and start writing.



Item/icon	Description
De-Identification	<p>Select transfer options.</p> <p>( <input checked="" type="checkbox"/> : Execute / <input type="checkbox"/> : Do not execute)</p> <p>Hides the following information included in the banner in the image data.</p> <ul style="list-style-type: none"><li>&lt;a&gt; Patient ID</li><li>&lt;b&gt; Patient name</li><li>&lt;c&gt; Sex</li><li>&lt;d&gt; Age</li><li>&lt;e&gt; Hospital name</li><li>&lt;f&gt; Operator name</li><li>&lt;g&gt; Date</li><li>&lt;h&gt; Time</li></ul> <p>* Images using some applications (4D/Stress Echo/Wall Motion Tracking etc.) are not supported.</p>

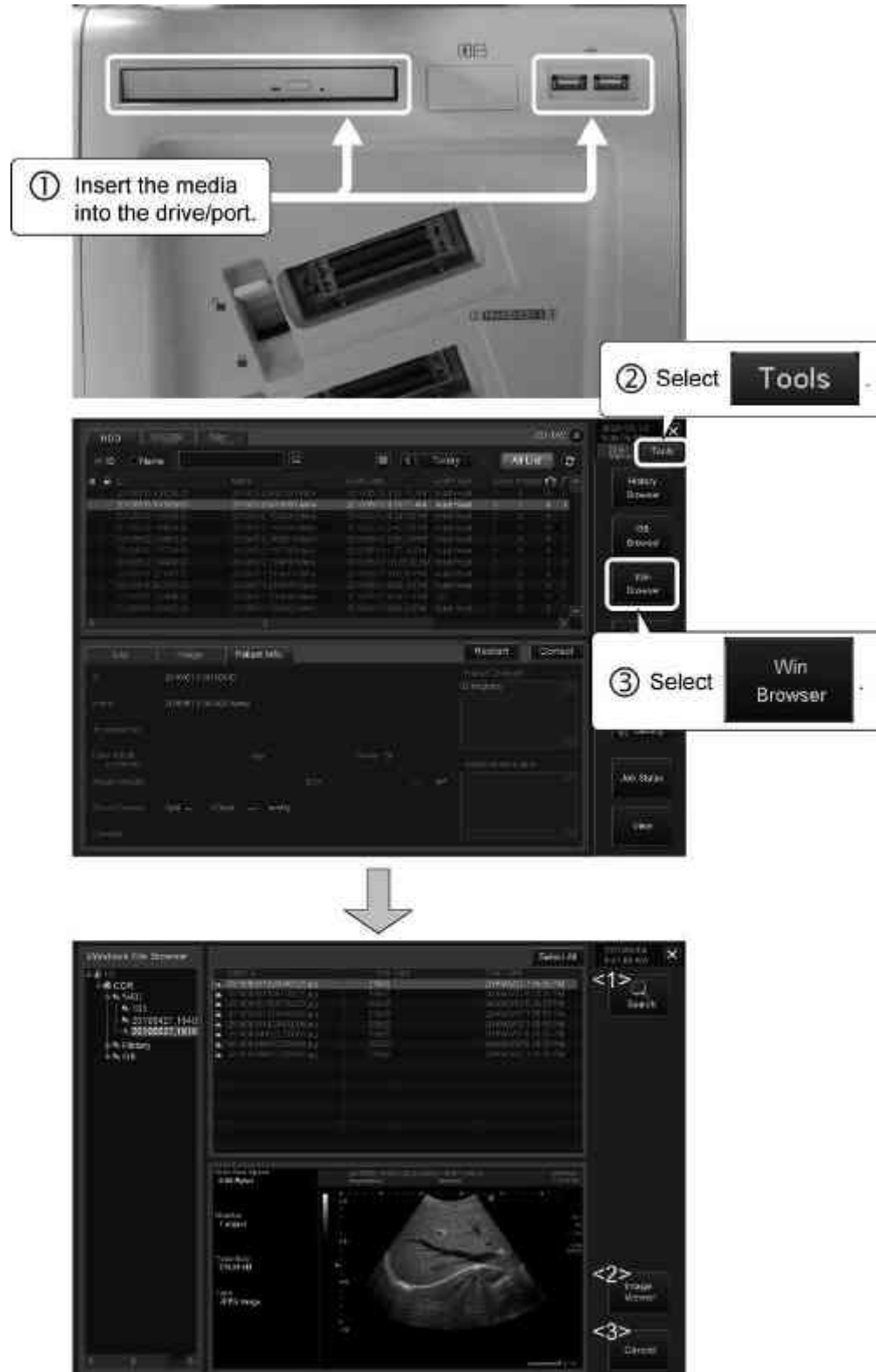




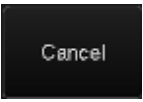
(c) Remove the USB flash drive from the USB port.



### 2.2.14 Windows File Browser screen

The image data converted into Windows file format can be handled on the Windows File Browser screen.



No.	Item	Description
<1>		Displays the list search screen (refer to subsection 2.2.14.1).
<2>		Displays the Windows File Image Viewer screen (refer to subsection 2.2.14.2).
<3>		Closes the Windows File Browser screen.

## NOTE

1. The sizes of the display areas for the folder tree, file list, image preview, and function switches can be adjusted. Move the cursor to the border between the list items and move the border using the trackball while holding down



. The position is set when

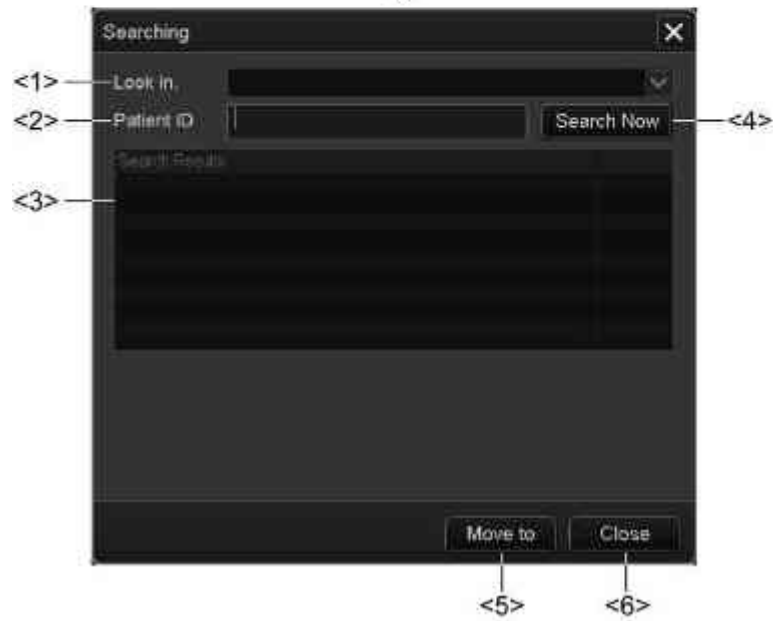





is released and pressed again.

2. To help prevent errors regarding patient IDs, the system operates as follows:
  - When data is converted to a Windows format such as jpeg, an ID folder is automatically created for the patient and the data is saved in this ID folder.
  - When only the image data in a folder is copied to another folder or DVD/CD cache, an ID folder is automatically created at the copy destination and the image data is stored in that ID folder. Accordingly, if image data for a patient is copied to the existing ID folder for that patient, a subfolder with the same patient ID is created within the ID folder and the image data is stored in that subfolder.

## 2.2.14.1 Search screen

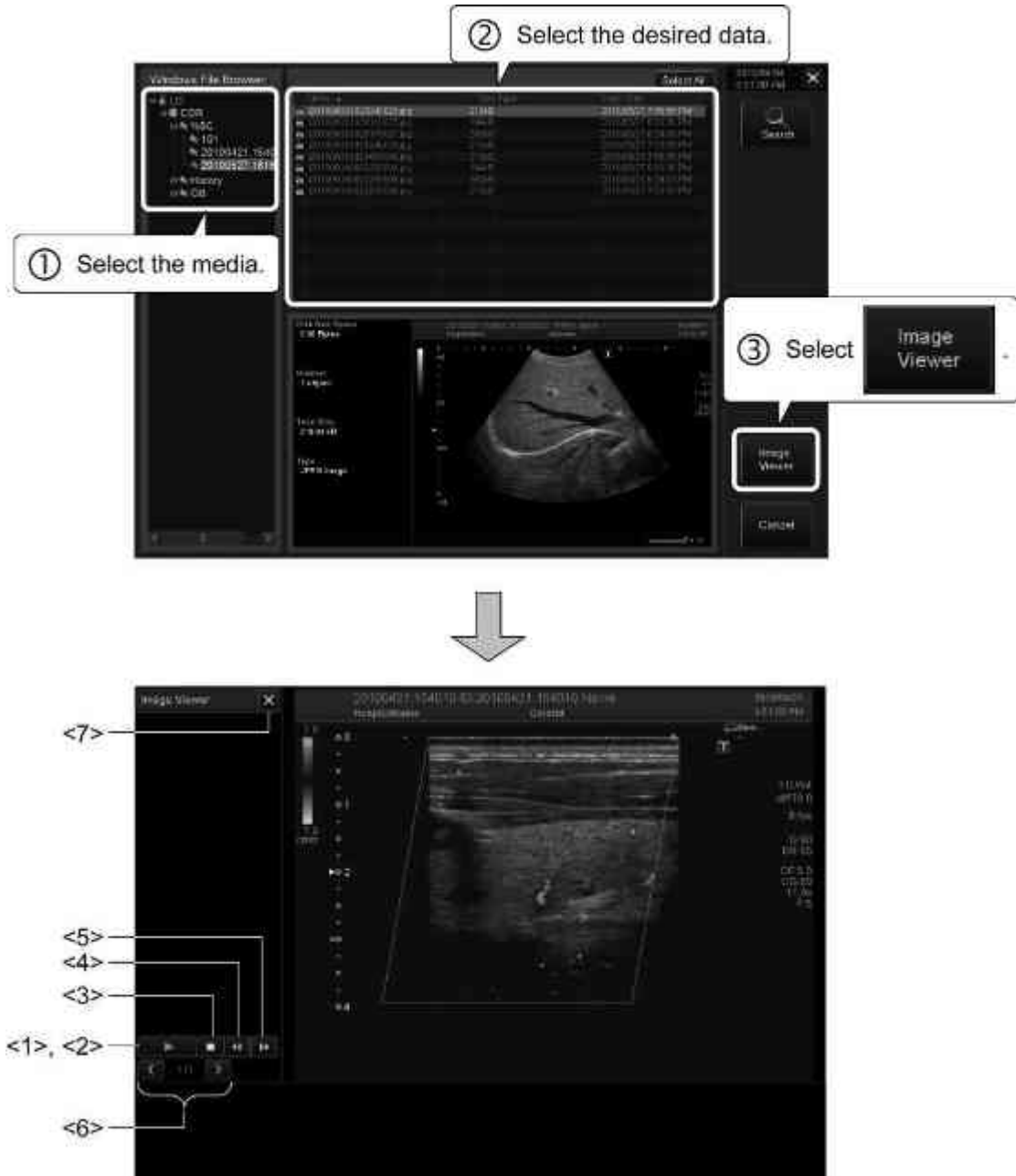
Files are searched for according to the specified search conditions and displayed in a list.

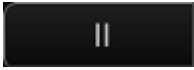








No.	Item	Description
<1>	Look in.	Select the search location.
<2>	Patient ID	Enter the patient ID.
<3>	Search Results	The search results are displayed in a list.
<4>		Starts searching with the specified conditions.
<5>		Displays a list of files in the selected folder.
<6>		Closes the list search screen.

2.2.14.2 Windows File Image Viewer screen

Image data in the Windows file format can be viewed on this screen.



No.	Item	Function
<1>		Pauses playback.
<2>		Starts playback.
<3>		Stops playback.
<4>		Displays the previous frame of the image.
<5>		Displays the next frame of the image.
<6>		Feeds the pages forward or backward.
<7>		Closes the Windows File Image Viewer screen.

### 2.2.15 Setting screen

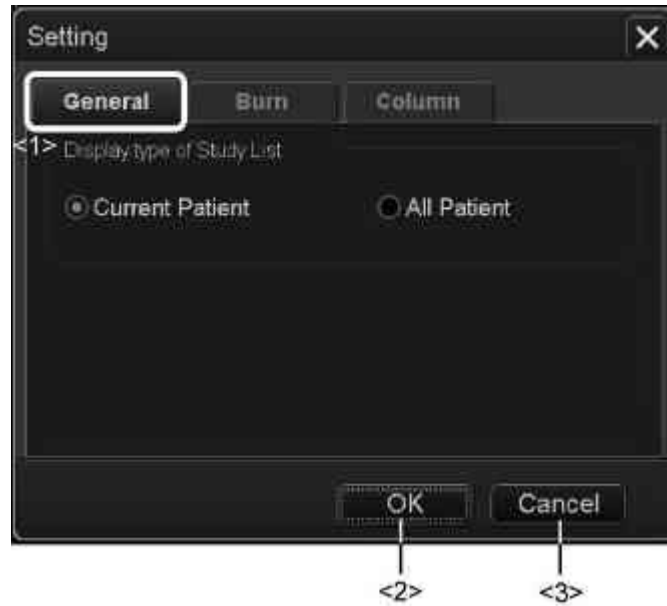
The media recording conditions, display items on the Patient Browser screen, and server settings can be changed.







(1) General tab

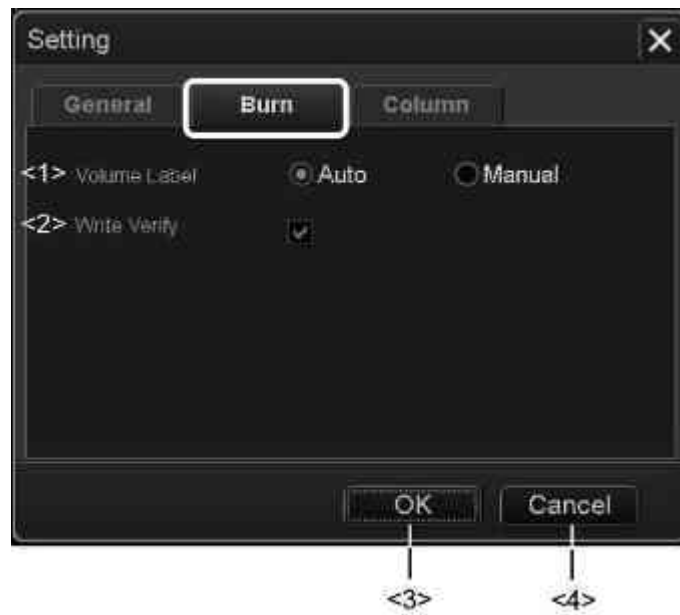
Perform setting for the operation when the Patient Browser screen is started up.





No.	Item/icon	Description
<1>	Display type of Study List	<ul style="list-style-type: none"> <li>• Current Patient : Displays the saved data of the current patient (status when search has been performed for patient ID)</li> <li>• All Patient : Displays all saved data (data in the HDD).</li> </ul>
<2>		Saves the settings.
<3>		Closes the Setting screen.

## (2) Burn tab

The volume label entry method can be selected.



No.	Item	Description
<1>	Volume Label	<ul style="list-style-type: none"> <li>• Auto : The volume label is entered automatically.</li> <li>• Manual : The volume label is entered by the user (a label can contain up to 11 characters).</li> </ul>
<2>	Write Verify	Select whether to perform read-after-write verification (data sameness check) or not after writing.*1 <ul style="list-style-type: none"> <li>• <input checked="" type="checkbox"/> : Verification is performed.</li> <li>• <input type="checkbox"/> : Verification is not performed.</li> </ul>
<3>		Saves the settings.
<4>		Closes the Setting screen.

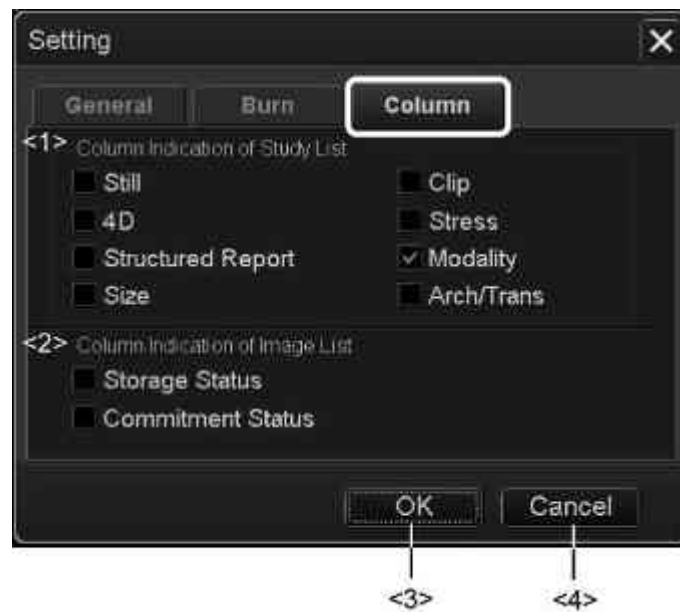
\*1: If read-after-write verification is performed for writing onto media, data writing requires a longer time.

(3) Column tab



The conditions for list display on the Patient Browser screen can be set.

**NOTE** The patient data and exam data can be listed quickly by selecting the minimum required items in this screen (by selecting the checkbox for "Modality" or by deselecting all checkboxes).

\* When other items are selected (particularly when the checkbox for "Size" is selected), displaying the list may take some time.



No.	Item	Description
<1>	Column Indication of Study List	<p>Select the image types for which icons are displayed.</p> <ul style="list-style-type: none"> <li>• Still : Number of still images</li> <li>• Clip : Number of dynamic images</li> <li>• 4D : Number of 4D images</li> <li>• Stress : Number of Stress Echo images</li> <li>• Structured Report : Number of worksheets</li> <li>• Modality : Modality information</li> <li>• Size : Total data size</li> <li>• Arch/Trans : Data archive/transfer status</li> </ul>

No.	Item	Description
<2>	Column Indication of Image List	The selected items are displayed on the [List] tab page. <ul style="list-style-type: none"><li>• Storage Status : Status of transfer to the server</li><li>• Commitment Status : Result of transfer to the server</li></ul>
<3>		Saves the settings.
<4>		Closes the Setting screen.



### **3.**

## **Exam Review**

---

### 3.1 Outline of Exam Review

Exam Review is used to display the images stored in the HDD for review. On the Exam Review screen, it is possible to display the images stored in the HDD for the current patient. It is also possible to display the images for a patient who has been examined previously.

- \* Display of images using the Exam Review function may take some time. It is recommended that this function be used when there is sufficient time available, such as after examination of the patient is completed.

---

**⚠ CAUTION** When using a previously acquired image for diagnosis, be sure to verify the patient ID, the patient name, and the date and time of image acquisition displayed above the image. The displayed patient ID and name may not match the registered patient ID and name if the image has been stored in the HDD and the corresponding patient/exam information has then been edited using the patient/exam information editing form.

---

- NOTE
1. Do not display data acquired by other systems.  
Such data may not be displayed correctly.
  2. When displaying the still and dynamic images acquired using the application, the first magnification ratio may not be displayed properly.
  3. Do not perform another operation until the selected image is displayed.  
It may cause the system to malfunction.
  4. If the image is not displayed properly in two-frame layout, display it in single-frame (fullscreen display) to check if it is displayed properly.
  5. Do not open the Worksheet screen from the Exam Review screen. The image may not be displayed properly.  
Before opening the Worksheet screen, first close the Exam Review screen, and then start the measurement.
  6. When a dynamic image is to be stored on the Exam Review screen, set the playback range so that the number of frames does not exceed 1000.
  7. An image that was converted to monochrome when the image was forwarded to DICOM cannot be displayed on the Exam Review screen.
-

## 3.2 Startup and Termination of Exam Review

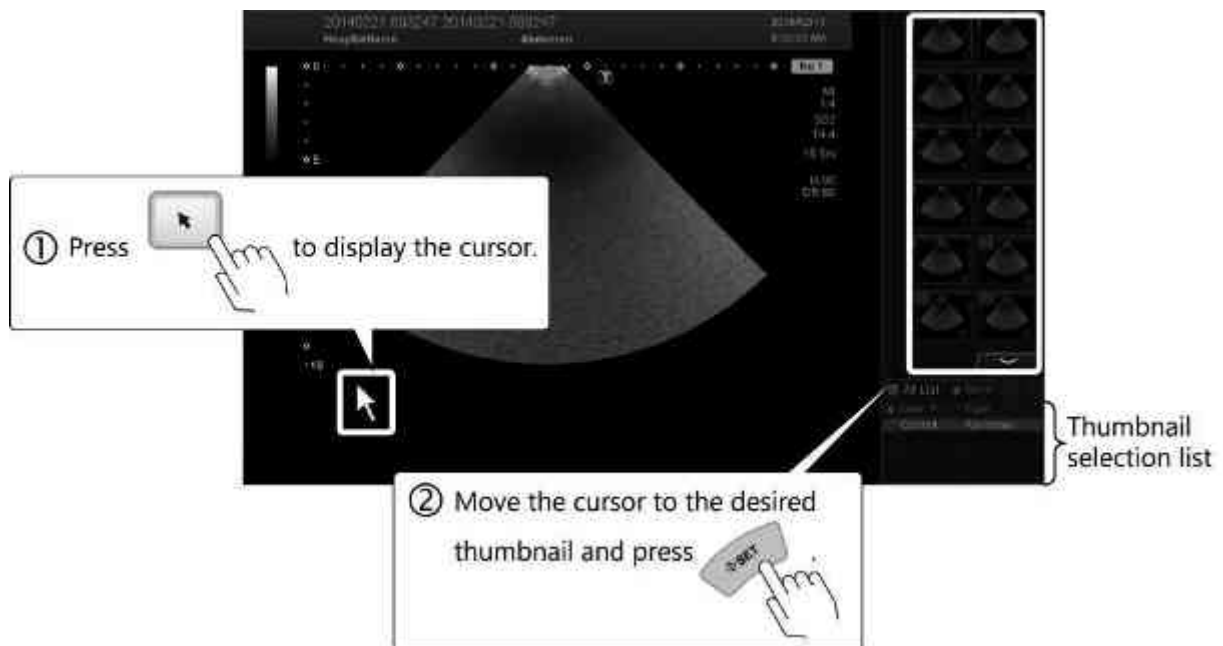
### 3.2.1 Startup

(1) Reviewing images stored for the current patient

(a) For the most recently stored image (current image)

Press  or  in the [PIMS] menu on the touch panel.

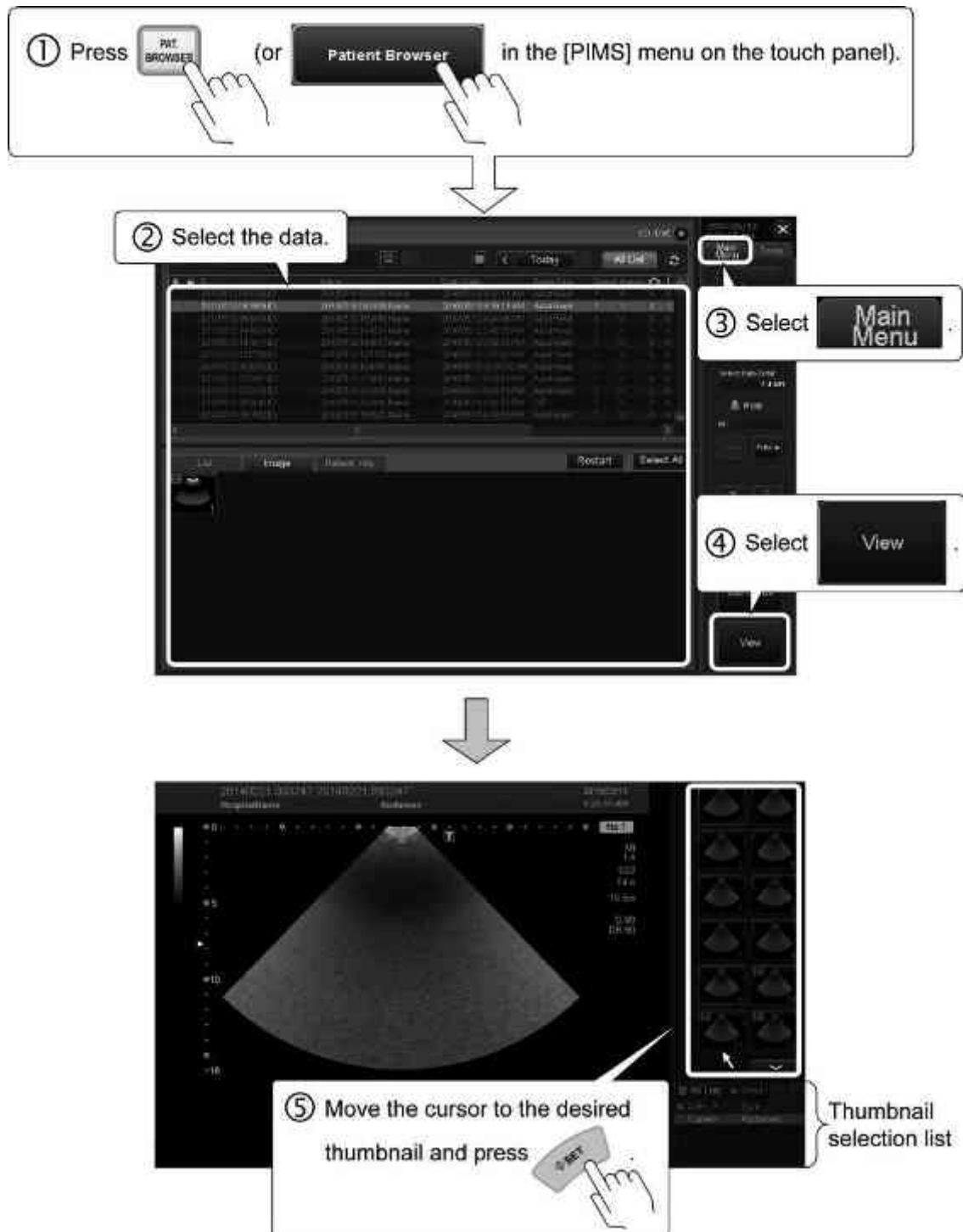
(b) To select the desired image





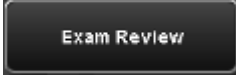



(2) Reviewing images acquired in previous examinations

**NOTICE** Wait until image loading is completed before performing the next operation.



### 3.2.2 Termination

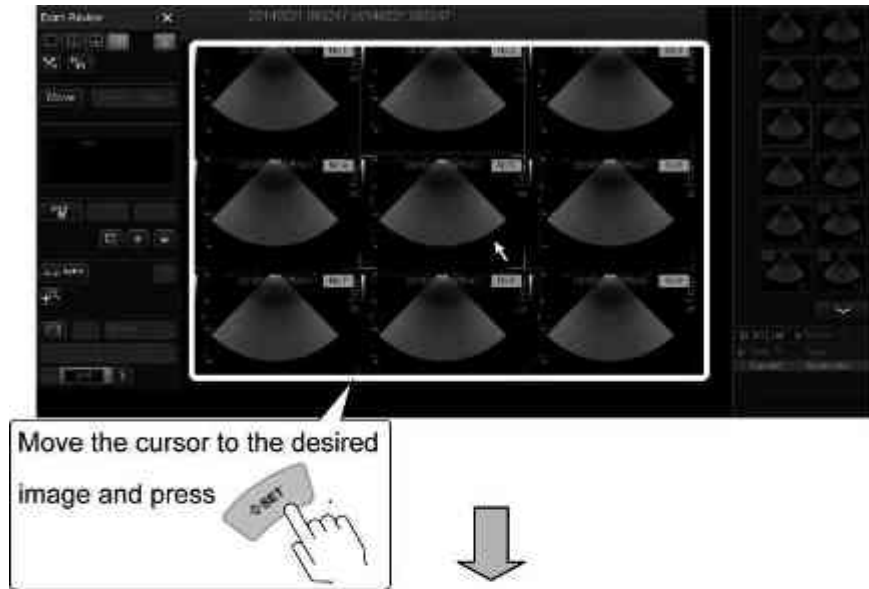
Press  ,  , or  in the [PIMS] menu on the touch panel to terminate Exam Review.

- \* Exam Review is also terminated when  on the Exam Review screen is selected (refer to subsection 3.3.3).

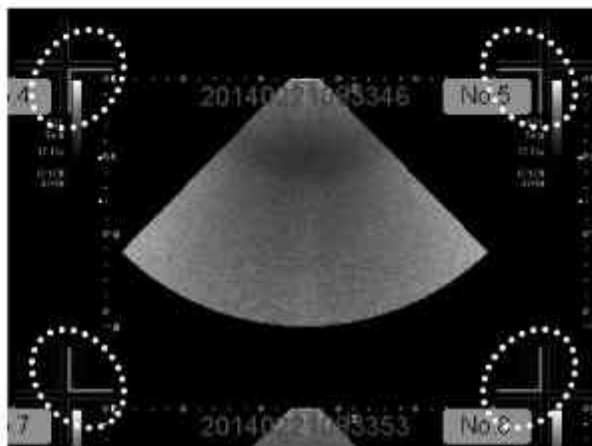
### 3.3 Exam Review Operations

#### 3.3.1 Selecting an image

(1) Select an image (set it to active status).



\* For the multiframe display layout (2-frame, 4-frame, or 9-frame)  
The selected image is indicated by corner markers displayed at the four corners of the frame.

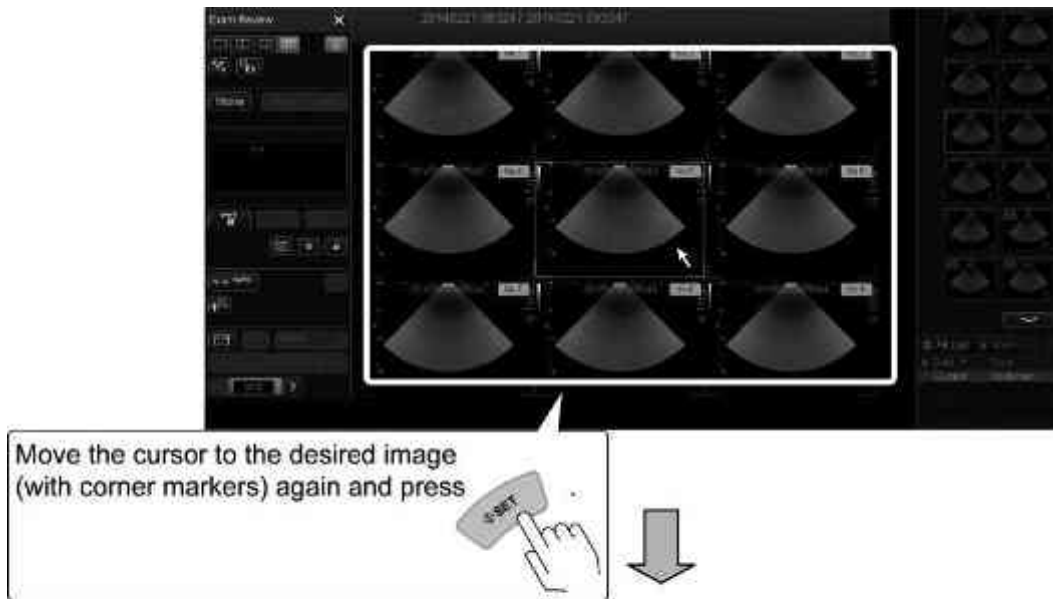


---

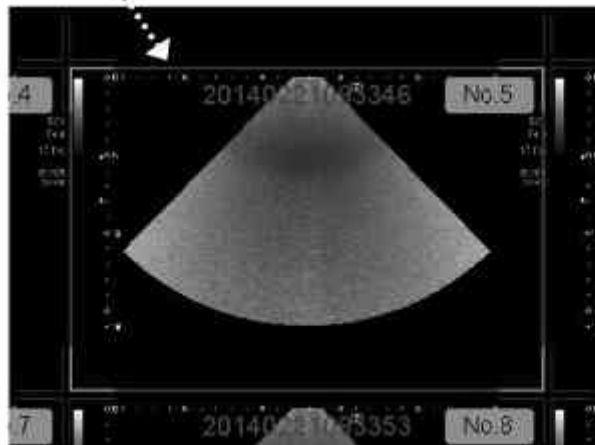
**NOTE** Corner markers are displayed when a multiframe layout (2-frame, 4-frame, or 9-frame) is set. Corner markers are not displayed in the 1-frame layout because the displayed image is considered to be active.

---

- (2) Select the image with corner markers again (set it to selected status).



The selected image is enclosed in a gray frame.



- (3) To select multiple images successively, repeat the operations in steps (1) and (2).
- \* To cancel the selected status, perform the operations in steps (1) and (2).

**NOTICE**

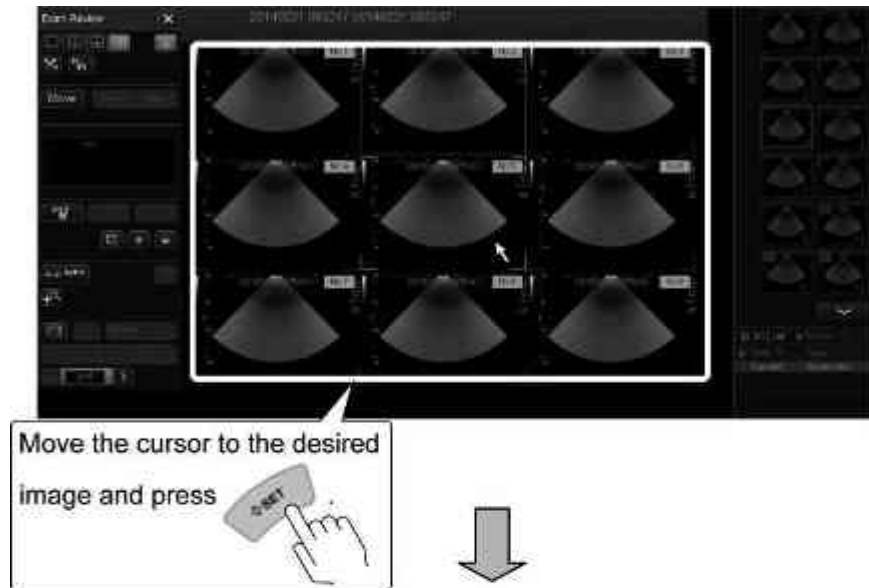
The image selection status is maintained even when the display page is changed or the display image is replaced (refer to subsection 3.3.2). The image may therefore remain selected for deletion etc. (refer to subsection 3.3.3).

- (4) Use the function switches to perform the operations described in subsection 3.3.3.

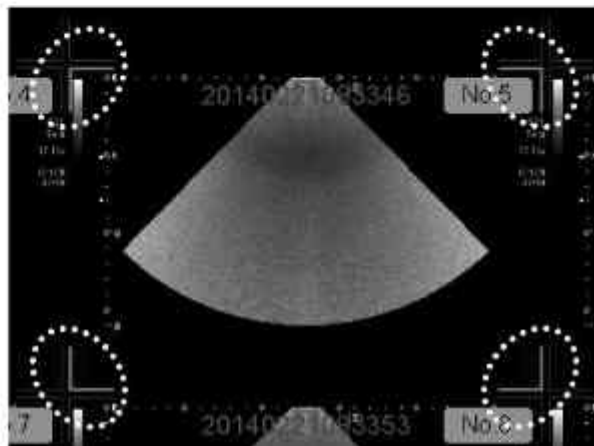
### 3.3.2 Replacing an image

It is possible to replace a display image at a desired specified position when a multiframe layout (2-frame, 4-frame, or 9-frame) is set.

- (1) Select an image to be replaced (set it to active status).



- \* For the multiframe display layout (2-frame, 4-frame, or 9-frame) The selected image is indicated by corner markers displayed at the four corners of the frame.



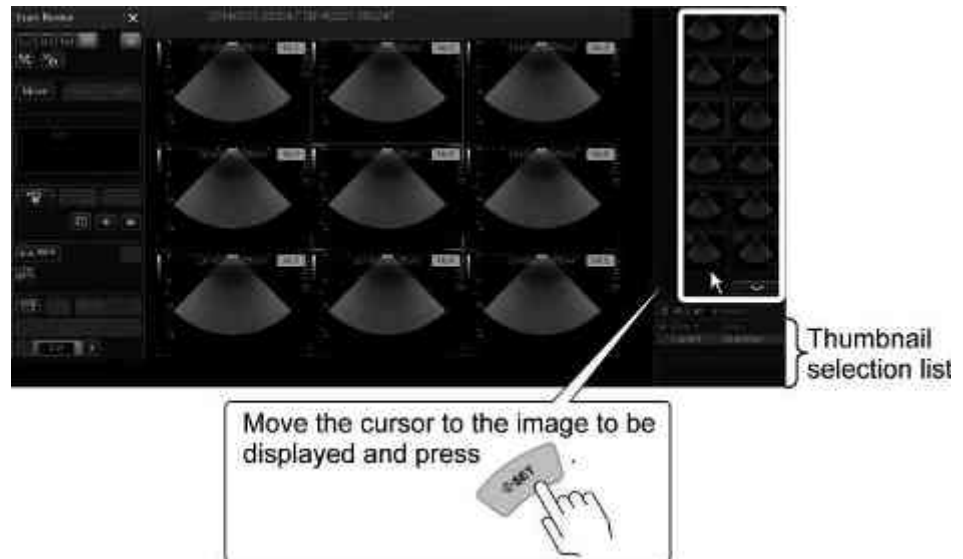

---

**NOTE** Corner markers are displayed when a multiframe layout (2-frame, 4-frame, or 9-frame) is set. Corner markers are not displayed in the 1-frame layout because the displayed image is considered to be active.

---

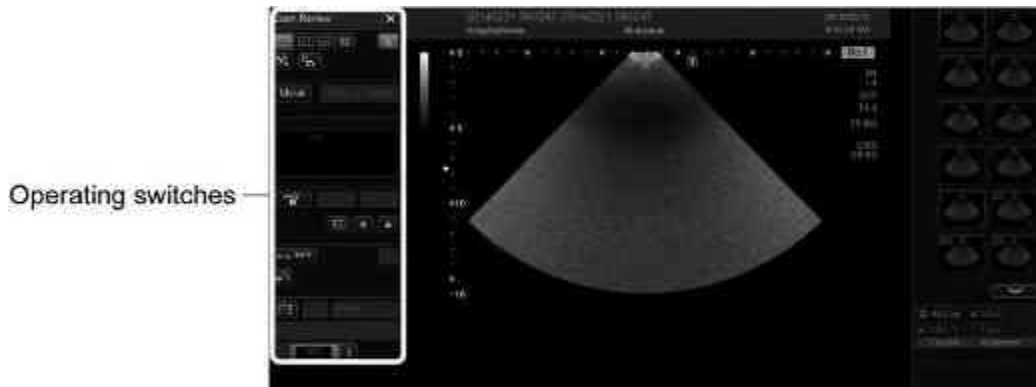
(2) Select an image to be displayed for review.












**NOTICE** The image selection status is maintained even when the display page is changed or the display image is replaced. The image may therefore remain selected for deletion etc. (refer to subsection 3.3.3).



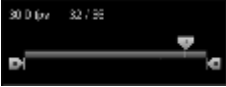










### 3.3.3 Operation using function switches








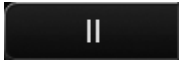





The Exam Review screen provides switches for performing various operations related to images.






Switch	Function	
	Displays a single image in full-screen mode.	
	Displays 2 images in 2-frame mode.	
	Displays 4 images in 4-frame mode.	
	Display 9 images in 9-frame mode.	
	Displays only the selected images (with gray frames).	
	Toggles show/hide of the image-related information overlay.	
	Indicates that only dynamic images are being displayed.	The label of this switch changes each time the cursor is placed on it and  is pressed.
	Indicates that only still images are being displayed.	
	Indicates that both dynamic and still images are being displayed.	
	Turns the Image Shuffle function ON/OFF.	

Switch	Function
	Replaces the selected image with the previous image when Image Shuffle is ON. * When the first image is selected, it is replaced with the last image.
	Replaces the selected image with the previous image when Image Shuffle is ON. * When the last image is selected, it is replaced with the first image.
	Used to specify the image playback range. * To store the image frames in the specified playback range as a new dynamic image, press 
	Sets the deletion mark for all images in selected status (with gray frames) and in active status (with corner marks). * To remove the deletion mark, select this switch again.
	Cancels all selections and deletion marks.
	Deletes the objects for which the deletion mark has been set.
	Displays the images one by one in slideshow mode when there are multiple images.
	Sets the identification mark for all images in selected status (with gray frames) and in active status (with corner marks). * To remove the identification mark, select this switch again.
	Protects all images in selected status (with gray frames) and in active status (with corner marks) to prevent the images from being accidentally deleted. * To remove protection, select this switch again.
	Displays the images in synchronized mode when there are multiple images. * The playback conditions and zoom conditions set for the selected image (image with corner marks) are applied to all of the other images.




Switch	Function	
	Zooms and pans the image.	
	Displays the Patient Browser screen.	
	Plays back a dynamic image in loop mode.	The label of this switch changes each time the cursor is placed on it and  is pressed.
	Plays back a dynamic image in reciprocating mode.	
	Indicates the playback speed <ul style="list-style-type: none"> <li>• x1</li> <li>• x1/2</li> <li>• x1/4</li> <li>• x1/6</li> <li>• x1/8</li> </ul>	The playback speed can be adjusted using  .
	Indicates the playback speed in slideshow mode <ul style="list-style-type: none"> <li>• xXH</li> <li>• xH</li> <li>• xM</li> <li>• xL</li> <li>• xXL</li> </ul>	
	Pauses playback.	
	Starts playback.	
	Stops playback.	
	Displays the previous image frame. * In slideshow mode, the first page is displayed.	
	Displays the next image frame. * In slideshow mode, the last page is displayed.	
	Feeds the pages forward or backward.	

Switch	Function
	<p>Closes Exam Review.</p> <p>* Exam Review can also be closed by pressing</p> <div style="text-align: center;">  ,   , or [Exam Review] in the PIMS menu on the touch panel. </div>

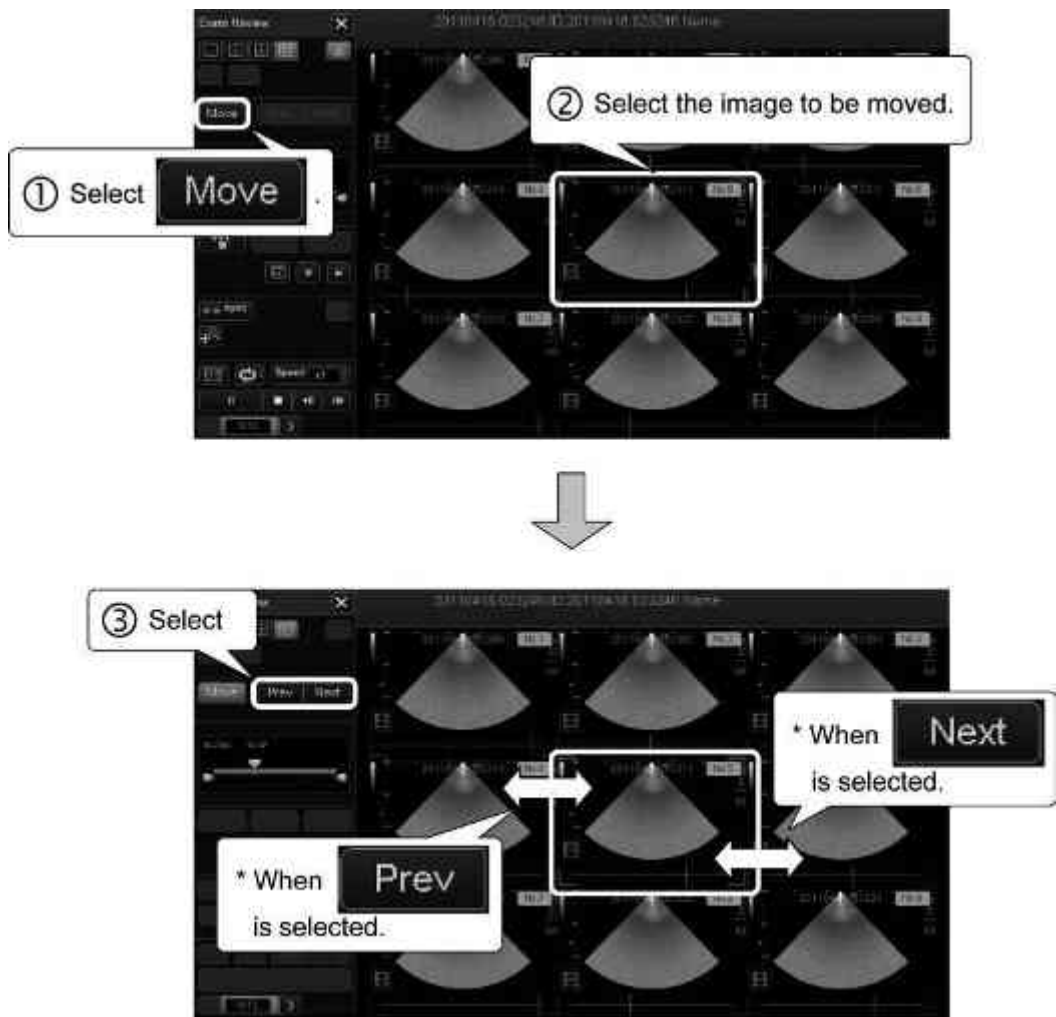
---

**NOTICE** Before deleting the images, confirm the images on all pages (deletion marks are set only for the images to be deleted).

---

- NOTE**
1. Confirm the patient ID, patient name, and exam date for the displayed image each time the image display is switched between an image from the current exam and an image from a previous exam.
  2. In multiframe display mode, the image-related information overlay is displayed for each of the displayed images.
  3. When  is pressed to close the Exam Review screen, the image for the current patient is unfrozen.
-

<<Image Shuffle operating procedure>>



## **4. CHI Mode**

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**⚠ WARNING** If any abnormality is observed with the patient during use of the contrast medium, stop the examination and perform appropriate treatment.

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**⚠ CAUTION** Cavitation may occur due to interactions between the ultrasonic waves and the contrast medium. Always perform examination using the lowest acoustic power setting that is reasonably achievable.

---

- NOTE
1. Handle the contrast medium as described in the instruction manual supplied with the contrast medium. Canon Medical Systems will not be held liable for any injury to the patient resulting from the use of contrast media.
  2. Confirm the possible side effects of the contrast medium with the manufacturer of the contrast medium.
  3. It is known that enhancement exhibits focus dependency in Contrast Echo imaging.  
The degree of enhancement varies in proportion to the second power of the acoustic pressure. Therefore, the area around the focus is strongly enhanced, with less enhancement in areas away from the focus.  
It is recommended that the transmission focus be set at the same depth as the region of interest.
- 

## 4.1 Outline of CHI Mode

CHI (Contrast Harmonic Imaging) is an examination method that involves the use of ultrasound contrast medium.

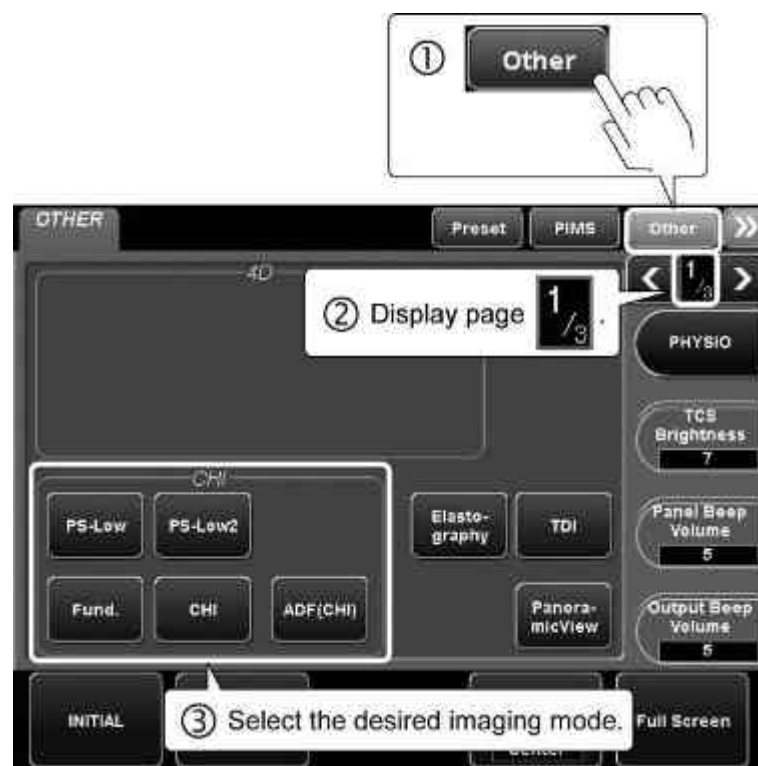
Several imaging modes are supported in CHI mode.

- CHI mode is available when the optional USHI-X200A and a transducer that supports CHI mode are used in combination.
- Refer to the compatibility table of transducers and modes in subsection 5.7 of the Operation Manual <<Fundamentals volume>> for the transducers that support CHI mode.

## 4.2 Operating Procedures






**NOTE** The switches displayed on the touch panel, the switch layout, and the number of tabs differ depending on the mode, exam type, and transducer selected and the preset settings.  
For details of switch display, contact your Canon Medical Systems service representative.

### 4.2.1 Starting up CHI mode



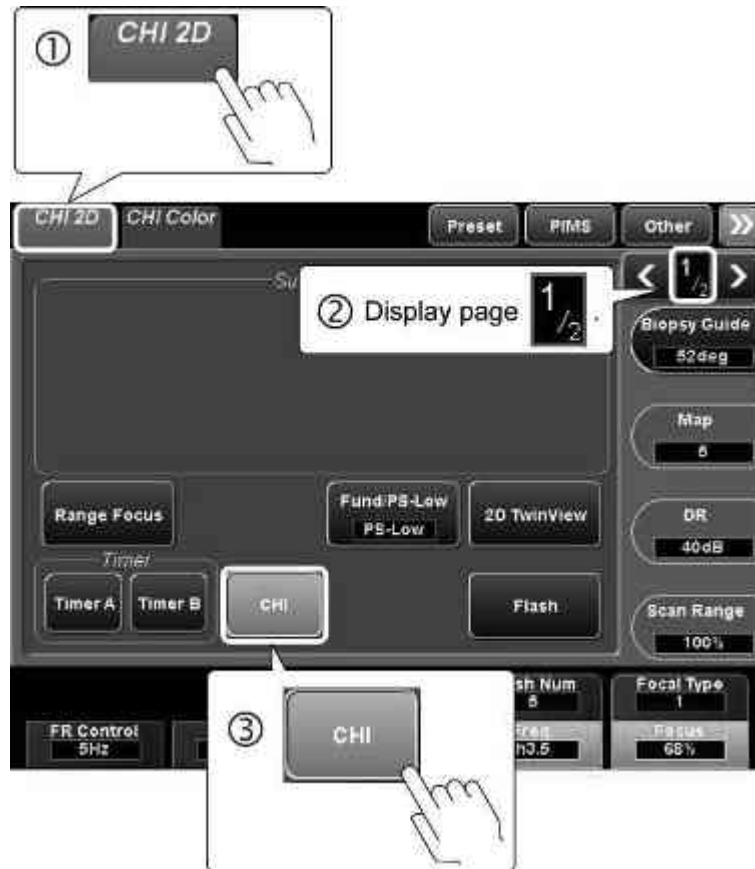
\* Select the desired imaging mode and then select the [CHI 2D] or [CHI Color] tab on the touch panel to use the CHI function.


Imaging mode	Function
<b>PS-Low</b>	PS (Pulse Subtraction™)-Low and PS-Low2 are contrast mode for low-acoustic-power ultrasound transmission. Very small tissue blood flow in the myocardium or parenchymal organs can be imaged by visualizing the second harmonic wave signals from the microbubbles in the contrast medium.
<b>PS-Low2</b>	
<b>Fund.</b>	Tissue images are generated from the fundamental wave components.

Imaging mode	Function
	PS-Low is displayed when this switch is selected when CHI mode is OFF.
	The signals from the contrast medium are displayed in color. An ADF (CHI) image can also be displayed by pressing  in contrast imaging mode. * The optional USDF-X200A is required in order to use this function.
 *1	Used to display the signals from the contrast medium in color. A cSMI (Contrast) image is also displayed when [cSMI] on the main panel is pressed in contrast enhancement mode. * The optional USMI-X200A is required in order to use this function.
 *1	Used to display the signals from the contrast medium in color. A mSMI (Contrast) image is also displayed when [mSMI] on the main panel is pressed in contrast enhancement mode. * The optional USMI-X200A is required in order to use this function.

\*1: This switch must be registered with the TCS customization tool. Contact your Canon Medical Systems service representative for details.

## 4.2.2 Closing CHI mode



- \* Pressing  in the Other menu on the touch panel also terminates CHI mode.












### 4.3 Operations From the Touch Panel

This subsection describes the touch panel menu used in CHI mode. The functions related to the image quality adjustment parameters are the same as for other imaging modes. Refer to the Operation Manual <<Fundamentals volume>> for details.

(1) CHI 2D menu (page 1/2)




No.	Switch	Function
<1>	Sub Preset	The sub-preset switches are displayed. * The image is displayed with the adjusted image parameter values that are registered to the selected switch. (Refer to section 17 for details.)
<2>		Used to improve contrast enhancement uniformity over a wide range when a transducer supporting the Range Focus function is used. The range marks ▼ and ▲ are displayed, indicating the approximate range for contrast enhancement. * Use [Focal Position] to select the optimal setting from among those provided.
<3>		Switches between Fund mode and PS-Low mode.
<4>		Turns the 2D TwinView function ON/OFF (refer to subsection 4.3.1).

No.	Switch	Function
<5>	Timer	Starts or stops the stopwatch. <ul style="list-style-type: none"> <li>• </li> <li>• </li> </ul>
<6>		Terminates CHI mode.
<7>		Executes Flash scan (AP output at 100%).
<8>		Used to set the frame rate.
<9>		Used to set the number of frames for Flash scan.



(2) CHI 2D menu (page 2/2)



No.	Switch	Function
<1>		Turns the MI value retaining function ON/OFF (refer to subsection 4.3.2).

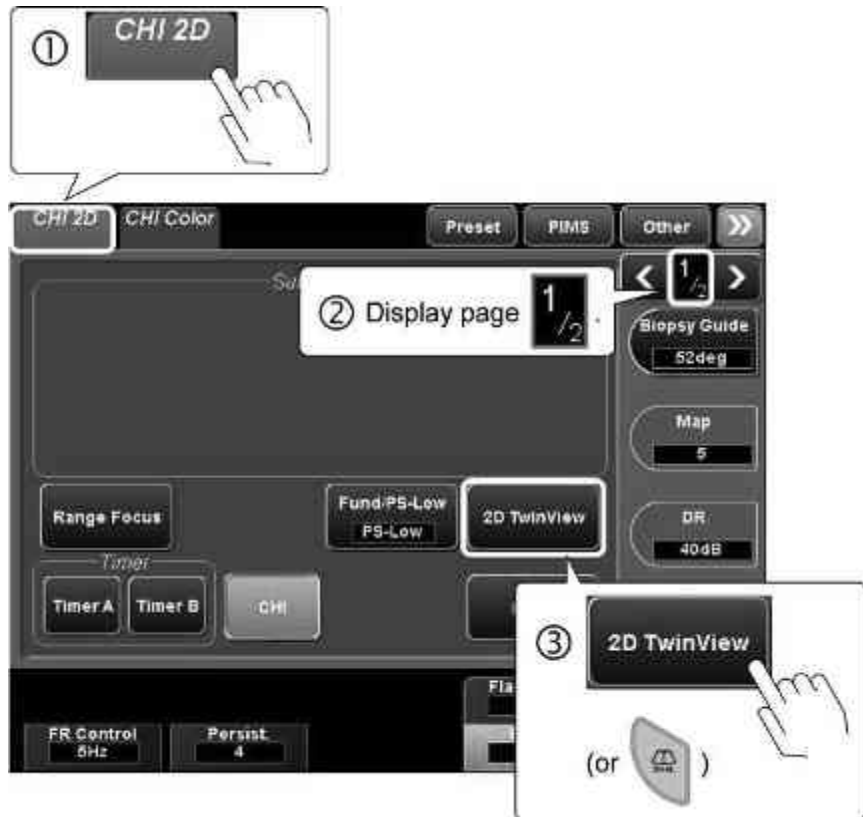
## (3) CHI Color menu (page 1/1)



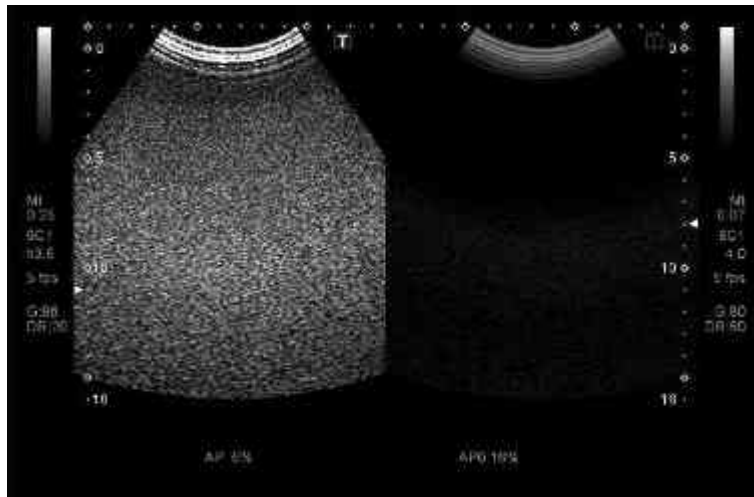
No.	Switch	Function
<1>	Sub Preset	Sub-preset switch display area * The image is displayed with the adjusted image parameter values that are registered to the selected switch. (Refer to section 17 for details.)
<2>		Starts ADF (video mode).
<3>		Used to set the frame rate.

### 4.3.1 2D TwinView mode

The Pulse Subtraction image and Fundamental image are displayed in real time in dual-display mode.



<Image display>

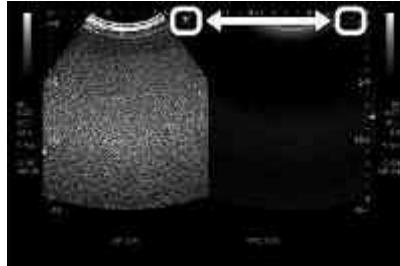


Pulse Subtraction image

Fundamental image



(1) Selecting the image for which operations are to be performed

(a) Press  to move the **T** mark to the desired image.



(b) Perform operations for the selected image using the functions provided on the touch panel or main panel.

(2) Measurement

(a) Press  or  to start measurement mode.

(b) The measurement cursor is displayed at the same position on each image.

(3) Cine operation

(a) Press .

(b) The cine image is displayed in dual-display mode.

(4) Single display

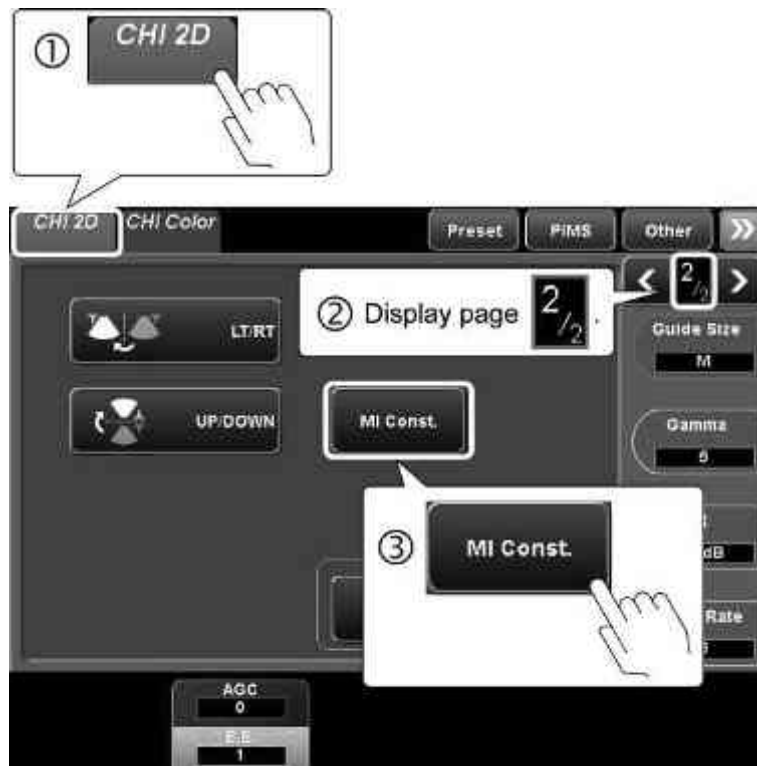
(a) Press .

(b) Single-display mode is set.

### 4.3.2 MI Constant function

In order to prevent the MI value from exceeding the reference MI value, the acoustic power is adjusted automatically when the focal position or zoom ratio is changed.

- This function can be used in PS-Low, and PS-Low2 modes.
- The MI value immediately after the ACOUSTIC POWER knob is operated, the frequency is changed, or the mode is changed is set as the reference MI value.



## **5. Panoramic View**

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## 5.1 Outline of Panoramic View

Diagnostic images are combined in the scanning direction of the transducer to display an image with a range greater than the viewing range of the transducer.

- The optional USPV-X200A is required in order to use this function.
- The needle mark cannot be displayed in Panoramic View mode. Panoramic View mode cannot be started when the needle mark is displayed.

---

NOTE

1. Move the transducer in the specified direction only. If the transducer movement direction is changed during scanning, image distortion will result. Image distortion may also occur if there is any deviation from the correct scan path.

Image distortion is clearly identifiable in some cases, but may not be clearly identifiable in other cases. Panoramic View images should therefore be used only as reference data, not for definitive diagnosis. The final diagnosis should be based on a comprehensive assessment of all clinical data, including the results obtained by other examination methods.

2. A scan line image generated by moving the transducer is displayed. Note that a curved image is displayed as a flat surface if the scan line is curved.
3. When scanning is performed by moving the transducer in a circular motion (for example, when the transducer is moved around the neck and the Panoramic View image is displayed) and if there are overlapped parts at a certain depth, the overlapped parts cannot be displayed correctly. Set the depth of the image so that such image overlap does not occur.

4. In Panoramic View mode,  is displayed on the monitor.

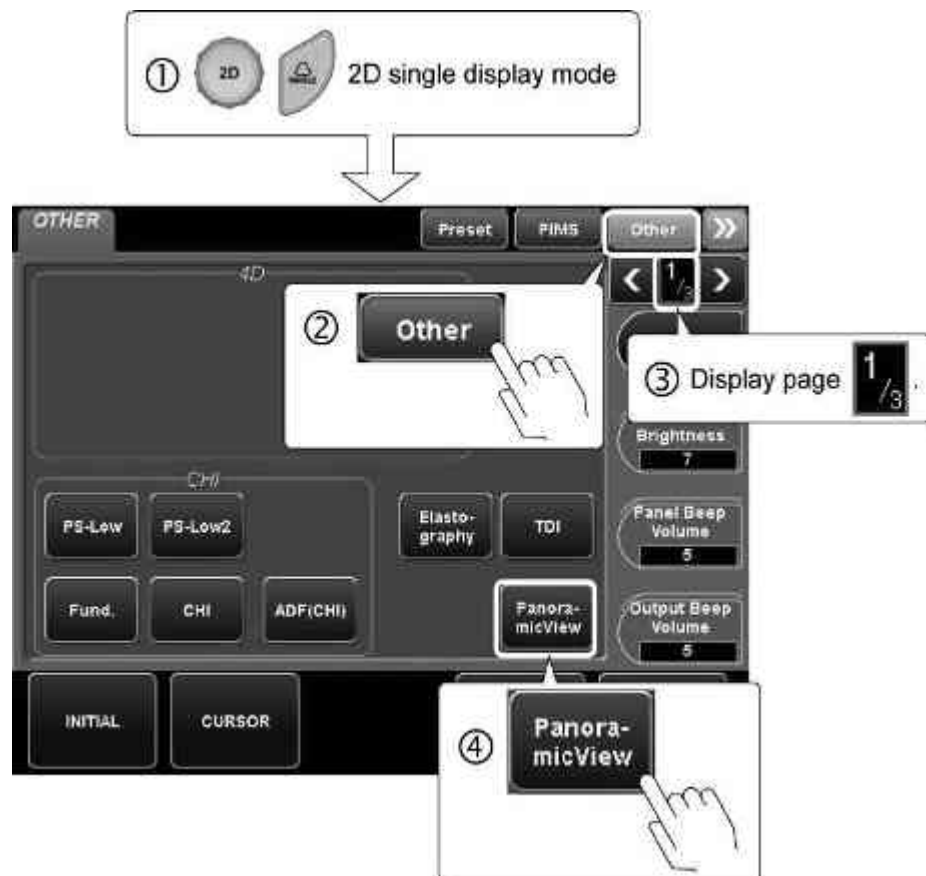
The accuracy of the displayed image cannot be assured, because the image has been corrected. Data obtained in quantitative evaluation must only be used as a guide.

---

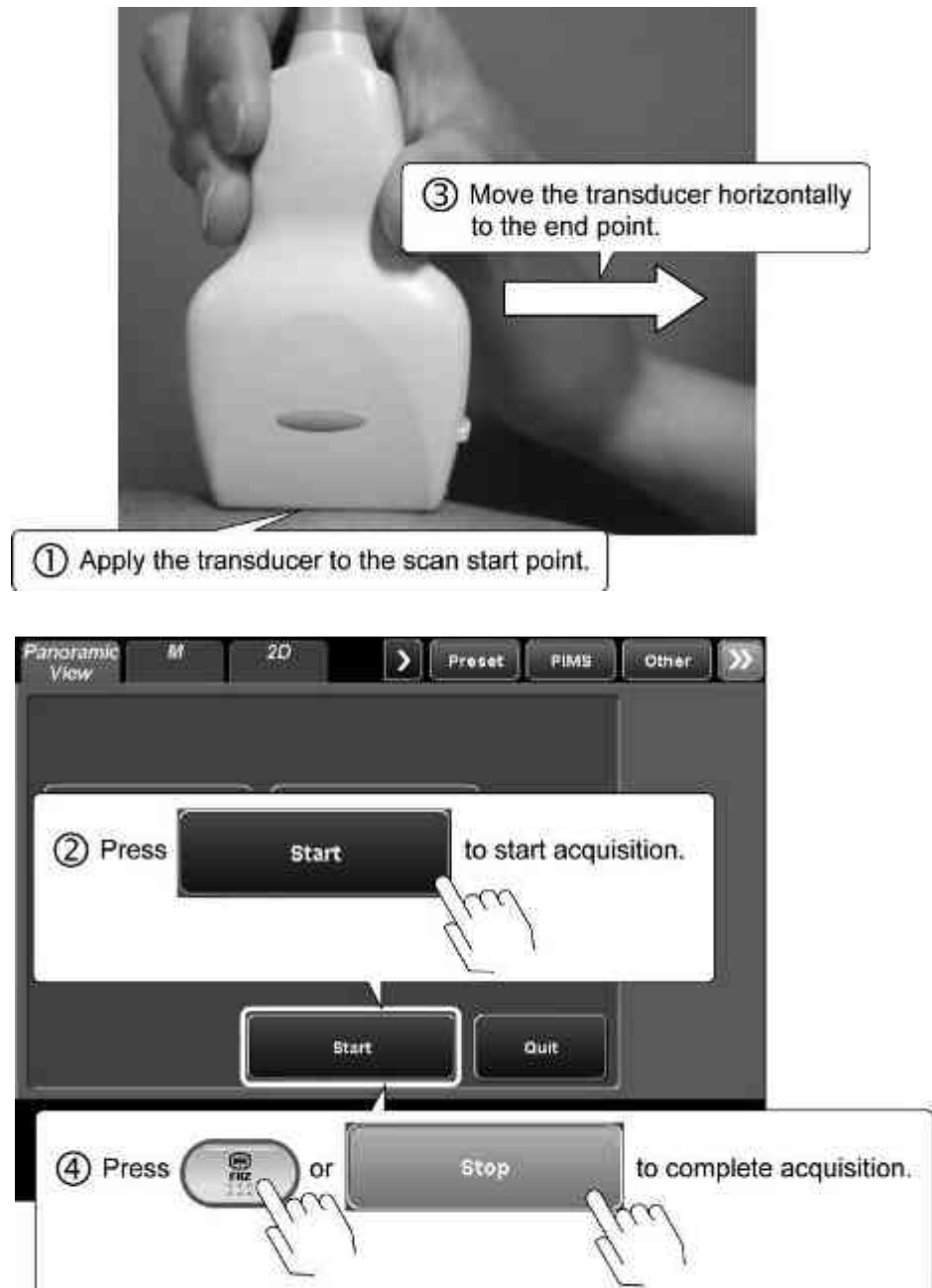
## 5.2 Operations in Panoramic View Mode

**NOTE** The switches displayed on the touch panel, the switch layout, and the number of tabs differ depending on the mode, exam type, and transducer selected and the preset settings.  
For details of switch display, contact your Canon Medical Systems service representative.

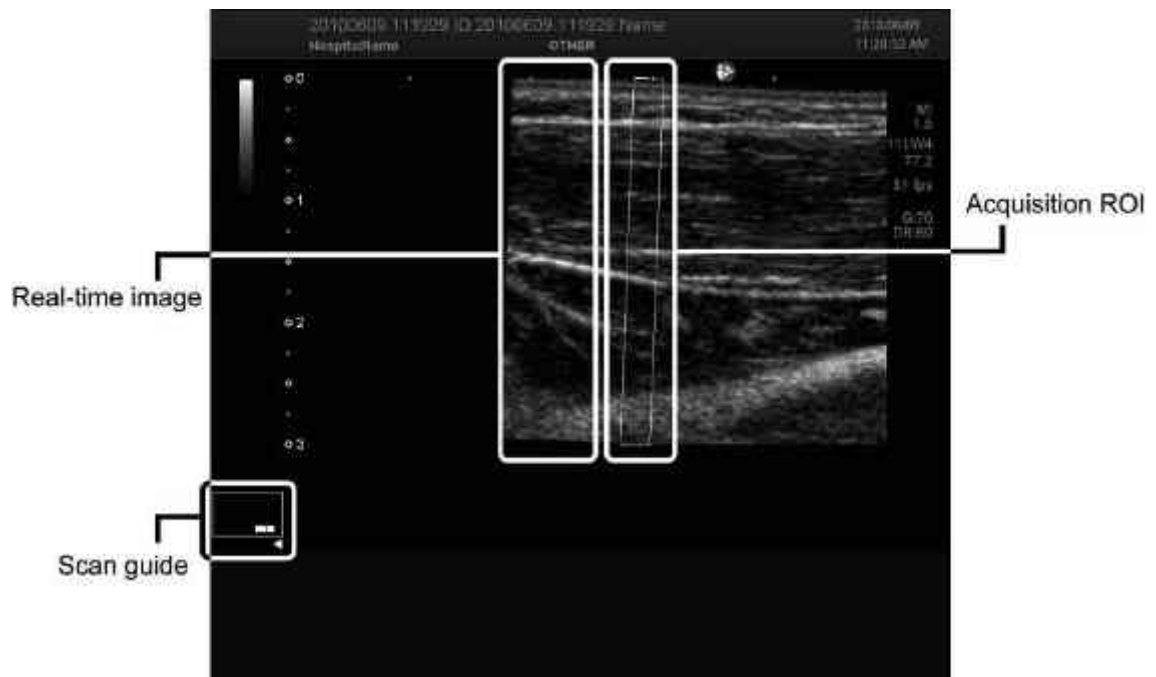
### 5.2.1 Starting up Panoramic View mode



### 5.2.2 Acquiring a Panoramic View image

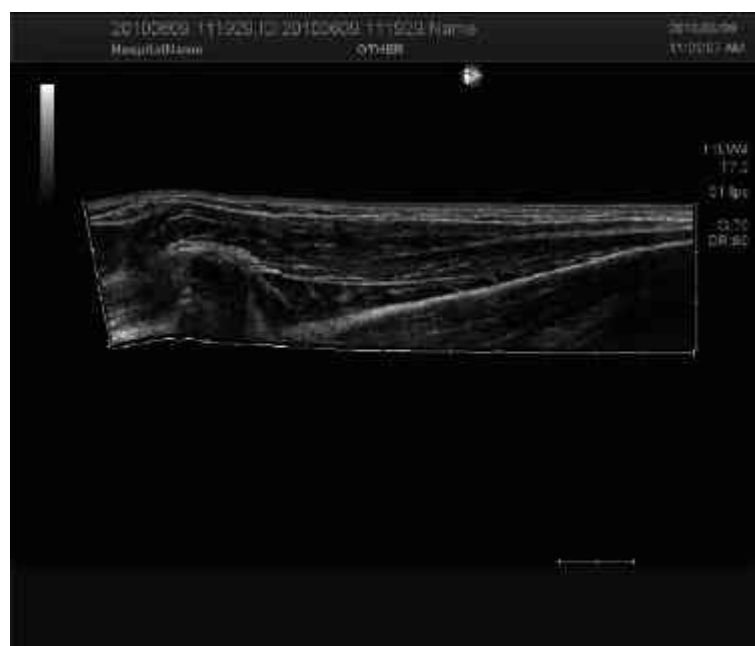


<Display during acquisition>



**NOTE** Observing the Scan Guide, operate the transducer so that image continuity is maintained. If the transducer is moved outside of the frame of the Scan Guide, warning lines (lines indicating the boundaries on top/bottom and right/left of the screen) are displayed automatically. If the image reaches one of these lines, acquisition is stopped and the image acquired up to that point is displayed.

<Display after acquisition>



### 5.2.3 Adjusting the acquired image

#### (1) Image rotation

(a) Change the function icon to  by pressing  .

(b) Operate the trackball to rotate the image.

#### (2) Image panning

(a) Change the function icon to  by pressing  .



(b) Pan the image using the trackball.


#### (3) Image zooming

Rotate  to zoom the image.

- 
- NOTE** The adjustments performed for the image can be reset using the following switches on the touch panel.
- [Initialize] : The image is reset to the status before rotation or zooming.
  - [Optimize] : The image is returned to its original size before zooming while maintaining the same rotation angle.
- 



#### (4) Cine control

(a) Press  to set functional icon  to ON.

\* Press  again to turn the icon OFF.

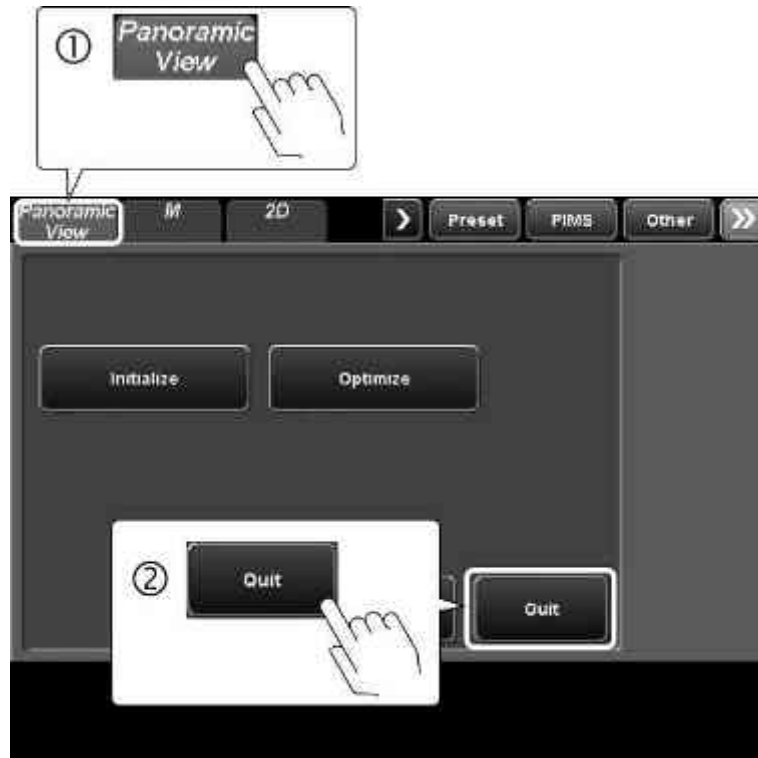
(b) Move the ROI (scan position) on the image on the right using the trackball. The image for the ROI position is displayed on the left of the screen.

#### (5) Measurement

Press  or  to start measurement mode.

\* For OB/Gyn measurement presets, measurement mode cannot be started.

## 5.2.4 Terminating Panoramic View mode





## 6. Elastography Mode

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- NOTE
1. Do not disconnect the transducer from the system while the system is in Elastography mode. If the currently selected transducer is disconnected, Elastography mode is terminated and the data is lost.
  2. The analysis results displayed by this function should be used as reference data for diagnosis. Final diagnosis should be performed based on comprehensive data including other examination results.
  3. If a frame rate higher than 30 fps is set in the conditions, the setting is automatically changed to 30 fps.
- 

### 6.1 Outline of Elastography Mode

In Elastography mode, the changes in the velocity caused by physical compression and decompression of target regions are used to visualize the rigidity of the tissue.

The displayed images represent the rate of change in the length (strain) between two points that are separated from each other by a predetermined distance in the direction of the ultrasound beam.

- Elastography mode can be used only when the optional USEL-X201A or USEL-X200A is installed and a transducer that supports Elastography mode is connected to the system.
- Refer to the compatibility table of transducers and modes in subsection 5.7 of the Operation Manual <<Fundamentals volume>> for the transducers that support Elastography mode.

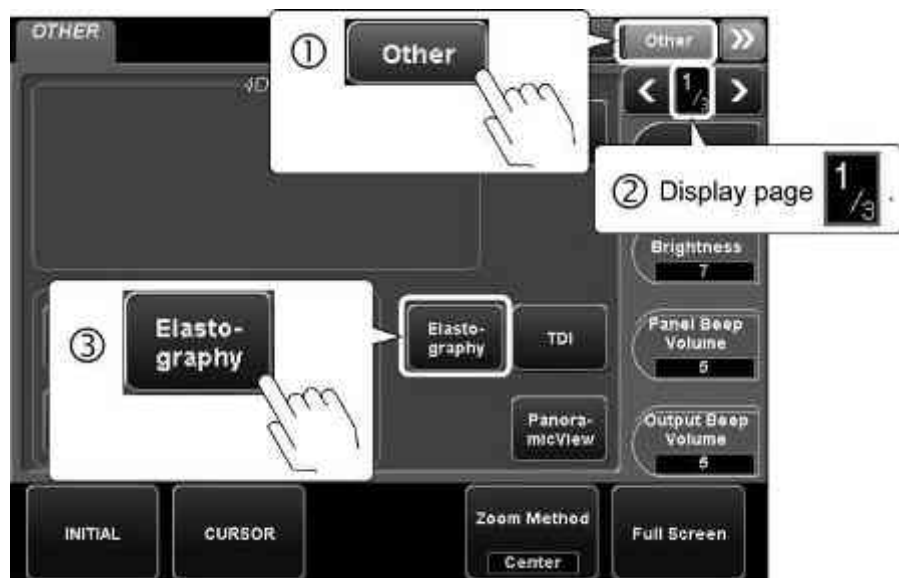
## 6.2 Operating Procedure

**NOTE** The switches displayed on the touch panel, the switch layout, and the number of tabs differ depending on the mode, exam type, and transducer selected and the preset settings.  
For details of switch display, contact your Canon Medical Systems service representative.

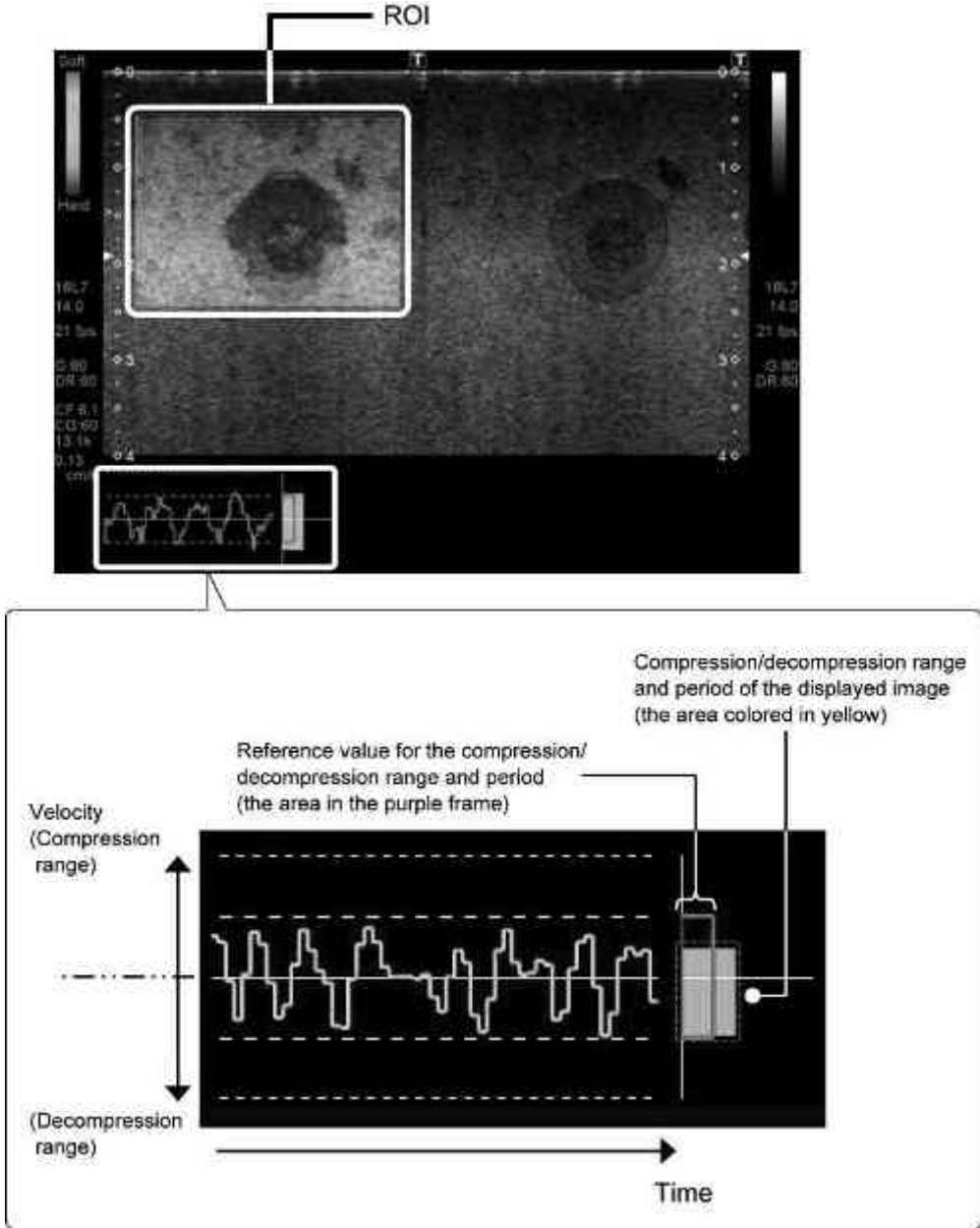
### 6.2.1 Startup

**NOTE** Confirm the following use conditions before starting Elastography mode. If Elastography mode is started in a status in which the conditions are not satisfied, the images displayed may not be of acceptable quality.

- CDI mode  
The status in which Frm Intrpl is "0" and Apure + With Color is ON
- TDI mode  
The status in which Frm Intrpl is "0"







<<Image display>>



## 6.2.2 Adjusting the acquired image

### (1) Setting the ROI

(a) Change the function icon by pressing  or .

Function icon	Trackball function
	Adjusts the ROI position.
	Adjusts the ROI size.


(b) Adjust the ROI using the trackball.

### (2) Image panning

(a) Change the function icon to  by pressing .

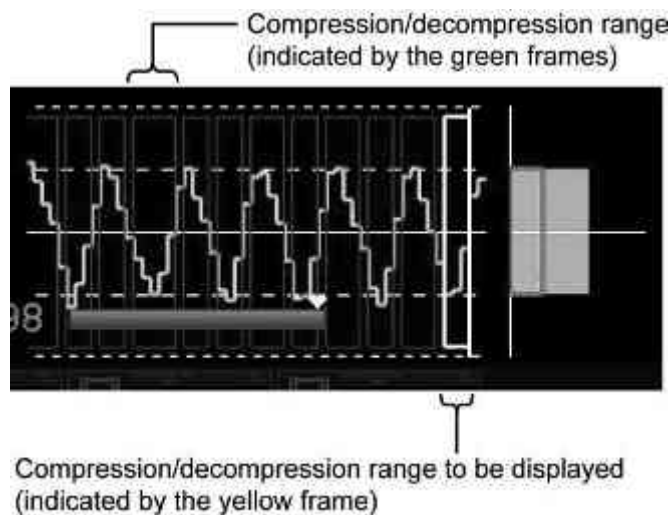
(b) Pan the image using the trackball.

### (3) Image zooming




Rotate  to zoom the image.

(4) Cine operations


- NOTE 1. Cine frame-advance playback is performed for the compression/decompression range (indicated by the green frames) in Elastography mode.




2. When the dynamic image is saved during or after Cine operation, the number of cine memory images is limited to no more than 200 images.


- (a) Press . The function icon is changed to .
- (b) Select the compression/decompression range (indicated by the yellow frame) to be displayed using the trackball or .
- \* To specify the playback range, set the start/end points using the white line on the right side of the frame.
- (c) Display the Cine image by operating the palm dial.

## (5) Measurement

Press  to start measurement mode.

## (6) Storing the image

(a) To store the dynamic image, press  .

(b) To store the still image, press  .

## NOTE

1. The free space on the hard disk is displayed at the top of the screen as



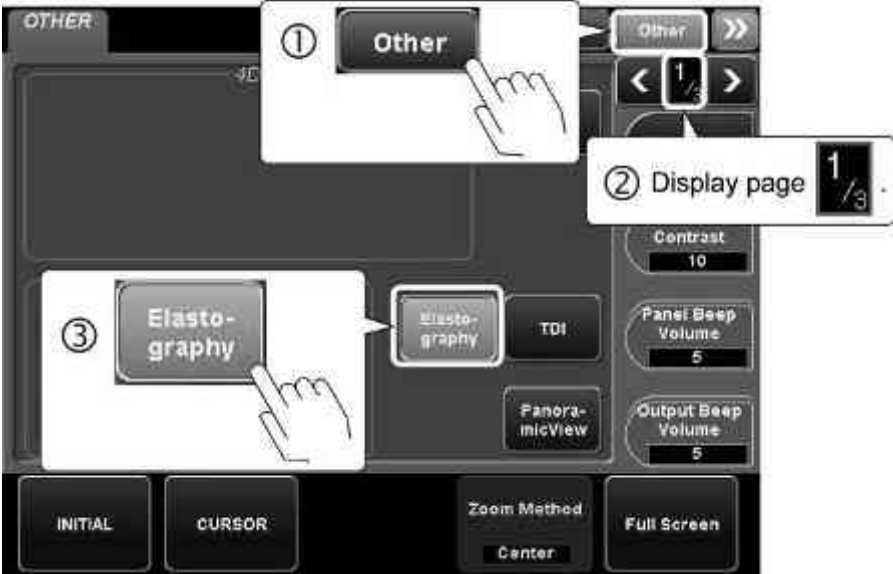
. Images cannot be saved if there is insufficient free space.

If there is less than 35 GB of free space, the icon is highlighted in yellow. The color of the free space indicator changes to red when free space falls below 20 GB.

When free space falls below 1 GB, the message "HDD is full. Please delete some images in Patient Browser and try again." is displayed in the information message area on the screen and no more data can be stored. Ensure the required free space before saving the images.

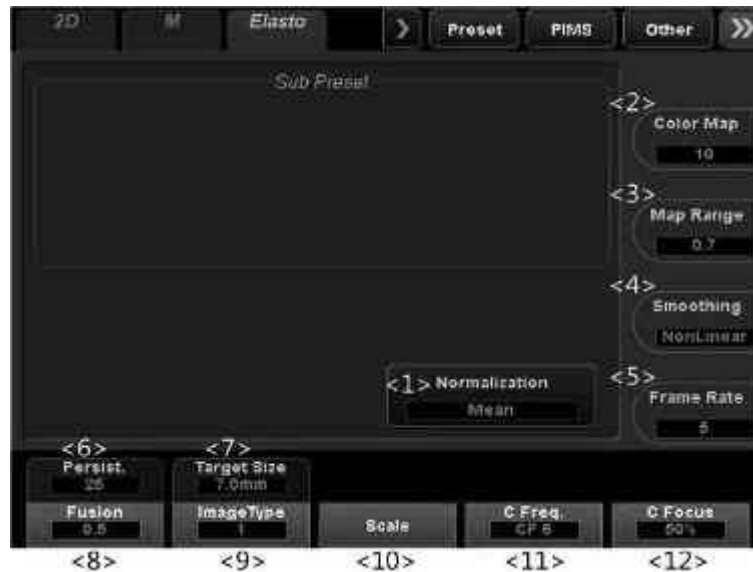
2. If the free space is less than 1 GB at the end of the examination, the message "There is no enough space in Database. Please Delete some data in Patient Browser" is displayed and the examination cannot be terminated. Ensure that there is sufficient free space to terminate the examination.
3. Refer to section 2 for information regarding recording to media.



6.2.3 Termination











### 6.3 Operations From the Touch Panel

This subsection describes the touch panel menu used in Elastography mode.



No.	Switch	Function
<1>		Used to select the color map normalization method. <ul style="list-style-type: none"> <li>• Max : The calculated upper limit value is set to the maximum (soft) of the color map.</li> <li>• Mean : The calculated mean value is set to the center of the color map.</li> </ul>
<2>		Used for setting the color map. <ul style="list-style-type: none"> <li>• 0 : Soft (red), hard (blue)</li> <li>• 1 : Soft (blue), hard (red)</li> <li>• 2 : Soft (black), hard (white)</li> <li>• 3 : Soft (white), hard (black)</li> <li>• 4 : Soft (red), hard (blue)</li> <li>• 5 : Soft (blue), hard (red)</li> <li>• 6 : Soft (red), hard (blue)</li> <li>• 7 : Soft (blue), hard (red)</li> <li>• 8 : Soft (red), hard (blue)</li> <li>• 9 : Soft (blue), hard (red)</li> <li>• 10 : Soft (red), hard (blue)</li> <li>• 11 : Soft (blue), hard (red)</li> </ul>



No.	Switch	Function
<3>		<p>Used for adjusting the range of the color map.</p> <ul style="list-style-type: none"> <li>• 1.1 to 1.5 : Displays the image with a color map range of 110% to 150% of the reference display.</li> <li>• 1.0 : Display for reference</li> <li>• 0.3 to 0.9 : Displays the image with a color map range of 30% to 90% of the reference display.</li> </ul> <p>* The adjustment range differs according to the setting of .</p> <ul style="list-style-type: none"> <li>• Max : 0.3 to 1.0</li> <li>• Mean : 0.5 to 1.5</li> </ul>
<4>		Used to select the type of smoothing level to be used in Elastography image from among Linear L, Linear M, NonLinear, and NonLNR 2.
<5>		Used to adjust the frame rate.
<6>		Adjusts the image persistence (time smooth).
<7>		<p>Used to select the target size for Elastography.</p> <ul style="list-style-type: none"> <li>• The size is adjusted in the range from 0.2 mm to 12.0 mm when a linear transducer is used.</li> <li>• The size is adjusted in the range from 2.0 mm to 40.0 mm when a convex transducer is used.</li> </ul>
<8>		<p>Used for setting the weighting between the Elastography image and 2D-mode image (superimposition display).</p> <ul style="list-style-type: none"> <li>• 0.0 : Only the 2D-mode image is displayed.</li> <li>• 0.1 to 1.0 : The 2D-mode image and Elastography image are displayed superimposed.</li> </ul>
<9>		<p>Used to automatically eliminate unnecessary frames to improve stability.</p> <ul style="list-style-type: none"> <li>• 0: OFF</li> <li>• 1: ON</li> </ul>

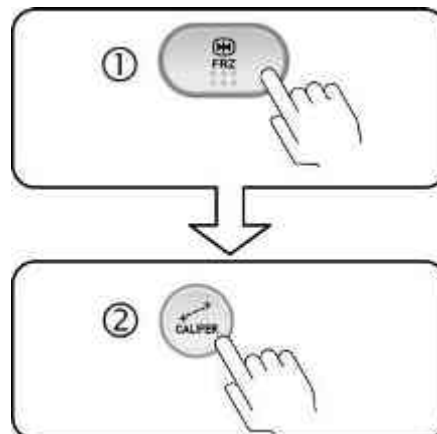
No.	Switch	Function
<10>	<b>Scale</b>	Adjusts the tissue movement speed range when the data is acquired in Elastography mode.
<11>	<b>C Freq.</b> <b>CF 6</b>	Used to select the transmission/reception frequency for acquiring Elastography data.
<12>	<b>C Focus</b> <b>50%</b>	Used to adjust the color focus position.

## 6.4 FLR Measurement (Outside the USA)

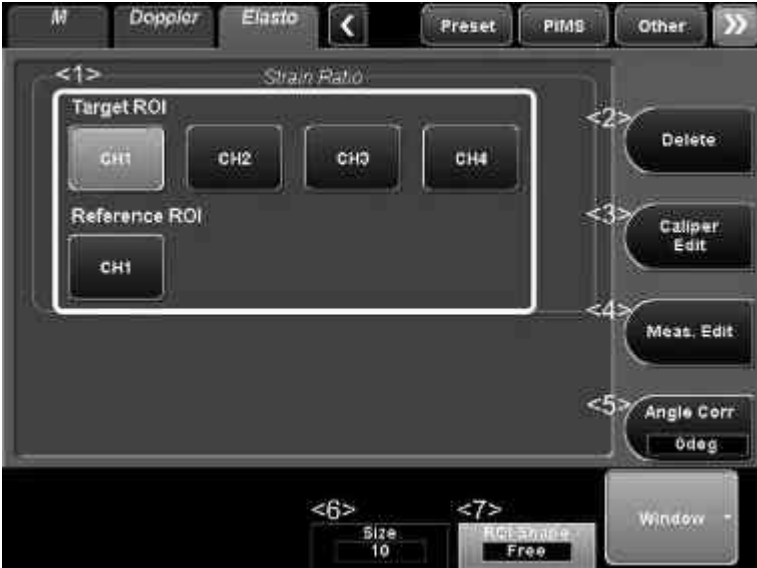
FLR (Fat Lesion Ratio) measurement is possible in Elastography mode.


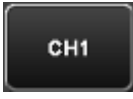
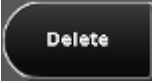





FLR measurement is used to calculate the ratio between the strain values within two ROIs.

\* The optional USEL-X200A is required in order to use this function.

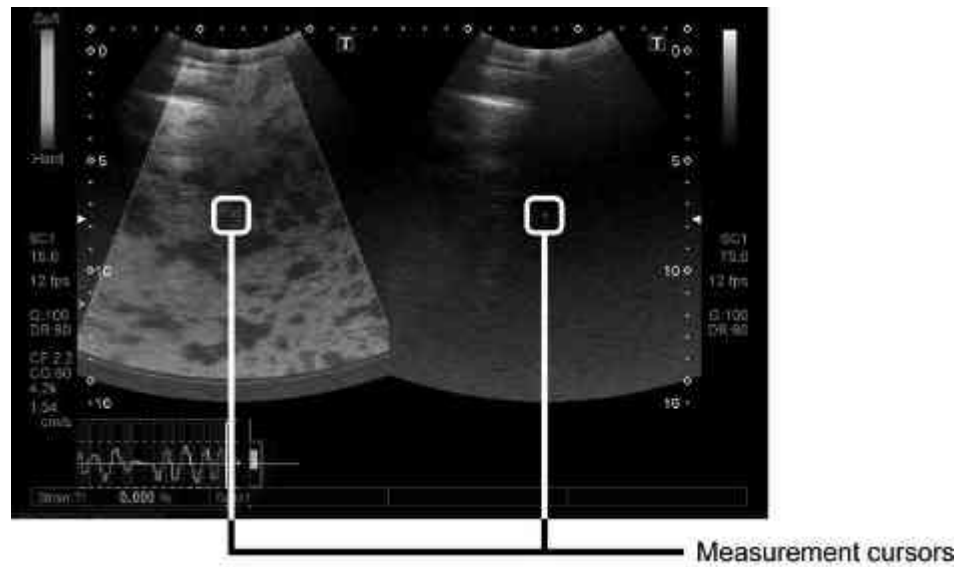


<<Elasto (measurement) menu on the touch panel>>



No.	Switch	Function
<1>	Target ROI 	Displays the cursor for drawing the target ROI on the image. * After the ROI is set, this switch is used to toggle display of the target ROI (show/hide).
	Reference ROI 	Displays the cursor for drawing the reference ROI on the image. * After the ROI is set, this switch is used to toggle display of the target ROI (show/hide).
<2>		Used to delete the ROI.
<3>		Used to adjust the ROI size.
<4>		Used to adjust the ROI position.
<5>		Used to adjust the angle to the Doppler beam.
<6>		Used to select the ROI size to be set. * Effective when the ROI is circular.
<7>		Used to select the ROI shape. <ul style="list-style-type: none"> <li>• Ellipse : Ellipse (ellipsoid)</li> <li>• Rect : Rectangle (rectangular solid)</li> <li>• Free : Closed curve</li> <li>• Circle : Circular (perfect circle)</li> </ul>

(1) Setting the ROIs

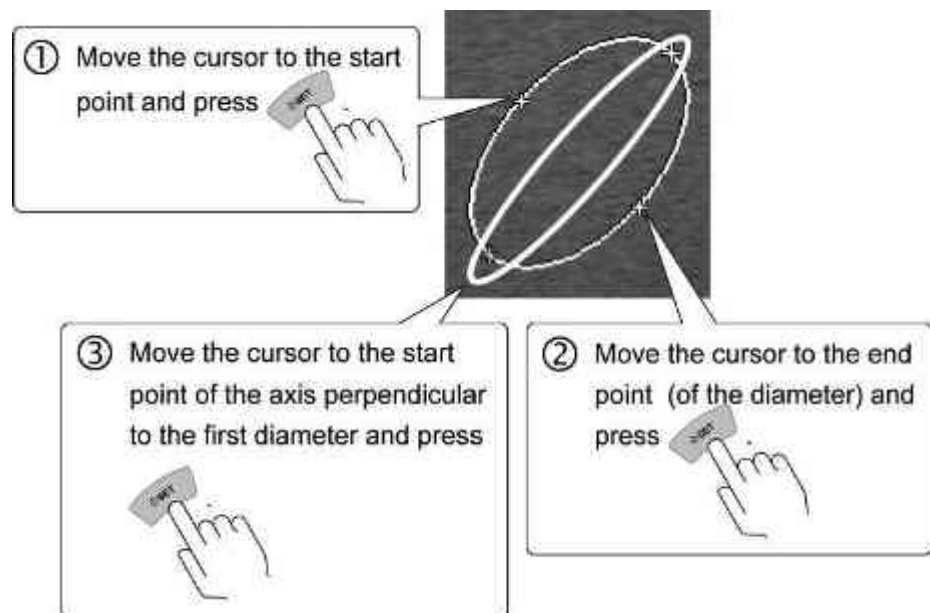


(a) Draw the ROIs.

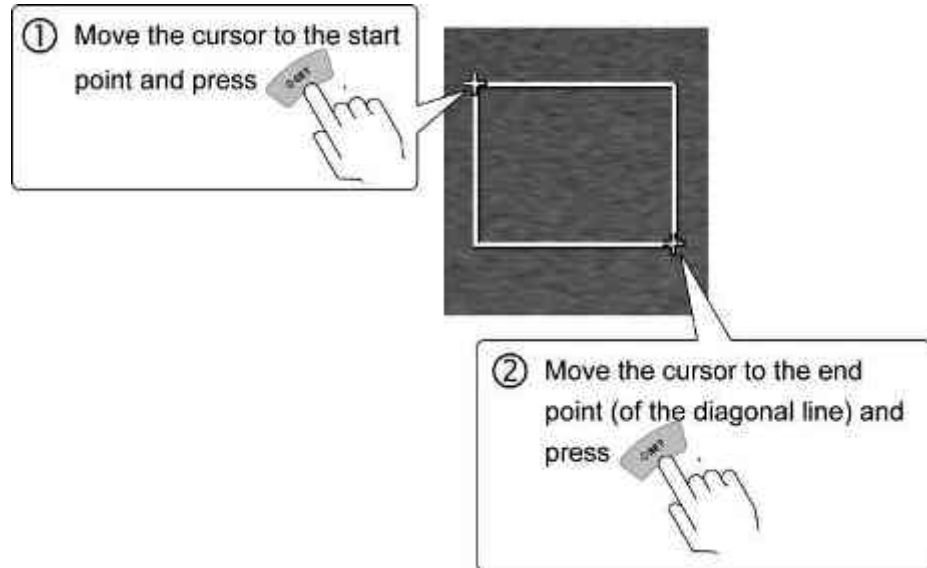
NOTE

To set multiple ROIs successively, press  after the ROI is set to display a new measurement cursor.

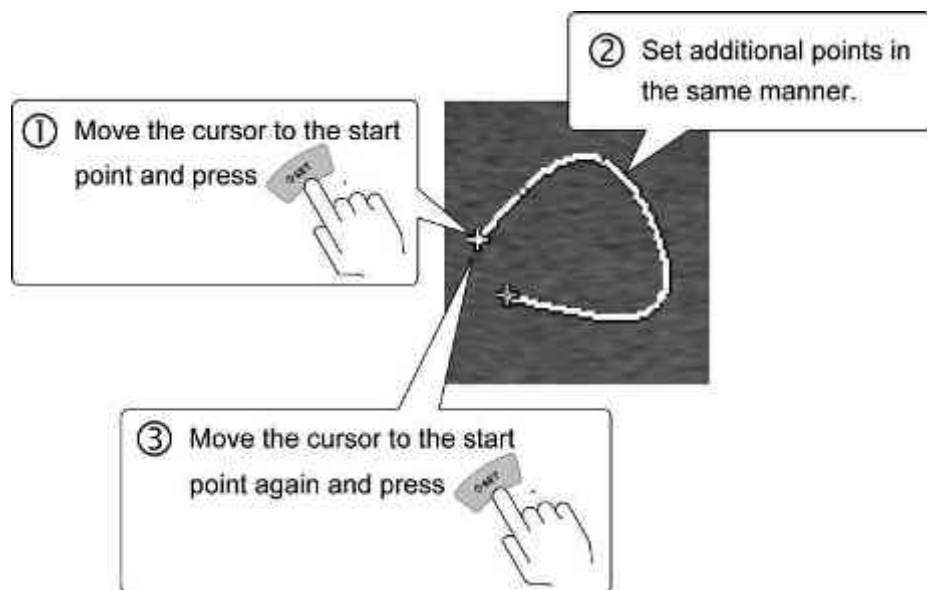
<<When ROI Shape is set to Ellipse>>



<<When ROI Shape is set to Rect>>




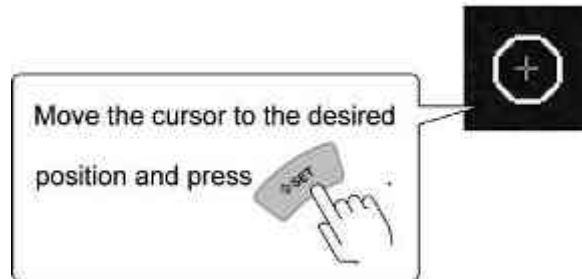
<<When ROI Shape is set to Free>>



<<When the ROI shape is "Circle">>

NOTE


Before setting the ROI, adjust the diameter, using  in the [Elasto] (measurement) menu on the touch panel.



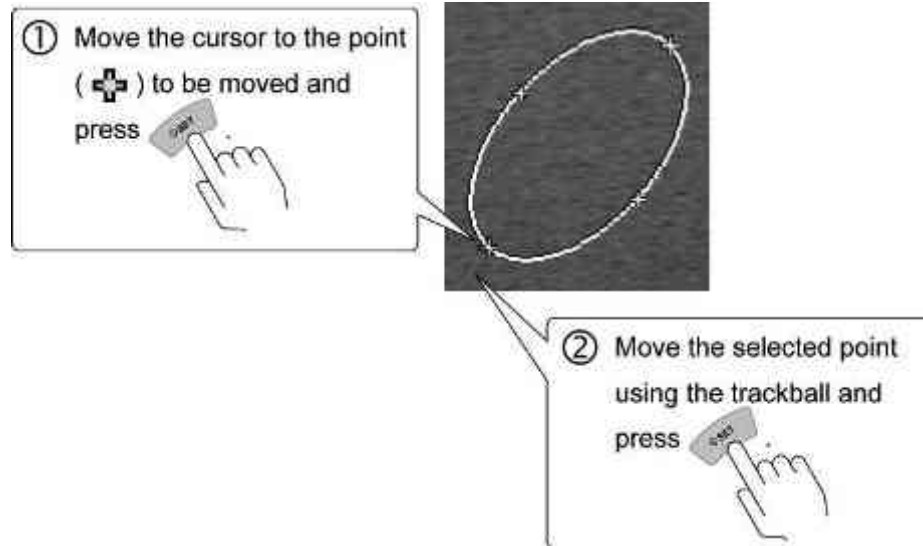
(b) When both the target ROI and reference ROI are set, the measurement results are displayed automatically.

Item	Result
Strain T1 to T4 (Target ROI)	0.000 to 999.999 (%)
Strain R (Reference ROI)	0.000 to 999.999 (%)
Ratio	0.00 to 999.99


## (2) Changing the ROI size

(a) Press  in the Elasto (measurement) menu on the touch panel. The cursor is displayed on the ROI.

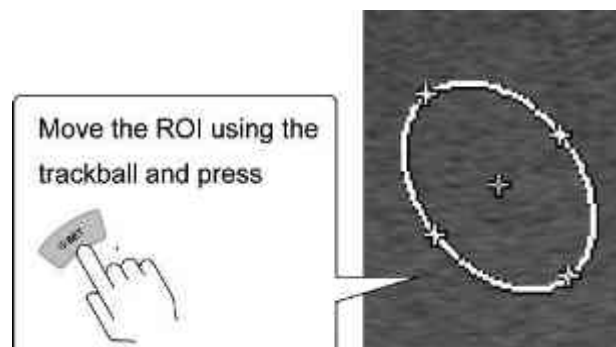
(b) Change the ROI size.



## (3) Changing the ROI position

(a) Press  in the Elasto (measurement) menu on the touch panel. The cursor is displayed on the ROI.

(b) Change the ROI position.



## (4) Terminating measurement mode





Press  or .





## **7.** **4D Mode**

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- NOTE
1. Image distortion may occur, depending on the manner in which the transducer is applied or due to hand instability or fetal movement. 3D images created in 4D mode must not be used to establish a definitive diagnosis. In order to ensure accurate diagnosis, such images should only be used in combination with other types of images.
  2. Do not start 4D mode while copying image data to media. Doing so will result in slow response in 4D mode.
  3. It is necessary to assign the switches ( , , ,  ) for this function on the main panel using the User Function function. Contact your Canon Medical Systems service representative for details.
- 

## 7.1 Outline of 4D

The 4D function generates and displays three-dimensional image data (hereinafter referred to as volume data) using image data acquired for the purpose of three-dimensional image reconstruction.

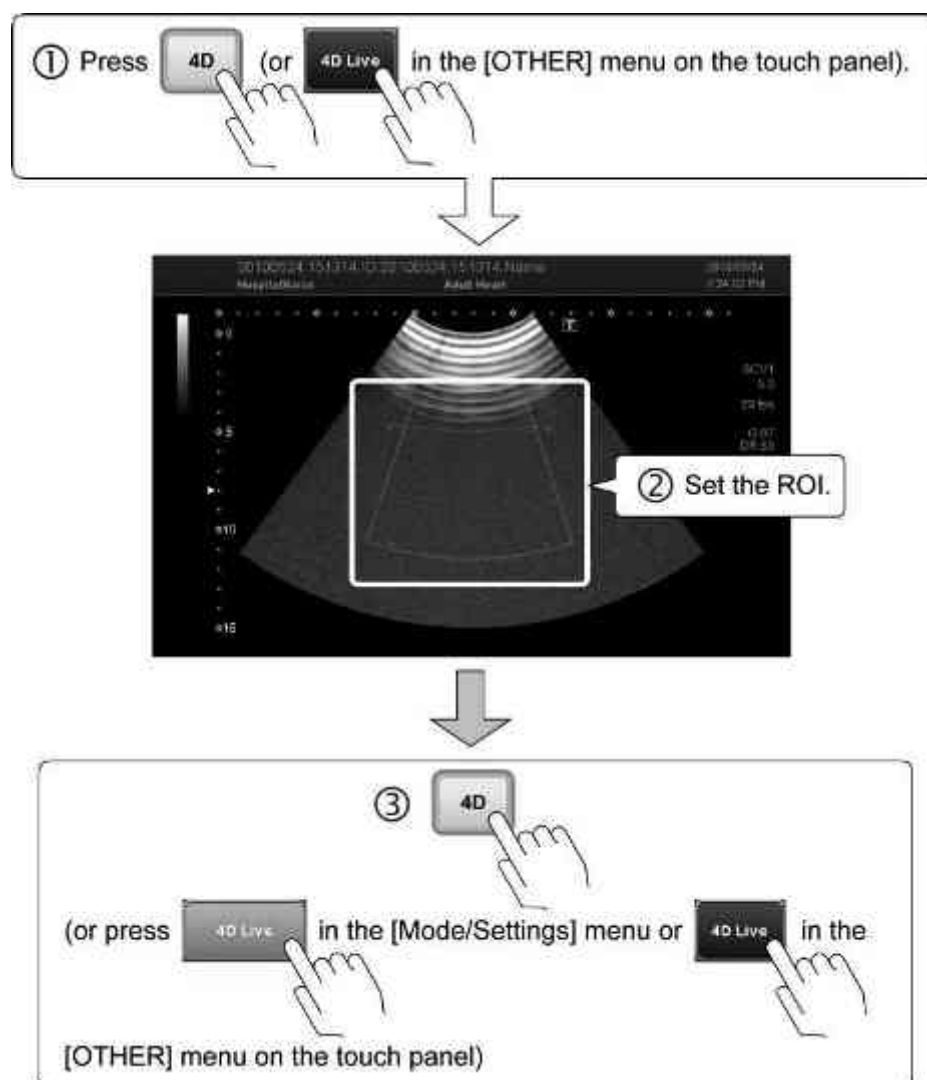
- To use 4D mode, the optional UIMV-X200A and a transducer that supports 4D mode are required.
- Refer to the compatibility table of transducers and modes in subsection 5.7 of the Operation Manual <<Fundamentals volume>> for the transducers that support 4D mode.

## 7.2 Startup and Termination of 4D Mode

**NOTE** The switches displayed on the touch panel, the switch layout, and the number of tabs differ depending on the mode, exam type, and transducer selected and the preset settings.  
For details of switch display, contact your Canon Medical Systems service representative.

### 7.2.1 Startup

(1) To observe the image for the current patient in 4D mode






NOTE

1. ROI setting

(1) Move the cursor to the function icon and change the function assigned to

the trackball by pressing  or .

Function icon	Function
	ROI position adjustment
	ROI size adjustment
	Adjustment of flexible cut line

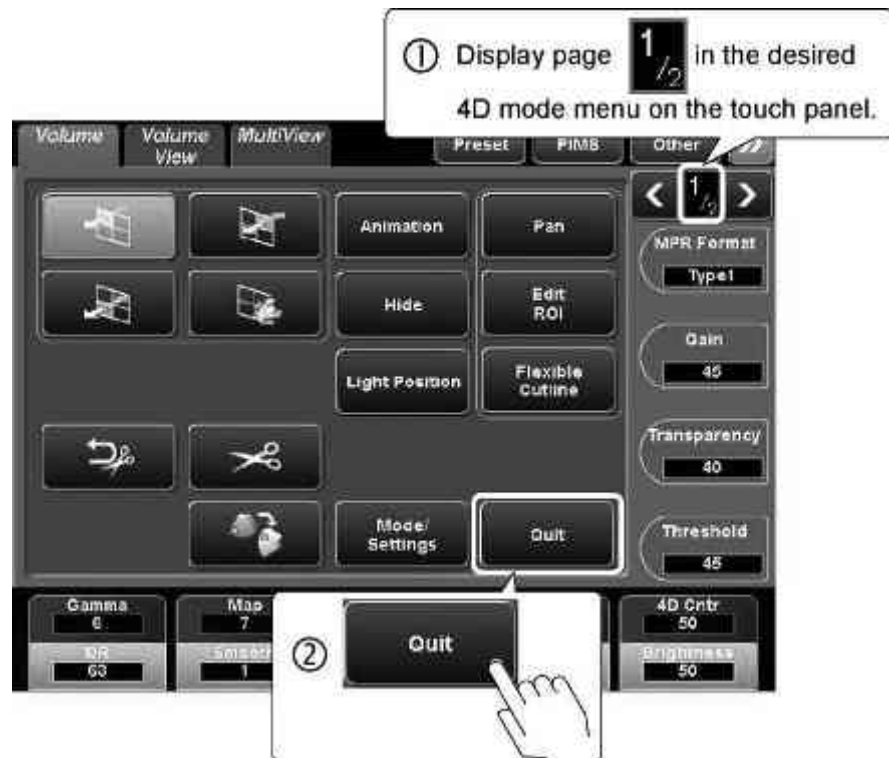
(2) Adjust the ROI using the trackball.


2. Adjust the gain using the palm dial.

(2) To observe the stored images for previous examination in 4D mode



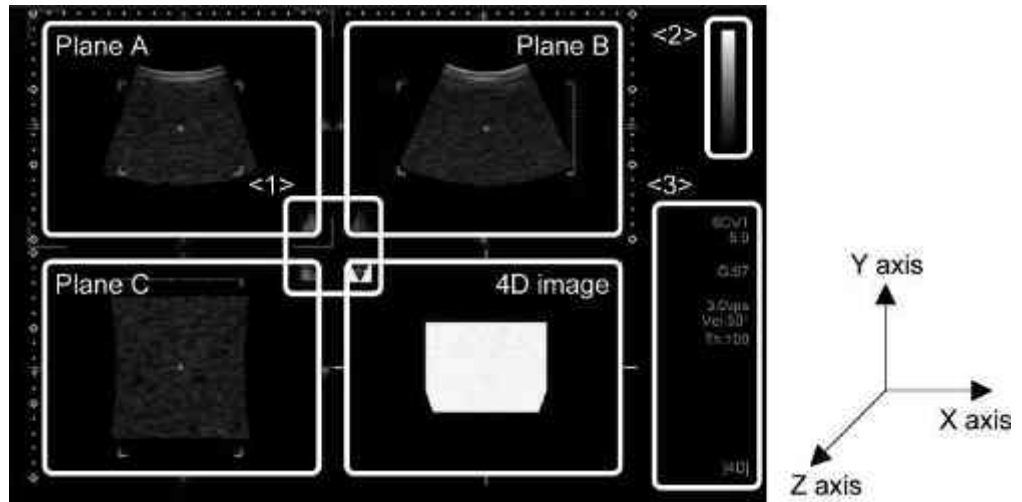
## 7.2.2 Termination



\* Pressing  also terminates 4D mode.


### 7.3 Operations on the 4D Screen on the Monitor

When 4D mode is started, the 3D image for the area within the ROI and the planar images for the ROI are displayed.




No.	Item
<1>	Volume mark (indicates the position of the plane)
<2>	Color map
<3>	Image parameter information

- (1) Switching between the real-time 3D image (4D Live) and the ROI setting screen

Press  to toggle the display.



- (2) Switching between high-definition 3D image display and the ROI setting screen


Press  to toggle the display.

- (3) Adjusting the brightness

Adjust the gain using the palm dial.

- (4) Adjusting the acoustic power or frequency

Use  to adjust the acoustic power, and use  below the touch


panel  to adjust the frequency.


NOTE Note that the volume data is not displayed while the acoustic power or


frequency is being adjusted (  or  is being rotated).

In addition, the volume data acquired during this period is skipped in frame-by-frame playback in cine display.


#### (5) Changing the display layout


(a) Pressing  sets the 4-frame layout (MPR).


(b) Pressing  sets the 2-frame layout (2D image + 4D image).

(c) Pressing  sets the single frame-layout (4D image).


#### (6) Rotating the image

(a) Rotate  to rotate the image around the X axis.


(b) Rotate  to rotate the image around the Y axis.

(c) Rotate  to rotate the image around the Z axis.

#### (7) Translating the image position along the Z axis



Rotate  to translate the position of the displayed image along the Z axis.

#### (8) Zooming the 4D image



Rotate  to enlarge or reduce the 4D image.



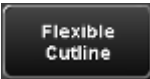

## (9) Panning

- (a) Press  in the Volume menu on the touch panel to change the function icon to  .
- (b) Operate the trackball to pan the image.





## (10) Adjusts the ROI size.

- (a) Press  in the Volume menu on the touch panel to change the function icon to  .
- (b) Operate the trackball to adjust the ROI size.

## (11) Adjusting the flexible cut line




- (a) Press  in the Volume menu on the touch panel to change the function icon to  .
- (b) Operate the trackball to adjust the position of the flexible cut line (plane A).

## (12) Cursor operation




- (a) Use  to change the function icon to  .
- (b) Select the desired thumbnail using the trackball and  .
- (c) Press  again to terminate cursor operation.

## NOTE Other function icons




## 1. Moving the MPR plane in Volume View mode

- (1) Press  or  to change the function icon to  .
- (2) Use the trackball to adjust the MPR position.





## 2. Moving the ROI in VolPure (C) mode

- (1) Press  or  to change the function icon to  .
- (2) Use the trackball to adjust the ROI position.





## (13) Cine control

- (a) Press  to change the function icon to  .
- (b) Use the trackball to play back the image frame by frame.
- (c) Using  , specify the range of frame feed playback and dynamic image storage.



## (14) MPR measurement

- (a) Press  .
- (b) Press  . The measurement menu (refer to subsection 7.4.5.1) is displayed on the touch panel and the measurement cursor is displayed on the monitor screen.
- (c) Specify the measurement range using the trackball and  .
- (d) Press  again to terminate measurement mode.



## (15) Volume measurement

- (a) Press  .
- (b) Press  . The measurement menu (refer to subsection 7.4.5.2) is displayed on the touch panel and the measurement cursor is displayed on the monitor screen.
- (c) Specify the measurement range using the trackball and  .
- (d) Press  again to terminate measurement mode.

## (16) Storing the 4D data (volume data)

Press  on the main panel or  in the PIMS menu on the touch panel.

## (17) Storing the image

- (a) To store the dynamic image, press  .
- (b) To store the still image, press  .

## NOTE

1. The free space on the hard disk is displayed at the top of the screen as



. Images cannot be saved if there is insufficient free space.

If there is less than 35 GB of free space, the icon is highlighted in yellow. The color of the free space indicator changes to red when free space falls below 20 GB.

When free space falls below 1 GB, the message "HDD is full. Please delete some images in Patient Browser and try again." is displayed in the information message area on the screen and no more data can be stored. Ensure the required free space before saving the images.

2. If the free space is less than 1 GB at the end of the examination, the message "There is no enough space in Database. Please Delete some data in Patient Browser" is displayed and the examination cannot be terminated. Ensure that there is sufficient free space to terminate the examination.
3. Refer to section 2 for information regarding recording to media.

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(18) Entering a comment (annotation)

(a) Press  .



(b) Move the cursor to the desired position using the trackball.

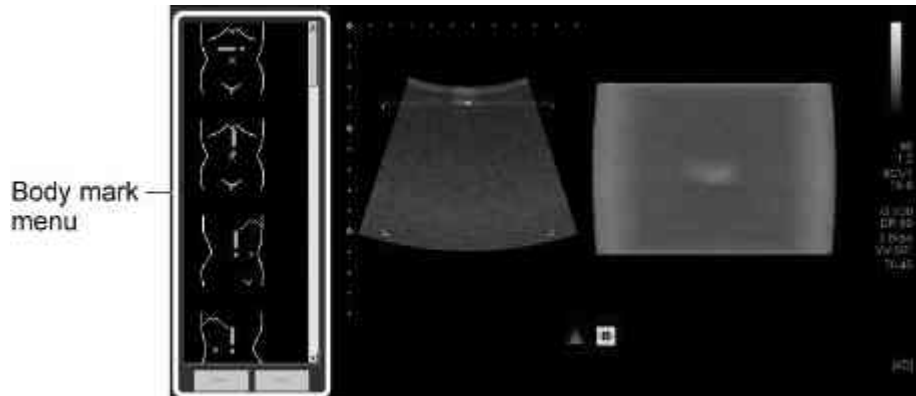
(c) Enter the characters using the keyboard.

(19) Resetting the image parameter settings to the default values





Press  to restore the default values.

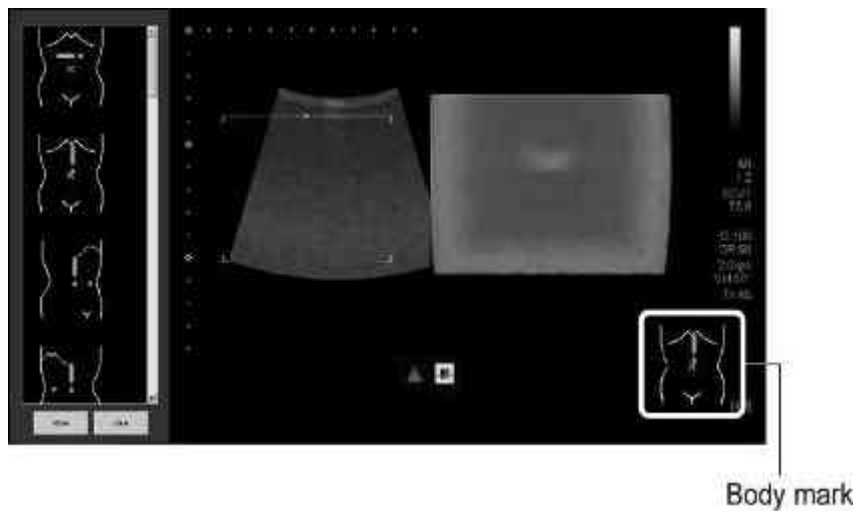
(20) Performing operations on the body mark

Press . The function icon is changed to  and the body mark menu is displayed.




(a) Displaying and changing the body mark



- Press  or  to display the body mark.
- Press  or  to change the type of the body mark.

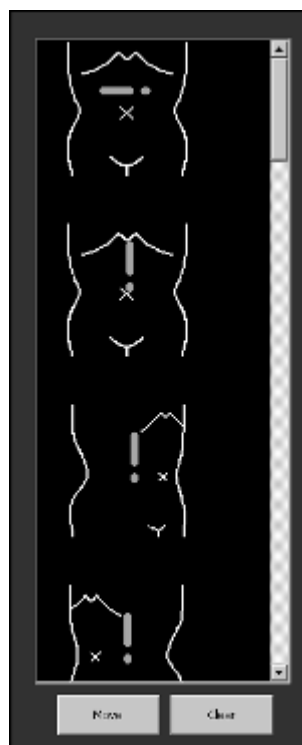


(b) Displaying and moving the transducer mark and changing the transducer mark angle

- Use the trackball to move the transducer mark.
- Rotate  to change the angle of the transducer mark.

NOTE Performing operations on the body mark using the body mark menu


Press  to change the function icon to .



1. To display and select the body mark


Use the trackball and  to select the desired body mark.

2. To move the body mark

(1) Place the cursor on [Move] and press .

(2) Use the trackball and  to move the body mark.

3. To delete the body mark




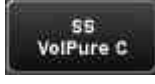


Place the cursor on [Clear] and press .





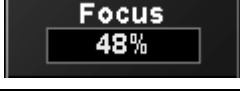
## 7.4 Operations From the Touch Panel

This subsection describes the touch panel menus used in 4D mode.

(1) Mode/Settings menu (page 1/2)

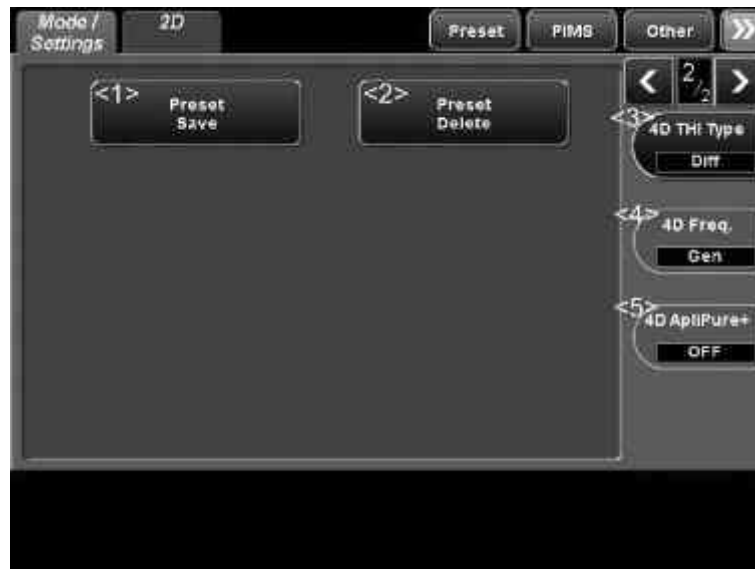







No.	Switch	Function
<1>	Sub-preset switch display area	Sub-preset switches are displayed. * The image is displayed with the adjusted image parameter values that are registered to the selected switch. (Refer to subsection 7.5 for details.)
<2>		Switches the display between real-time 3D image (4D Live) and ROI setting screen.
<3>		Switches the display between detailed 3D image and ROI setting screen. * The 2D image is displayed during sweeping.
<4>		VolPure switch (Refer to subsection 7.4.4 for details.)
		
		
<5>		Used to adjust the threshold.

No.	Switch	Function
<6>	 A black rectangular button with white text. The top line reads "4D Angle" and the bottom line reads "50".	Used to adjust the transducer sweep angle.
<7>	 A black rectangular button with white text. The top line reads "Resolution" and the bottom line reads "4".	Used to adjust the resolution of the 4D image in the sweep direction.
<8>	 A black rectangular button with white text. The top line reads "MIX" and the bottom line reads "60".	Used to adjust the gradient texture ratio.
<9>	 A black rectangular button with white text. The top line reads "Freq." and the bottom line reads "T6.0".	Used to select the transmission/reception frequency.
<10>	 A black rectangular button with white text. The top line reads "Focus" and the bottom line reads "48%".	Used to adjust the focal position.

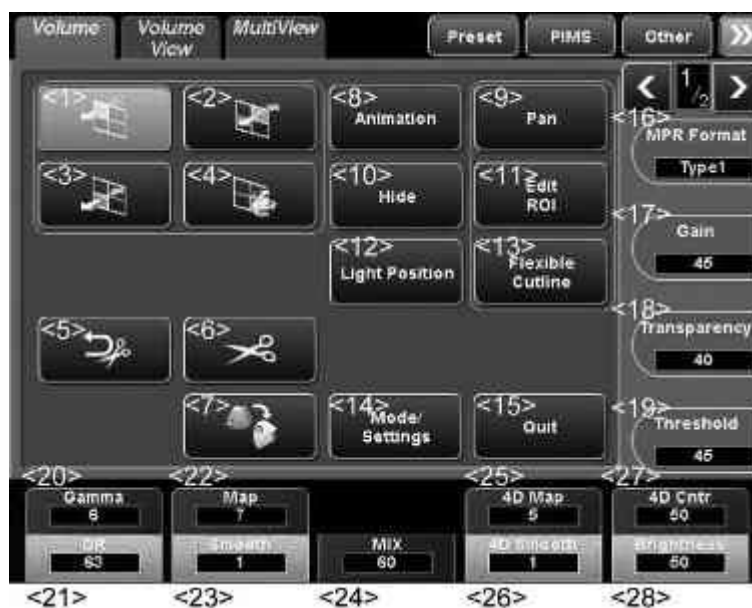


## (2) Mode/Settings menu (page 2/2)




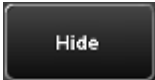










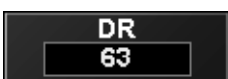







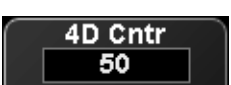

No.	Switch	Function
<1>		Used to save a sub-preset switch. (Refer to subsection 7.5 for details.)
<2>		Used to delete the selected sub-preset switch. (Refer to subsection 7.5 for details.)
<3>		Used to select the type of THI to be used in 4D mode from among Fund, PS, and Diff.
<4>		Used to select the type of frequency to be used in 4D mode from among Pene, Gen, and Reso.
<5>		Used to select ON/OFF of ApliPure+ during Single Sweep.

## (3) Volume menu (page 1/2)




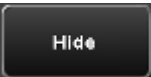





No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 4D image.
<5>		Undoes 4D image cutout.
<6>		Used to cut out a portion of the 4D image. <ol style="list-style-type: none"> <li>Set the cutout start position using the trackball and .</li> <li>Operate the trackball to trace the portion to be cut out.</li> <li>Press  at the cutout end position.</li> <li>The portion of the 4D image enclosed by the trace line is erased.</li> </ol>

No.	Switch	Function
<7>		Rotates the 4D image 90° in the clockwise direction. * Each time the switch is pressed, the 4D image is rotated further by 90°.
<8>		Used to set animation. * The Animation page is displayed.
<9>		Turns the panning operation ON/OFF.
<10>		Toggles Volume View image display (show/hide) (refer to subsection 7.4.3).
<11>		Used to adjust the ROI size.
<12>		Used to change the light source position. * The Light Position menu is displayed.
<13>		Used to adjust the flexible cut line.
<14>		Displays the Mode/Settings menu.
<15>		Terminates 4D mode.
<16>		Used to select the display orientation of plane B.
<17>		Used to adjust the gain of the MPR image.
<18>		Used to adjust the transparency of the 4D image.
<19>		Used to adjust the threshold.
<20>		Used to adjust the gamma curve of the MPR image.
<21>		Used to adjust the dynamic range of the MPR image.


No.	Switch	Function
<22>	 A rectangular switch with a dark background. The word "Map" is written in white at the top, and the number "7" is centered below it.	Used to adjust the hue of the MPR image.
<23>	 A rectangular switch with a dark background. The word "Smooth" is written in white at the top, and the number "1" is centered below it.	Used to adjust the degree of smoothing of the MPR image.
<24>	 A rectangular switch with a dark background. The word "MIX" is written in white at the top, and the number "60" is centered below it.	Used to adjust the gradient texture ratio.
<25>	 A rectangular switch with a dark background. The text "4D Map" is written in white at the top, and the number "5" is centered below it.	Used to adjust the hue of the 4D image.
<26>	 A rectangular switch with a dark background. The text "4D Smooth" is written in white at the top, and the number "1" is centered below it.	Used to adjust the degree of smoothing of the 4D image.
<27>	 A rectangular switch with a dark background. The text "4D Cntr" is written in white at the top, and the number "50" is centered below it.	Used to adjust the contrast of the 4D image.
<28>	 A rectangular switch with a dark background. The word "Brightness" is written in white at the top, and the number "50" is centered below it.	Used to adjust the brightness.

## (4) Volume menu (page 2/2)



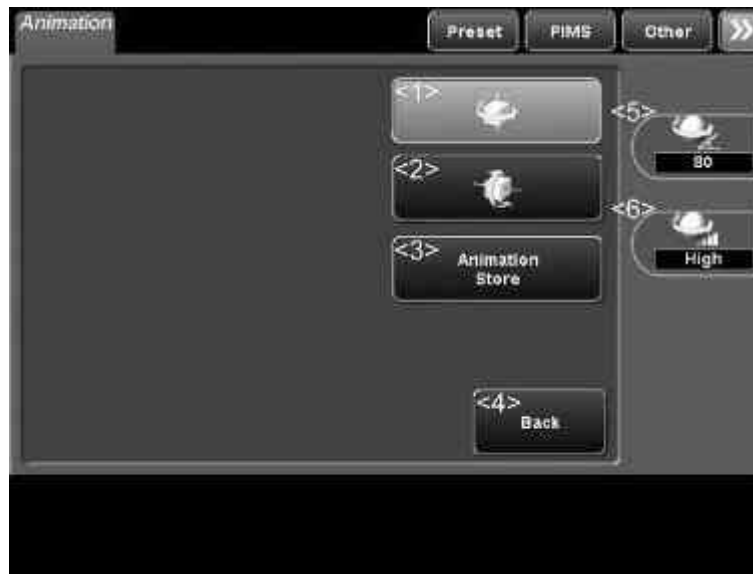
No.	Switch	Function
<1>		Selects the viewing direction.
<2>		Toggles Volume View image display (show/hide) (refer to subsection 7.4.3).
<3>		Changes the 4D image rendering mode to Inversion (in which lumens are displayed using tone reversal).
<4>		Changes the 4D image rendering mode to MIP.
<5>		Changes the 4D image rendering mode to Volume.
<6>		Used to change the rendering mode for the 4D image to "Volume Rendering" (to change the light source position). * The Light Position menu is displayed.
<7>		Switches the filter type between Filter and Gradient.

---

No.	Switch	Function
-	 *1	Changes the 4D image rendering mode to X-ray projection.

\* 1: This switch must be registered with the TCS customization tool. Contact your Canon Medical Systems service representative for details.

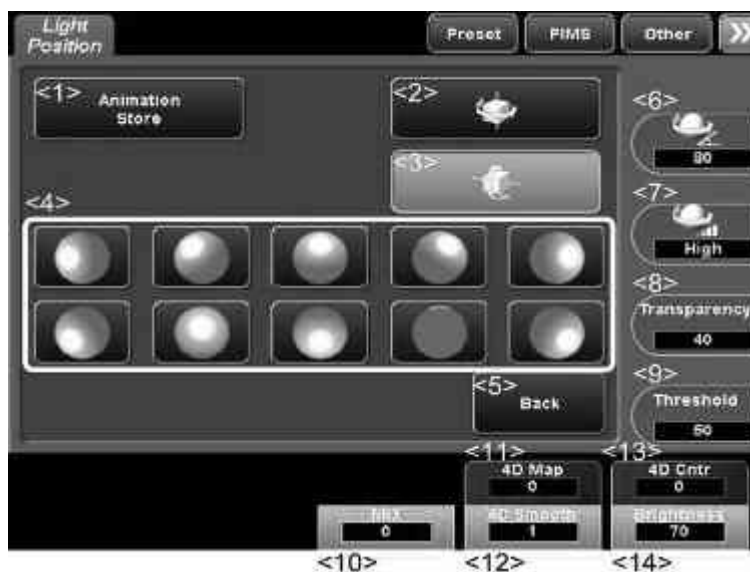
## (5) Animation menu









No.	Switch	Function
<1>		Displays the 4D image in animation mode (rotation around the Y axis).
<2>		Displays the 4D image in animation mode (rotation around the X axis).
<3>		Stores the animation display.
<4>		Terminates setting of the animation display. * Page 1/2 of the Volume menu is displayed.
<5>		Used to adjust the rotation angle of the animation display. * This switch is effective when animation display is selected.
<6>		Used to adjust the speed of the animation display. * This switch is effective when animation display is selected.









## (6) Light Position menu

To use Luminance mode, the optional USLM-X200A and a transducer that supports 4D mode are required.



No.	Switch	Function
<1>		Stores the animation display.
<2>		Displays the 4D image in animation mode (rotation around the Y axis).
<3>		Displays the 4D image in animation mode (rotation around the X axis).
<4>	 to	Displays the 4D image as viewed with the light source position indicated on the switch.
<5>		Used to close the Light Position menu. * The Volume menu (page 1/2) is displayed.
<6>		Used to adjust the rotation angle of the animation display. * This switch is effective when animation display is selected.

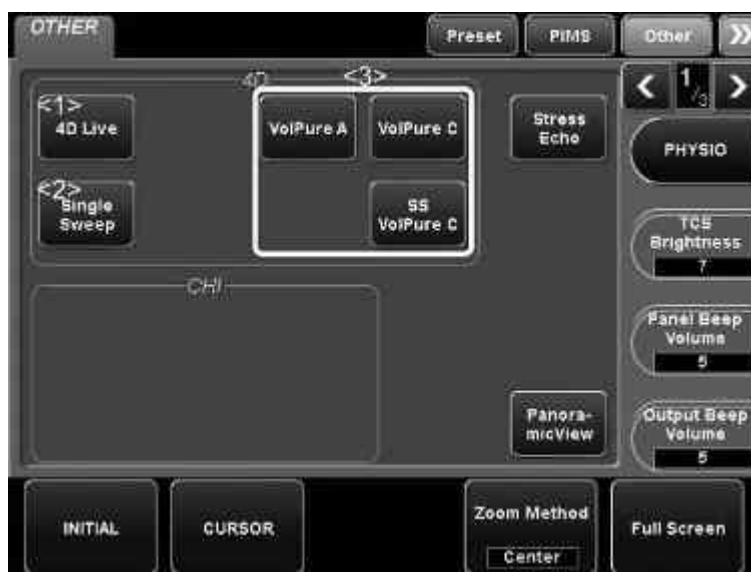






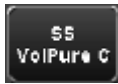
No.	Switch	Function
<7>		Used to adjust the speed of the animation display. * This switch is effective when animation display is selected.
<8>		Used to adjust the transparency of the 4D image.
<9>		Used to adjust the threshold.
<10>		Used to adjust the gradient texture ratio.
<11>		Used to adjust the hue of the 4D image.
<12>		Used to adjust the degree of smoothing of the 4D image.
<13>		Used to adjust the contrast of the 4D image.
<14>		Used to adjust the brightness.

## (7) 2D menu and M menu

Refer to the operation manual <<Fundamentals volume>> for the 2D menu and M menu on the touch panel.

## (8) Other menu (page 1/3)

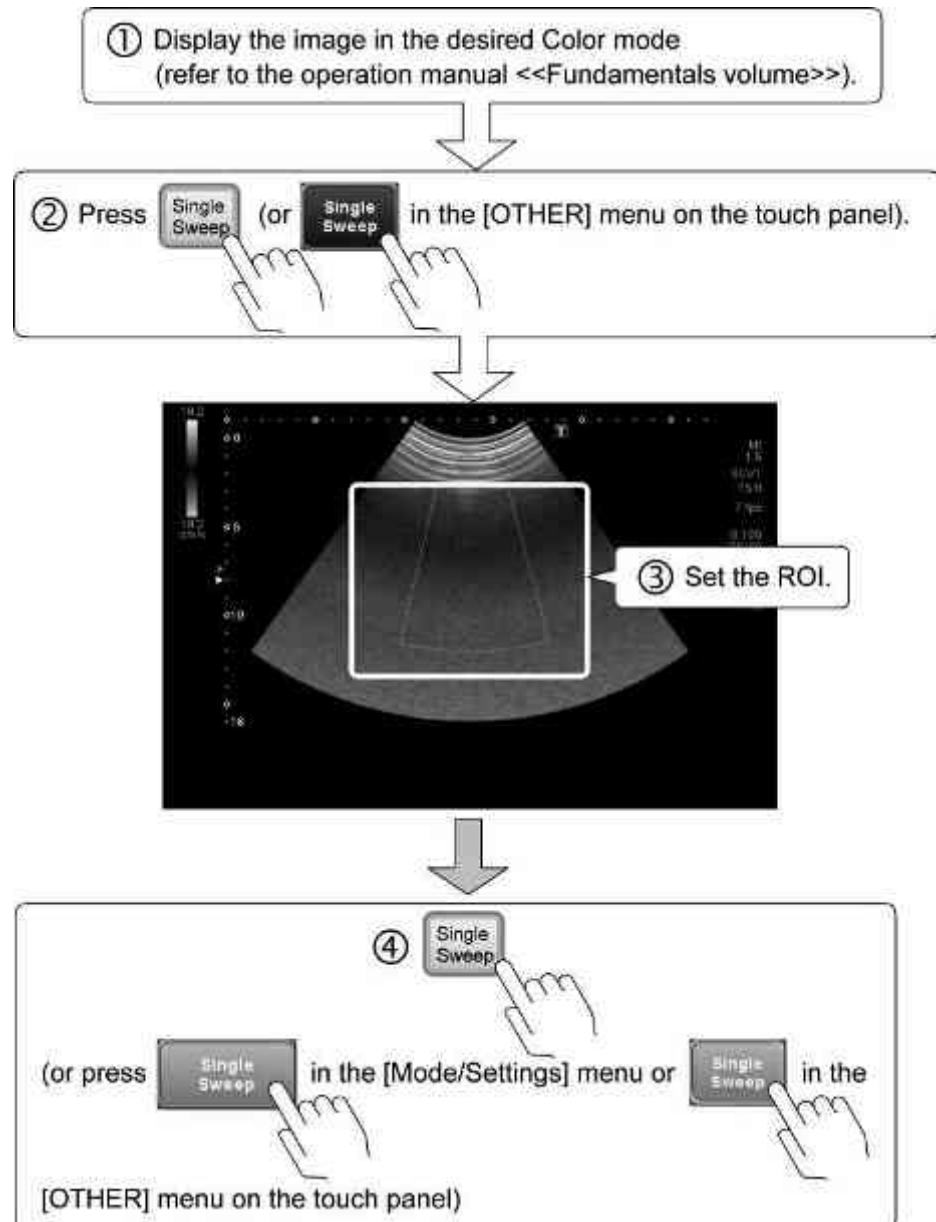


No.	Switch	Function
<1>		Switches between real-time 3D (4D Live) image display and the ROI setting screen.
<2>		Switches between the high-definition 3D image display and the ROI setting screen. * 2D images are displayed during transducer sweeping.
<3>		VolPure switch (Refer to subsection 7.4.4 for details.)
		
		

### 7.4.1 Volume Color

In Volume Color mode, 3D images can be displayed in Color mode.

- The Color mode can be selected from among CDI (Velocity), Power Angio, and Dynamic Flow™.
- For the transducers that support Volume Color, refer to subsection 5.7 "List of Available Transducers" of the operation manual <<Fundamentals volume>>.


















(b) Power Angio mode



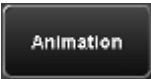

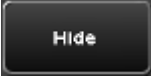








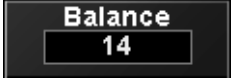




(c) Dynamic Flow mode

\* The optional USDF-X200A is required in order to use this function.



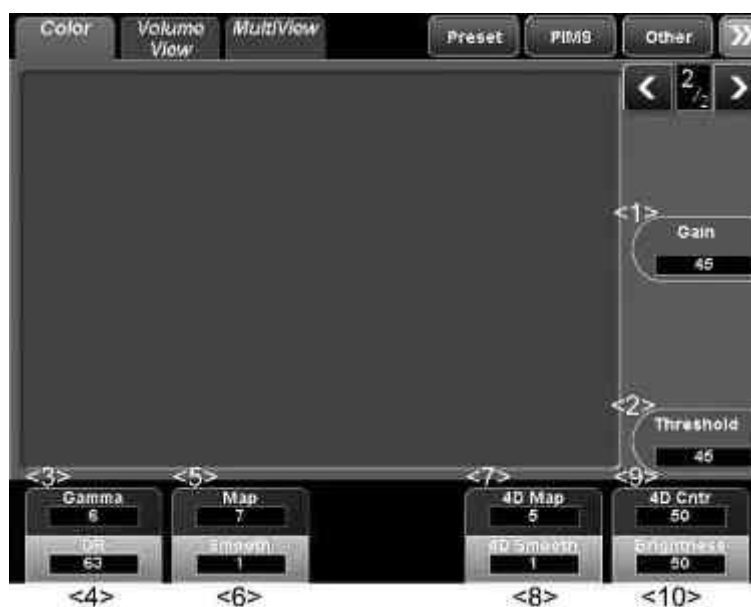
No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 4D image.
<5>		Displays the color volume image and MPR image.
<6>		Displays the color volume image and tissue cube cut image.
<7>		Displays the color volume image and transparent tissue cube cut image (for observing the distribution of blood vessels in the tissue).
<8>		Displays the cube cut image.
<9>		Displays the color volume image.
<10>		Displays the color MIP image.
<11>		Used to cut out a portion of the 4D image. <ul style="list-style-type: none"> <li>(a) Set the cutout start position using the trackball and  .</li> <li>(b) Operate the trackball to trace the portion to be cut out.</li> <li>(c) Press  at the cutout end position.</li> <li>(d) The portion of the 4D image enclosed by the trace line is erased.</li> </ul>




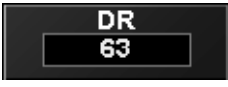


No.	Switch	Function
<12>		Undoes 4D image cutout.
<13>		Rotates the 4D image 90° in the clockwise direction. * Each time the switch is pressed, the 4D image is rotated further by 90°.
<14>		Displays the Animation menu for setting animation display mode.
<15>		Turns panning operation ON/OFF.
<16>		Toggles Volume View image display (show/hide) (refer to subsection 7.4.3).
<17>		Used to reverse the colors.
<18>		Displays the Mode/Settings menu.
<19>		Terminates 4D mode.
<20>		Used to select the display orientation of plane B.
<21>		Used to adjust the hue of the Color image.
<22>		Used to adjust the transparency of the Color image.
<23>		Used to adjust the threshold of the Color image.
<24>		Used to move the baseline vertically.
<25>		Used to adjust the balance between the Color image and BW image.
<26>		Used to adjust the coloring of the Power image.

No.	Switch	Function
<27>		Used to adjust the dynamic range of the Power image.





## (2) Color menu (page 2/2)

- \* The same switches are displayed for CDI mode, POWER ANGIO mode, and Dynamic Flow mode.
- \* To use Dynamic Flow mode, the USDF-X200A option is required.



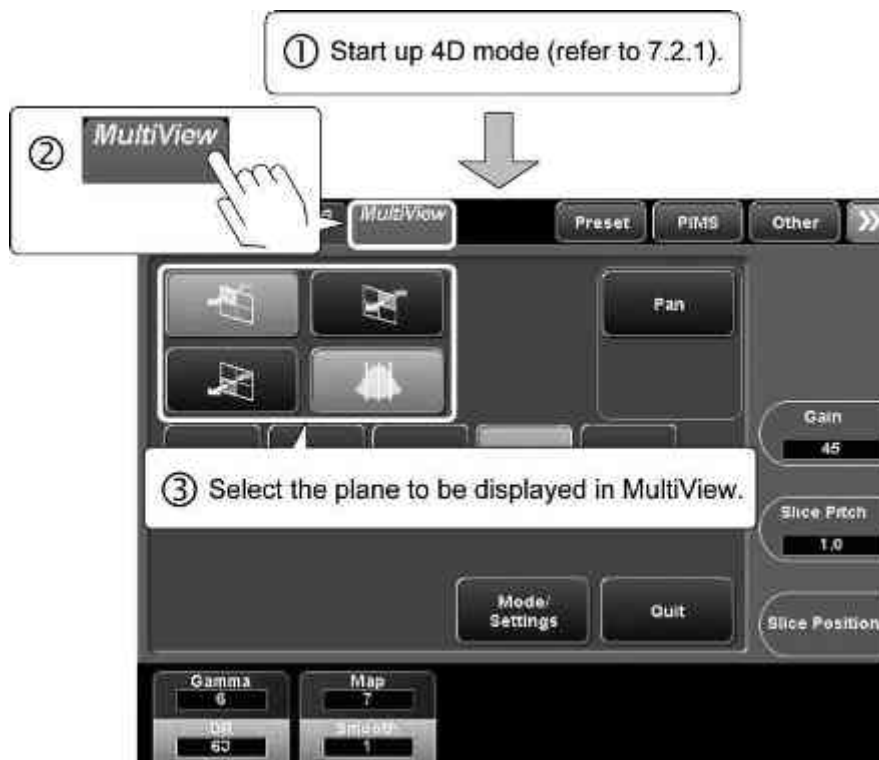
No.	Switch	Function
<1>		Used to adjust the gain of the MPR image.
<2>		Used to adjust the threshold.
<3>		Used to adjust the gamma curve of the MPR image.
<4>		Used to adjust the dynamic range of the MPR image.
<5>		Used to adjust the hue of the MPR image.
<6>		Used to adjust the smoothing of the MPR image.



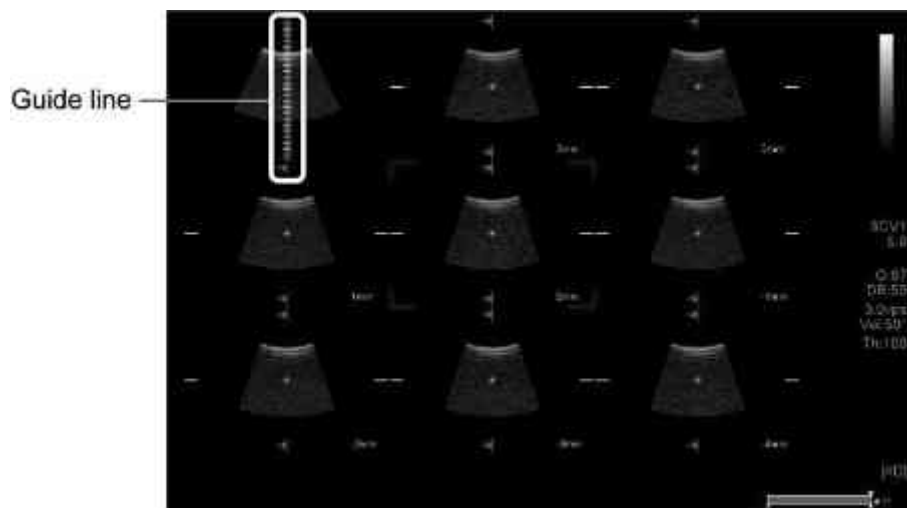
No.	Switch	Function
<7>	 A rectangular button with a dark background and white text. The text reads "4D Map" on the top line and "5" on the bottom line.	Used to adjust the hue of the 4D image.
<8>	 A rectangular button with a dark background and white text. The text reads "4D Smooth" on the top line and "1" on the bottom line.	Used to adjust the smoothing of the 4D image.
<9>	 A rectangular button with a dark background and white text. The text reads "4D Cntr" on the top line and "50" on the bottom line.	Used to adjust the image contrast.
<10>	 A rectangular button with a dark background and white text. The text reads "Brightness" on the top line and "50" on the bottom line.	Used to adjust the image brightness.

## 7.4.2 MultiView mode

Multiple planes (up to 16) of a volume are displayed simultaneously in MultiView mode.



<Image display>

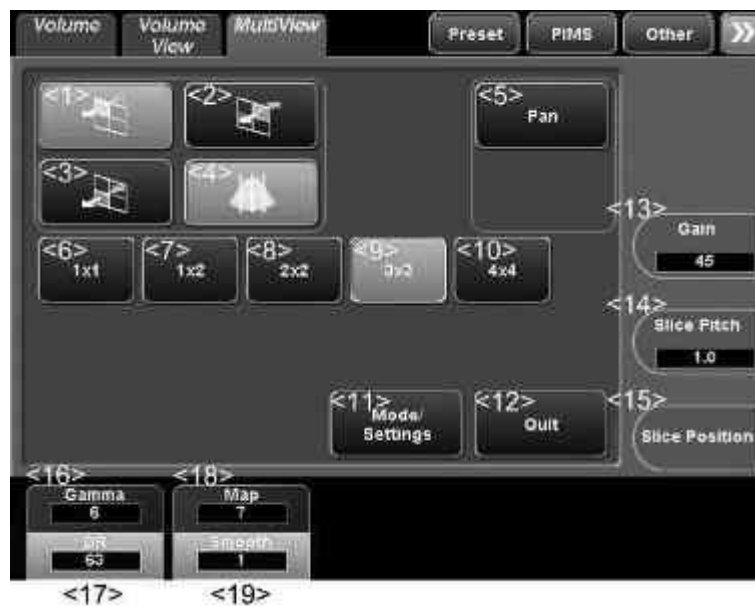








NOTE The image corresponding to the position along the guide line (green line) is indicated by the four corner marks.














\* The same operation is possible using



#### (1) MultiView menu

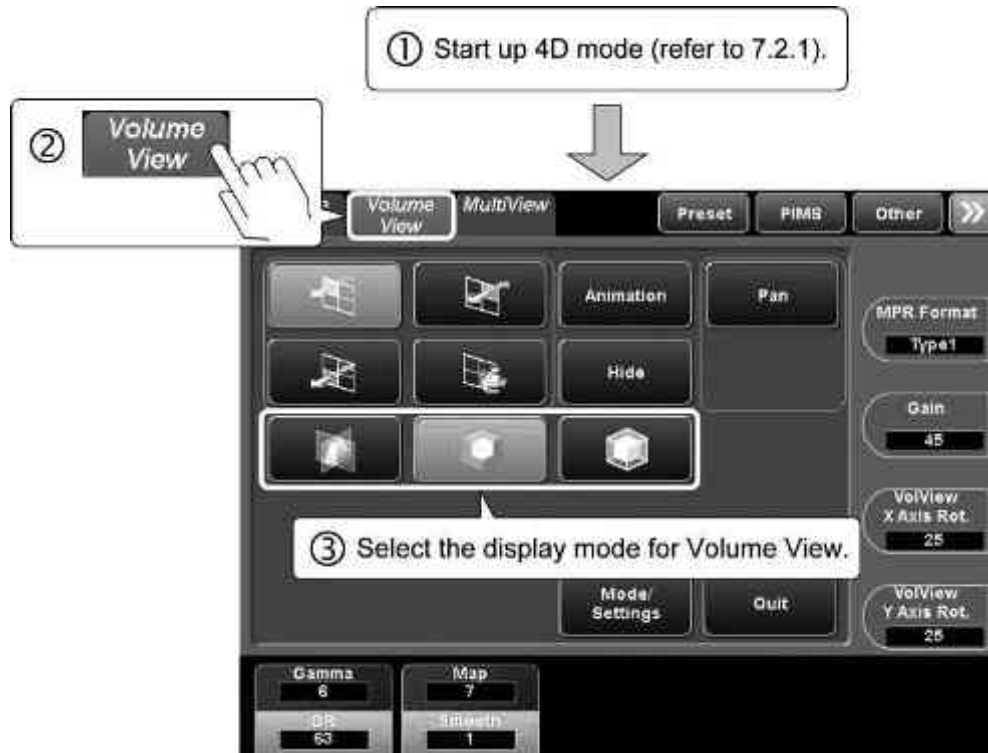


No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Toggles the display of guideline image ON/OFF.
<5>		Turns the panning operation ON/OFF.
<6>		Displays a single image in full-screen mode.

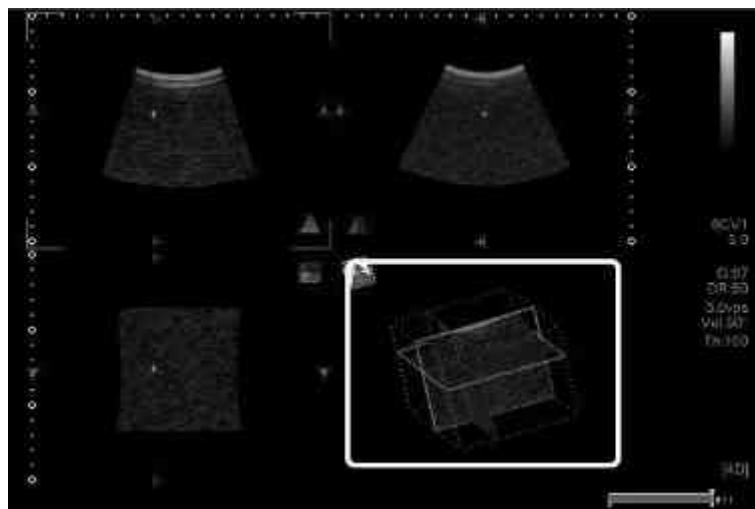
No.	Switch	Function
<7>		Displays two images in 2-frame mode.
<8>		Displays two images in 4-frame mode.
<9>		Displays nine images in 9-frame mode.
<10>		Displays 16 images in 16-frame mode.
<11>		Displays the Mode/Settings menu.
<12>		Terminates 4D mode.
<13>		Used to adjust the gain of the MPR image.
<14>		Used to adjust the intervals of the guidelines.
<15>		Used to change the position of the planar image on the guideline image.
<16>		Used to adjust the gamma curve of the MPR image.
<17>		Used to adjust the dynamic range of the MPR image.
<18>		Used to adjust the hue of the MPR image.
<19>		Used to adjust the degree of smoothing of the MPR image.

### 7.4.3 Volume View

Three orthogonal planes are displayed as one image.



<Image display>

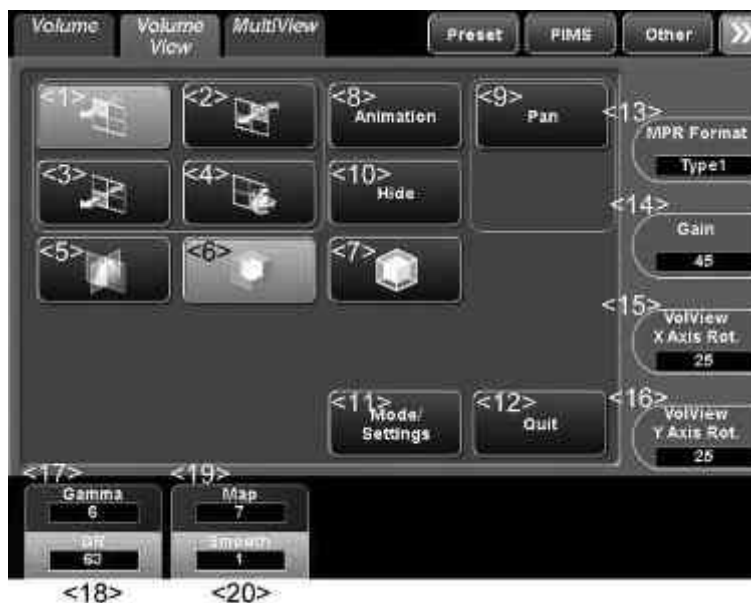







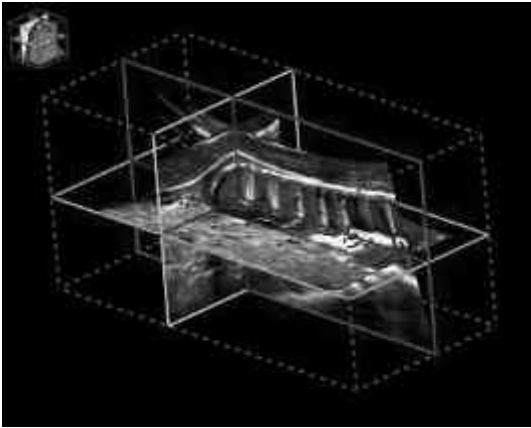
**NOTE**


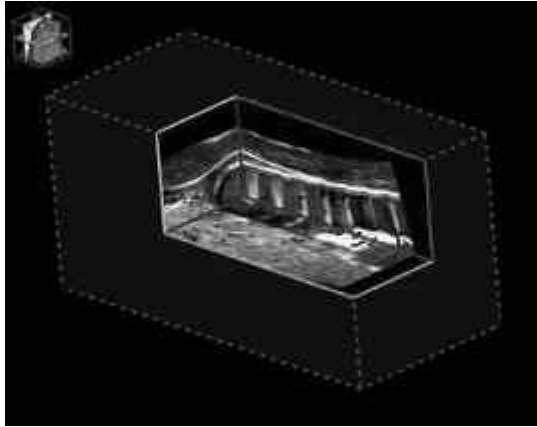

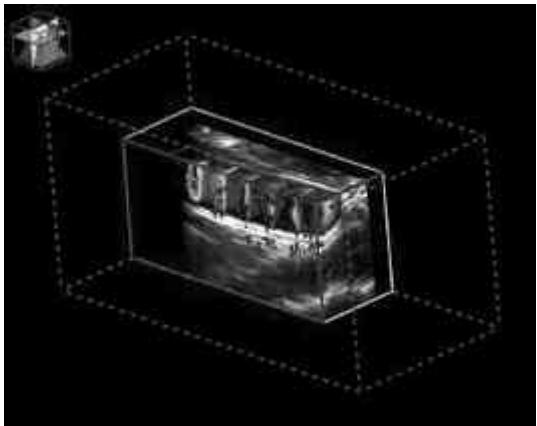
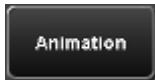

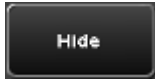



The position of the plane can be adjusted using





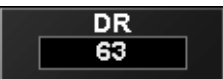




## (1) Volume View menu



No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 4D image.
<5>		Displays the volume image in Plane mode.
		

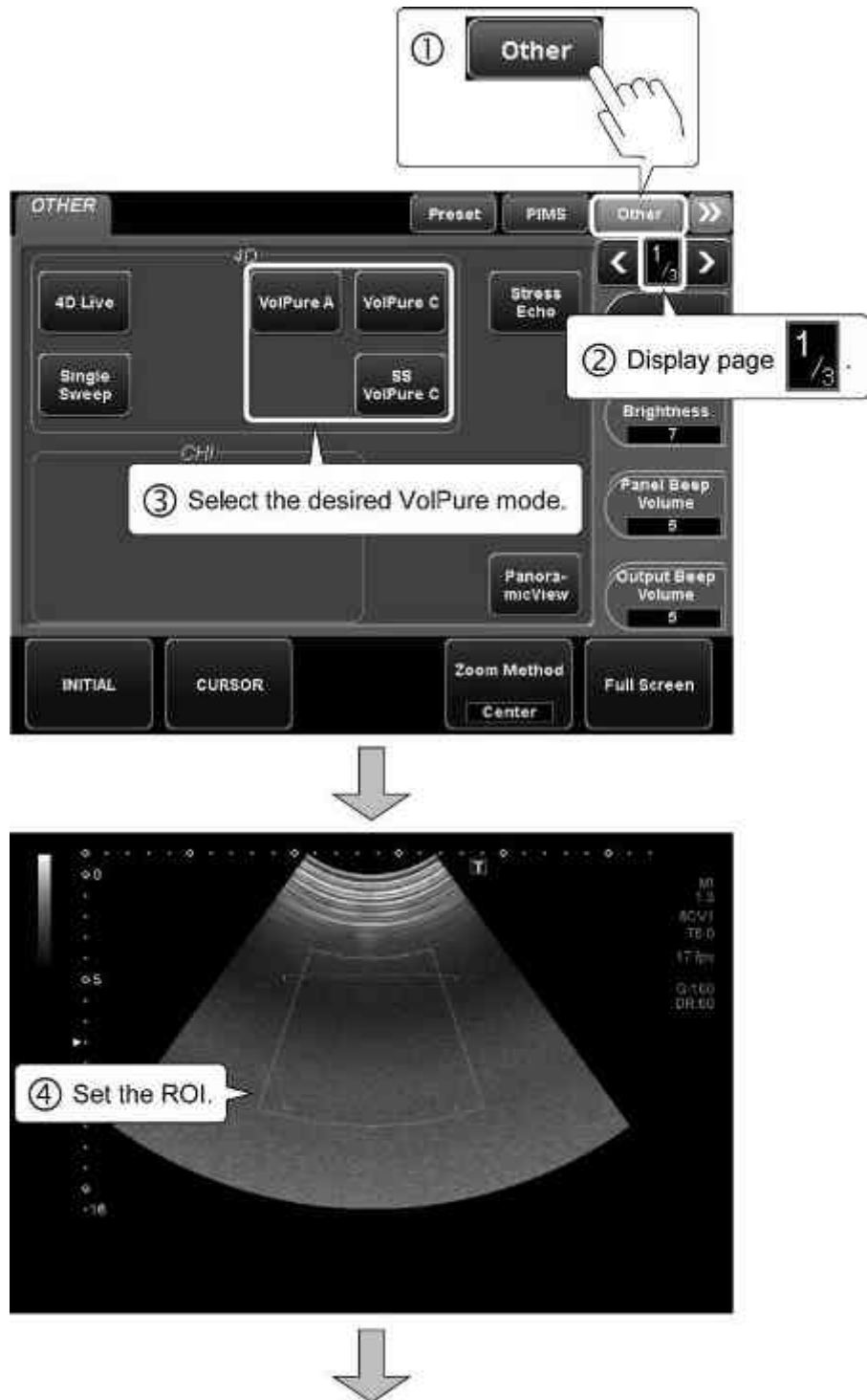
No.	Switch	Function
<6>		Displays the volume image in Niche mode. 
<7>		Displays the volume image in Box mode. 
<8>		Displays the Animation menu for setting animation display mode.
<9>		Turns panning operation ON/OFF.
<10>		Toggles Volume View image display (show/hide).
<11>		Displays the Mode/Settings menu.
<12>		Terminates 4D mode.
<13>		Used to select the display orientation of plane B.

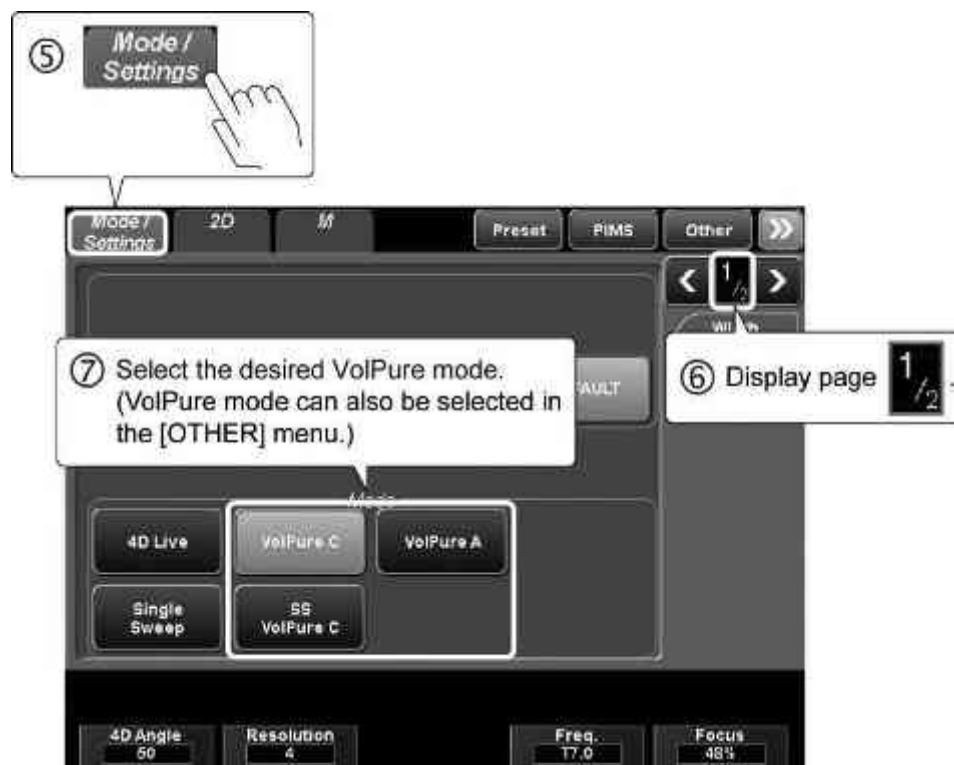
No.	Switch	Function
<14>		Used to adjust the gain of the MPR image.
<15>		Used to rotate the 4D image around the X axis.
<16>		Used to rotate the 4D image around the Y axis.
<17>		Used to adjust the gamma curve of the MPR image.
<18>		Used to adjust the dynamic range of the MPR image.
<19>		Used to adjust the hue of the MPR image.
<20>		Used to adjust the degree of smoothing of the MPR image.



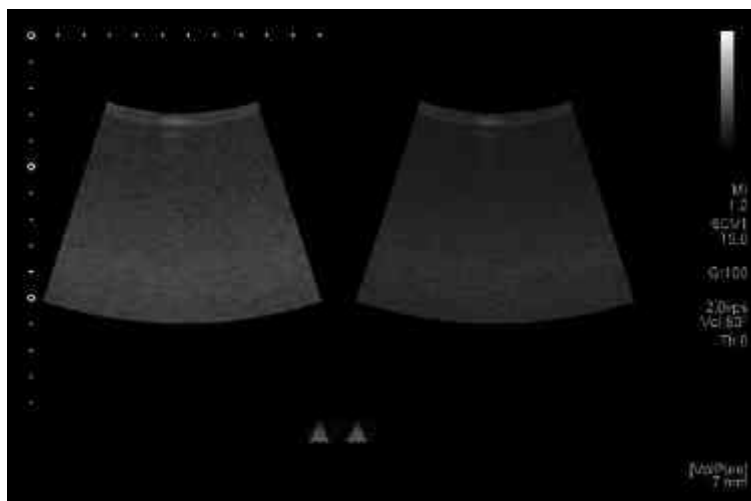
### 7.4.4 VolPure

Tortuous structures can be displayed with improved continuity in VolPure mode. The speckle noise typical to ultrasound images is reduced to provide images with higher contrast resolution.

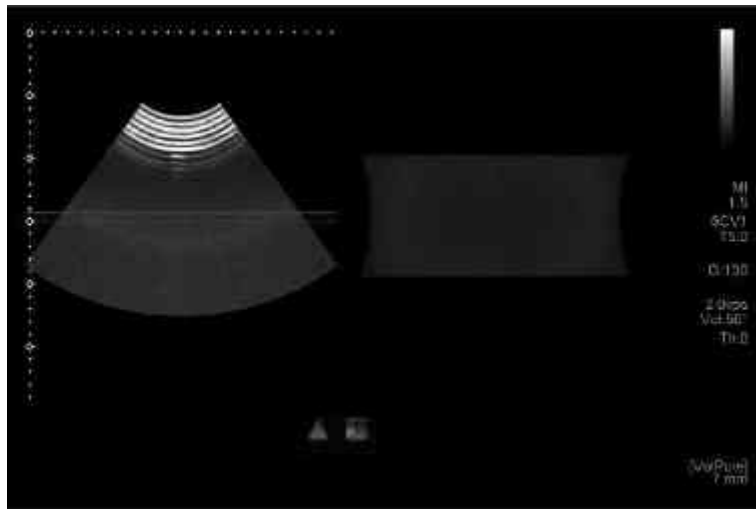




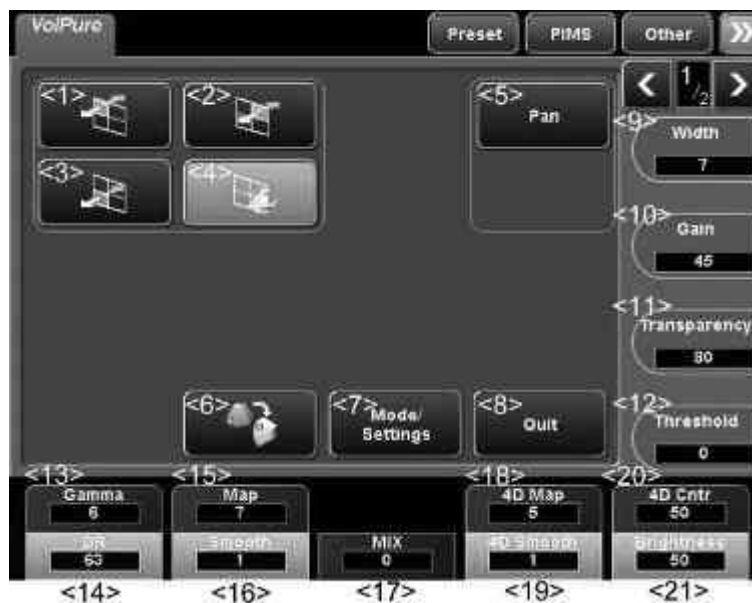
<<Image display for VolPure A>>








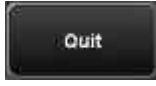



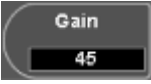
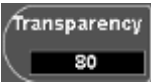


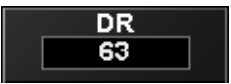







<<Image display for VolPure C>>



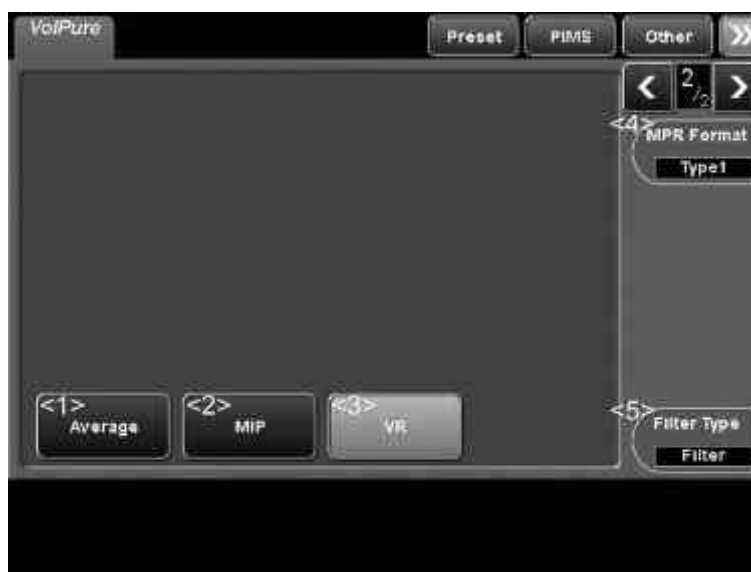
## (1) VolPure menu (page 1/2)



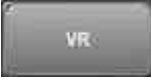
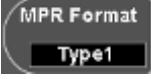



No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 4D image.
<5>		Turns the panning operation ON/OFF.
<6>		Rotates the 4D image 90° in the clockwise direction. * Each time the switch is pressed, the 4D image is rotated further by 90°.
<7>		Displays the Mode/Settings menu.
<8>		Terminates 4D mode.

No.	Switch	Function
<9>		Used to adjust the ROI range (thickness) for the data to be used to reconstruct the VolPure image.
<10>		Used to adjust the gain of the MPR image.
<11>		Used to adjust the transparency of the 4D image.
<12>		Used to adjust the threshold.
<13>		Used to adjust the gamma curve of the MPR image.
<14>		Used to adjust the dynamic range of the MPR image.
<15>		Used to adjust the hue of the MPR image.
<16>		Used to adjust the degree of smoothing of the MPR image.
<17>		Used to adjust the gradient texture ratio.
<18>		Used to adjust the hue of the 4D image.
<19>		Used to adjust the degree of smoothing of the 4D image.
<20>		Used to adjust the contrast of the 4D image.
<21>		Used to adjust the brightness.

## (2) VolPure menu (page 2/2)



No.	Switch	Function
<1>		Changes the VolPure image rendering mode to Average.
<2>		Changes the VolPure image rendering mode to MIP.
<3>		Changes the VolPure image rendering mode to Volume.
<4>		Used to select the display orientation of plane B.
<5>		Switches the filter type between Filter and Gradient.

## 7.4.5 4D measurement

### 7.4.5.1 MPR measurement

Start up MPR measurement mode (refer to subsection 7.3). Select the desired measurement item in the Mpr Meas. Menu on the touch panel.

---

**NOTE**

## 1. CTAR measurement

(1) In CTAR measurement, the ratio of the areas of two ellipses (cardiac area/thoracic area × 100 (%)) and the angle between the axes of the ellipses (cardiac axis) are obtained.

\* The measurement item can be selected from among the three options using "CTAR Tool (Available after PR)" in the preset menu. Refer to the operation manual <<Measurements volume>> for details.

(2) In CTAR measurement, first measure the thoracic area (in the dorsoventral direction) and then measure the cardiac area (from the base to the apex).

(3) When the thoracic area is to be measured in CTAR measurement, set the measurement start point on the spine.

If measurement is performed with the start point set at a location other than the spine, correct measurement results cannot be obtained.

(4) Do not perform CTAR measurement using a horizontally flipped image. Correct measurement results cannot be obtained.

2. When the measurement range is being edited, the measurement lines are displayed in the following colors.

(1) Distance measurement : White

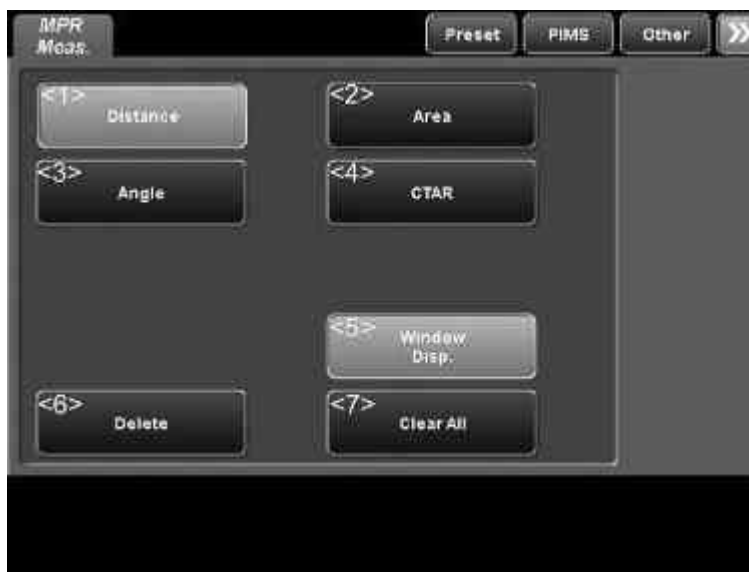
(2) Angle measurement : Yellow

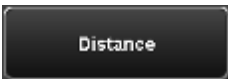




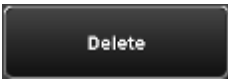
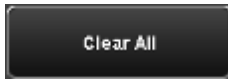
(3) Area measurement : Bright green

(4) CTAR measurement : White

---

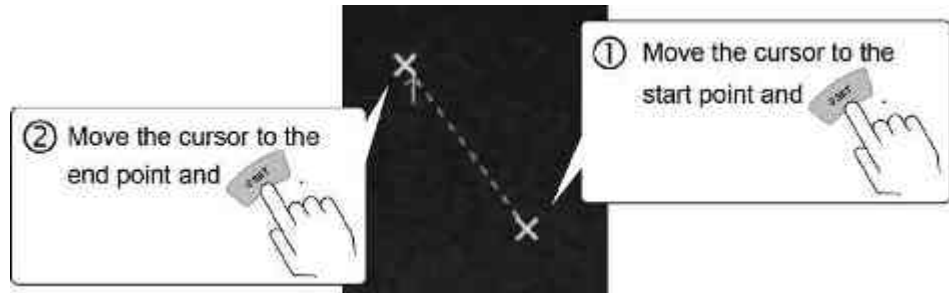
## (1) MPR Meas. menu



No.	Switch	Function
<1>		Starts distance measurement (Distance) mode.
<2>		Starts the area/circumference measurement (Area) mode.
<3>		Starts the angle measurement (Angle) mode.
<4>		Starts Cardiothoracic area ratio (CTAR) measurement mode.
<5>		Toggles display of the measurement results (show/hide).
<6>		Deletes the value measured most recently or the selected measurement result.
<7>		Deletes all the measured values.

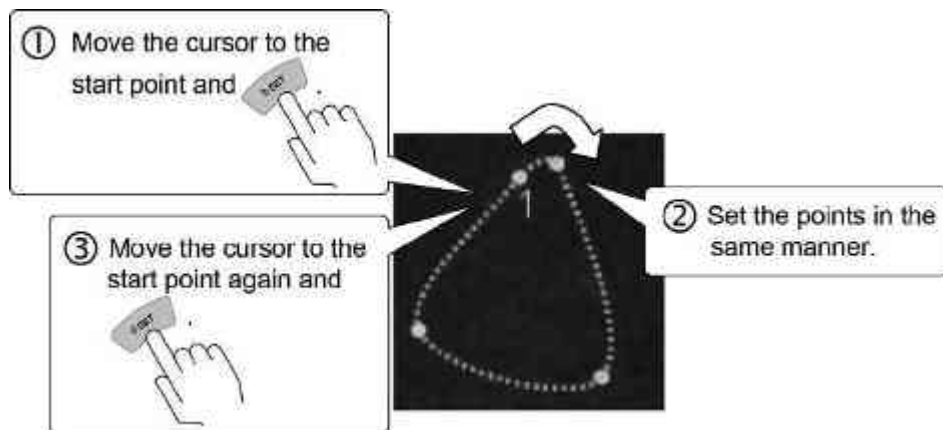


<<Distance measurement (Distance)>>



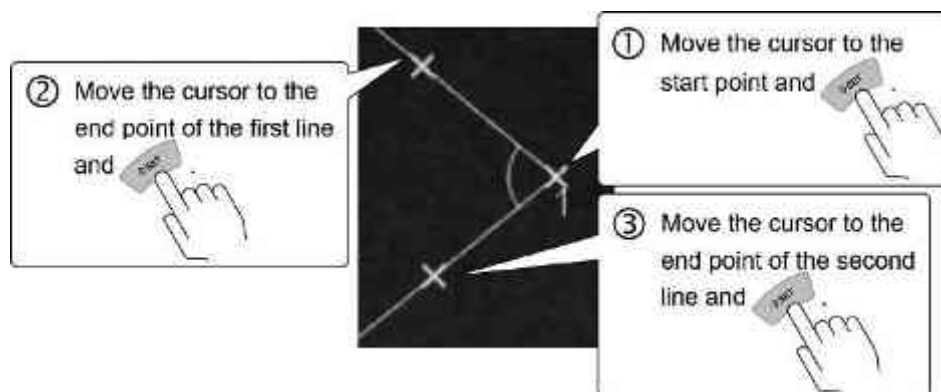
Item	Measurement result
Dist	0.0 to 999.9 (mm)

<<Area/circumference measurement (Area)>>



Item	Measurement result
Area	0.00 to 999.99 (cm <sup>2</sup> )
Circ	0.0 to 999.9 (mm)

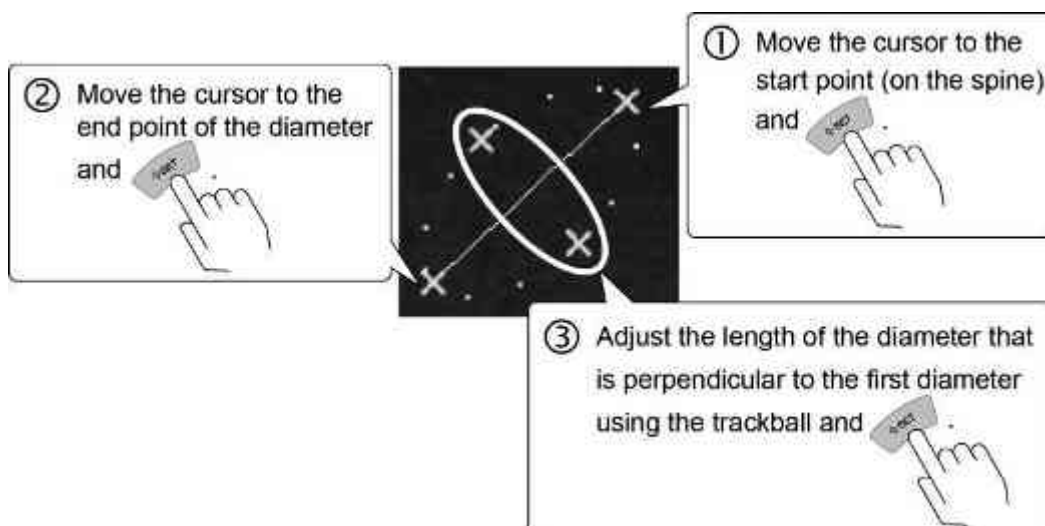
## &lt;&lt;Angle measurement (Angle)&gt;&gt;



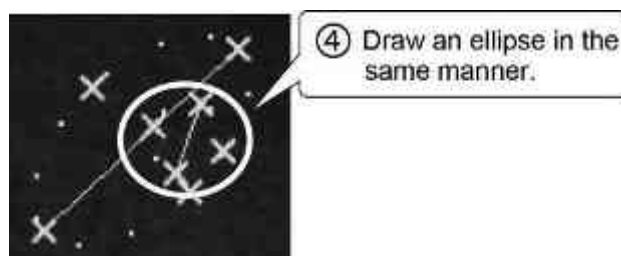
Item	Measurement result
Angle	0.00 to 180.0 (°)

## &lt;&lt;CTAR measurement&gt;&gt;

## (a) Measuring the thoracic area



## (b) Measuring the cardiac area








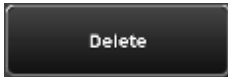
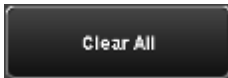
Item	Measurement result
Ratio	0.00 to 999.99 (%)
Cardiac Axis	0.00 to 180.0 (°)

## 7.4.5.2 Volume measurement

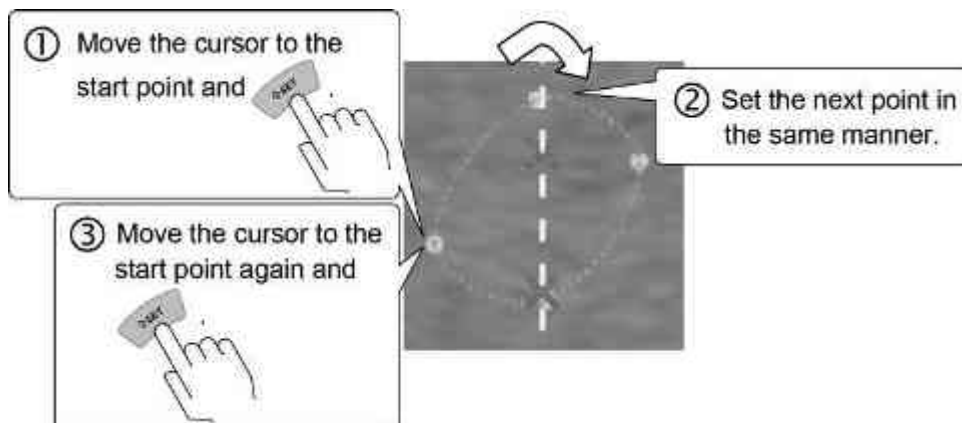
Start up volume measurement mode (refer to subsection 7.3). Select the desired item in the Volume Meas. menu.

(1) Volume Meas. menu



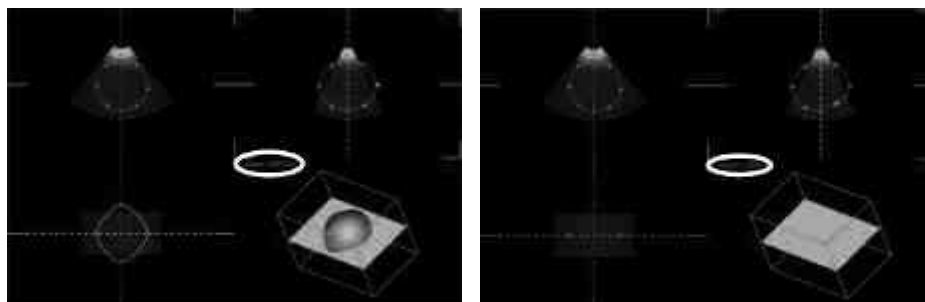
No.	Switch	Function
<1>		Starts calculation for Volume measurement. * This switch becomes effective after the measurement range is specified on plane A or plane B.
<2>		Displays the next plane.
<3>		Displays the previous plane.
<4>		Doubles the number of planes splitting the volume.
<5>		Halves the number of planes splitting the volume.
<6>		Deletes the most recent measurement result or selected measurement result.
<7>		Deletes all the measurement results.

&lt;&lt;Volume measurement (Volume)&gt;&gt;



Item	Measurement result
Volume	0.00 to 999.99 (mL)

NOTE To edit the measurement range specified on plane A or plane B



<<Display at the time the measurement is set>>

<<Editing after the measurement is set>>

1. If the measurement range is edited after the measurement result is displayed, the measurement result display is changed to "0.0 mL". To perform measurement again with the new range setting, select

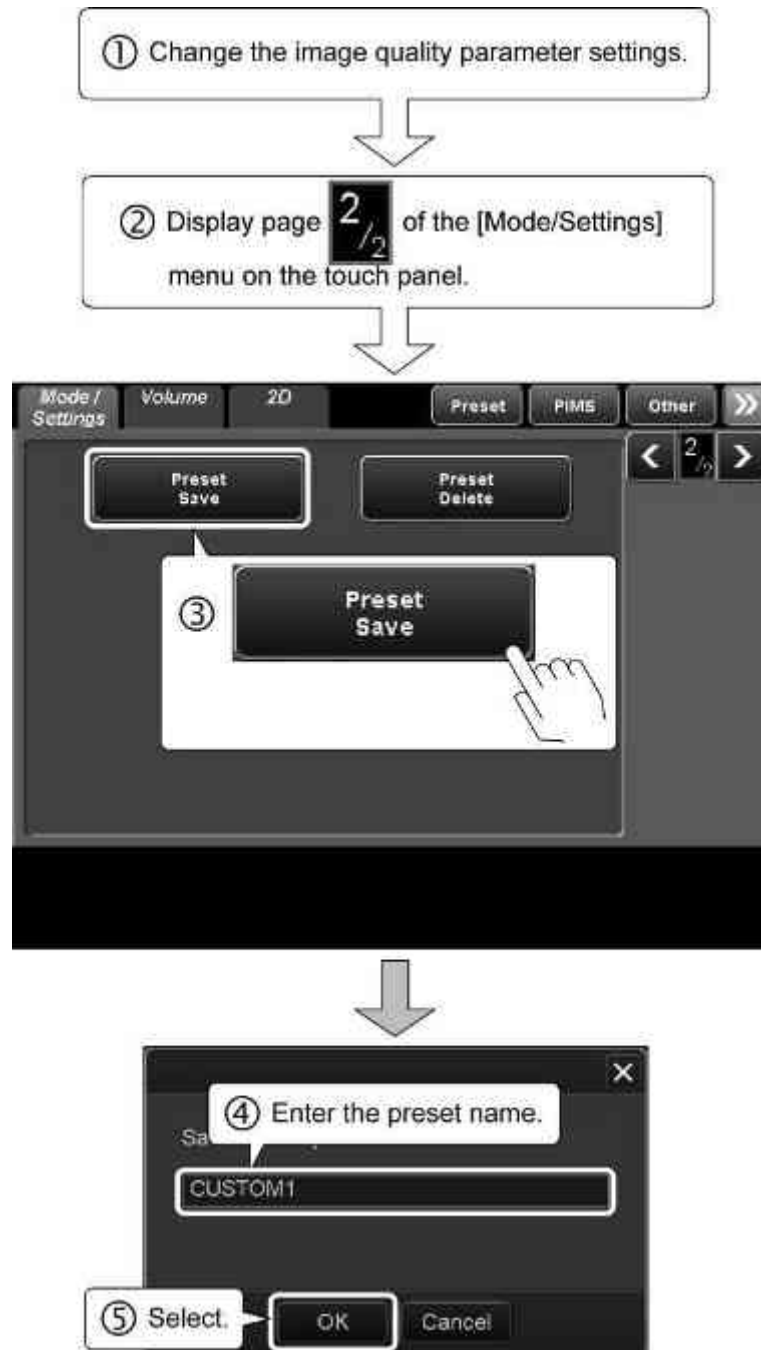


2. The trace line is displayed in bright green during editing.

## 7.5 Sub-Presets for 4D

### (1) Creating sub-presets for 4D

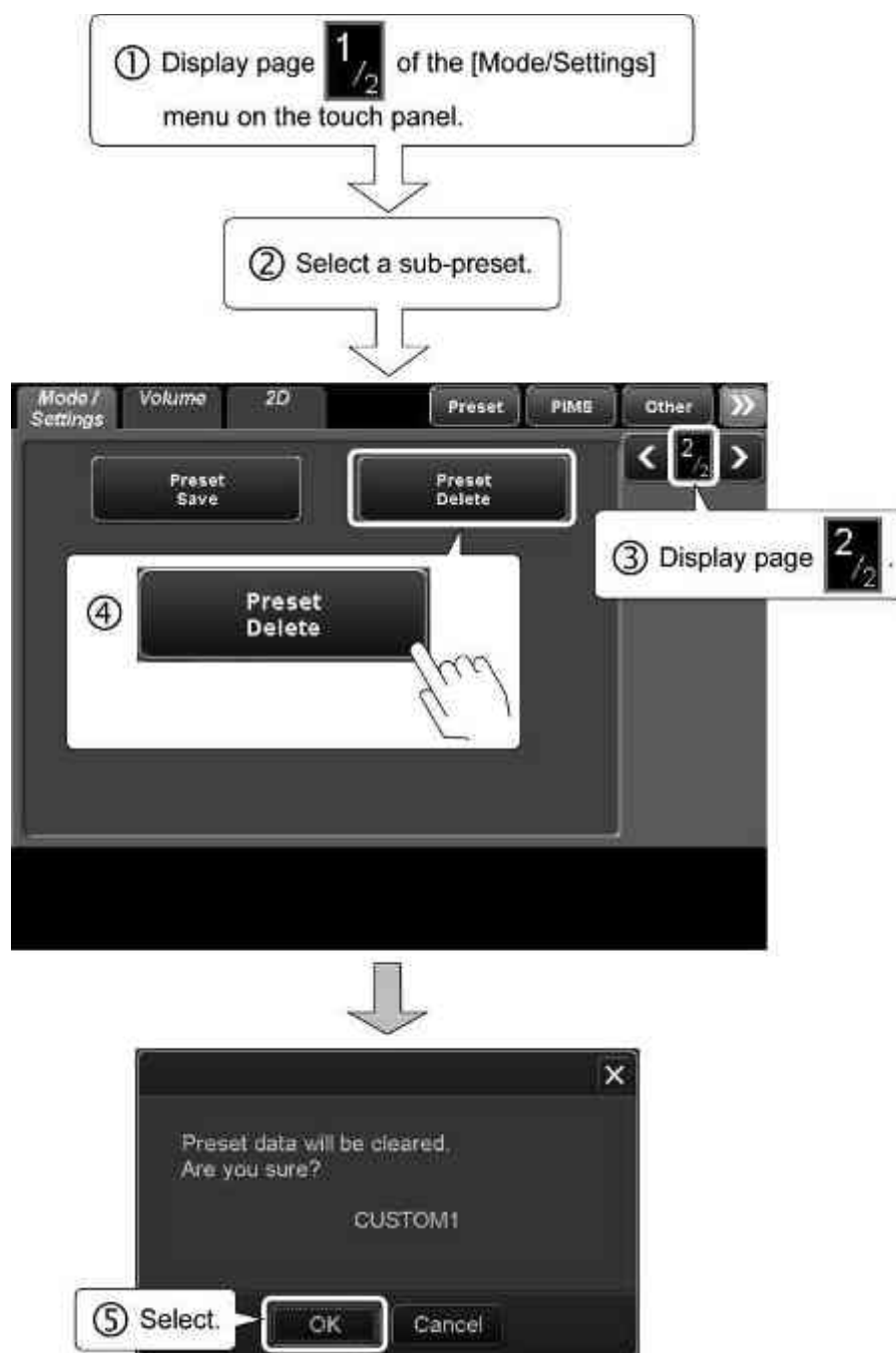
A set of image quality parameter settings can be stored as a sub-preset. Up to seven sub-presets in addition to [DEFAULT] can be stored.



\* If [OK] is selected without changing the preset name, the existing preset is overwritten.

- (2) Deleting sub-presets for 4D  
Stored sub-presets can be deleted.


**NOTICE** Do not delete [DEFAULT]. Doing so may cause a system malfunction.



## 7.6 Storage of 4D Data

The table below shows the type of images stored when Still Store, Clips Store, or 4D Data Store is executed.

Display	Details	Still Store	Clips Store	4D Data Store
Volume	Real-time 3D image (4D Live)	Still image	-	-
	3D image (4D Freeze, MultiView, Volume View)	Still image	Dynamic image	4D data
	High-resolution 3D image, MultiView, Volume View	Still image	-	4D data
Volume Color	High-resolution 3D image, MultiView, Volume View	Still image	-	4D data
VolPure	Real-time 3D image (4D Live)	Still image	-	-
	3D image (4D Freeze)	Still image	Dynamic image	4D data
	High-resolution 3D image	Still image	-	4D data
4D measurement	4D measurement	Still image	-	-

- NOTE
1. The message "No R Wave detected. Image for x.x sec will be stored." may be displayed when a 4D dynamic image is stored. However, the operation will be performed normally.
  2. To refer to stored 4D images, select an image from Patient Browser, Exam Review, or Thumbnails.
  3. For 4D images in Exam Review, the following functions are not supported.
    - (1) Reflecting rotations and adjustments performed on frozen images
    - (2) Matching 4D images and the image acquisition range
    - (3) Reflecting rotations and adjustments of frozen images performed on the thumbnails created when  is pressed

## 7.7 Accuracy of Measurement in 4D Mode

<Accuracy of each measurement parameter>

Parameter	Range	Accuracy
Distance	Up to 40 cm	< $\pm 10\%$
Area	Up to 800 cm <sup>2</sup>	< $\pm 15\%$
Circumference	Up to 120 cm	< $\pm 15\%$
Angle	0° to 180°	< $\pm 1^\circ$
Volume	Up to 20000 mL	< $\pm 17\%$

<Conditions>

The accuracies of the above measurements are applicable to MPR images that are acquired and created using the PVU-674MV with the factory default settings. If the gradient of the measurement surface in sweep scanning is different from the factory default settings, the accuracies are not guaranteed.






## **8.** **Stress Echo**

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- 
- ⚠WARNING**
- 1. If any abnormality is observed with the patient during use of the pharmacologic stress agent, stop the examination and perform appropriate treatment.**
  - 2. If any abnormality is observed with the patient during an exercise test such as a treadmill test, stop the examination and perform appropriate treatment. Canon Medical Systems is not liable for any harm to the patient resulting from an exercise test.**
- 

- NOTE
1. Handle the pharmacologic stress agent (such as Dobutamin) as described in the instructions supplied with it. Canon Medical Systems is not liable for any damage or injury to the patient resulting from misuse of pharmaceuticals.
  2. Check the side effects of the pharmacologic stress agent with its manufacturer.
  3. The free space on the hard disk is displayed at the top of the screen as . Images cannot be saved if there is insufficient free space. If there is less than 35 GB of free space, the icon is highlighted in yellow. The color of the free space indicator changes to red when free space falls below 20 GB. When the free space falls below 1 GB, the message "HDD is full. Please delete some images in Patient Browser and try again." is displayed in the information message area on the screen and no more data can be stored. Ensure the required free space before saving the images.
  4. If the free space is less than 1 GB at the end of the examination, the message "There is no enough space in Database. Please Delete some data in Patient Browser" is displayed and the examination cannot be terminated. Ensure that there is sufficient free space to terminate the examination.
  5. The functions of the switches displayed on the touch panel can be assigned to the user function keys on the main panel. Consult your Canon Medical Systems service representative for details.
-

## 8.1 Overview of Stress Echo

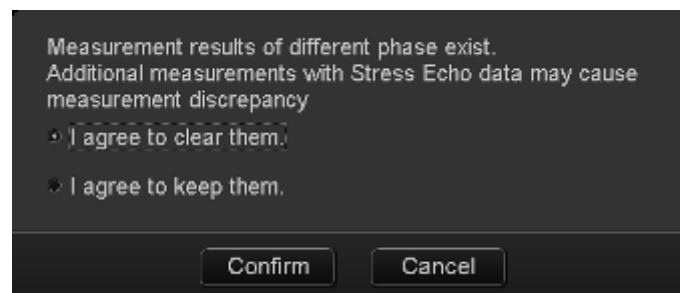
The Stress Echo function provides acquisition, evaluation, and digital archiving of image data for exercise and pharmacological stress echo examinations.

Acquisition of data for multiple phases and views is possible.

- To use this function, the optional USSE-X200A is required.

## 8.2 Startup and Termination of Stress Echo

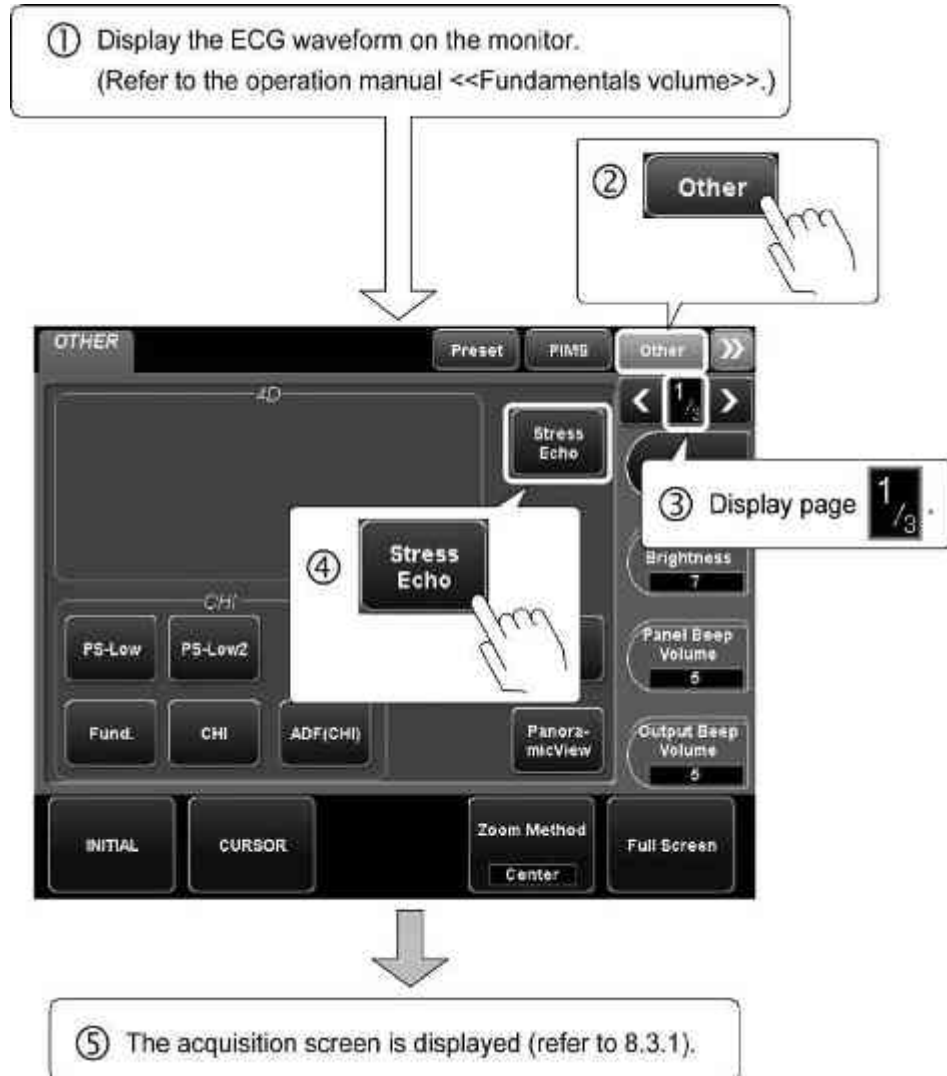
- NOTE
1. Before starting Stress Echo, enter 2D Single mode.
  2. Do not start Stress Echo while displaying the annotation.
  3. If the R-wave position on the waveform cannot be identified, acquisition is started from the beginning of the current view.
  4. To record the ECG waveform or PCG waveform together with the acquired image, display the waveform within the image acquisition area.
  5. If the results on the Worksheet screen are to be saved, save them before terminating Stress Echo mode. When Stress Echo mode is started next time, the previous measurement values are cleared.
  6. When the phase is switched in a Stress Echo exam and the application measurement is started up again after the application measurement was performed, the following dialog is displayed.



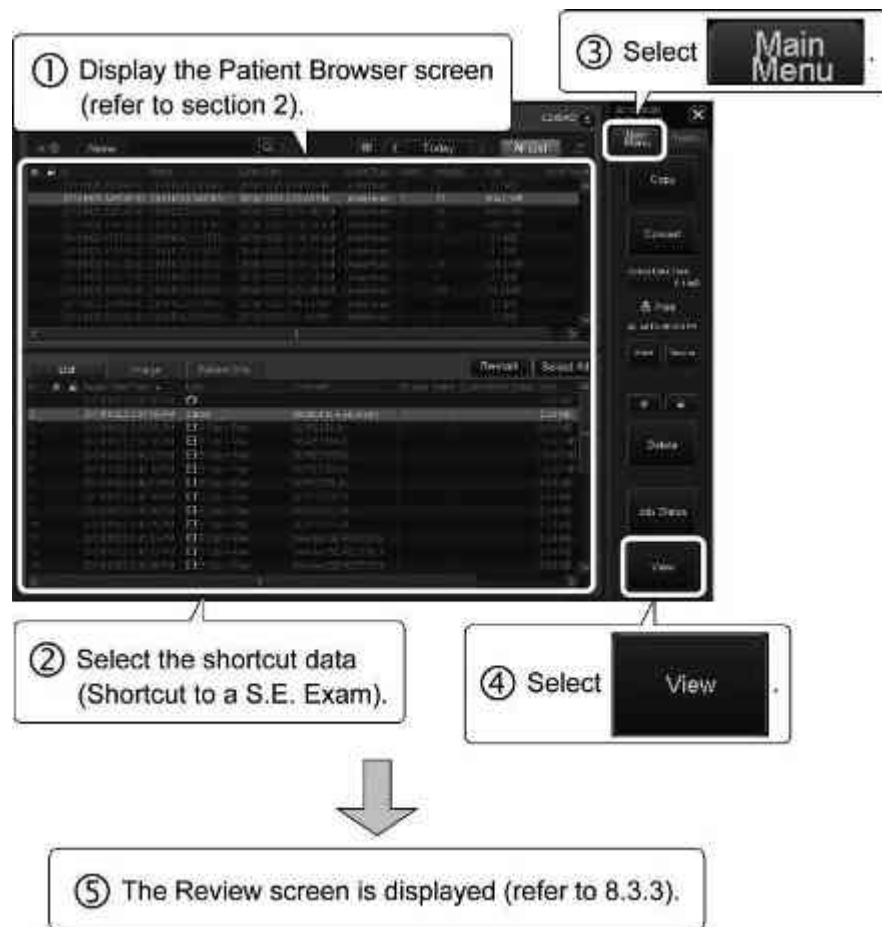
- \* To save the measurement value for each phase, select **Cancel**, and then save the results in the Worksheet page.

### 8.2.1 Starting up Stress Echo mode

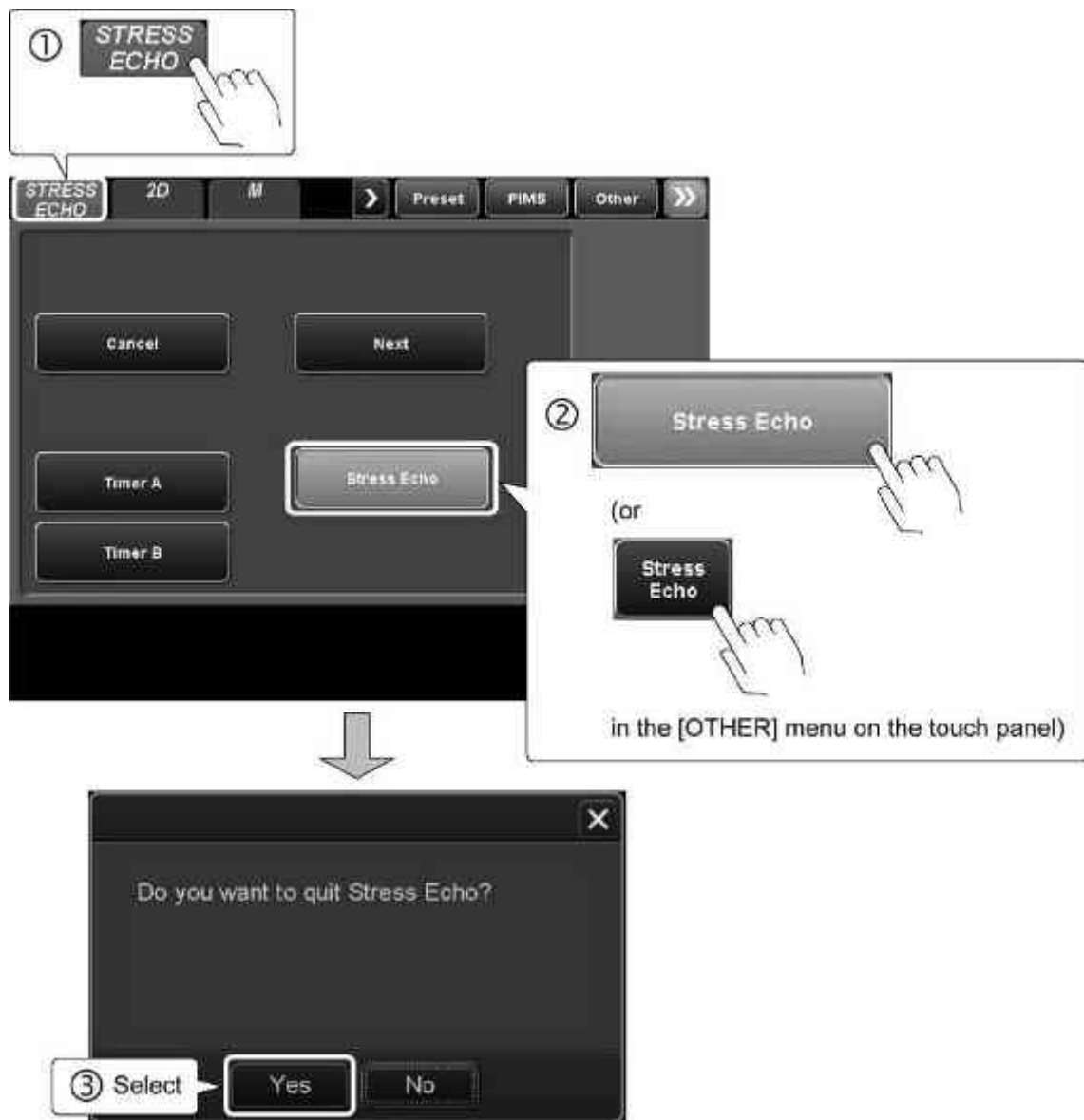
(1) To start up Stress Echo for the current patient




(2) To start up Stress Echo for an image stored in a previous examination

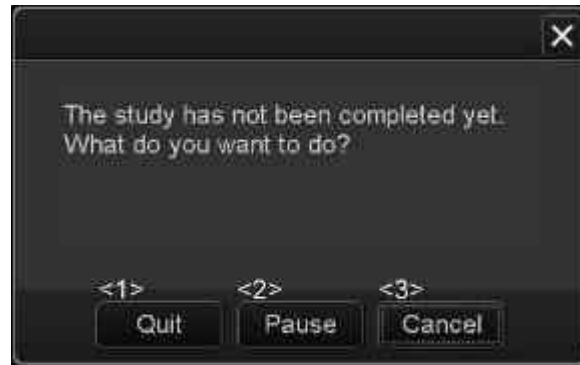





### 8.2.2 Terminating Stress Echo mode



\* Stress Echo mode can also be terminated by selecting  on the screen (refer to subsection 8.3).

- NOTE
1. When an attempt is made to terminate Stress Echo mode during image acquisition, the following dialog is displayed.  
Select the desired item.






No.	Item	Function
<1>		Discards all the images that have been acquired up to this point and terminates Stress Echo mode.
<2>		Pauses image acquisition (refer to subsection 8.3.1 for details).
<3>		Cancels the termination operation.



- NOTE 2. When an attempt is made to terminate Stress Echo mode before the best loops are saved, the following dialog is displayed.  
Select the desired option.



No.	Item	Function
<1>		Saves all the best loops and terminates Stress Echo mode.
<2>		Terminates Stress Echo mode without saving the best loops.
<3>		Cancels the termination operation.

## 8.3 Screens and Operations in Stress Echo Mode

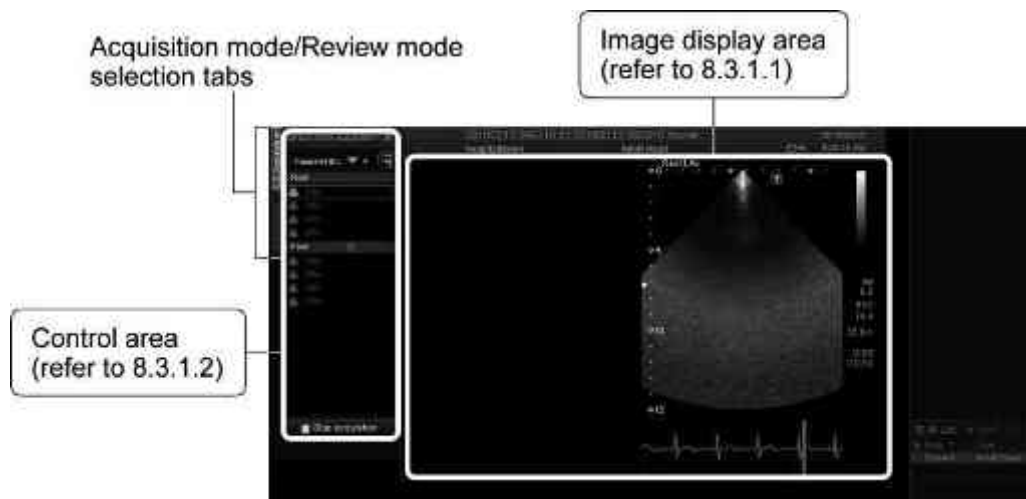
\* The displayed screens may differ depending on the presets (refer to section 18).

### 8.3.1 Acquisition screen



The acquisition screen is displayed when Stress Echo is started up for the current examination.

#### NOTE

If  Stop acquisition is selected during acquisition, acquisition is discontinued immediately and cannot be resumed.



(1) Selecting a protocol

(a) Place the cursor on  and press .

(b) Select the desired protocol from the pull-down menu and press .



(c) The contents (phases and views) of the selected protocol are displayed in the control area.


- NOTE
1. Refer to section 18 for the procedure for editing the protocols.
  2. If another protocol is started before the previous protocol is completed, and if the name of the first phase of the new protocol is the same as that of the previous protocol, only the images acquired in the first phase of the previous protocol are saved. Confirm the saved images and use the appropriate ones. The measurement results for the previous protocol are cleared. Therefore, if the measurement results need to be saved, save them on the Worksheet screen before attempting to change the protocol.



## (2) Acquisition according to the selected protocol








## (a) Acquisition according to the selected protocol


<1> Press . A check mark is displayed inside the icon  for the current view and acquisition for the next view is started automatically. Repeat this step to acquire all the views.

\* To acquire a view other than the next one, move the cursor to the desired view name in the control area and press  twice.


<2> When acquisition for all views is completed, move the cursor to  and press . The image selection screen (refer to subsection 8.3.2) is displayed.


- NOTE
1. The images acquired according to the selected protocol are automatically stored in the HDD.  
To store such images on media or in a server, select the desired images from among the images saved as best loop images or multiple-cycle acquisition images in Patient Browser and then store them.
  2. In image acquisition for the second phase (Post), the following imaging conditions used for the first phase (Rest) are reproduced automatically.
    - STC
    - LGC (Lateral Gain)
    - Focus
    - Gain
    - Depth
    - Acoustic Power
  3. When Phase Timer (refer to section 18) is set to ON,  is displayed on the right of the phase name. The elapsed time from the start of the phase can be displayed by pressing  .
  4. When automatic playback after acquisition is set to ON (refer to section 18), the image selection screen is displayed immediately after the acquisition of each view.
    - \* Refer to subsection 8.3.2 for the functions of the switches on this screen.
    - (1) To start acquisition for the next view  
Confirm the played-back loop images and press  .  
The acquisition screen for the next view is displayed automatically.
    - (2) To select the best loop  
Move the cursor to the best loop and press  . The selection border is displayed around the selected image and the acquisition screen for the next view is displayed automatically.
    - (3) To acquire the view again  
Confirm the played-back loop images and press  .  
The previous acquisition screen is displayed again automatically.

## (b) FD (Full Disclosure) acquisition

- NOTE
1. It is necessary to create a protocol for FD acquisition using the preset menu. Refer to section 18 for details.
  2. Depth adjustment is disabled during FD acquisition. Set the system to the acquisition start ready status (move the cursor to the phase name and press  twice).

<1> Press  to start acquisition.

<2> The timer starts countdown and FD acquisition is continued for 120 seconds. When acquisition is completed, a check mark is displayed inside  and the next phase is selected automatically. Repeat this step to acquire all the phases.


\* If  is pressed during FD acquisition, the acquisition is terminated at that point and the next phase is selected automatically.


<3> When all the images are acquired, move the cursor to

 and press . The image selection screen (refer to subsection 8.3.2) is displayed.

## (3) Acquiring a view again


(a) To return to the previous view, press .

\* To return to a view other than the previous one, move the cursor to the desired view and press  twice.

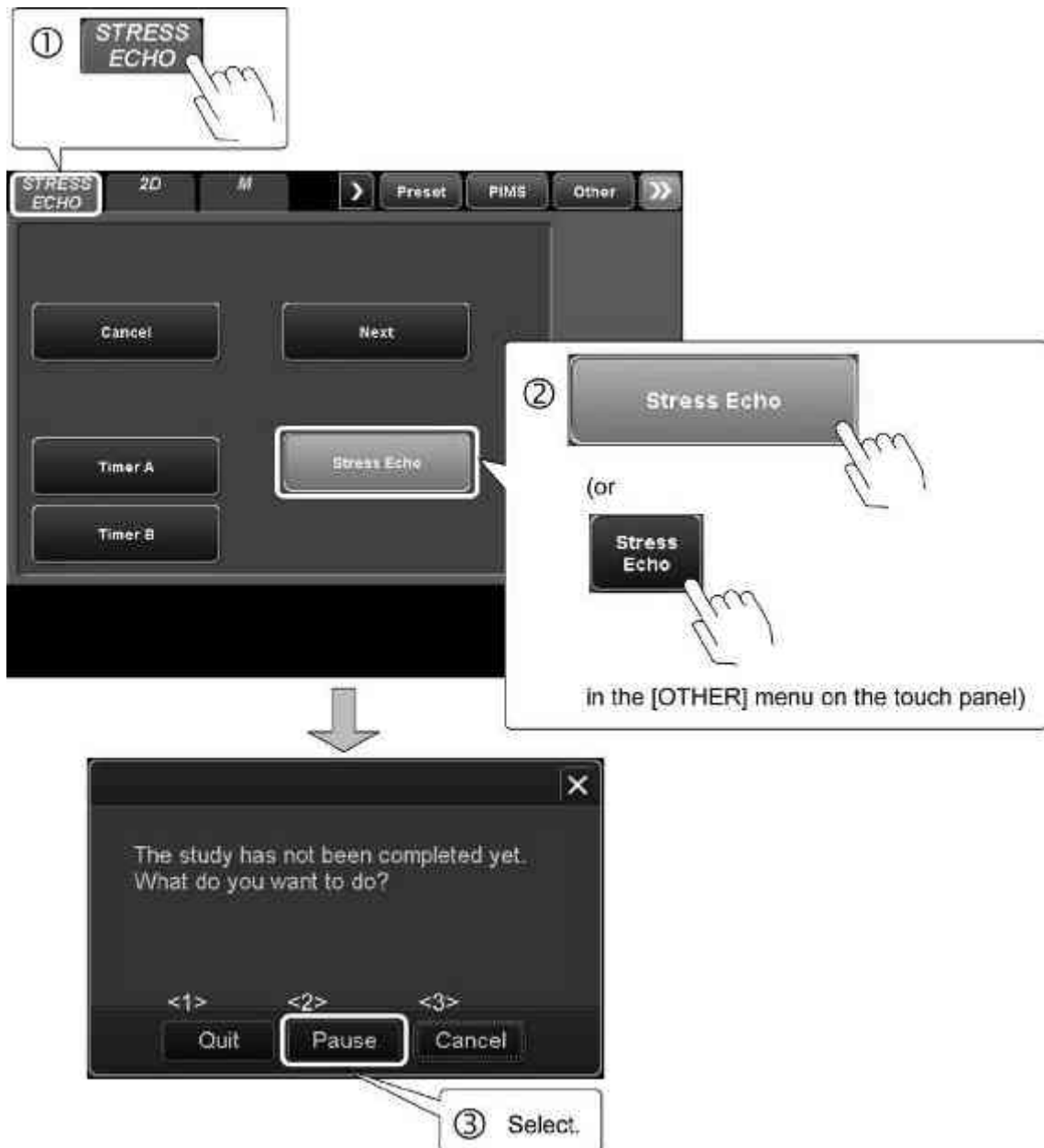
(b) Press  to acquire the view again.



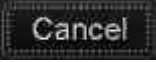
(c) Select [OK] in the displayed confirmation dialog.

## (4) Pausing a protocol acquisition

To pause a protocol acquisition, follow the procedure below.  is displayed at the top of the screen.

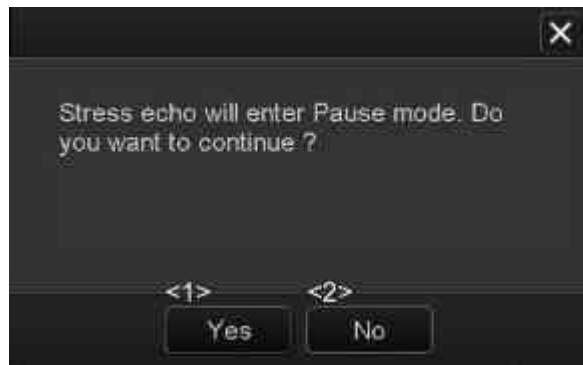
- \* When another transducer is selected during the pause, do not disconnect the previously used transducer. Otherwise, it will not be possible to resume the protocol acquisition.





No.	Item	Function
<1>		The protocol acquisition is terminated and all the images acquired up to that point are cleared.
<2>		The protocol acquisition is paused.
<3>		The protocol acquisition is continued.

NOTE

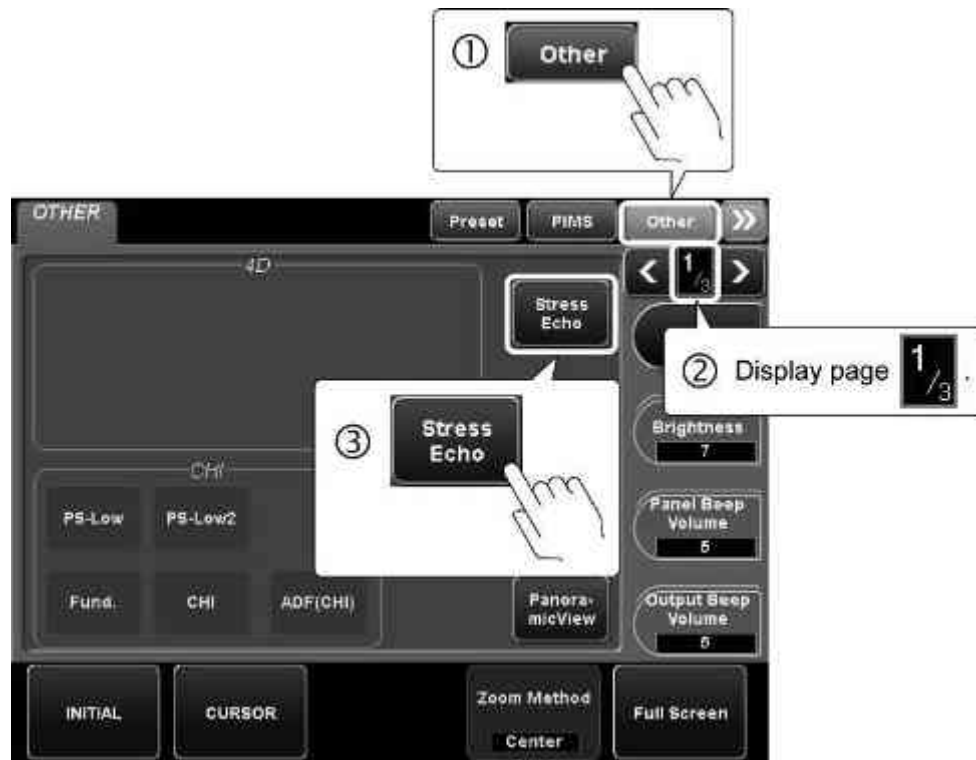
When another mode switch or  is pressed during a protocol acquisition, the dialog below is displayed. Select the desired item.



No.	Item	Function
<1>		The protocol acquisition is paused.
<2>		The protocol acquisition is continued without mode change or freezing.

## (5) Resuming a paused protocol acquisition

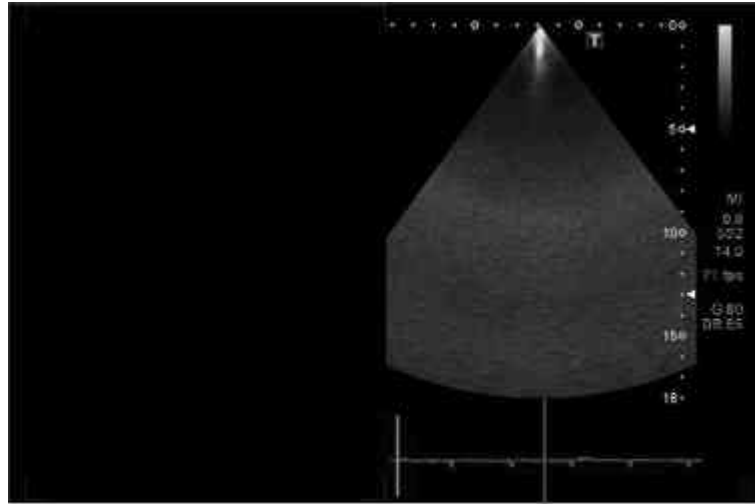
To resume a paused protocol acquisition, follow the procedure below. The image conditions (including gain, depth, and acoustic power) that were used immediately before pausing are reproduced.





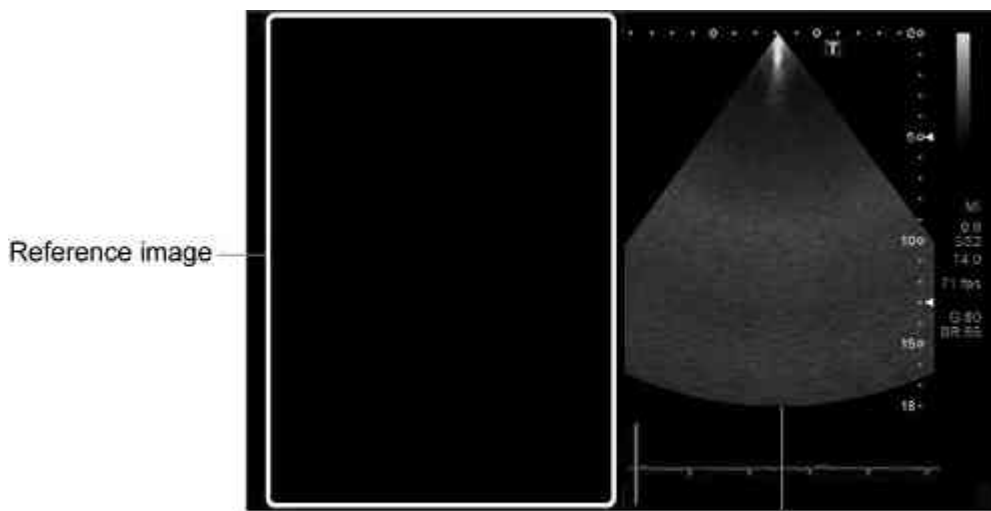
8.3.1.1 Image display area

- (1) When Stress Echo mode is entered  
The real-time image of the current patient is displayed in the image display area.



Real-time image





- (2) During acquisition of the second phase (Post)  
The reference image (image acquired in the first phase (Rest)) and the real-time image are displayed side by side.




Real-time image

## 8.3.1.2 Control switches

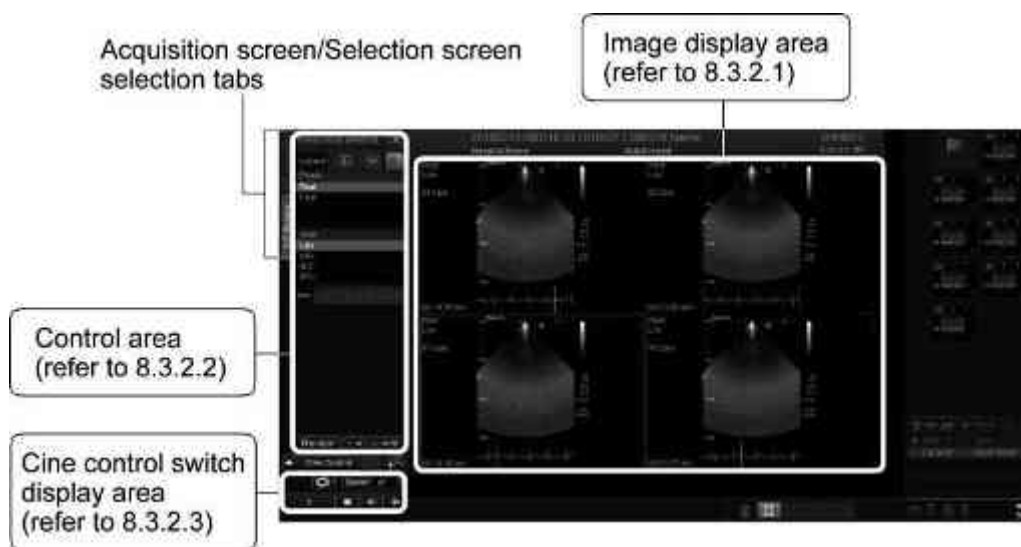




No.	Item	Function
<1>	Protocol	The protocol name and the number of loops held for storage are displayed here.
<2>		Used to select a new protocol. * The contents of the protocol dialog differ depending on the selected protocol.
<3>	Protocol dialog	The contents of the currently selected protocol are displayed. * A check mark is displayed for the already acquired views (  ). * To manually change the view to be acquired, move the cursor to the desired view and press  twice.
<4>		Stops the current acquisition.
<5>	Timer	The elapsed time from the start of the stress examination is displayed here.

### 8.3.2 Image selection screen


When  is pressed on the acquisition screen (refer to subsection 8.3.1), the image selection screen is displayed. The best loop can be selected from among the images that have been acquired and saved.

**NOTE** If the best loop has already been selected for a view during automatic playback immediately after acquisition, this step can be skipped.



- (1) Selecting the best loop
  - (a) Acquisition according to the selected protocol
    - <1> Move the cursor to the best loop image and press . The selection border is displayed around the selected image and the selection screen for the next view is displayed automatically. Repeat this step to select the best loops for all the views.
      - \* To acquire a view other than the next one, move the cursor to the desired view name in the control area and press  twice.
    - <2> When best loop selection is completed for all views, the review screen (refer to subsection 8.3.3) is displayed.

## (b) FD (Full Disclosure) acquisition

<1> Move the cursor to the best loop image and press . The

selection border is displayed around the selected image and the selection screen for the next view is displayed automatically. Repeat this step to select the best loops for all the views.

\* The best loop image can also be selected by selecting the view from the pull-down menu on each image.

<2> When best loop selection is completed for all views, the review screen (refer to subsection 8.3.3) is displayed.



## (2) To display another page

Move the cursor to  and press .

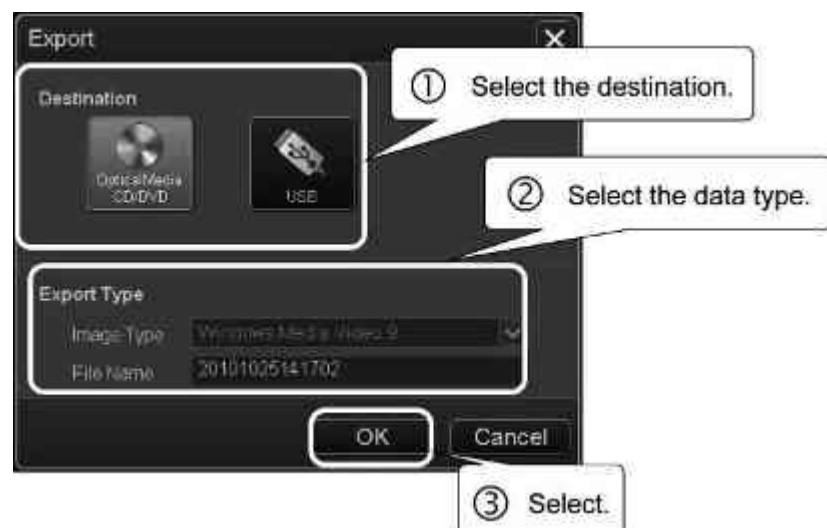
## (3) Storing the best loops

Move the cursor to  and press .

## (4) Storing the Stress Echo data to media

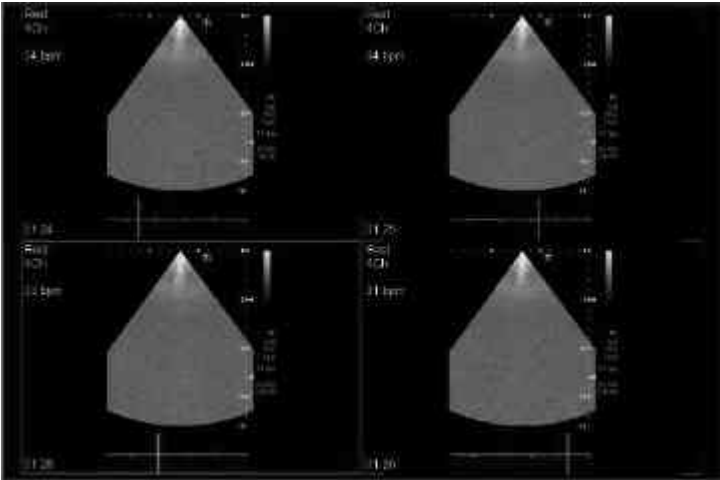
(a) Move the cursor to  and press .

(b) The screen below is displayed.

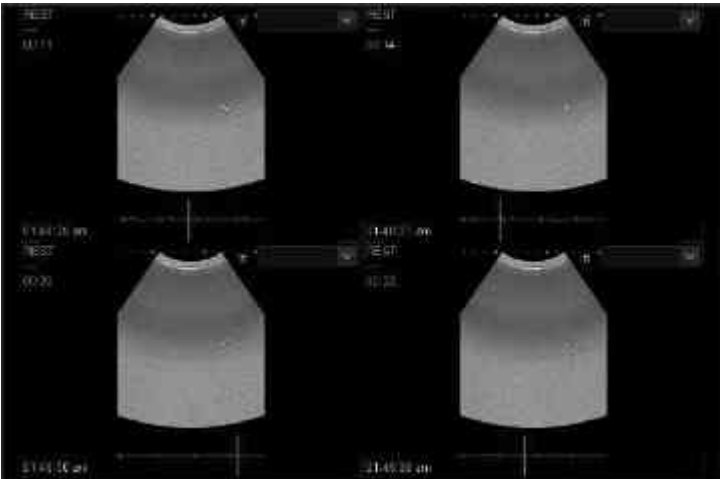


8.3.2.1 Image display area

(1) Acquisition according to the selected protocol















(2) FD (Full Disclosure) acquisition



## 8.3.2.2 Control switches







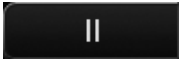




No.	Item	Function
<1>	Layout	Used to select the image display layout.
		The screen is divided into four frames and up to four images are displayed.
		The screen is divided into two frames and up to two images are displayed.
		The screen is not divided and a single image is displayed using the whole screen.
<2>		Used to turn ON/OFF the overlay display for the acquired image.
<3>	Protocol dialog	<p>The contents of the currently selected protocol are displayed.</p> <p>* To display images for another view for best loop selection, move the cursor to the desired view name and press  twice.</p>

No.	Item	Function
<4>		Used to display loops that are not currently displayed. * These buttons become active when more than four loops have been acquired.
<5>		Displays the review screen (refer to subsection 8.3.3).
<6>		Stores the best loops to media.
<7>		Stores the best loops in the HDD.
<8>		Used to zoom or pan the image. * When this switch is ON, the image can be panned using the trackball and zoomed using  .
		Undoes the zooming or panning operation.

## 8.3.2.3 Cine control area

The cine control switches are used to adjust the playback speed, to play back the image in frame-by-frame mode, and to change the playback method.



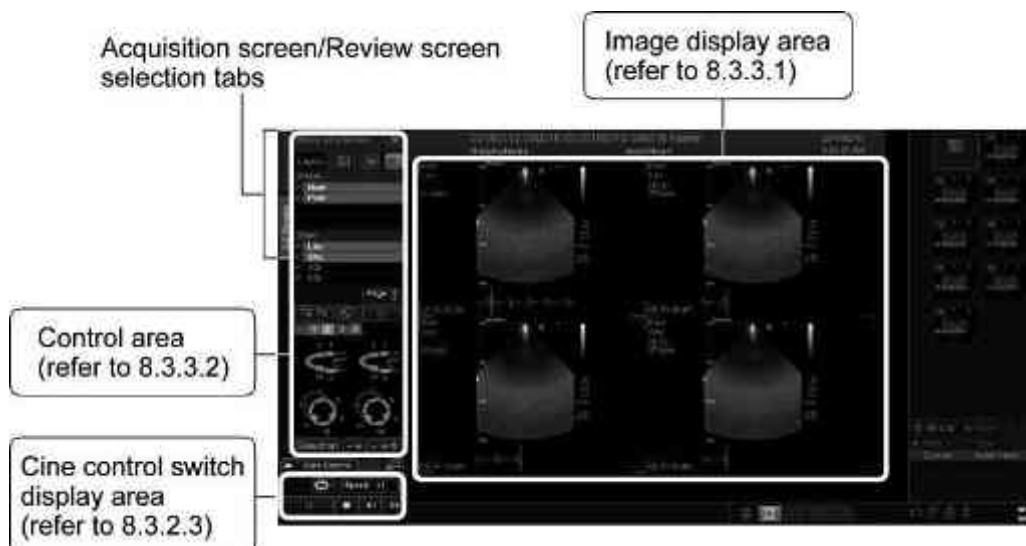
No.	Switch	Function	
<1>		Indicates that a dynamic image is played back in loop mode.	The label of this switch changes each time the cursor is placed on it and  is pressed.
		Indicates that a dynamic image is played back in reciprocating mode.	
<2>		Used to change the playback speed.	
<3>		Pauses playback.	
		Starts playback.	
<4>		Stops playback.	
<5>		Feeds the image backward by one frame.	
<6>		Feeds the image forward by one frame.	



### 8.3.3 Review screen

The review screen is displayed when selection of the best loops is completed on the selection screen (refer to subsection 8.3.2) or when an image stored in a previous stress echo exam is selected on the Patient Browser screen. This screen is used to evaluate cardiac wall motion.

- NOTE
1. If the best loops are not selected manually, the default loops are displayed on the review screen.
  2. If a phase name or view name is displayed in gray in the menu area, it indicates that no image has been acquired for the phase or view or that FD (Full Disclosure) acquisition has been performed but images have not been selected. Nothing is displayed when such a phase name or view name is selected.



## (1) Changing the image display mode

When the review screen is started, the first views of all the phases are displayed simultaneously.

## (a) To display all the views in a phase

Move the cursor to the desired phase name and press



## (b) To display the desired view in a phase

Move the cursor to the desired view name and press



## (c) To remove a view from the review target

Move the cursor to the check mark (  ) on the left of the view name

and press



## (2) Displaying another page

## (a) Move the cursor to



and press



## (b) The switch is highlighted and the page feed function is turned ON. Use



to display the desired page.

## (c) To turn OFF the page feed function, move the cursor to



and

press




## (3) Storing the displayed images as dynamic images

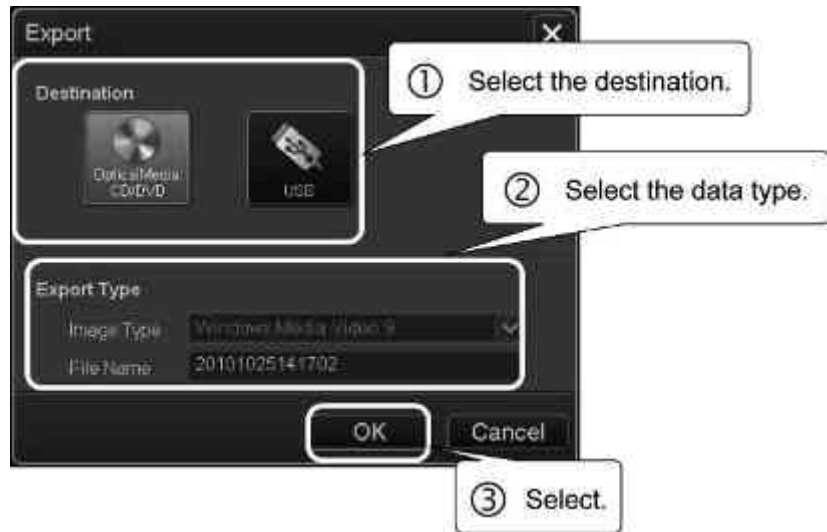
Press



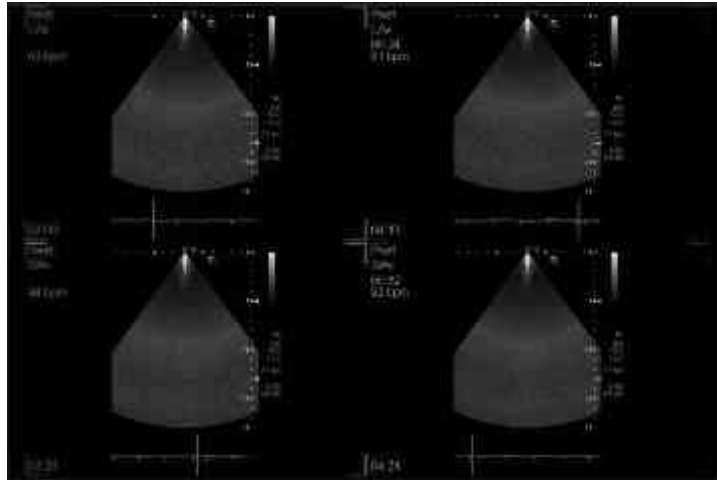
(4) Storing the Stress Echo data

(a) Move the cursor to  and press  .

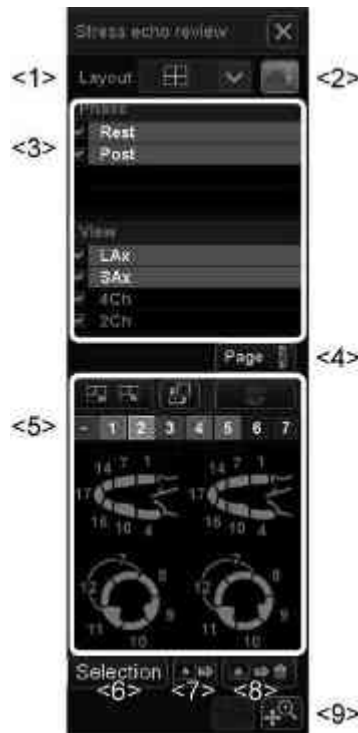
(b) The screen below is displayed.
















## 8.3.3.1 Image display area






8.3.3.2 Control switches



No.	Item	Function
<1>	Layout	Used to select the image display layout.
		The screen is divided into four frames and up to four images are displayed.
		The screen is divided into two frames and up to two images are displayed.
		The screen is not divided and a single image is displayed using the whole screen.
<2>		Used to turn ON/OFF the overlay display for the acquired image.

No.	Item	Function
<3>	Protocol dialog	<p>The contents of the currently selected protocol are displayed.</p> <ul style="list-style-type: none"> <li>* To remove a view from the review target, move the cursor to the check mark (  ) on the left of the view name and press  .</li> <li>* To display the desired view in a phase, move the cursor to the desired view name and press  .</li> <li>* To display all the views in a phase, move the cursor to the desired phase name and press  .</li> </ul>
<4>		Used to display the loops that are not currently displayed.
<5>		Wall Motion Scoring display area (refer to subsection 8.3.3.3).
<6>		Displays the selection screen (refer to subsection 8.3.2).
<7>		Stores the best loops to media.
<8>		Stores the best loops in the HDD.

No.	Item	Function
<9>		Used to zoom or pan the image.  * When this switch is ON, the image can be panned using the trackball and zoomed using  .
		Undoes the zooming or panning operation.

### 8.3.3.3 Wall Motion Scoring (WMS) display area

The display for WMS differs depending on the preset (refer to section 18).

- NOTE
1. Wall Motion Scoring (WMS) provides support for Stress Echo examination and permits subjective semi-quantitative evaluation of abnormalities related to left ventricular wall motion and changes in wall thickness.  
The left ventricle is divided into segments, and a score is assigned to each segment to semi-quantitatively evaluate the degree of abnormality in each segment by comparing the cardiac wall motion before and after stress.
  2. The left ventricle is divided into 16 segments in 4 cross sections (described below), as recommended by the American Society of Echocardiography (ASE).
    - (1) Long-axis cross-section : LAX
    - (2) Short-axis cross-section : SAX
    - (3) Four-chamber cross-section : 4CH
    - (4) Two-chamber cross-section : 2CH
  3. This system supports three patterns of scoring.
    - (1) 4 Scores

Score	Degree of wall motion abnormality	Color
-	No Score	Gray
1	Normal	Green
2	Hypokinetic	Yellow
3	Akinetic	Blue
4	Dyskinetic	Red

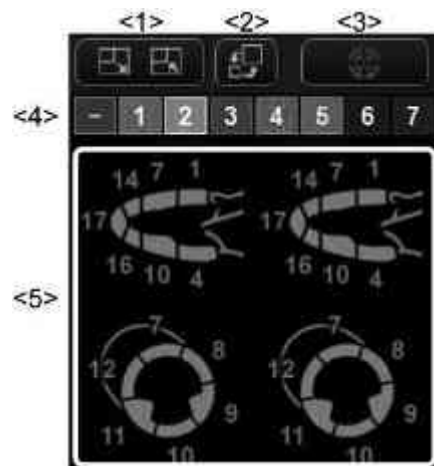









NOTE (2) 5 Scores

Score	Degree of wall motion abnormality	Color
-	No Score	Gray
1	Normal	Green
2	Hypokinetic	Yellow
3	Akinetic	Blue
4	Dyskinetic	Red
5	Aneurysmal	Pink

(3) 7 Scores

Score	Degree of wall motion abnormality	Color
-	No Score	Gray
1	Normal	Green
2	Hypokinetic	Yellow
3	Akinetic	Blue
4	Dyskinetic	Red
5	Aneurysmal	Pink
6	Akinetic with scar	Dark blue
7	Dyskinetic with scar	Brown



No.	Item	Function
<1>		Enlarges or reduces the selected WMS image (in the WMS display area).
<2>		Displays the selected WMS image in the image display area or in the WMS display area.
<3>		Switches to WMS display.
		Switches to polar map display.
<4>		Used to change scores manually.
<5>		WMS operations can be performed in this area.
		Polar map operations can be performed in this area.

NOTE If another image is selected while scoring is being performed or after scoring is completed, the results up to that point are cleared.

<<Changing the automatically set score manually>>

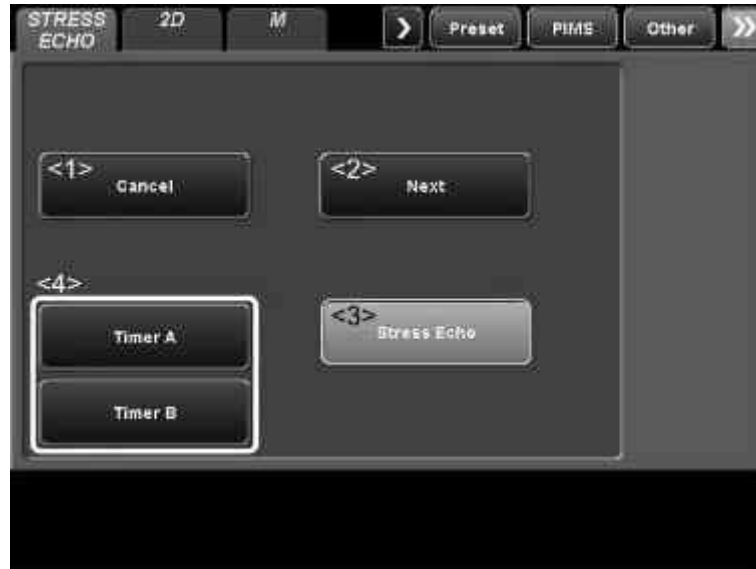
① Move the cursor to **0** or **SET** and

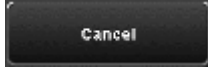
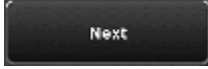
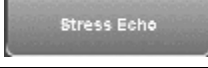
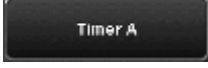

② Move the cursor to the score to be set and

③ Move the cursor to the desired segment and

## 8.4 Operations From the Touch Panel

The switches on the touch panel that are used for Stress Echo examination are described below.



No.	Switch	Function
<1>		The selection is returned to the previous view and the previous view is acquired again. * When this switch is pressed during automatic playback immediately after acquisition, the current view is acquired again.
<2>		The current view is acquired and the selection is moved to the next view. * When this switch is pressed during automatic playback immediately after acquisition, the data for the current view is accepted and the selection is moved to the next view.
<3>		Terminates or pauses Stress Echo.
<4>	 	Starts or stops the stopwatch timer.



## 9. Wall Motion Tracking

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## 9.1 Overview of Wall Motion Tracking

Wall Motion Tracking semi-automatically extracts the left-ventricular myocardium from the image data acquired by the system and depicts it for the evaluation of myocardial motion.


- To use this function, the optional USWT-X200A is required.

- 
- NOTE
1. The results displayed by this function should be used as reference data for diagnosis. Final diagnosis should be performed based on comprehensive data including other examination results.
  2. If the ECG waveform contains excessive noise, the R-wave position may not be identified correctly.
  3. In Wall Motion Tracking for 2D images, tracking may not be performed correctly if the displayed cardiac image contains any of the items listed below. Move such items away from the cardiac image or delete them.
    - M/D Cursor
    - Waveform input from the Physio unit
    - Graphics for measurement, annotations, or a body mark
  4. Tracking may not be performed correctly due to the noise contained in the images. Confirm the display after tracking and modify the trace as required.
  5. If the valve ring, cardiac apex, or endocardium is not depicted in the displayed image, the contours may not be traced correctly. Make sure that the valve ring, cardiac apex, and endocardium are depicted by adjusting the DEPTH/ZOOM dial, GAIN dial, and/or STC sliders and by using the image quality adjustment functions.
  6. If the frequency, sound pressure, or another condition is changed while the cardiac cycle is being analyzed, Wall Motion Tracking may not be performed correctly.
-

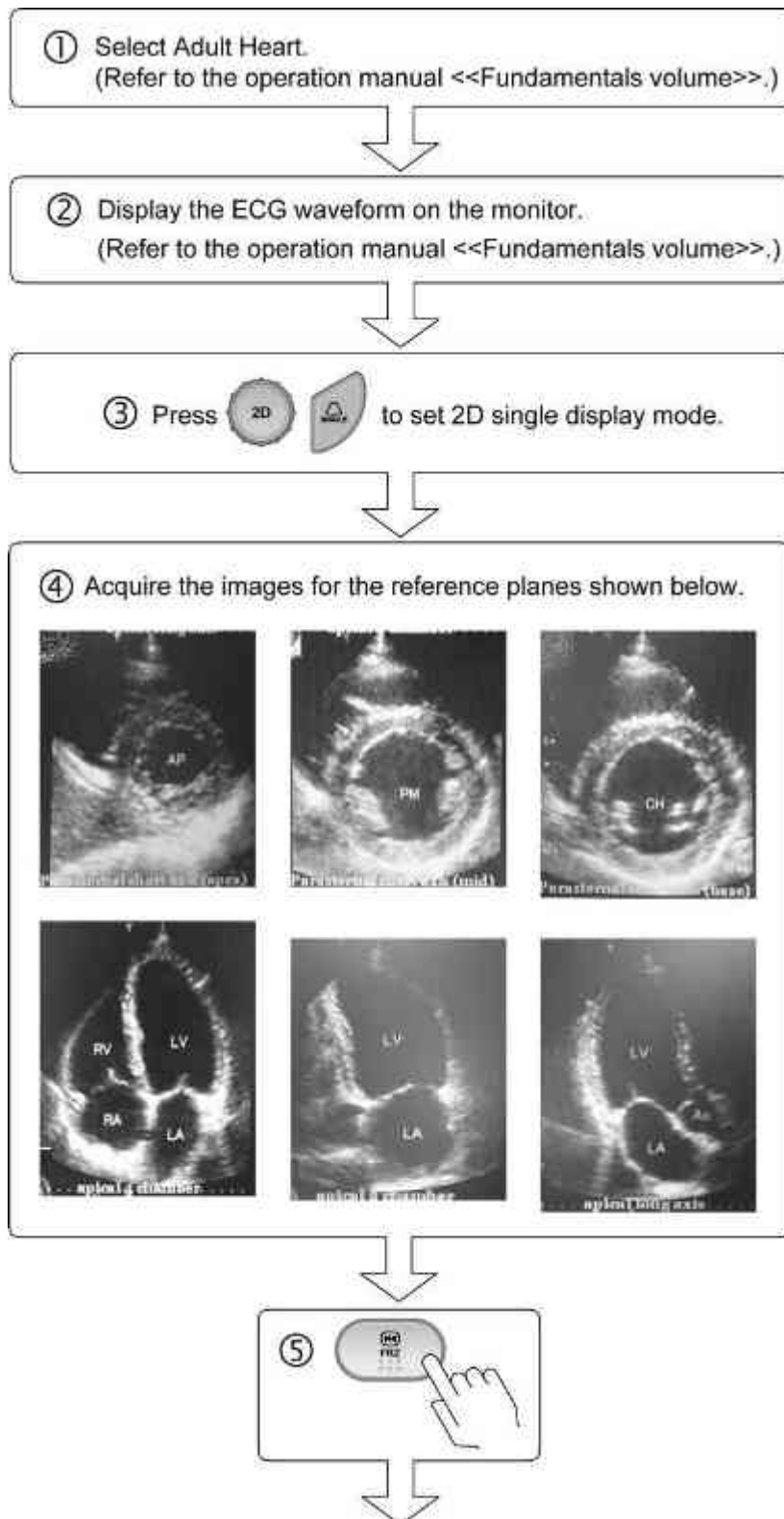
## 9.2 Startup and Termination of Wall Motion Tracking

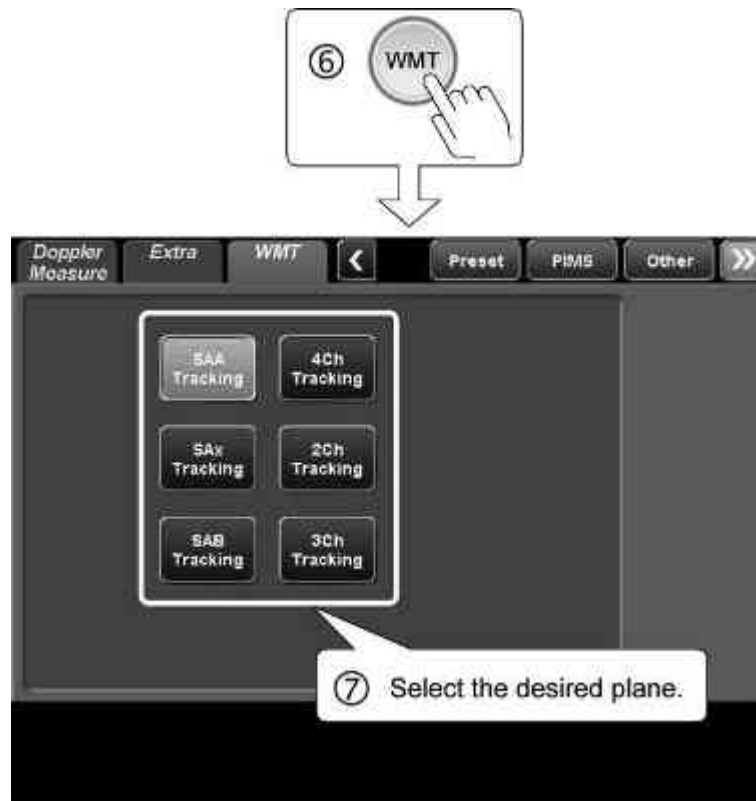
### 9.2.1 Starting up Wall Motion Tracking

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- NOTE
1. It is necessary to assign a switch for this function on the main panel. Consult your Canon Medical Systems service representative for details.
  2. Wall Motion Tracking cannot be started up for images for which the ECG waveform is not displayed. Display the ECG waveform before starting Wall Motion Tracking.
  3. Wall Motion Tracking cannot be started up for Cine Clips images. Use Snapshot Clips images.
  4. Wall Motion Tracking is only applicable to images acquired in black-and-white imaging mode. (It is not applicable to scanning in Color, Power, VRI, or TDI mode.)
  5. It is recommended that Wall Motion Tracking be performed using an image with raw data.
  6. Adjust the conditions so that the frame rate displayed on the monitor during image acquisition is 30 fps or higher. If the frame rate is lower, the measurement period may not include the end-diastolic and end-systolic images.
  7. To perform Wall Motion Tracking for an image stored with the state of analysis (  ), select it in the Patient Browser screen (refer to section 2) before starting up Wall Motion Tracking.
-




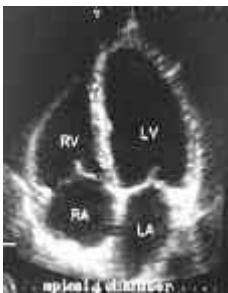









### 9.2.2 Selecting the plane

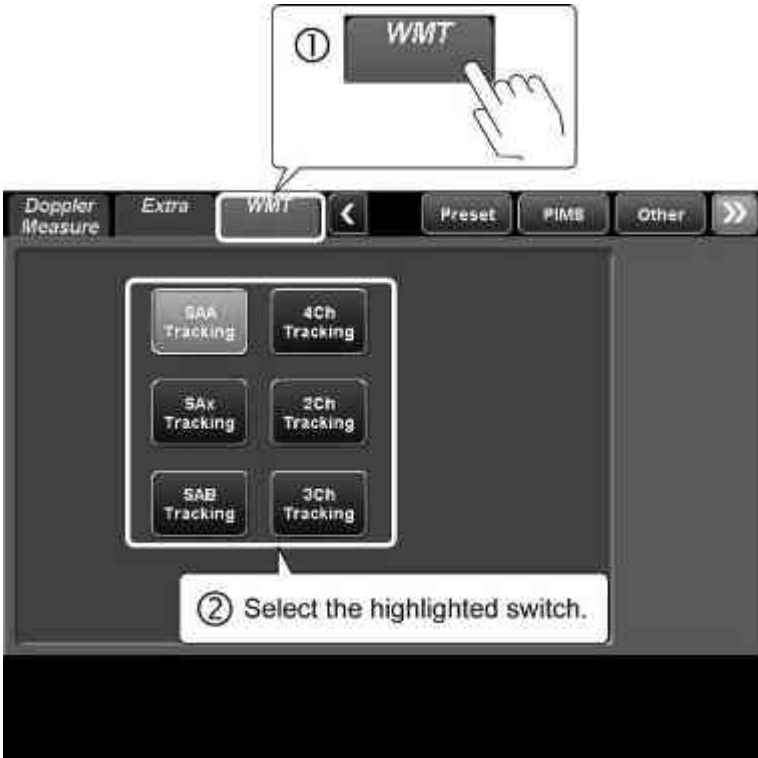
Press the switch corresponding to the reference plane.


Switch	Reference plane	Function
<b>SAA Tracking</b>		The Wall Motion Tracking screen is displayed with RegionSelect set to "SAX-Apical".
<b>SAX Tracking</b>		The Wall Motion Tracking screen is displayed with RegionSelect set to "SAX-Middle".
<b>SAB Tracking</b>		The Wall Motion Tracking screen is displayed with RegionSelect set to "SAX-Basal".
<b>4Ch Tracking</b>		The Wall Motion Tracking screen is displayed with RegionSelect set to "Apical-4Ch".
<b>2Ch Tracking</b>		The Wall Motion Tracking screen is displayed with RegionSelect set to "Apical-2Ch".

Switch	Reference plane	Function
		<p>The Wall Motion Tracking screen is displayed with RegionSelect set to "Apical-3Ch".</p>

- NOTE
1. If the acquired images are in a plane other than the selected reference plane, the segments will not correspond correctly.
  2. If the acquired images are inverted relative to the reference plane, use the Image Direction function to make segments correspond correctly (refer to subsection 9.3.5).

### 9.2.3 Terminating Wall Motion Tracking

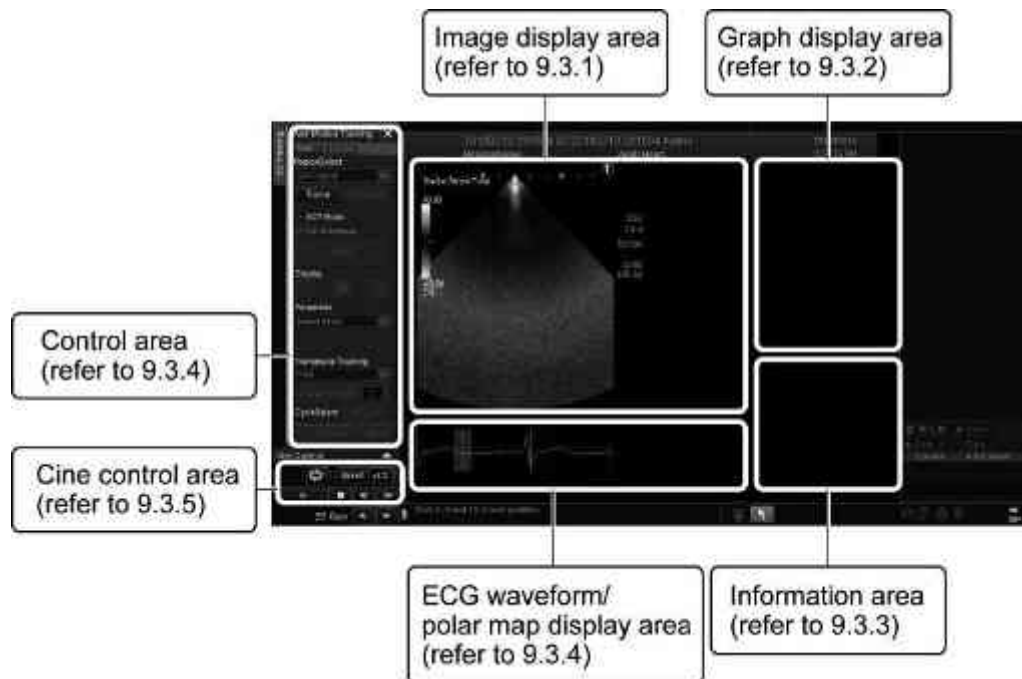


\* Wall Motion Tracking can also be terminated by selecting  on the Wall Motion Tracking screen.

### 9.3 Wall Motion Tracking Screen and Operating Procedures

When Wall Motion Tracking is started, the 2D Wall Motion Tracking screen is displayed.

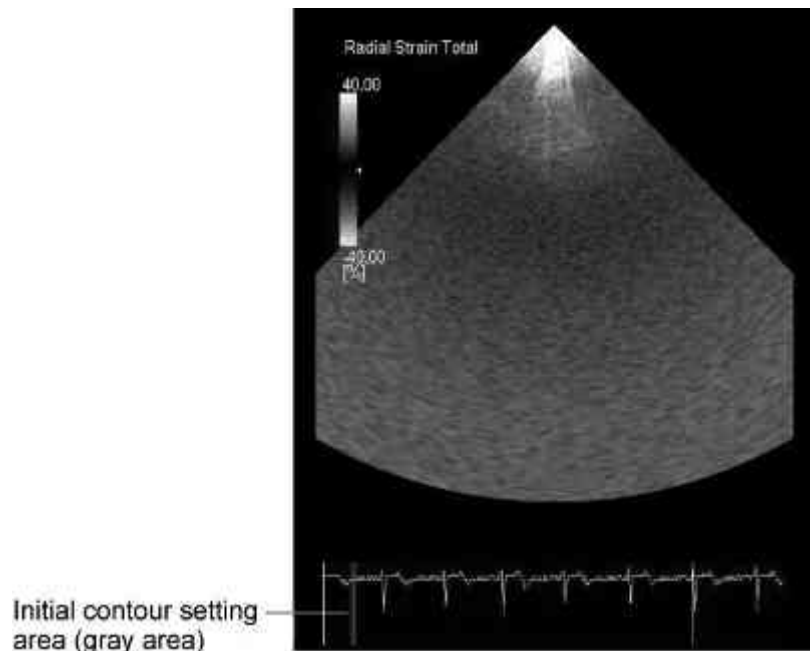
On this screen, the cardiac wall is traced (initial contour setting) and local Wall Motion Tracking is performed with two-dimensional pattern matching, allowing wall motion information analysis and display, cardiac volume measurement, and cardiac function analysis.



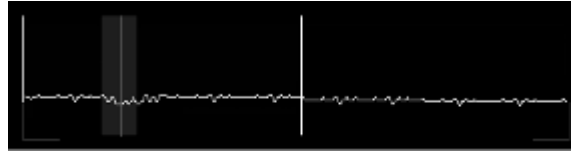
### 9.3.1 Image display area

The image acquired in 2D single mode is displayed. Perform initial contour setting and tracing in the cardiac phases (within the ranges indicated on the ECG waveform) suitable to each image type as indicated in the table below.

Image type	ACT Mode	Cardiac phase	Trace
Short-axis image	OFF	In the estimated systolic phase	Set the points for epicardial and endocardial tracing in the counterclockwise direction.
	ON	Near the estimated end systole	Set points at the 4-o'clock, 8-o'clock, and 12-o'clock positions.
Long-axis images or other images that are not short-axis images	OFF	In the estimated systolic phase	Set the points for epicardial and endocardial tracing in the counterclockwise direction.
	ON	Near the estimated end diastole	Set a point each on the right of the valve ring, left of the valve ring, and the apex.



## (1) Changing the reference phase for analysis




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**NOTE** The reference phases for analysis are set automatically to ensure that the phase range corresponding to a single cardiac cycle is recognized by the system. It is not possible to change only the reference phase on the right or only the reference phase on the left.

---

(a) Place the cursor on the white line on the ECG waveform and press



(b) Move the white line to the desired position using the trackball or  and


press .



(2) Tracing (initial contour setting)

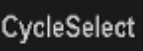


NOTE



1. Set the epicardial contour so that the closed surface of the endocardium is inside the closed surface of the epicardium. If the closed surface of the endocardium is set outside the closed surface of the epicardium, tracing will not be performed correctly.
2. The initial cardiac phase for short-axis images is set to end systole by default. For long-axis images and other images, the initial cardiac phase is set to end diastole by default.



\* The initial cardiac phase frame can be finely adjusted using  or



in the cine control area, provided that the endocardial and epicardial contours have not yet been set.

\* To select another cardiac cycle for analysis, use    in the control area.

3. When SAA Tracking is to be performed,  **ACT Mode**  **Fix Thickness** cannot be set.



4. When an epicardial contour is to be set at a variable distance from the endocardial contour, set  **ACT Mode**  **Fix Thickness** and set the contour manually.

(a) To generate the initial contour automatically

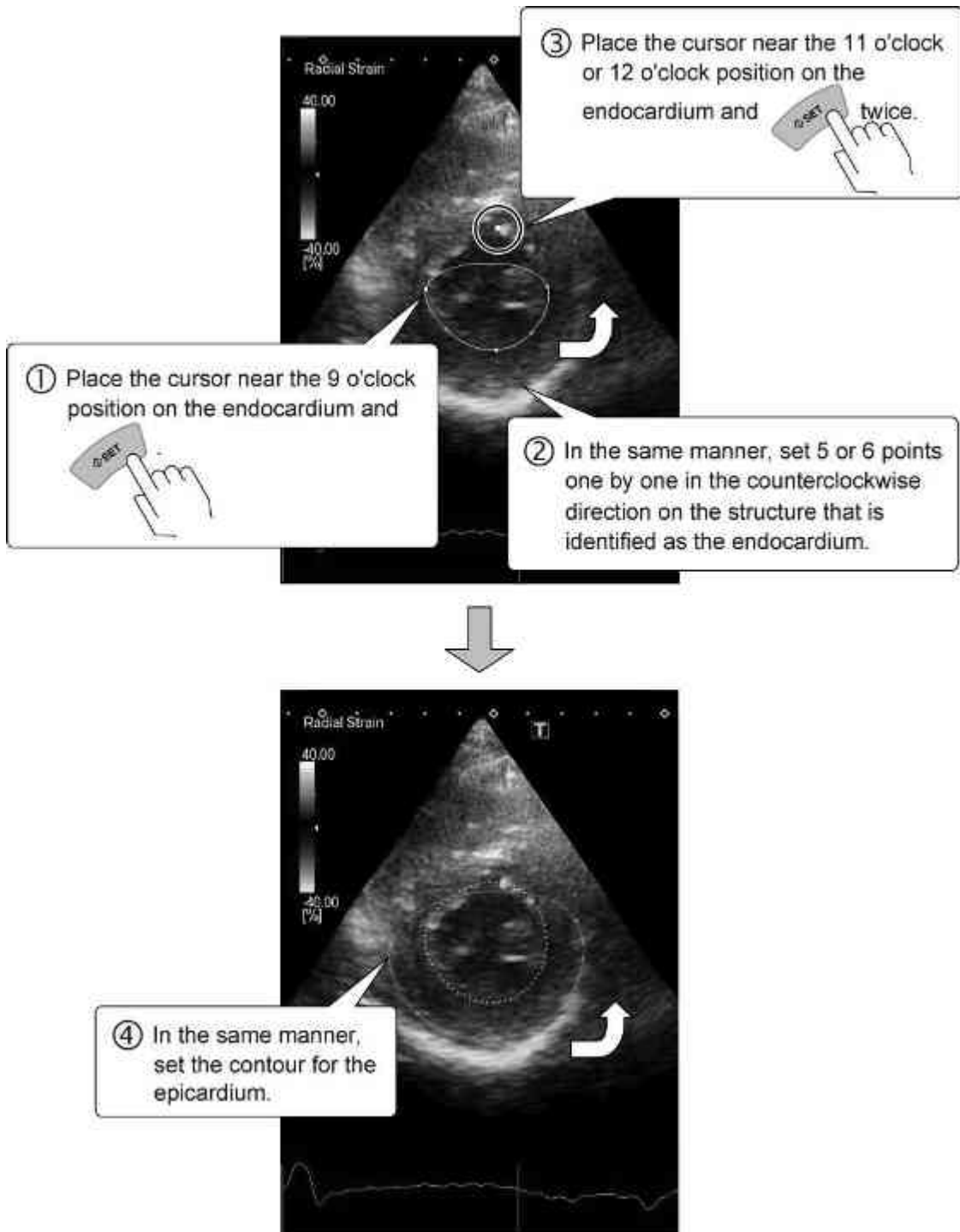
Select both ACT Mode and Fix Thickness  **ACT Mode**  **Fix Thickness** by

moving the cursor to the corresponding checkboxes and press .

(b) Setting the initial contours

Place the cursor on  **Trace** in the control area and press .

<1> For a short-axis image (when **ACT Mode** and **Fix Thickness** is set)



## NOTE

To cancel the last point placed in initial contour setting, press



<2> For a short-axis image (when **ACT Mode** and **Fix Thickness** is set)

The diagram illustrates the process of wall motion tracking in a short-axis image. It is divided into two main stages, each with a corresponding ultrasound image and numbered instructions.

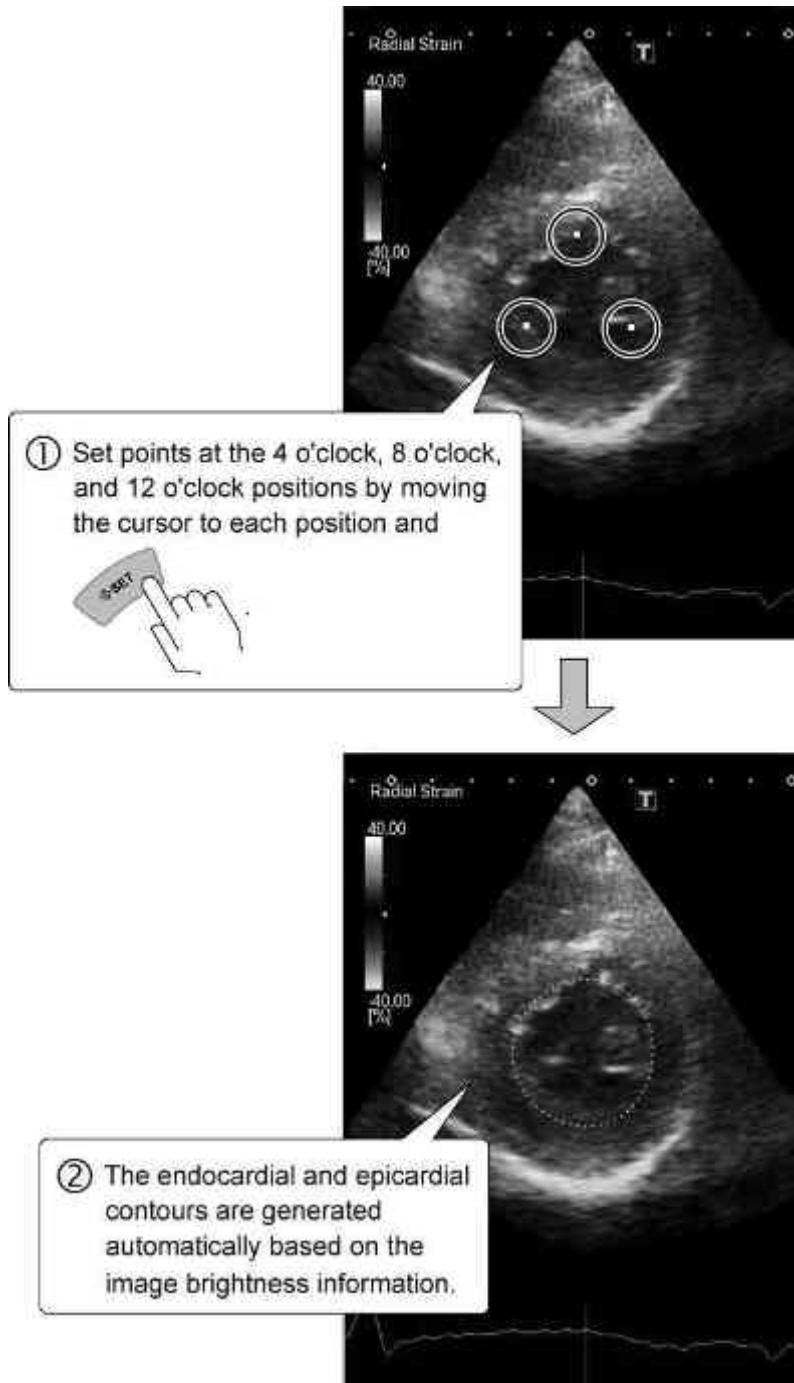
**Top Stage: Manual Point Placement**

- Image:** A short-axis ultrasound image of the heart. A vertical scale on the left is labeled "Radial Strain" with values from 40.00 to -40.00 (%). Several points are marked on the endocardium.
- Instruction 1:** "① Place the cursor near the 9 o'clock position on the endocardium and" (accompanied by a hand icon clicking a "SET" button).
- Instruction 2:** "② In the same manner, set 5 or 6 points one by one in the counterclockwise direction on the structure that is identified as the endocardium."
- Instruction 3:** "③ Place the cursor near the 11 o'clock or 12 o'clock position on the endocardium and" (accompanied by a hand icon clicking a "SET" button "twice").

**Bottom Stage: Automatic Contour Generation and Adjustment**

- Image:** The same short-axis ultrasound image, but now showing a dashed circular contour representing the epicardium. A numerical value "9.4mm" is displayed near the contour.
- Instruction 4:** "④ The epicardial contour is generated automatically at a fixed distance outward from the endocardial contour."
- Instruction 5:** "⑤ Adjust the distance between the contours using" (accompanied by a hand icon adjusting a vertical slider).

<3> For a short-axis image (when  ACT Mode  
 Fix Thickness is set) is set)



<4> For a short-axis image (when  ACT Mode  Fix Thickness is set)

① Set points at the 4 o'clock, 8 o'clock, and 12 o'clock positions by moving the cursor to each position and

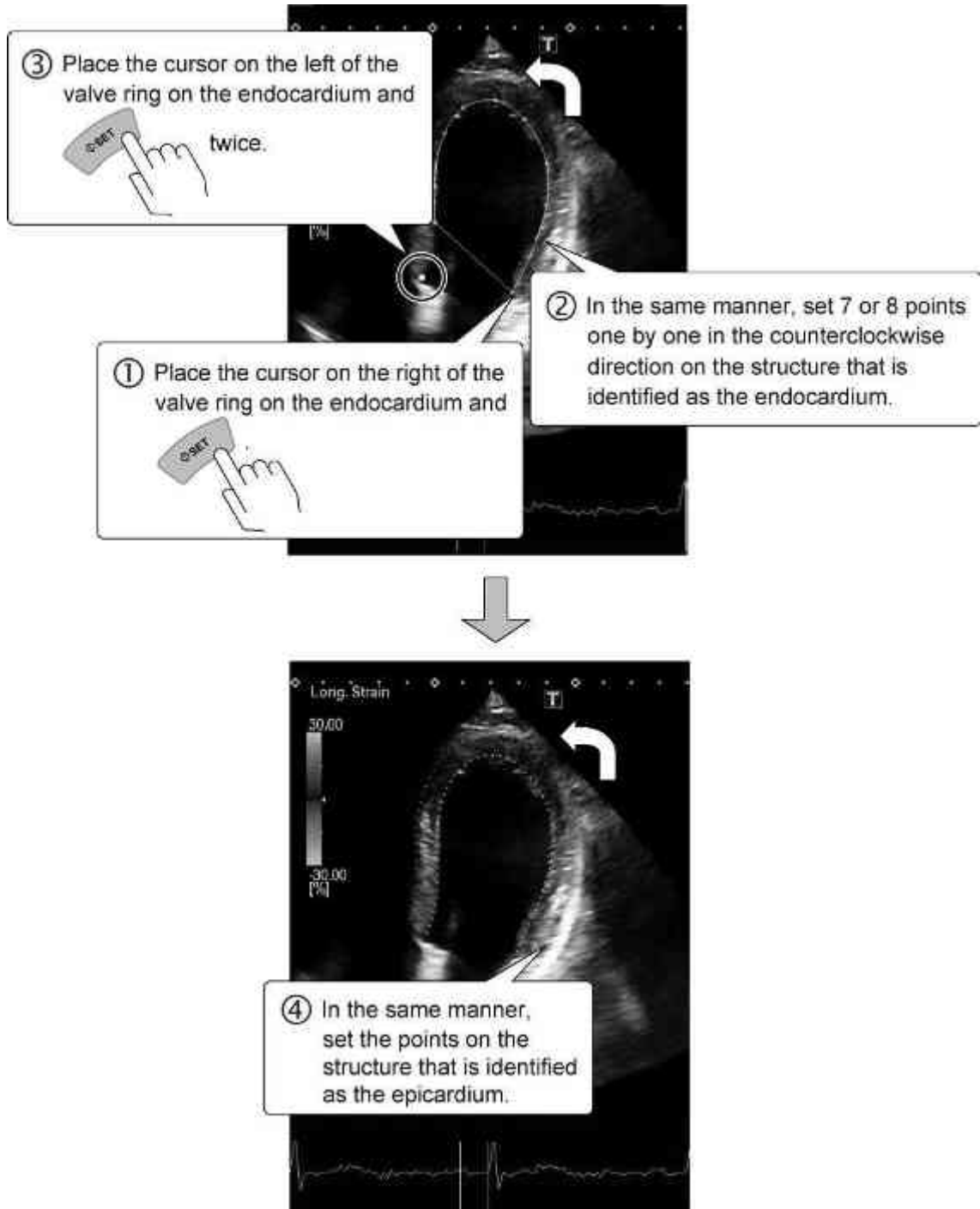
② The endocardial contour is generated automatically based on the image brightness information, and the epicardial contour is generated automatically at a fixed distance outward from the endocardial contour.

③ Adjust the distance between the contours using

9.4mm

<5> For a long-axis image or other image that is not a short-axis image

(when **ACT Mode**  
**Fix Thickness** is set)




NOTE

To cancel the last point placed in initial contour setting, press




<6> For a long-axis image or other image that is not a short-axis image


(when **ACT Mode** is set and  **Fix Thickness** is set)

③ Place the cursor on the left of the valve ring on the endocardium and  twice.

② In the same manner, set 7 or 8 points one by one in the counterclockwise direction on the structure that is identified as the endocardium.

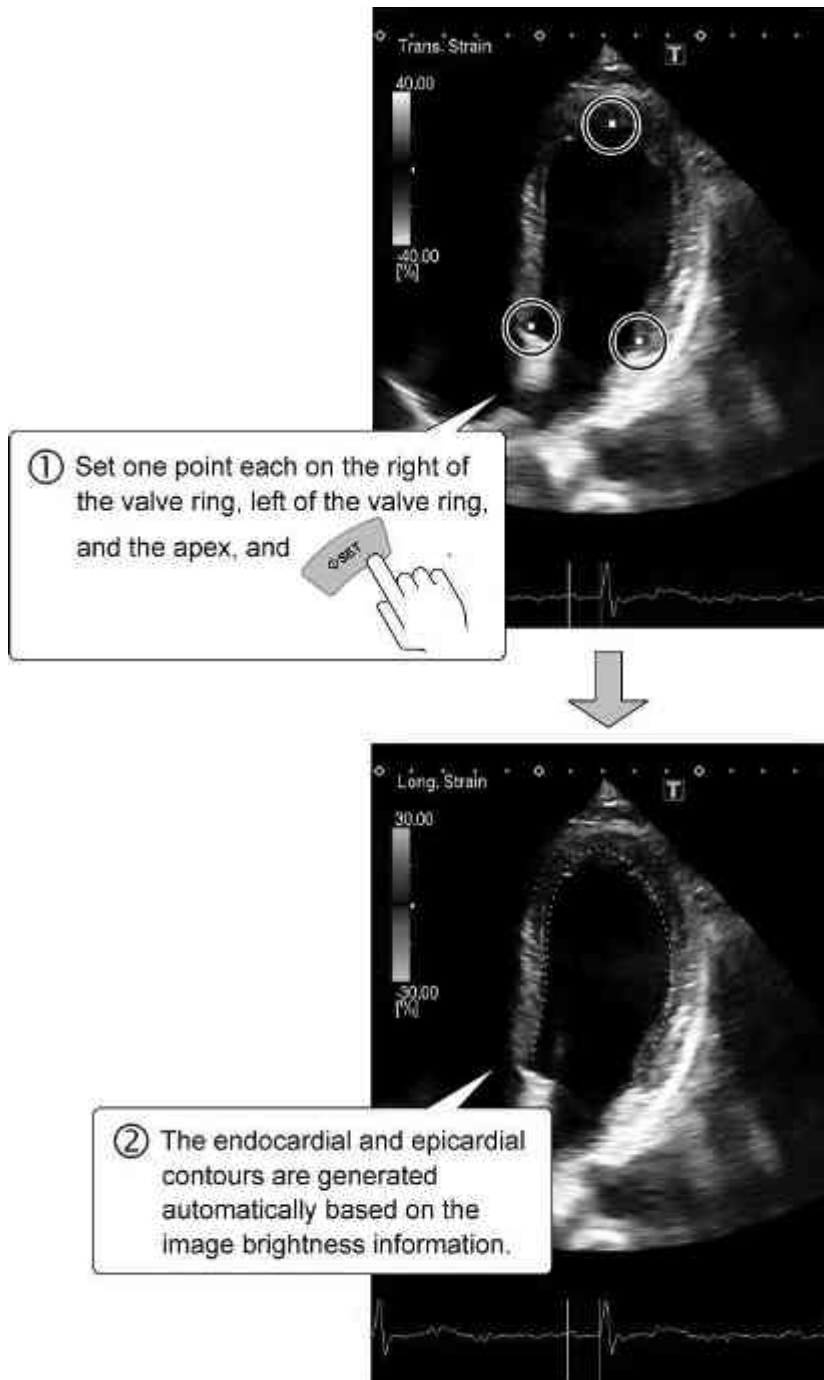
① Place the cursor on the right of the valve ring on the endocardium and .

④ The epicardial contour is generated automatically at a fixed distance outward from the endocardial contour.

⑤ Adjust the distance between the contours using .

<7> For a long-axis image or other image that is not a short-axis image

(when  **ACT Mode**  
 **Fix Thickness** is set)





<8> For a long-axis image or other image that is not a short-axis image



(when **ACT Mode** and **Fix Thickness** is set)

① Set one point each on the right of the valve ring, left of the valve ring, and the apex, and

② The endocardial contour is generated automatically based on the image brightness information, and the epicardial contour is generated automatically at a fixed distance outward from the endocardial contour.

③ Adjust the distance between the contours using

## (3) Displaying the tracking result

After the initial contours are set, move the cursor to  in the control area and press . The tracking result is displayed in the graph display area.

## NOTE


1. When tracking is complete, confirm the contour position in all phases and modify the contour if necessary. The contour can be modified in any of the phases.
2. If the contour for the endocardium has been modified, reconfirm the results for the parameters other than Radial Strain and Transverse Strain.

## (4) Modifying the initial contour

- (a) Place the cursor on the point to be modified and press and hold down



- (b) Move the point to the desired position using the trackball.


- (c) Release  to set the point at the new position.

## (5) Generating the initial contour again

- (a) Place the cursor on  and press .

- (b) Perform tracing again.

## (6) Modifying the initial contour and retracking

- (a) After tracking is completed, place the cursor on  and press




- (b) The frame used for initial contour setting is selected automatically.

- (c) Place the cursor on the point to be modified and press and hold down




- (d) Move the point to the desired position using the trackball.

- (e) Release  to set the point at the new position.

(f) Place the cursor on  in the control area and press



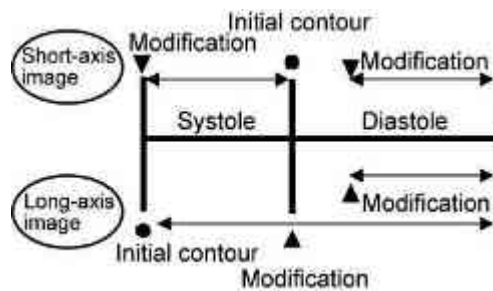
. The retracking result is displayed in the graph display area.

NOTE Initial contour modification and retracking can also be performed by selecting the estimated end-diastolic phase frame using  or



in the cine control area. In this case, retracking is performed in the frame in which the initial contour is modified and the following frames. For the preceding frames, the tracking result before the initial contour is modified is used.

(7) Initial contour modification and retracking after selecting another frame




(a) Short-axis image

<1> Select the end-diastolic phase frame using  or




in the cine control area.


\* The end-diastolic phase frame can be selected by clicking .

<2> Place the cursor on the point to be modified and press and hold down




<3> Move the point to the desired position using the trackball.

<4> Release  to set the point at the new position.

<5> Place the cursor on  in the control area and press



<6> Retracking calculation is performed for a single cardiac cycle and the end-systolic phase is selected automatically.

<7> Select the end-diastolic phase frame using  or



in the cine control area and confirm the diastolic contour position.

\* If necessary, modify the diastolic contour by repeating steps <2> to <4>.

<8> Place the cursor on  in the control area and press



. Retracking calculation is performed for the diastolic phase.

(b) Long-axis image or other image that is not a short-axis image

<1> Select the end-systolic phase frame using  or




in the cine control area.

<2> Place the cursor on the point to be modified and press and hold down



<3> Move the point to the desired position using the trackball.

<4> Release  to set the point at the new position.

<5> Place the cursor on  in the control area and press



<6> Retracking calculation is performed for a single cardiac cycle and the end-systolic phase is selected automatically.

<7> Select the end-diastolic phase frame using  or



in the cine control area and confirm the diastolic contour position.

\* If necessary, modify the diastolic contour by repeating steps <2> to <4>.

<8> Place the cursor on  in the control area and press



. Retracking calculation is performed for the diastolic phase.

(8) If another plane is selected after tracking

When a new plane is selected from the pull-down menu




in the control area or from the 2DT/3DT menu on the touch panel, initial contour setting can be performed on the new plane.



(9) Storing the still image or dynamic image


Refer to section 19 of the operation manual <<Fundamentals volume>> for the image storage procedure.





(2) AVC-time display function

- (a) Place the cursor on  at the bottom of the graph and press



 . A blue dotted line is displayed on the graph and an edit box is displayed on the right of  .


- (b) Place the cursor on the displayed dotted line and press  .  
The dotted line can then be moved using the trackball.

- (c) Move the dotted line to the desired position and press  .  
The corresponding AVC time is displayed.

\* The AVC time can also be displayed by entering a value directly in the edit box on the right of  .

(3) Time-difference calculation function

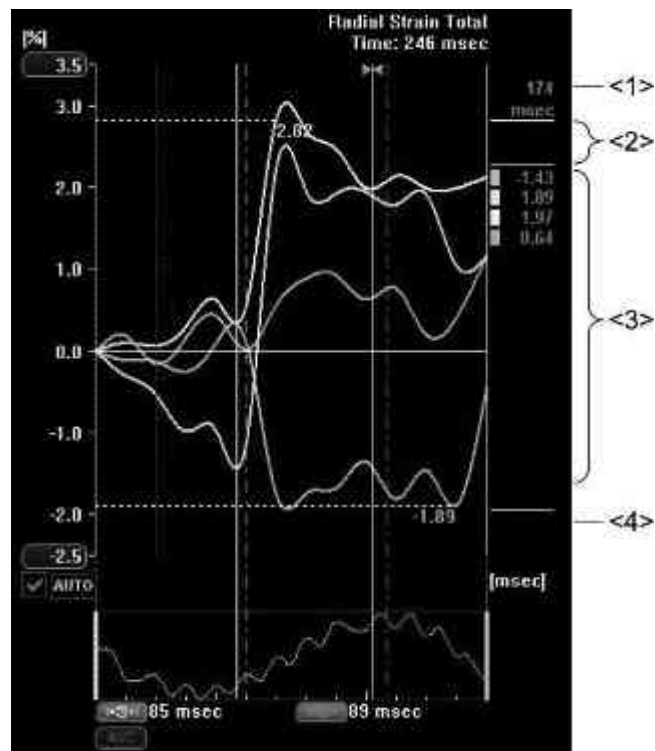
- (a) Place the cursor on  and press  . A dotted line is displayed on the graph.

- (b) Move the dotted line to the desired position using the trackball and press  . The dotted line is fixed at that position and a second dotted line is displayed.

- (c) Move the second line to the desired position and fix it there in the same manner as the first line. The time difference between the two lines is displayed.

\* Up to two sets of time differences can be displayed.


- NOTE
1. The time-difference calculation function displays the analysis values shown in the figure below.
  2. When two sets of time differences are calculated, only the values obtained in the time difference measurement that was started first (values calculated from the positions at which the second dotted line crosses the curves) are displayed in the analysis value display area on the right of the screen.  
Note that analysis values are not displayed for curves that are not displayed.




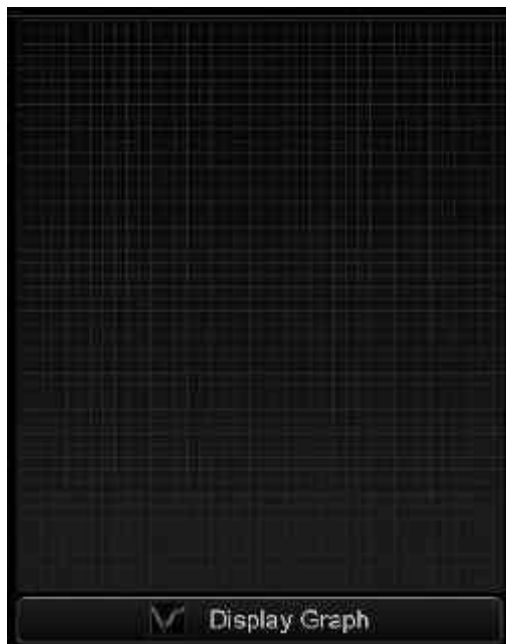
No.	Displayed item
<1>	Phase for which measurement was performed
<2>	Ventricular volume
<3>	Values of each of the segments
<4>	Mean value for the segments (global value)



### 9.3.2.2 Graph display in Manual mode

The  switch allows the user to display the graph manually after confirming the contours for all the cardiac phases.

- \* Select  to display the graph (refer to subsection 9.3.2.1).
- \* If the contour is modified with the graph displayed, the parameter image is updated to reflect the modification but the graph is no longer displayed when the modification is completed.



### 9.3.3 Information area

The measurement values are displayed in this area.

<b>EDV</b>	<b>11.80 mL</b>	<b>2669 msec</b>
<b>ESV</b>	<b>10.49 mL</b>	<b>511 msec</b>
<b>EF</b>	<b>11.05 %</b>	

Item	Cardiac parameter	Unit
EDV	End-diastolic chamber volume	mL
ESV	End-systolic chamber volume	mL
EF	Ejection fraction (100*(EDV-ESV)/EDV)	%



<<Measurement accuracy>>

The table below shows the accuracy of the measured values assuming that calculation is performed with contours set on the endocardium and epicardium in the cardiac phase for which the calculation is performed.

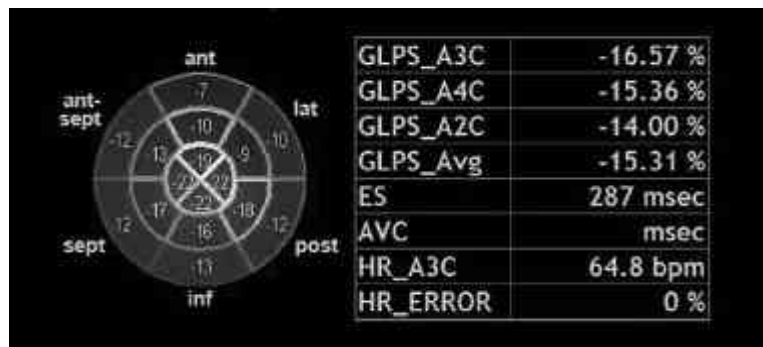
Item	Range	Accuracy
EDV, ESV	Up to 999.99 mL	<±16%

### 9.3.4 Polar map display area

The analysis results for images for each plane (in 4Ch Tracking, 3Ch Tracking, 2Ch Tracking) acquired at different times are combined and displayed as a polar map in this area.

NOTE If the maximum difference for the heart rate for each plane exceeds the specified value (refer to section 18 ),  and  are displayed in the polar map.



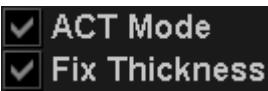

Because the accuracy for the values displayed in this area cannot be ensured due to effects from correction, when performing quantitative evaluation they should be used as reference data only.








### 9.3.5 Control switches

(1) Main tab



No.	Item	Function
<1>	RegionSelect	Used to select the reference plane (same as the WMT menu on the touch panel). <ul style="list-style-type: none"> <li>• SAX-Apical : SAA Tracking</li> <li>• SAX-Middle : SAx Tracking</li> <li>• SAX-Basal : SAB Tracking</li> <li>• Apical-4Ch : 4Ch Tracking</li> <li>• Apical-2Ch : 2Ch Tracking</li> <li>• Apical-3Ch : 3Ch Tracking</li> </ul>
<2>		Starts tracing (initial contour setting)
<3>		Starts retracking after the initial contour is modified.
<4>		Setting for generating the initial contour automatically
<5>		Starts tracking calculation.

No.	Item	Function
<6>	Display	Turns ON/OFF the corresponding overlay. <ul style="list-style-type: none"> <li>•  : Contour</li> <li>•  : Color image for the selected parameter</li> <li>•  : Segment positions</li> </ul>
<7>	Parameter	Used to select the parameter (refer to subsection 9.3.5.1).
<8>	Transmural Tracking	Used to select the type of transmural myocardial tracking (refer to subsection 9.3.5.2).
<9>		Displays the frames for the specified range (%) in diastole (from end systole to the R-wave).
<10>		Used to adjust the cardiac cycles to be used for analysis.


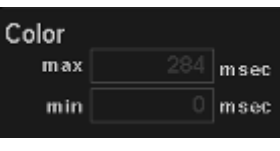


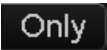



## (2) Format tab



&lt;&lt;Volume tab&gt;&gt;

&lt;&lt;Peak tab&gt;&gt;

No.	Item	Function
<1>	ImageDirection	Used to select the segment setting condition suitable for the plane orientation. <ul style="list-style-type: none"> <li>• Normal : Same orientation as the reference plane (refer to subsection 9.2.2)</li> <li>• Reverse : Orientation reversed vertically relative to the reference plane</li> </ul>
<2>	Fusion	Used to set the transparency (weighting) of the color-converted parameters superimposed over the 2D image. <ul style="list-style-type: none"> <li>• 0.0 : Only the 2D image is displayed.</li> <li>• 1.0 : Only the color-converted parameters are displayed.</li> <li>• 0.1 to 0.9 : The color-converted parameters are superimposed over the 2D image.</li> </ul>
<3>	Hue	Used to select the color map for color display. The color map corresponding to the displayed hue number is used.

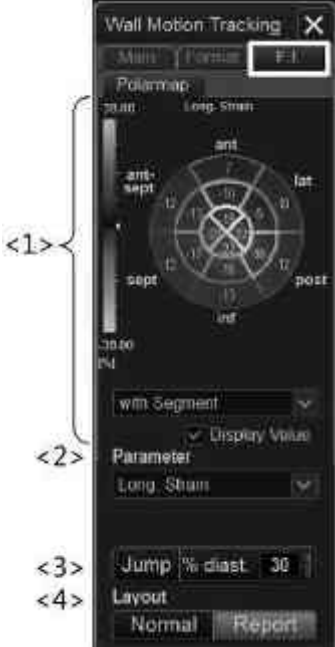
No.	Item	Function
<4>		<p>Used to set the maximum and minimum values of the dynamic range for color display.</p> <p>* This function is effective when a parameter other than DI is selected in the Parameter pull-down menu.</p>
		<p>Used to set the minimum time (corresponding to the light blue "[") and maximum time (corresponding to the orange "]") on the ECG waveform.</p> <p>Specify the maximum and minimum times by selecting the corresponding marks and moving them using the trackball.</p> <p>* This function is effective when DI is selected in the Parameter pull-down menu.</p>
<5>	Global	<p>Used to specify whether or not the global curve (representing the average of all segments for which parameter curves are displayed) is displayed.</p> <ul style="list-style-type: none"> <li>•  : Only the curves for individual segments are displayed.</li> <li>•  : The global curve is displayed together with the curves for individual segments.</li> <li>•  : Only the global curve is displayed.</li> </ul>
<6>	Ventricular Volume	<p>Used to specify whether or not the ventricular volume change curve is displayed.</p> <ul style="list-style-type: none"> <li>• </li> <li>• </li> </ul>
<7>		Turns ON/OFF the display of EDV (mL), ESV (mL), and EF (%).





No.	Item	Function
<8>	Hold	<p>Used to change the color display status for the parameters superimposed in color on the 2D image.</p> <ul style="list-style-type: none"> <li>• <b>OFF</b> : The parameter values are displayed as is.</li> <li>• <b>Posi</b> : The positive peak value in the time-series data is held and displayed in color.</li> <li>• <b>Nega</b> : The negative peak value in the time-series data is held and displayed in color.</li> </ul>
<9>	Marker Display	<p>Used to specify whether or not markers are displayed on the graph for each segment (markers representing the first and second peaks in the positive and negative directions, and text indicating values of these peaks and the cardiac phases).</p> <ul style="list-style-type: none"> <li>• <b>OFF</b></li> <li>• <b>ON</b></li> </ul>






(3) F.I. tab (Polarmap tab)

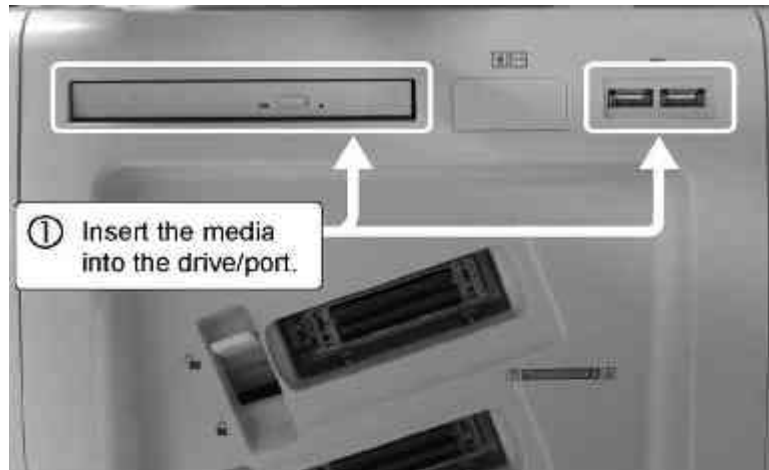
\* This tab is displayed after performing tracking calculation in 4Ch Tracking, 3Ch Tracking, or 2Ch Tracking.



No.	Item	Description
<1>		<p>Displays a polar map by combining the analysis results for images for each plane (in 4Ch Tracking, 3Ch Tracking, 2Ch Tracking) acquired at different times.</p> <p>* The following operation is possible only when "with Segment" is selected.</p> <p>(a) Only the graph for the desired region is highlighted when the cursor is placed on the polar map.</p> <p>(b) Only the graph for the desired region is hidden by pressing  while the cursor is placed on the polar map.</p> <p>* The hidden region is displayed by pressing  again.</p>
		<p>Sets the display format for the polar map.</p> <ul style="list-style-type: none"> <li>• Image : Displays the parameter by converting the color.</li> <li>• with Segment : Displays the color image by adding 16 or 17 fractional segment frames to it.</li> <li>• with Coronary bed : Displays the color image by adding the frames representing the approximate territory for each of the three coronary arteries.</li> </ul> <p>* The following operation is possible only when "with Segment" is selected.</p> <ul style="list-style-type: none"> <li>• <input checked="" type="checkbox"/> <b>Display Value</b> : Sets whether to show or hide the segment average value in the polar map.</li> </ul>
<2>	Parameter	Sets the parameter (refer to 9.3.5.1).

No.	Item	Description
<3>		Displays the frames for the specified range (%) in diastole (from end systole to the R-wave).
<4>	Layout	<ul style="list-style-type: none"><li>•  : Shows the polar map display area.</li><li>•  : Hides the polar map display area.</li></ul>

## (4) Storing the WMT data onto media






<<Selectable objects>>

Export type	Format	Object
Graph Bitmap	.BMP	Graph
Graph Text	.CSV	Graph
Polarmap Bitmap	.BMP	Polar map (The display type selected at the time of saving (Image/with Coronary bed/with Segment))
Image Full Bitmap	.BMP	Screen displayed on the monitor
Image Full Movie	.WMV, .AVI	Screen displayed on the monitor

## (5) Storing the current state of analysis






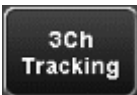


- \* The  icon is displayed for the thumbnail image stored with the state of analysis. When such data is selected in the Patient Browser screen (refer to section 2), the state of analysis at the time the image was stored is reproduced.

9.3.5.1 Parameter setting

Parameters for color display and graph display for Wall Motion Tracking output can be selected.

(1) The parameters that can be selected differ depending on the selected plane.

Plane	Available parameter
<div style="text-align: center;">  </div> <p>(SAX-Apical)</p>	<div style="background-color: #333; color: #fff; padding: 5px;"> <p><b>Parameter</b></p> <ul style="list-style-type: none"> <li>Radial Strain</li> <li>Radial S-Rate</li> <li>Radial Disp</li> <li>Radial Velocity</li> <li>Circum. Strain</li> <li>Circum. S-Rate</li> <li>Rotation</li> <li>Rotation Rate</li> <li>DI_R-Strain</li> <li>DI_R-Disp</li> <li>DI_C-Strain</li> </ul> </div>
<div style="text-align: center;">  </div> <p>(SAX-Middle)</p>	
<div style="text-align: center;">  </div> <p>(SAX-Basal)</p>	
<div style="text-align: center;">  </div> <p>(Apical-4Ch)</p>	<div style="background-color: #333; color: #fff; padding: 5px;"> <p><b>Parameter</b></p> <ul style="list-style-type: none"> <li>Long Strain</li> <li>Long S-Rate</li> <li>Long Disp</li> <li>Long Velocity</li> <li>Trans Strain</li> <li>Trans S-Rate</li> <li>Trans Disp</li> <li>Trans Velocity</li> <li>DI_PSS</li> <li>DI_L-Strain</li> <li>DI_L-Disp</li> <li>DI_T-Strain</li> <li>DI_T-Disp</li> <li>AI_L Strain</li> <li>AI_T Strain</li> </ul> </div>
<div style="text-align: center;">  </div> <p>(Apical-2Ch)</p>	
<div style="text-align: center;">  </div> <p>(Apical-3Ch)</p>	

## (2) Details of each parameter

Display	Parameter name	Discription
Radial Strain	Radial Strain	Strain [%] in the direction normal to the endocardial contour
Radial S-Rate	Radial Strain Rate	Difference in Radial Strain between frames [1/s]
Radial Disp.	Radial Displacement	Displacement of the endocardial surface [mm] in the direction normal to the endocardial contour (A positive (+) value indicates displacement toward the center.)
Radial Velocity	Radial Velocity	Difference in Radial Displacement between frames [cm/s]
Circum. Strain	Circumferential Strain	Endocardial strain in the circumferential direction [%]
Circum. S-Rate	Circumferential Strain Rate	Difference in Circumferential Strain between frames [1/s]
Rotation	Rotation	Endocardial rotation angle around the center of area [deg.] (A positive (+) value indicates counterclockwise rotation.)
Rotation Rate	Rotation Rate	Difference in Rotation between frames [deg./s]
DI_R-Strain	DI (+) Radial Strain	Time-to-peak (+) for Radial Strain [ms]
DI_R-Disp.	DI (+) Radial Displacement	Time-to-peak (+) for Radial Displacement [ms]
DI_C-Strain	DI (-) Circumferential Strain	Time-to-peak (-) for Circumferential Strain [ms]
Long. Strain	Longitudinal Strain	Endocardial strain tangential to the contour [%]
Long. S-Rate	Longitudinal Strain Rate	Difference in Longitudinal Strain between frames [1/s]
Long. Disp.	Longitudinal Displacement	Displacement of endocardium tangential to the contour [mm] (A positive (+) value indicates displacement toward the apex.)
Long. Velocity	Longitudinal Velocity	Difference in Longitudinal Displacement between frames [cm/s]
Trans. Strain	Transverse Strain	Strain [%] in the direction normal to the endocardial contour on a long-axis image



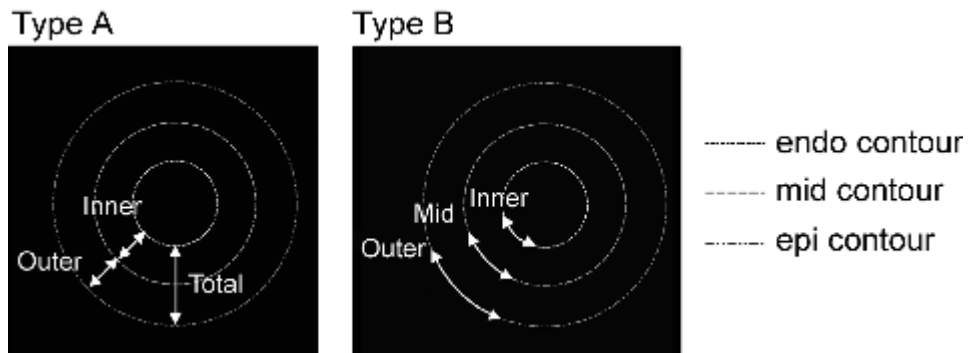
Display	Parameter name	Discription
Trans. S-Rate	Transverse Strain Rate	Difference in Transverse Strain between frames [1/s]
Trans. Disp.	Transverse Displacement	Displacement of endocardium normal to the contour [mm] (A positive (+) value indicates displacement toward the center.)
Trans. Velocity	Transverse Velocity	Difference in Transverse Displacement between frames [cm/s]
DI_PSS	DI (+) Post Systolic Shortening	Time-to-peak (+) for Longitudinal Displacement [ms] (The minimum value for the dynamic range for color display is set for the automatically estimated end-systole frame, and the maximum value is set for the frame that is closest to 100 ms after this frame.)
DI_L-Strain	DI (-) Longitudinal Strain	Time-to-peak (-) for Longitudinal Strain [ms]
DI_L-Disp.	DI (+) Longitudinal Displacement	Time-to-peak (+) for Longitudinal Displacement [ms]
DI_T-Strain	DI (+) Transverse Strain	Time-to-peak (+) for Transverse Strain [ms]
DI_T-Disp.	DI (+) Transverse Displacement	Time-to-peak (+) for Transverse Displacement [ms]
AI_L-Strain <sup>*1</sup>	AI (-) Longitudinal Strain	The time when the specified threshold (-) for Longitudinal Strain is reached for the first time [ms]
AI_T-Strain <sup>*1</sup>	AI (+) Transverse Strain	The time when the specified threshold (+) for Transverse Strain is reached for the first time [ms]

\* 1: Not available in the USA and Canada.

### 9.3.5.2 Setting of Transmural Myocardial Tracking

It is possible to specify Transmural Myocardial Tracking, in which parameter values are displayed in color or a graph for each parameter is displayed.

- (1) The parameter calculation method differs depending on the type of Transmural Myocardial Tracking.



#### <<Type A>>

- Inner : The parameters are calculated using "endo contour" and "mid contour".
- Outer : The parameters are calculated using "mid contour" and "epi contour".
- Total : The parameters are calculated using "endo contour" and "epi contour".

#### <<Type B>>

- Inner : The parameters are calculated using "endo contour".
- Outer : The parameters are calculated using "epi contour".
- Mid : The parameters are calculated using "mid contour".





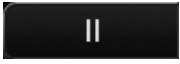




(2) The types of Transmural Myocardial Tracking that can be specified for each parameter are indicated in the table below.

Parameter	Type	Selectable Transmural Myocardial Tracking		
Radial Strain	A	Inner	Outer	Total
Radial S-Rate	A	Inner	Outer	Total
Radial Disp.	B	Inner	Outer	Mid
Radial Velocity	B	Inner	Outer	Mid
Circum. Strain	B	Inner	Outer	Mid
Circum. S-Rate	B	Inner	Outer	Mid
Rotation	B	Inner	Outer	Mid
Rotation Rate	B	Inner	Outer	Mid
DI_R-Strain	A	Inner	Outer	Total
DI_R-Disp.	B	Inner	Outer	Mid
DI_C-Strain	B	Inner	Outer	Mid
Long. Strain	B	Inner	Outer	Mid
Long. S-Rate	B	Inner	Outer	Mid
Long. Disp.	B	Inner	Outer	Mid
Long. Velocity	B	Inner	Outer	Mid
Trans. Strain	A	Inner	Outer	Total
Trans. S-Rate	A	Inner	Outer	Total
Trans. Disp.	B	Inner	Outer	Mid
Trans. Velocity	B	Inner	Outer	Mid
DI_PSS	B	Inner	Outer	Mid
DI_L-Strain	B	Inner	Outer	Mid
DI_L-Disp.	B	Inner	Outer	Mid
DI_T-Strain	A	Inner	Outer	Total
DI_T-Disp.	B	Inner	Outer	Mid

### 9.3.6 Cine control area

The cine control switches are used to adjust the playback speed, to play back the image in frame-by-frame mode, and to change the playback method.



No.	Switch	Function	
<1>		Indicates that a dynamic image is played back in loop mode.	The label of this switch changes each time the cursor is placed on it and  is pressed.
		Indicates that a dynamic image is played back in reciprocating mode.	
<2>		Used to change the playback speed.	
<3>		Pauses playback.	
		Starts playback.	
<4>		Stops playback.	
<5>		Feeds the image backward by one frame.	
<6>		Feeds the image forward by one frame.	



# 10. Protocol Assistant

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## 10.1 Outline of Protocol Assistant


This function automatically executes a series of operations (a protocol) that has been created for the intended examination.

By executing multiple operations automatically through a single workflow, an examination can be performed efficiently.

- To use Protocol Assistant, the optional USPA-X200A is required.
- Some of the functions to be executed using Protocol Assistant may require other options.

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**NOTICE**

1. If the following problem occurs with the registered workflow, contact your Canon Medical Systems service representative.
  - (1) The transducer is not changed to the specified one.
  - (2) When a step is completed (the  mark is displayed for the step) and then the light blue frame is skipped too quickly over several steps to select the step to be performed next, the mode specified in the selected step is not set.
2. If a measurement is included in a protocol, change the setting value for Freeze on Behavior to "Cine Only" through Presets (Measure Setup → [Labeled Preset] tab) before using it (refer to the operation manual <<Measurements volume>>).

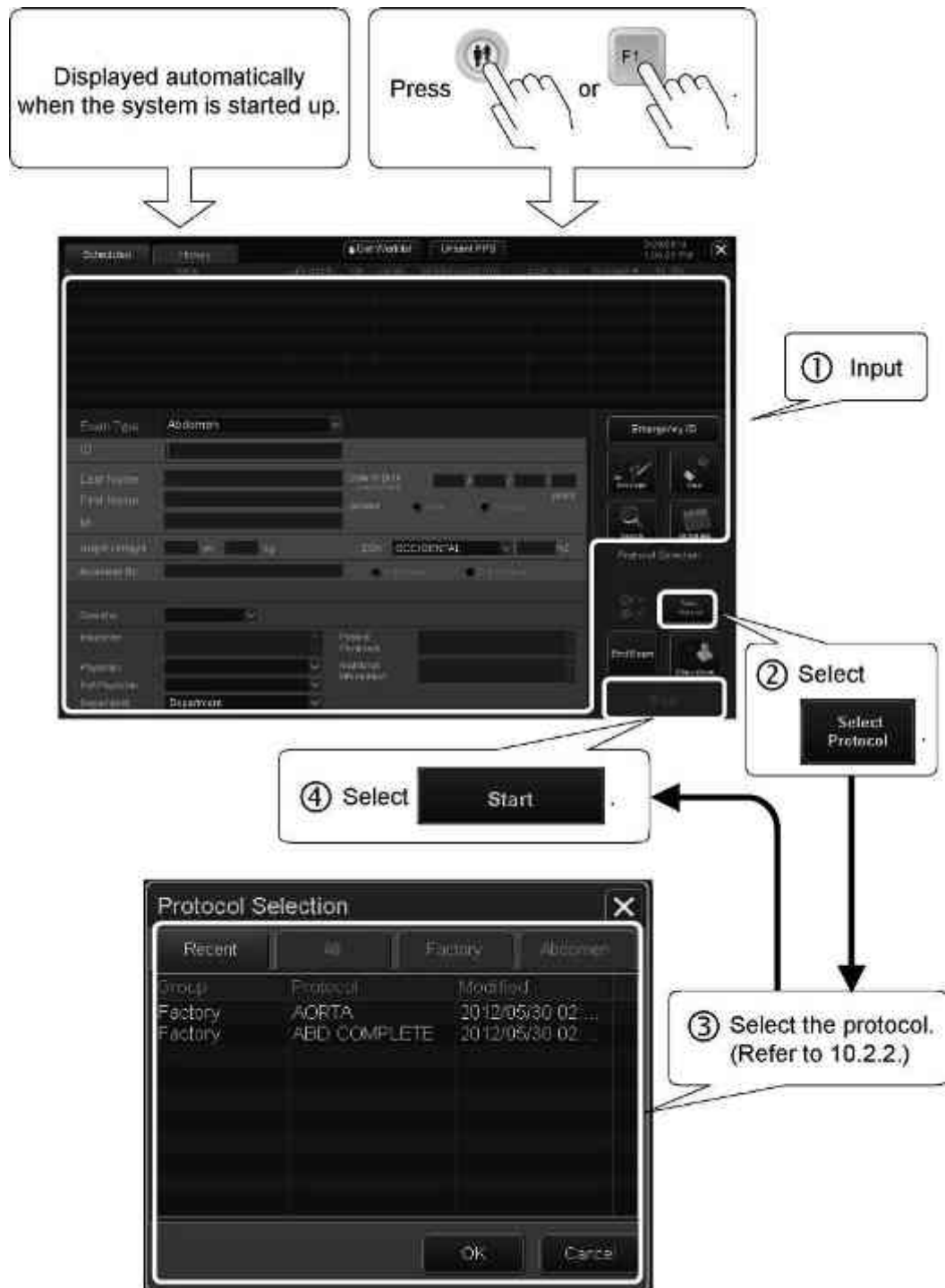
---

**NOTE**

1. Protocols can be registered for each user, each case, and each hospital.
  2. Contact your Canon Medical Systems service representative for registration and editing of protocols.
  3. Protocol Assistant cannot be operated when the image display area on the monitor is enlarged (Full Screen ON).
-

## 10.2 Starting Up Protocol Assistant

### 10.2.1 Startup

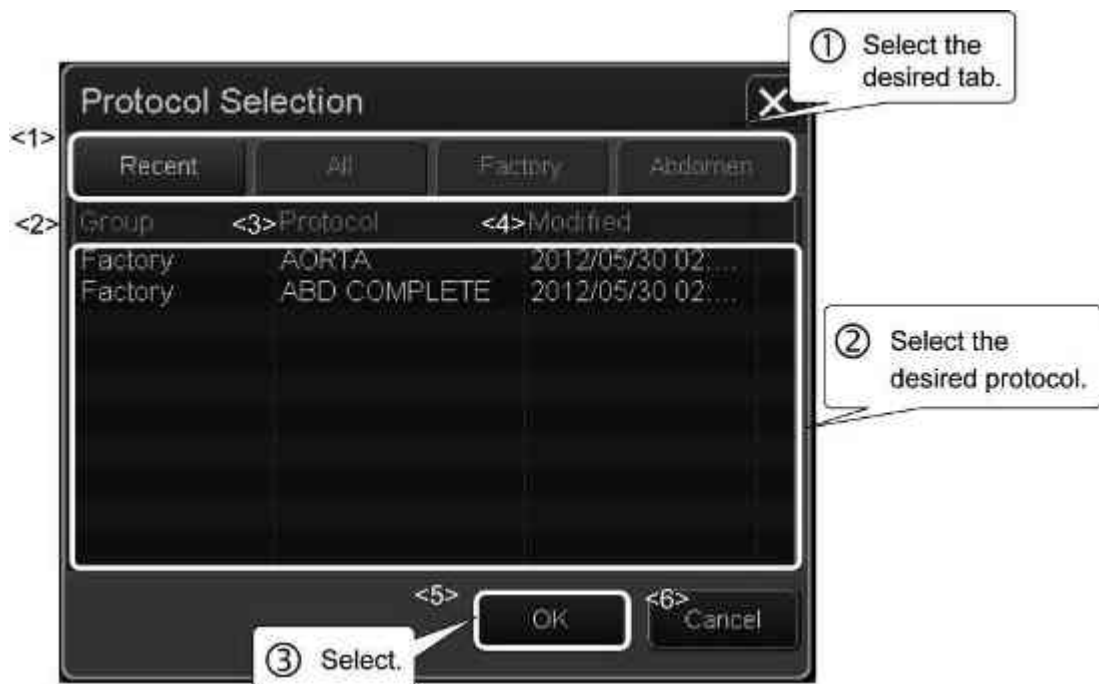





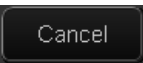


**NOTE** Once Protocol Assistant is started up, the protocol selected directly after startup will be selected automatically for the subsequent examinations. When an examination is to be performed without using Protocol Assistant, select "Off" for Protocol Selection on the Patient Registration screen in advance.



## 10.2.2 Protocol selection



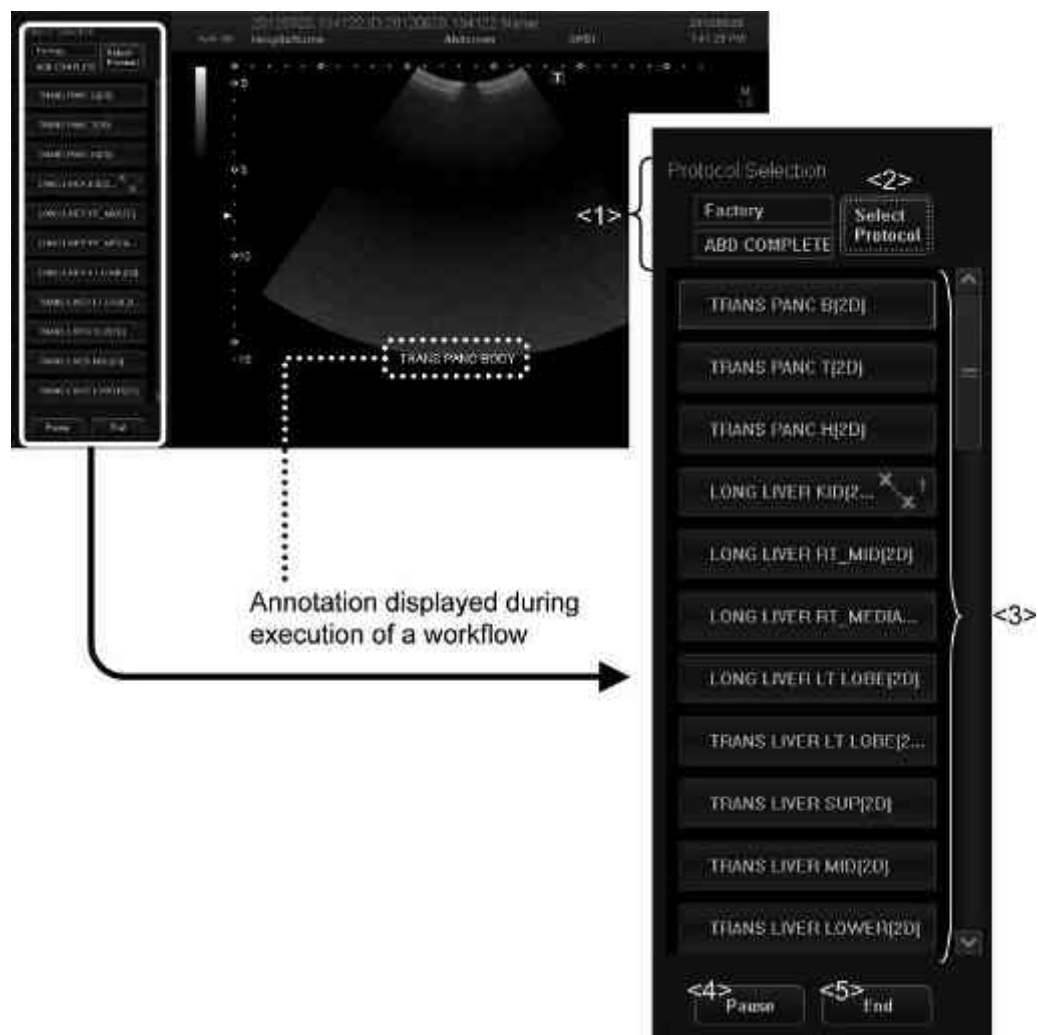
No.	Item	Description
<1>	[Recent] tab	The recently used protocols are listed.
	[All] tab	All of the registered protocols are listed.
	[Factory] tab	The protocols registered to a group (tab) are listed.
	Other tabs	
	 	Used to display the tabs that are not shown on the screen. * These switches are only displayed when tabs have been added.
<2>	Group	Registered group (tab name)
<3>	Protocol	Registered protocol name
<4>	Modified	Date and time the registered protocol was last modified (yyyy/mm/dd).
<5>		Loads the selected protocol.
<6>		Cancels the protocol selection and closes the Protocol Selection screen.

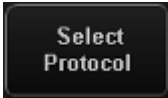




## 10.3 Protocol Assistant Screen and Operations

### NOTE

1. **Select Protocol** on the Protocol Assistant screen and the operations related to workflow selection can be registered to the main panel. Consult your Canon Medical Systems service representative for details.
2. To edit the step names in a workflow or the annotations displayed on the image during execution of a workflow, contact your Canon Medical Systems service representative.

When Protocol Assistant is started up, the Protocol Assistant screen is displayed on the left of the examination screen.



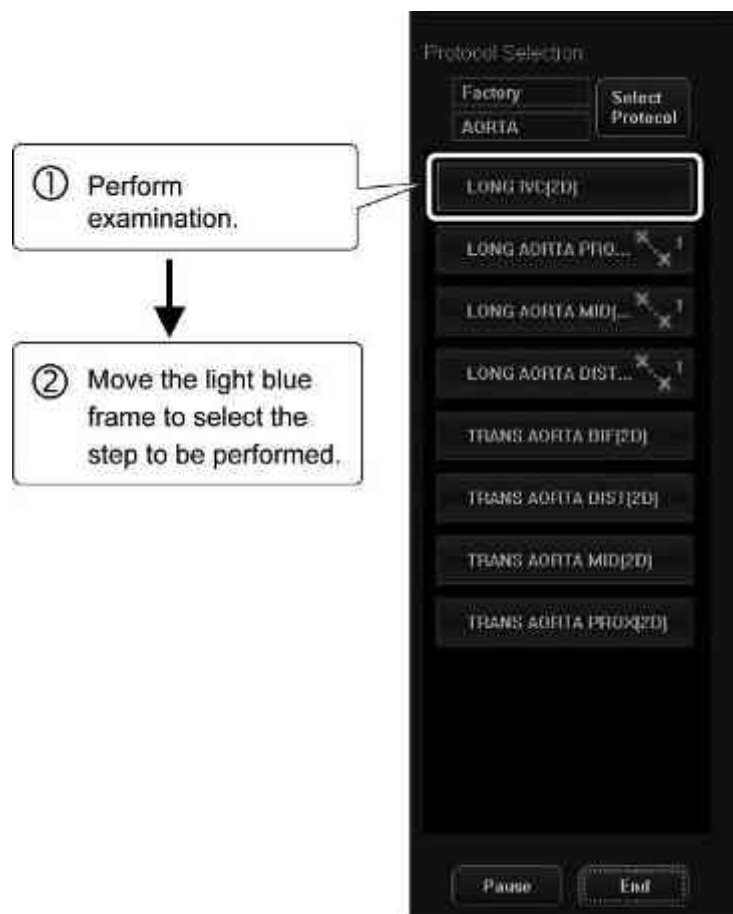
No.	Item	Description
<1>	Protocol Selection	The group (tab name) and name of the selected protocol (refer to subsection 10.2.2) are displayed.
<2>		Used to select a protocol (refer to subsection 10.2.2).
<3>	Workflow	The workflow of the selected protocol is displayed.  * The icon  is displayed for steps that include measurement.
<4>		Pauses the step being executed.
		Resumes execution of the paused step.
<5>		Terminates the workflow.

## (1) Executing a workflow

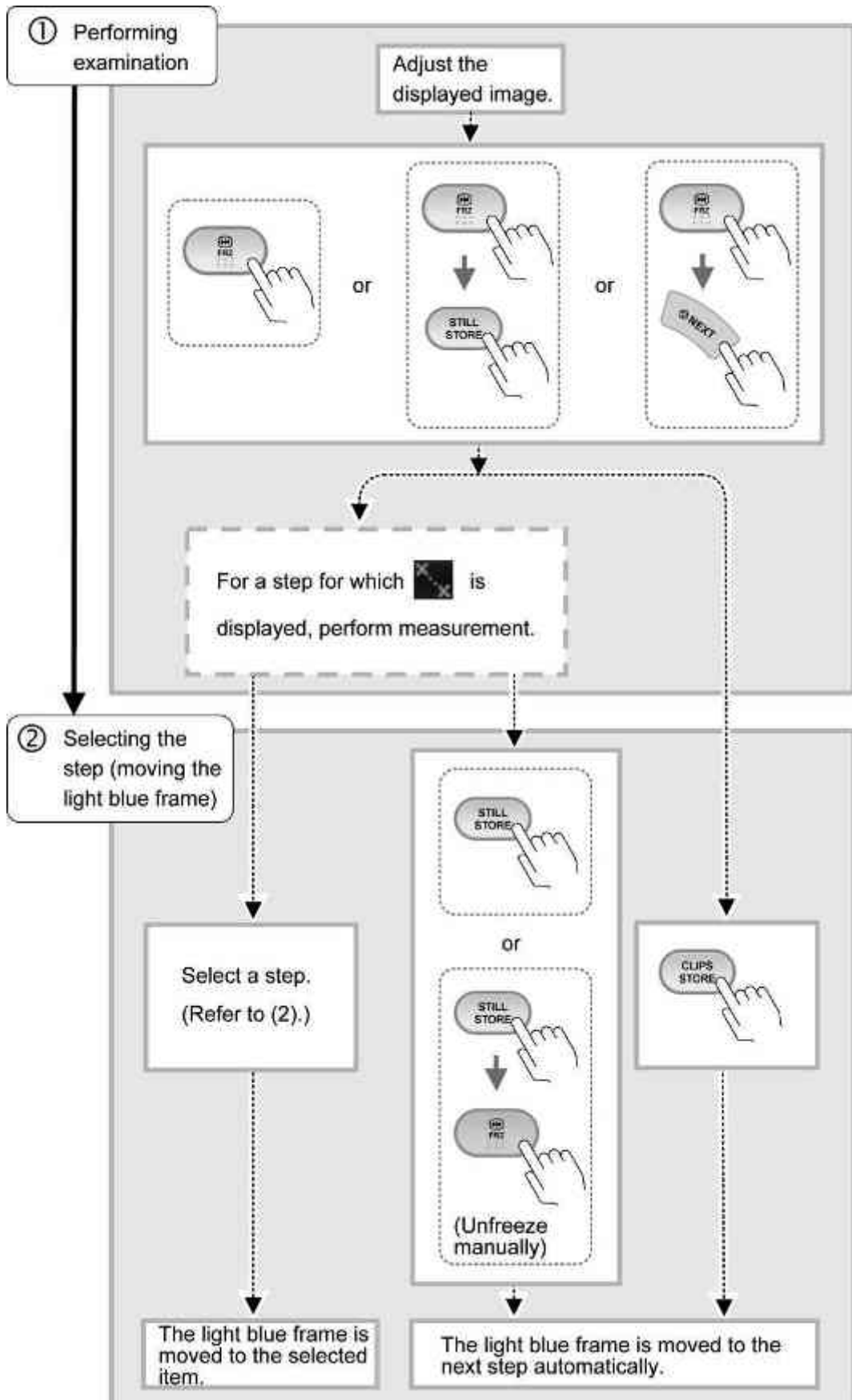
**NOTE** The contents of the workflow steps to be executed (modes to be set, transducer to be selected automatically, measurement items to be started automatically, etc.) differ depending on the settings. Consult your Canon Medical Systems service representative for details.

After the protocol is selected, the examination is performed executing the steps in the workflow sequentially (the currently active step is indicated using a light blue frame).

\* The  mark is displayed for a completed step.



<Operating example>

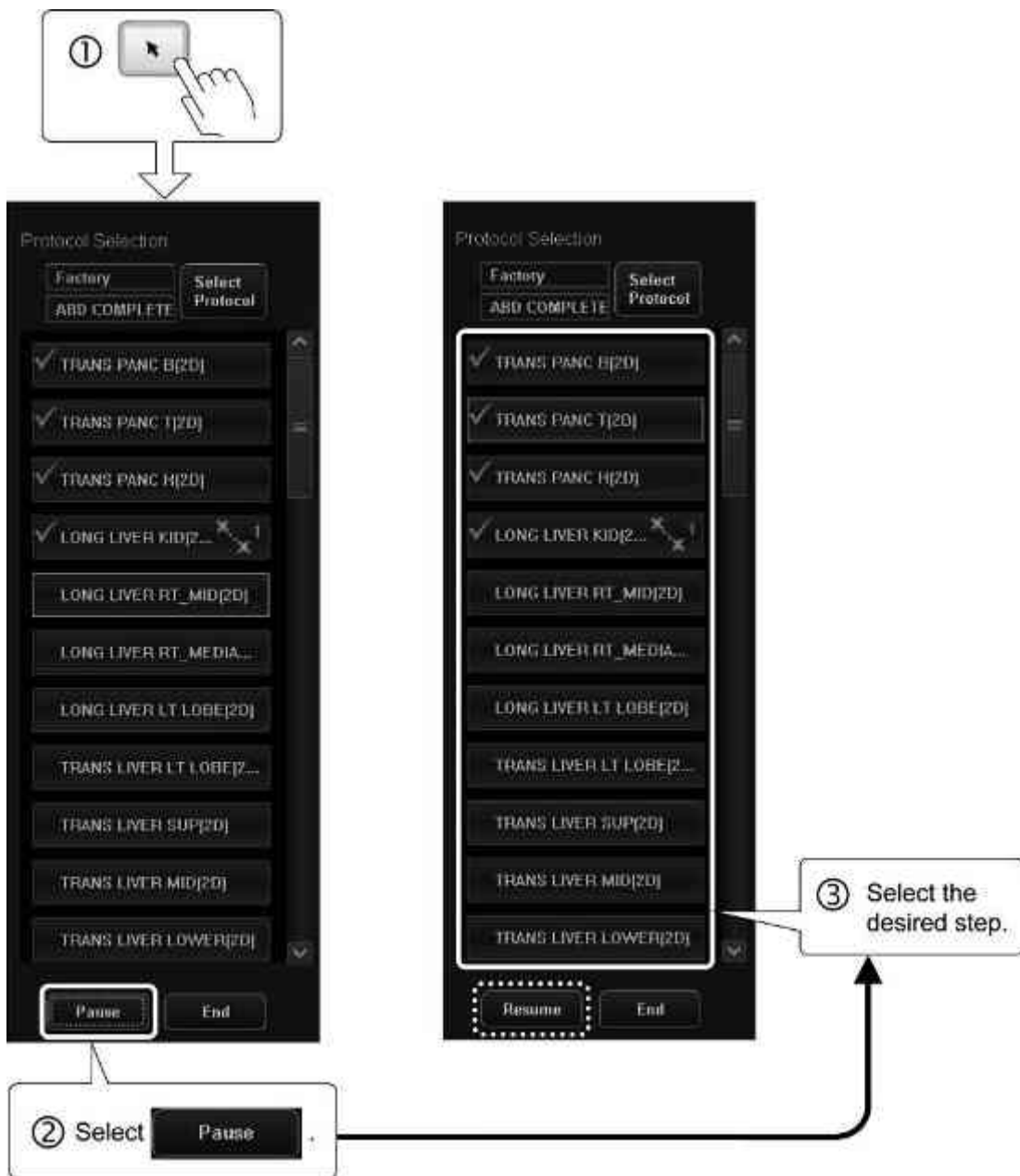


(2) Selecting a step

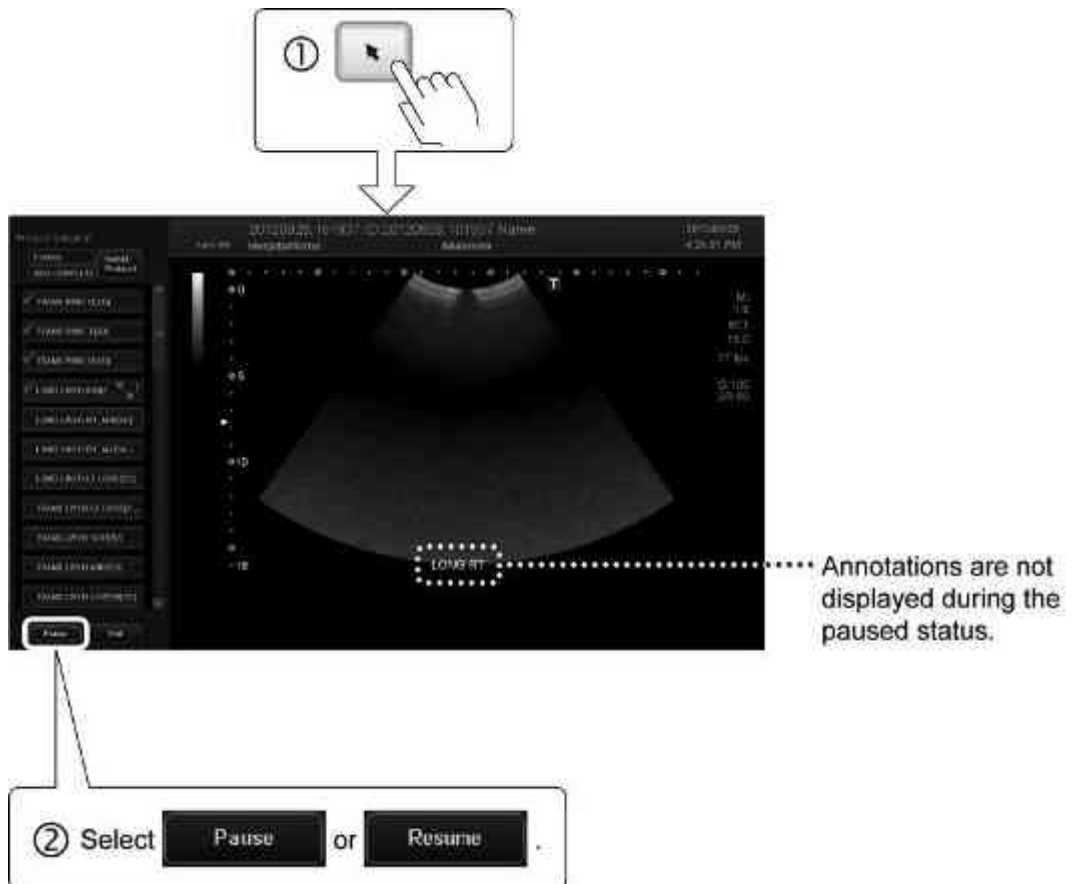
**NOTE** When a user function switch is used to select a step in a workflow, operate the dial as shown below.



The step to be executed can be selected (the light blue frame can be moved) during the paused ( **Resume** ) status.



## (3) Pausing/resuming a workflow





## 10.4 Operating Protocol Assist From the Touch Panel

**NOTE** The switches displayed on the touch panel, the switch layout, and the number of tabs differ depending on the mode, exam type, and transducer selected and the preset settings.  
For details of switch display, contact your Canon Medical Systems service representative.


This subsection describes operations using the touch panel menu in Protocol Assist mode.

The switch functions related to the image quality adjustment parameters are the same as for the other modes.

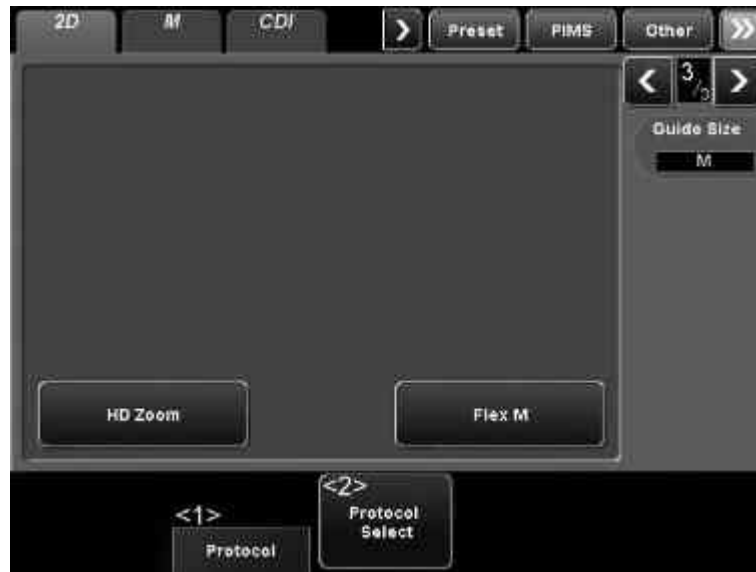
Refer to the operation manual <<Fundamentals volume>> for details.



(1) 2D menu (page 1/3)



No.	Switch	Function
<1>		Used to select a workflow.

(2) 2D menu (page 3/3)



No.	Switch	Function
<1>		Used to select a workflow.
<2>		Used to select a protocol.



# 11. Report

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**NOTE**      The function of the [Report] switch displayed on the touch panel can be assigned to a user function switch on the main panel.  
Consult your Canon Medical Systems service representative for details.

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### **11.1 Outline of the Report Function**

The Report function enters the patient information, exam information, and measurement results automatically in the appropriate template and creates examination reports.

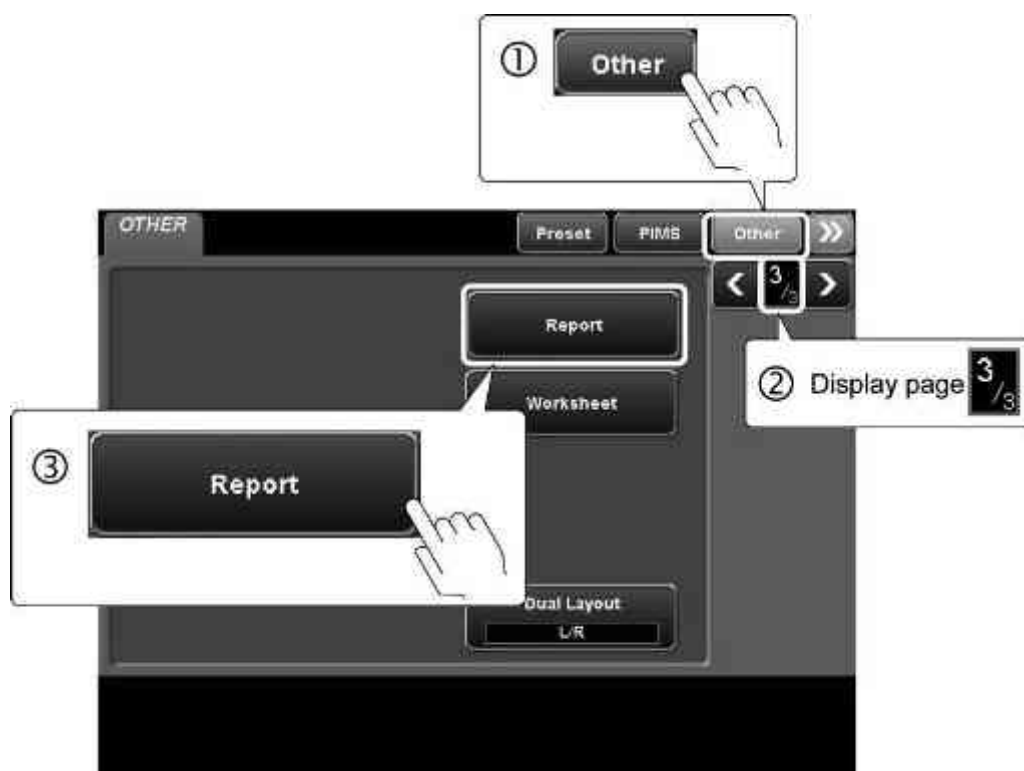
## 11.2 Startup and Termination of the Report Function

### NOTICE


1. Reports cannot be started up in the following cases.
  - If a multiframe layout is set on the screen for Exam Review.
  - If SR Viewer is active.
  - If there is no image stored in the previous exam.
2. Redisplay of the stored examination report
 

The image frame in the examination report cannot be displayed correctly if one of the following operations was performed on the Patient Browser screen before starting up the report again.

  - If the image pasted into the examination report has been deleted.
  - If the patient information or examination information stored in the examination report has been modified.



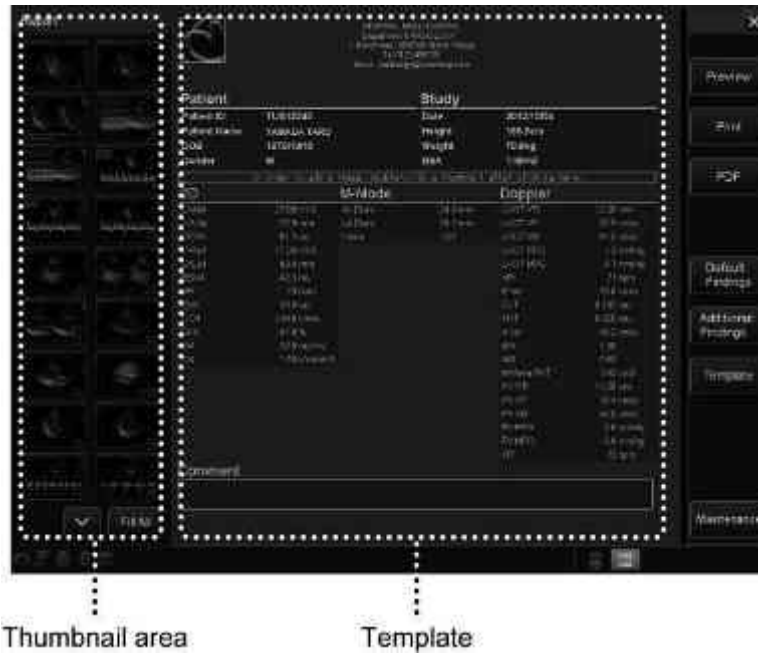
\* Each time this switch is pressed, the Reset function is started up or terminated.

\* The Report function can be terminated also by selecting  on the Report screen (refer to subsection 11.3).

### 11.3 Report Screen and Screen Operations

When the Report function is started up, the Report screen is displayed.

- \* The template appropriate for the exam type is selected automatically.
- \* The patient information, exam information, and measurement results for the current patient are entered to the template automatically.

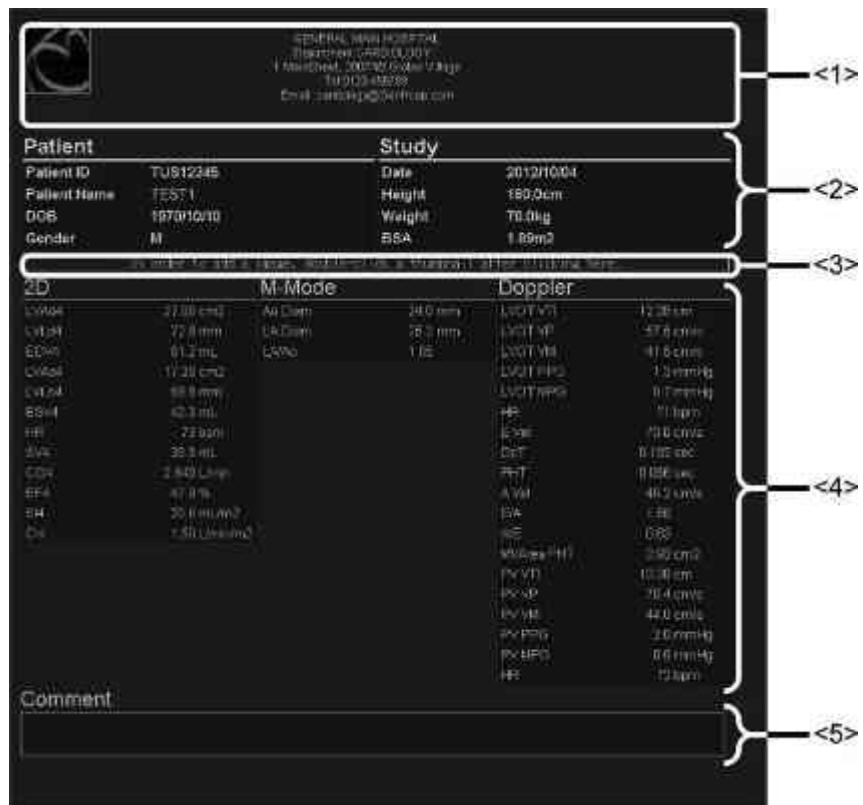


- NOTICE**
1. Confirm that the measurement results automatically displayed on the Report screen are correct by checking them against the values displayed on the Worksheet screen.  
Refer to the operation manual <<Measurements volume>> for details.
  2. Comparing with the Worksheet screen, the items listed below are not displayed.
    - <In OB measurement>
      - A value after "±" within the EFW error range  
(when the "± XXX g" display within the EFW error range display is set through presetting)
      - Display indicating the setting of EDD Extended by (1 to 7) days  
(when the Duration of Gestation value is preset)
        - \* However, the value already calculated is displayed in the EDD field.

- 
- NOTE
1. It is possible to specify whether the measurement result is displayed or not for each measurement item. Consult your Canon Medical Systems service representative for details.
  2. The Worksheet screen is used to edit the measurement results. Refer to the operation manual <<Measurements volume>> for details.
  3. For measurement items such as Teichholz, Cube, and Gibson, and OB measurement trend graphs, items set in the template are always displayed, regardless of the display on the Worksheet. Consult your Canon Medical Systems service representative for details.
  4. Date is displayed according to the date format selected in the presets.
-



<Display items on the template>



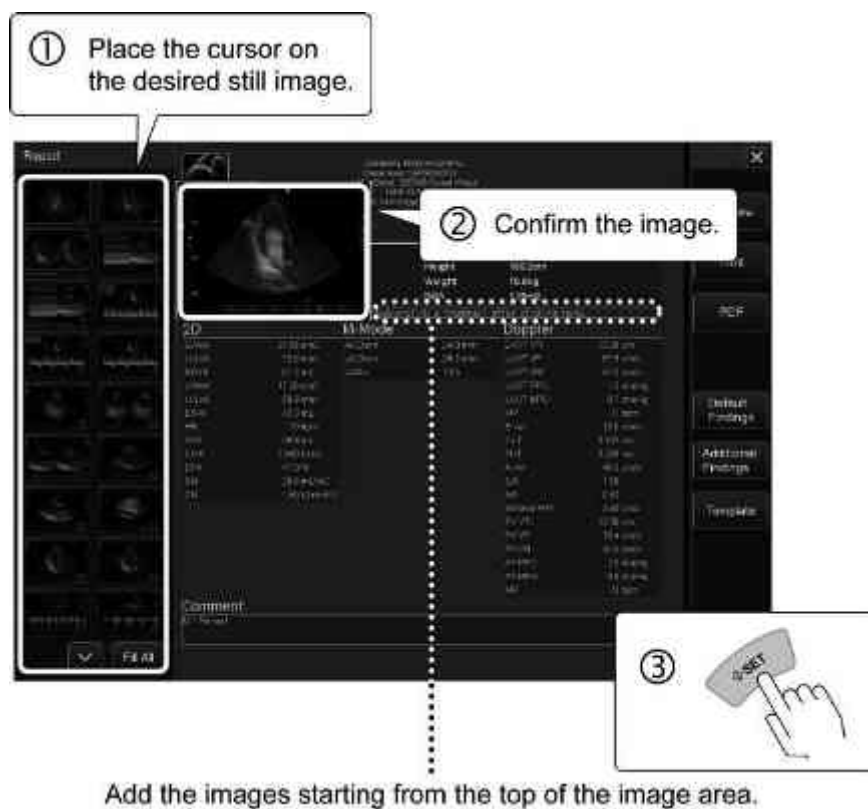
No.	Item	Description
<1>	Hospital information area	The logo and hospital information are displayed.
<2>	Patient/exam information area	The patient information and exam information are displayed.
<3>	Image area	The images can be placed in this area.
<4>	Measurement result area	The measurement results are displayed.
<5>	Comment field	Comments can be entered in this field.

## (1) Selecting images

- NOTE
1. Up to 48 images can be positioned in an image area.
  2. The number of image areas and the image display size differ depending on the selected template.
  3. Depending on the size of the image area, the ends of the positioned images may not be displayed.
    - \* The entire image for the positioned images (as stored in the system) will be included in the prints, even if part of the image is not visible in the image area.

## (a) Adding the images

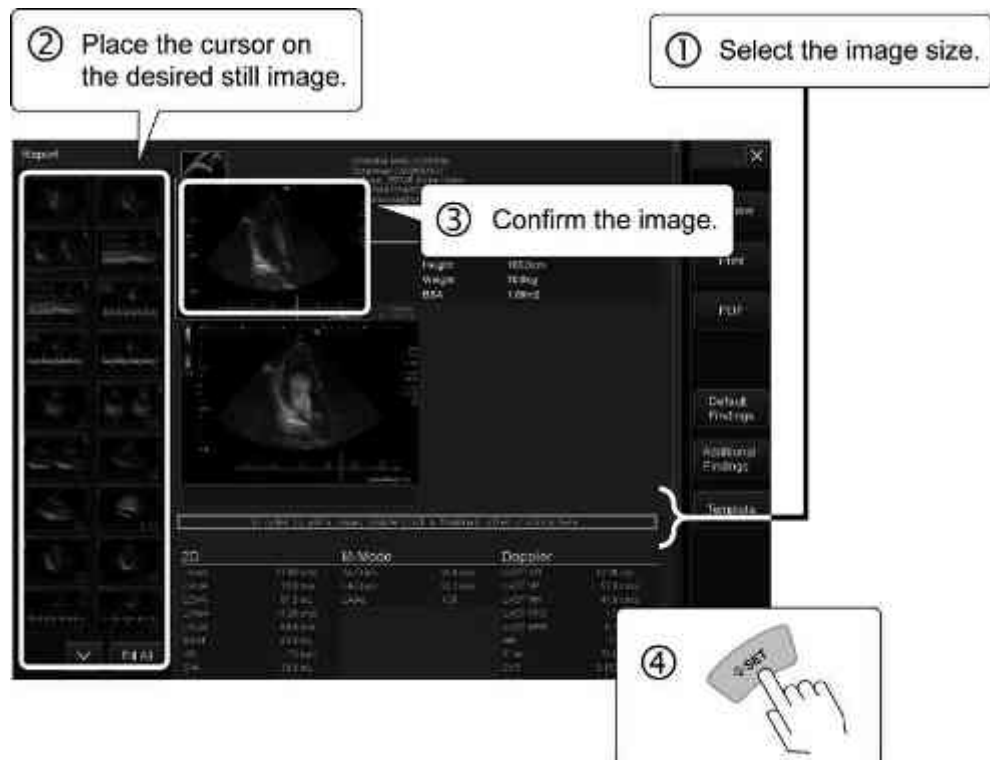
Position the selected image in the desired order in the image area (at the top).



- (b) Positioning all of the images  
Position all of the stored images in the image area (at the top).



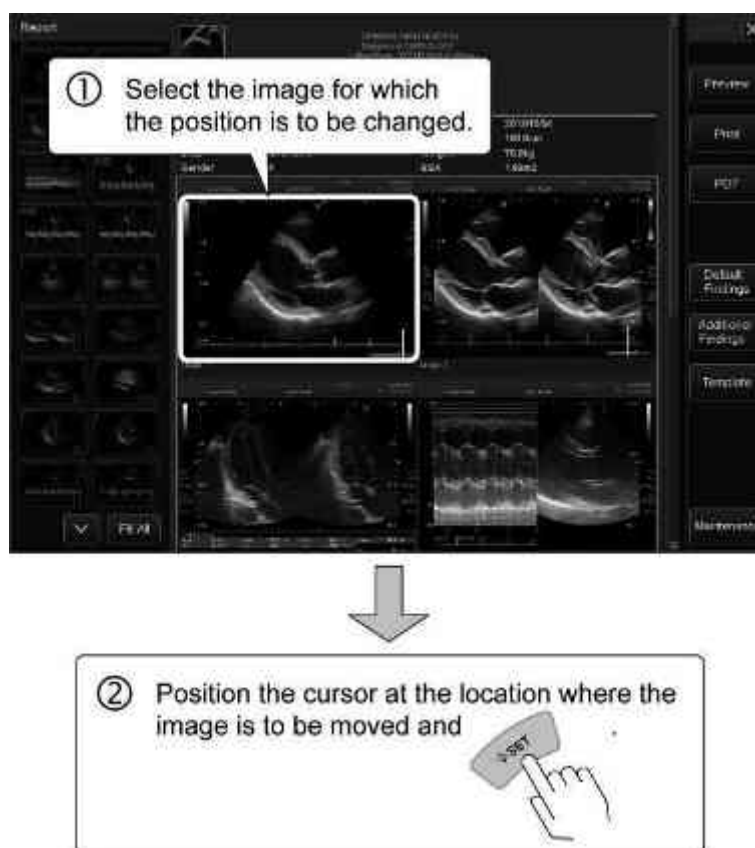
- (c) Adding the images (specifying the image size)



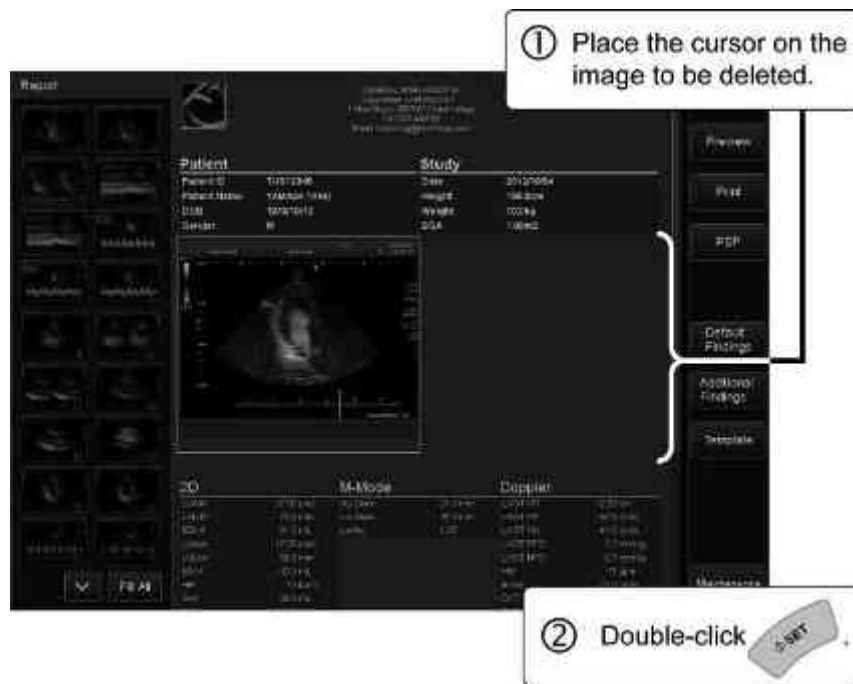
- (d) Positioning all of the images (specifying the image size)  
Position all of the images that are stored at the specified image size.




- (e) Changing the display position of the image  
\* When change operation is performed, the movement of the images differs depending on the setting.



(f) Deleting the image



NOTE The popup menu can be displayed by moving the cursor to the image area and pressing .

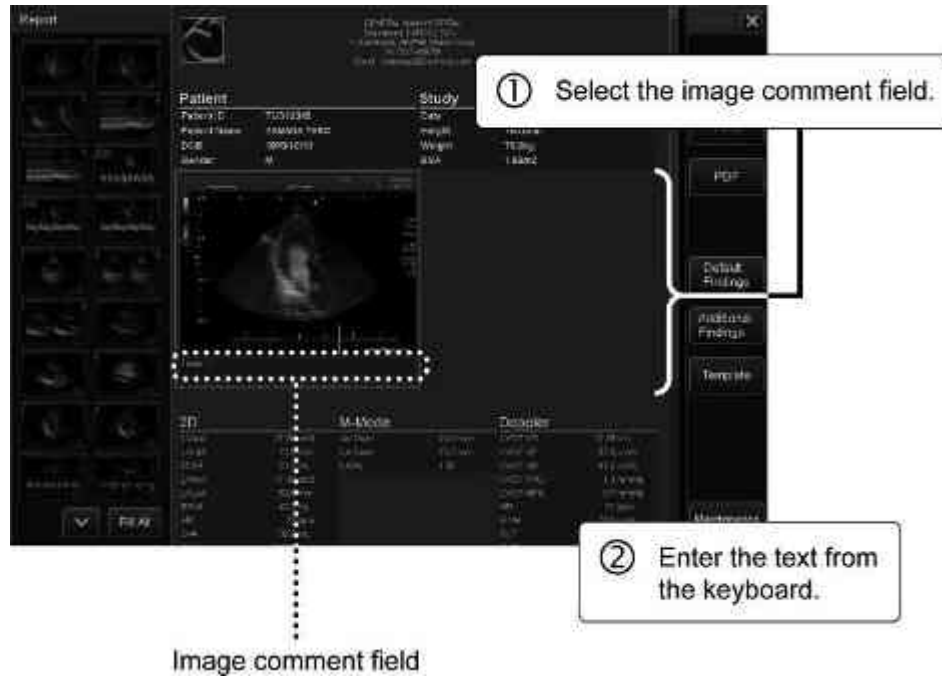


No.	Item	Function
<1>	Invert	Displays the selected image black/white reversed.
<2>	Delete	Deletes the selected image.
<3>	Fill All	Positions all of the images as thumbnails.
<4>	Invert All	Displays all of the images black/white reversed.
<5>	Delete All	Deletes all of the images.

## (2) Editing the comment

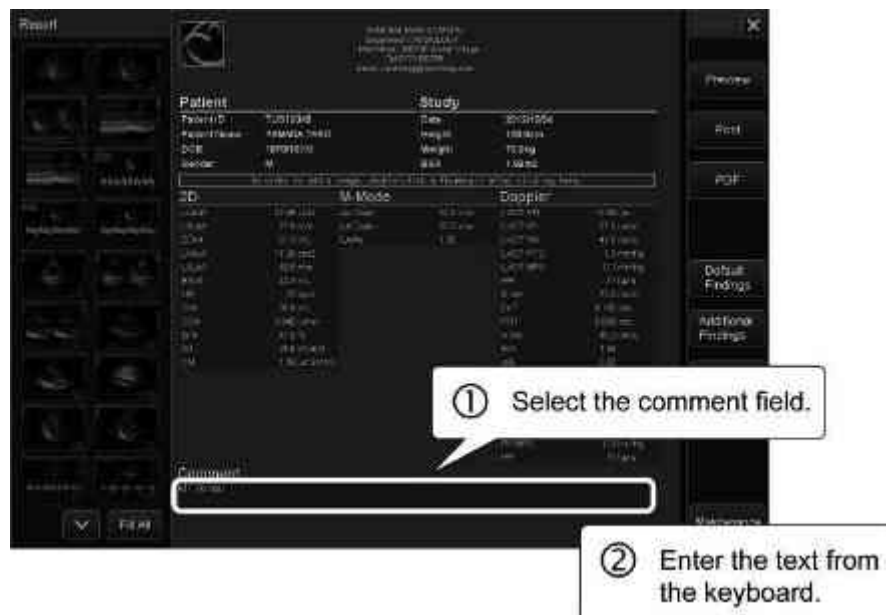
## (a) Editing the image comment

Edit the comment displayed below the image.



## (b) Editing the report comment

Edit the comment displayed at the bottom of the screen.



(3) Inserting text

---

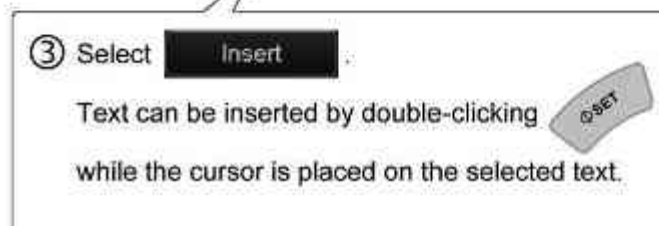
NOTE      Contact your Canon Medical Systems service representative for registration/  
              editing of the text.

---

(a) When inserting the default text

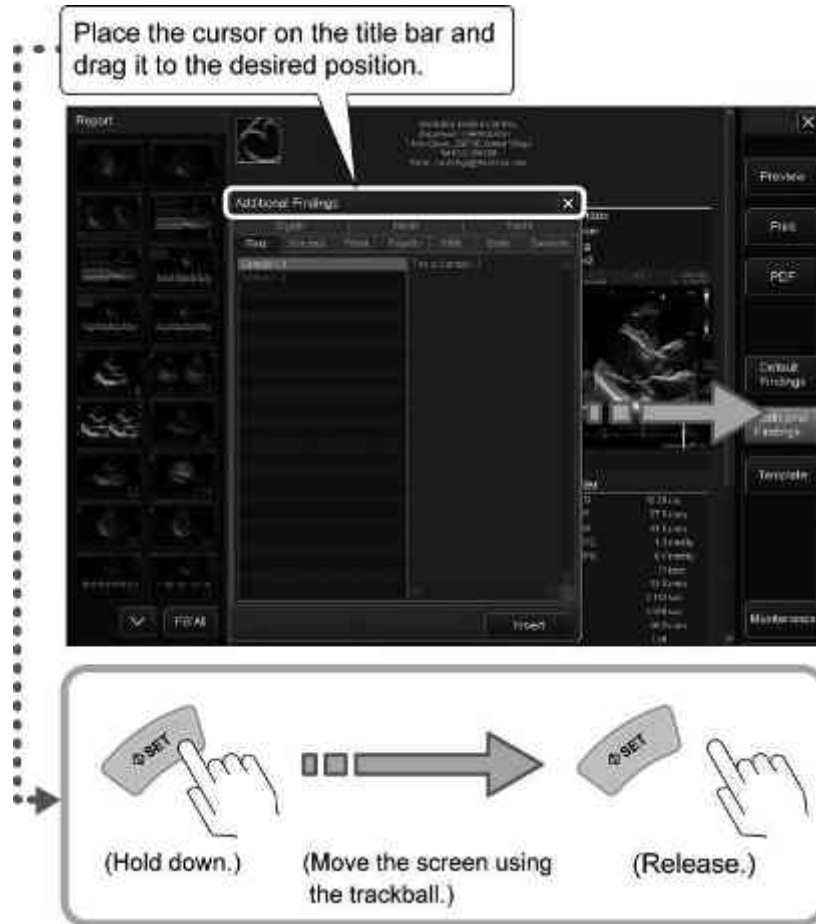


(b) When selecting and inserting the default text.





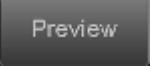
NOTE The display position of the "Additional Findings" screen can be changed by performing the following operation.



- (4) Previewing the report  
The preview of the edited report can be displayed.



Preview area

- \* To close the preview, select  .
- \* To display the next page, place the cursor in the preview area and press



(page feeding is possible only in the forward direction).

(5) Printing the report

---

**⚠ CAUTION** The printer must be installed outside the patient environment.  
Refer to section 4 of the operation manual <<Fundamentals volume>>  
for details of the patient environment.

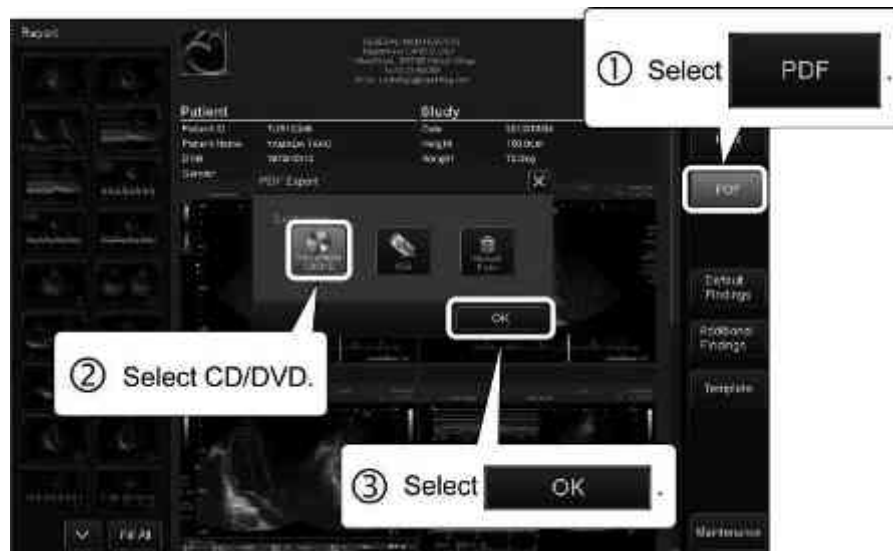
---

**NOTE** Contact your Canon Medical Systems service representative for the printer setting.

---

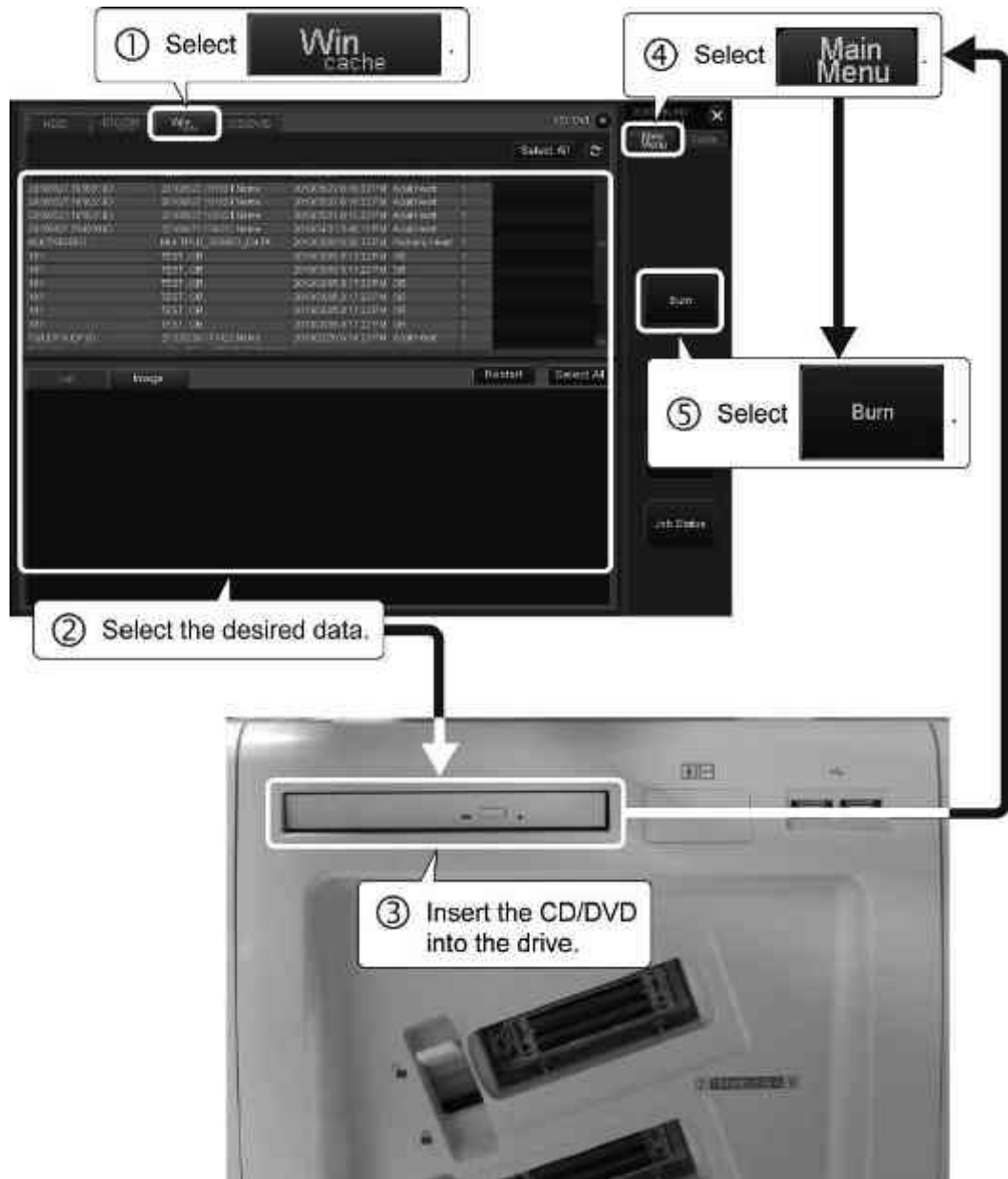


- (6) Exporting the report to the removable media (PDF data output)
- (a) To export the report to a CD/DVD
- <1> Store the report temporarily in the Windows cache.



- <2> Close the Report screen.

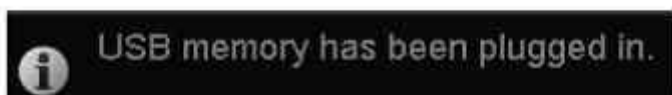
<3> Start data writing from the Patient Browser screen.



<4> When writing is completed, the CD/DVD is ejected automatically.

(b) To export the report to a USB flash drive

<1> Insert a USB flash drive into the USB port.

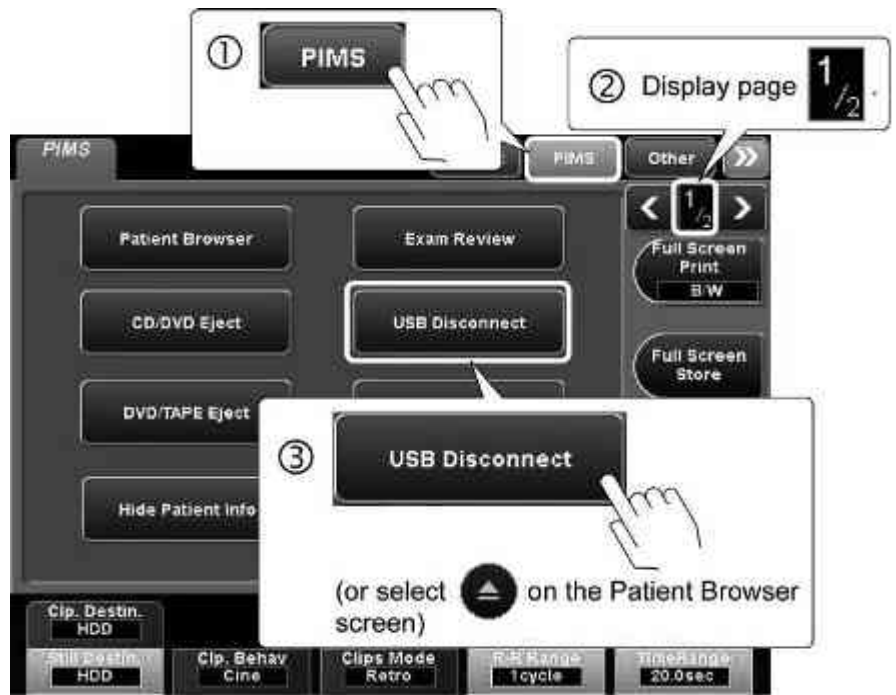


\* The above message is displayed on the screen when the USB flash drive is recognized by the system.

<2> Start data writing.



<3> Remove the USB flash drive from the USB port.



**i** You can unplug the USB memory safely.

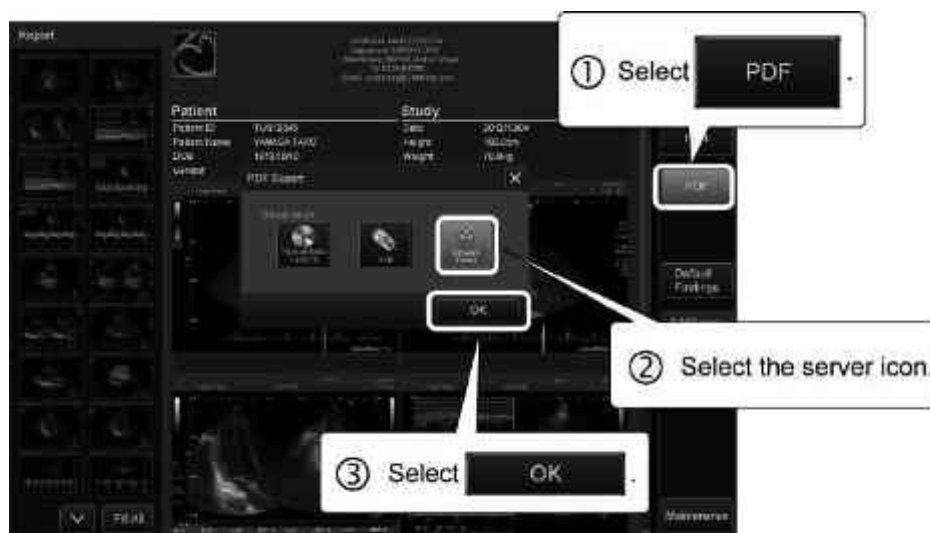


\* The above message is displayed on the screen when the USB flash drive can be disconnected safely.



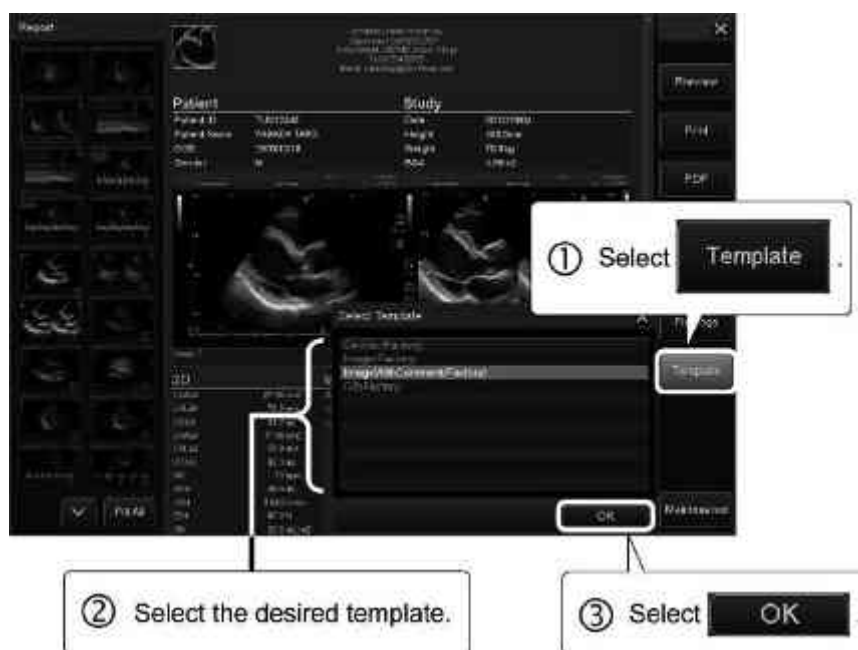
## (7) Exporting the report to a server

**NOTE** Contact your Canon Medical Systems service representative for the server setting.



## (8) Selecting a template

**NOTE** Contact your Canon Medical Systems service representative for registration and editing of the template.

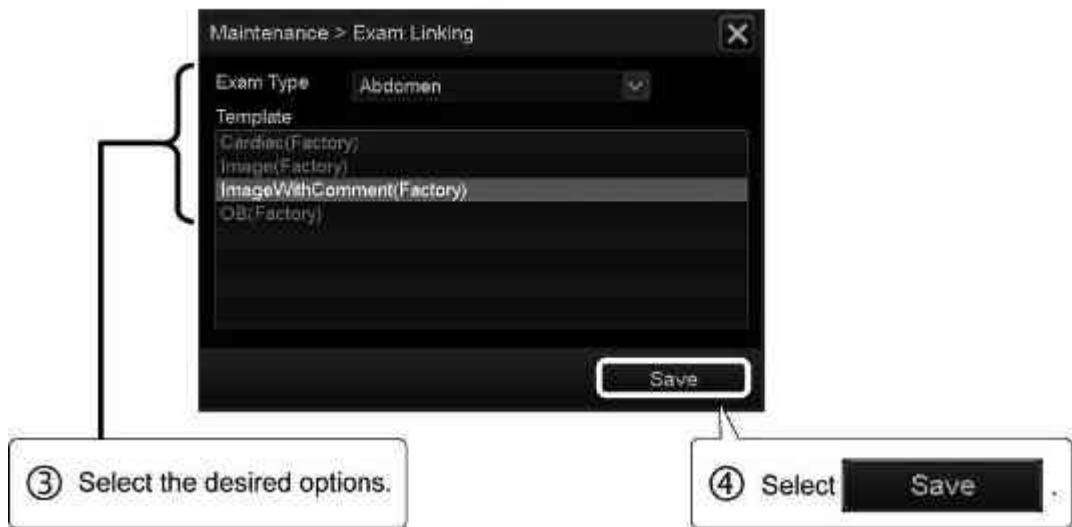




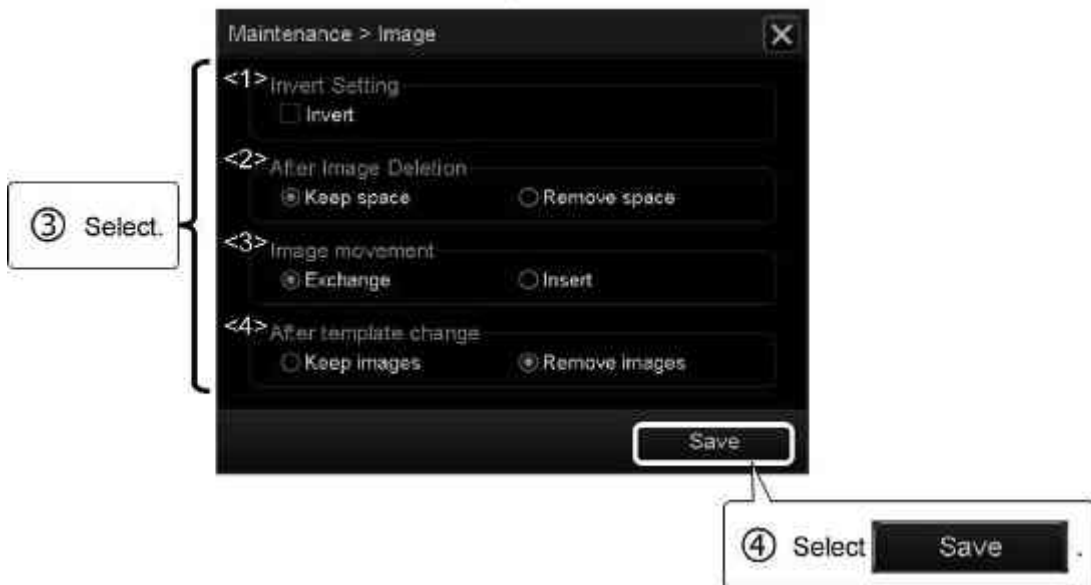
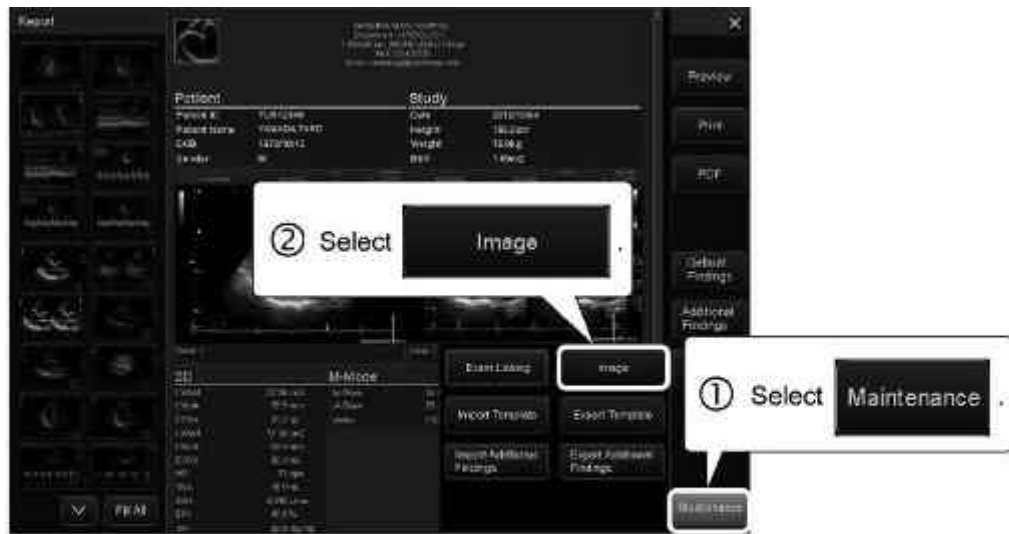
(9) Setting the report screen



(a) Setting the template appropriate for an examination type

It is possible to set the template to be displayed when the Report screen is started up.

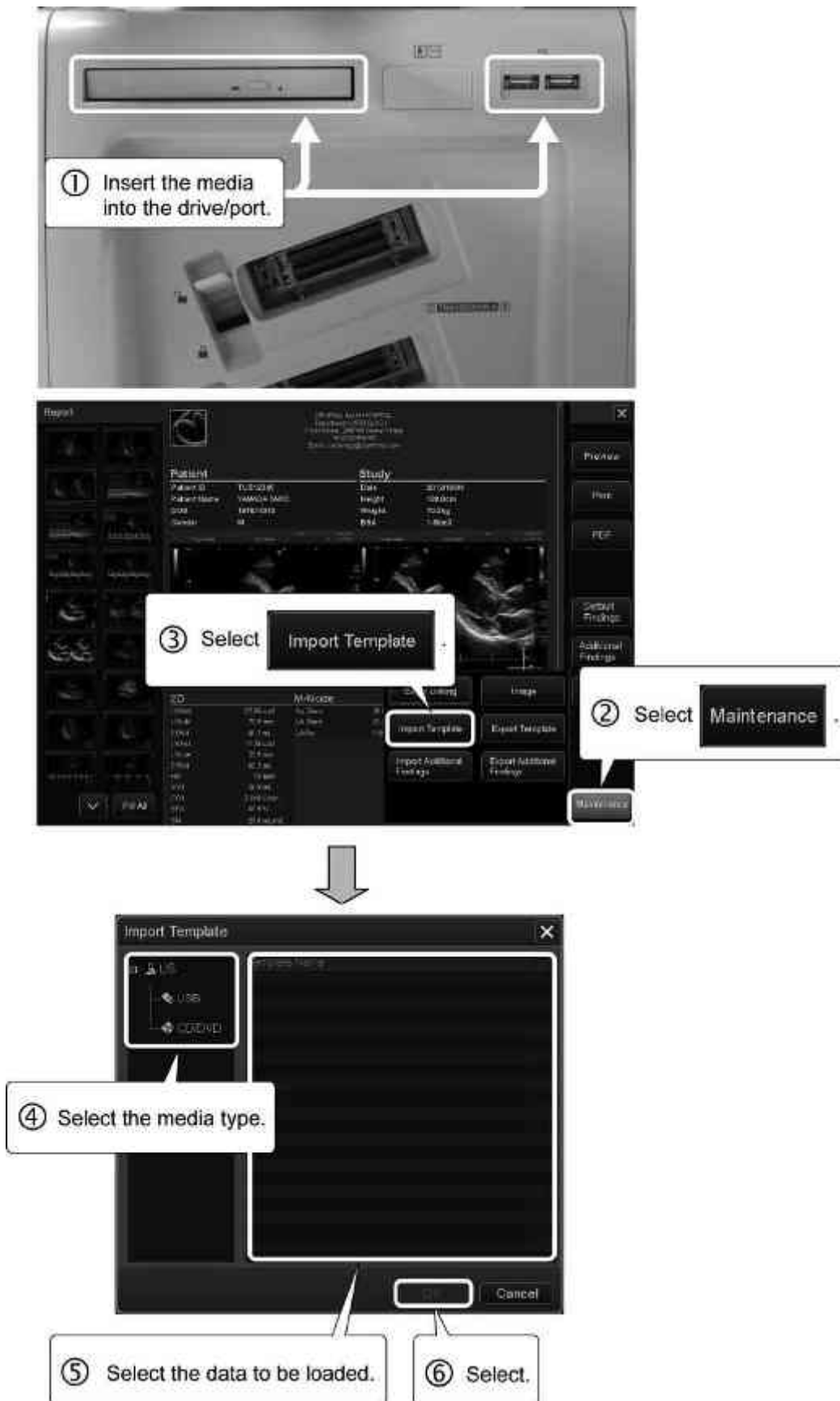


(b) Setting the image to be placed on the template.

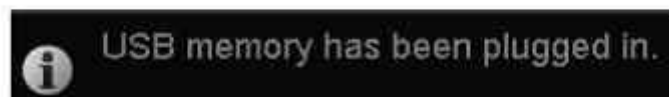


No.	Item	Function
<1>	Invert Setting	<p>Black/white reversal display setting at the time of positioning of the image</p> <ul style="list-style-type: none"> <li>•  : Automatically performs black/white reversal.</li> <li>•  : Does not perform black/white reversal.</li> </ul>
<2>	After Image Deletion	<p>Display setting at the time when the positioned image is deleted</p> <ul style="list-style-type: none"> <li>• Keep space : Does not remove in the space for display.</li> <li>• Remove space : Automatically removes the space for display.</li> </ul>
<3>	Image movement	<p>Display setting at the time when the image position is changed</p> <ul style="list-style-type: none"> <li>• Exchange : Replaces the image with the specified image.</li> <li>• Insert : Moves (inserts) the image at the position before the specified image.</li> </ul>
<4>	After template change	<p>Image restoration setting at the time when the template is changed</p> <ul style="list-style-type: none"> <li>• Keep images : Restores the positioned images.</li> <li>• Remove images : Deletes all of the positioned images.</li> </ul>

(c) When the template is loaded from media

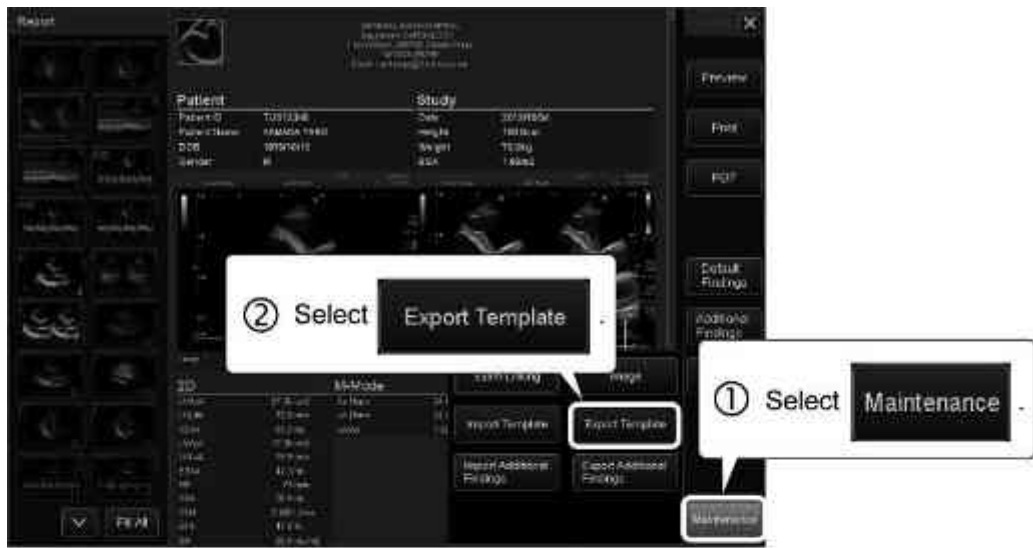


- (d) When the template is recorded on a USB flash drive  
<1> Insert a USB flash drive into the USB port.

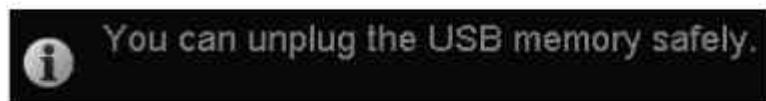
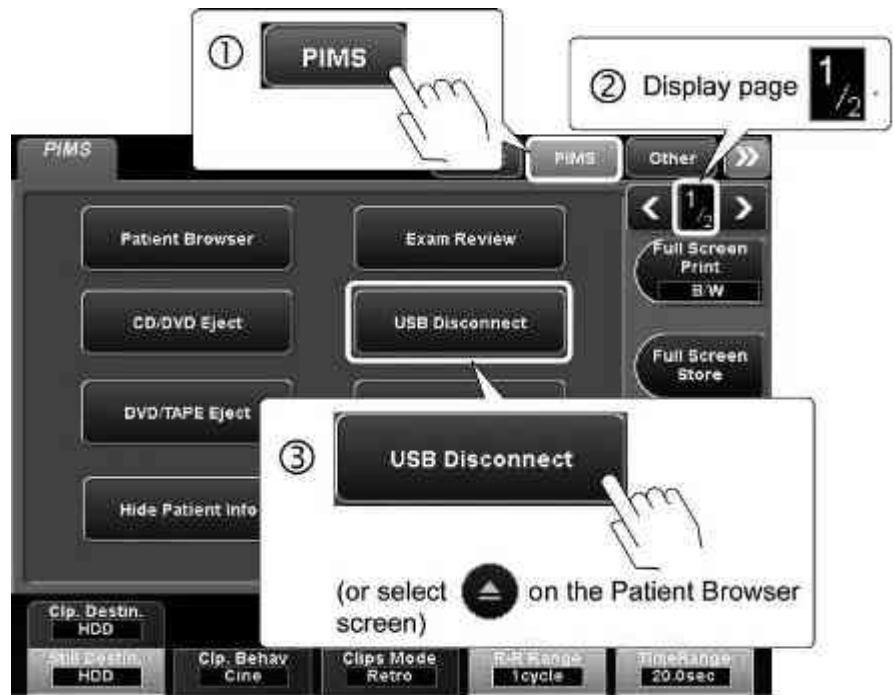


- \* The above message is displayed on the screen when the USB flash drive is recognized by the system.

<2> Select the desired data and export it.



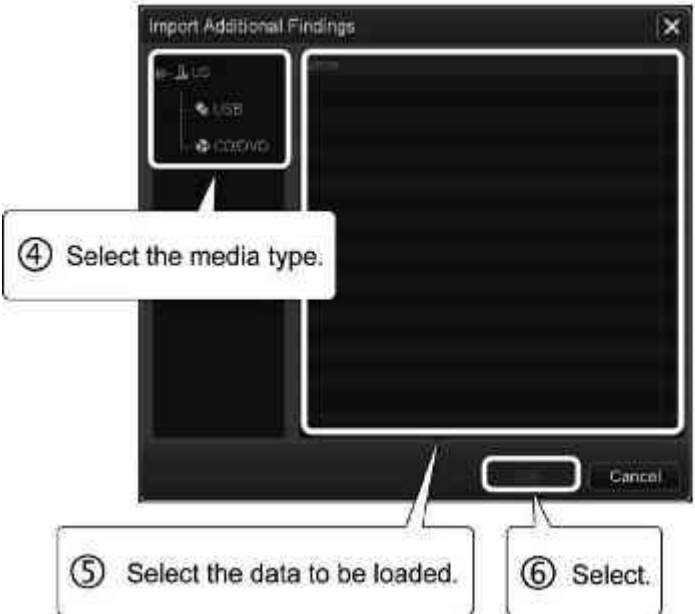
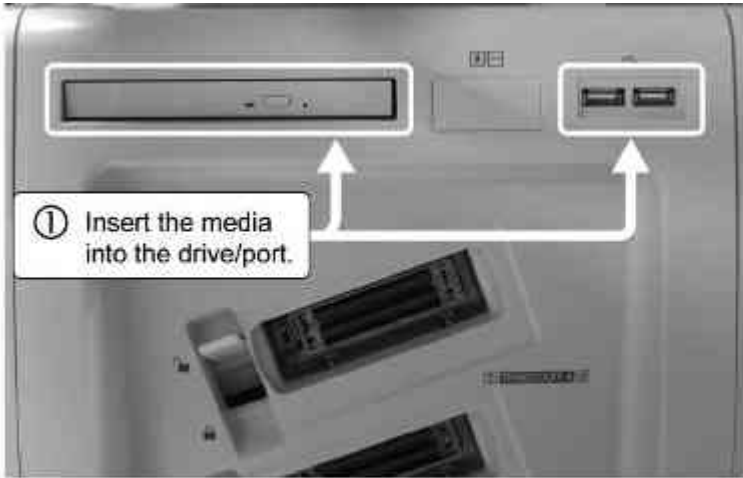
<3> Remove the USB flash drive from the USB port.



\* The above message is displayed on the screen when the USB flash drive can be disconnected safely.

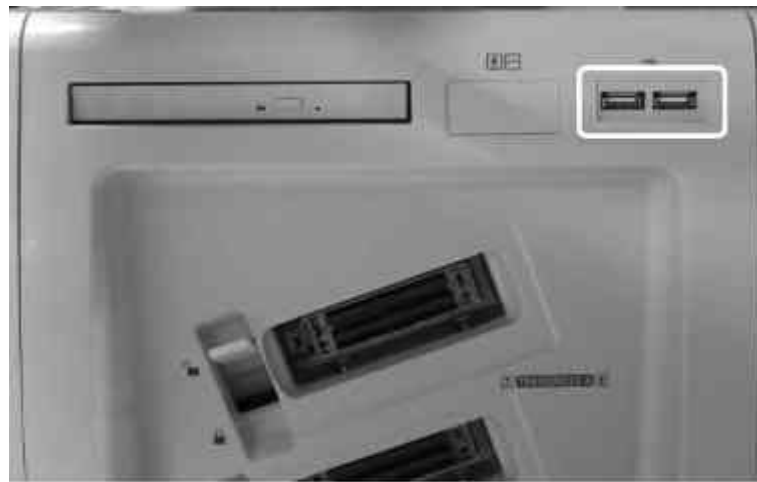


(e) When the text is loaded from media



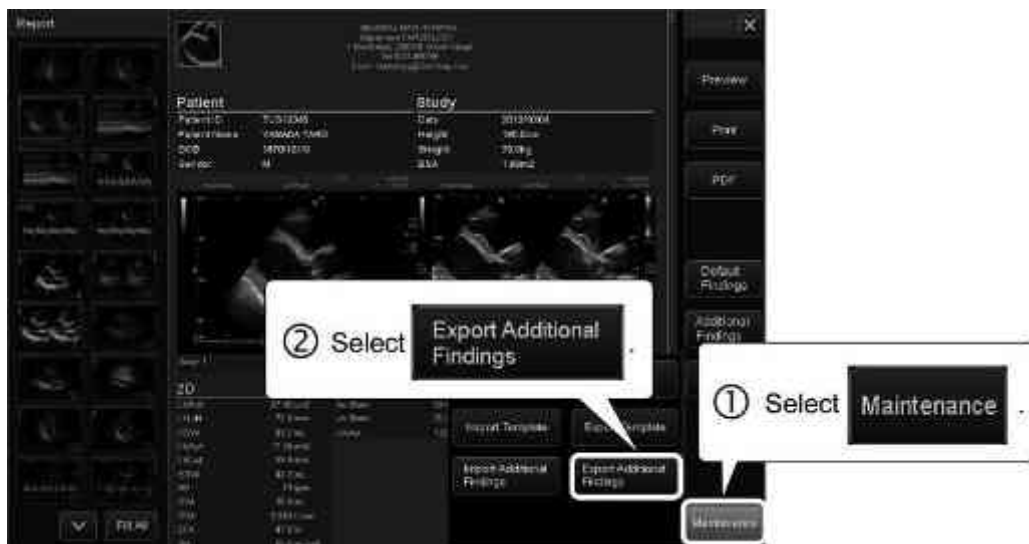


- (f) When the text is recorded on a USB flash drive
  - <1> Insert a USB flash drive into the USB port.

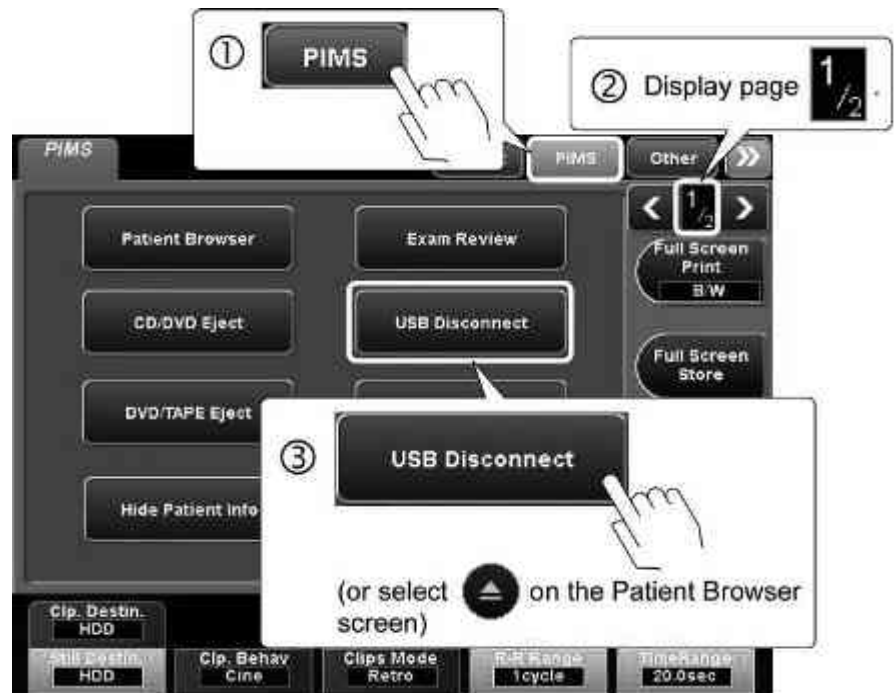


- \* The above message is displayed on the screen when the USB flash drive is recognized by the system.

- <2> Select the desired data and export it.



<3> Remove the USB flash drive from the USB port.



**i** You can unplug the USB memory safely.



\* The above message is displayed on the screen when the USB flash drive can be disconnected safely.





## 12. Superb Micro Vascular Imaging (SMI) Mode

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- NOTE
1. It is necessary to assign a switch for this function on the main panel.  
Consult your Canon Medical Systems service representative for details.
  2. The following items (image quality adjustment parameters in 2D mode) cannot be used in SMI mode.
    - AGC
    - Diff THI (Penetration mode)
    - Apure
    - Apure+
    - Boost
    - Frame Rate
    - Edge Enhance
    - Persistence
    - Auto-TSO
    - Quick Scan
  3. Triplex cannot be used in SMI mode.
  4. The SMI ROI size should be adjusted to 50% or less of the scanning range.
  5. If the Color Map is set to "9" to "11", blood flow may be displayed in the direction opposite actual flow when the velocity range in the Color Map is exceeded.
-

## 12.1 Outline of SMI Mode

SMI mode can display information for smaller blood flow than Dynamic Flow mode by using 2 display methods.


Display method	Function
cSMI (display with clutter suppressed)	Improves the visualization of small blood flow by suppressing motion artifacts and employing a high frame rate.
mSMI (display with blood flow enhanced)	Displays peripheral blood vessels even in non-contrast imaging.

- To use SMI mode, the optional USMI-X200A and a transducer that supports SMI mode are required.
- Refer to the compatibility table of transducers and modes in subsection 5.7 of the Operation Manual <<Fundamentals volume>> for the transducers that support SMI mode.

## 12.2 Startup and Termination of SMI Mode

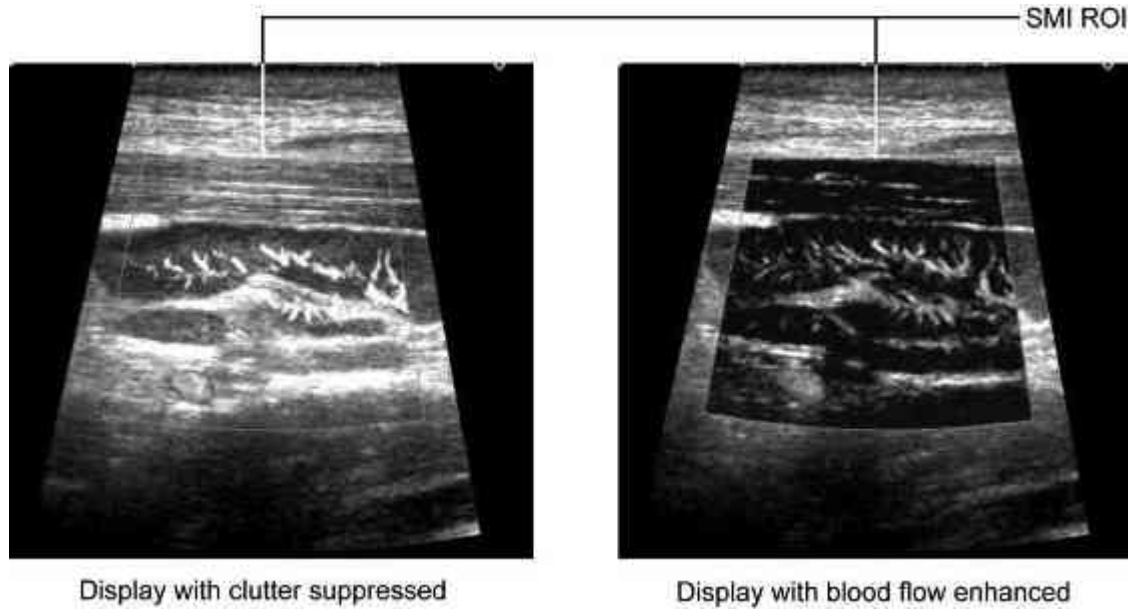
Each time [cSMI] or [mSMI] on the main panel is pressed, SMI mode is started-up/terminated.

- \* It is also possible to terminate SMI mode by selecting  or


 in the [SMI] menu on the touch panel.

## 12.3 SMI Mode Screen and Operations



### 12.3.1 Image display area



(1) Adjustment of the SMI ROI


(a) Change the function assigned to the trackball by pressing  or



Function icon	Function
	SMI ROI position adjustment
	SMI ROI size adjustment


(b) Adjust the SMI ROI using the trackball.

(2) Synchronized real-time display of 2D and color images

Press  to switch the display.

\* When blood flow-enhanced display is selected, images are displayed with TwinView ON.

(3) Color gain adjustment

Adjust the color gain by turning .

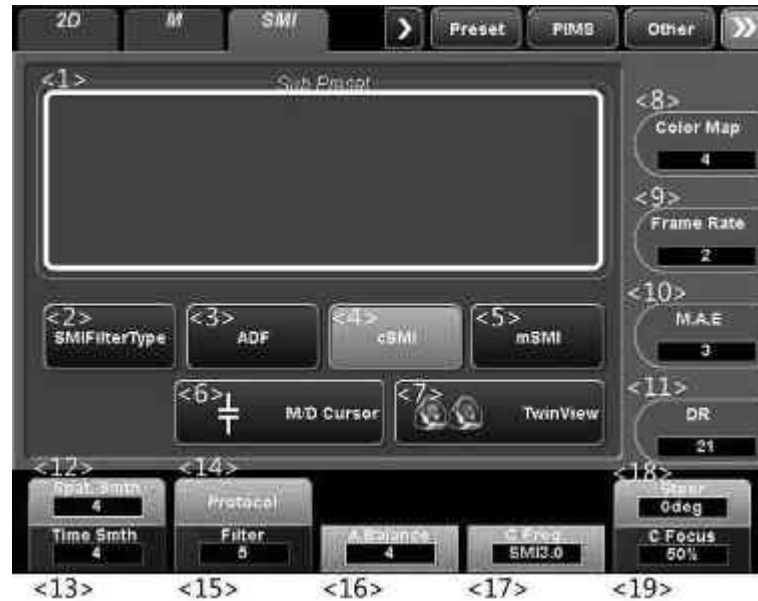
### 12.3.2 Operations from the touch panel





This subsection describes the touch panel menu used in SMI mode.

The functions related to the image quality adjustment parameters are the same as for other imaging modes.

Refer to the Operation Manual <<Fundamentals volume>> for details.




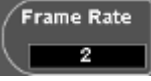










#### (1) SMI menu



No.	Switch	Function
<1>	Sub Preset	The sub-preset switches are displayed. * The image is displayed with the adjusted image parameter values that are registered to the selected switch. (Refer to section 17 for details.)
<2>	 *1	Used to switch the type of SMI filter. • ON (highlighted) : Adjustment of the filter including M.A.E. and A.Balance • OFF : Adjustment of the filter
<3>		Switches to display in Dynamic Flow mode.
<4>		Switches to display with clutter suppressed. * If it is selected again while it is highlighted, SMI mode is terminated.
<5>		Switches to display with blood flow enhanced. * If it is selected again while it is highlighted, SMI mode is terminated.



## 12. Superb Micro Vascular Imaging (SMI) Mode

No.	Switch	Function
<6>		Switches M/D cursor display ON/OFF in single display mode.
<7>		Switches to synchronized real-time display of 2D and color images.
<8>		Used to adjust the hue of the Color image.
<9>		Used to adjust the color image quality and the number of frames.
<10>		Used to adjust the degree of the reduction of motion artifacts.
<11>		Used to adjust the dynamic range of the image.
<12>		Used to adjust the degree of smoothing of the image.
<13>		Used to adjust the smoothness of motion of the image.
<14>		Used to select a workflow. (Refer to section 10 for details.)
<15>		Used to select the type of filter.
<16>		Used to adjust the reflection noise (vessel walls etc.).
<17>		Used to select the transmission/reception frequency.
<18>		Used to adjust the angle for oblique scanning in SMI mode.
<19>		Used to adjust the color focus position.

\*1: This switch must be registered with the TCS customization tool. Contact your Canon Medical Systems service representative for details.

# 13.

## Shear Wave Mode

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- NOTE
1. In Shear wave mode, when measuring the shear wave speed and elasticity, the measurement values in systems from different manufacturers may differ according to differences in data processing methods, shear wave frequencies, and signal-to-noise ratios.  
In Shear Wave Elastography, when displaying an elasticity (kPa) value converted from stiffness measurement, the displayed value may not accurately reflect the actual stiffness of organs etc.
  2. The analysis results displayed by this function should be used as reference data for diagnosis. Final diagnosis should be performed based on comprehensive data including other examination results.
  3. In Shear wave mode, the stiffness of the target tissue may not be measured correctly due to artifacts generated by tissue compression, the body tissue characteristics, or the shear wave propagation characteristics.  
  
<<Main factors that affect shear wave measurements (shear wave speed and elasticity measurements)>> \*1
    - (1) Attenuation of the push pulse  
Insufficient tissue displacement by the push pulse may make it difficult to generate the shear wave amplitude required for measuring the shear wave speed and elasticity. Note that insufficient tissue displacement may be caused by defocusing due to phase aberration or refraction in the tissues between the target and the transducer (e.g., a thick abdominal wall) or by severe attenuation in the tissues between the target and the transducer or in the target itself (e.g., a fatty liver).
    - (2) Reverberation  
Since the shear wave speed and elasticity are easily affected by reverberation artifacts, the measured shear wave speed or elasticity may be higher than the actual value in areas distal to acoustic interfaces or boundaries.
    - (3) Liquids  
Shear waves do not propagate through clear nonviscous liquids. However, artifacts caused by the diffraction from adjacent tissues may be observed within cystic structures.
-

## NOTE

## (4) Tumors

The shear wave speed may not be measured correctly due to unexpected propagation of shear waves. This results from unevenness in tissue stiffness; push pulse attenuation; or shear wave attenuation, reflection, or refraction in tissues. This attenuation, reflection, or refraction occurs, for example, at the boundary between a tumor and adjacent tissues, where there is a significant difference in tissue stiffness. As a result of the above factors, the shear wave speed may appear highest at the periphery of stiff tumors. Note that the stiffness of benign and malignant lesions may overlap.

## (5) Anisotropy

Anisotropy is the directional dependence of measurements related to the structure or characteristics of tissues. For anisotropic tissues, the measured shear wave speed and elasticity may be measured incorrectly depending on the tissue structure and the positions of the transducer and target.

## (6) Compression by the transducer

The measured values for the shear wave speed and elasticity for superficial tissues may be higher than the actual values due to excessive tissue compression by the transducer.

\*1: For additional information, refer to the following:

Bamber J et al. EFSUMB guidelines and recommendations on the clinical use of ultrasound elastography.

Part 1: Basic principles and technology.

Ultraschall Med. 2013;34(2):169-84.

Cosgrove D et al. EFSUMB guidelines and recommendations on the clinical use of ultrasound elastography.

Part 2: Clinical applications.

Ultraschall Med. 2013;34(3):238-53.

4. When performing a shear wave scan, be sure to perform scanning in accordance with all general precautions applicable to ultrasound scanning.
5. If acceptable shear wave propagation is not observed during a shear wave scan, set the position and the size of the ROI again so that the target is located at the center of the ROI.  
If acceptable shear wave propagation is not observed even after resetting the ROI, adjust the scanning plane to minimize the attenuation of ultrasound echoes between the surface of the transducer and the target region.

- 
- NOTE
6. Be sure to perform shear wave scanning in regions where acceptable shear wave propagation is observed.
  7. It is necessary to assign a switch for this function on the main panel. Consult your Canon Medical Systems service representative for details.
- 

### 13.1 Outline of Shear Wave Mode

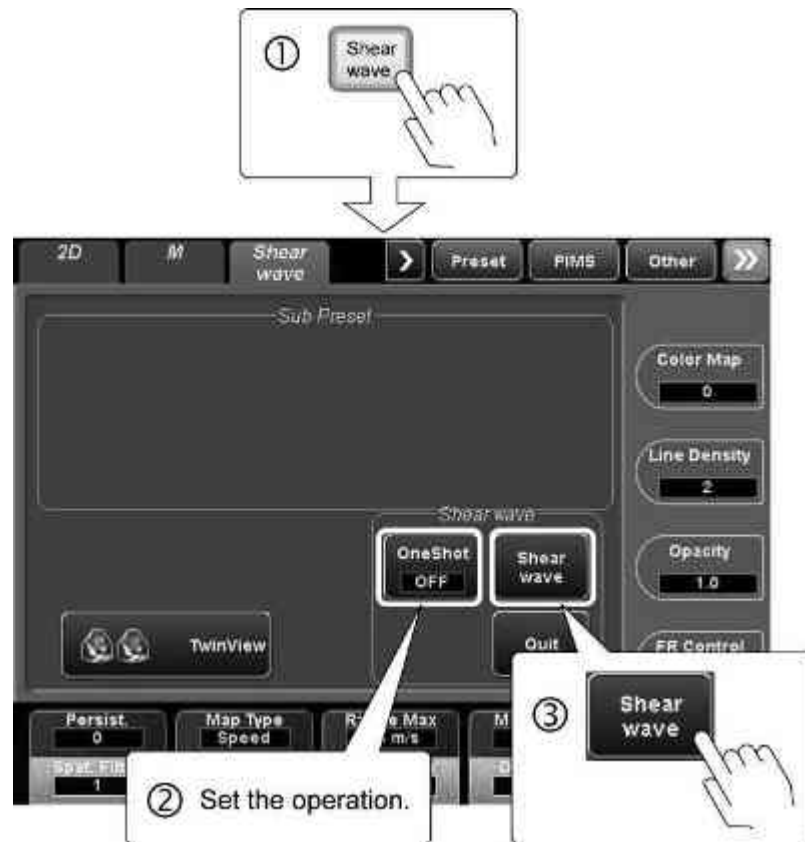
In Shear wave mode, a burst wave with high acoustic pressure is transmitted to displace tissues locally, and images representing the speed of tissue displacement propagation (shear wave speed) are generated (shear wave scan).


Because the shear wave speed is related to tissue stiffness, it is possible to calculate the stiffness of target tissues based on the measurement result.

- To use Shear wave mode, the optional USSW-X200A and a transducer that supports Shear wave mode are required.
- For transducers that support Shear wave mode, refer to subsection 5.7 "List of Available Transducers" of the operation manual <<Fundamentals volume>>.

## 13.2 Operating Shear Wave Mode



### 13.2.1 Startup





Item	Function
	Sets the update method of the shear wave scan image. <ul style="list-style-type: none"> <li>• ON : Enters freeze status after a single image is acquired. (Operation is not possible for 5 seconds after scanning.)</li> <li>• OFF : Updates the image in real time at the specified frame rate.</li> </ul>

### 13.2.2 Adjusting the acquired image

(1) Setting the ROI


(a) Change the function icon by pressing  or .


Function icon	Trackball function
	Adjusts the ROI position.
	Adjusts the ROI size.


(b) Adjust the ROI using the trackball.


(2) Performing a shear wave scan

NOTE

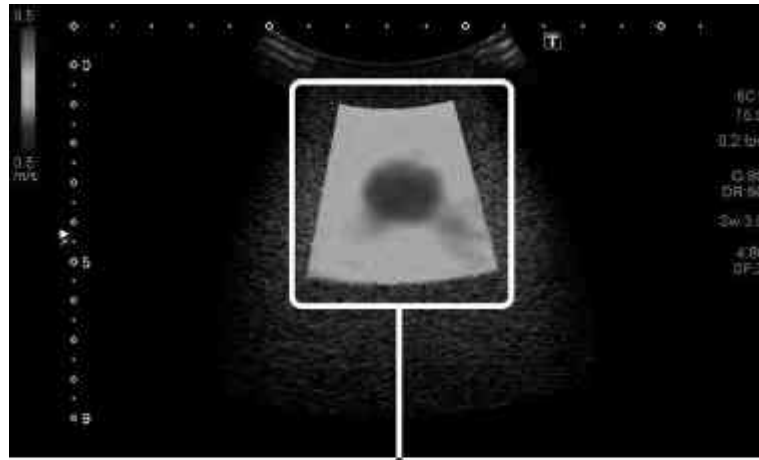
If a shear wave scan is performed when OneShot is set to ON , the message "Please wait a moment." is displayed.

Do not perform operations (such as ) while this message is displayed.

Press  in the [Shear wave] menu on the touch panel.

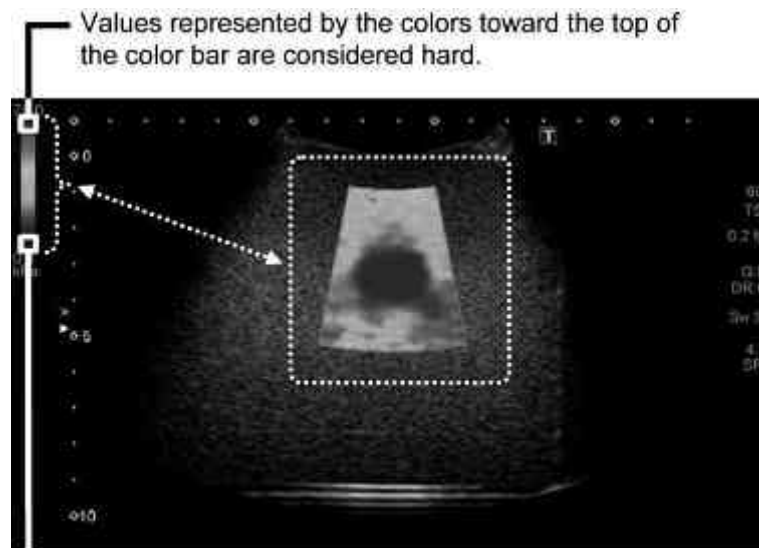
\* It is possible to select the display mode using  in the [Shear wave] menu on the touch panel.

<<When the map type is "Speed">>



The stiffness of the target tissues (spatial distribution) is displayed by color mapping the shear wave speed in the ROI.

<<When the map type is "Elast. (Elasticity)">>




Values represented by the colors toward the top of the color bar are considered hard.

Values represented by the colors toward the bottom of the color bar are considered soft.



(3) Changing the Shear wave display mode

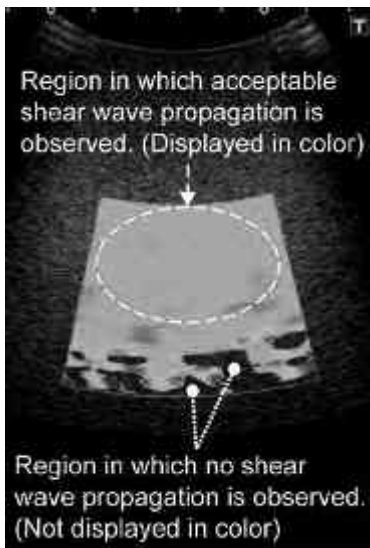
The display can be changed by pressing  from the [Shear wave] menu on the touch panel.

Map Type	Display	Description
Speed	Shear wave speed display (m/s) <sup>*1</sup>	The stiffness distribution for the scanned plane can be observed.
Elast.	Elasticity display (kPa) <sup>*1</sup>	
Prop.	Propagation display <sup>*2</sup>	The shear wave arrival time is presented as contour lines. (The wavefront of the shear wave is displayed at regular time intervals.)

\* 1: Regions in which no shear wave propagation is observed are not displayed in color.

\* 2: Distorted contour lines are displayed for regions where no shear wave propagation is observed or where acceptable shear wave propagation is not observed.

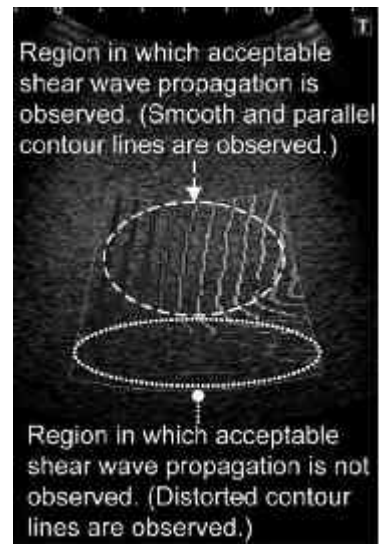
The region in which the desired shear wave propagation is observed can be confirmed by using the propagation display together with the shear wave speed display or elasticity display.



Shear wave speed display



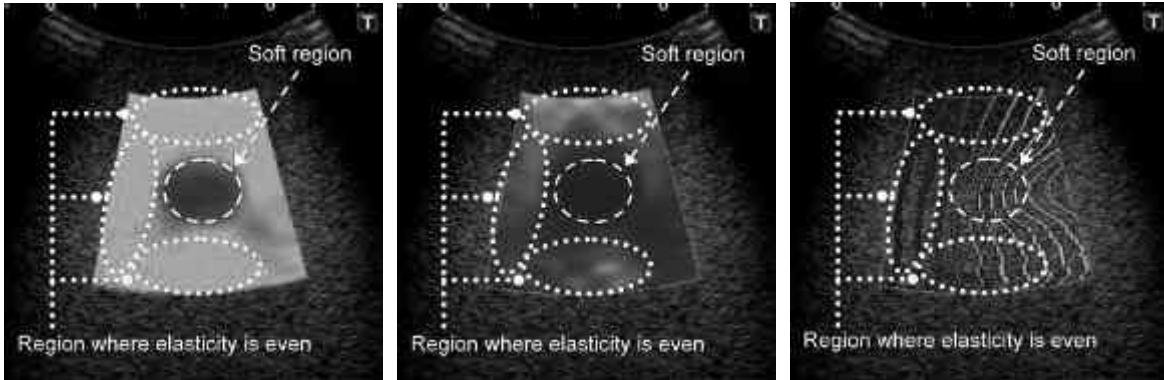
Elasticity display



Propagation display

<<If the target is soft>>

The contour lines are displayed at narrow intervals when the target is soft and the shear wave speed is low.



Shear wave speed display

Elasticity display

Propagation display

<<If the target is hard>>

The contour lines are displayed at wide intervals when the target is hard and the shear wave speed is high.




Shear wave speed display

Elasticity display

Propagation display

(4) Switching of propagation display mode

Press  in the [Shear wave] menu on the touch panel to switch propagation display mode.

- NOTE
1. Measurement is not possible in propagation mode.
  2. To switch propagation mode, "Prop." must be set for Map Type.

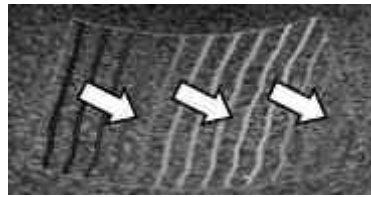
Prop. Type	Display	Description
Contour	Propagation display <sup>*1</sup>	Shear wave arrival time is represented in contour lines (the position of the shear wavefront is displayed at constant time intervals). Propagation of shear wave at a uniform speed is displayed in fan-shaped form.
Variance	Variance display <sup>*2</sup>	Minor distortion in shear wave arrival time is represented in color.
Contour2	Propagation display 2 <sup>*1</sup>	Shear wave arrival time is represented in contour lines (the position of the shear wavefront is displayed at constant time intervals). Propagation of shear wave at a uniform speed is displayed in parallel form.

- \* 1: Distorted contour lines are displayed for regions where no shear wave propagation is observed or where acceptable shear wave propagation is not observed.  
The region in which the desired shear wave propagation is observed can be confirmed by using the propagation display together with the shear wave speed display or elasticity display.
- \* 2: Regions in which no shear wave propagation is observed or no distortion is observed are not displayed in color.

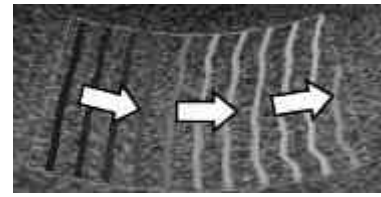
<<Propagation display>>



Shear wave speed display

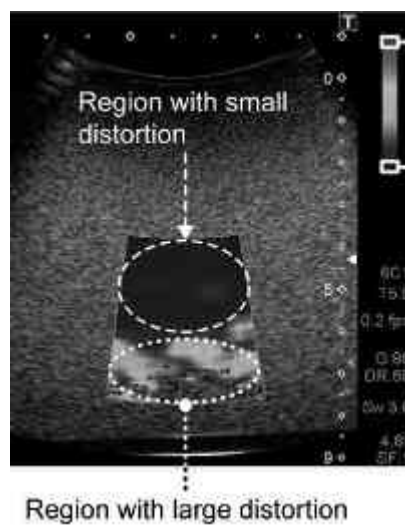


Propagation display 2



Propagation display


<<Variance display>>



Colors toward the top of the color bar indicate that minor distortion in shear wave arrival time is large.

Colors toward the bottom of the color bar indicate that minor distortion in shear wave arrival time is small.

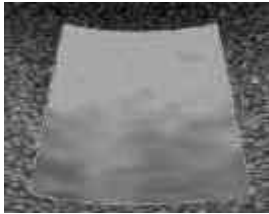
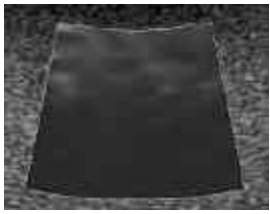

- (5) Switching the display mode with TwinView set to ON (right side of the screen)


Press  in the [Shear wave] menu on the touch panel to change the display on the right of the screen.

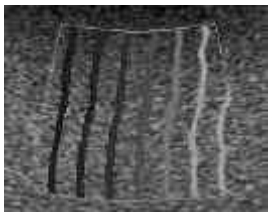
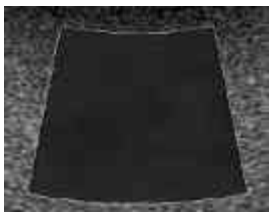
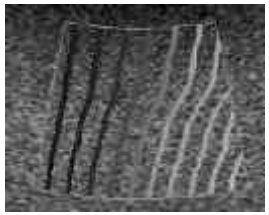
Map Type	Display
Prop.	Propagation display
B	No propagation display (2D image display)

NOTE Examples when TwinView is set to ON are displayed below.



1. Switching of  : Left of the screen

Speed	Elast.	Prop.
		Display according to setting of 
Shear wave speed display	Elasticity display	Propagation display

2. Switching of  : Right of the screen

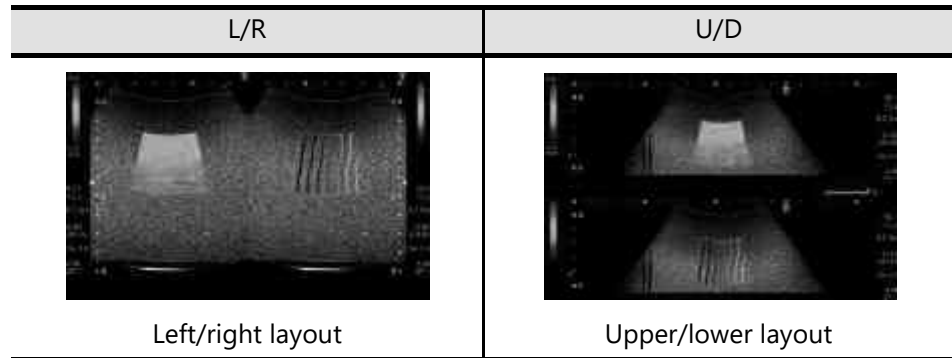
Contour	Variance	Contour2
		
Propagation display	Variance display	Propagation display 2

3. Switching of  : Right of the screen


Prop.	B
	
Propagation display	No propagation display (2D image display)

## NOTE

4. Switching of  ([Other] menu on the touch panel)



- (6) Releasing a shear wave scan

Press  in the [Shear wave] menu on the touch panel.



\* When OneShot is set to ON , press .

- (7) Cine operation


(a) Press .


(b) The Cine image is displayed.

- (8) Measurement

Press  or  to start measurement mode.

- (9) Storing the image

(a) To store the dynamic image, press .

(b) To store the still image, press .

NOTE

1. The free space on the hard disk is displayed at the top of the screen as



. Images cannot be saved if there is insufficient free space.

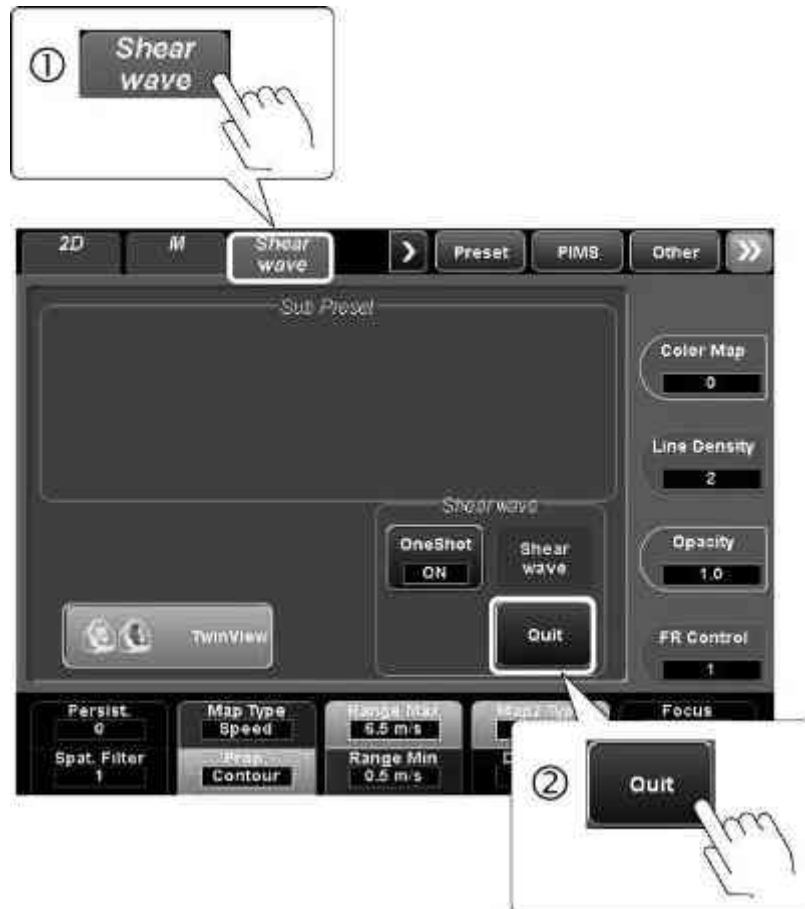
If there is less than 35 GB of free space, the icon is highlighted in yellow.


The color of the free space indicator changes to red when free space falls below 20 GB.

When the free space falls below 1 GB, the message "HDD is full. Please delete some images in Patient Browser and try again." is displayed in the information message area on the screen and no more data can be stored. Ensure the required free space before saving the images.

2. If the free space is less than 1 GB at the end of the examination, the message "There is no enough space in Database. Please Delete some data in Patient Browser" is displayed and the examination cannot be terminated. Ensure that there is sufficient free space to terminate the examination.
  3. Refer to section 2 for information regarding recording to media.
-

### 13.2.3 Termination







\* Pressing  also terminates Shear wave mode.












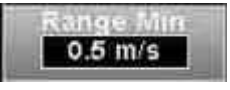




### 13.3 Operations From the Touch Panel

The touch panel used in Shear wave mode is shown below.



No.	Switch	Function
<1>		Displays a 2D image and a color image simultaneously in real time. * This function cannot be turned on before starting shear wave scan.
<2>		Sets the update method of shear wave scan image. <ul style="list-style-type: none"> <li>• ON : Enters freeze status after a single image is acquired. (Operation is not possible for 5 seconds after scanning.)</li> <li>• OFF : Updates the image in real time at the specified frame rate.</li> </ul>
<3>		Performs a shear wave scan/releases a shear wave scan.
<4>		Terminates Shear wave mode.

No.	Switch	Function
<5>		<p>Performs color map setting.</p> <hr/> <p>NOTE      Smaller color map values represent softer targets, while larger color map values represent harder targets.</p> <hr/> <ul style="list-style-type: none"> <li>• 0            : Low value (blue), high value (red)</li> <li>• 1            : Low value (blue), high value (red)</li> <li>• 2            : Low value (black), high value (white)</li> <li>• 3            : Low value (red), high value (blue)</li> <li>• 4            : Low value (red), high value (blue)</li> <li>• 5            : Low value (white), high value (black)</li> </ul>
<6>		Adjusts the density of the color beam.
<7>		<p>Adjusts color image opacity.</p> <ul style="list-style-type: none"> <li>• 0.0            : Displays only the 2D image.</li> <li>• 0.1 to 0.9    : Superimposed display of the 2D image and the color image</li> <li>• 1.0            : Displays only the color image.</li> </ul>
<8>		Sets the frame rate.
<9>		Adjusts image persistence (smoothness along the time axis).
<10>		Adjusts the smoothing filter (spatial direction).
<11>		<p>Switches the shear wave display mode.</p> <hr/> <p>NOTE      When the map type is "Elast.", smaller color map values represent softer targets, while larger color map values represent harder targets.</p> <hr/> <ul style="list-style-type: none"> <li>• Speed        : Displays the shear wave speed (m/s).</li> <li>• Elast.        : Displays the elasticity (kPa).</li> <li>• Prop.        : Displays propagation.</li> </ul>
<12>	 *1	Switches the propagation display mode.

No.	Switch	Function
<13>	 *2, *3	Adjusts the upper limit of the shear wave image display range. (Applied to the left image when TwinView is set to ON)
<14>	 *2	Adjusts the lower limit of the shear wave image display range. (Applied to the left image when TwinView is set to ON)
<15>		Switches the display mode when TwinView is set to ON (at the right of the screen). <ul style="list-style-type: none"> <li>• Prop. : Propagation display</li> <li>• B : 2D image display</li> </ul>
<16>		Adjusts the differentiation value pitch.
<17>		Adjusts the focus position.
<18>		Switches the transmission/reception frequency level while displacement is observed.

\*1: This switch must be registered with the TCS customization tool.  
Contact your Canon Medical Systems service representative for details.

\*2: If the display scale for the shear wave propagation speed or elasticity ratio has been adjusted, be aware of the following points.

- Regions where the measurement value is greater than the maximum display value are displayed in the same color as for the maximum value.
- Regions where the value is smaller than the minimum display value are displayed in the same color as for the minimum value.
- For the measurement values of measurements performed in a range greater than the maximum display value or smaller than the minimum display value, actual measurement values are displayed.

\*3: In regions where the shear wave speed or elasticity is greater than the maximum measurement range of 10 m/s and 200 kPa respectively, no color is mapped and no values can be measured from those regions.

## 13.4 Shear Wave Measurement Function


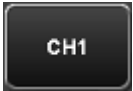
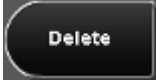




**NOTE** If the display scale for the shear wave propagation speed or the elasticity ratio has been adjusted, measurement values may differ even though the display shows the same color in the color map. Refer to subsection 13.3 for details.

In Shear wave mode, shear wave measurement can be performed.  
Shear wave measurement enables the stiffness of target tissues to be measured.

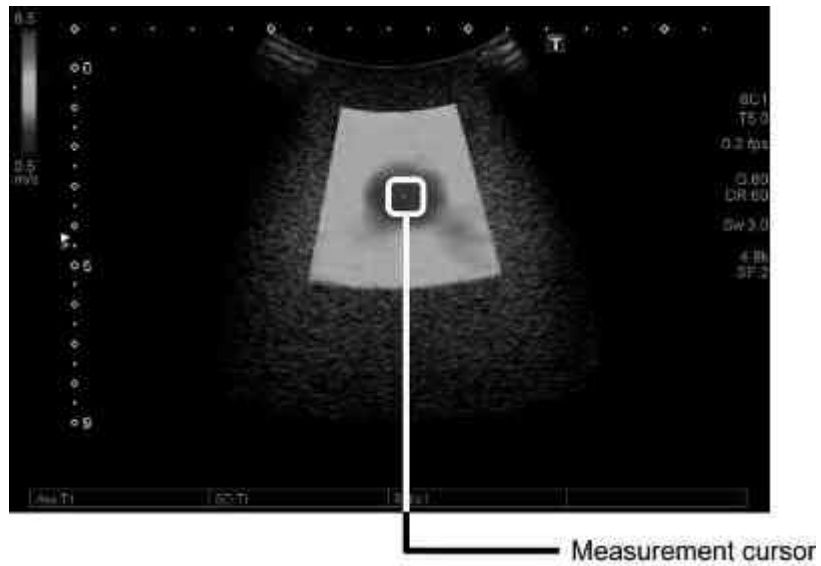


<<Elasto menu on the touch panel>>




No.	Switch	Function
<1>	Target ROI 	Displays the cursor for drawing the target ROI on the image.
	Reference ROI 	Displays the cursor for drawing the reference ROI on the image.
<2>		Used to delete the ROI.
<3>		Used to adjust the ROI size.
<4>		Switches the shear wave display mode. <ul style="list-style-type: none"> <li>• Speed : Displays the shear wave speed (m/s).</li> <li>• Elast. : Displays the elasticity (kPa).</li> <li>• Prop. : Displays the propagation.</li> </ul>
<5>		Used to select the ROI size to be set. * Effective when the ROI is circular.
<6>		Used to select the ROI shape. <ul style="list-style-type: none"> <li>• Ellipse : Ellipse (ellipsoid)</li> <li>• Rect. : Rectangle (rectangular solid)</li> <li>• Free. : Closed curve</li> <li>• Circle : Circular (perfect circle)</li> </ul>

(1) Setting the ROIs

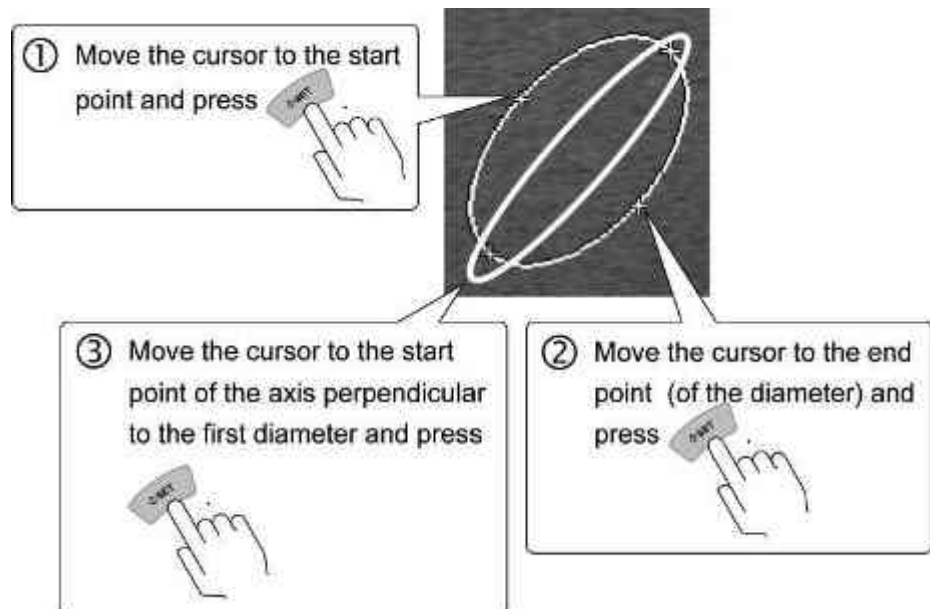


(a) Draw the ROIs.

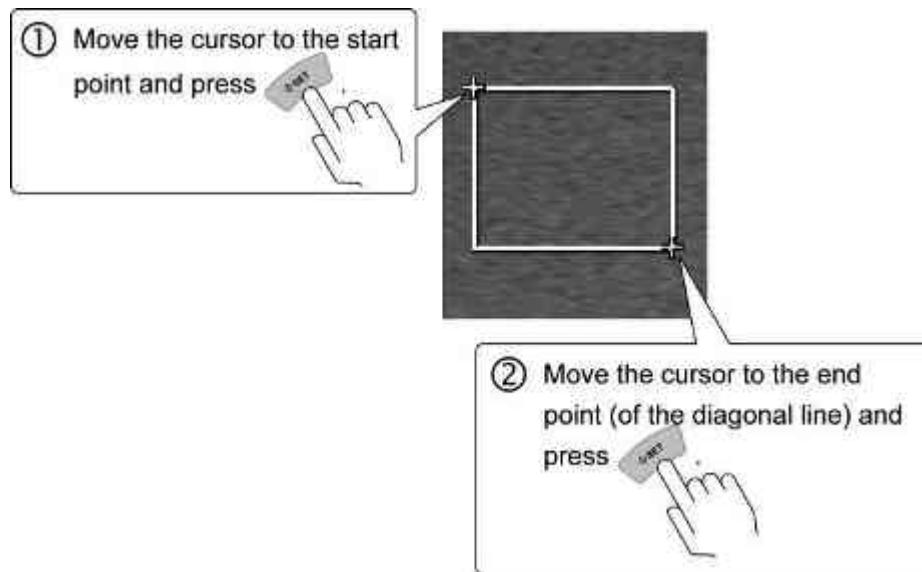
NOTE

To set multiple ROIs successively, press  after the ROI is set to display a new measurement cursor.

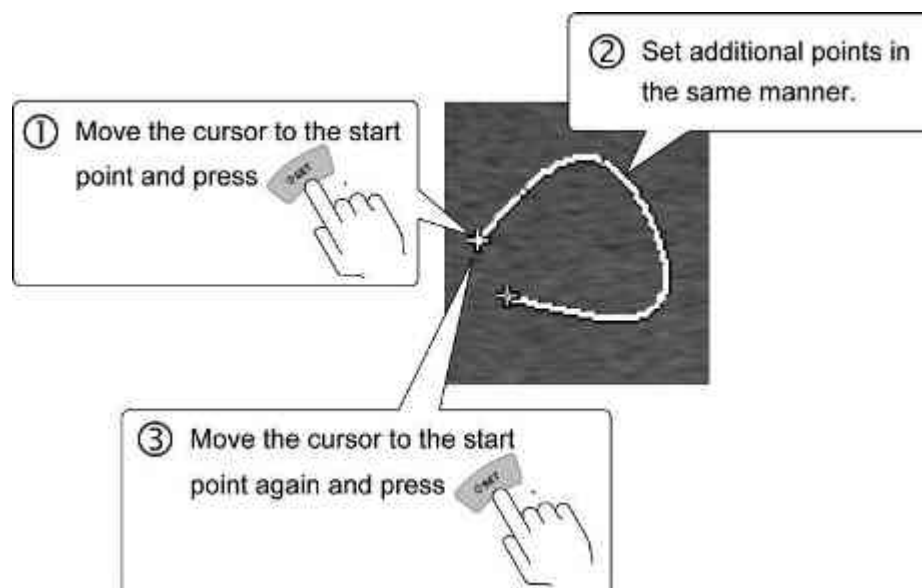
<<When ROI Shape is set to Ellipse>>



<<When ROI Shape is set to Rect>>




<<When ROI Shape is set to Free>>

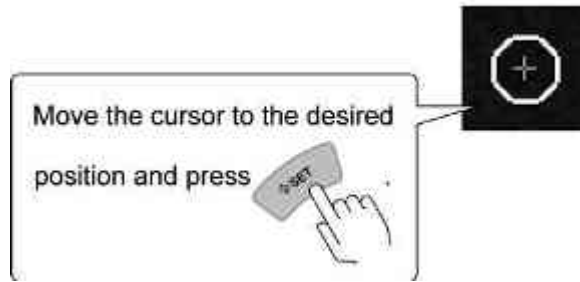




<<When the ROI shape is "Circle">>

NOTE

Before setting the ROI, adjust the diameter, using  in the [Elasto] menu on the touch panel.



(b) When both the target ROI and reference ROI are set, the measurement results are displayed automatically.

<<When Color map is "Speed">>

Item	Measurement result
Ave.T1 to T13 (Target ROI 1 to 13)	0.00 to 10.00 (m/s)
Ave.R (Reference ROI)	0.00 to 10.00 (m/s)
SD.T1 to T13 (Target ROI 1 to 13)	0.00 to 10.00 (m/s)
SD.R (Reference ROI)	0.00 to 10.00 (m/s)
Ratio 1 to 13	0.00 to 999.99

<<When Color map is "Elast">>

Item	Measurement result
Ave.T1 to T13 (Target ROI 1 to 13)	0.0 to 200.0 (kPa)
Ave.R (Reference ROI)	0.0 to 200.0 (kPa)
SD.T1 to T13 (Target ROI 1 to 13)	0.0 to 200.0 (kPa)
SD.R (Reference ROI)	0.0 to 200.0 (kPa)
Ratio 1 to 13	0.00 to 999.99

\* Shear wave elastography was tested and validated using commercially available Elasticity QA Phantoms (Models 049 & 049A, CIRS Inc., Norfolk, VA), with elasticity ranging from 11-82 kPa. All measured shear wave speeds were within 30% in accuracy and 15% in precision with reference to the standard values of each target.

\* Average/Accuracy/Precision tables of measured shear wave speed

<1> Object Speed : 2.0 m/s

Average/Accuracy/Precision vs Object Size at 30 mm depth			
Size (mm)	Average (m/s)	Accuracy (%)	Precision (%)
6.5	2.17	9	1
10.4	2.00	0	1
16.7	1.96	-2	1

<2> Object Speed : 2.2 m/s

Average/Accuracy/Precision vs Object Size at 30 mm depth			
Size (mm)	Average (m/s)	Accuracy (%)	Precision (%)
6.5	2.36	7	2
10.4	2.24	2	1
16.7	2.20	0	1

<3> Object Speed : 4.0 m/s

Average/Accuracy/Precision vs Object Size at 30 mm depth			
Size (mm)	Average (m/s)	Accuracy (%)	Precision (%)
6.5	3.75	-6	1
10.4	3.72	-7	0
16.7	3.87	-3	1

<4> Object Speed : 5.2 m/s

Average/Accuracy/Precision vs Object Size at 30 mm depth			
Size (mm)	Average (m/s)	Accuracy (%)	Precision (%)
6.5	4.75	-9	2
10.4	4.74	-9	1
16.7	4.75	-9	2

<5> Object Speed : 3.1 m/s

Average/Accuracy/Precision vs Depth			
Depth (mm)	Average (m/s)	Accuracy (%)	Precision (%)
20.0	3.04	-2	3
30.0	2.87	-7	6
40.0	2.48	-20	2
50.0	2.40	-23	3
60.0	2.57	-17	3

- Accuracy is defined as follows :  $(X_m - X_s) / X_s$  [%], where  $X_m$  denotes the average of the measured values and  $X_s$  denotes the standard value.
- Precision is defined as follows :  $\sigma_m / X_m$  [%], where  $\sigma_m$  is the standard deviation of the measured values.

\* Average/Accuracy/Precision tables of measured shear wave elasticity

<1> Object Elasticity : 12 kPa

Average/Accuracy/Precision vs Object Size at 30 mm depth			
Size (mm)	Average (kPa)	Accuracy (%)	Precision (%)
6.5	14.1	18	3
10.4	12.0	0	2
16.7	11.7	-3	2

<2> Object Elasticity : 15 kPa

Average/Accuracy/Precision vs Object Size at 30 mm depth			
Size (mm)	Average (kPa)	Accuracy (%)	Precision (%)
6.5	16.8	12	3
10.4	15.0	0	2
16.7	14.6	-3	1

<3> Object Elasticity : 49 kPa

Average/Accuracy/Precision vs Object Size at 30 mm depth			
Size (mm)	Average (kPa)	Accuracy (%)	Precision (%)
6.5	42.6	-13	3
10.4	42.6	-13	2
16.7	45.9	-6	2

<4> Object Elasticity : 81 kPa


Average/Accuracy/Precision vs Object Size at 30 mm depth			
Size (mm)	Average (kPa)	Accuracy (%)	Precision (%)
6.5	70.5	-13	3
10.4	70.7	-13	4
16.7	71.2	-12	5

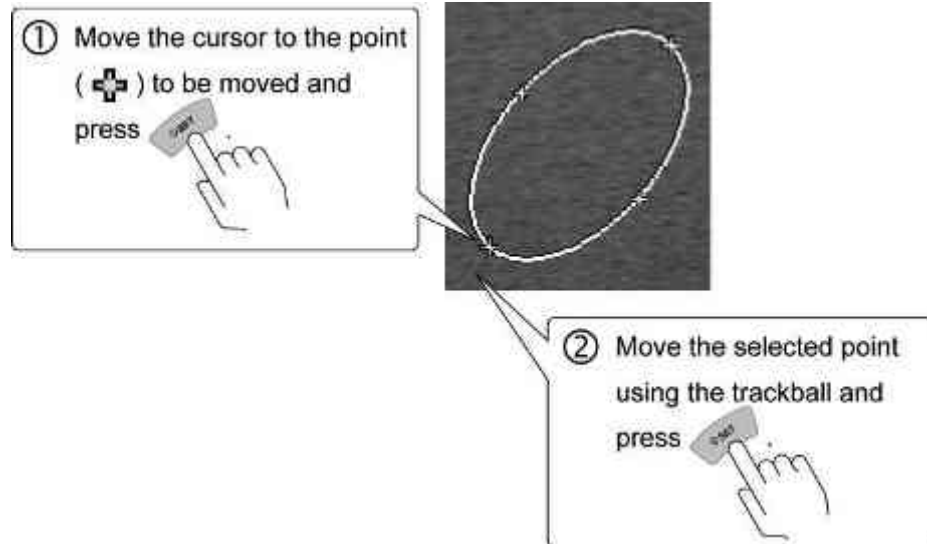
<5> Object Elasticity : 28 kPa

Average/Accuracy/Precision vs Depth			
Depth (mm)	Average (kPa)	Accuracy (%)	Precision (%)
20.0	27.8	-1	4
30.0	24.8	-11	9
40.0	18.5	-34	3
50.0	17.3	-38	4
60.0	19.8	-29	5


- Accuracy is defined as follows :  $(X_m - X_s) / X_s$  [%], where  $X_m$  denotes the average of the measured values and  $X_s$  denotes the standard value.
- Precision is defined as follows :  $\sigma_m / X_m$  [%], where  $\sigma_m$  is the standard deviation of the measured values.

## (2) Changing the ROI size.

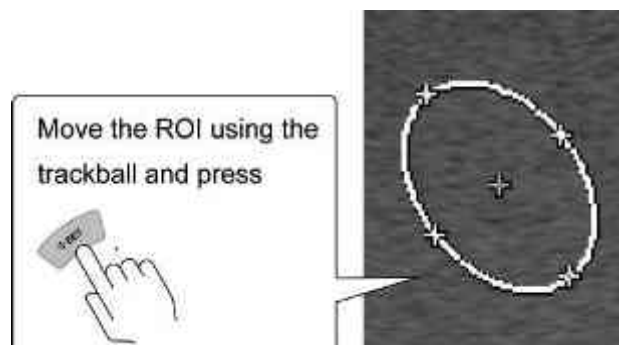
- (a) Press  in the Elasto menu on the touch panel. The cursor is displayed on the ROI.
- (b) Change the ROI size.



## (3) Changing the ROI position


- (a) Press .
- (b) Edit the ROI.

\* Rotate  to rotate the ROI.



(4) Displaying the measurement results in the Worksheet

- NOTE
1. The measurement results are displayed in the order in which the measurements were performed (the result for the most recent examination is added at the bottom of the list), including the Reference ROI in the Worksheet screen during Shear wave measurement.
  2. Up to 14 measurement results can be retained.  
When 15 or more measurements are performed, the oldest measurement result in the list (at the top of the list) is deleted and the newest measurement result is added at the bottom of the list.
  3. A measurement result is not displayed in the Worksheet screen if the measurement value is "0". Because the measurement value is "0", a measurement result with "Prop." selected for the color map is also not displayed in the Worksheet screen. (If it is necessary to display the measurement result in this status, change the color map to "Speed" or "Elast.")

Press  in the [Other] menu on the touch panel while Shear wave measurement is being performed.



No.	Item	Description
<1>	Changing the image display mode	<p>The corresponding measurement results are displayed.</p> <ul style="list-style-type: none"> <li>• [Shear Wave] ON : Measurement results for Shear wave measurement are displayed.</li> <li>• [Shear Wave] OFF : Other measurement results are displayed.</li> </ul> <p>* Refer to the operation manual &lt;&lt;Measurements volume&gt;&gt; for details.</p>
<2>	Setting the calculation range for statistical values	<p>The calculation range for statistical values is set using checkmarks for each measurement result (for each line).</p> <ul style="list-style-type: none"> <li>• <input checked="" type="checkbox"/> : Included in the calculation range</li> <li>• <input type="checkbox"/> : Excluded from the calculation range</li> </ul>
<3>	Measurement results	<p>The Average value and the SD value that are calculated in each color map (Speed or Elast.) are displayed.</p>
<4>	Depth (cm)	<p>The depth value for the ROI is displayed.</p> <p>* Not displayed when the shape of the ROI is "Free".</p>
<5>	Statistical values	<p>The Average value calculated in each color map (Speed or Elast.) is displayed.</p> <ul style="list-style-type: none"> <li>• Mean : Average</li> <li>• SD : Standard deviation</li> <li>• Median : Median value</li> <li>• IQR : Interquartile range</li> </ul>

## (5) Terminating measurement mode

Press  or .



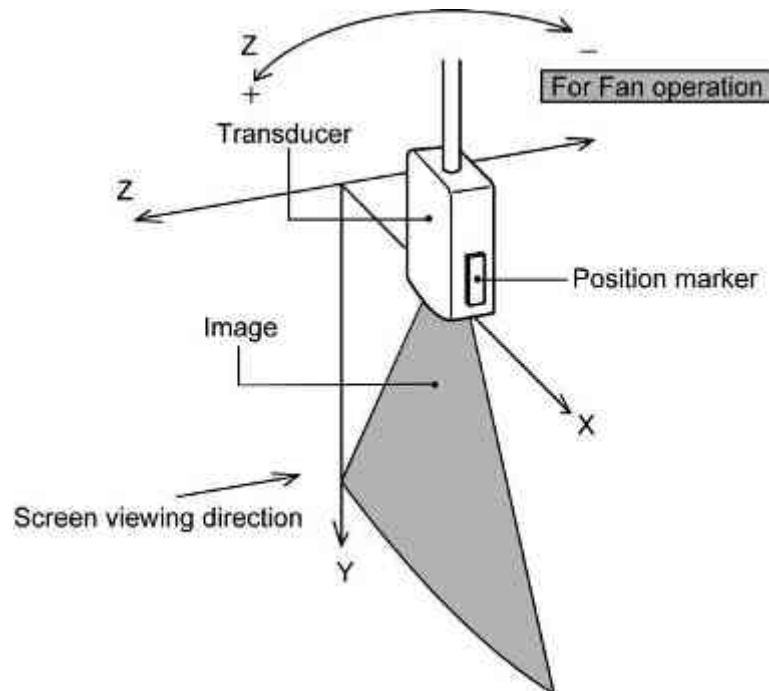



# 14.

## Smart 3D

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- ⚠ CAUTION** 1. Be sure to enter the scanning conditions for the transducer for each examination correctly.
- Set the value for Angle referring to the direction of the transducer position marker. If an incorrect setting is made, a mirror image will be generated, possibly leading to misidentification of the region examined.



2. The displayed 3D image may be distorted due to improper application of the transducer to the patient, hand movement, or fetal movement. Image distortion will also occur if scanning using the transducer is not performed at a constant speed. 3D images generated using Smart 3D mode must not be used to establish a definitive diagnosis. In order to ensure accurate diagnosis, they should only be used in combination with other types of images.
3. In Smart 3D mode,  is displayed on the monitor. The accuracy of the displayed image cannot be assured, because the image has been corrected. Data obtained in quantitative evaluation must only be used as a guide.
4. Quantitative evaluations such as measurements are not supported in Smart 3D mode.

- 
- ⚠ CAUTION**
5. **The scale mark displayed in Smart 3D mode is for reference only. Do not use it for measurement.**
  6. **When measurement (Manual Calibration) is performed for the stored image in Smart 3D on the Exam Review screen, a shape is not reconstructed correctly, displaying incorrect measurement results.**
  7. **The values calculated in Smart 3D mode (shear wave function) are for reference only. Do not use them in diagnosis, as the accuracy of the calculated values cannot be guaranteed.**
- 

**NOTICE** If the needle mark is displayed in 2D mode and Smart 3D mode is to be started up, turn OFF the needle mark display before starting up Smart 3D mode.

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- NOTE**
1. The 3D image (volume data) is generated based on the following information.
    - (1) The horizontal (X-axis direction) and vertical (Y-axis direction) lengths of the 3D image are based on the body dimensions calculated in the diagnostic ultrasound system.
    - (2) The depth (Z-axis direction) of the 3D image is calculated based on the transducer movement data entered manually by the operator.
  2. As the number of cine frames acquired during scanning increases, the interpolation interval becomes smaller and 3D image quality improves.
  3. Do not start Smart 3D mode while copying image data to media. Doing so will result in slow response in Smart 3D mode.
  4. It is necessary to assign a switch for this function on the main panel. Consult your Canon Medical Systems service representative for details.
-

## 14.1 Outline of Smart 3D

The Smart 3D function generates and displays three-dimensional image data (volume data) using the Cine memory image data acquired for the purpose of three-dimensional image reconstruction.

- To use Smart 3D mode, the optional USFR-X200A and a transducer that supports Smart 3D mode are required.
- Refer to the compatibility table of transducers and modes in subsection 5.7 of the Operation Manual <<Fundamentals volume>> for the transducers that support Smart 3D mode.

## 14.2 Startup and Termination of Smart 3D Mode

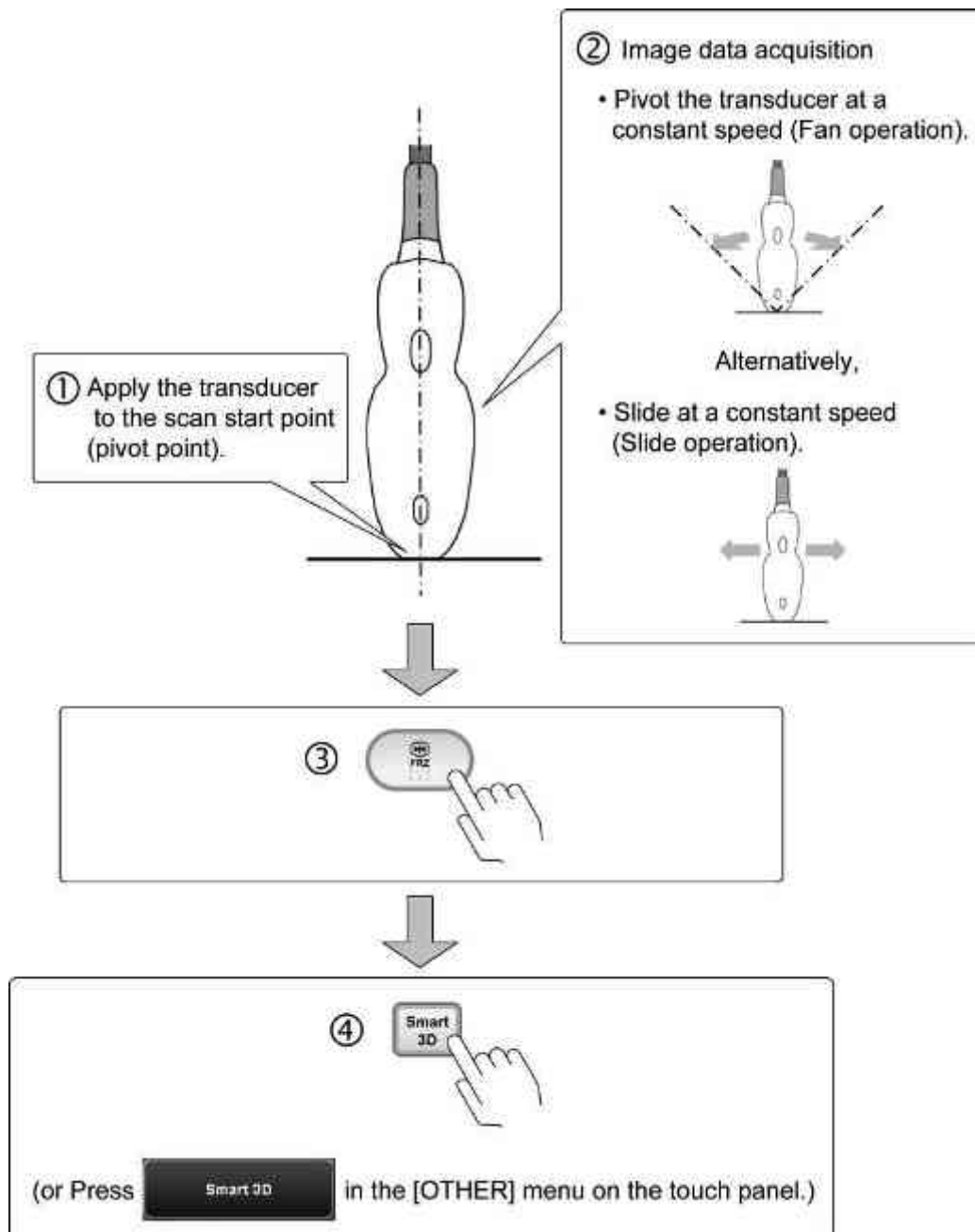
### 14.2.1 Startup

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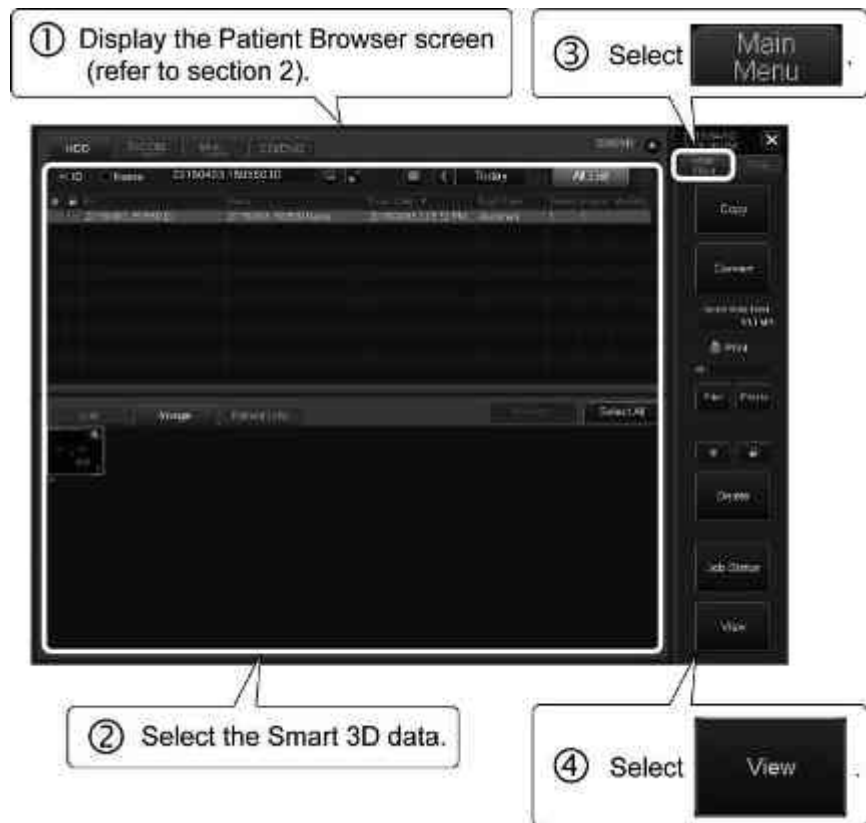
NOTE	Smart 3D cannot start up using image data acquired under the following conditions. <ul style="list-style-type: none"><li>• Steering operation is performed with the linear transducer.</li><li>• Zoom is performed.</li><li>• Except the Shear wave function, the display layout is set to multiple view mode (TwinView, Dual, or Quad).</li></ul> <p>* Only for the Shear wave function, Smart 3D can start up with TwinView set to ON.</p>
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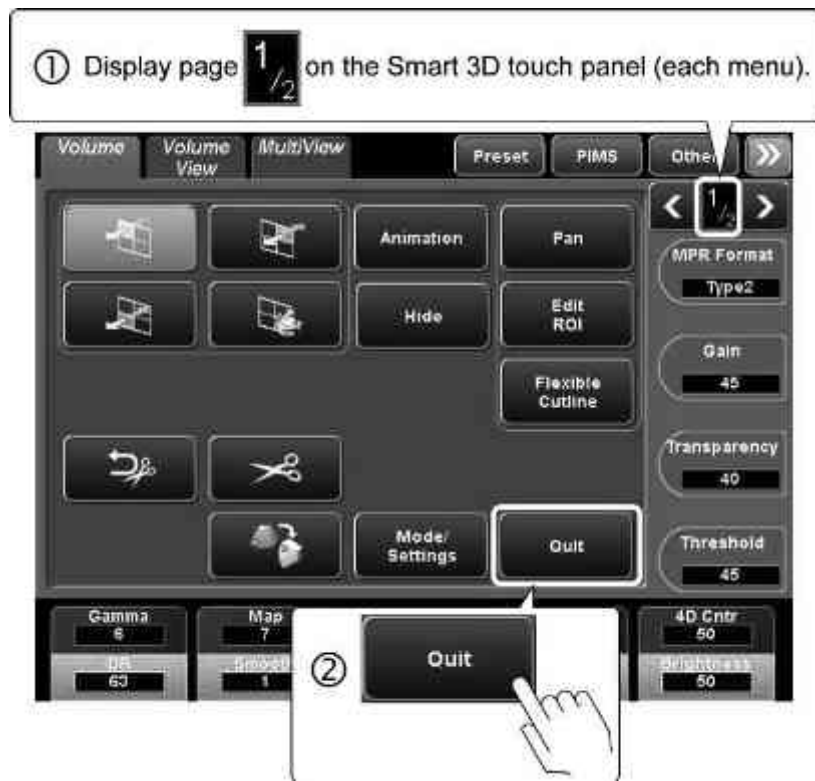
(1) To observe the image for the current patient in Smart 3D mode



(2) To observe the stored images for previous examination in Smart 3D mode



## 14.2.2 Termination

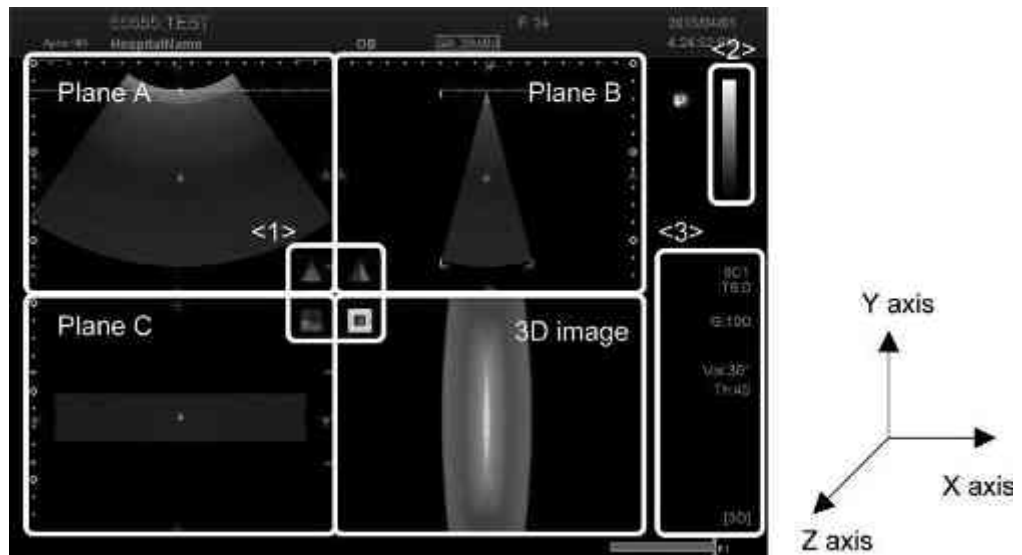


\* Pressing **2D** also terminates Smart 3D mode.






### 14.3 Operations on the Smart 3D Screen on the Monitor

When Smart 3D mode is started up, the 3D image and arbitrary planes are displayed.






No.	Item
<1>	Volume mark (indicates the position of the plane)
<2>	Color map
<3>	Image parameter information

(1) Changing the display layout


- (a) Pressing  sets the 4-frame layout (MPR).
- (b) Pressing  sets the 2-frame layout (2D image + 3D image).
- (c) Pressing  sets the single frame-layout (3D image).

(2) Rotating the image


- (a) Rotate  to rotate the image around the X axis.
- (b) Rotate  to rotate the image around the Y axis.

(c) Rotate  to rotate the image around the Z axis.


(3) Translating the image position along the Z axis

Rotate  to translate the position of the displayed image along the Z axis.

(4) Zooming the 3D image

Rotate  to enlarge or reduce the 3D image.


(5) Panning

(a) Press  in the touch panel to change the function icon to



(b) Operate the trackball to pan the image.

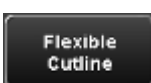
(6) Adjusts the ROI size.

(a) Press  in the touch panel to change the function icon to



(b) Operate the trackball to adjust the ROI size.



(7) Adjusting the flexible cut line


(a) Press  in the touch panel to change the function icon to




(b) Operate the trackball to adjust the position of the flexible cut line (plane A).

## (8) Cursor operation

(a) Use  to change the function icon to .

(b) Select the desired thumbnail using the trackball and .



(c) Press  again to terminate cursor operation.

NOTE Function icon for MPR Plane operation

The function icon displayed for Volume and Volume View is .


The MPR position can be adjusted using the trackball.

## (9) Cine control

(a) Press  to change the function icon to .



(b) Use the trackball to play back the image frame by frame.

## (10) Changing the range of the cine memory to be used to reconstruct the 3D image

Use the trackball or  to specify the range of the cine memory to be used to reconstruct the 3D image.

NOTE The range of the cine memory to be used to reconstruct the 3D image can be changed in the following cases.

1. When image data acquisition is completed (before startup of 3D)
2. When a still image remains displayed after Smart 3D is completed

(  on the touch panel or  is pressed once).

## (11) Storing the Smart 3D data (volume data)

Press  on the main panel or  in the PIMS menu on the touch panel.

## (12) Storing the image

To store the still image, press .

## NOTE

1. The free space on the hard disk is displayed at the top of the screen as



. Images cannot be saved if there is insufficient free space.


If there is less than 35 GB of free space, the icon is highlighted in yellow.

The color of the free space indicator changes to red when free space falls below 20 GB.


When free space falls below 1 GB, the message "HDD is full. Please delete some images in Patient Browser and try again." is displayed in the information message area on the screen and no more data can be stored. Ensure the required free space before saving the images.

2. If the free space is less than 1 GB at the end of the examination, the message "There is no enough space in Database. Please Delete some data in Patient Browser" is displayed and the examination cannot be terminated. Ensure that there is sufficient free space to terminate the examination.
3. Refer to section 2 for information regarding recording to media.



## (13) Entering a comment (annotation)

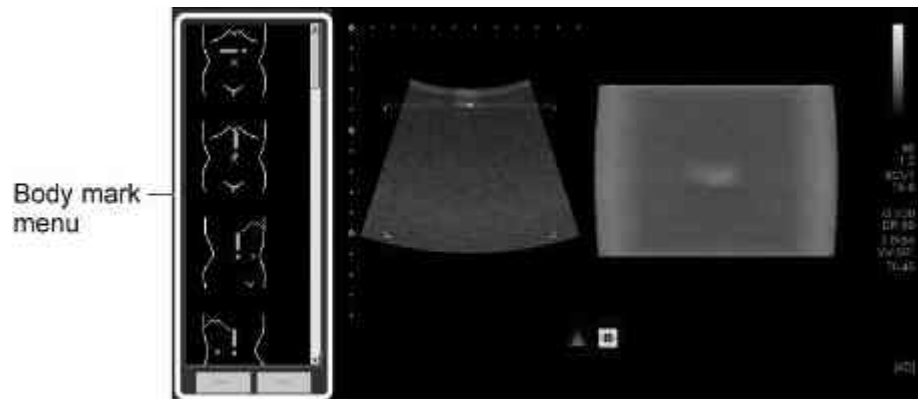
- (a) Press .
- (b) Move the cursor to the desired position using the trackball.
- (c) Enter the characters using the keyboard.

## (14) Resetting the image parameter settings to the default values





Press  to restore the default values.

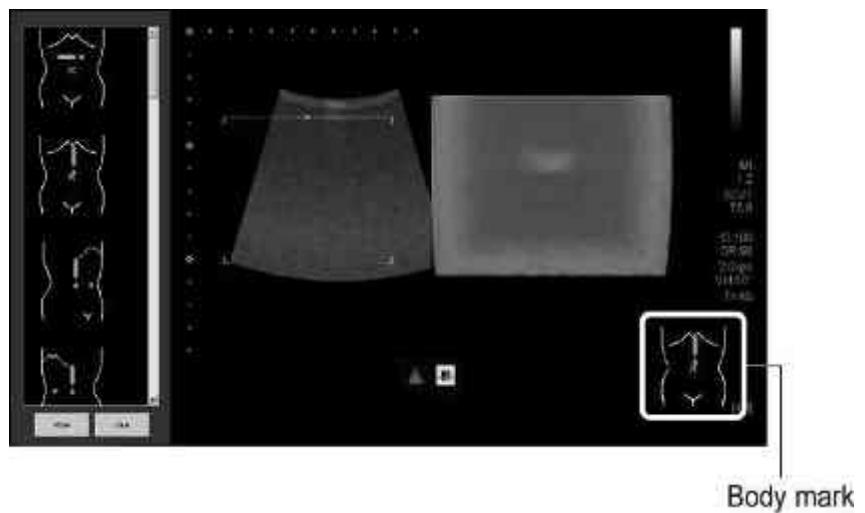
(15) Performing operations on the body mark

Press . The function icon is changed to  and the body mark menu is displayed.




(a) Displaying and changing the body mark



- Press  or  to display the body mark.
- Press  or  to change the type of the body mark.

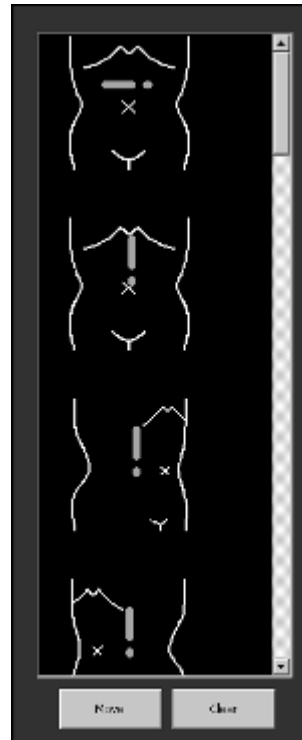


(b) Displaying and moving the transducer mark and changing the transducer mark angle

- Use the trackball to move the transducer mark.
- Rotate  to change the angle of the transducer mark.

NOTE Performing operations on the body mark using the body mark menu


Press  to change the function icon to .



1. To display and select the body mark


Use the trackball and  to select the desired body mark.

2. To move the body mark

(1) Place the cursor on [Move] and press .

(2) Use the trackball and  to move the body mark.

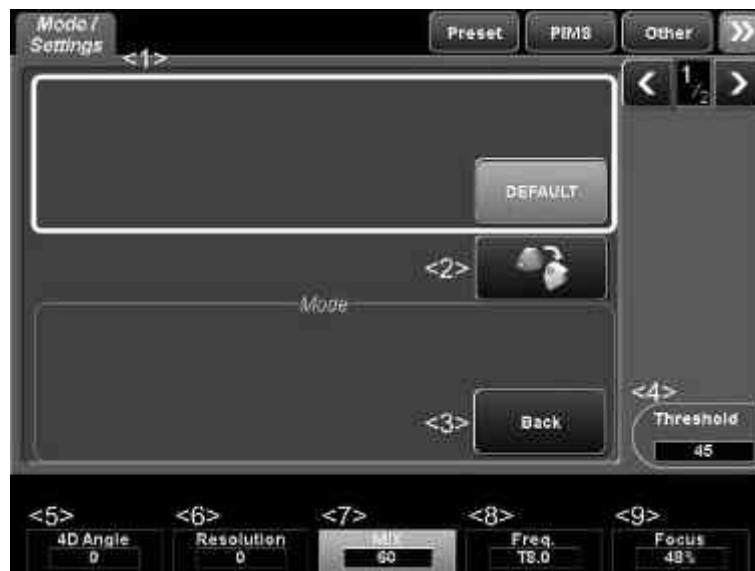
3. To delete the body mark


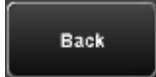



Place the cursor on [Clear] and press .



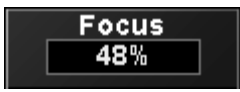
## 14.4 Operations From the Touch Panel

This subsection describes the touch panel menus used in Smart 3D mode.

(1) Mode/Settings menu (page 1/2)





No.	Switch	Function
<1>	Sub-preset switch display area	Sub-preset switches are displayed. * The image is displayed with the adjusted image parameter values that are registered to the selected switch. (Refer to subsection 14.5 for details.)
<2>		Rotates the 3D image 90° in the clockwise direction. * Each time the switch is pressed, the 3D image is rotated further by 90°.
<3>		Used to close the Mode/Settings menu. * The Volume menu (page 1/2) is displayed.
<4>		Used to adjust the threshold.
<5>		Used to adjust the transducer sweep angle.
<6>		Used to adjust the resolution of the 3D image in the sweep direction.

No.	Switch	Function
<7>		Used to adjust the gradient texture ratio.
<8>		Used to select the transmission/reception frequency.
<9>		Used to adjust the focal position.

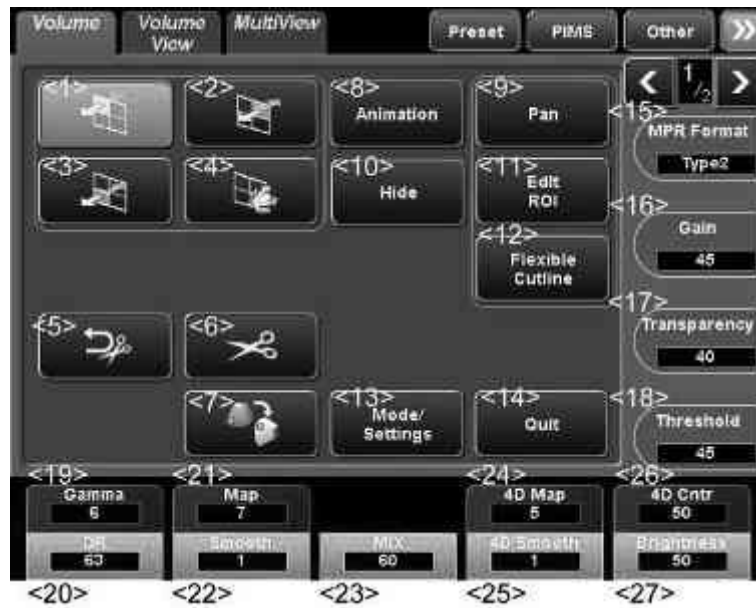
(2) Mode/Settings menu (page 2/2)














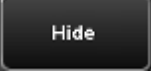





No.	Switch	Function
<1>		Used to save a sub-preset switch. (Refer to subsection 14.5 for details.)
<2>		Used to delete the selected sub-preset switch. (Refer to subsection 14.5 for details.)

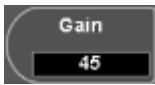








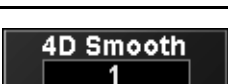
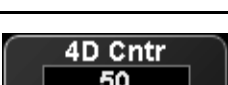



(3) Volume menu (page 1/2)







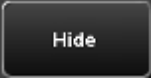



No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 3D image.
<5>		Undoes 3D image cutout.


No.	Switch	Function
<6>		Used to cut out a portion of the 3D image. (a) Adjust the fan angle or sliding distance around the pivot point (the transducer end) and then set the cutout start position using the trackball and  (b) Operate the trackball to trace the portion to be cut out. (c) Press  at the cutout end position. (d) The portion of the 3D image enclosed by the trace line is erased.
<7>		Rotates the 3D image 90° in the clockwise direction. * Each time the switch is pressed, the 3D image is rotated further by 90°.
<8>		Used to set animation. * The Animation page is displayed.
<9>		Turns the panning operation ON/OFF.
<10>		Toggles Volume View image display (show/hide) (refer to subsection 14.4.3).
<11>		Used to adjust the ROI size.
<12>		Used to adjust the flexible cut line.
<13>		Displays the Mode/Settings menu.
<14>		Terminates Smart 3D mode.
<15>		Used to select the display orientation of plane B.

No.	Switch	Function
<16>		Used to adjust the gain of the MPR image.
<17>		Used to adjust the transparency of the 3D image.
<18>		Used to adjust the threshold.
<19>		Used to adjust the gamma curve of the MPR image.
<20>		Used to adjust the dynamic range of the MPR image.
<21>		Used to adjust the hue of the MPR image.
<22>		Used to adjust the degree of smoothing of the MPR image.
<23>		Used to adjust the gradient texture ratio.
<24>		Used to adjust the hue of the 3D image.
<25>		Used to adjust the degree of smoothing of the 3D image.
<26>		Used to adjust the contrast of the 3D image.
<27>		Used to adjust the brightness.

## (4) Volume menu (page 2/2)

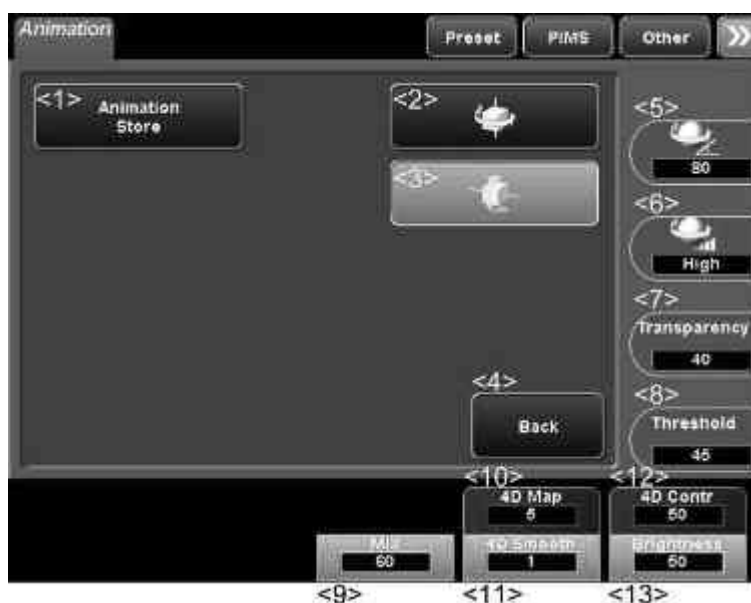







No.	Switch	Function
<1>		Selects the viewing direction.
<2>		Changes the 3D image rendering mode to Inversion (in which lumens are displayed using tone reversal).
<3>		Changes the 3D image rendering mode to MIP.
<4>		Changes the 3D image rendering mode to Volume.
<5>		Toggles Volume View image display (show/hide) (refer to subsection 14.4.3)
<6>		Switches the filter type between Filter and Gradient.
<7>	 *1	Used to adjust the fan angle around the pivot point (the transducer end).
<8>	 *1	Used to adjust the sliding distance around the pivot point (the transducer end).









No.	Switch	Function
-	 *1	Changes the 3D image rendering mode to X-ray projection.

\* 1: This switch must be registered with the TCS customization tool. Contact your Canon Medical Systems service representative for details.

(5) Animation menu



No.	Switch	Function
<1>		Stores the animation display.
<2>		Displays the 3D image in animation mode (rotation around the Y axis).
<3>		Displays the 3D image in animation mode (rotation around the X axis).
<4>		Terminates setting of the animation display. * Page 1/2 of the Volume menu is displayed.
<5>		Used to adjust the rotation angle of the animation display. * This switch is effective when animation display is selected.

No.	Switch	Function
<6>		Used to adjust the speed of the animation display. * This switch is effective when animation display is selected.
<7>		Used to adjust the transparency of the 3D image.
<8>		Used to adjust the threshold.
<9>		Used to adjust the gradient texture ratio.
<10>		Used to adjust the hue of the 3D image.
<11>		Used to adjust the degree of smoothing of the 3D image.
<12>		Used to adjust the contrast of the 3D image.
<13>		Used to adjust the brightness.

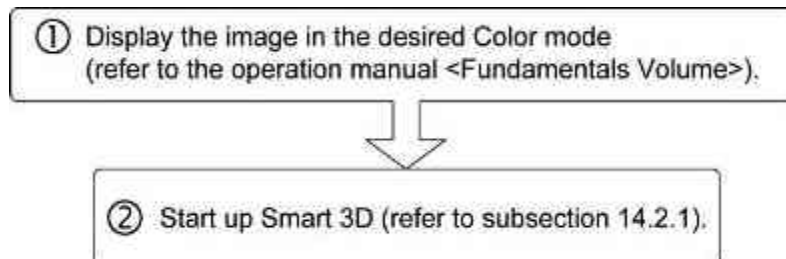
## (6) 2D menu and M menu

Refer to the operation manual <<Fundamentals volume>> for the 2D menu and M menu on the touch panel.

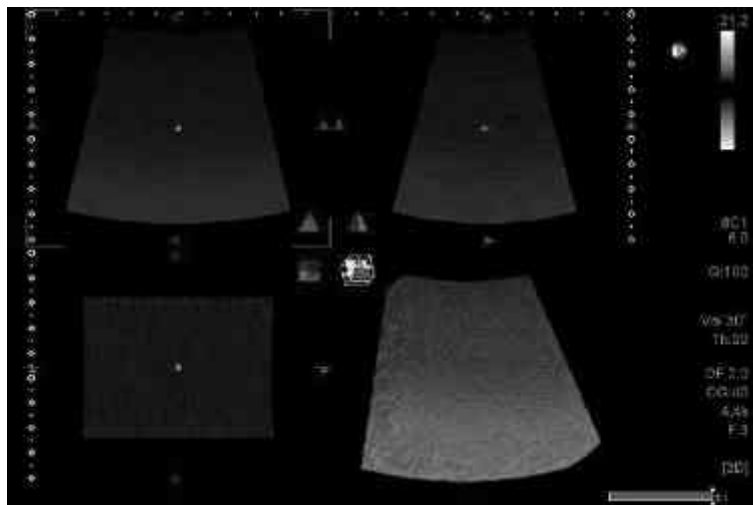
### 14.4.1 Volume Color

In Volume Color mode, 3D images can be displayed in Color mode.

- The Color mode can be selected from among CDI (Velocity), Power Angio, Dynamic Flow, and SMI.
- To use Dynamic Flow mode, the USDF-X200A option is required.
- To use SMI mode, the USMI-X200A option is required.
- For the transducers that support Volume Color, refer to subsection 5.7 "List of Available Transducers" of the operation manual <<Fundamentals volume>>.



<<Image display>>

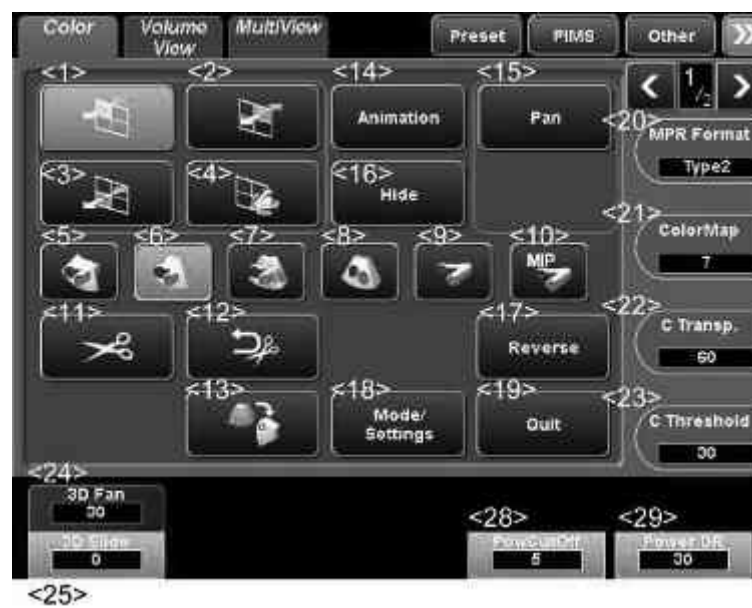


## (1) Color menu (page 1/2)

## (a) CDI mode












## (b) Power Angio mode









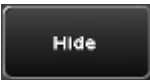

















## (c) Dynamic Flow/SMI mode



No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 3D image.
<5>		Displays the color volume image and MPR image.
<6>		Displays the color volume image and tissue cube cut image.
<7>		Displays the color volume image and transparent tissue cube cut image (for observing the distribution of blood vessels in the tissue).
<8>		Displays the cube cut image.
<9>		Displays the color volume image.

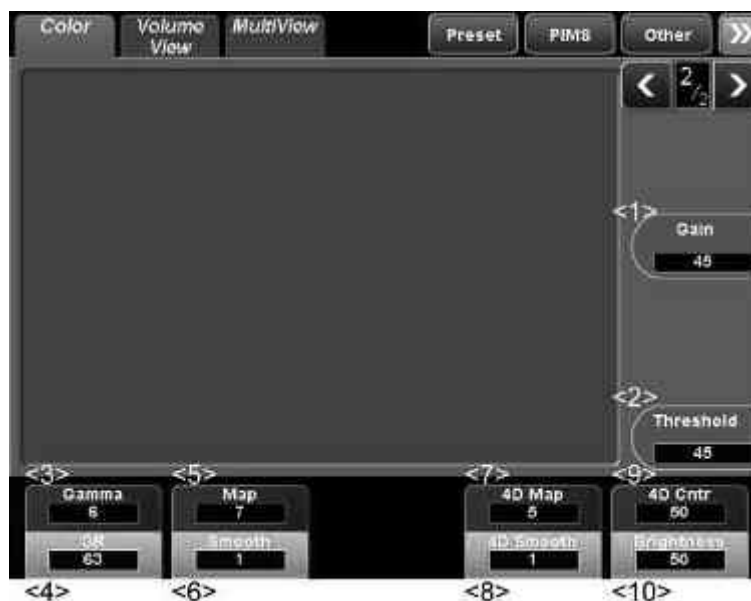
No.	Switch	Function
<10>		Displays the color MIP image.
<11>		<p>Used to cut out a portion of the 3D image.</p> <p>(a) Adjust the fan angle or sliding distance around the pivot point (the transducer end) and then set the cutout start position using the trackball and .</p> <p>(b) Operate the trackball to trace the portion to be cut out.</p> <p>(c) Press  at the cutout end position.</p> <p>(d) The portion of the 3D image enclosed by the trace line is erased.</p>
<12>		Undoes 3D image cutout.
<13>		<p>Rotates the 3D image 90° in the clockwise direction.</p> <p>* Each time the switch is pressed, the 3D image is rotated further by 90°.</p>
<14>		Displays the Animation menu for setting animation display mode.
<15>		Turns panning operation ON/OFF.
<16>		Toggles Volume View image display (show/hide) (refer to subsection 14.4.3).
<17>		Used to reverse the colors.
<18>		Displays the Mode/Settings menu.
<19>		Terminates Smart 3D mode.




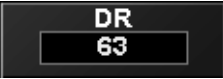
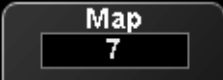



No.	Switch	Function
<20>		Used to select the display orientation of plane B.
<21>		Used to adjust the hue of the Color image.
<22>		Used to adjust the transparency of the Color image.
<23>		Used to adjust the threshold of the Color image.
<24>	 *1	Used to adjust the fan angle around the pivot point (the transducer end).
<25>	 *1	Used to adjust the sliding distance around the pivot point (the transducer end).
<26>		Used to move the baseline vertically.
<27>		Used to adjust the balance between the Color image and BW image.
<28>		Used to adjust the coloring of the Power image.
<29>		Used to adjust the dynamic range of the Power image.



\* 1: This switch must be registered with the TCS customization tool. Contact your Canon Medical Systems service representative for details.

## (2) Color menu (page 2/2)

- \* The same switches are displayed for CDI mode, POWER ANGIO mode, Dynamic Flow mode, and SMI mode.



No.	Switch	Function
<1>		Used to adjust the gain of the MPR image.
<2>		Used to adjust the threshold.
<3>		Used to adjust the gamma curve of the MPR image.
<4>		Used to adjust the dynamic range of the MPR image.
<5>		Used to adjust the hue of the MPR image.
<6>		Used to adjust the smoothing of the MPR image.
<7>		Used to adjust the hue of the 3D image.
<8>		Used to adjust the smoothing of the 3D image.

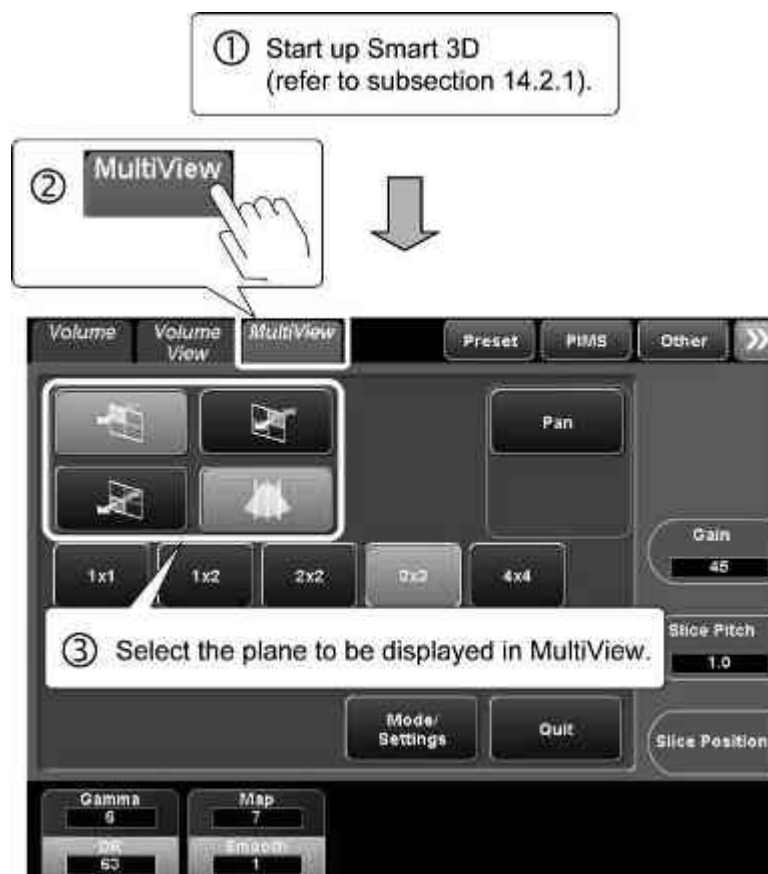
No.	Switch	Function
<9>	 A rectangular touch panel button with a dark background. The text "4D Cntr" is displayed in white at the top, and the number "50" is displayed in white below it.	Used to adjust the image contrast.
<10>	 A rectangular touch panel button with a dark background. The text "Brightness" is displayed in white at the top, and the number "50" is displayed in white below it.	Used to adjust the image brightness.

(3) SMI menu

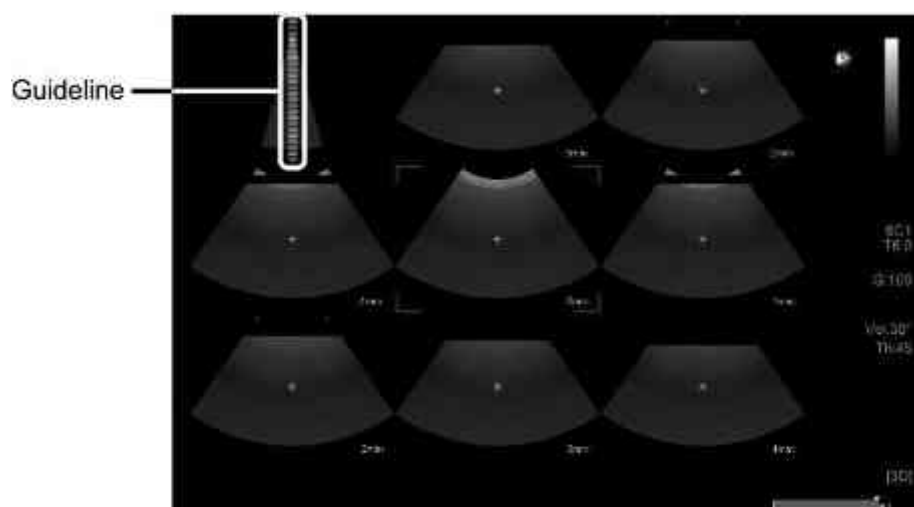
For details for the [SMI] menu on the touch panel, refer to section 12.

## 14.4.2 MultiView mode

Multiple planes (up to 16) of a volume are displayed simultaneously in MultiView mode.



<Image display>

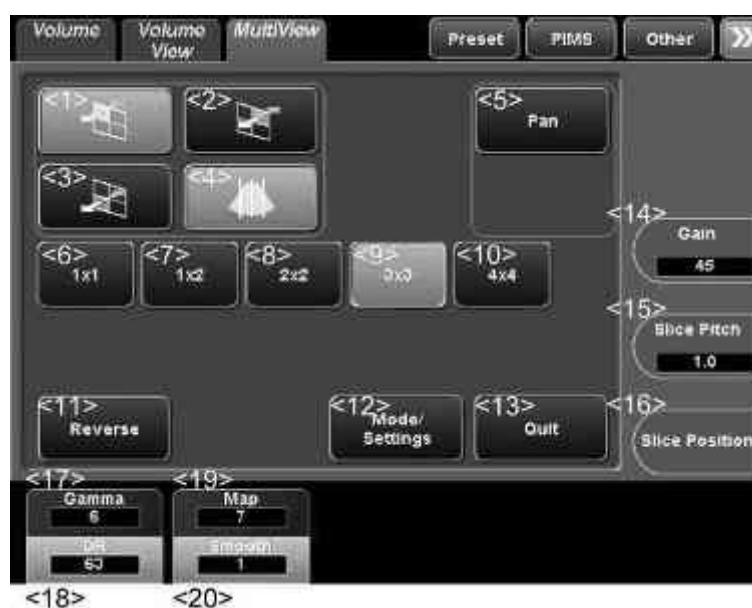








NOTE The image corresponding to the position along the guide line (green line) is indicated by the four corner marks.





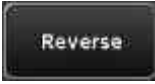

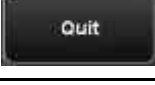




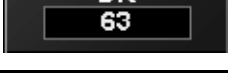

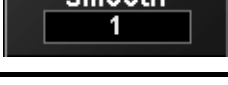
\* The same operation is possible using



### (1) MultiView menu



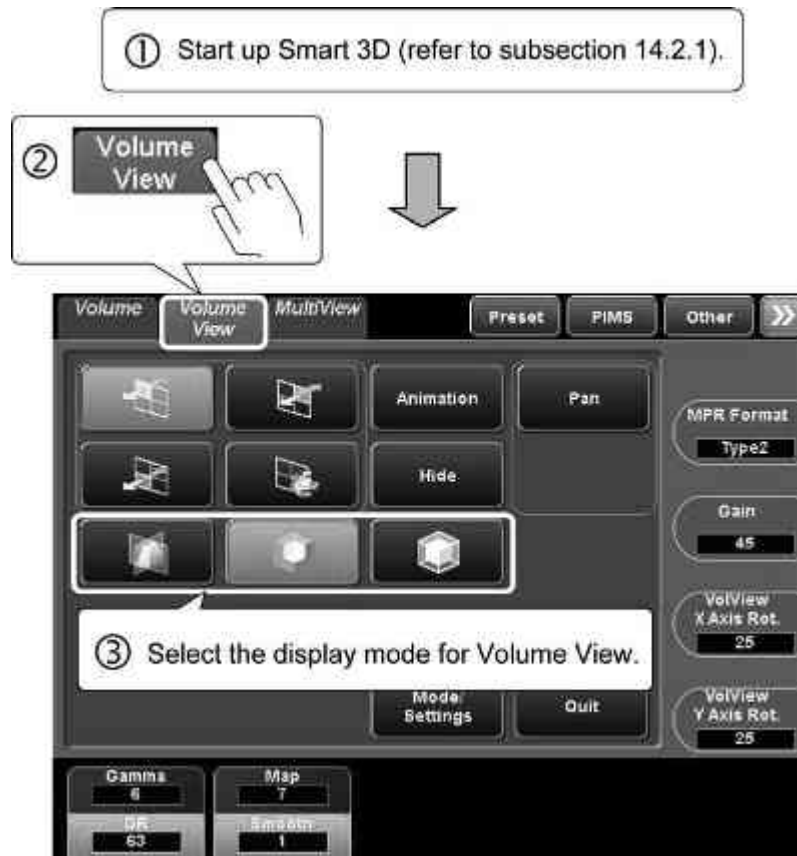
No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Toggles the display of guideline image ON/OFF.
<5>		Turns the panning operation ON/OFF.
<6>		Displays a single image in full-screen mode.

No.	Switch	Function
<7>		Displays two images in 2-frame mode.
<8>		Displays two images in 4-frame mode.
<9>		Displays nine images in 9-frame mode.
<10>		Displays 16 images in 16-frame mode.
<11>		Used to reverse the colors.
<12>		Displays the Mode/Settings menu.
<13>		Terminates Smart 3D mode.
<14>		Used to adjust the gain of the MPR image.
<15>		Used to adjust the intervals of the guidelines.
<16>		Used to change the position of the planar image on the guideline image.
<17>		Used to adjust the gamma curve of the MPR image.
<18>		Used to adjust the dynamic range of the MPR image.
<19>		Used to adjust the hue of the MPR image.
<20>		Used to adjust the degree of smoothing of the MPR image.

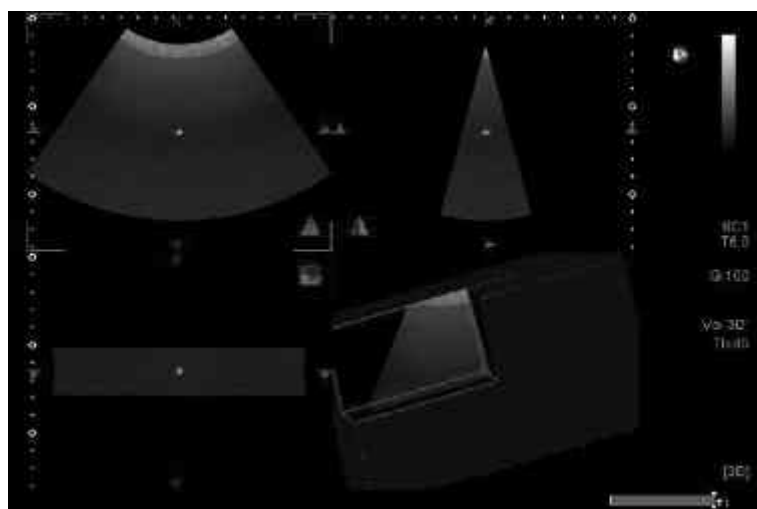


### 14.4.3 Volume View

Three orthogonal planes are displayed as one image.



<Image display>

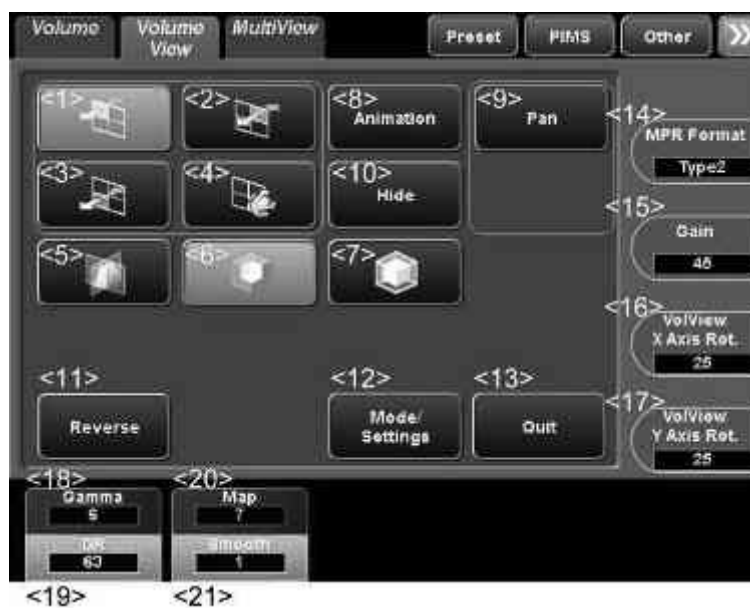







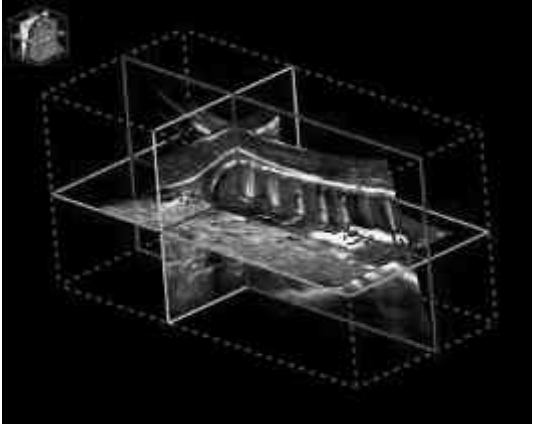
**NOTE**


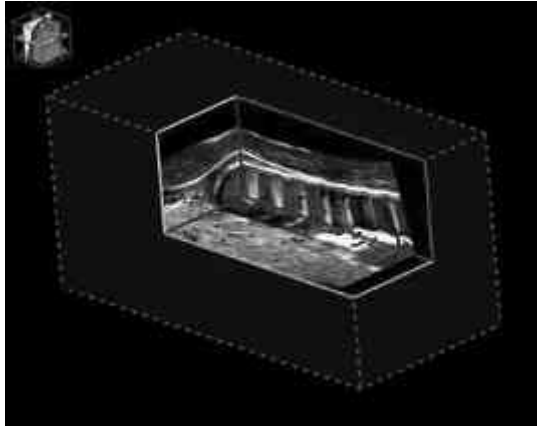

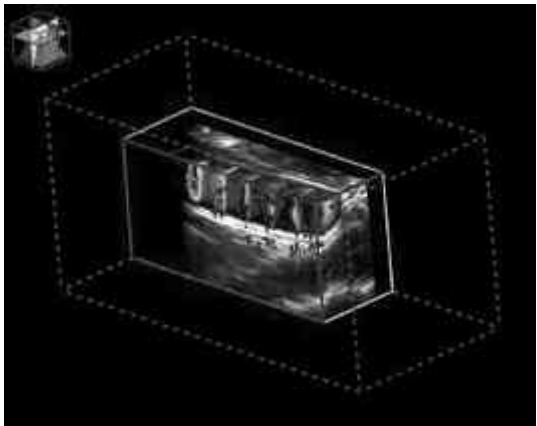
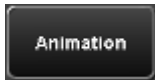

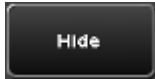



The position of the plane can be adjusted using






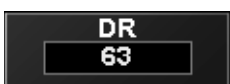




## (1) Volume View menu



No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 3D image.
<5>		Displays the volume image in Plane mode.
		

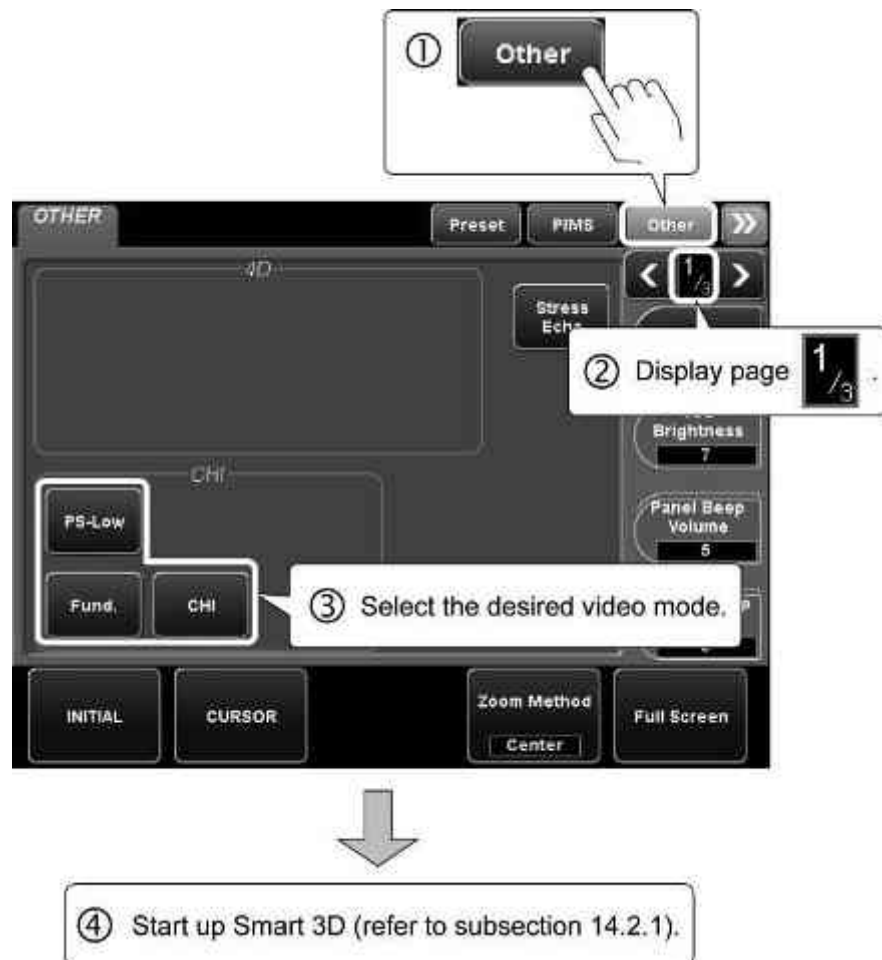
No.	Switch	Function
<6>		Displays the volume image in Niche mode. 
<7>		Displays the volume image in Box mode. 
<8>		Displays the Animation menu for setting animation display mode.
<9>		Turns panning operation ON/OFF.
<10>		Toggles Volume View image display (show/hide).
<11>		Used to reverse the colors.
<12>		Displays the Mode/Settings menu.
<13>		Terminates Smart 3D mode.

No.	Switch	Function
<14>		Used to select the display orientation of plane B.
<15>		Used to adjust the gain of the MPR image.
<16>		Used to rotate the 3D image around the X axis.
<17>		Used to rotate the 3D image around the Y axis.
<18>		Used to adjust the gamma curve of the MPR image.
<19>		Used to adjust the dynamic range of the MPR image.
<20>		Used to adjust the hue of the MPR image.
<21>		Used to adjust the degree of smoothing of the MPR image.

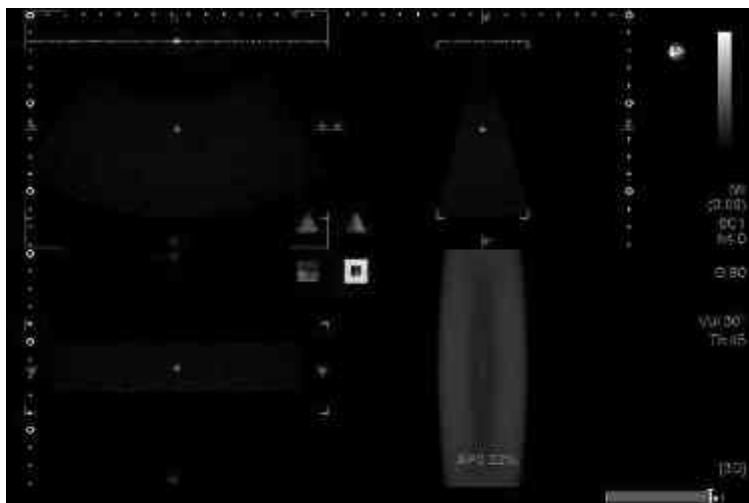
#### 14.4.4 CHI function

3D contrast harmonic imaging mode images can be displayed.

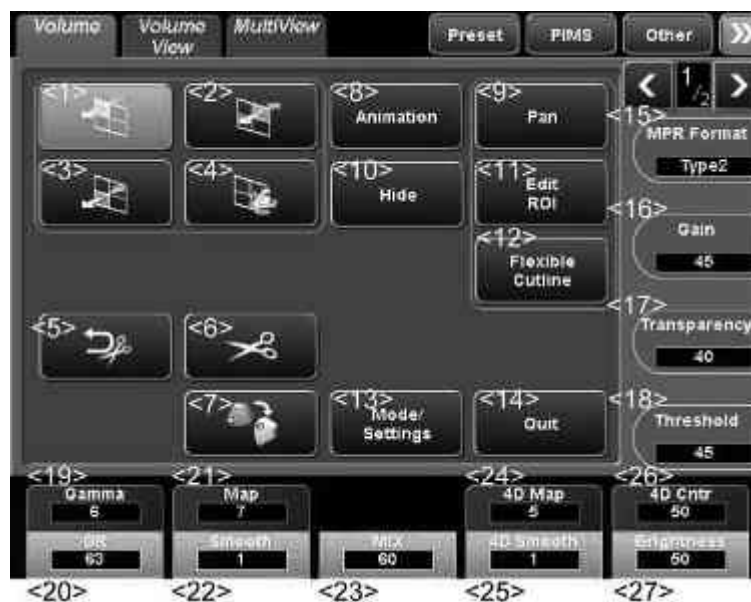
- To use Smart 3D mode (CHI function), the USHI-X200A option is required.
- For the transducers that support Smart 3D mode (CHI function), refer to subsection 5.7 "List of Available Transducers" of the operation manual <<Fundamentals volume>>.












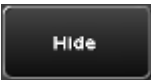







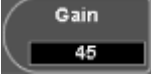

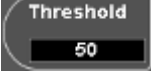







&lt;&lt;Image display&gt;&gt;



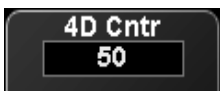

(1) Volume menu (page 1/2)



No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 3D image.
<5>		Undoes 3D image cutout.
<6>		Used to cut out a portion of the 3D image. <ul style="list-style-type: none"> <li>(a) Adjust the fan angle or sliding distance around the pivot point (the transducer end) and then set the cutout start position using the trackball and .</li> <li>(b) Operate the trackball to trace the portion to be cut out.</li> <li>(c) Press  at the cutout end position.</li> <li>(d) The portion of the 3D image enclosed by the trace line is erased.</li> </ul>
<7>		Rotates the 3D image 90° in the clockwise direction. <ul style="list-style-type: none"> <li>* Each time the switch is pressed, the 3D image is rotated further by 90°.</li> </ul>
<8>		Used to set animation. <ul style="list-style-type: none"> <li>* The Animation page is displayed.</li> </ul>
<9>		Turns the panning operation ON/OFF.
<10>		Toggles Volume View image display (show/hide) (refer to subsection 14.4.3).





No.	Switch	Function
<11>		Used to adjust the ROI size.
<12>		Used to adjust the flexible cut line.
<13>		Displays the Mode/Settings menu.
<14>		Terminates Smart 3D mode.
<15>		Used to select the display orientation of plane B.
<16>		Used to adjust the gain of the MPR image.
<17>		Used to adjust the transparency of the 3D image.
<18>		Used to adjust the threshold.
<19>		Used to adjust the gamma curve of the MPR image.
<20>		Used to adjust the dynamic range of the MPR image.
<21>		Used to adjust the hue of the MPR image.
<22>		Used to adjust the degree of smoothing of the MPR image.
<23>		Used to adjust the gradient texture ratio.
<24>		Used to adjust the hue of the 3D image.
<25>		Used to adjust the degree of smoothing of the 3D image.








No.	Switch	Function
<26>		Used to adjust the contrast of the 3D image.
<27>		Used to adjust the brightness.

(2) Volume menu (page 2/2)



No.	Switch	Function
<1>		Selects the viewing direction.
<2>		Changes the 3D image rendering mode to Inversion (in which lumens are displayed using tone reversal).
<3>		Changes the 3D image rendering mode to MIP.
<4>		Changes the 3D image rendering mode to Volume.

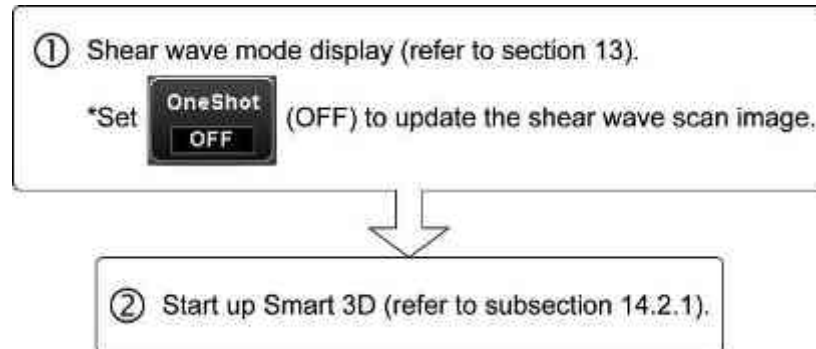
No.	Switch	Function
<5>		Toggles Volume View image display (show/ hide) (refer to subsection 14.4.3).
<6>		Switches the filter type between Filter and Gradient.
<7>	 *1	Used to adjust the fan angle around the pivot point (the transducer end).
<8>	 *1	Used to adjust the sliding distance around the pivot point (the transducer end).
-	 *1	Changes the 3D image rendering mode to X-ray projection.

\*1 : This switch must be registered with the TCS customization tool.  
Consult your Canon Medical Systems service representative for details.

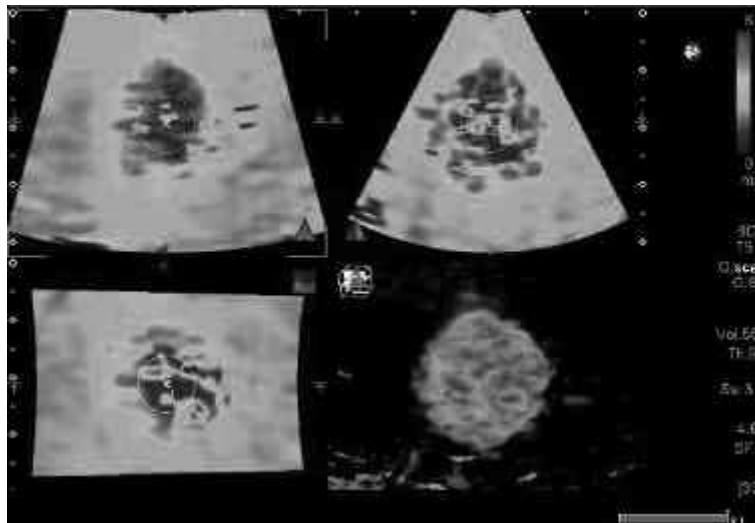
### 14.4.5 Shear wave function

3D images are displayed in Shear wave mode.

- To use Smart 3D mode (Shear wave function), the USSW-X200A option is required.
- For the transducers that support Smart 3D mode (Shear wave function), refer to subsection 5.7 "List of Available Transducers" of the operation manual <<Fundamentals>> volume.









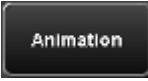

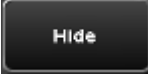



<<Image display>>









## (1) Color menu (page 1/2)



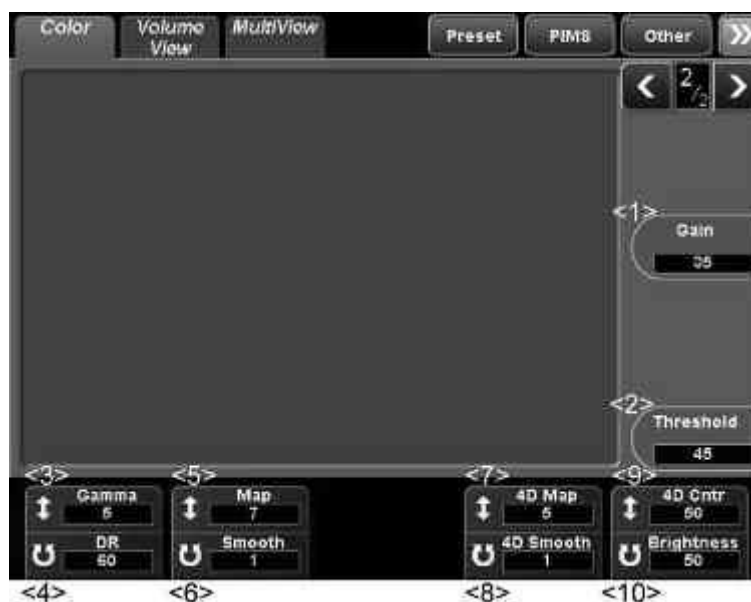
No.	Switch	Function
<1>		Selects plane A.
<2>		Selects plane B.
<3>		Selects plane C.
<4>		Selects the 3D image.
<5>		Displays the color volume image and MPR image.
<6>		Displays the color volume image and tissue cube cut image.
<7>		Displays the color volume image and transparent tissue cube cut image (for observing the distribution of blood vessels in the tissue).
<8>		Displays the cube cut image.
<9>		Displays the color volume image.

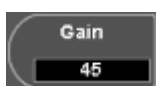
No.	Switch	Function
<10>		Displays the color MIP image.
<11>		<p>Used to cut out a portion of the 3D image.</p> <p>(a) Adjust the fan angle or sliding distance around the pivot point (the transducer end) and then set the cutout start position using the trackball and .</p> <p>(b) Operate the trackball to trace the portion to be cut out.</p> <p>(c) Press  at the cutout end position.</p> <p>(d) The portion of the 3D image enclosed by the trace line is erased.</p>
<12>		Undoes 3D image cutout.
<13>		<p>Rotates the 3D image 90° in the clockwise direction.</p> <p>* Each time the switch is pressed, the 3D image is rotated further by 90°.</p>
<14>		Displays the Animation menu for setting animation display mode.
<15>		Turns panning operation ON/OFF.
<16>		Toggles Volume View image display (show/hide) (refer to subsection 14.4.3).
<17>		Used to reverse the colors.
<18>		Displays the Mode/Settings menu.
<19>		Terminates Smart 3D mode.







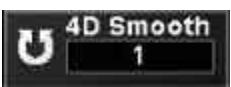


No.	Switch	Function
<20>		Used to select the display orientation of plane B.
<21>		Used to adjust the hue of the Color image.
<22>		Used to adjust the transparency of the Color image.
<23>		Used to adjust the threshold of the Color image.
<24>	 *1	Used to adjust the fan angle around the pivot point (the transducer end).
<25>	 *1	Used to adjust the sliding distance around the pivot point (the transducer end).

\* 1: This switch must be registered with the TCS customization tool. Contact your Canon Medical Systems service representative for details.

(2) Color menu (page 2/2)



No.	Switch	Function
<1>		Used to adjust the gain of the MPR image.


No.	Switch	Function
<2>		Used to adjust the threshold.
<3>		Used to adjust the gamma curve of the MPR image.
<4>		Used to adjust the dynamic range of the MPR image.
<5>		Used to adjust the hue of the MPR image.
<6>		Used to adjust the smoothing of the MPR image.
<7>		Used to adjust the hue of the 3D image.
<8>		Used to adjust the smoothing of the 3D image.
<9>		Used to adjust the image contrast.
<10>		Used to adjust the image brightness.

## (3) Shear wave menu

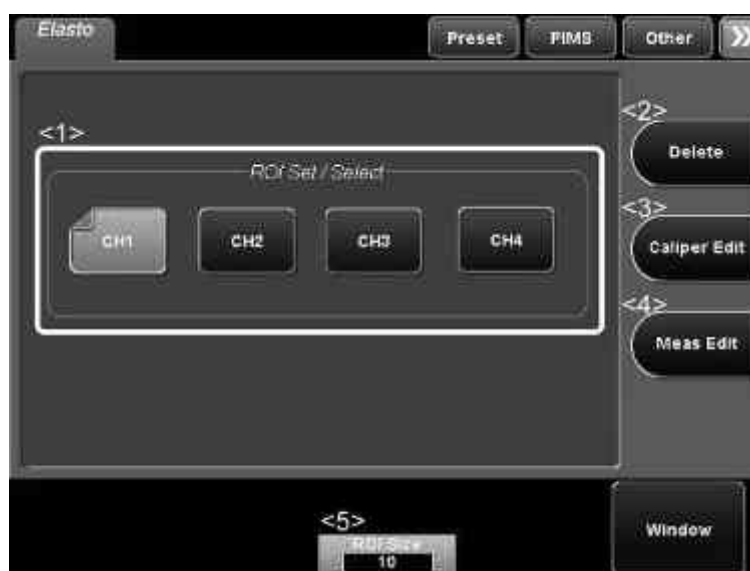
For details for the [Shear wave] menu on the touch panel, refer to section 13.






- (4) Measurement functions in shear wave mode (Smart 3D)  
In shear wave mode (Smart 3D), the stiffness of the target tissues (shear wave arrival speed, elasticity) can be calculated.

**⚠ CAUTION** The values calculated in Smart 3D mode (shear wave function) are for reference only. Do not use them in diagnosis, as the accuracy of the calculated values cannot be guaranteed.


Press . The [Elasto] menu is displayed on the touch panel and a cursor for measurement is displayed on the screen.

<<[Elasto] menu on the touch panel>>



No..	Switch	Function
<1>	 to 	Used to set the ROI on the image * After the ROI is set, select whether the ROI is selected or not.
<2>		Used to delete the ROI.
<3>		Used to adjust the ROI size.
<4>		Used to adjust the ROI position.





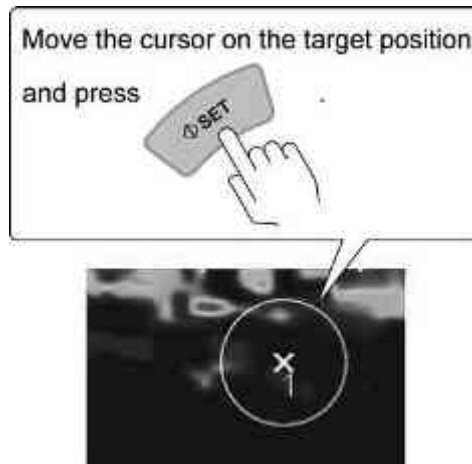
No..	Switch	Function
<5>		Used to select the ROI size to be set.

(a) Setting the ROIs

<1> Draw the ROIs.

NOTE

1. To set multiple ROIs successively, press  after the ROI is set to display a new measurement cursor.
2. Before setting the ROI, adjust the diameter, using  in the [Elasto] menu on the touch panel.
3. An ROI cannot be set on a 3D image.



<2> When both the target ROI and reference ROI are set, the measurement results are displayed automatically.

<<When Color map is "Speed">>

Item	Measurement result
Ave.T1 to T4	0.00 to 10.00 (m/s)
SD.T1 to T4	0.00 to 10.00 (m/s)
Ratio 1 to 4	0.00 to 999.99

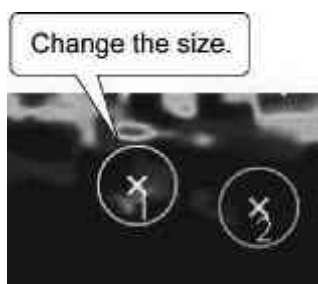
<<When Color map is "Elast">>

Item	Measurement result
Ave.T1 to T4	0.0 to 200.0 (kPa)
SD.T1 to T4	0.0 to 200.0 (kPa)
Ratio 1 to 4	0.00 to 999.99


(b) Changing the ROI size

<1> Press the set ROI button (  to  ) on the [Elasto] menu of the touch panel.

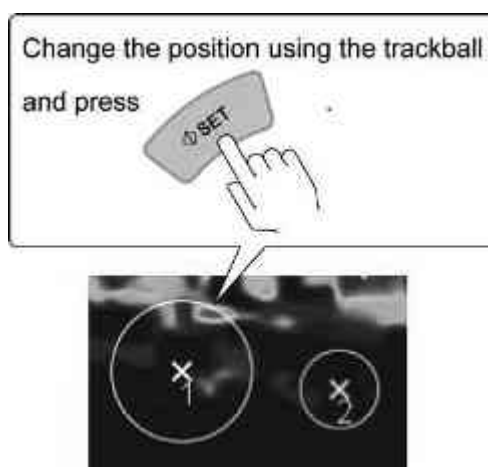
<2> Change the diameter using  of the [Elasto] menu on the touch panel.



(c) Changing the ROI position

<1> Press  in the Elasto menu on the touch panel. The cursor is displayed on the ROI.

<2> Change the ROI position.



(d) Terminating measurement mode

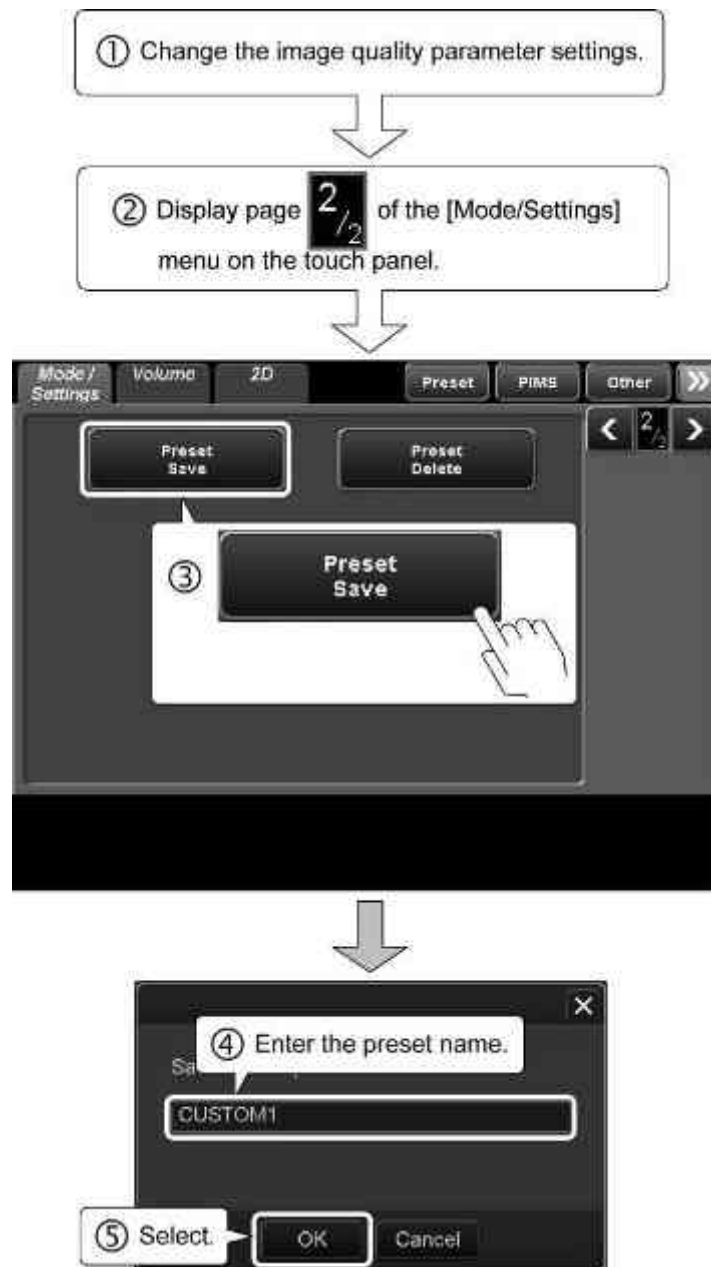
Press  or .

## 14.5 Sub-Presets for Smart 3D

**NOTE** The sub-presets for Smart 3D are independent of other functions. They are used only for the corresponding functions of Smart 3D.

### (1) Creating sub-presets for Smart 3D

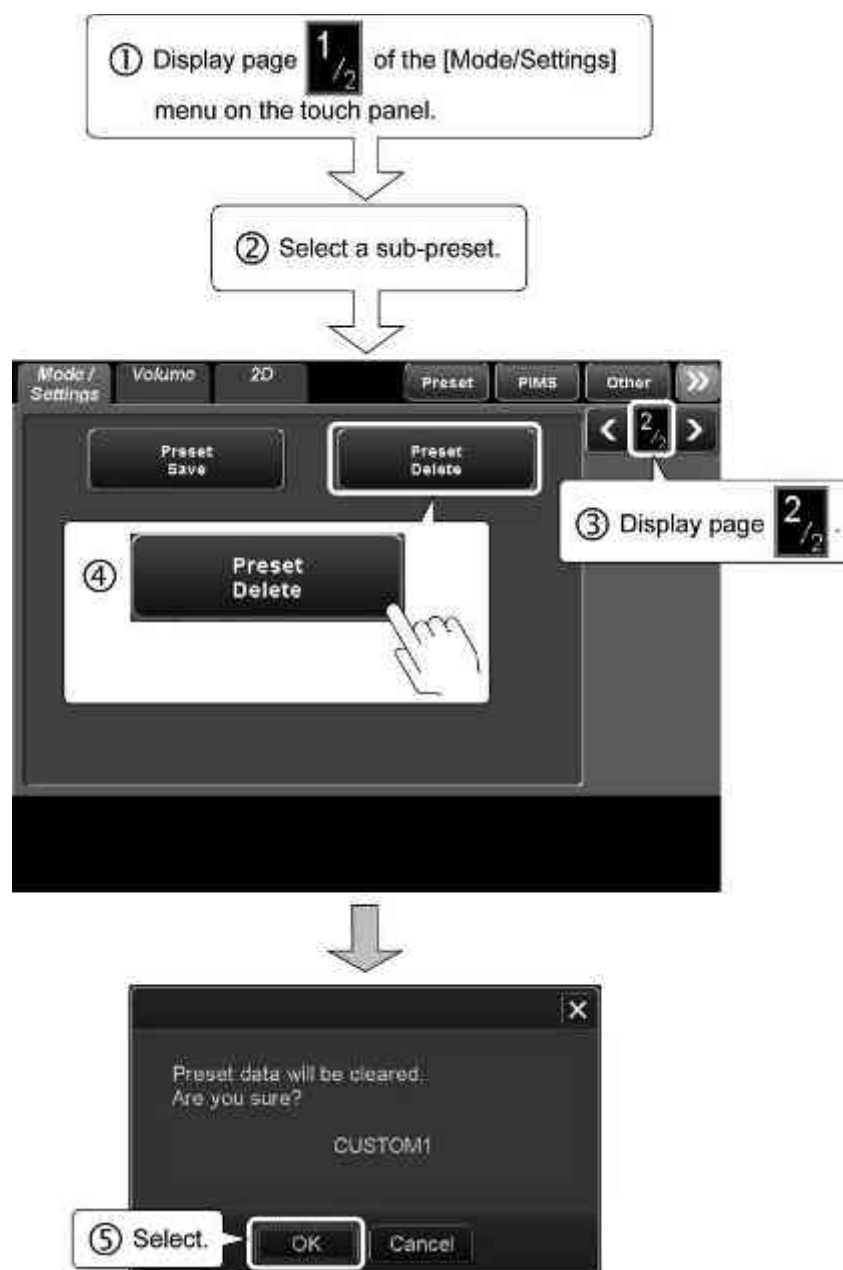
A set of image quality parameter settings can be stored as a sub-preset. Up to seven sub-presets in addition to [DEFAULT] can be stored.



\* If [OK] is selected without changing the preset name, the existing preset is overwritten.

- (2) Deleting sub-presets for Smart 3D  
Stored sub-presets can be deleted.


**NOTICE** Do not delete [DEFAULT]. Doing so may cause a system malfunction.



## 14.6 Storage of Smart 3D Data

The table below shows the type of images stored when Still Store or Clips Store with Raw is executed.

Display	Details	Still Store	Clips Store with Raw
Volume	Smart 3D image (Smart 3D Freeze, MultiView, Volume View)	Still image	Smart 3D data
Volume Color			
Smart 3D+CHI			
Smart 3D+Shear wave			

- NOTE
1. To refer to stored Smart 3D images, select an image from Patient Browser, Exam Review, or Thumbnails.
  2. For Smart 3D images in Exam Review, the following functions are not supported.
    - (1) Reflecting rotations and adjustments performed on frozen images
    - (2) Reflecting rotations and adjustments of frozen images performed on the thumbnails created when  is pressed

# 15.

## Using the Transducers

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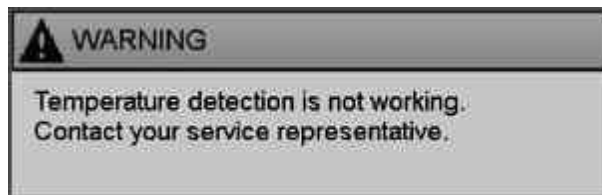
This section describes the system operating procedures for the PET-512MA, PET-512MC, PET-512MD, PVL-715RST, or PVT-681MVL.

\* For the transducer operating procedures, refer to the operation manual for the transducer.

## 15.1 PET-512MA/PET-512MC/PET-512MD

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**⚠WARNING** If the temperature detection function of the transducer is not functioning normally, the message below is displayed.



**In this case, stop the examination immediately, set angulation to free, return the transducer to a neutral angle, and then withdraw the transducer carefully. Then, contact your service representative.**

---

**NOTE** Display of caution messages regarding temperature control for the MD-MTEE and MTEE transducers can be set to OFF through presetting. Refer to section 18 for the presetting procedure. For details of the messages, refer to subsection 15.1.3.

---

### 15.1.1 Types of TEE transducers supported

This system supports the following two types of TEE transducers.

Type	Description
Motor-driven multiplane transesophageal transducer (hereinafter referred to as "MD-MTEE")	The imaging plane is changed by motor driving (the angle is displayed in 1° increments). Example: PET-512MC or PET-512MD
Manual multiplane transesophageal transducer (hereinafter referred to as "MTEE")	The angle of the imaging plane is changed manually (the angle is displayed in 15° increments). Example: PET-512MA

### 15.1.2 Indication of the rotation angle


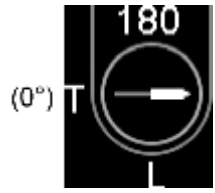
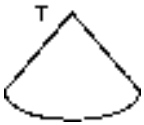
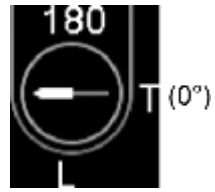

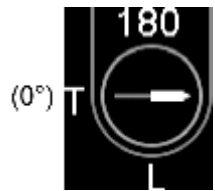
The rotation angle of the ultrasound scanning plane at the tip of the transducer can be indicated by an icon.

The indication of the angle display icon changes depending on the T mark display position and horizontal flipping of the image.

#### (1) Relationship between the image and the icon





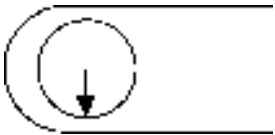
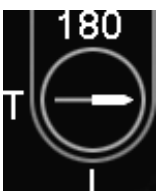
"T" indicates the short axis and "L" indicates the long axis. The number at the top of the icon indicates the current rotation angle at the tip of the transducer.

The table below shows the relationship between the image and the icon when the T mark is displayed at the upper right of the image.

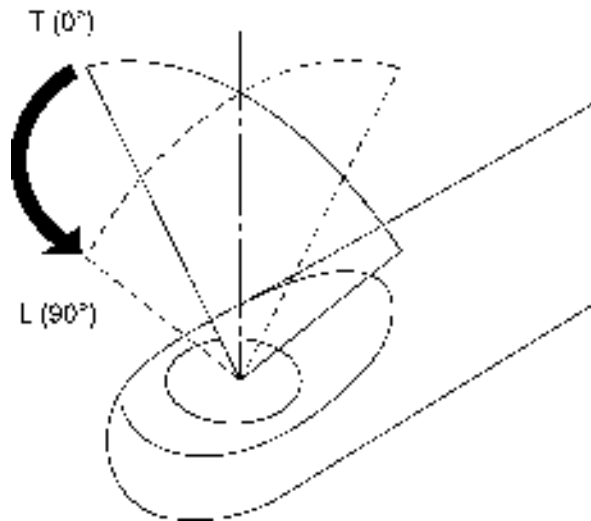
Status	Image	Icon
Normal		
Flipped horizontally		
Flipped vertically		



(2) Relationship between the transducer and the angle

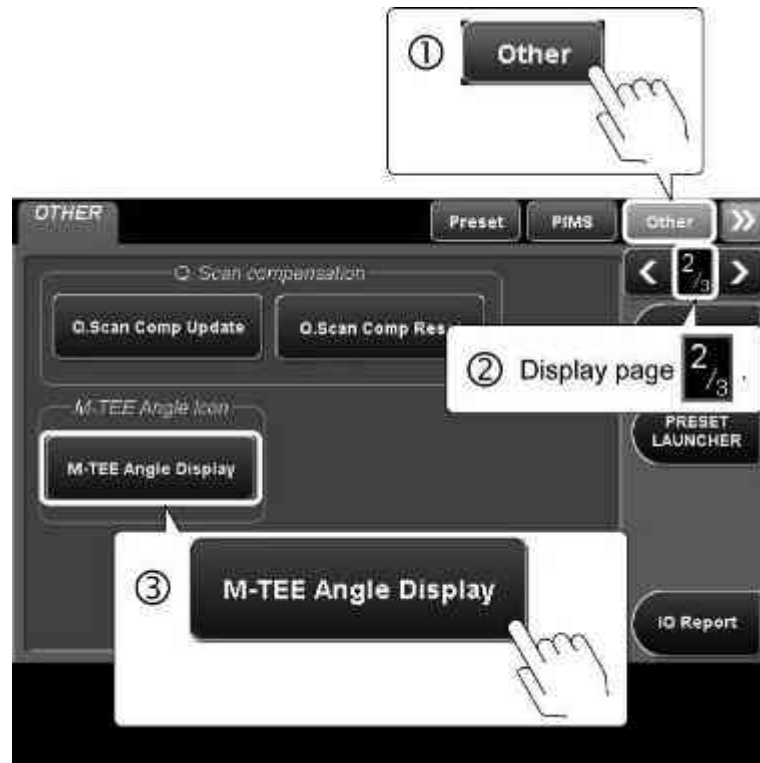
Angle	Ultrasound scanning plane	Icon
0°		
90°		
180°		

\* The relationship between the rotation angle at the tip and the displayed angle is shown in the figure below.



Ultrasound scanning plane at the tip of the transducer

## (3) Angle icon display ON/OFF



---

**NOTE** MD-MTEE transducer angle reset  
When another transducer is selected during transducer rotation, rotation is stopped. When the MD-MTEE transducer is selected again, the angle is automatically reset to 0°.

---

### 15.1.3 Temperature control of TEE transducers

The warning message display function is executed as described below while the MD-MTEE or MTEE transducer is being used.

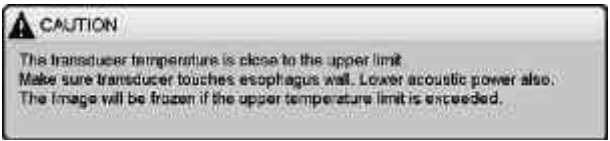
Users must understand the meanings of these warning messages to ensure that the transducer is operated safely.



**⚠ CAUTION** If the temperature at the tip of the transducer exceeds 43°C, this system operates as follows.

- The system freezes automatically. When the temperature falls, scanning is restarted automatically.
- If the temperature remains at 43°C or higher for 2 minutes or more, the system must be restarted.

To prevent the temperature from increasing, observe the precautions below.

- Keep the tip of the transducer in contact with the wall of the body cavity.
- Reduce the transmission power (acoustic power) or freeze the images when images are not being observed.
- If the transducer is to be used for a long period of time, set the minimum transmission power needed to obtain the required diagnostic information.

Temperature T (°C)	Display/operation
$T < 41$	No warning message is displayed. Use the transducer while carefully checking for any temperature increase due to prolonged scanning.
$41 \leq T$	When a temperature of 41°C is reached, the following message indicating that the temperature is approaching the limit is displayed and the display color for acoustic power (or MI value) and the range of multiple frequencies for the transducer changes to yellow. The display color returns to white (normal) when the temperature falls below 41°C.  

Temperature T (°C)	Display/operation
43 ≤ T	<p>When a temperature of 43°C is reached, the following message indicating that the temperature has reached the limit is displayed. Transmission is terminated to prevent the temperature from increasing further and images are frozen. If the temperature falls to a sufficiently low level within 2 minutes, freeze status is canceled automatically.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>WARNING</b></p> <p>The image has been temporarily frozen due to the transducer temperature reaching the upper limit.  Only Power switch and Transducer switch available.  System restarts when transducer temperature drops below upper limit.  After 2 minutes, shut down required if temperature remains above upper limit.</p> </div> <hr/> <p><b>CAUTION</b> While the warning message above is displayed, all switches other than  and  are disabled.</p> <hr/> <p><b>WARNING</b> If the temperature remains at 43°C or higher after 2 minutes, the message below is displayed.</p> <p>* This message is also displayed if the temperature detection circuit is not functioning normally.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>WARNING</b></p> <p>Shut down system immediately.  Contact your service representative.</p> </div> <p><b>In this case, stop the examination immediately, set angulation to free, return the transducer to a neutral angle, and then withdraw the transducer carefully. The diagnostic ultrasound system must be restarted in order to perform examination again. Check the temperature detection function as described in subsection 15.1.4 "Temperature detection function check procedure". If any abnormality is found, contact your service representative.</b></p>

---

**NOTE** The temperature detection accuracy of this system is  $\pm 0.5^{\circ}\text{C}$ . Note that temperature control includes some degree of error.

---

#### 15.1.4 Temperature detection function check procedure

Follow the check procedures below to confirm that the temperature detection function is operating normally.

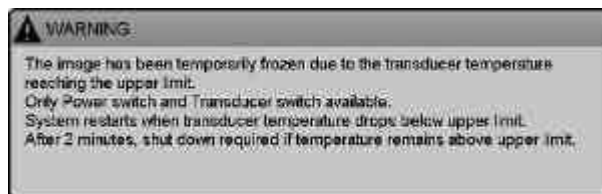
If the temperature detection function is not operating normally, contact your Canon Medical Systems service representative.

---

**NOTICE** Do not place the tip of the transducer in water at a temperature exceeding  $60^{\circ}\text{C}$ . The transducer may be damaged.

---

- (1) Prepare a container filled with warm water at a temperature of between  $45^{\circ}\text{C}$  and  $50^{\circ}\text{C}$ .
- (2) Place the tip of the transducer in the water. Confirm that, after a brief interval, the display color for the acoustic power (or MI value) and the multi-frequency range of the transducer changes to yellow and that the image is frozen. Also confirm that the message below is displayed.




- (3) Immediately after confirming the above (within 2 minutes), replace the warm water with tap water and place the tip of the transducer in the tap water. Confirm that, after a brief interval, the image returns to live status and the display color for the acoustic power (or MI value) and the multi-frequency range of the transducer returns to white. Also confirm that the warning message is cleared.

### 15.1.5 Other messages

The following messages may be displayed when a TEE transducer is used. If the message is displayed, take the corrective action described below.

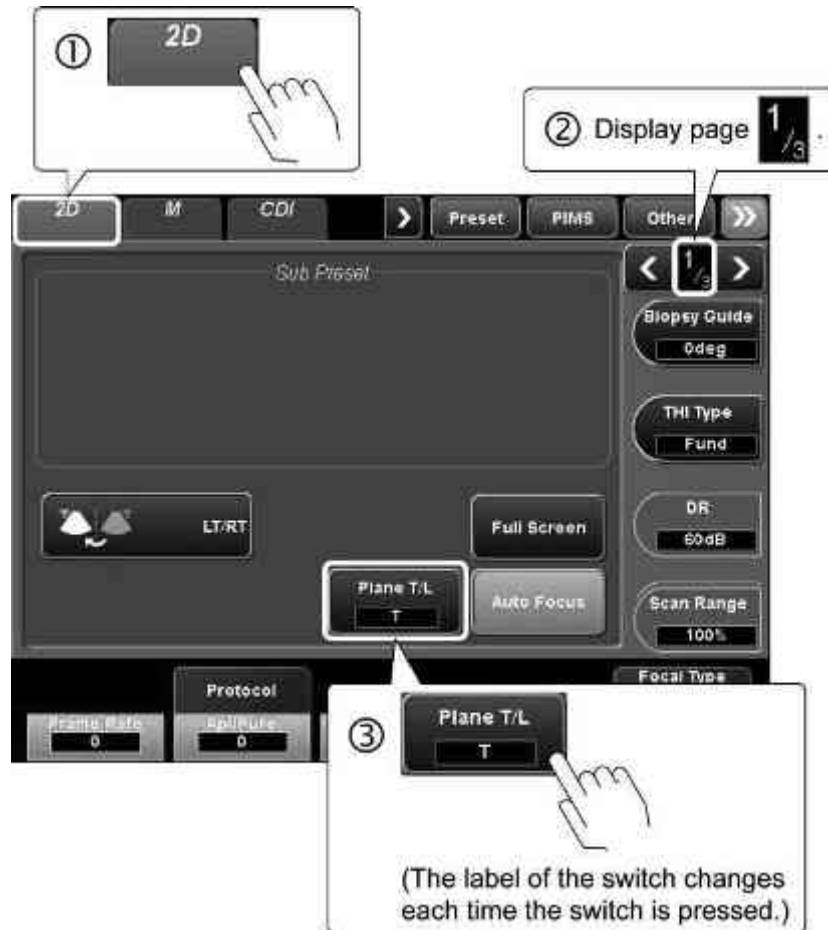
No.	Message/corrective action
<1>	<p>The following message is displayed if the connector of the MD-MTEE transducer is not connected properly or the motor control of the MD-MTEE transducer is not operating normally.</p> <div style="border: 1px solid black; background-color: #333; color: #ccc; padding: 10px; text-align: center;"> <p>Mechanical Transducer Connection failed. Please select another transducer and then re-select the Mechanical transducer.</p> <p>Service ID: TUS_IMG_59</p> <div style="border: 1px solid #ccc; width: 60px; margin: 10px auto; padding: 2px 5px; text-align: center;">OK</div> </div> <p>&lt;Corrective action&gt;</p> <ol style="list-style-type: none"> <li>(1) Select another transducer and then select the MD-MTEE transducer again.</li> <li>(2) If the error is not cleared in (1), select another transducer, disconnect and connect the MD-MTEE transducer, and then select the MD-MTEE transducer again.</li> </ol> <p>* If another transducer cannot be selected, reboot the system.</p> <hr/> <p><b>NOTICE</b> Be sure to select another transducer before disconnecting the currently used transducer. Disconnecting the currently selected transducer can damage the system or the transducer.</p>

No.	Message/corrective action
<2>	<p>The following message is displayed when  is pressed while an MTEE transducer is used.</p> <div style="border: 1px solid black; padding: 5px; background-color: #f0f0f0; margin: 10px auto; width: fit-content;"> <p style="text-align: center; margin: 0;">Power Control</p> <p style="text-align: center; margin: 5px 0 0 20px;">System will shut down when you press power button again, or you can select another operation from following buttons.</p> <p style="text-align: center; margin: 5px 0 0 20px;">A MTEE transducer is being used. LogOff cannot be selected.</p> <div style="display: flex; justify-content: center; gap: 10px; margin-top: 10px;"> <span style="border: 1px solid gray; padding: 2px 5px;">Standby</span> <span style="border: 1px dashed gray; padding: 2px 5px;">Shutdown</span> <span style="border: 1px solid gray; padding: 2px 5px;">Cancel</span> </div> </div> <ul style="list-style-type: none"> <li>* [Logoff] is not displayed in security mode.</li> <li>* To log off from the system, select another transducer and press [Logoff].</li> </ul> <p>&lt;Corrective action&gt;</p> <p>Select [Standby], [Shutdown], or [Cancel] in the same manner as in the standard power OFF procedure.</p> <p>Refer to the operation manual &lt;&lt;Fundamentals volume&gt;&gt; for details.</p>

## 15.2 PVL-715RS

For PVL-715RS, the scanning method can be changed when "Prostate" is selected as the "Exam Type".

- \* For other operation procedures of the [2D] menu on the touch panel, refer to the operation manual <<Fundamentals volume>>.



Switch	Scanning method
	Convex
	Linear



### 15.3 PVU-681MVL

For PVU-681MVL, tilting angle of the scanning plane and the display method can be changed.


\* For other operation procedures of the [2D] menu on the touch panel, refer to the operation manual <<Fundamentals volume>>.

(1) Angle setting of the scanning plane

The tilting angle of the scanning plane can be set when "Prostate", "OB", "GYN", or "Endovaginal" is selected as the "Exam Type".

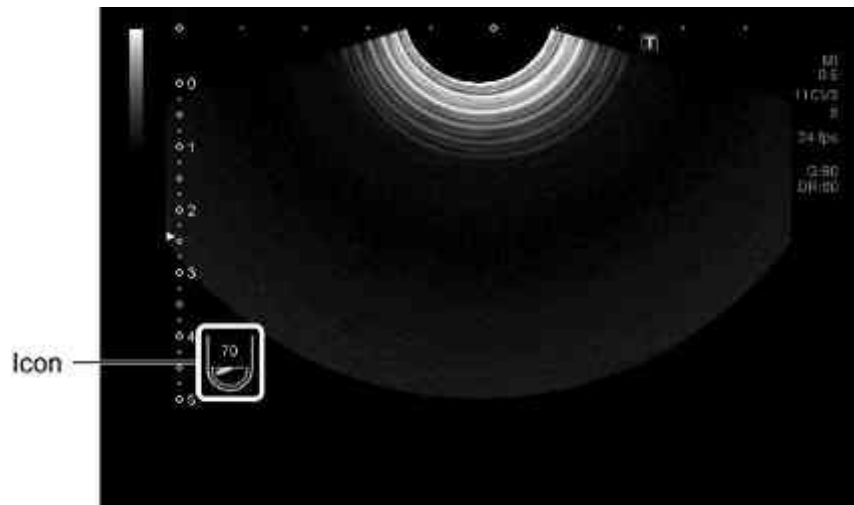




NOTE

The tilting angle can be returned to the initial setting (0°) when  located

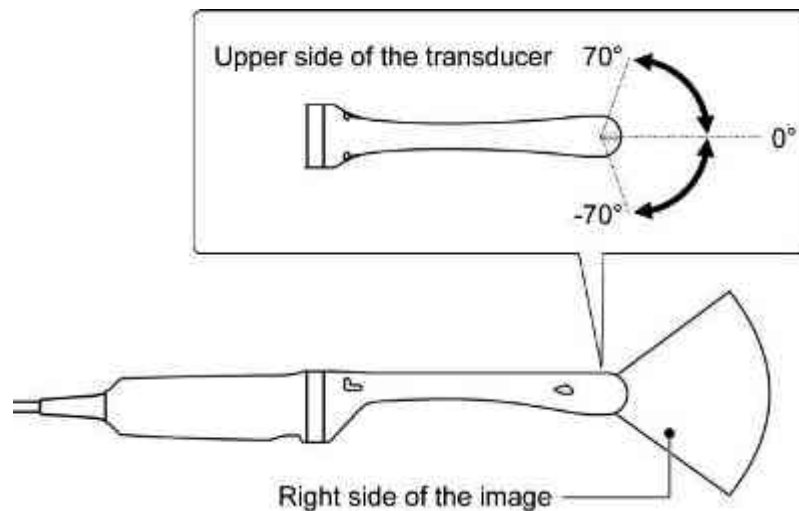
below  is pressed.

<<Displayed image>>

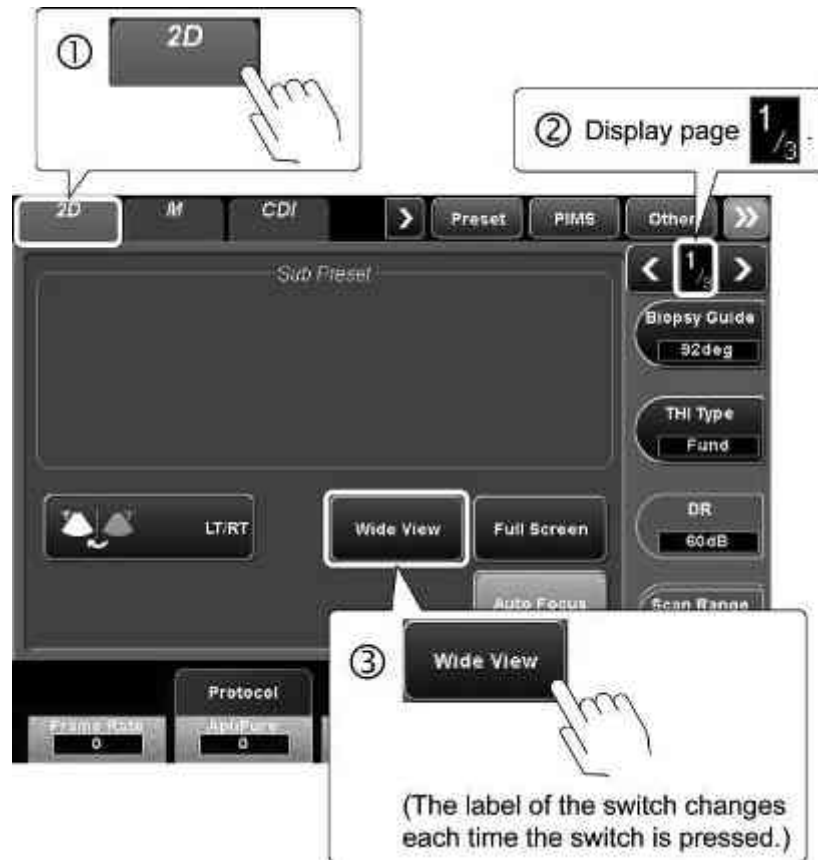


Angle	Example of icon
70°	
0°	Not displayed
-70°	

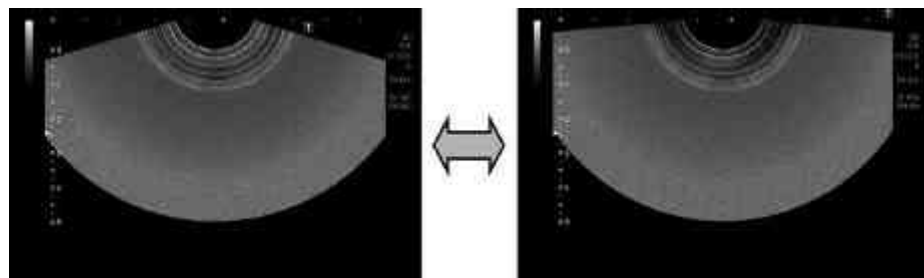
\* The relation between the transducer and the scanning plane is described below.



- (2) Switching between normal display and wide-angle (wide view) scanning display



<<Displayed image>>



# 16.

## Peripheral Units

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**NOTICE** Do not turn the power of peripheral units ON/OFF during system startup or shutdown. System malfunction may result.

---

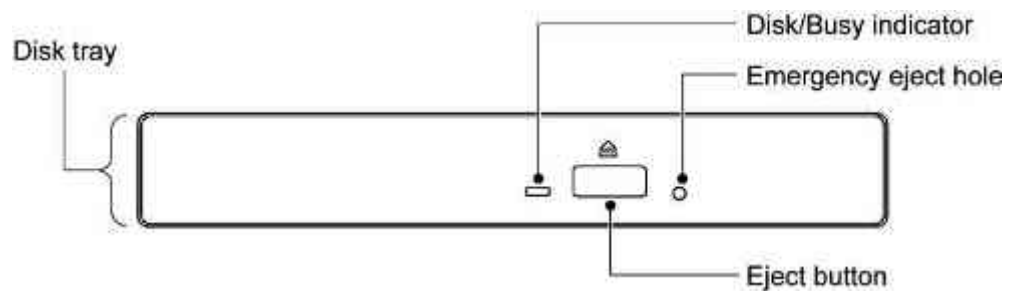
## 16.1 CD/DVD Unit

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**⚠WARNING** Do not use the controls, adjusters, or operating sections in a manner other than specified. Incorrect use may cause hazardous laser beams to be emitted. The laser beams emitted by the optical assembly may be hazardous to humans (especially to the eyes). Do not look into the CD/DVD unit.

---

### 16.1.1 Name and function of each section



Name	Function
Disk tray	A disk is placed in this tray.
Emergency eject hole	Use this hole to eject the disk if the disk cannot be ejected by pressing the eject button. * Refer to subsection 16.1.3.2 for details.
Disk/Busy indicator	This indicator blinks when the media is being accessed. * Do not open the tray while this indicator is blinking.
Eject button	Used to open and close the disk tray.

### 16.1.2 Recommended media

Some CD-R and DVD-R/DVD+R media may not be suitable for writing data, depending on the manufacturer. Canon Medical Systems has confirmed that the media manufactured by the following manufacturers can write data correctly. Contact your Canon Medical Systems service representative for details.

Media	Manufacturer
CD-R	Hitachi Maxell, TDK, Start Lab, Mitsubishi Chemical Corporation
DVD-R/DVD+R	Hitachi Maxell, Start Lab, Mitsubishi Chemical Corporation

### 16.1.3 Basic operations

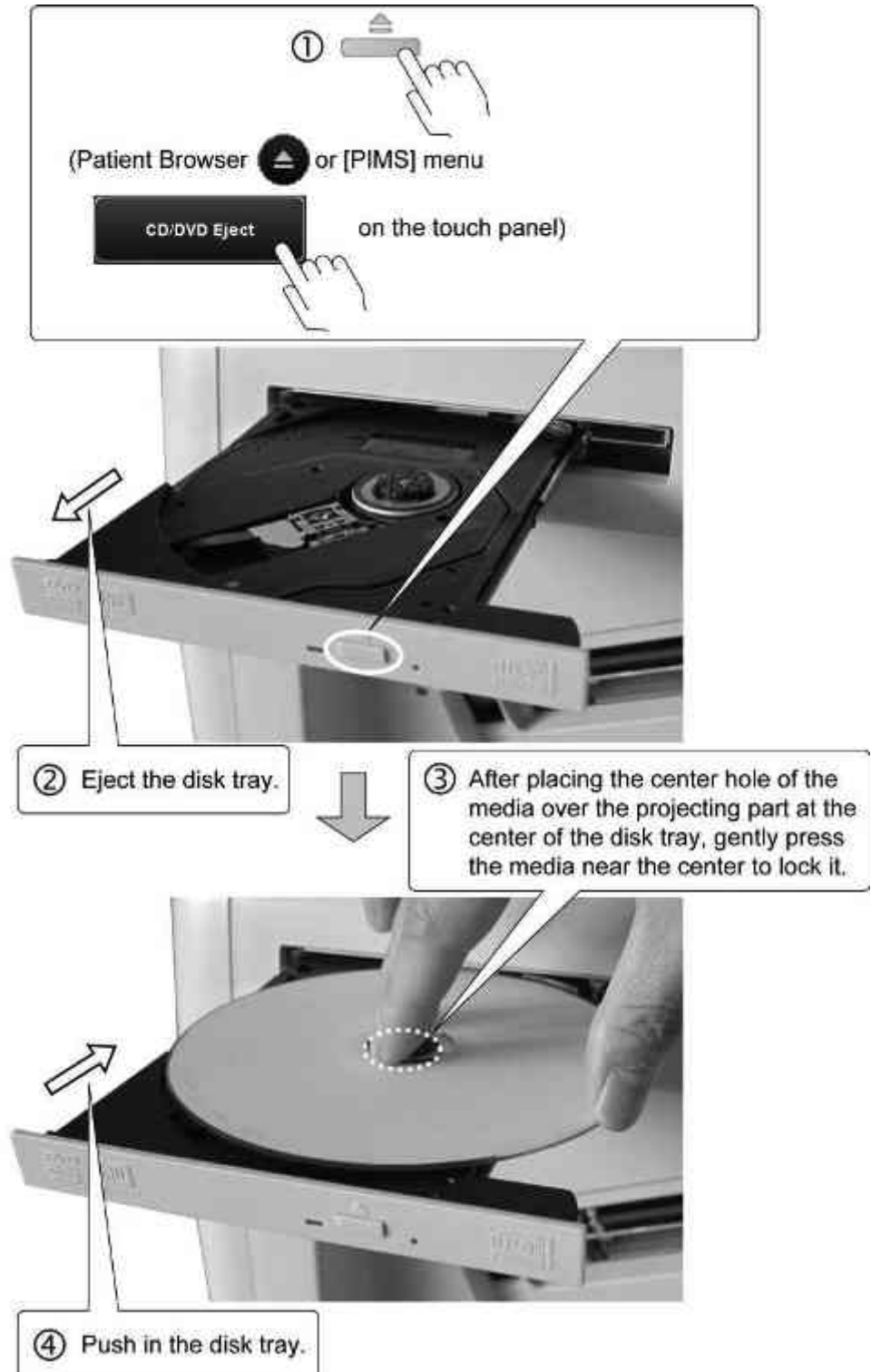
---

**NOTICE**

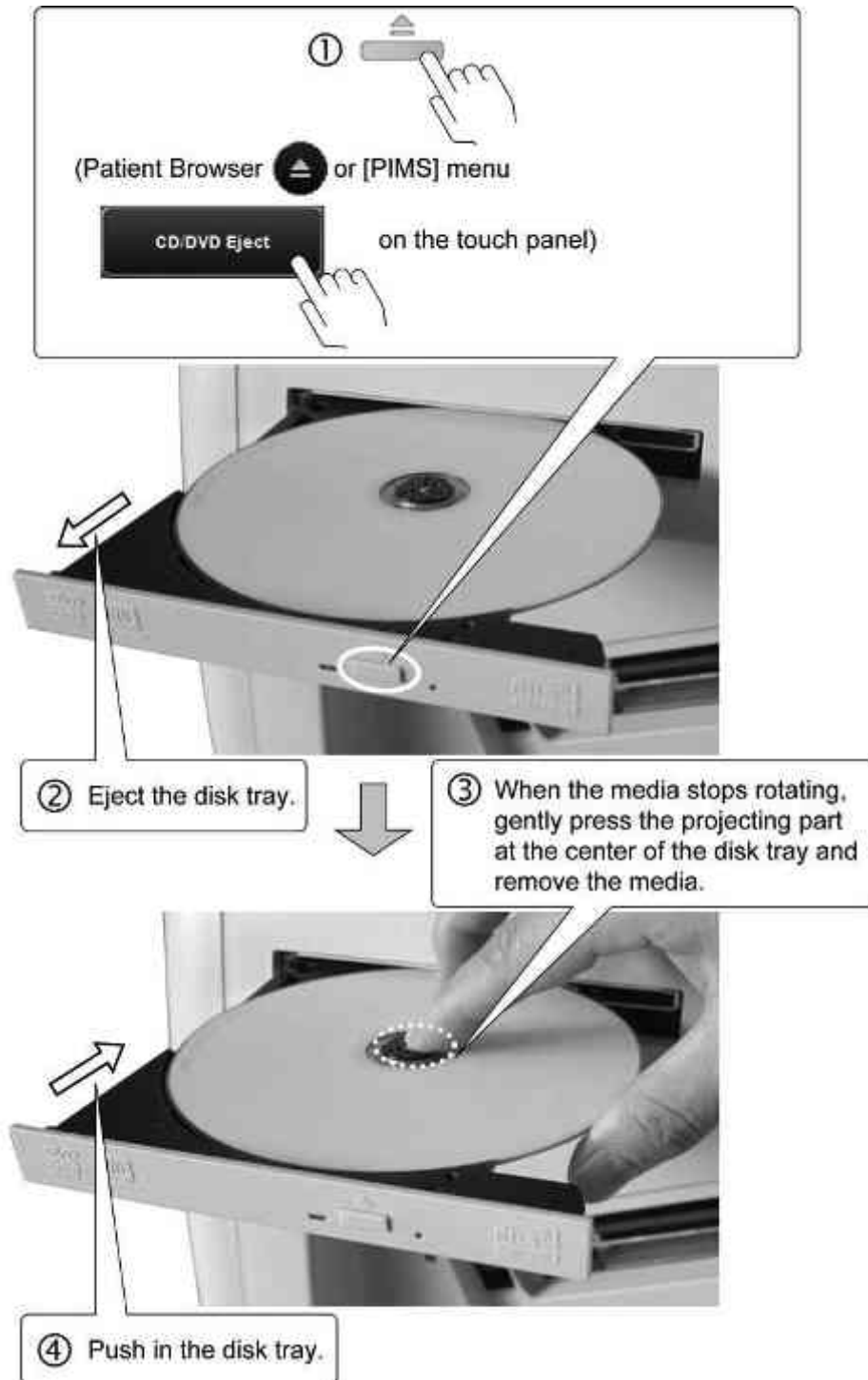
1. Do not place self-adhesive labels on the label side of the media. Labels on the disk may cause read/write errors or scratches on the media.
  2. Media purchased in a spindle package may have protective sponge material applied to its surface. If such sponge material enters the internal mechanism of this unit, a malfunction may result. Confirm that there are no traces of sponge material on the media before inserting it into the unit.
  3. The disk tray slides out approximately 3 cm from the loading slot when it is ejected. Do not place any obstacles in front of the disk tray.
  4. The disk tray should be kept closed except when media is being loaded or ejected. If the disk tray is left open, dust may enter the drive and cause a malfunction. In addition, hitting the open disk tray may cause personal injury.
-

16.1.3.1 How to use the CD/DVD unit

(1) Inserting media



## (2) Removing the media.

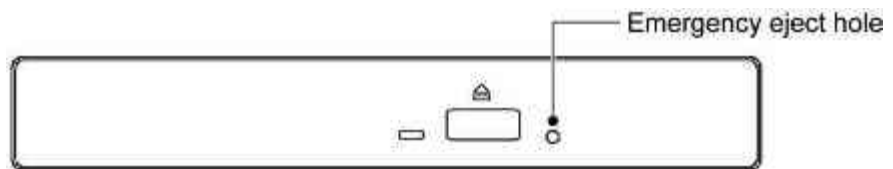




16.1.3.2 If the tray cannot be ejected

If the tray is not ejected even when the eject button is pressed, use the emergency ejection tool supplied with the DVD/CD unit.

- (1) Turn the system power OFF.
- (2) Insert the emergency ejection tool into the emergency eject hole and manually pull out the disk tray.



---

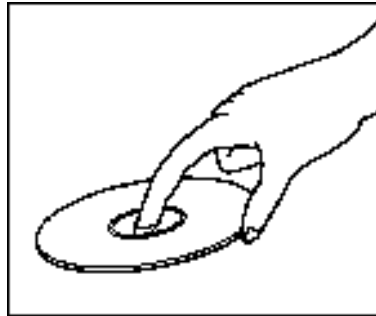
NOTE      Emergency ejection tool for ejecting media supplied with the DVD/CD unit



### 16.1.4 Handling of media

#### (1) Handling media

- (a) When holding the media, place one finger in the center hole of the media and one finger on the outer edge of the media.



- (b) Do not drop the media, stack the media, place a heavy object on the media, or subject the media to mechanical shock.
- (c) Do not touch the data-recording surface of the media.
- (d) Do not place self-adhesive labels on the label side of the media. Labels on the media may cause read/write errors or scratches on the media.
- (e) Store the media in its package or case for protection.
- (f) Scratches on the media may cause read/write errors.
- (g) Do not use a writing implement with a hard tip (such as a ball-point pen) to write the title on the label side of the media. The media may be damaged.

#### (2) Cleaning media

To clean the media, wipe the media using an air spray and a soft cloth in the radial direction (from the center to the outer edge). Be very careful not to scratch the media surface.



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**NOTICE**

Do not use commercial lens cleaner to clean the media. Commercial lens cleaner will damage the drive.

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### 16.1.5 Troubleshooting

If any problems occur in the CD/DVD unit, take appropriate measures referring to the tables below.

(1) Data cannot be written or a write error occurs

Possible cause	Action
Media that is not included in the recommended types is used.	Use media recommended by Canon Medical Systems or media that has been confirmed to operate properly. * Refer to subsection 16.1.2 for details.
The media is placed in the tray upside down.	Place the media in the tray with the recording surface facing down.
The media is scratched or of poor quality.	Use different media that is free of scratches and of good quality. * If there is dust or fingerprints on the media, clean the media. * Refer to subsection 16.1.4 (2) for details.

(2) The media cannot be written at the specified speed

Possible cause	Action
Media that is not included in the recommended types is used.	Use media recommended by Canon Medical Systems or media that has been confirmed to operate properly. * Refer to subsection 16.1.2 for details.
The media is scratched or of poor quality.	Use different media that is free of scratches and of good quality. * If there is dust or fingerprints on the media, clean the media. * Refer to subsection 16.1.4 (2) for details.
The data transfer speed is slower than the specified recording speed.	When a buffer underrun occurs, the buffer underrun function is triggered in order to prevent recording errors. In this case, the actual recording speed is significantly lower than the specified speed. * This is not an abnormality. The unit can be used as is.

(3) The media cannot be read, the media is not recognized by the unit, or the reading speed does not increase

Possible cause	Action
The media is placed in the tray upside down.	Place the media in the tray with the recording surface facing down.
The media is scratched or of poor quality.	Use different media that is free of scratches and of good quality. <ul style="list-style-type: none"> <li>* If there is dust or fingerprints on the media, clean the media.</li> <li>* Refer to subsection 16.1.4 (2) for details.</li> </ul>


(4) Abnormal noise is heard during reading

Possible cause	Action
The media is scratched or of poor quality.	Use different media that is free of scratches and of good quality. <ul style="list-style-type: none"> <li>* If there is dust or fingerprints on the media, clean the media.</li> <li>* Refer to subsection 16.1.4 (2) for details. (If warped media is used, abnormal noise may be generated even if the data can be read normally.)</li> </ul>
A self-adhesive label is placed on the media surface.	If a self-adhesive label is placed on the media, the weight of the label may cause a weight imbalance, resulting in abnormal noise when the media rotates. <ul style="list-style-type: none"> <li>* In this case, remove the label from the media.</li> <li>* Be careful not to damage the media when removing the label.</li> </ul>

## 16.2 Printer

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- NOTICE**
1. Do not turn OFF the power supply of the system during printing, data saving, or loading. Doing so may result in failure of saving or printing or damage to the data. In addition, doing so during access to media may damage the media.
  2. Do not set the system to Standby mode during printing, data saving, or loading. Doing so may result in failure of saving or printing or damage to the data. In addition, doing so during access to media may damage the media.
  3. When a color printer is to be used, confirm that the power of the color printer is turned ON in advance. If the print operation is performed with the power of the color printer turned OFF, system malfunction may result.
  4. When a print operation is performed for a video image, confirm that the image is printed normally. If the image is not printed normally, press [Quit], display the desired video image again, and print it.
- 



- NOTE**
1. This system cannot read data with a file name or folder name containing Japanese or 2-byte alphanumeric characters.
  2. Do not display or print data acquired using another system in this system. Such data may not be displayed or printed correctly.
  3. Some printers cannot detect print errors. Examine the actual printout to confirm that the data has been printed correctly.
  4. When the system is ready to output the image to the printer,  is displayed at lower left of the image. Confirm the completion of printing by checking the actual printout. While this icon is displayed, printing is not possible even if the next print operation is performed. Wait until the icon disappears and then perform the print operation.
-

## 16.2.1 Printing from the printer

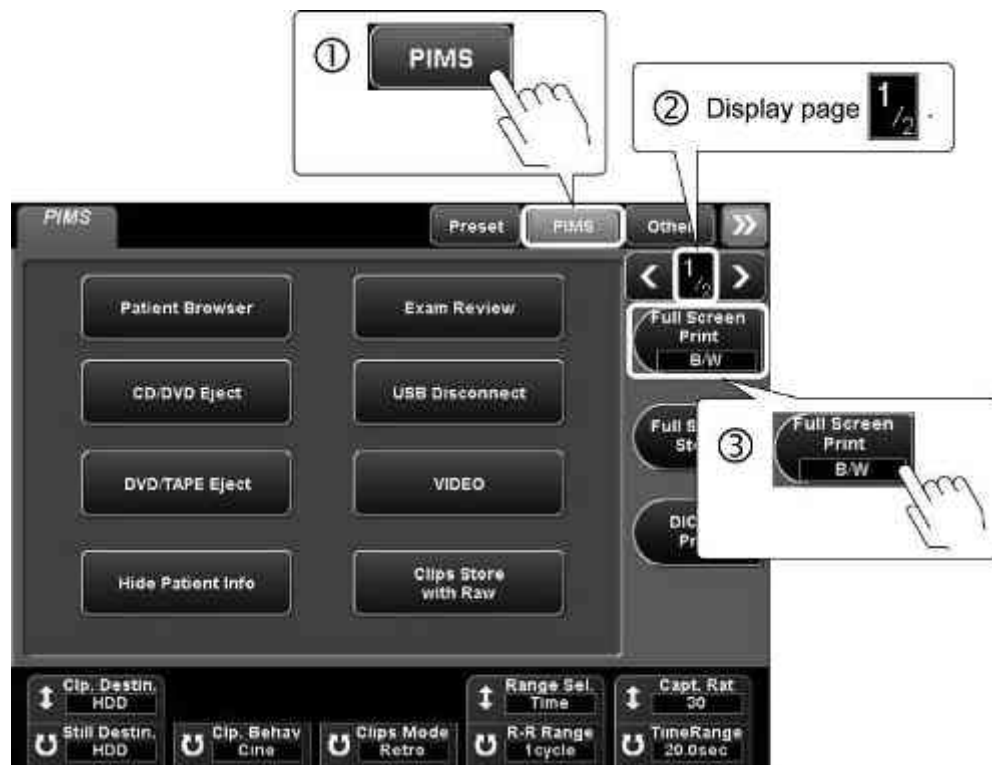
**NOTE** If printing does not stop in the P95DW/P95DW-DC, use one of the following methods to stop printing.

- Press the [FEED] switch on the front of the printer.
- Turn OFF the power of the printer.

(1) To print the image display area

Press  to print using the monochrome printer. Press  to print using the color printer.

(2) To print the entire screen



\* Select the printer using the knob on the right of the [Full Screen Print] switch.

## 16.2.2 Replacing the ink sheet and printer sheet

- (1) For the UP-D897/UP-D898MD/UP-D898DC
  - (a) When the printer sheets have run out, the color of the LCD display on the front of the printer is changed to orange and "EMPTY" is displayed. In addition, an error message is displayed on the monitor.
  - (b) Replace the printer sheets. The image that was being printed when printing was discontinued is printed again. The remaining images in the print queue are also printed.
- (2) For the P95DW/P95DW-DC
  - (a) When the printer sheets have run out, "EP" is displayed on the indicator on the front of the printer. In addition, an error message is displayed on the monitor.
  - (b) Replace the printer sheets. The image that was being printed when printing was discontinued is printed again. The remaining images in the print queue are also printed.
- (3) For the CP30DW
  - (a) When the ink sheet or printer sheets have run out, an error message is displayed on the monitor.
  - (b) Replace the ink sheet or add printer sheets.
  - (c) The error message disappears and the images in the print queue are printed.
- (4) For the UP-D25MD
  - (a) When the ink sheet or printer sheets have run out, the "PAPER" or "RIBBON" LED on the front of the printer lights.
  - (b) Replace the ink sheet or add printer sheets. The image that was being printed when printing was discontinued is printed again. The images in the print queue are also printed.



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### **NOTICE**

If the system shutdown operation is performed when a printer error message is displayed, printing may not be performed correctly.

- \* Confirm the indication of the error message and take appropriate measures before performing shutdown. Also confirm that the data has been printed correctly.
-

NOTE      When the ink sheet or printer sheets have run out and an error message is displayed at the bottom of the screen, perform the following procedure to clear the error message.


1. Press  to display the free cursor.
  2. Select [OK], [Retry], or [Cancel] for the error message.
  3. Press  again to clear the free cursor.
-

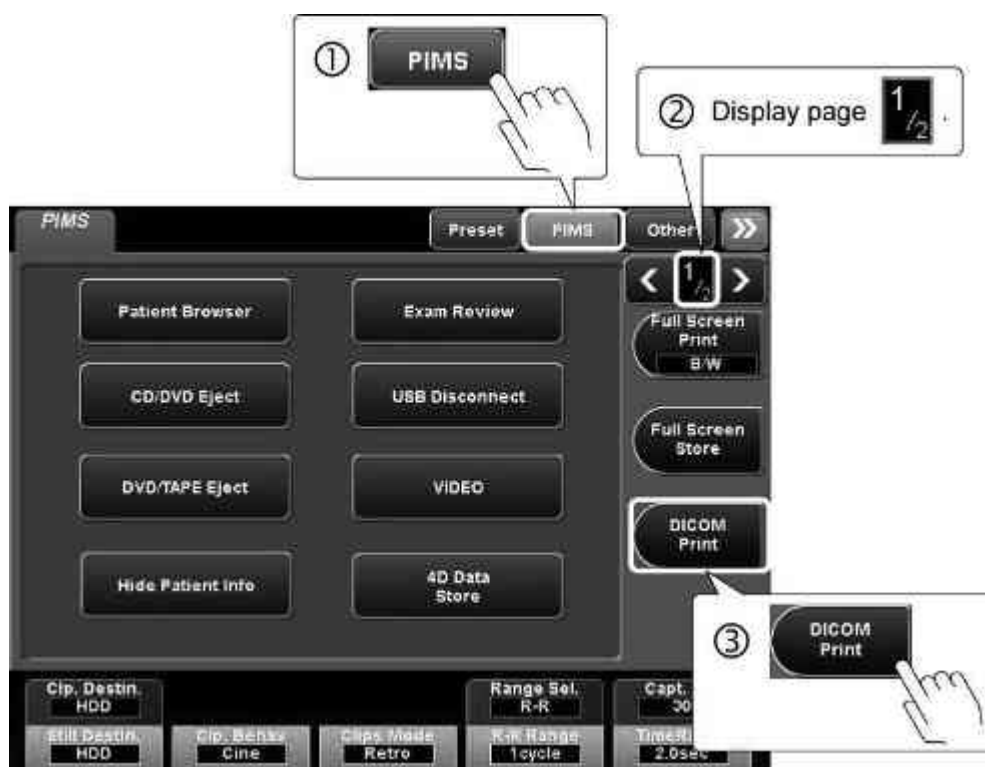


### 16.2.3 Transferring the data to a DICOM printer

\* The optional USDI-X200A is required in order to use this function.

NOTE 1. For the settings of the DICOM printer, consult your Canon Medical Systems service representative.

2. When multiframe format is set for printing,  is displayed at the bottom of the screen and the frame filling status can be checked. When all of the frames are filled, the images are transferred to the DICOM printer.



\* When more than one DICOM printer is set, select the desired printer using the knob on the right of the [DICOM Print] switch.

## 16.2.4 Troubleshooting

If an error message related to the printer is displayed, take appropriate measures referring to the tables below.

Message	Meaning	Action
Check the printer cables.	The printer cable has been disconnected or the printer power has been turned OFF during printing.	Confirm that the printer cable is connected correctly and then turn the printer power ON.  * For the P95DW/P95DW-DC, hold down the [COPY] button on the front to reset the error.
Remove jammed paper.	Paper jam.	Pull out the paper tray and remove the jammed paper.

## 16.3 Video Recording Device




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**⚠ CAUTION** When recording diagnostic images, confirm that the displayed patient ID is correct. Recording diagnostic images with an incorrect patient ID may result in incorrect diagnosis.

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- NOTICE*
1. Do not subject the video recording device to vibration or shock during recording. The media may be damaged.
  2. Do not move the video recording device with media in the device. Vibration or shock during movement may damage the media.
  3. Do not start up the Patient Browser screen while the video unit is in use.
- 



- NOTE*
1. If images recorded on the video recording device using another system are played back on this system, the displayed images may be distorted.
  2. In order for the video recording device to be operated using the main panel or touch panel, a recommended video recording device must be used. In addition, presetting by a service engineer is required. Contact your Canon Medical Systems representative.
  3. The time displayed for the images recorded in the Sony DVO-1000MD, HVO-550MD, and JVC BD-X201M/ME may differ from the actual time by  $\pm 2$  seconds depending on the accuracy of the recorder.
  4. The counter value displayed on the Sony DVO-1000MD and HVO-550MD differs from the counter value displayed on the diagnostic ultrasound system.
    - The counter value for each title is displayed on the Sony DVO-1000MD and HVO-550MD.
    - The total counter value of the recorded data is displayed on the diagnostic ultrasound system.
  5. Use media recommended by Canon Medical Systems for the Sony DVO-1000MD, HVO-550MD, and JVC BD-X201M/ME.
-

- NOTE
6. The index contains the information required to locate the start of the recorded image.  
The index is written when recording is started from stopped status.
  7. Recording is stopped when one of the following operations is performed.
    - [VIDEO] in the PIMS menu on the touch panel is pressed.
    -  is pressed.
    -  is pressed and [Shutdown] is then selected.
  8. It is possible to preset the system so that recording/playback is paused when  is pressed. Contact your Canon Medical Systems service representative for details.

### 16.3.1 Recording to the video recording device

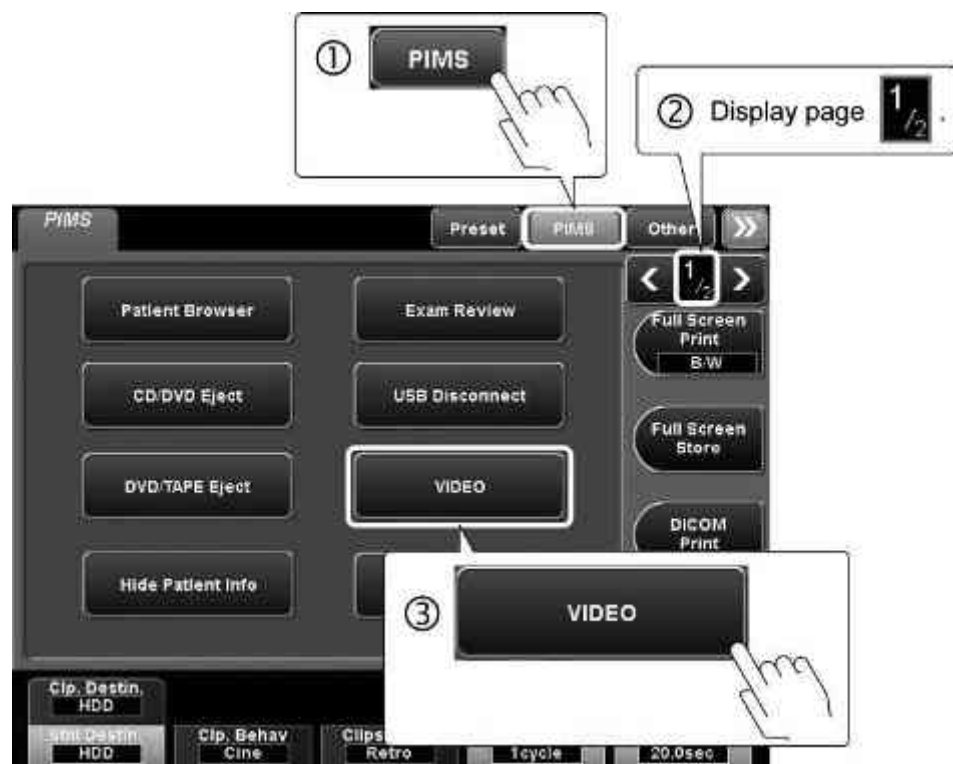
**NOTICE** Do not turn the system power OFF or set the system to Standby mode during video recording. Doing so may damage the hard disk of the video recording device or the inserted media.

NOTE It is necessary to assign the switch (  ) for this function on the main panel using the User Function function. Contact your Canon Medical Systems service representative for details.

Press  to start recording. When  is pressed a second time, recording is paused.

### 16.3.2 Playing back images from the video recording device

- NOTE
1. Logon and logoff are not possible in security mode.
  2. For SONY HVO-550MD, **VIDEO** is grayed out immediately after startup, and playback and recording cannot be performed (graying out is cleared after approximately 30 seconds).

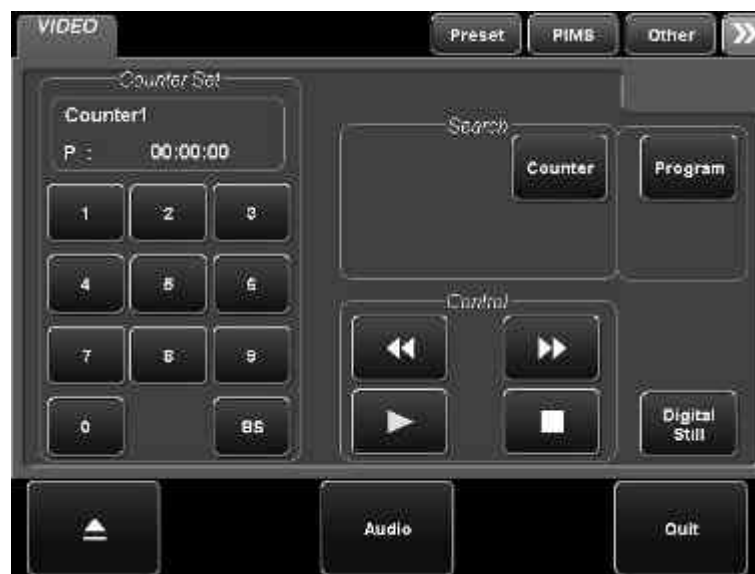













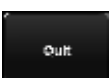

\* The same operation is possible using **F8** .






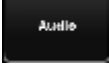
(1) For the Sony DVO-1000MD and HVO-550MD



(2) For the JVC BD-X201M/ME



Switch	Function	Video recording device		
		SONY DVO-1000MD	SONY HVO-550MD	JVC BD-X201M/ME
	Starts playback.	○	○	○
	Pause	○	○	○
During playback 	Starts fast-forward playback (double speed).	○	○	○
	Starts fast-forward playback.	-	-	○
During fast-forward playback 	Returns to the first title or chapter.	○	-	-
During playback 	Starts reverse playback (double speed).	○	○	○
	Starts reverse playback.	-	-	○
During rewinding 	Returns to the first title or chapter.	○	-	-
	Stops playback.	○	○	○
	Displays the video images as digital still images.	○	○	-
	Ejects the media.	○	○	○
	Exits video playback mode.	○	○	○
	Enables searching using the index stored on the media (refer to subsection 16.3.2.1).	-	-	○

Switch	Function	Video recording device		
		SONY DVO-1000MD	SONY HVO-550MD	JVC BD-X201M/ME
	Enables searching using the CTL counter (refer to subsection 16.3.2.2).	○	○	○
	Returns to the previous title.	○	○	-
	Skips to the next title.	○	○	-
	Returns to the previous chapter.	○	○	-
	Skips to the next chapter.	○	○	-
	Used to adjust audio volume (such as for the Doppler sound).	○	○	○


NOTE Entry of numbers

1. Enter numbers using two digits.

<Example>

• 2 →  

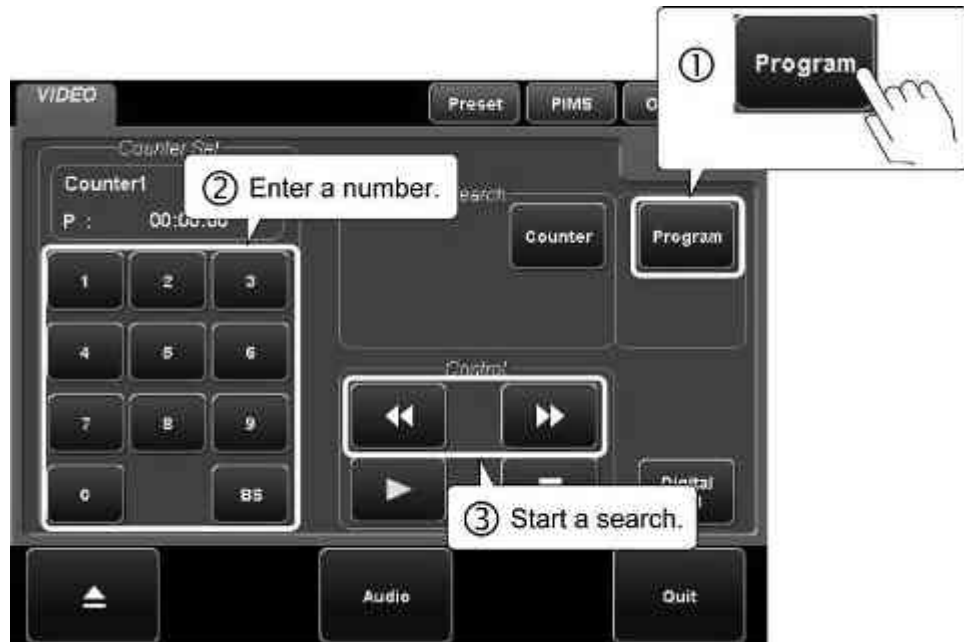
• 12 →  







2. To delete the entered number, press  .



### 16.3.2.1 Search by index

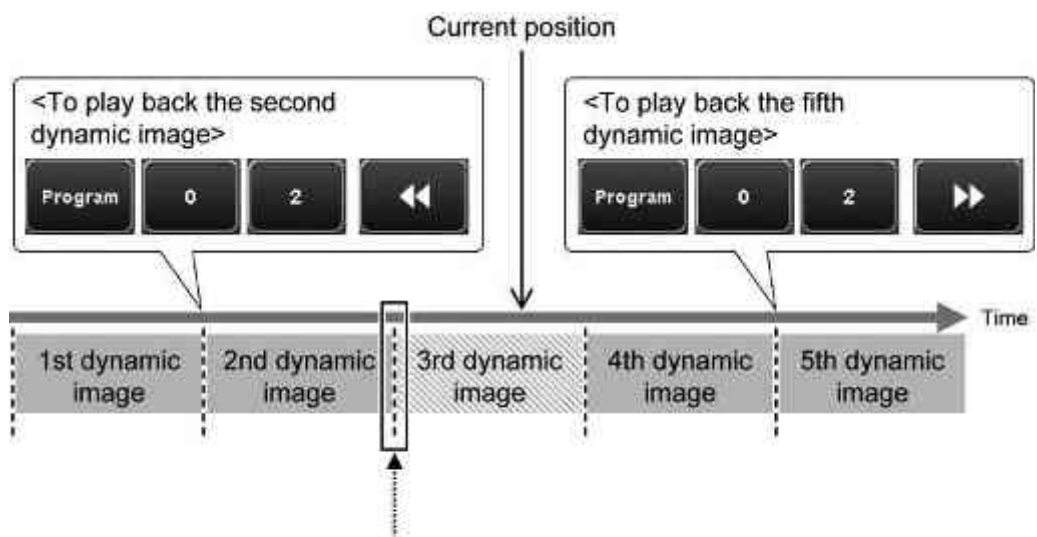
\* This function is available only for the JVC BD-X201M/ME.



NOTE To play back the current dynamic image from the beginning, enter 1 and press . To play back the immediately preceding dynamic image, enter 2 and press . Other preceding dynamic images can be played back in a similar manner by entering the appropriate number and pressing . To play back the next dynamic image, enter 1 and press . To play back the dynamic image after the next dynamic image, enter 2 and press . Other succeeding dynamic images can be played back in a similar manner by entering the appropriate number and pressing .

<Example>

If a total of five dynamic images are recorded and the third image is selected (playback is paused)

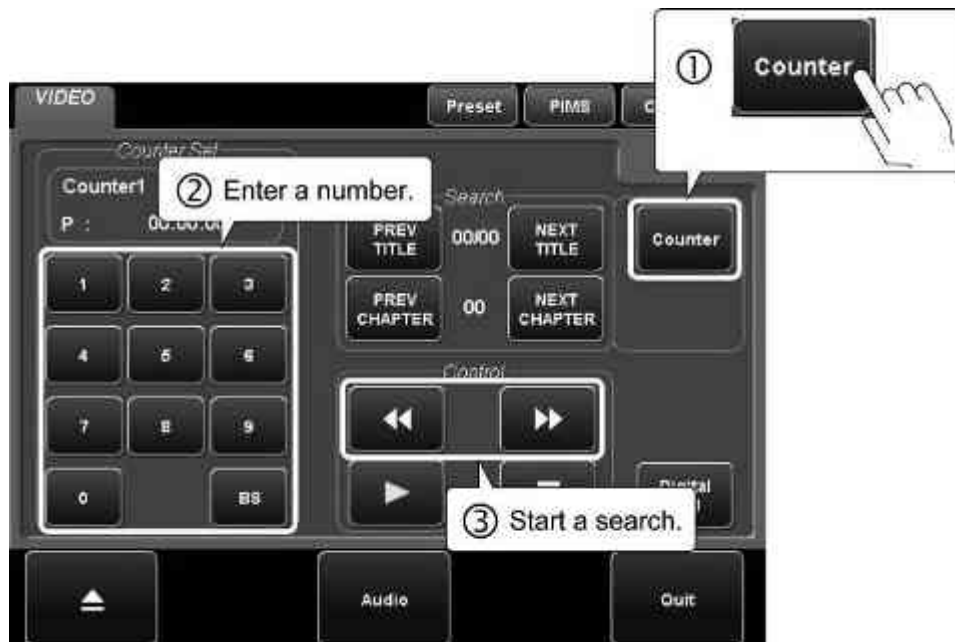


Start position for the current dynamic image

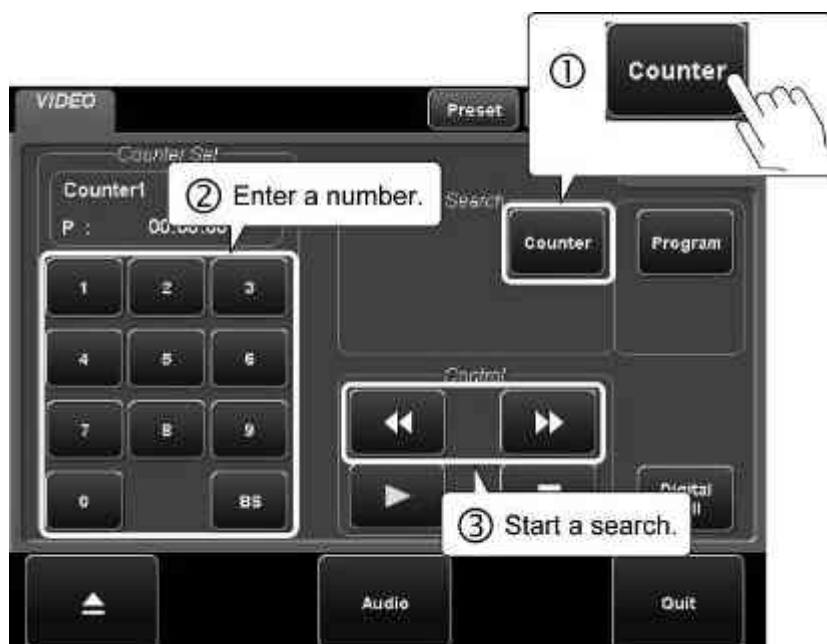
\* When entering the number above, think in terms of the number of start positions. When moving to a dynamic image preceding the currently selected image, be sure to include the start position of the currently selected dynamic image.

16.3.2.2 Search by CTL counter value

<SONY DVO-1000MD and HVO-550MD>



<JVC BD-X201M/ME>



### 16.3.3 Troubleshooting

If an error message related to the printer is displayed, take appropriate measures referring to the tables below.

Message	Meaning	Action
The VIDEO device is off. Please turn the VIDEO on. If the VIDEO is on, please contact the Service representative.	The power of the video recording device is OFF.	Turn ON the power of the video recording device.  * If the video recording device does not operate when the power is turned ON, contact your Canon Medical Systems service representative.
RS-232C communication error. Please contact the Service representative.	Communication between the diagnostic ultrasound system and the video recording device is abnormal.	Contact your Canon Medical Systems service representative.
No tape (disk) in the VIDEO. Please insert a tape (disk).	No media is placed in the device.	Insert the media.
A write-protected tape (disk) is set.	Writing to the media placed in the device is not possible (write-protected or full).	Release write protection or insert writable media.
The VIDEO device is busy. Please contact the Service representative.	The video recording device is not operating normally.	Contact your Canon Medical Systems service representative.
End of tape (disk) detected. The VIDEO device has stopped automatically.	The video recording device has detected Disk Full for the media and stopped automatically.	Insert new media.



# 17.

## Other Functions

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## 17.1 Editing User Presets

(1) Creating a user preset

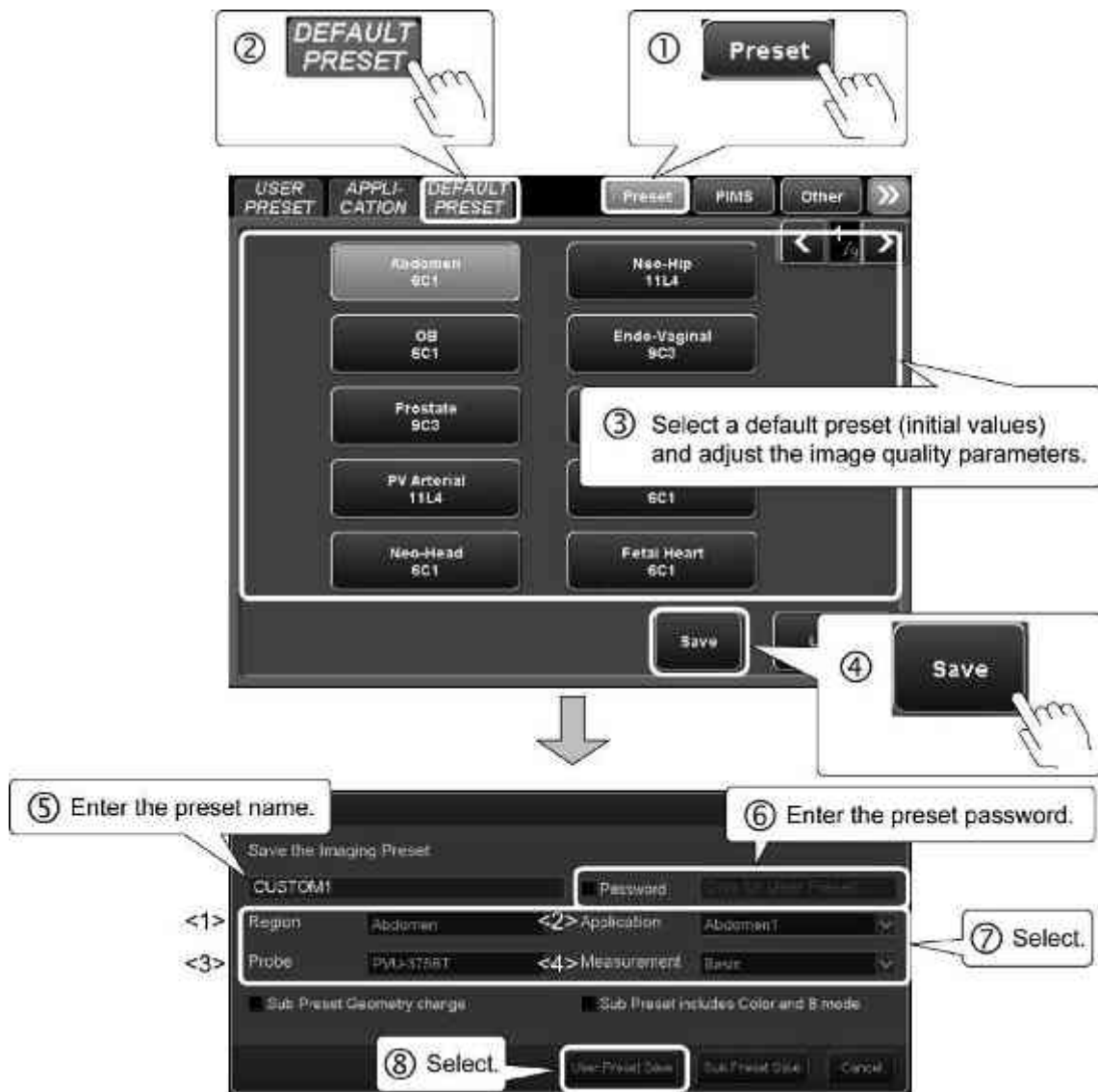
It is possible to edit the image quality parameters of an existing default preset and register the edited preset as a user preset.

\* Up to 40 user presets can be registered.

---

NOTE      The exam type name is automatically displayed for a newly created user preset. Be sure to change this automatically displayed name. For example, if "Adult Heart" is displayed automatically, change it to "Adult Heart 1" or a similar name.

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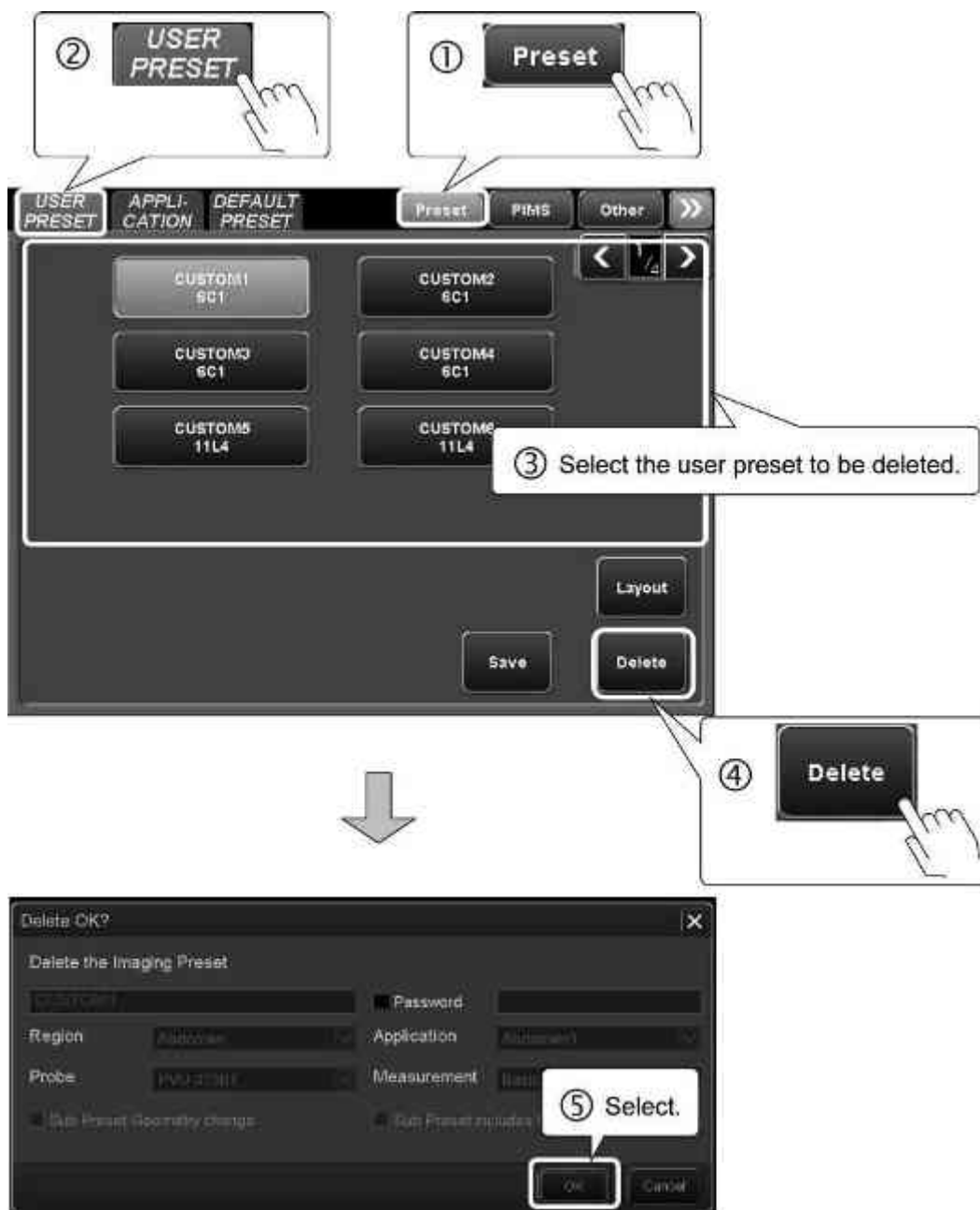
No.	Item	Description
<1>	Region	Select the anatomical region.
<2>	Application	Select the application preset (annotation, body mark)
<3>	Probe	Select the transducer name.
<4>	Measurement	Select the measurement preset.





(3) Deleting a user preset

User presets that have been registered can be deleted.

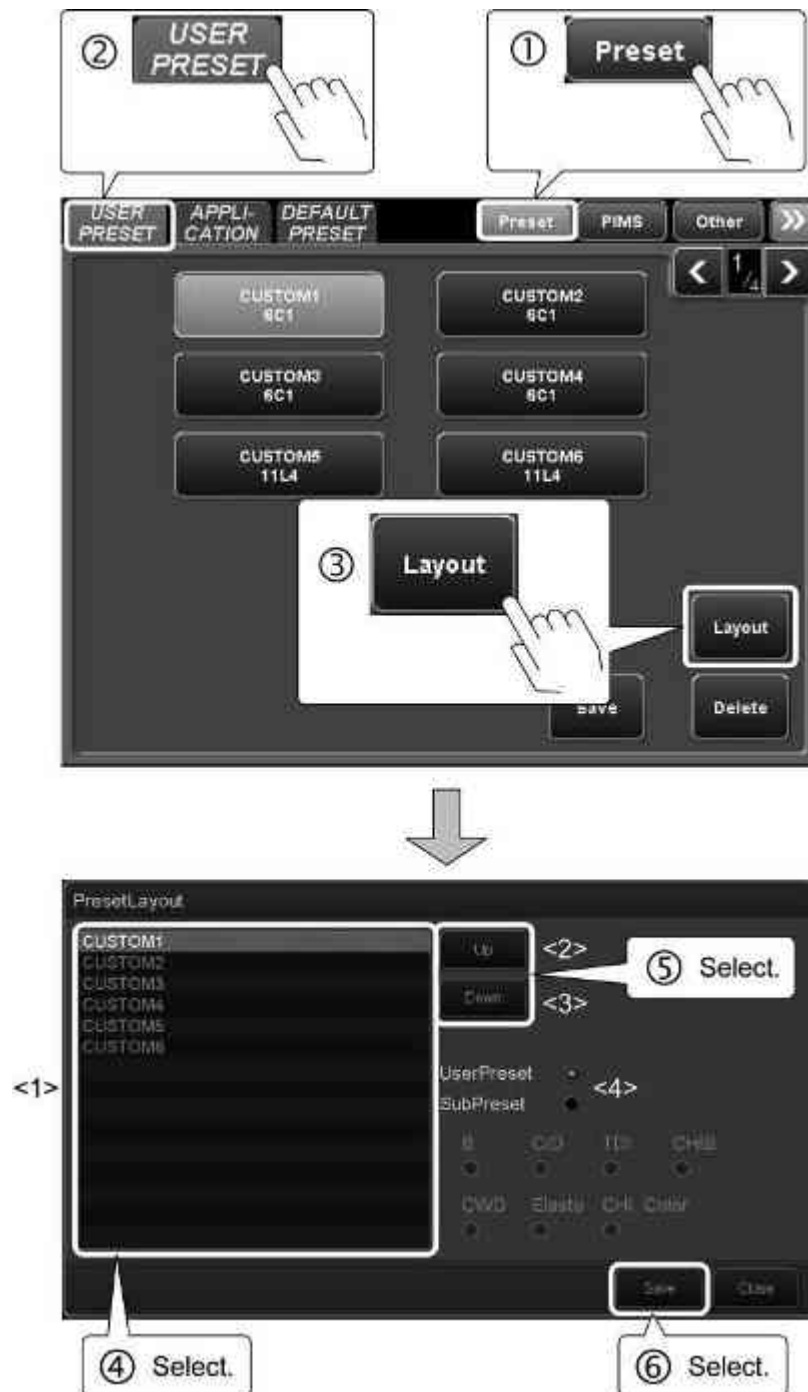


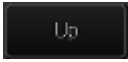
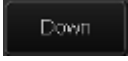
**NOTE** To delete a preset for which a password is set, select the checkbox for Password, enter the appropriate password in the text field, and select [OK]. If an incorrect password is entered, the dialog shown below is displayed.



## (4) Changing the layout of the user presets

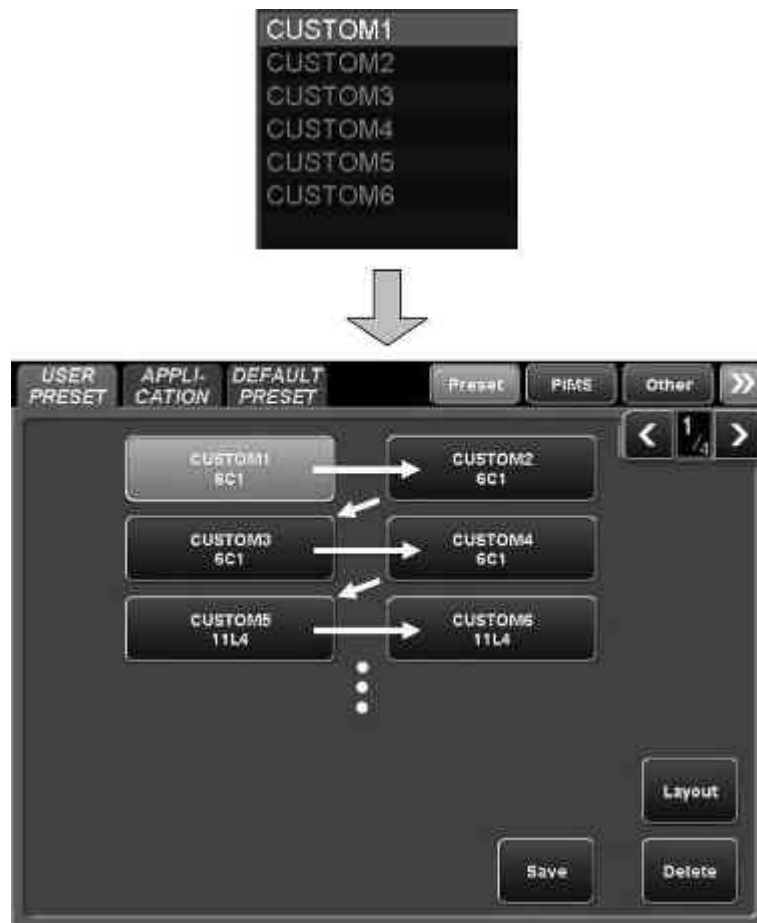
It is possible to change the layout of the registered user presets on the touch panel.



No.	Item	Description
<1>	User presets/sub-presets	The registered user presets or sub-presets are displayed in a list.
<2>		Moves the selected preset upward by a line.
<3>		Moves the selected preset downward by a line.
<4>	Preset type selection	Used to select the type of presets to be displayed.

NOTE The presets displayed in the list are applied to the touch panel in the following order.

Example



## 17.2 Editing a Sub-Preset

### (1) Creating a sub-preset

It is possible to edit the image quality parameters of an existing user preset and register the edited preset as a sub-preset.

It is also possible to change the mode of a created sub-preset, edit the image quality parameters of the sub-preset, and register the sub-preset as a new sub-preset.

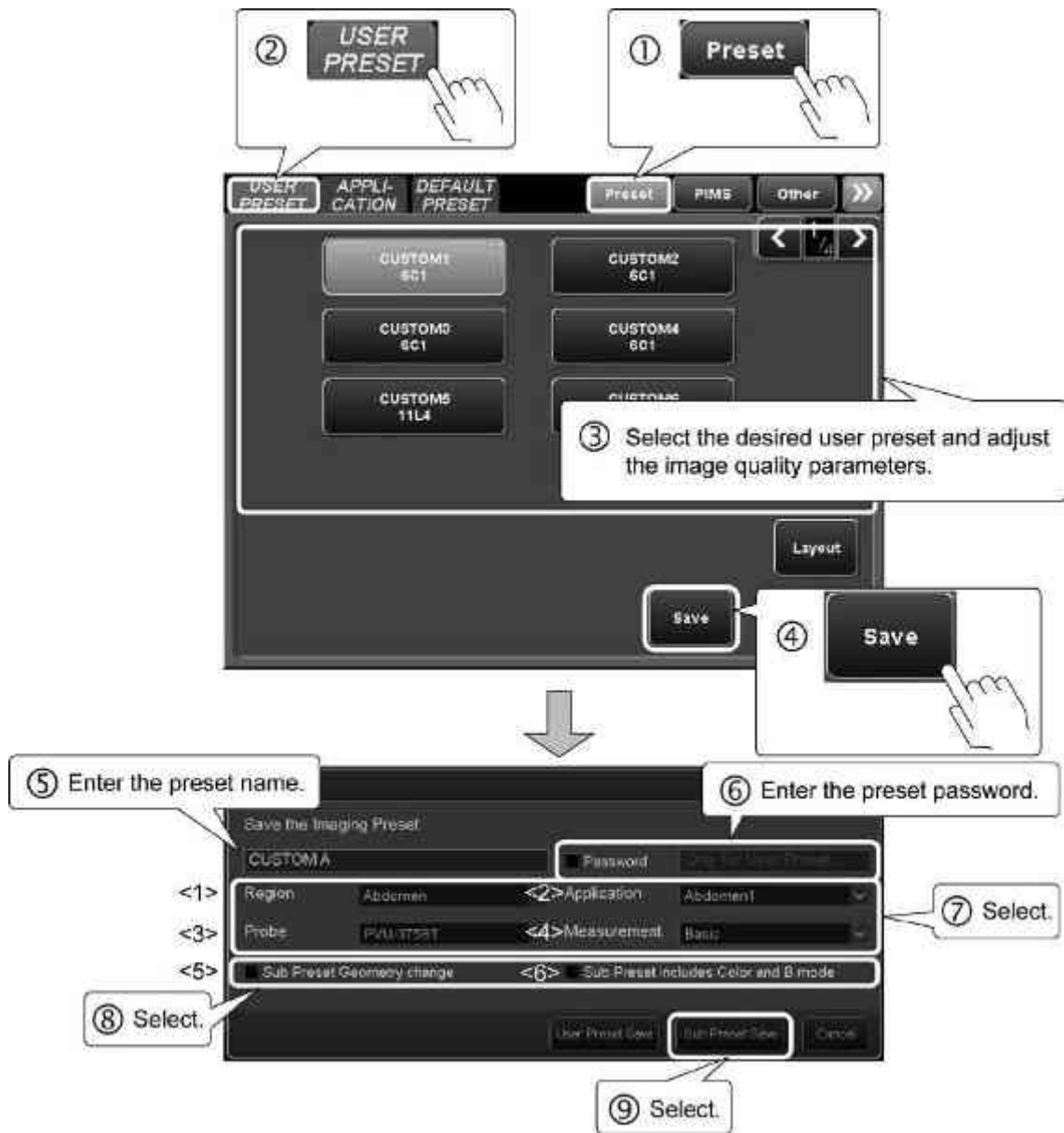
\* Up to 8 sub-presets can be registered in each sub-preset area.

---

**NOTE**

1. The user preset name is initially displayed as the sub-preset name. Be sure to change the sub-preset name so that it is different from the mother preset name. For example, if "Adult Heart" is displayed, it can be changed to "Adult Heart1".
  2. Refer to section 7 for the information on editing of sub-presets for 4D.
-

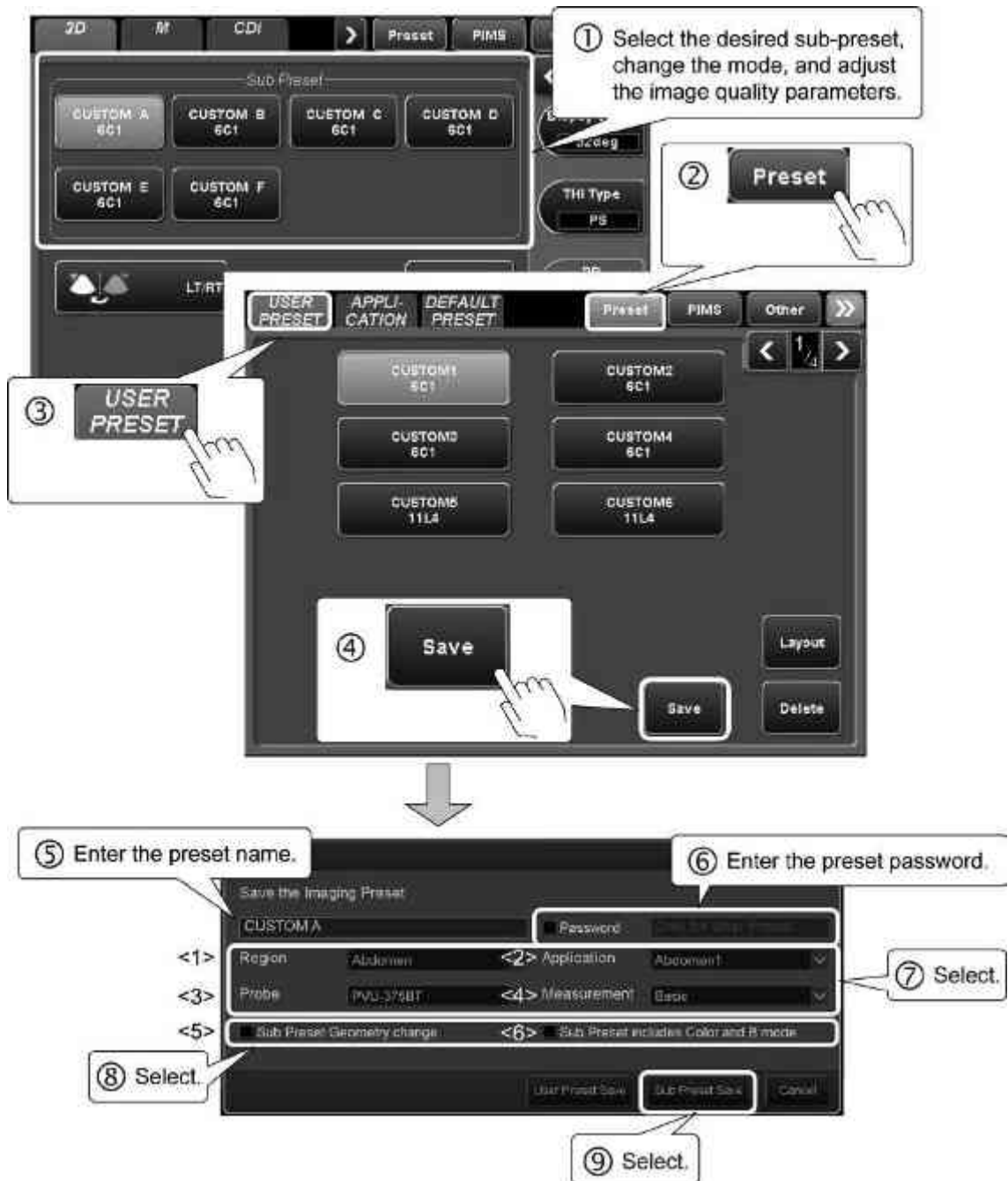
(a) Creating a sub-preset from a user preset



No.	Item	Description
<1>	Region	Select the anatomical region.
<2>	Application	Select the application preset (annotation, body mark)
<3>	Probe	Select the transducer name.
<4>	Measurement	Select the measurement preset.
<5>	Sub Preset Geometry change	<p>Select whether the settings of Depth/Zoom, L/R, U/D, and Scan Range are to be changed when another sub-preset is selected.</p> <p><input checked="" type="checkbox"/> : Changed</p> <p><input type="checkbox"/> : Not changed</p> <p>* When this checkbox is selected during color mode, checkbox &lt;6&gt; is also selected automatically.</p>
<6>	Sub Preset includes Color and B mode	<p>Select whether the parameter settings are to be changed when another sub-preset (color) is selected.</p> <p><input checked="" type="checkbox"/> : Changed</p> <p><input type="checkbox"/> : Not changed</p> <p>* This parameter is available in color modes.</p>



(b) Creating a sub-preset from another sub-preset

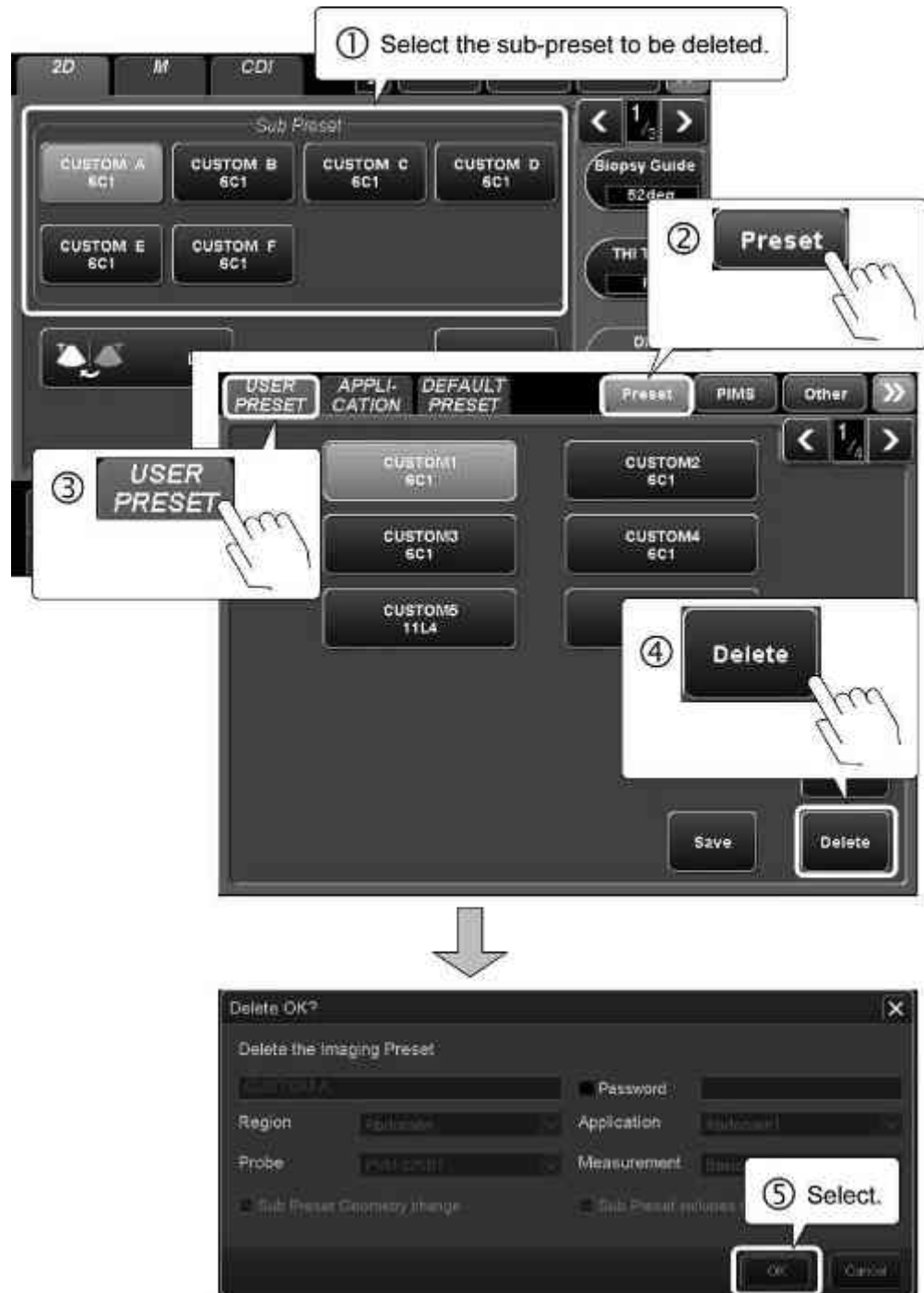


No.	Item	Description
<1>	Region	Select the anatomical region.
<2>	Application	Select the application preset (annotation, body mark)
<3>	Probe	Select the transducer name.
<4>	Measurement	Select the measurement preset.
<5>	Sub Preset Geometry change	<p>Select whether the settings of Depth/Zoom, L/R, U/D, and Scan Range are to be changed when another sub-preset is selected.</p> <p><input checked="" type="checkbox"/> : Changed</p> <p><input type="checkbox"/> : Not changed</p> <p>* When this checkbox is selected during color mode, checkbox &lt;6&gt; is also selected automatically.</p>
<6>	Sub Preset includes Color and B mode	<p>Select whether the parameter settings are to be changed when another sub-preset (color) is selected.</p> <p><input checked="" type="checkbox"/> : Changed</p> <p><input type="checkbox"/> : Not changed</p> <p>* This parameter is available in color modes.</p>



## (3) Deleting a preset

A registered preset can be deleted.

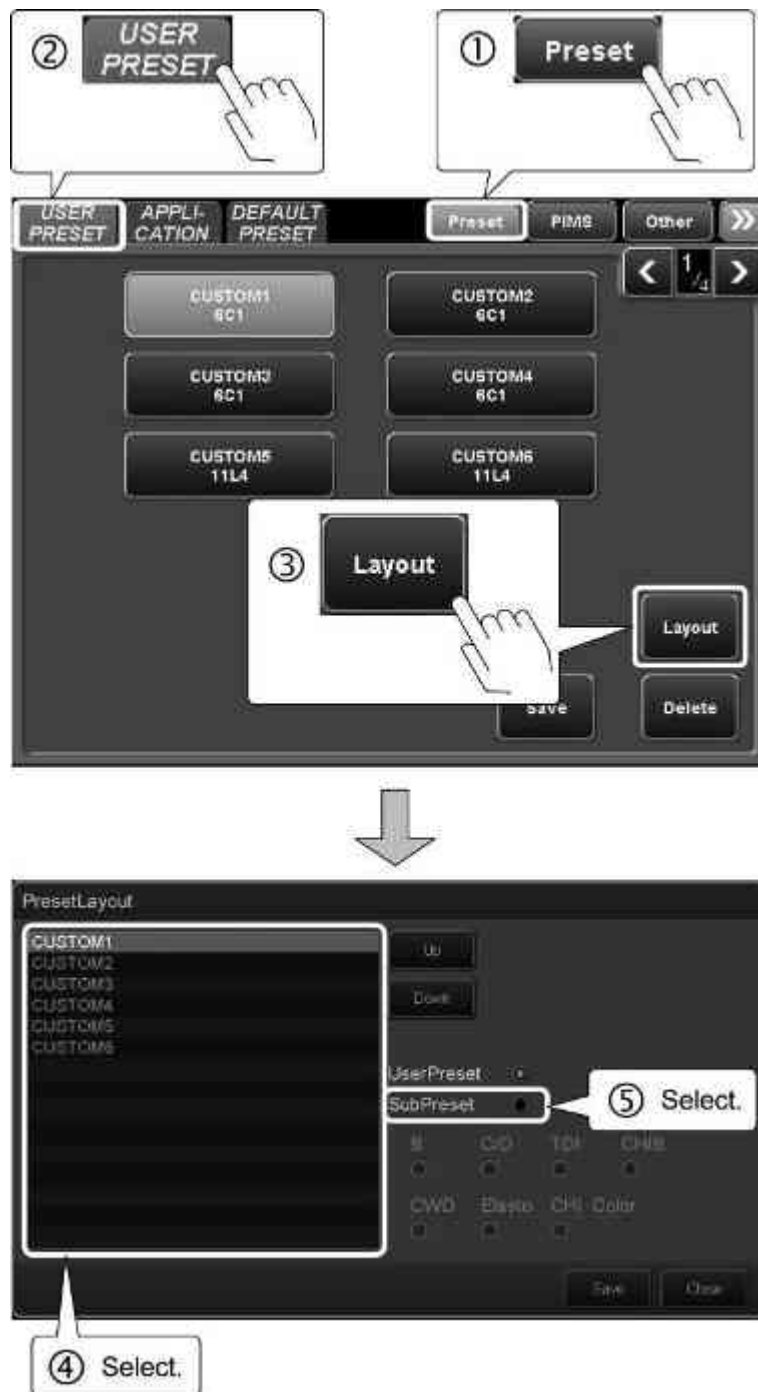


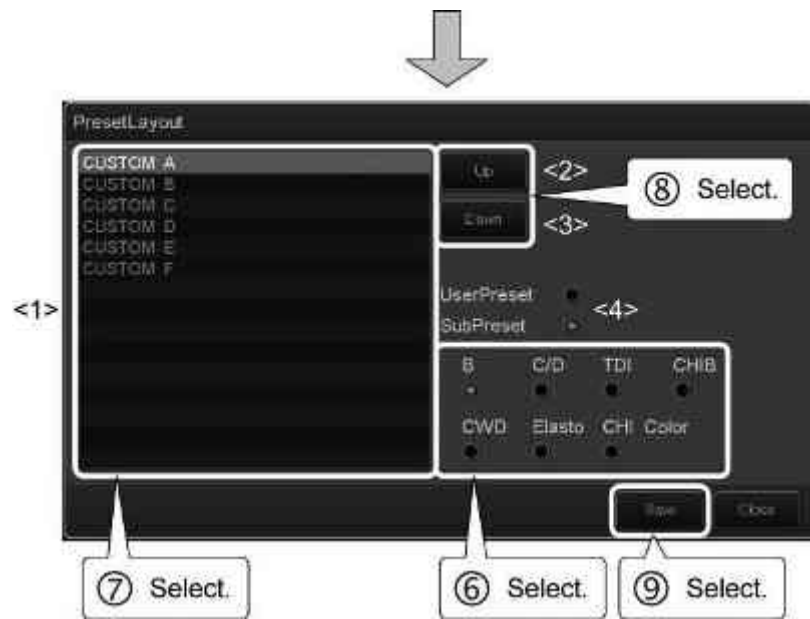
NOTE To delete a preset for which a password is set, select the checkbox for Password, enter the appropriate password in the text field, and select [OK]. If an incorrect password is entered, the dialog shown below is displayed.

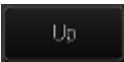
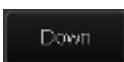


## (4) Changing the layout of the sub-presets

It is possible to change the layout of the registered sub-presets on the touch panel.

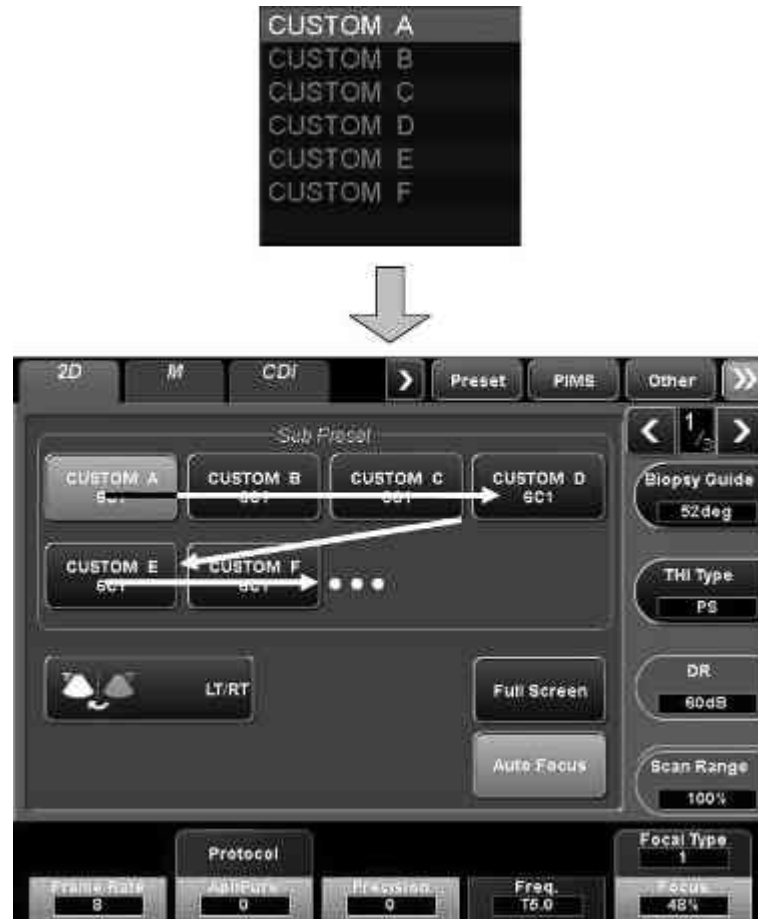




No.	Item	Description
<1>	User presets/sub-presets	The registered user presets or sub-presets are displayed in a list.
<2>		Moves the selected preset upward by a line.
<3>		Moves the selected preset downward by a line.
<4>	Preset type selection	Used to select the type of presets to be displayed. * When SubPreset is selected, one of the following modes can be selected. <ul style="list-style-type: none"> <li>• B : 2D mode</li> <li>• CDI : CDI mode</li> <li>• TDI : TDI mode</li> <li>• CHIB : CHI Mode</li> <li>• CWD : CW mode</li> <li>• Elasto : Elastography mode</li> <li>• CHI Color : CHI mode (Color)</li> </ul>

NOTE The presets displayed in the list are applied to the touch panel in the following order.

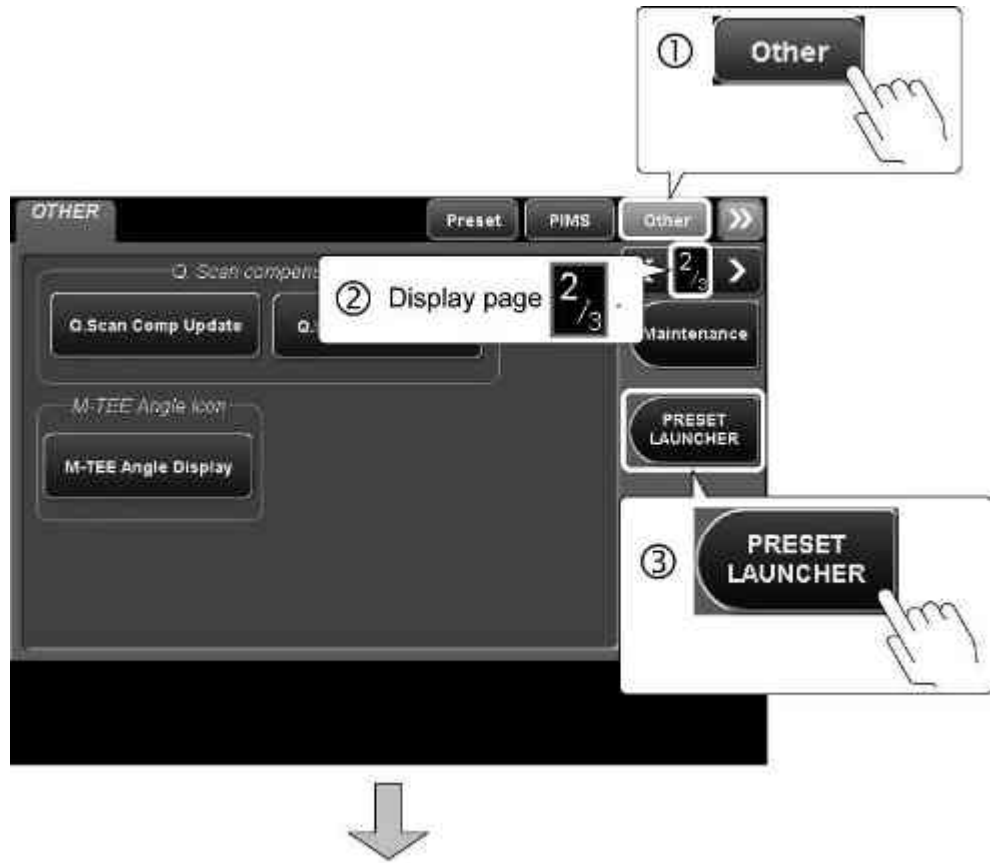
Example

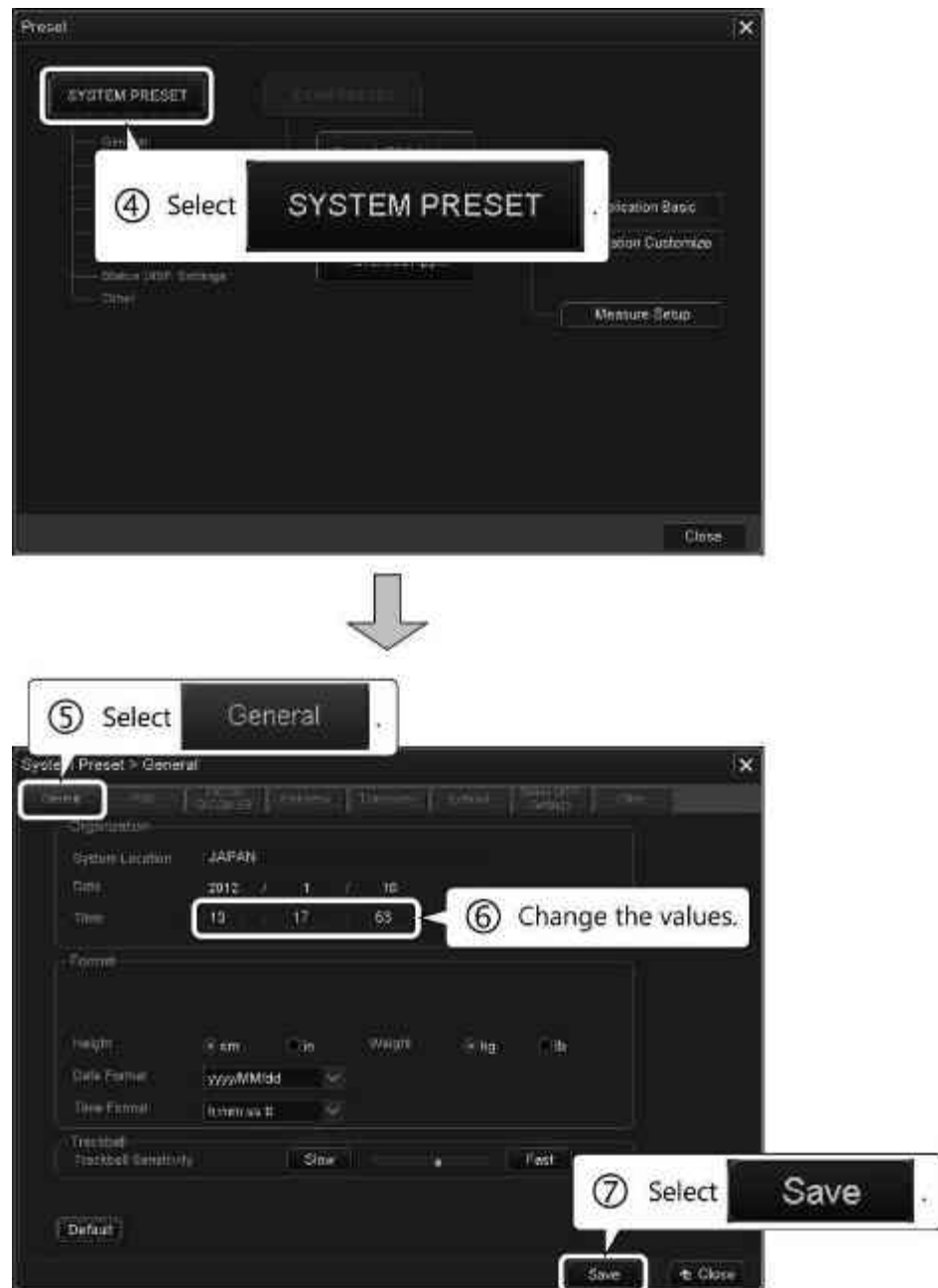




### 17.3 Changing the System Time


The hour:minute:second display at the right top of the screen can be changed.

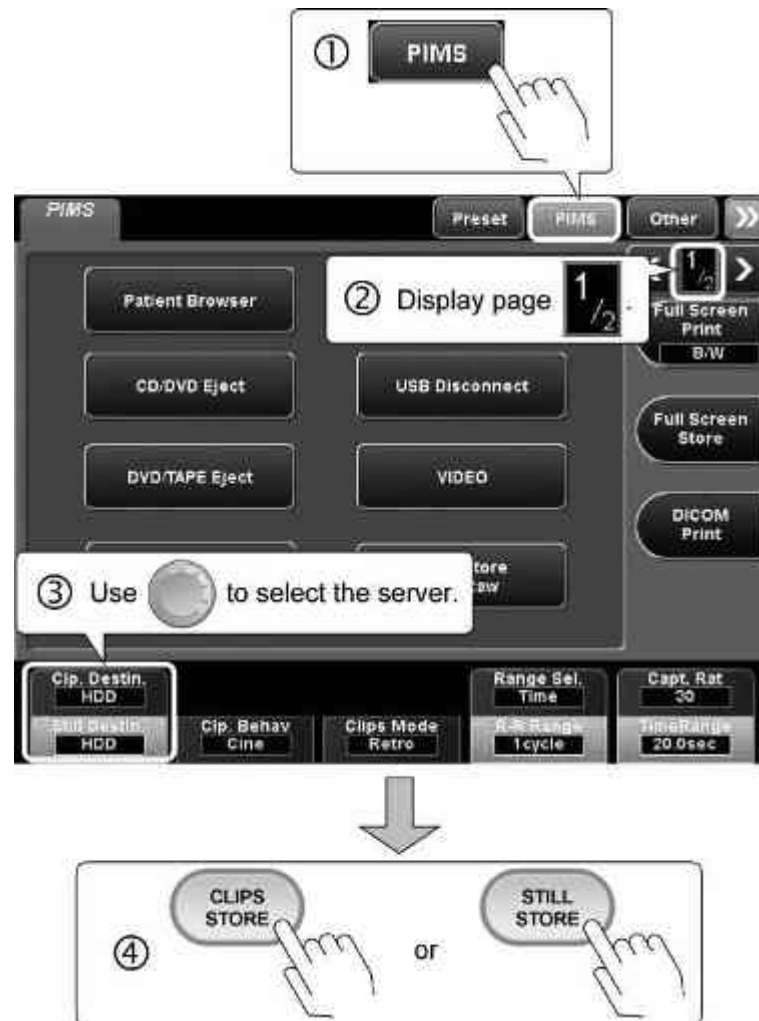




## 17.4 Data Transfer to a DICOM Server

---

- NOTE
1. A long time may be needed to export images to media, load images from media, or transmit or receive images in DICOM format. In addition, when such operations are running in the background, other system functions may become sluggish. It is therefore recommended that such operations be performed after all patient examinations have been completed.
  2. Before transferring the data to the server, perform detailed setting of the data to be transferred from the Copy screen (refer to subsection 2.2.2).
  3. When data for analysis (4D, Wall Motion Tracking, etc.) is saved, be sure to save the data with raw data.  
For image data without raw data, functions other than Exam Review cannot be used.
  4. When an image is transferred to the server, the same image is also stored on the hard disk.
  5.  is displayed at the bottom of the screen during transfer to the server.
  6. Do not disconnect the network cable while the system is transmitting data to or receiving data from the server.
  7. Transfer to the server may take a longer time depending on the load on the network.
  8. While creating a copy in the server, if the network is temporarily unavailable, data to be saved in the server is temporarily queued internally.  
\* To check the internal queue, refer to the Job Status screen (subsection 2.2.8).
-



## 17.5 Wireless Network Connection

\* The optional UIWL-X200A is required in order to use this function.

(1) Specifications (wireless LAN)

(a) Standards

- IEEE 802.11b/g/n 2.4 GHz
- IEEE 802.11a/n/ac 5 GHz

(b) Security

- WPA2-PSK [AES]
- WPA2-Enterprise [AES] (compliant<sup>\*1</sup>)

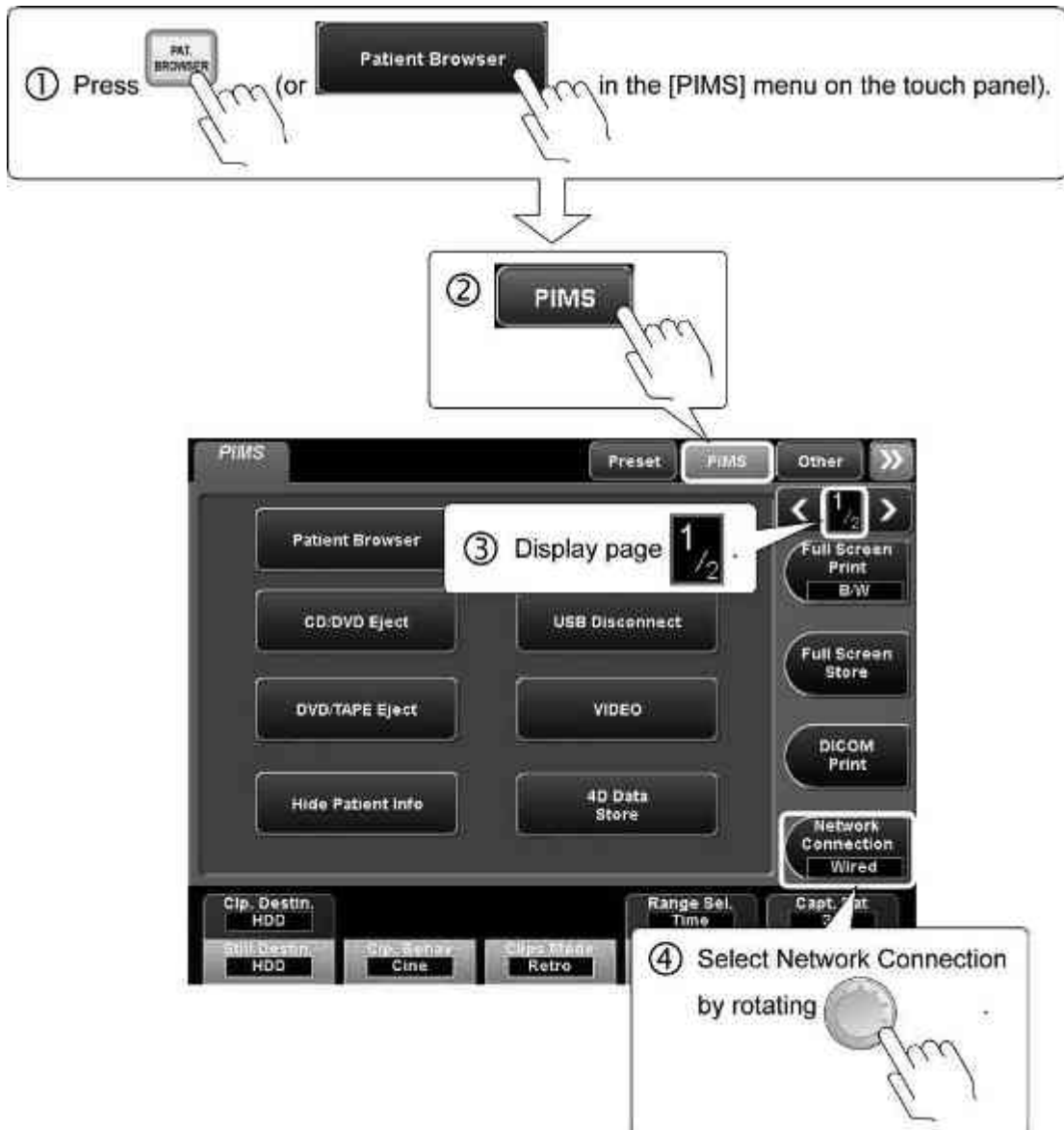
\*1: Contact your Canon Medical Systems service representative for details.

(c) Frequency

- 2.4 GHz to 2.5 GHz CCK/OFDM modulation
- 5 GHz OFDM, 802.11n MCS 0-7, 802.11ac MCS 0-9 coding system

(2) Changing the network connection method (wired/wireless)

- 
- NOTE
1. Do not change the connection method while printing of multiple pages is in progress for a DICOM printer. Doing so may cause printing errors.
  2. Do not change the connection method while saving or loading data.  
Data saving or loading may be interrupted if the wireless signal is weak.  
  
\* If the connection method is changed, confirm the data transfer status on the Job Status screen (refer to subsection 2.2.8). Also make sure that the relevant data is saved correctly in the storage destination.
  3. The network may be temporarily unavailable immediately after changing the connection method.
  4. While creating a copy in the server, if the network is temporarily unavailable, data to be saved in the server is temporarily queued internally.  
  
\* To confirm the state of the internal queue, refer to the Job Status screen (subsection 2.2.8).
  5. After changing the connection mode, a phenomenon may occur whereby some functions in USDI-X200A cannot be used due to settings in the connected server.  
Contact your Canon Medical Systems service representative for details.
-



**NOTE** Switching of the connection method between wired and wireless should be performed while the Patient Browser is displayed. The connection method is not switched if switching operation is performed while the Patient Browser screen is not displayed.

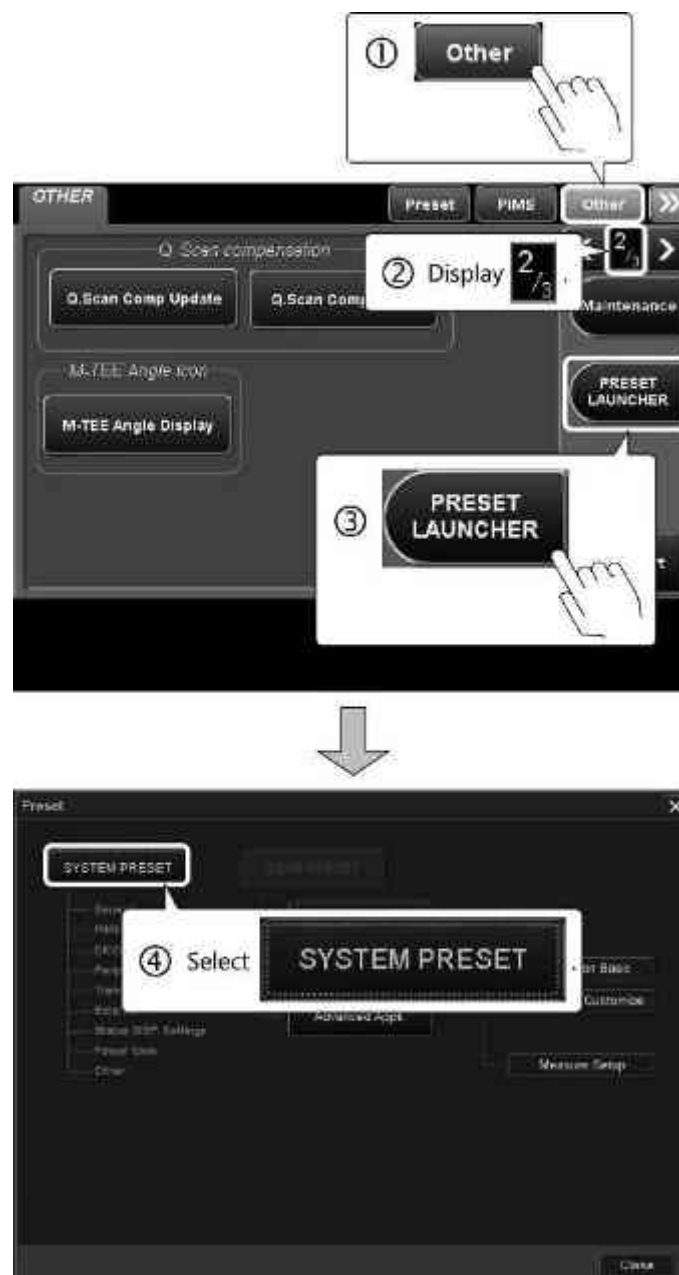
(3) Updating the wireless LAN certification information

At the time of wireless LAN connection, the certification information can be updated according to the type of the security.

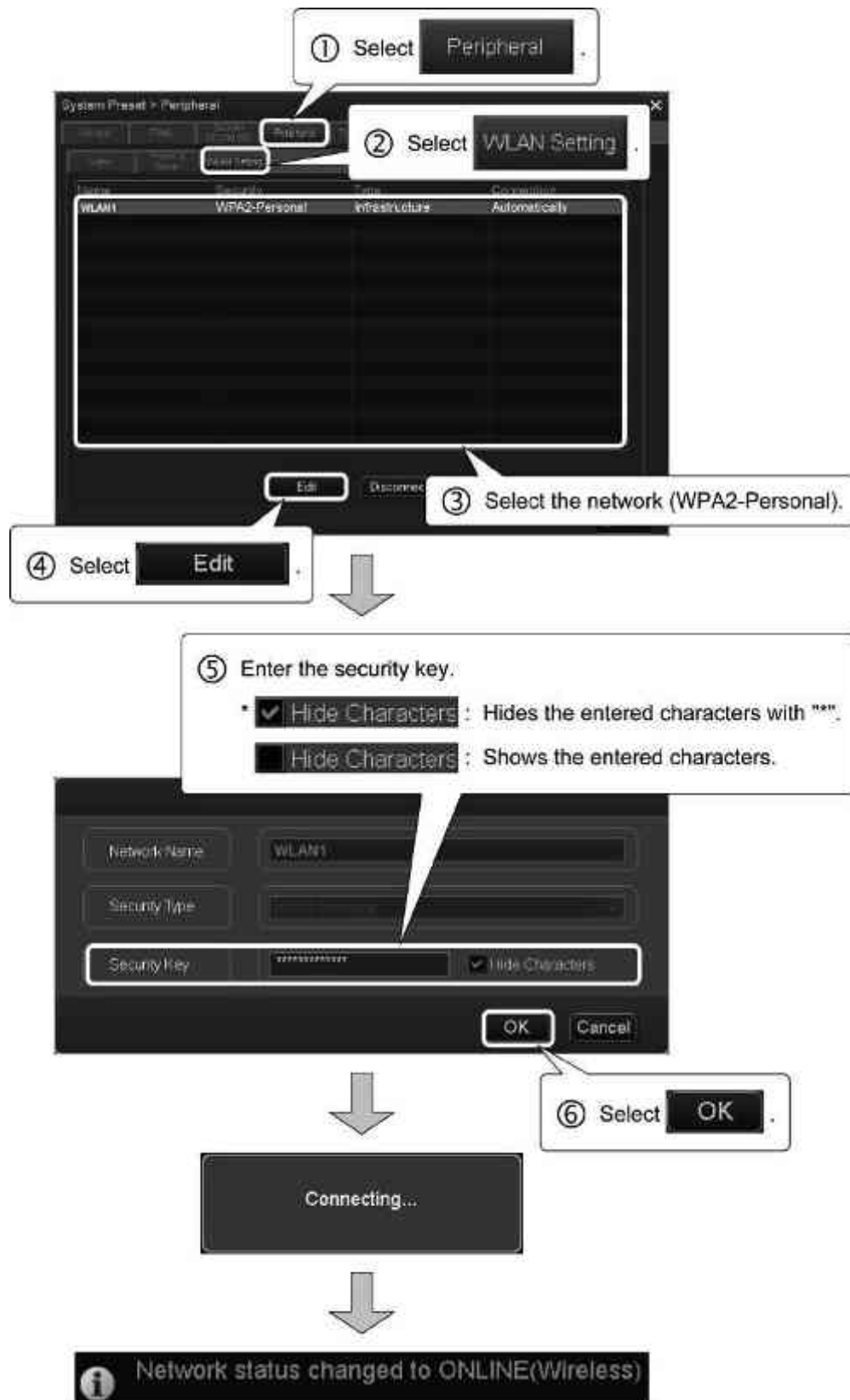
**NOTE** For information regarding addition/deletion of networks, contact your Canon Medical Systems service representative.

(a) Information update for WPA2-PSK (change of the security key for the access point)

<1> Display the System Preset screen.



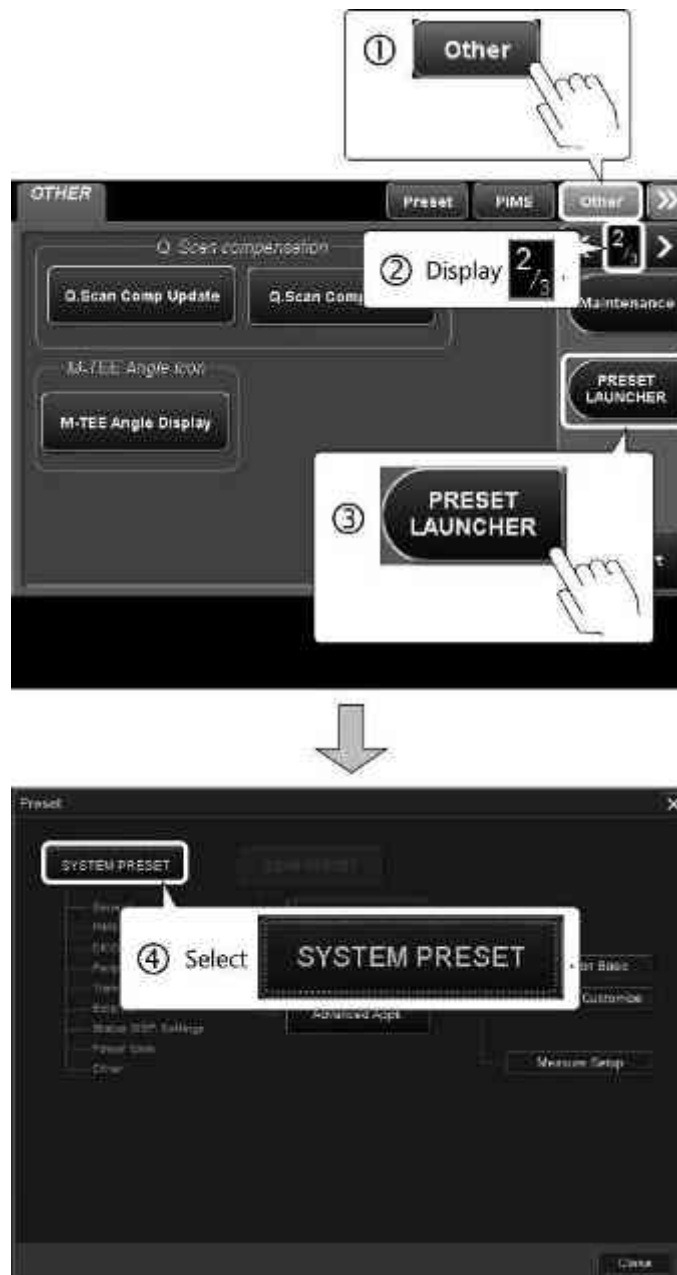
<2> Change the security key.



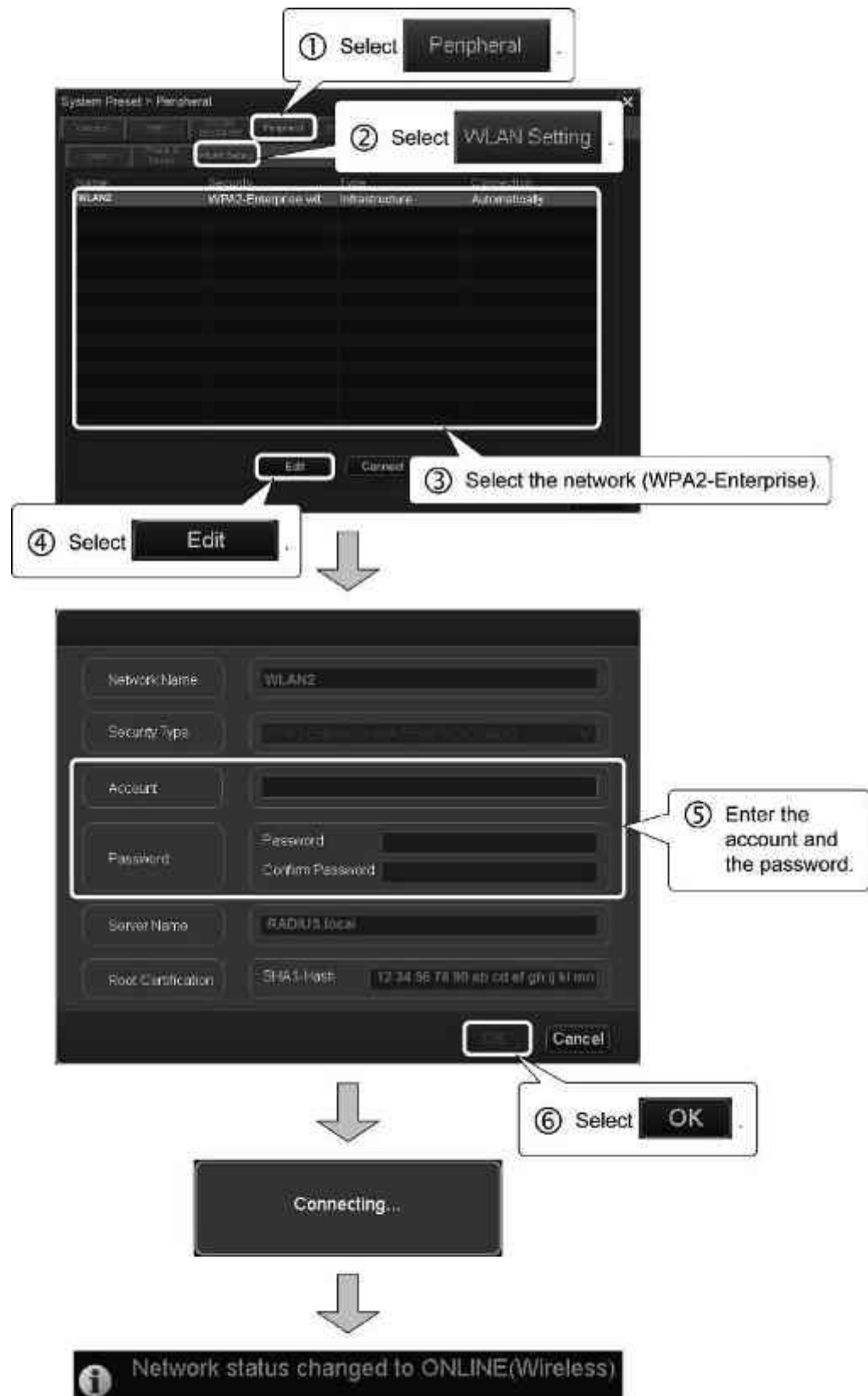
\* The message above is displayed on the screen when the network connection is established.



- (b) Information update for WPA2-Enterprise (change of account/password)
  - <1> Display the System Preset screen.



<2> Change the account and the password.



\* The message above is displayed on the screen when the network connection is established.

## 17.6 Security Management

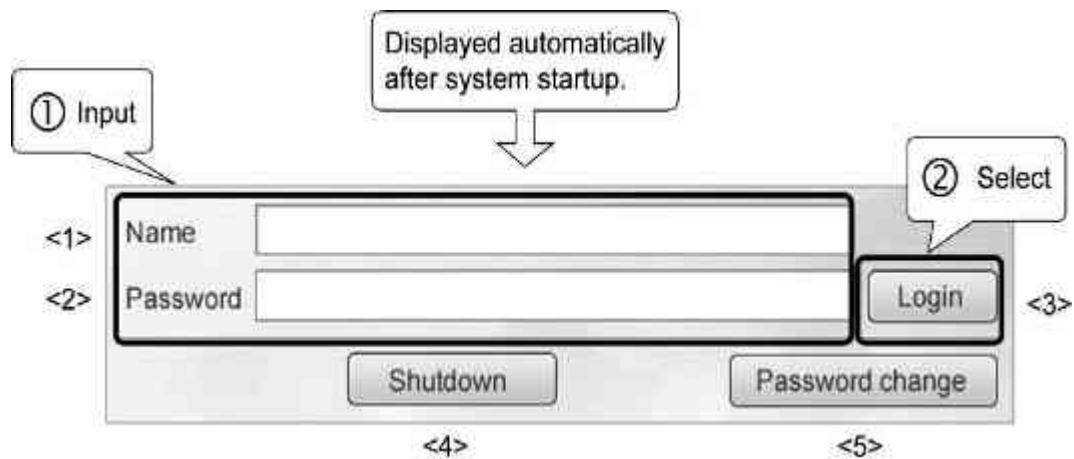
This system supports a function for recording the user's authorization and access log in order to protect personal information. To use this function, contact your Canon Medical Systems service representative.






- 
- NOTE
1. Immediately set the accounts (user names and their passwords) of the persons who use this system (refer to subsection 17.6.4).
  2. Be sure to handle user names and their passwords appropriately.
  3. Account management and audit log tool  
This function is used to acquire a log to identify the persons who access data in order to protect the personal information stored in the diagnostic ultrasound system. However, this function cannot completely prevent leakage of personal information. Be aware of the features and limitations of this function and also take other suitable measures to protect personal information in order to ensure a safe system environment. Note that the log data for identifying persons who access data contains personal information.
  4. This function is not available on a Russian keyboard.
-

### 17.6.1 Login

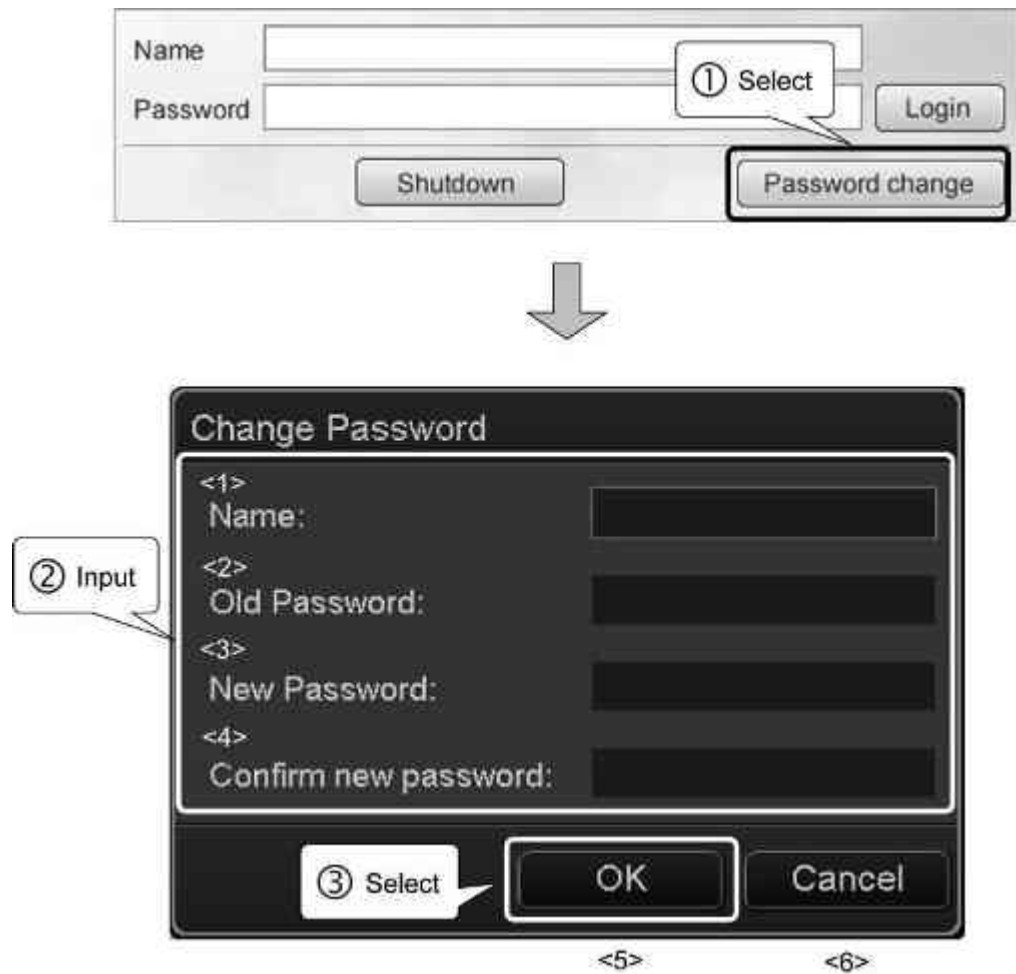
If the security management function is set to ON, the login screen shown below is displayed when the system is started up in order to identify the user.

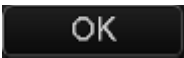
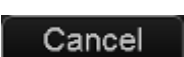


No.	Item	Description
<1>	Name	Enter the user name.
<2>	Password	Enter the password.
<3>		Logs in to the system with the entered account.
<4>		Turns the system power OFF.
<5>		Displays the password change screen (refer to subsection 17.6.2).

- NOTE
1. Be sure to enter uppercase and lowercase characters correctly.
  2. For the initial settings of accounts, contact your Canon Medical Systems service representative.
  3. When the user logs in to the system as administrator, the account information management, user management, and audit log storage functions can be operated using the service menu.

### 17.6.2 Changing the password

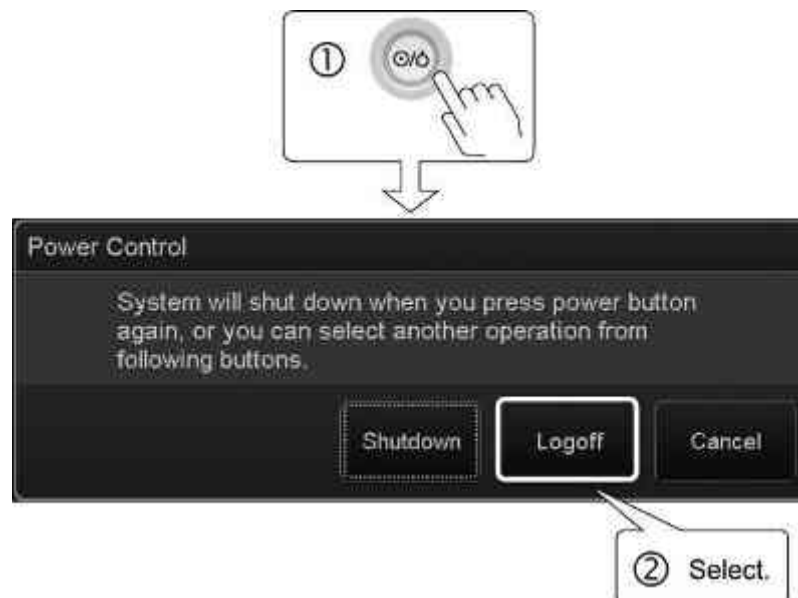


No.	Item	Description
<1>	Name	Enter the user name.
<2>	Old Password	Enter the current password.
<3>	New Password	Enter the new password.
<4>	Confirm new password	Enter the new password again.
<5>		Registers the changed password.
<6>		Cancels the change and closes the password change screen.

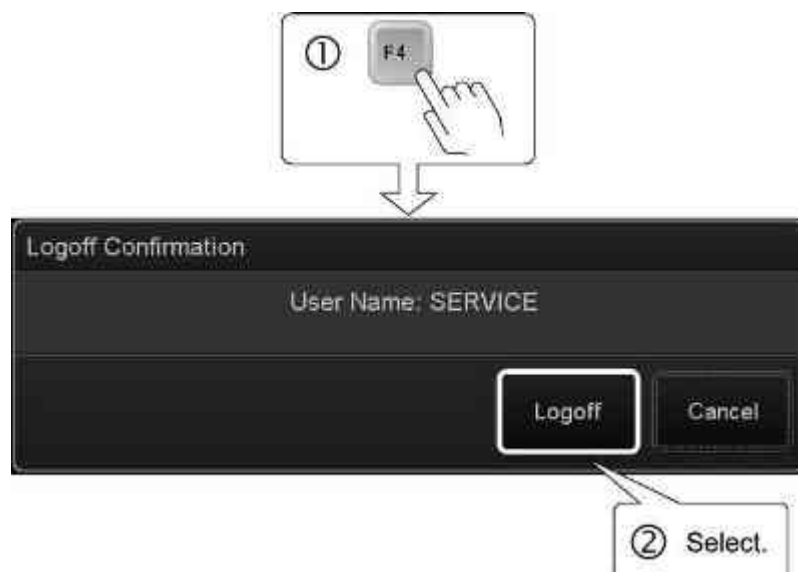
### 17.6.3 Logoff

The logoff switch is displayed when the security management function is ON.

(1) Operation from the main panel



(2) Operation from the keyboard



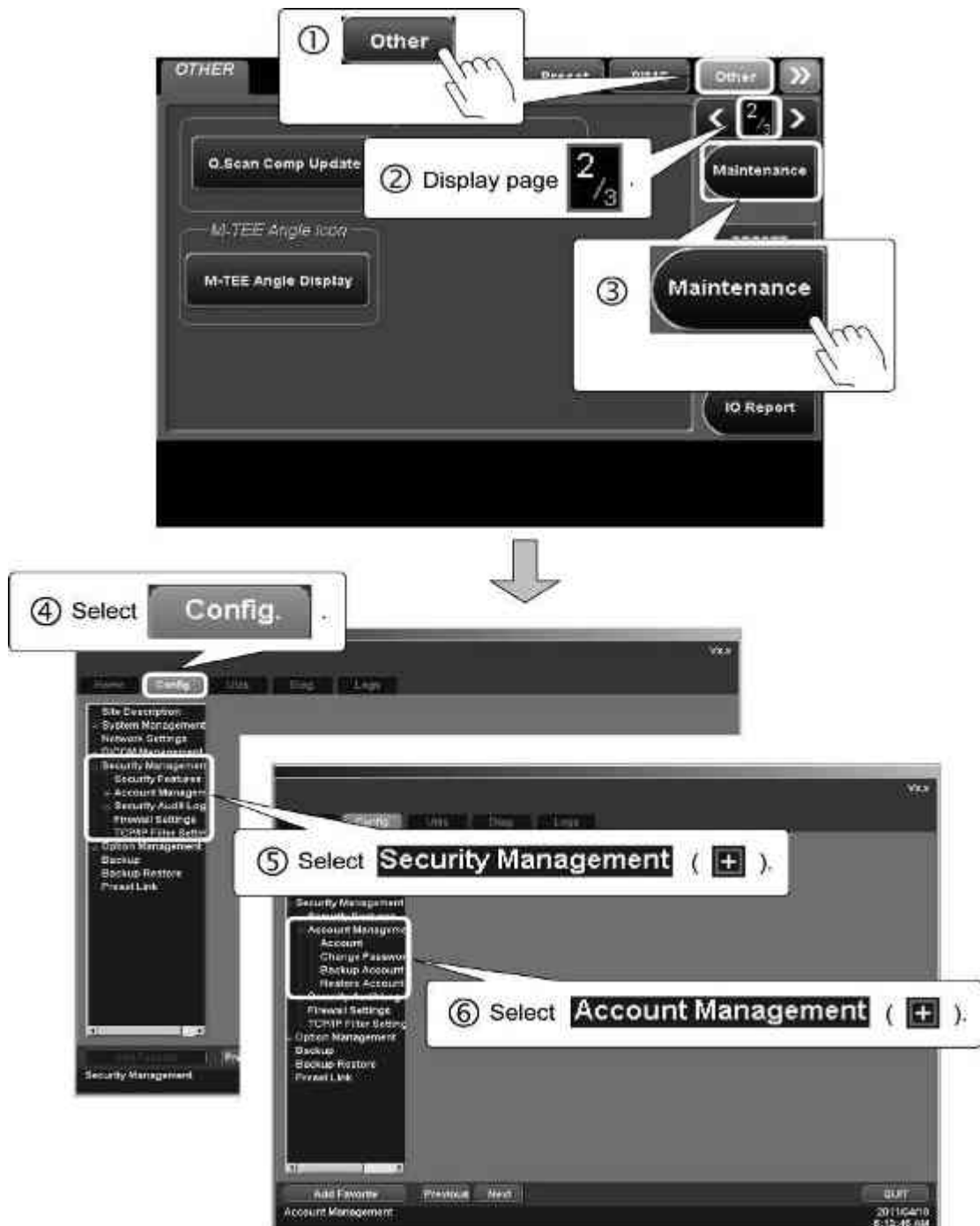
#### NOTE

1. The function assigned to **F4** can be changed in User Function.  
Contact your Canon Medical Systems service representative for details.
2. Save the necessary data and log off before leaving the system.

### 17.6.4 Account management

User accounts can be added, edited, and deleted in order to limit access to the system.

**NOTE** As the initial setting, the account management function can be operated from the maintenance menu after logging in to the system as administrator.



## (1) Account

User accounts can be added, edited, or deleted.



No.	Item	Description
<1>	User Name	Enter the account user name.
<2>	Role	Enter the role to which the account belongs.
<3>	Last Logon	Displays the date and the time of the most recent logon.
<4>	Locked	Used to set account lock after xx consecutive failed logon attempts.
<5>	Disabled	Displays whether account settings are enabled or disabled.
<6>	<b>Add...</b>	Used to add an account.
<7>	<b>Edit...</b>	Enables editing of the account selected in the list.
<8>	<b>Remove</b>	Used to delete the account selected in the list.
<9>	<b>Change Password...</b>	Displays the password change screen for the account selected in the list.
<10>	<b>Refresh</b>	Used for updating the list.
<11>	<b>Enable</b>	Enables the selected account.
<12>	<b>Disable</b>	Disables the selected account.
<13>	<b>Unlock</b>	Releases the account lock.





- 
- NOTE
1. The user name that was used to log in to the system cannot be deleted.
  2. When entering characters from the keyboard, enter uppercase character and lowercase characters correctly.
  3. User names must contain 1 to 127 characters. Letters from A to Z, numbers from 0 to 9, and the symbols "-" and "\_" can be used.
  4. Passwords must contain 8 to 255 characters, including at least one symbol. Letters from A to Z, numbers from 0 to 9, and all symbols on the keyboard can be used.
  5. An appropriate role should be selected.
  6. A user management function that deactivates accounts that have not been logged on to for a specified period of time can be enabled (factory setting: OFF; refer to subsection 17.6.5 for details). Note that accounts that are deactivated by this function cannot be reactivated. If necessary, create new accounts for the affected users.
    - \* The system administrator should log on to the system periodically to prevent deactivation of the system administrator account. If the system administrator account has been deactivated, contact your Canon Medical Systems service representative.
-

## (2) Change Password (Current)

The password for the account that was used to log in to the system can be changed.



No.	Item	Description
<1>	User Name	Enter the user name (current account).
<2>	Old Password	Enter the current password.
<3>	New Password	Enter the new password.
<4>	Confirm Password	Enter the new password again.
<5>		Changing the password
<6>		Resets the entries.

(3) Backup Account

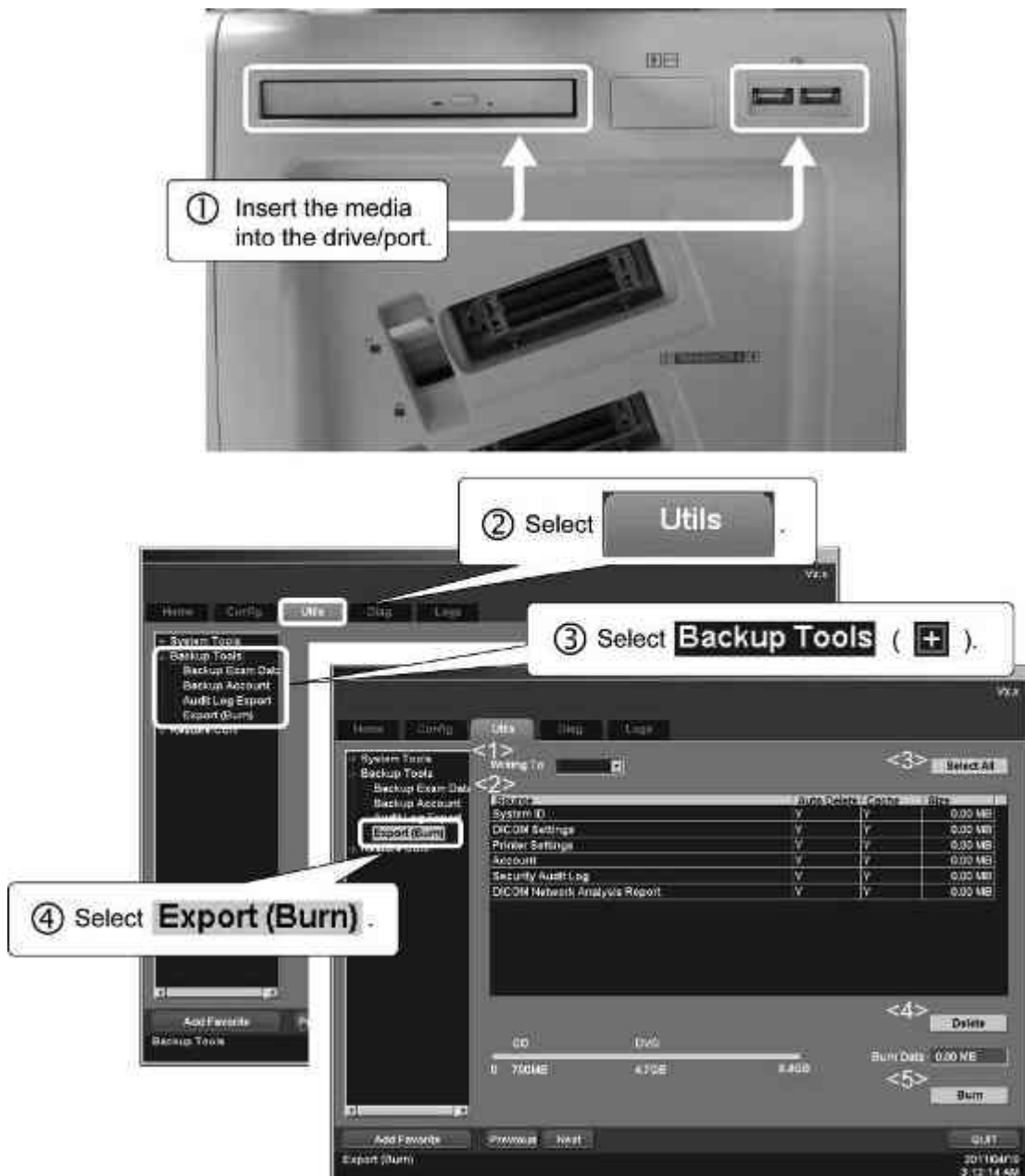
Registered accounts can be backed up.

(a) Creating an account backup file



No.	Item	Description
<1>	Media	Select the backup destination. (The free space available on the media is displayed.)
<2>	Folder	The destination folder is displayed. * The folder can be changed from the keyboard or by using <b>Browse...</b> .
<3>	<b>Start</b>	Starts backup. * The label of this switch changes to [Abort] during backup. Selecting [Abort] discontinues backup.

(b) Exporting an account backup file to external media.



No.	Item	Description
<1>	Writing To	Select the media.
<2>	Source	The datasets that can be exported are listed.
<3>	<b>Select All</b>	Selects all the datasets.
<4>	<b>Delete</b>	Deletes the datasets selected in the list.
<5>	<b>Burn</b>	Exports the datasets selected in the list.

(4) Restore Account

User account data stored on external media can be restored to the system.



No.	Item	Description
<1>	Media	Select the media.
<2>	Folder	The folder name is displayed. * The folder can be changed from the keyboard or by using <b>Browse...</b> .
<3>	<b>Start</b>	Starts restoration. * The label of this switch changes to [Abort] during restoration. Selecting [Abort] discontinues restoration.

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NOTE      After restoring an account, reboot the system.

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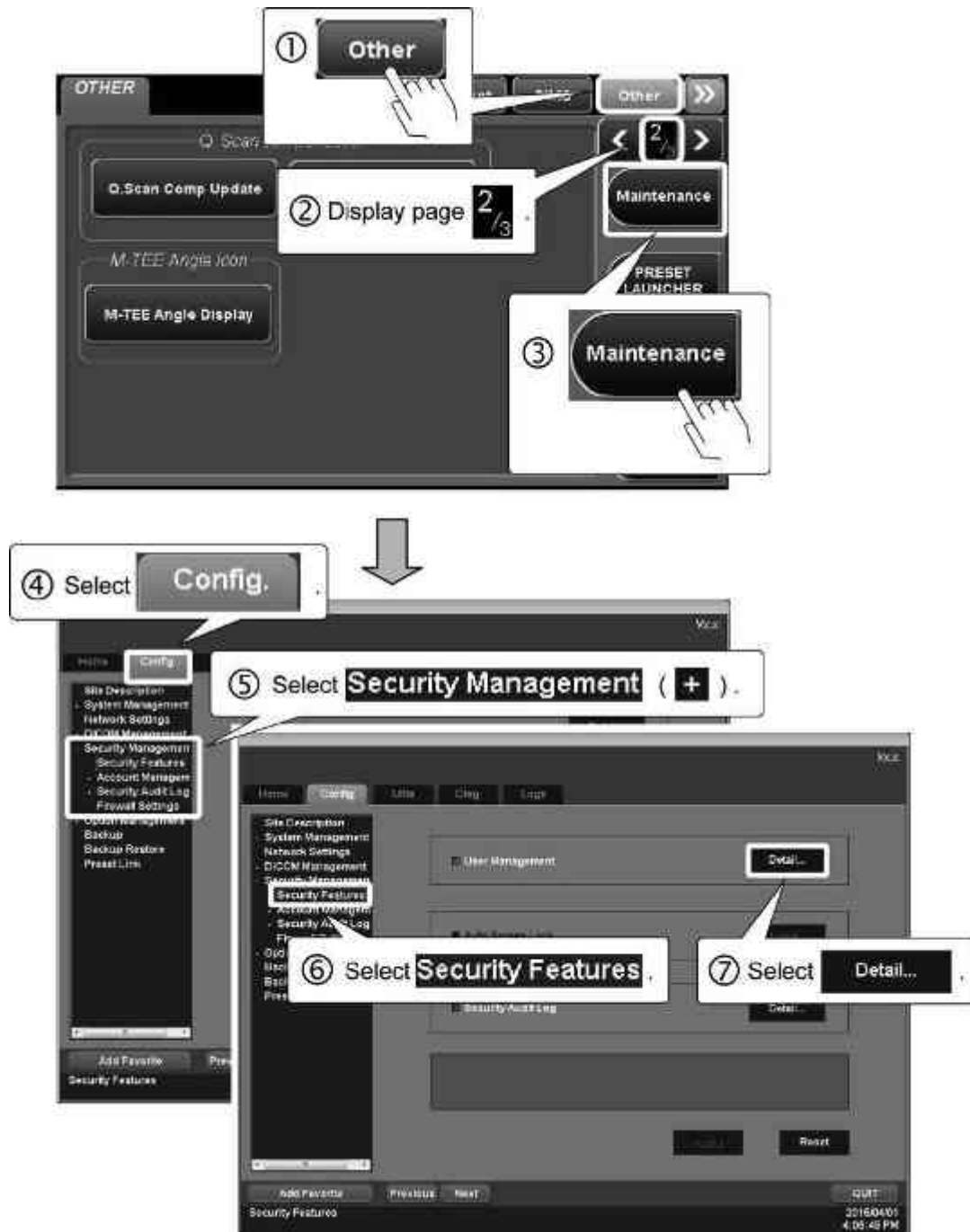
### 17.6.5 User management

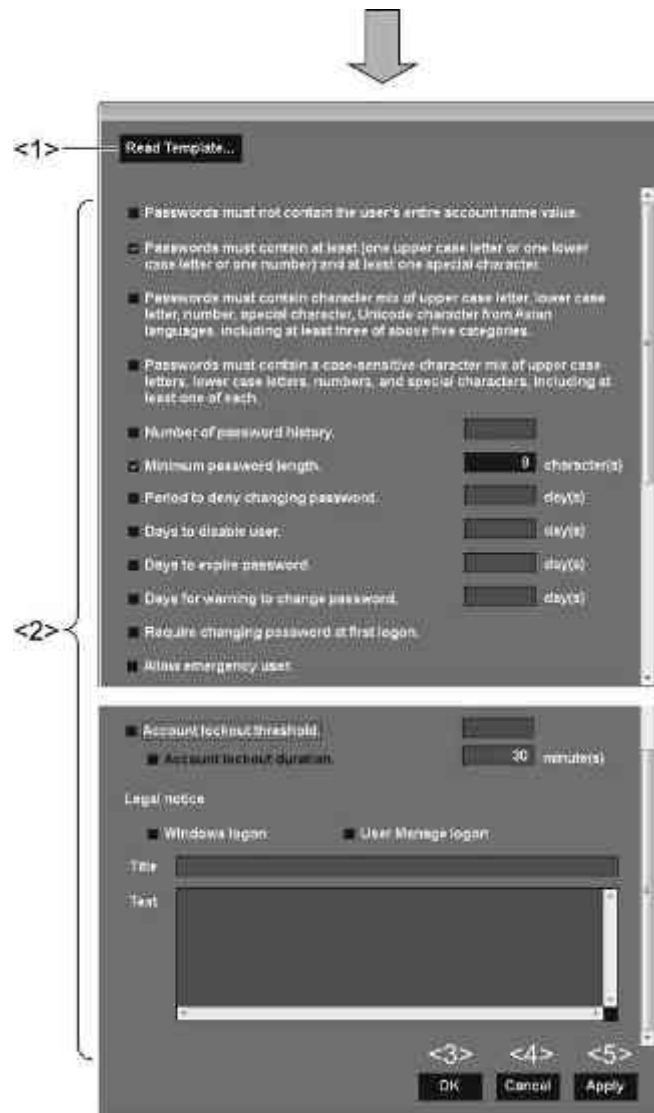
Detailed setting related to user management such as the message to be displayed on the login screen and the rules for the password used for the account can be performed.

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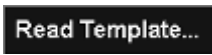
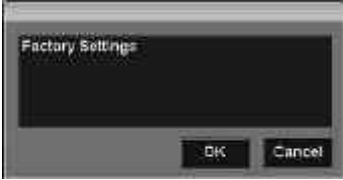
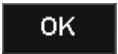


NOTE      As the initial setting, the user management function can be operated from the maintenance menu after logging in to the system as administrator.

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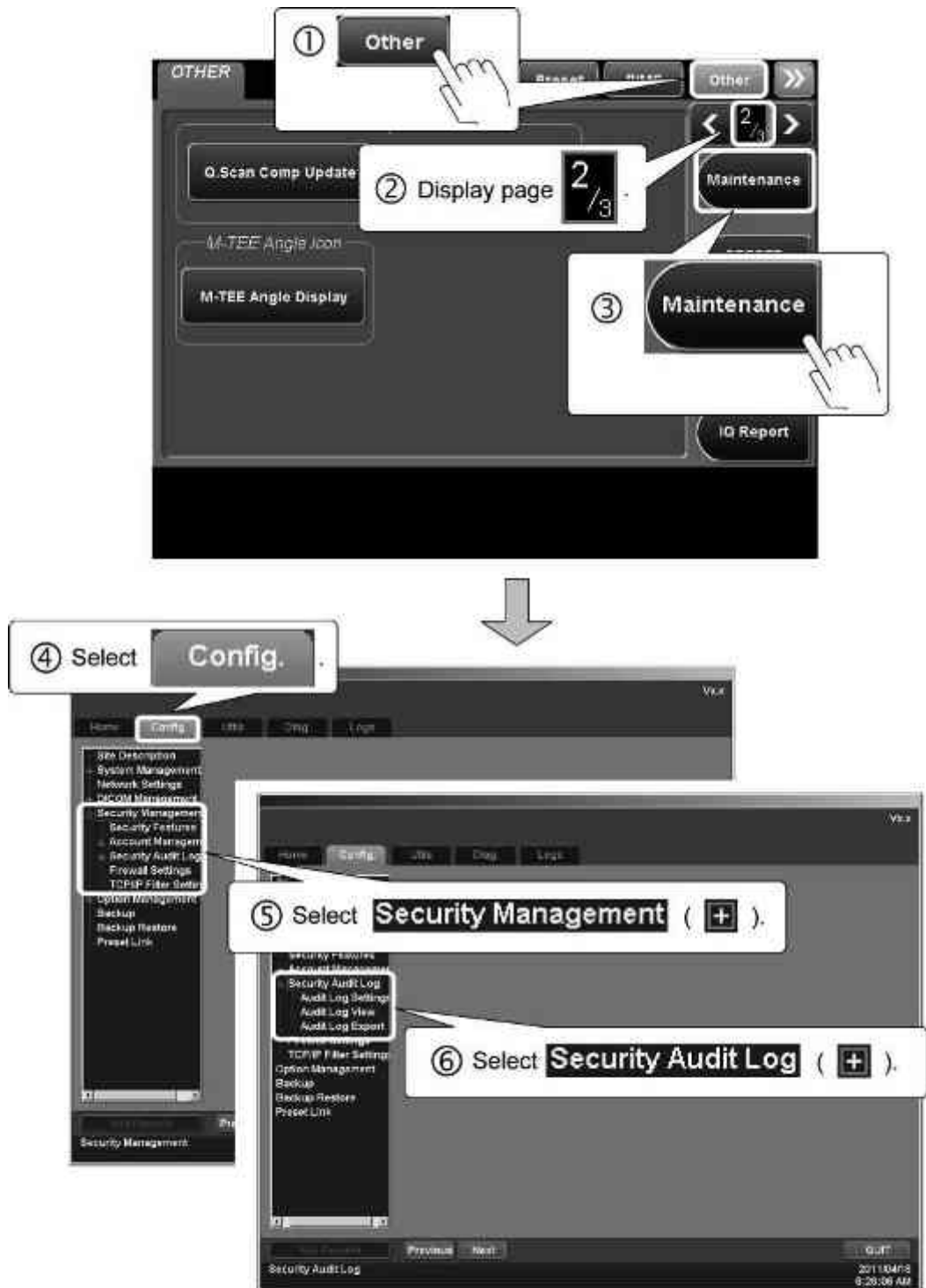


No.	Item	Description
<1>		Used to select the text message to be displayed on the login screen.  
<2>	Details of password	Used to select the checkbox for the applicable item.  <hr/> <p>NOTE      Contact your Canon Medical Systems service representative for details of each item.</p> <p>* Note that setting is not possible for "Allow emergency user."</p> <hr/>
<3>		Used to complete setting and close the screen.
<4>		Used to cancel the entered contents and close the screen.
<5>		Used to apply the entered contents.

### 17.6.6 Audit log tool

This tool is used to save audit logs, display them, output them to external media, and delete them.

- 
- NOTE
1. As audit logs contain personal information, they should be handled with the same care that applies to image files.
  2. As the initial setting, the audit log tool can be operated using the maintenance menu after logging in to the system as administrator.
-





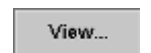

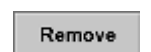
## (1) Audit Log Settings

Settings related to the audit log can be made on this screen.

**NOTE** Back up the audit logs periodically using the Export function or delete them periodically using the Delete function. If the disk becomes full, subsequent operations cannot be recorded in a log.




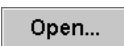



No.	Item	Description
<1>	Local Disk Disk Space	The free space in the audit log storage area is displayed.
<2>	Active Log Log File	The free space in the working audit log file is displayed.  * Select <b>Create Backup File</b> to convert the working audit log file to a backup audit log file.
<3>	Backup Files	The backup audit log files are listed. Protected : Protected files File Name : The file name is displayed. Size : The file size is displayed.
<4>	<b>All</b>	Displays all files.
<5>	<b>Protected</b>	Displays protected files only.

No.	Item	Description
<6>		Displays only files that are not protected.
<7>		Selects all files.
<8>		Displays the Security Audit Log View screen.
<9>		Exports the audit log.
<10>		Deletes the selected files.
<11>	Size Area	<p>Selected : The number of selected files and the total size of the selected files are displayed.</p> <p>Total : The total number of files and the total size of the files are displayed.</p> <p>Max : The maximum number of files is displayed.</p>

## (2) Audit Log View

The audit log is displayed.



No.	Item	Description
<1>	Event List	<p>The events recorded in the file are listed.</p> <p>Date and Time : The date and time are displayed.</p> <p>Audit Message : The message type is displayed.</p> <p>Object Action : The action is displayed.</p> <p>User Name : The user name is displayed.</p> <p>Host Name : The host name is displayed.</p> <p>* Move the cursor to the desired event and press  twice to display the details of the event.</p>
<2>		Displays the audit log selection screen.
<3>		Updates the file list.
<4>	Search	Use the arrow keys to search for the desired file.
<5>		Used to set the search conditions.
<6>		Resets the filter settings.

(3) Audit Log Export

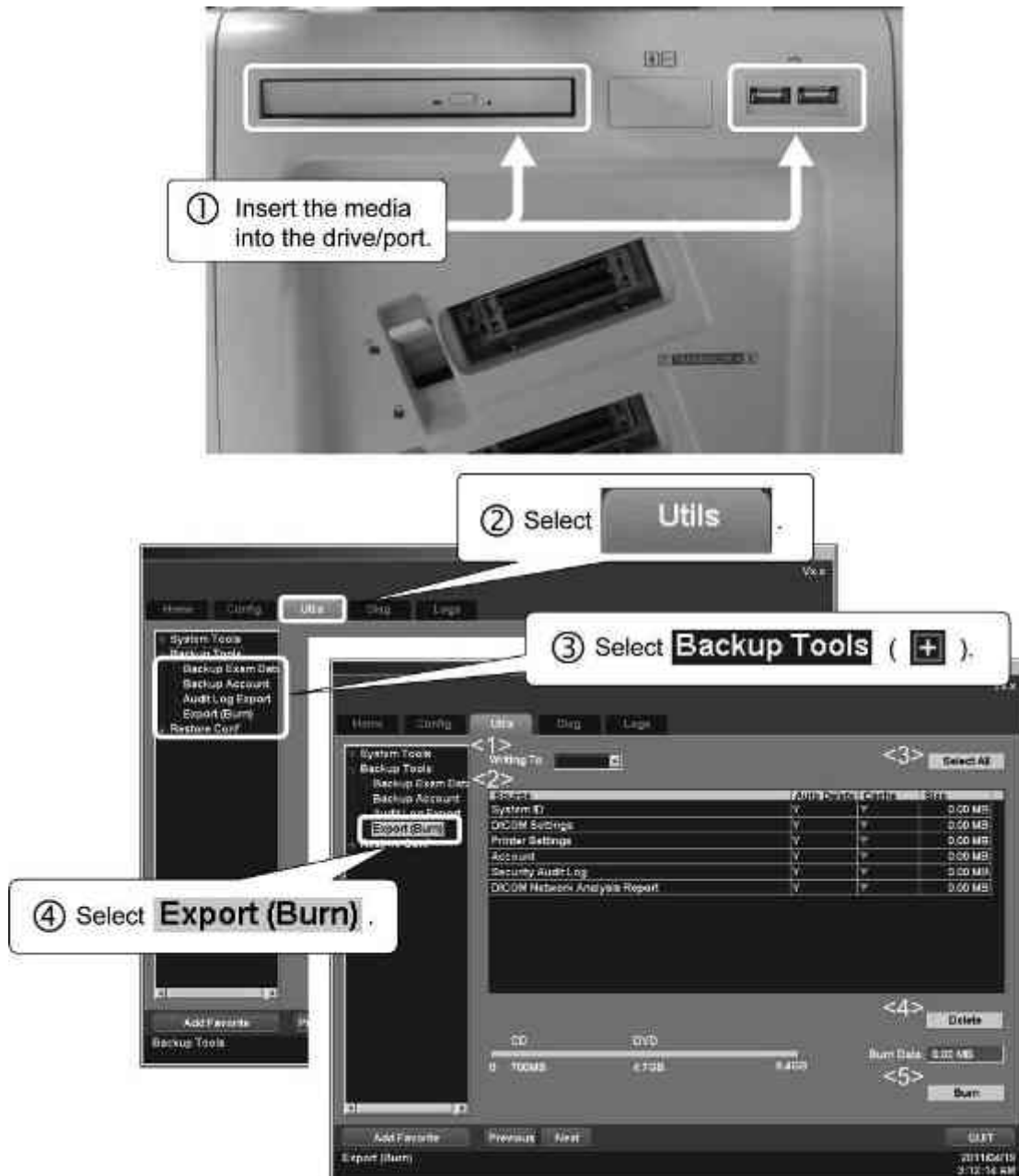
The audit logs can be backed up.

(a) Creating an audit log backup file



No.	Item	Description
<1>	Files for Export	The number of files to be exported and the total size of the files are displayed.
<2>	Destination	The destination is displayed. * Select <input type="button" value="Check"/> to display the free space in the destination.
<3>	<input type="button" value="Start"/>	Starts backup. * The label of this switch changes to [Abort] during backup. Selecting [Abort] discontinues backup.

## (b) Exporting an audit log file to external media



No.	Item	Description
<1>	Writing To	Select the media.
<2>	Source	The datasets that can be exported are listed.
<3>	<b>Select All</b>	Selects all the datasets.
<4>	<b>Delete</b>	Deletes the datasets selected in the list.
<5>	<b>Burn</b>	Exports the datasets selected in the list.





# 18.

## Presets

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**NOTE** When you wish to change an application preset, confirm that the application preset is displayed on the screen.  
Only changes to the displayed application preset can be saved.

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## 18.1 Outline of Presets

Presets include System Presets and Exam Presets.

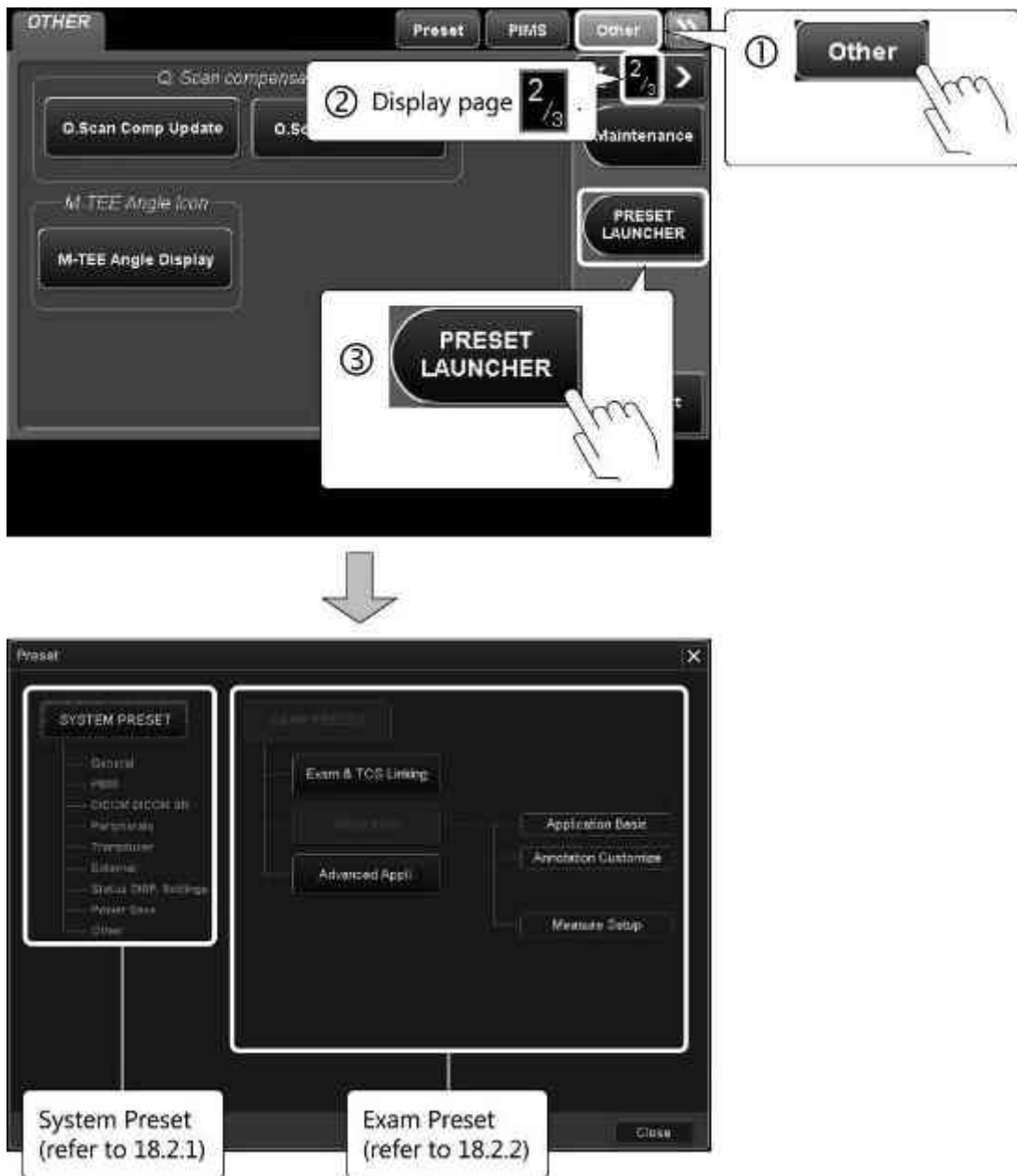
The presets can be changed according to the intended use.




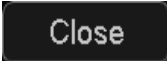
\* Reboot the system after a change is made to the system presets.

Presets	Item	Description
SYSTEM PRESET	General	Setting of date/time format, units for height and weight, and trackball sensitivity
	PIMS	Setting of the Patient Registration screen
	DICOM DICOM SR	Setting of the DICOM functions and Worksheet screen
	Peripheral	Setting of the VCR, printer, and server
	Transducer	Setting of the TEE transducer
	External	Setting of the card reader
	Status DISP. Settings	Setting of the status display icon
	Power Save	Setting of the power saving mode during battery-powered operation
	Other	Setting of transducer-related parameters

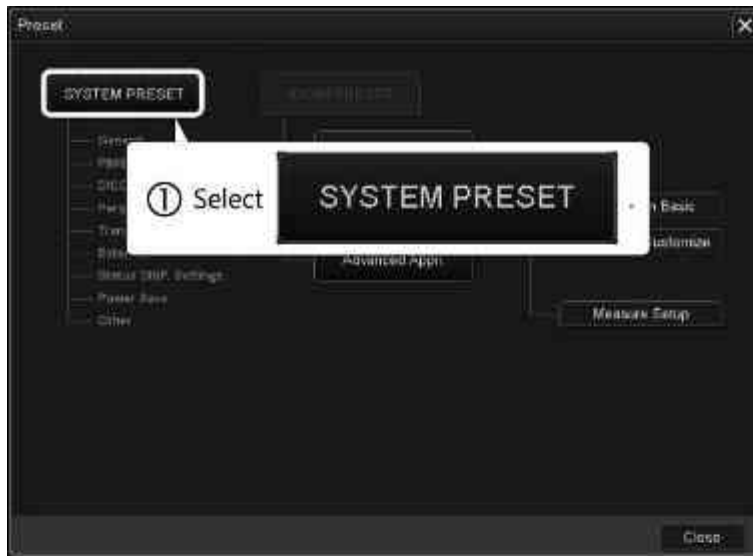
Presets	Item	Description
EXAM PRESET	Exam & TCS Linking	Setting of the items (transducer, imaging preset, application preset, and measurement preset) to be displayed automatically for the exam type selected on the Patient Registration screen
	Application <ul style="list-style-type: none"> <li>• Application Basic</li> <li>• Annotation Customize</li> <li>• Measure Setup</li> </ul>	Setting of measurement-related parameters, editing of the annotation menu, etc.
	Advanced Appli.	Setting of advanced application parameters

## 18.2 Operations on the Preset Screen



Switches common to all pages of the preset screen	Function
 A rectangular button with a dotted border and the word "Default" in the center.	Restores the default settings.
 A solid black rectangular button with the word "Save" in white.	Saves the changes.
 A solid black rectangular button with a white arrow pointing up and to the right, followed by the word "Close" in white.	Abandons the changes.
 A solid black rectangular button with the word "Close" in white.	Closes the Preset screen.

### 18.2.1 Changing a System Preset



## (1) General tab




Item	Description
System Location	Enter the hospital address etc.
Date	The date is displayed (the displayed date cannot be changed).
Time	Set the time.
Height	Select the unit for height used on the Patient Registration screen. <ul style="list-style-type: none"> <li>• cm</li> <li>• in</li> </ul>
Weight	Select the unit for weight used on the Patient Registration screen. <ul style="list-style-type: none"> <li>• kg</li> <li>• lb</li> </ul>
Date Format	Select the date format to be displayed in the ID area.
Time Format	Select the time format to be displayed in the ID area.
Trackball Sensitivity	Set the trackball sensitivity.
Brightness	Brightness of LED (blue) that lights next to foot while AC power is supplied.



## (2) PIMS tab

## (a) BASIC tab



Item	Description
Operation Of New Patient Button	<p>System operation when  is pressed</p> <ul style="list-style-type: none"> <li>• END EXAM : Terminates the exam and displays the Patient Registration screen.</li> <li>• without END EXAM : Displays the Patient Registration screen and the touch panel [End Exam] menu without terminating the exam.</li> </ul>
Auto Screen Capture at starting exam	<p>Function to automatically save the Patient Registration screen when an examination is started</p> <ul style="list-style-type: none"> <li>• On</li> <li>• Off</li> </ul>

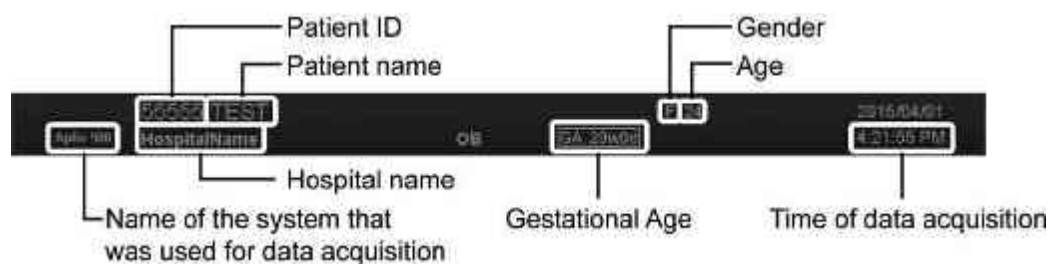
Item	Description
Annotation on Thumbnail	Comment on thumbnails <ul style="list-style-type: none"> <li>• On</li> <li>• Off</li> </ul>
Patient information display	Selection of the items that are not displayed when [Hide Patient Info] in the PIMS menu on the touch panel is pressed <ul style="list-style-type: none"> <li>• ID : Patient ID</li> <li>• Name : Patient name</li> <li>• Gender : Patient gender</li> <li>• Age : Patient age</li> <li>• Model Name : Name of the system that was used for data acquisition</li> <li>• Time : Time of data acquisition</li> <li>• Hospital Name : Hospital name</li> <li>• GA : Gestational Age <sup>*1</sup></li> </ul>
Patient information display position	Selection of the position for display of the patient ID, name, gender, and age <ul style="list-style-type: none"> <li>• Inside Imaging area : The patient information is displayed on the patient banner.</li> <li>• Outside : The patient information is displayed outside the patient banner (in the status area above the patient banner).</li> </ul>

Item	Description
Japanese Calendar	<p>Setting of the initial letter and the start date of the Japanese era <sup>*2</sup></p> <ul style="list-style-type: none"> <li>Initial : Setting for the initial letter of the Japanese era. M (Meiji), T (Taisho), S (Showa), or H (Heisei) Select an initial using the pulldown menu. If no initial letter is registered, the setting for the row is invalid.</li> </ul> <p>The setting cannot be edited for current/previous eras that are already specified (Meiji, Taisho, Showa, and Heisei).</p> <ul style="list-style-type: none"> <li>Year/Month/Day : Setting for the start year, month, and day of a new era</li> <li>[Add] : Addition of a new row.</li> </ul> <p>* Even if [Default] is pressed, there is no effect on the Japanese calendar settings.</p>







\* 1: Displayed for obstetrical (OB) measurements only.

\* 2: This item is used to convert the Japanese calendar year to the Western calendar year when the birth date of a patient is registered.

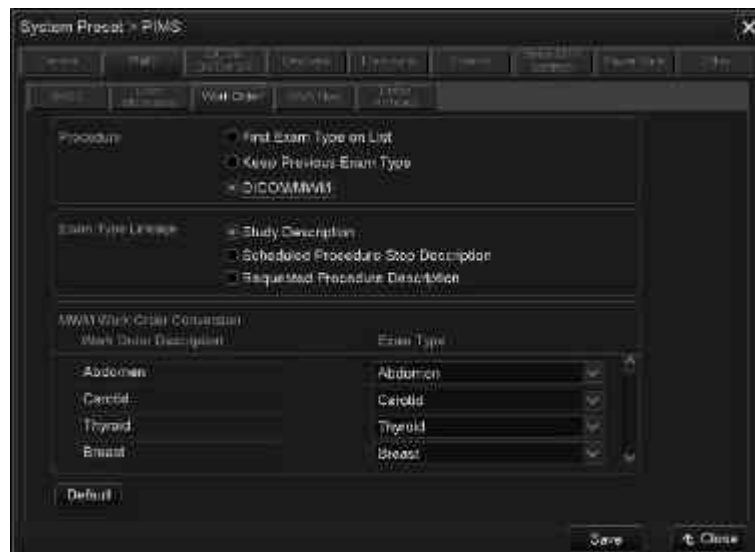
NOTE Patient banner and patient information item display positions





Item		Description
Emergency ID	ID Suffix	<p>Special character string to be added at the end of the ID for emergency patients</p> <ul style="list-style-type: none"> <li>• Unique character string : Arbitrary characters can be entered.</li> <li>• Arbitrary character string : Arbitrary characters can be entered.</li> </ul>
	NAME Suffix	<p>A special character string to be added at the end of the name for emergency patients</p> <ul style="list-style-type: none"> <li>• Unique character string : Arbitrary characters can be entered.</li> <li>• Arbitrary character string : Arbitrary characters can be entered.</li> </ul>
Select the Exam Type that you want to use for Exam		<p>Setting of the exam types to be displayed in the pull-down menu for Exam Type on the Patient Registration screen</p> <ul style="list-style-type: none"> <li>• All Exam Type : A list of all exam types is displayed in this area.</li> <li>• Select Exam Type : The exam types to be displayed in the Exam Type pull-down menu on the Patient Registration screen are displayed in this area.</li> <li>•  : The exam types selected in the All Exam Type area are added to the Selected Exam Type area.</li> <li>•  : All the exam types in the All Exam Type area are added to the Selected Exam Type area.</li> <li>•  : The exam types selected in the Selected Exam Type area are removed.</li> <li>•  : All the exam types in the Selected Exam Type area are removed.</li> <li>•  ,  : The selected exam type is moved upward or downward.</li> </ul>

## (c) Work Order tab



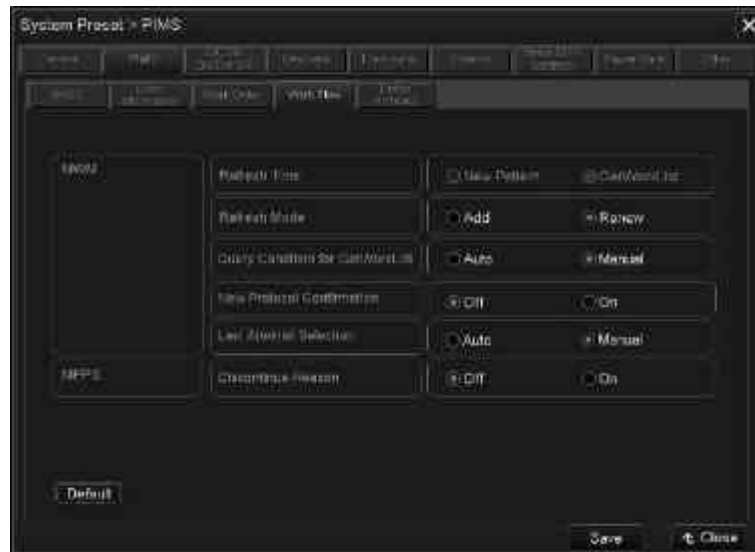
Item	Description
Procedure	<p>Display of the Exam Type field when the Patient Registration screen is started</p> <ul style="list-style-type: none"> <li>• First Exam Type on List : Exam type displayed at the top of the Selected Exam Type area<sup>*1</sup></li> <li>• Keep Previous Exam Type : Exam type used for the last examination</li> <li>• DICOM/MWM : Exam type set in the DICOM work list</li> </ul>
Exam Type Linkage <sup>*2</sup>	<p>The value for the selected DICOM information is set.</p> <ul style="list-style-type: none"> <li>• Study Description</li> <li>• Scheduled Procedure Step Description</li> <li>• Requested Procedure Description</li> </ul>
MWM Work Order Conversion <sup>*2, *3</sup>	<p>The DICOM information is linked to the Exam Type.</p>




- \*1: Select SYSTEM PRESET → [PIMS] tab → [Exam Information] tab to access the Selected Exam Type area.
- \*2: This parameter is effective when DICOM/MWM is selected for "Procedure".
- \*3: If the exam type to be displayed for "Exam Type" on the Patient Registration screen (the exam type selected in "Select the Exam Type that you want to use for Exam" on the [Exam Information] tab under the [PIMS] tab in the System Preset menu) has been changed and the exam type linked to the changed exam type is set to be hidden, nothing is displayed in the Exam Type field on the Patient Registration screen.

Example :   Work Order Conversion   Exam Type  
                  Echo1                            Adult Heart

→ If Adult Heart is set to be hidden, nothing is displayed in the Exam Type field when the Echo1 examination is received in the MWM Work Order.


## (d) Work Flow tab



Item		Description
MWM	Refresh Time	<p>Timing for updating the examination schedule</p> <ul style="list-style-type: none"> <li>• New Patient : The examination schedule is acquired when  or  is pressed.</li> <li>• GetWorkList : The examination schedule is acquired when the cursor is placed on [GetWorkList] and  is then pressed.</li> </ul>

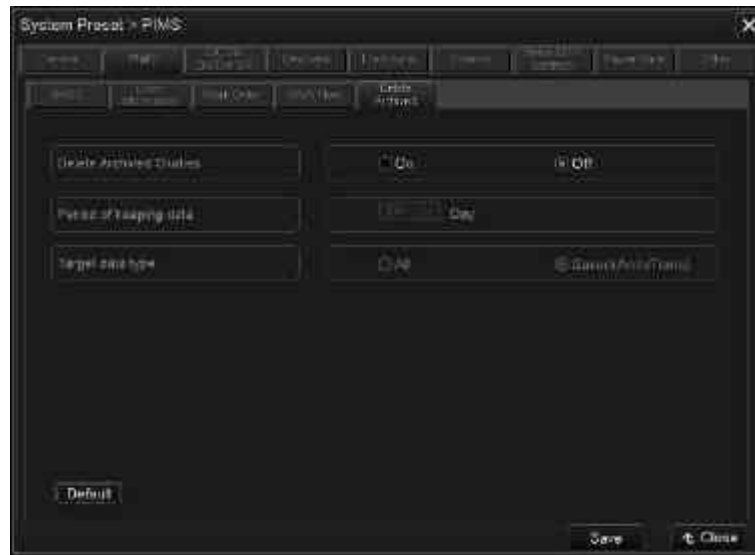


Item		Description
MWM	Refresh Mode	<p>Examination schedule updating mode</p> <ul style="list-style-type: none"> <li>• Add : The new items in the examination schedule are added to the examination schedule stored in the system.</li> <li>* The schedule information in the system is cleared when the system is shut down.</li> <li>• Renew : The schedule information stored in the system is cleared and the new examination schedule is acquired from the HIS/RIS server.</li> <li>* The schedule information remains in the system even after the system is shut down. (This option is recommended if the system is frequently used in rooms where no network connection is available.)</li> </ul>
	Query Condition for GetWorkList *1	<p>Query conditions</p> <ul style="list-style-type: none"> <li>• Auto : The schedule information is searched for with the following conditions and acquired from the HIS/RIS server. <ul style="list-style-type: none"> <li>• Exam date : Today</li> <li>• System name : Name of this system</li> <li>• Modality : US</li> </ul> </li> <li>• Manual : The Query screen is displayed. (The schedule information is searched for with the specified conditions and acquired from the HIS/RIS server.)</li> </ul>
	New Protocol Confirmation	<p>Display of the confirmation screen when the examination schedule is updated</p> <ul style="list-style-type: none"> <li>• Off : The confirmation screen for the new schedule is not displayed.</li> <li>• On : The confirmation screen is displayed.</li> </ul>

Item		Description
MWM	Last Worklist Selection	<p>Sets the display method in order to select whether or not to display the last examination remaining in the acquired examination schedule in the Patient Registration Screen.</p> <ul style="list-style-type: none"> <li>• Auto: Displays automatically.</li> <li>• Manual: Displays only when the cursor is placed on the relevant examination from the acquired examination schedule list and  is pressed.</li> </ul>
MPPS	Discontinue Reason	<p>Display of the screen for selecting the reason for discontinuing the examination when [Discontinue] in the End Exam menu on the touch panel is pressed.</p> <ul style="list-style-type: none"> <li>• Off</li> <li>• On</li> </ul>

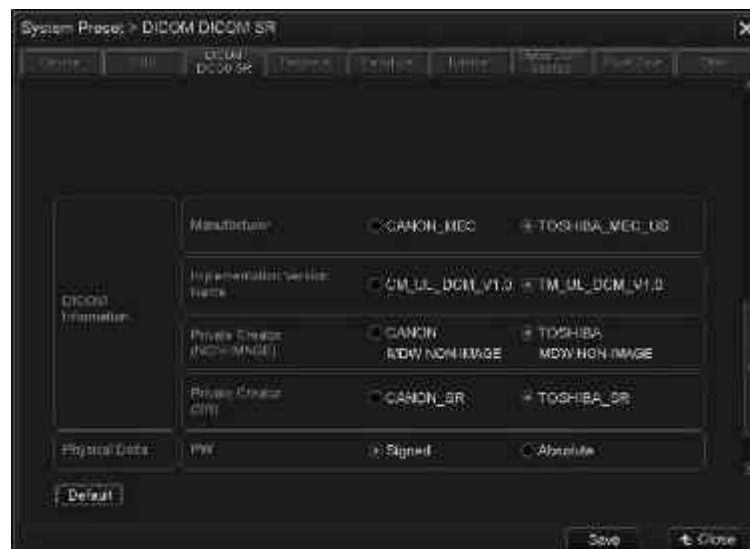
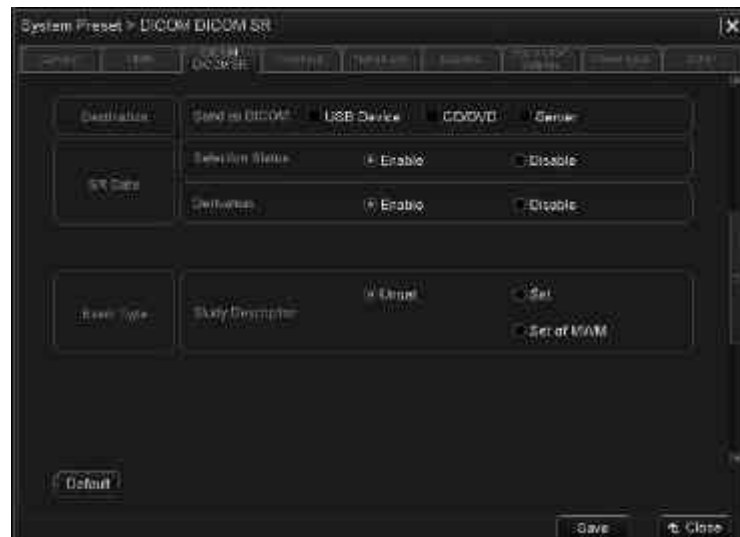
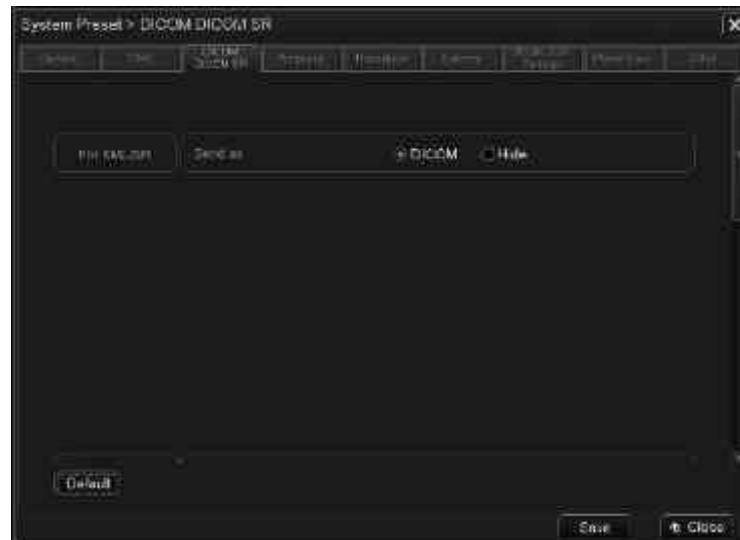
\*1: This item must be set according to the operating method of the HIS/RIS server. Before changing the setting, contact your Canon Medical Systems service representative.

## (e) Delete Archived tab



Item	Description
Delete Archived Studies	<p>Function for deleting the exam data in the HDD</p> <ul style="list-style-type: none"> <li>On</li> <li>* [Delete Archived] is displayed on the Tools tab of the Patient Browser screen.</li> <li>Off</li> </ul>
Period of keeping data	<p>Exam data retention period</p> <ul style="list-style-type: none"> <li>* 1, 7, 14, 35, 183, 300, or 366 days can be selected.</li> <li>* The exam data that was previously recorded on the day of the examination and the data for the specified retention period are retained. The exam data that was recorded before the specified period is displayed in the delete list.</li> <li>* 24 hours after the examination counts as 1 day.</li> </ul>
Target data type	<p>Exam types to be displayed on the Delete Archived screen</p> <ul style="list-style-type: none"> <li>All : All exams</li> <li>Saved (Arch/Trans) : Exams that have been archived on CD/DVD media or transferred to the server</li> </ul> <p>* An exam containing no data is displayed in the delete list whichever type is selected.</p>

## (3) DICOM DICOM SR tab



Item		Description														
For XML/SR	Send as	Specify whether or not to display the [Send as DICOM] switch on the Worksheet screen. <ul style="list-style-type: none"> <li>• DICOM <sup>*1</sup> : The [Send as DICOM] switch is displayed.</li> <li>• Hide : The [Send as DICOM] switch is not displayed.</li> </ul>														
Destination	Send as DICOM	The data export destination can be added. <ul style="list-style-type: none"> <li>• USB Device</li> <li>• CD/DVD</li> <li>• Server</li> </ul>														
SR Data <sup>*2</sup>	Selection Status	Select whether the central value information (Last/Ave/Max/Min) is exported to the DICOM server. <ul style="list-style-type: none"> <li>• Enable : Exported</li> <li>• Disable : Not exported</li> </ul>														
	Derivation	<table border="1"> <thead> <tr> <th>Central value</th> <th>Selection Status</th> <th>Derivation</th> </tr> </thead> <tbody> <tr> <td>Last</td> <td>Most recent value chosen</td> <td>-</td> </tr> <tr> <td>Ave</td> <td>Mean value chosen</td> <td>Mean</td> </tr> <tr> <td>Max</td> <td>User chosen value</td> <td>Maximum</td> </tr> <tr> <td>Min</td> <td>User chosen value</td> <td>Minimum</td> </tr> </tbody> </table>	Central value	Selection Status	Derivation	Last	Most recent value chosen	-	Ave	Mean value chosen	Mean	Max	User chosen value	Maximum	Min	User chosen value
Central value	Selection Status	Derivation														
Last	Most recent value chosen	-														
Ave	Mean value chosen	Mean														
Max	User chosen value	Maximum														
Min	User chosen value	Minimum														
Exam Type	Study Description	Specify whether or not to include the Exam Type information in Study Description. <ul style="list-style-type: none"> <li>• Unset : Exam Type information is not included.</li> <li>• Set : Exam Type information is included.</li> <li>• Set of MWM : Exam Type information obtained using MWM is included.</li> </ul>														

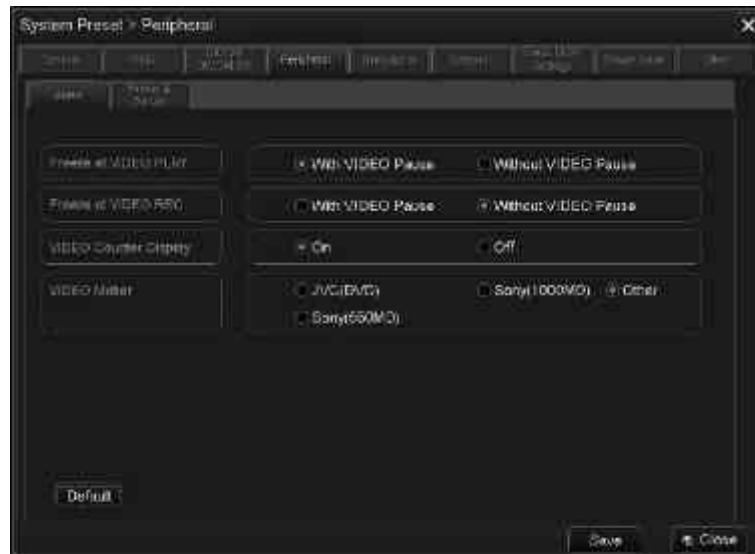
Item		Description
DICOM Information	Manufacturer	Set manufacturer name in DICOM Tag information.
	Implementation Version Name	(0008, 0070) Manufacturer <ul style="list-style-type: none"> <li>• CANON_MEC</li> </ul>
	Private Creator (NON-IMAGE)	<ul style="list-style-type: none"> <li>• TOSHIBA_MEC_US</li> </ul>
	Private Creator (SR)	(0002, 0013) Implementation Version Name <ul style="list-style-type: none"> <li>• CM_UL_DCM_V1.0</li> <li>• TM_UL_DCM_V1.0</li> </ul> (0029, 0010) Private Creator (NON-IMAGE) <ul style="list-style-type: none"> <li>• CANON MDW NON-IMAGE</li> <li>• TOSHIBA MDW NON-IMAGE</li> </ul> (7015, 0010) Private Creator (SR) <ul style="list-style-type: none"> <li>• CANON_SR</li> <li>• TOSHIBA_SR</li> </ul>
Physical Delta	PW	Output "(0018, 6011) Sequence of Ultrasound Regions >(0018, 602E) Physical Delta Y" according to the setting value of Doppler REVERSE. <ul style="list-style-type: none"> <li>• Signed: Output in signed value.</li> <li>• Absolute: Output in absolute value.</li> </ul>



\*1: The results of application measurements and user-programmed measurements are stored in the DICOM format (Structured Report). Contact your Canon Medical Systems service representative for the procedure for changing the DICOM identifier of Structured Reports.

\*2: If some measurement values are not displayed in the external report server with the "enable" setting, change the setting to "disable".

## (4) Peripheral tab

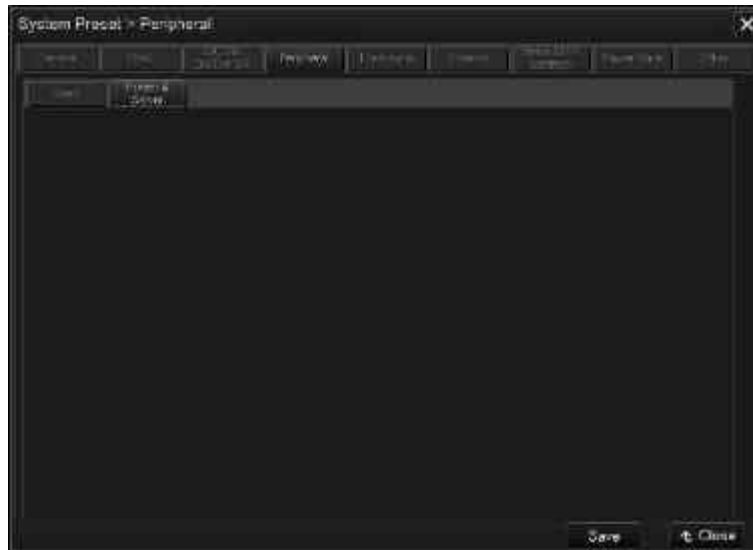
## (a) VIDEO tab



Item	Description
Freeze at VIDEO PLAY	<p>Operation when  is pressed during video playback</p> <ul style="list-style-type: none"> <li>• With VIDEO Pause : Playback is paused.</li> <li>• Without VIDEO Pause : Playback is not paused.</li> </ul>
Freeze at VIDEO REC	<p>Operation when  is pressed during video recording</p> <ul style="list-style-type: none"> <li>• With VIDEO Pause : Playback is paused.</li> <li>• Without VIDEO Pause : Playback is not paused.</li> </ul>
VIDEO Counter Display	<p>Display of the video counter</p> <ul style="list-style-type: none"> <li>• On</li> <li>• Off</li> </ul>
VIDEO Maker	<p>Selection of the manufacturer of the video device</p> <ul style="list-style-type: none"> <li>• JVC (DVD) : JVC BD-X201M/ME</li> <li>• Sony (1000MD) : SONY DVO-1000MD</li> <li>• Sony (550MD) : SONY HVO-550MD</li> <li>• Other</li> </ul>

## (b) Printer &amp; Server tab

To change the preset, contact your Canon Medical Systems service representative.

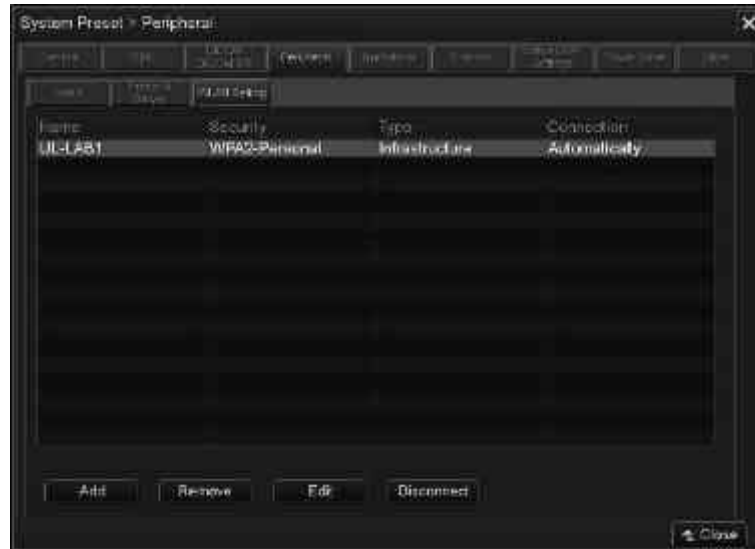




(c) WLAN Setting tab

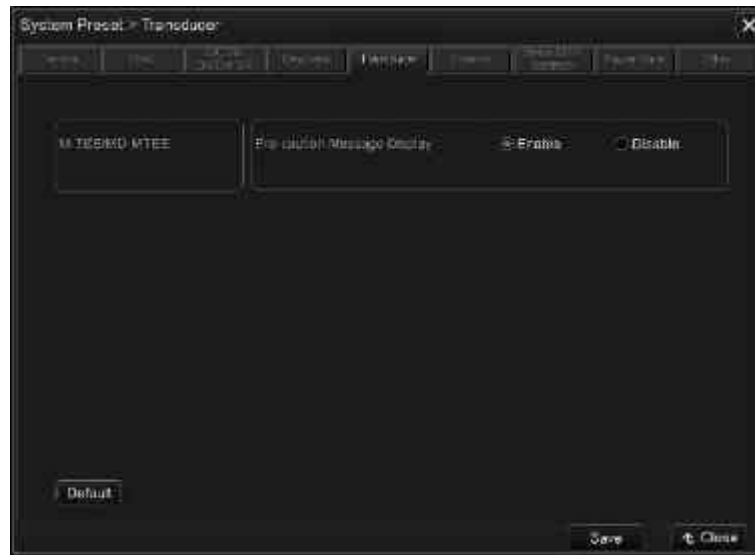
\* This tab is displayed when the optional UIWL-X200A is installed.

**NOTE** Refer to subsection 17.5 for the procedures for updating the certification information.



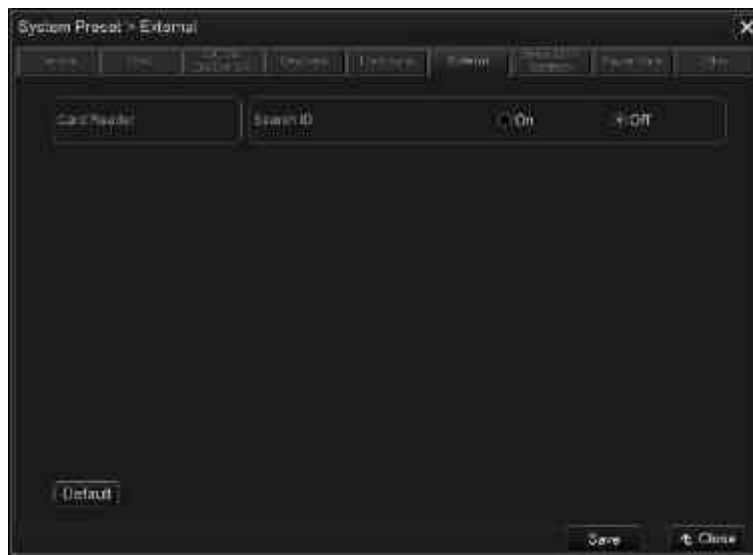
Item	Description
Network information	The details of the currently set wireless network are displayed in this table. <ul style="list-style-type: none"> <li>• Name : Wireless network name</li> <li>• Security : Type of security used</li> <li>• Type : "Infrastructure" only</li> <li>• Connection : "Automatically" for automatic connection</li> </ul>
<b>Edit</b>	Used to change the wireless network settings.
<b>Connect</b>	Used to connect to or disconnect from the wireless network.
<b>Disconnect</b>	

## (5) Transducer tab



Item		Description
MTEE/ MD-MTEE	Pre-caution Message Display	Display of the warning message when the transducer surface temperature exceeds 41°C <ul style="list-style-type: none"> <li>• Enable : The warning message is displayed.</li> <li>• Disable : The warning message is not displayed.</li> </ul>

(6) External tab



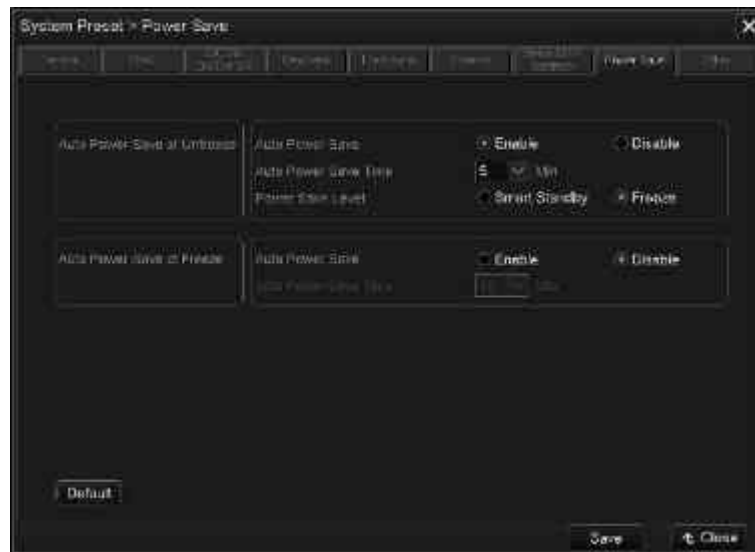
Item		Description
Card Reader	Search ID	Setting of whether or not only data items that match the card reader information should be loaded from the examination schedule acquired using the MWM function. <ul style="list-style-type: none"> <li>• On</li> <li>• Off</li> </ul>

(7) Status DISP. Settings tab

Display of the individual status icons can be toggled ON and OFF.



## (8) Power Save tab



Item		Description
Auto Power Save at Unfreeze	Auto Power Save	Setting of the Auto Power Save mode during freeze OFF status <ul style="list-style-type: none"> <li>• Enable : Auto Power Save mode is turned ON.</li> <li>• Disable : Auto Power Save mode is turned OFF.</li> </ul>
	Auto Power Save Time	Time setting for the system to enter the Auto Power Save mode (1 to 60 minutes)
	Power Save Level	Setting of the status for the Auto Power Save mode <ul style="list-style-type: none"> <li>• Smart Standby</li> <li>• Freeze</li> </ul>
Auto Power Save at Freeze	Auto Power Save	Setting of the Auto Power Save mode during freeze status <ul style="list-style-type: none"> <li>• Enable : Auto Power save mode is turned ON. *1</li> <li>• Disable : Auto Power Save mode is turned OFF.</li> </ul>
	Auto Power Save Time	Time setting for the system to enter the Auto Power Save mode (1 to 60 minutes)

\*1: The system enters the Smart Standby status during Auto Power Save mode.

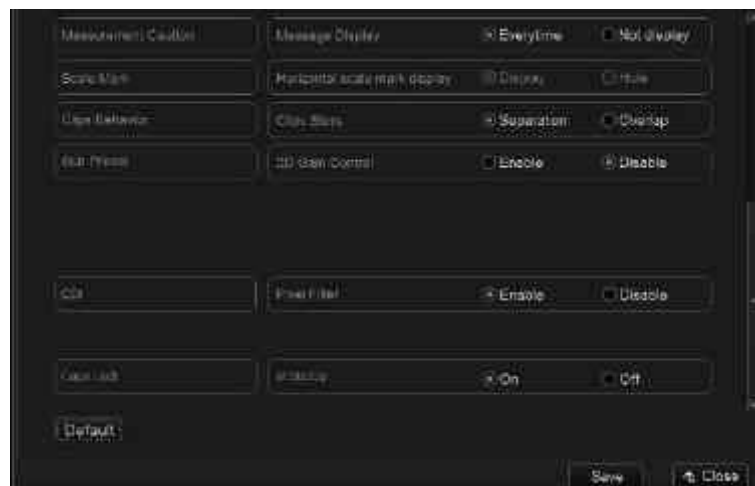
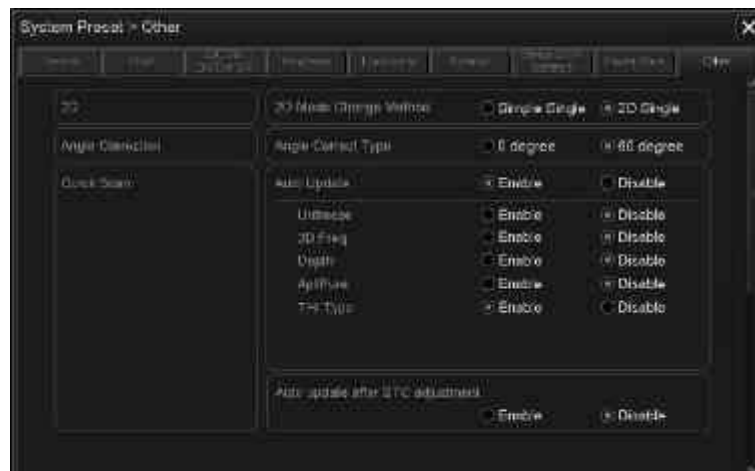
<Note>


In the following statuses, the system does not enter Freeze or Smart Standby mode even when the specified time has elapsed.

×: The system does not enter the indicated mode.

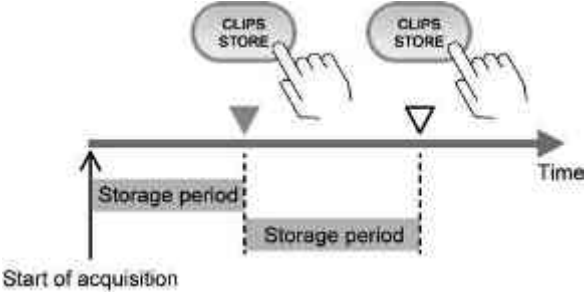
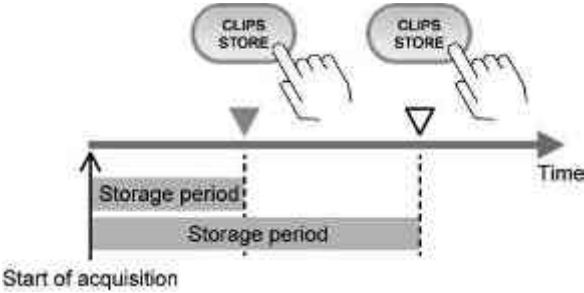
	Freeze	Smart Standby
CHI	×	×
Stress Echo	×	×
BEAM	×	×
Biopsy Guide	×	×
While printing	-	×
While writing to a USB flash drive or CD/DVD	-	×
During Cine image playback	-	×
Exam Review	-	×
Video (playback mode)	-	×
While recording to a DVD	×	×

## (9) Other tab



Item		Description
2D	2D Mode Change Method	Type of 2D mode to be set when  is pressed <ul style="list-style-type: none"> <li>• Simple Single</li> <li>• 2D Single</li> </ul>
Angle Correction	Angle Correct Type	Angle correction value <ul style="list-style-type: none"> <li>• 0 degree</li> <li>• 60 degree</li> </ul>

Item		Description
Quick Scan	Auto Update	<p>Automatic execution of the QuickScan Update function when the setting of the following 2D mode parameters is changed</p> <ul style="list-style-type: none"> <li>• Enable : The QuickScan Update function is automatically executed.</li> <li>• Disable : The QuickScan Update function is not automatically executed.</li> </ul> <p>* "Enable" should be set for each parameter.</p> <ul style="list-style-type: none"> <li>• Unfreeze</li> <li>• 2D Freq.</li> <li>• Depth</li> <li>• ApliPure™</li> <li>• THI Type</li> </ul>
	Auto update after STC adjustment	<p>Automatic update after the STC setting is changed after Quick Scan</p> <ul style="list-style-type: none"> <li>• Enable : Automatic update is performed.</li> <li>• Disable : Automatic update is not performed.</li> </ul>
Measurement Caution	Message Display	<p>Display of the message alerting the user that the accuracy of the measurement results cannot be ensured (for Panoramic View)</p> <ul style="list-style-type: none"> <li>• Every time : The message is displayed for each measurement.</li> <li>• Not display : The message is not displayed.</li> </ul>
Scale Mark *1	Horizontal scale mark display	<p>Display of horizontal scale mark</p> <ul style="list-style-type: none"> <li>• Display : The horizontal scale mark is displayed.</li> <li>• Hide : The horizontal scale mark is not displayed.</li> </ul>

Item		Description
Clips Behavior	Clips Store	<p>Storage period for continuous storage of a dynamic image</p> <ul style="list-style-type: none"> <li>• Separation : Storage periods do not overlap.</li> </ul>  <ul style="list-style-type: none"> <li>• Overlap : Storage periods overlap.</li> </ul> 
Sub Preset	2D Gain Control	<p>2D gain setting when another sub-preset is selected</p> <ul style="list-style-type: none"> <li>• Enable : The 2D gain setting is changed.</li> <li>• Disable : The 2D gain setting is not changed.</li> </ul>
CDI	Pixel Filter	<p>Smoothing setting for color images in CDI mode (when [Vel-Variance] or [Velocity] is selected for CDI Map Type)</p> <ul style="list-style-type: none"> <li>• Enable : Smoothing processing is performed.</li> <li>• Disable : Smoothing processing is not performed.</li> </ul>
Caps Lock	at Startup	<p>Keyboard input setting for Caps Lock</p> <ul style="list-style-type: none"> <li>• On : Caps Lock ON at startup.</li> <li>• Off : Caps Lock OFF at startup.</li> </ul>

\*1: Setting of this parameter is not possible.



## 18.2.2 Changing the Exam Preset

### 18.2.2.1 Exam and TCS Linking

Consult your Canon Medical Systems service representative for details.

### 18.2.2.2 Application

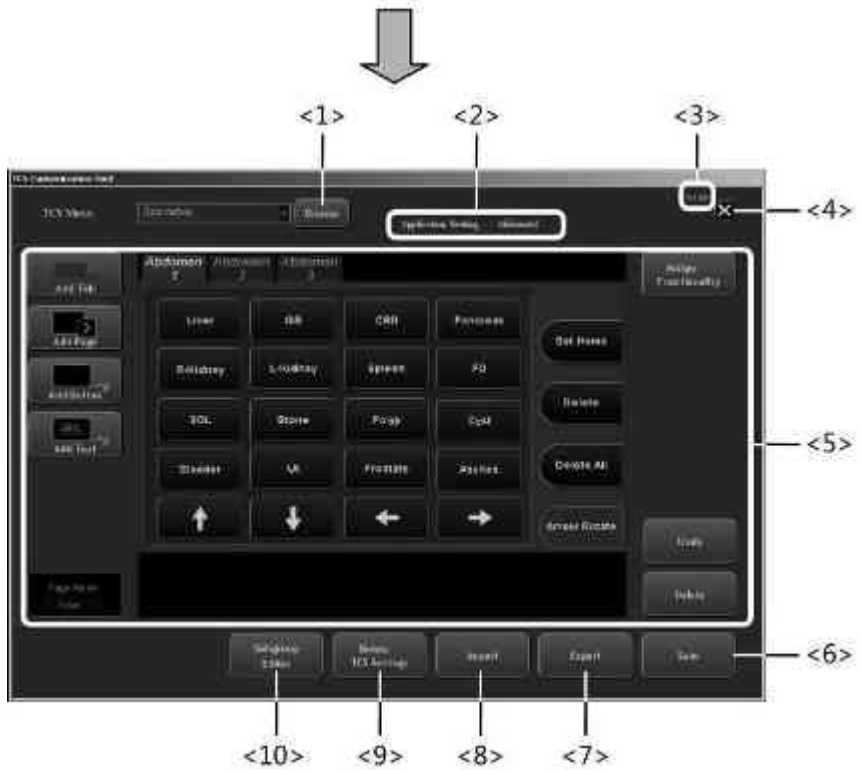
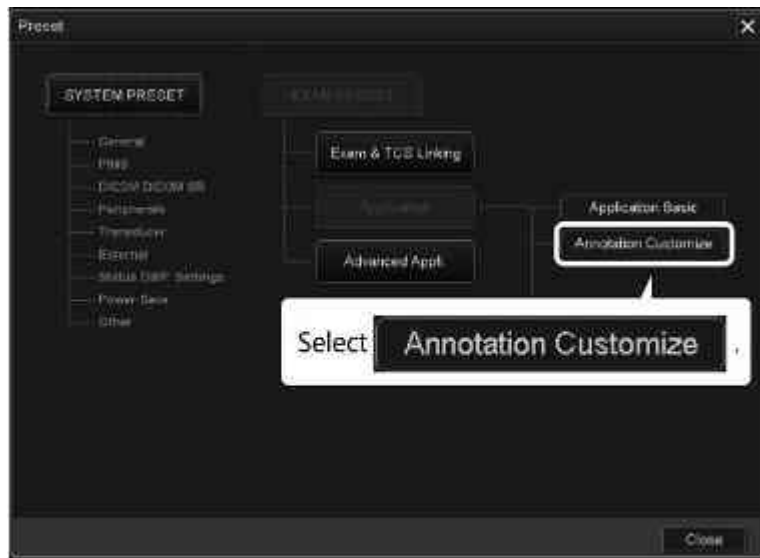
The Annotation Customize tool allows the user to customize the annotation menus to be displayed on the touch panel and to register the customized menus.









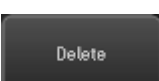

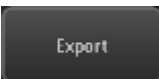

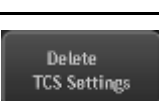

- \* Refer to the Operation Manual <<Measurements volume>> for details of Application Basic and Measure Setup.

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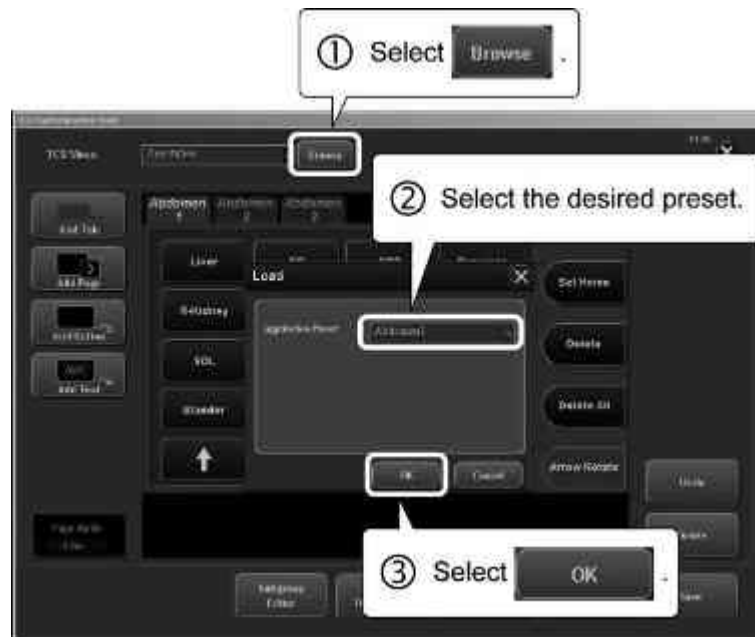
**NOTE** Restrictions for displayed characters

1. Characters that cannot be used in captions
    - ¥, \ (backslash), umlaut characters (Ä, ä, Ö, ö, Ü, ü)
  2. Characters that cannot be used for saving or exporting files (for file names)
    - (1) Input prohibited
      - ¥, /, ;, :, \*, ?, ", <, >, |, .
    - (2) Microsoft reserved words:
      - "CON", "AUX", "COM1", "COM2", "COM3", "COM4", "LPT1", "LPT2", "LPT3", "PRN", "NUL"
    - \* Do not use these Microsoft reserved words. If any of these words is input, the file cannot be saved or exported.
  - (3) After the settings have been changed using the Annotation Customize tool, be sure to reboot the system and confirm that the customized annotation menus operate normally before using them.
-

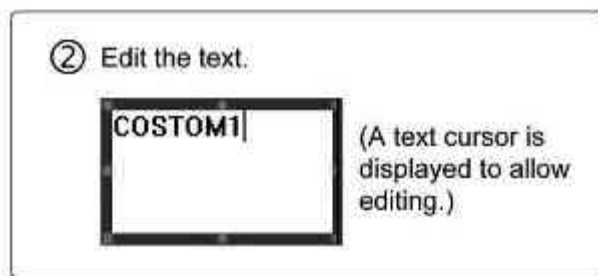
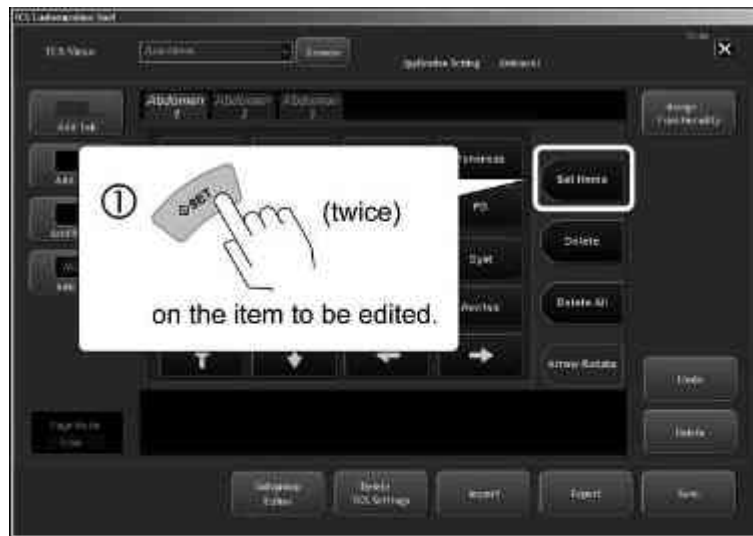


No.	Item	Function
<1>		Used to select the preset for which the annotation menu is to be customized.
<2>	Application Setting	The name of the application preset for which the annotation menu is to be customized is displayed.
<3>	Version	The version of the Annotation Customize tool is displayed.
<4>		Used to close the Annotation Customize screen.
<5>	      	Used to edit the touch panel data.
<6>		Used to save the touch panel data (to the hard disk).
<7>		Used to export the touch panel data to external media (CD/DVD or USB flash drive).
<8>		Used to import the touch panel data from external media (CD/DVD or USB flash drive) to the hard disk.
<9>		Used to delete previously created touch panel data.
<10>		Used to add a new character string as a subgroup.

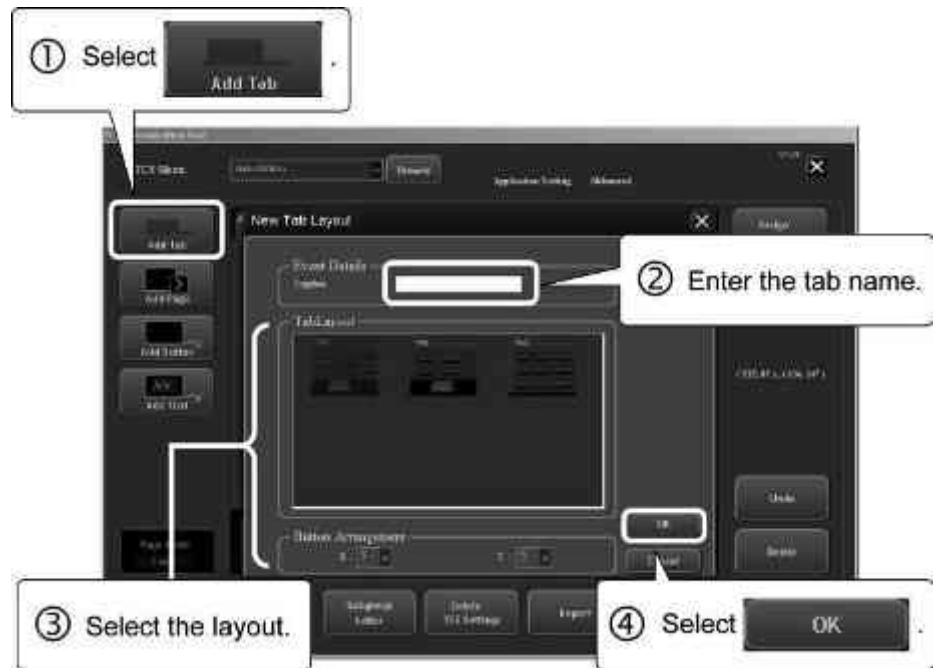
(1) Selecting the preset for which the annotation menu is to be customized



- (2) Editing the touch panel data
  - (a) Editing the text



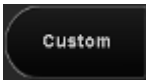
## (b) Adding a tab

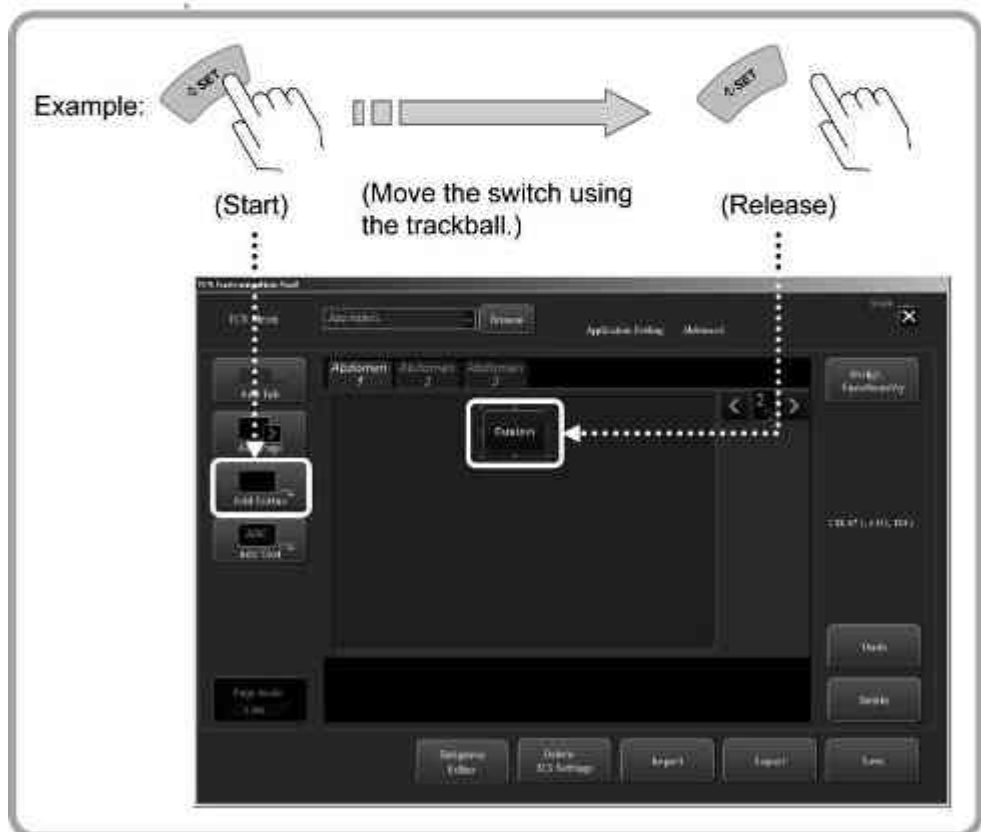
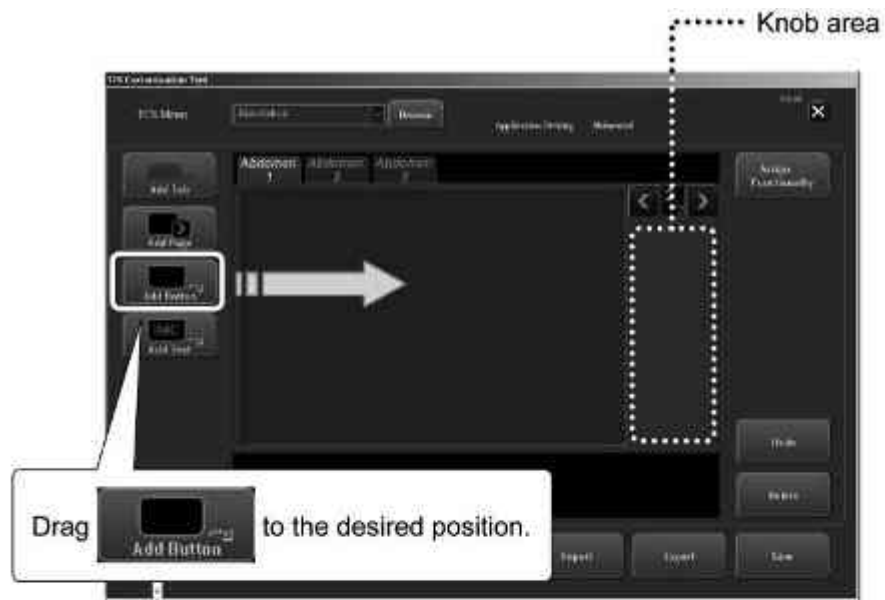


## (c) Adding a page

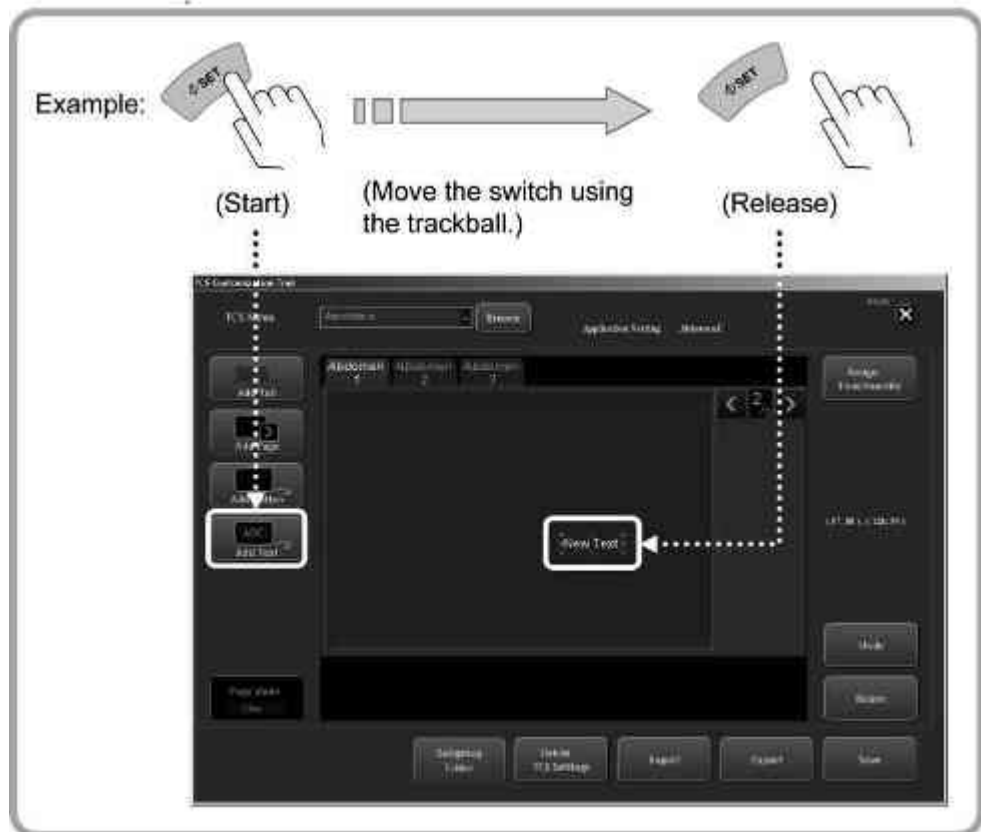
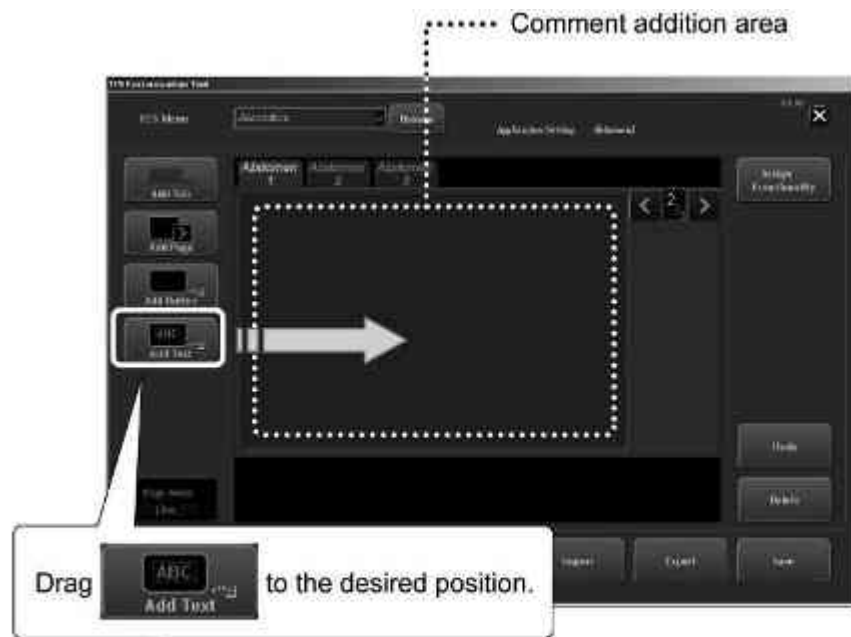


(d) Adding a switch

- \* When a switch is added to the knob area, the switch shape is automatically changed to  .

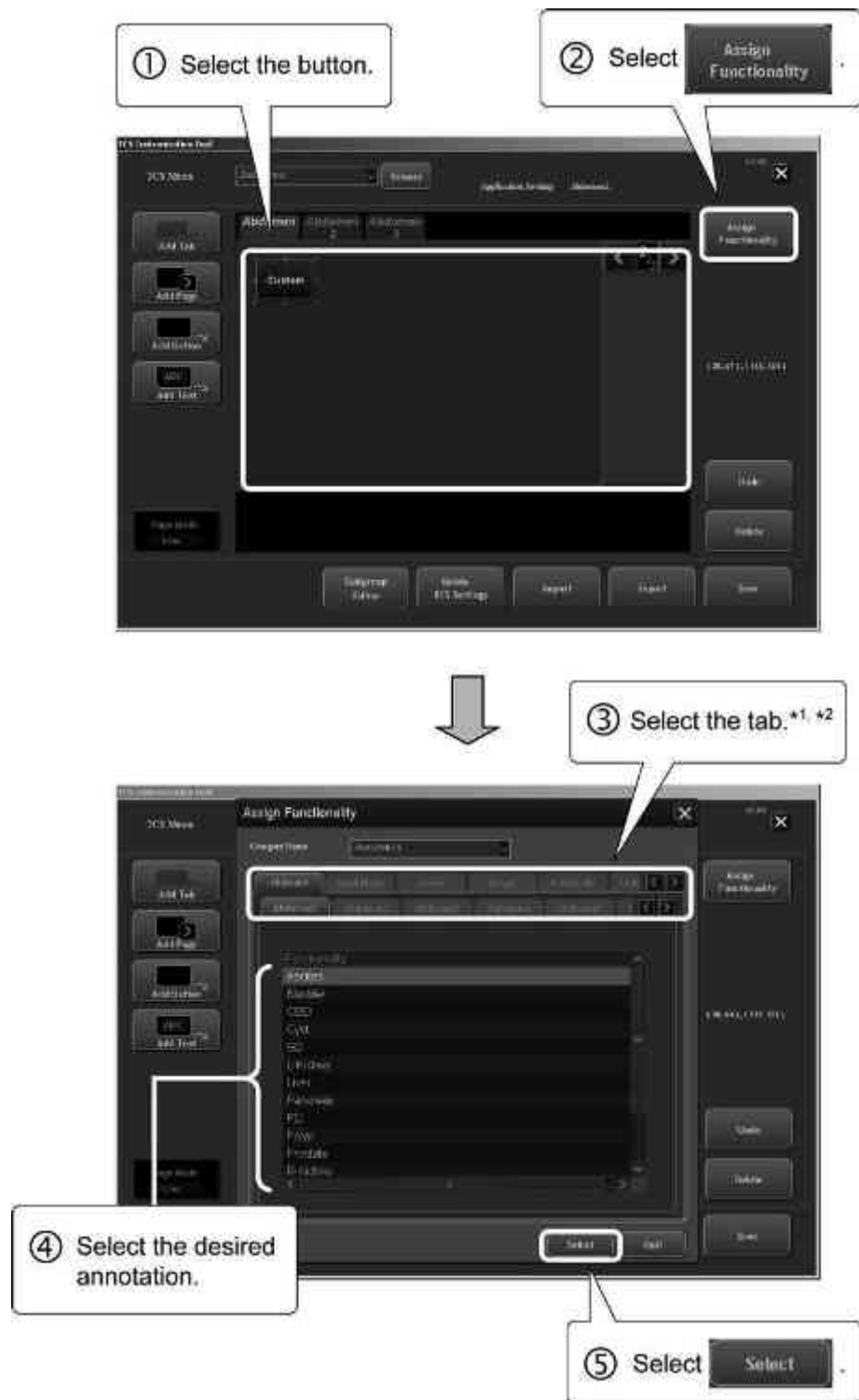



(e) Adding a comment to the touch panel





(f) Registering an annotation



\*1: To register an arrow mark (example: ) , select **Arrow** .

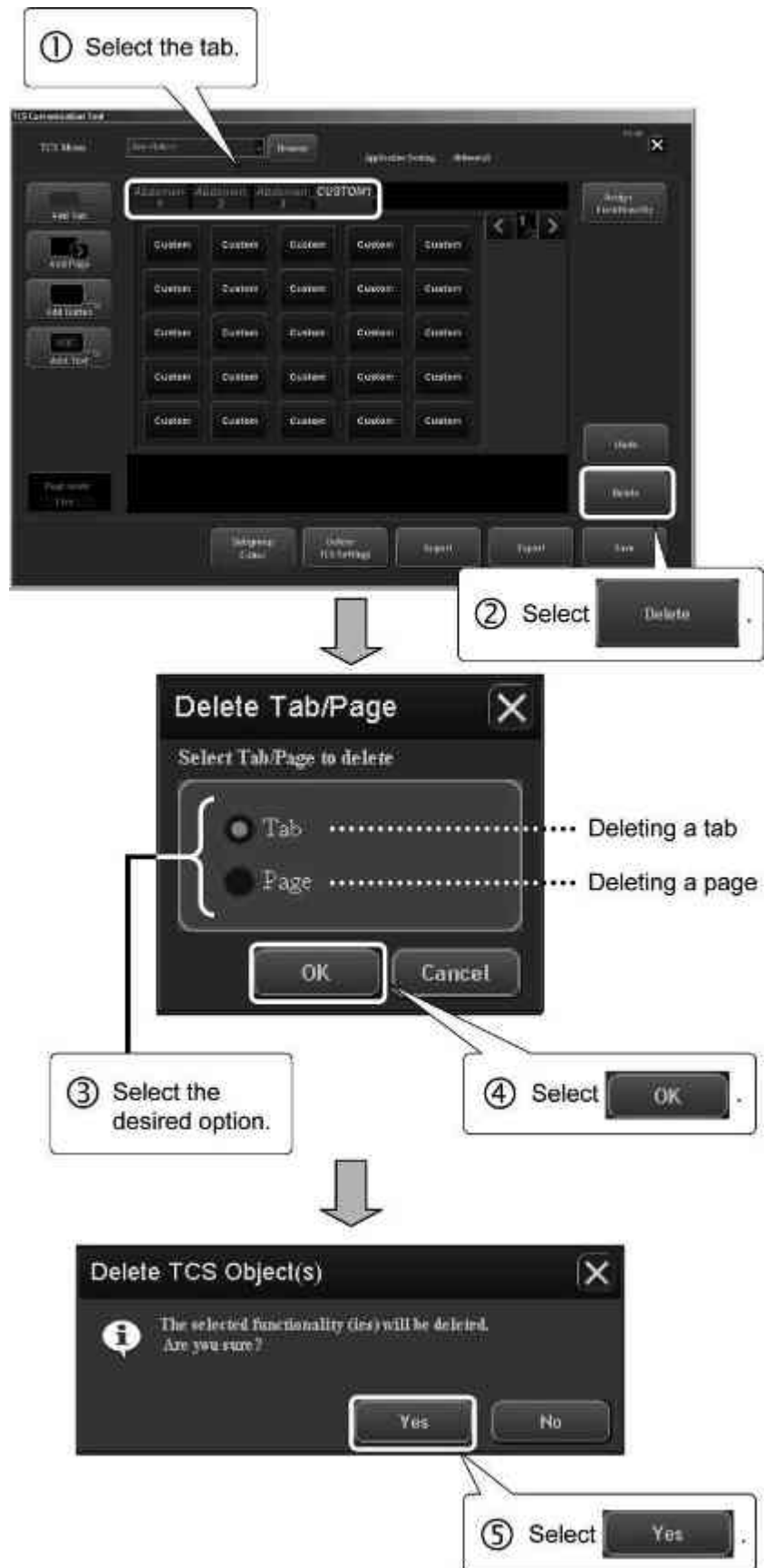
\*2: A switch that can be used to select multiple strings is registered when a Subgroup is selected from the Subgroup tab ("\*" is displayed for the registered switch to indicate that it is a Subgroup).

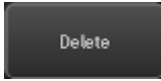
## (g) Undoing an operation

Each time the [Undo] switch is pressed, the most recent operation is undone.



(h) Deleting a tab or page

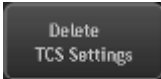


NOTE Of the factory preset tabs, the following are handled as user data. Note that these tabs cannot be deleted using  .

<List of factory preset tabs handled as user data>

Application setting	Tab name
Abdomen1	Abdomen1, Abdomen2, Abdomen3
Abdomen2	Abdomen1, Abdomen2, Abdomen3
Breast	Breast, Thyroid, S-Parts
Carotid1	Carotid, Carotid2
Carotid2	Carotid, Carotid2
CHI	CHI, Abdomen1, Abdomen2, Thyroid, P-Heart, Heart
MSK	MSK
Neo-Hip	Neo-Hip
OB/Gyn	OB, Gyn, OB/Gyn2, OB/Gyn3, OB/Gyn4
Pelvis	Pelvis
Penile	PV Lower, PV Lower2, PV Lower3, PV Lower4, VENOUS (PV Lower), ARTERIAL (PV Lower)
Prostate	Prostate, Prostate2
PV Lower	PV Lower, PV Lower2, PV Lower3, PV Lower4, VENOUS (PV Lower), ARTERIAL (PV Lower)
PV Upper	PV Upper, PV Upper2, VENOUS (PV Upper), ARTERIAL (PV Upper)
Testes	Testis1, Testis2
Thyroid	Breast, Thyroid, S-Parts

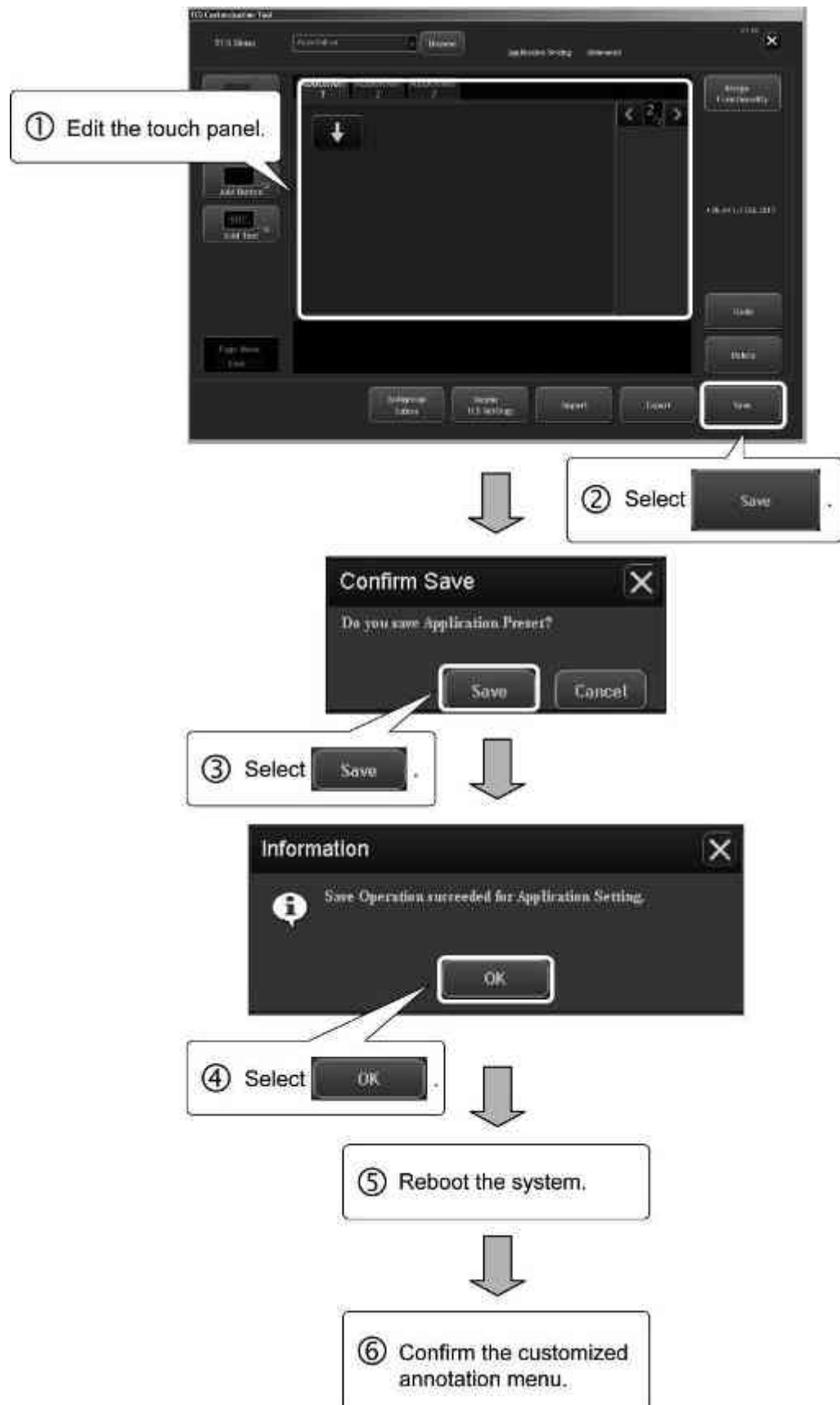
\* If it is necessary to delete factory preset tabs that are handled as user data,

use  . (Refer to (6) for the procedure.)

(i) Deleting a switch



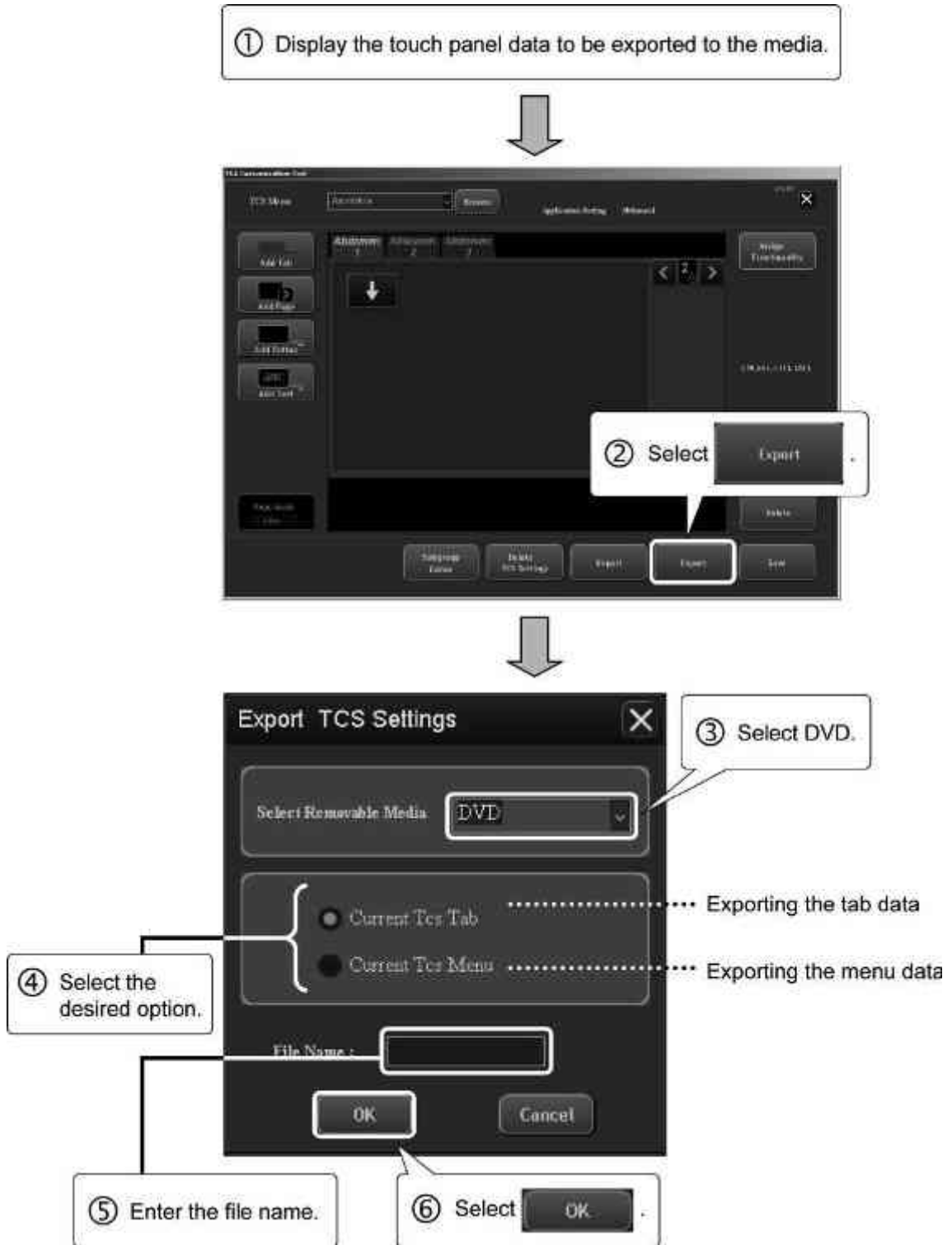
## (3) Saving the settings and confirming normal menu operation



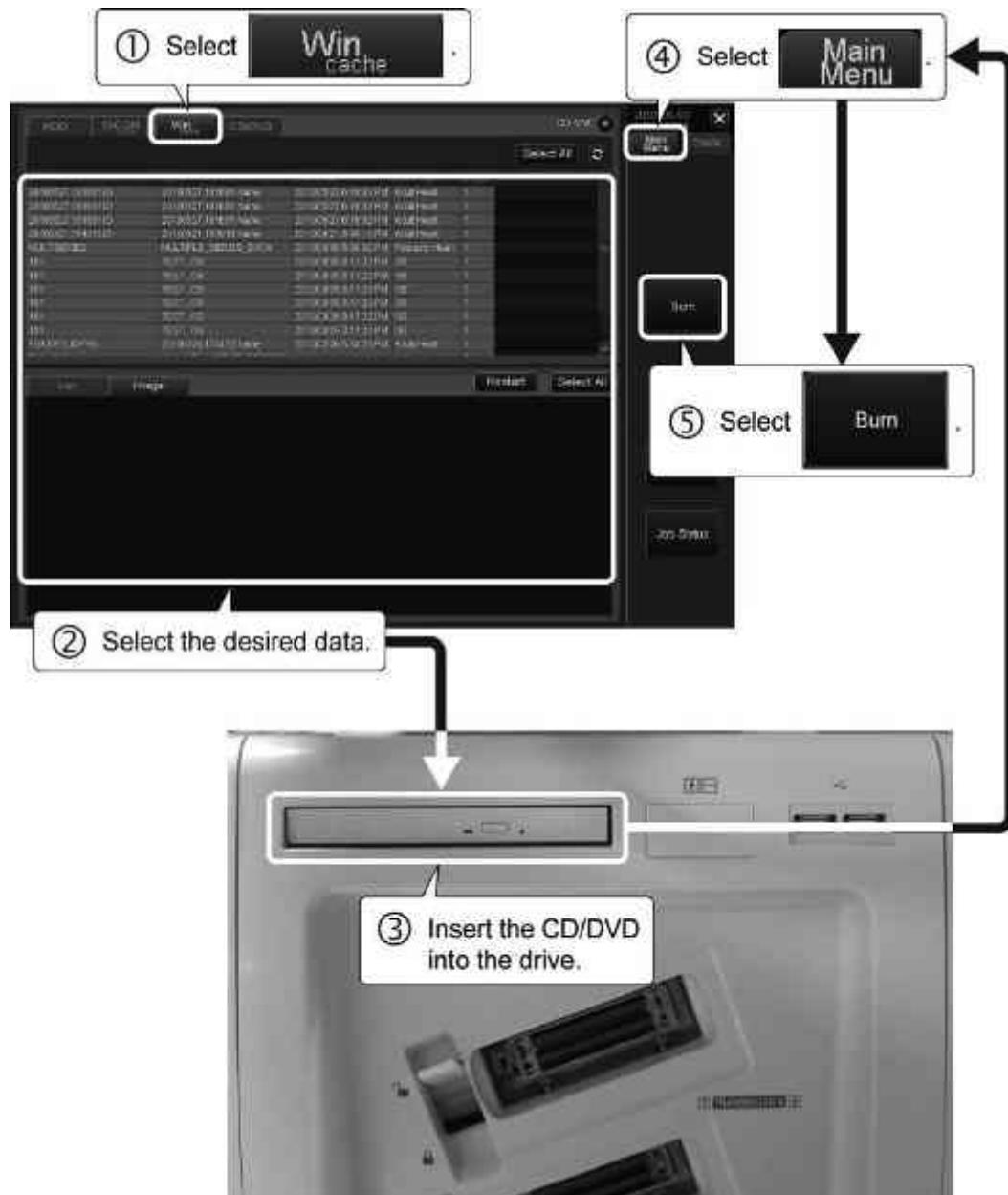
(4) Exporting the customized touch panel data

(a) Exporting to CD/DVD

<1> Temporarily store the touch panel data in the Windows cache.



- <2> Close the Annotation Customize screen.
- <3> From the Patient Browser screen, start writing the touch panel data from the Windows cache onto a CD/DVD.



- <4> The CD/DVD is ejected automatically when writing is completed.



(b) Exporting the touch panel data to a USB flash drive

<1> Insert a USB flash drive into the USB port.



\* The above message is displayed on the screen when the USB flash drive is recognized by the system.

<2> Select the desired data and export it.

① Display the touch panel data to be exported to the media.



③ Select USB.

④ Select the desired option.

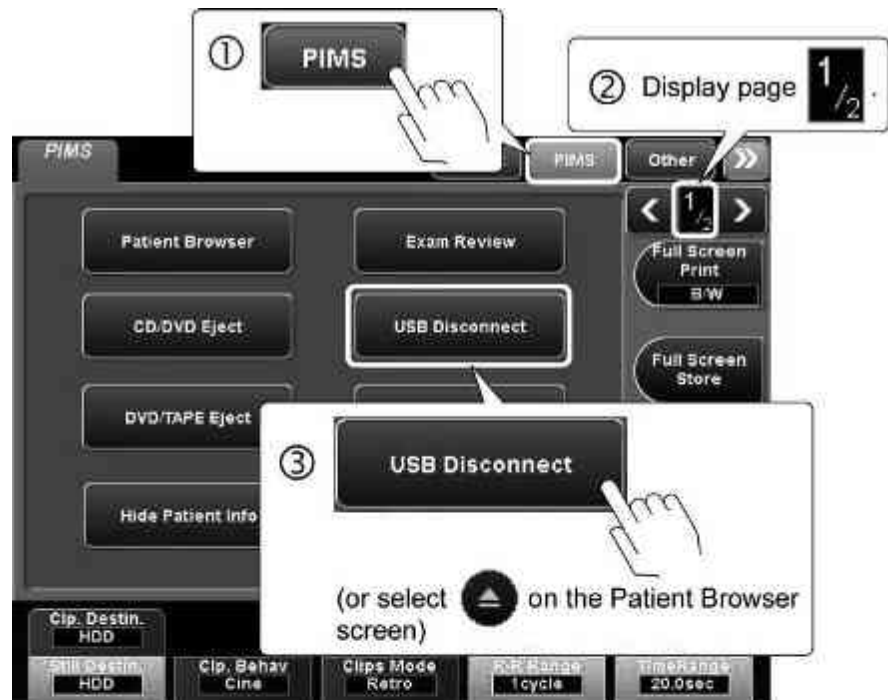
⑤ Enter the file name.

⑥ Select OK.

Exporting the tab data

Exporting the menu data

<3> Remove the USB flash drive from the USB port.



**i** You can unplug the USB memory safely.



\* The above message is displayed on the screen when the USB flash drive can be disconnected safely.



## (5) Loading the touch panel data from external media

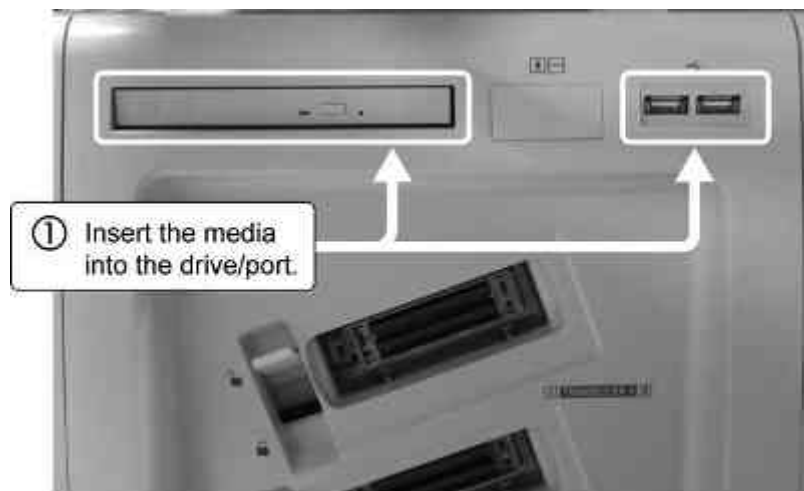
**NOTICE****Data compatibility**

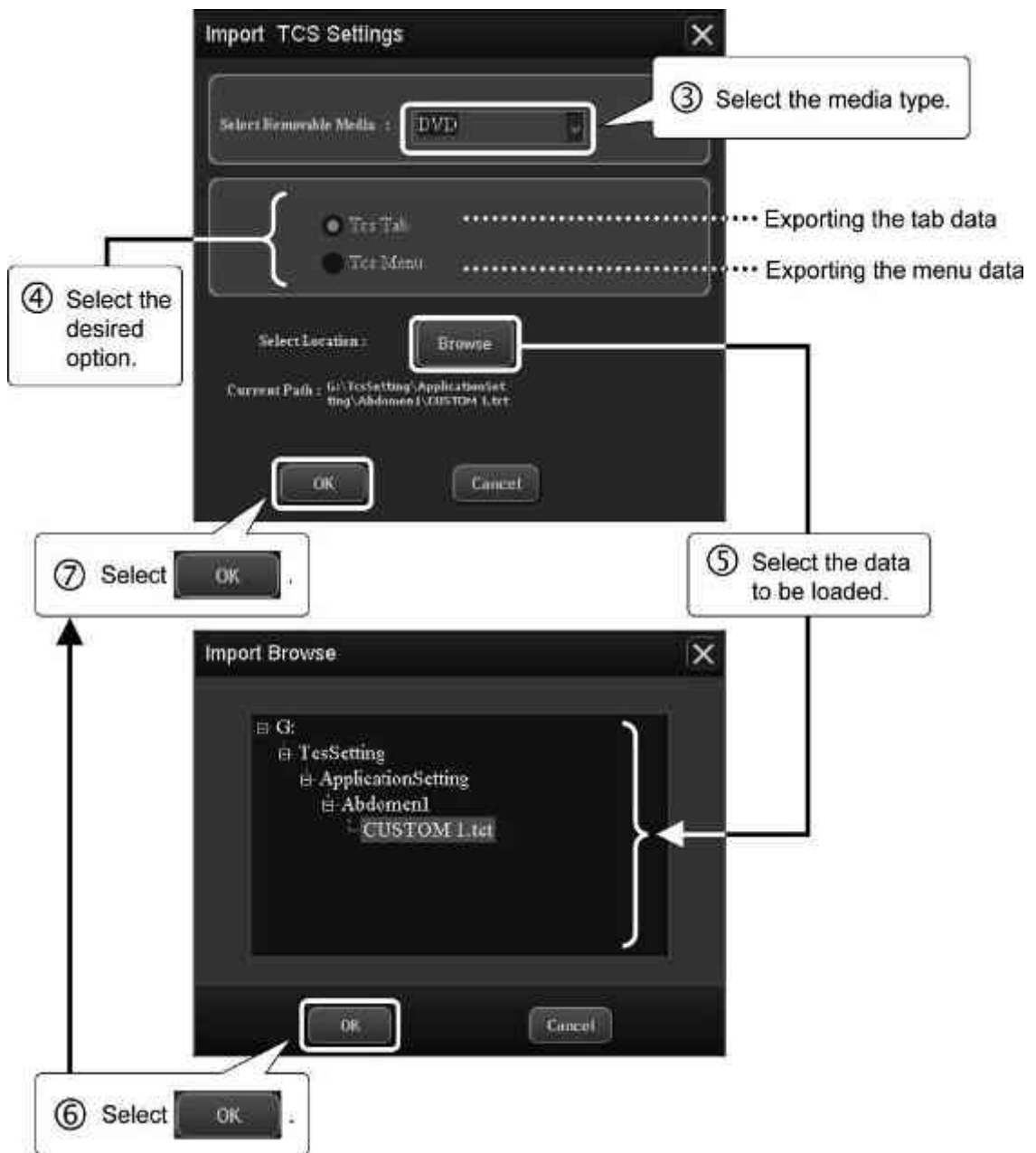
When the touch panel data is to be loaded from external media, confirm the version of the Annotation Customize tool used to export the data. The data is not backward compatible.

For example, it is possible to load data created using V1.XX into V2.XX, but it is not possible to load data created using X2.XX into V1.XX.

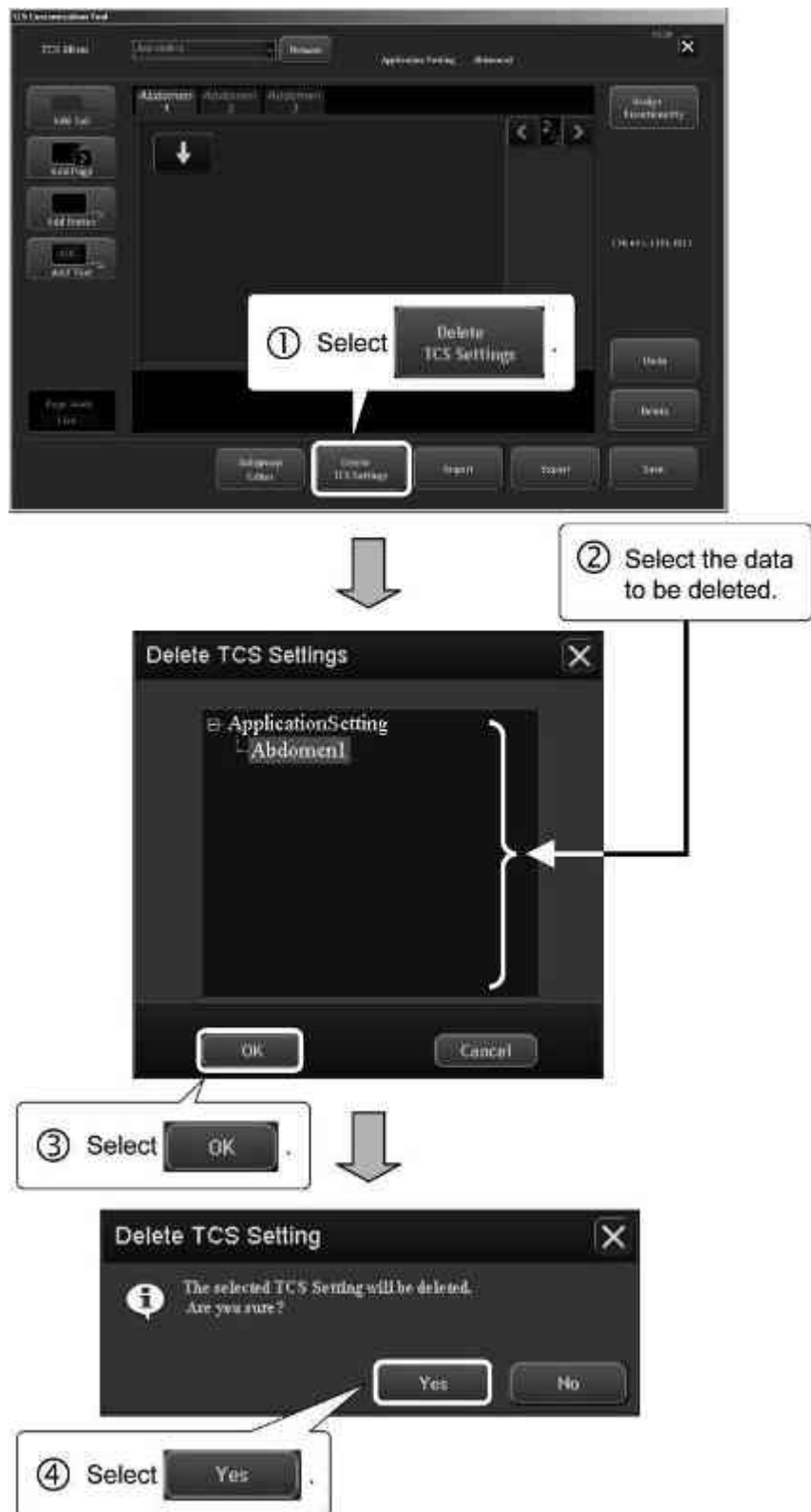
**NOTE****Data extension**

Select "xxx.tct" to load the tab data (Current Tcs Tab) of the touch panel, and select "xxx.tcm" to load the menu data (Current Tcs menu).






(6) Deleting the touch panel data

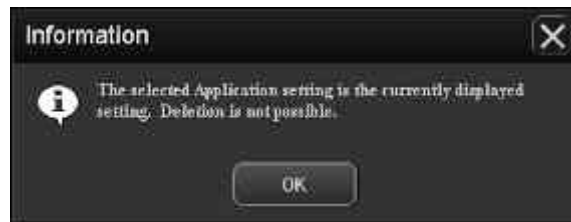


---

**NOTICE** The selected factory preset touch panel data items that are handled as user data are deleted when  is pressed.  
(Refer to (2) (h) "Deleting a tab or page" for details.)

---

**NOTE** If the touch panel data specified for deletion is currently selected on the Annotation Customize screen, the message dialog below is displayed and the data is not deleted.



In this case, select other touch panel data on the Annotation Customize screen and then perform the deletion procedure again.

---





(7) Editing the Subgroup



↓  
 ② Enter text.  
 \*Up to 4 strings  
 can be entered.



No.	Item	Function
<1>		Registers the change to the Subgroup (for which options are available) and closes the Annotation Subgroup Editor window.* <sup>1</sup>
<2>		Cancels the change and closes the Annotation Subgroup Editor window.

\* 1: The registered subgroup is used for all application presets.


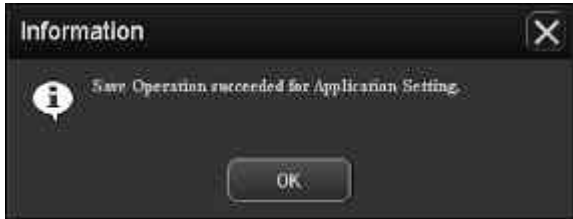


(8) Closing the Annotation Customize screen



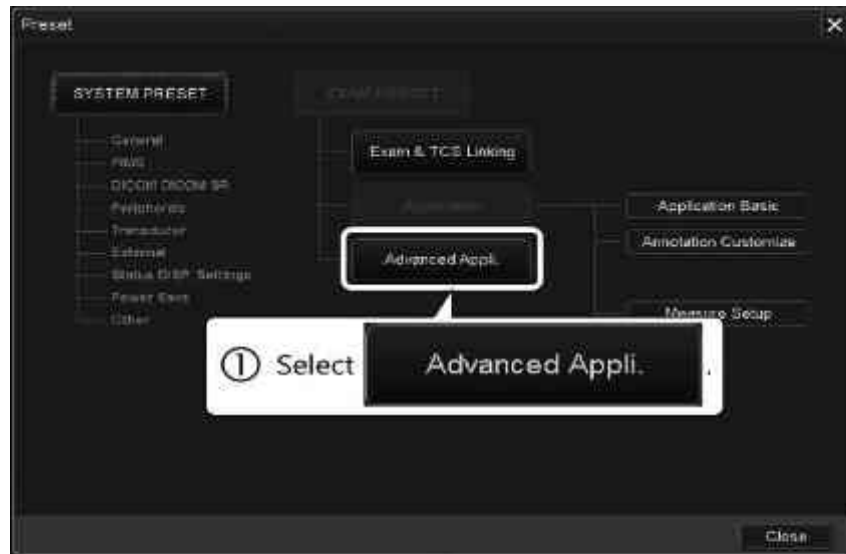
NOTE If the close switch is selected without saving the changes, the confirmation dialog below is displayed.



In this case, select the desired switch.

No.	Switch	Function
<1>		Saves the changes and closes the Annotation Customize screen. * A confirmation message is displayed. 
<2>		Closes the Annotation Customize screen without saving the changes.
<3>		Cancels the termination process and returns to the Annotation Customize screen.

## 18.2.2.3 Advanced Appli.



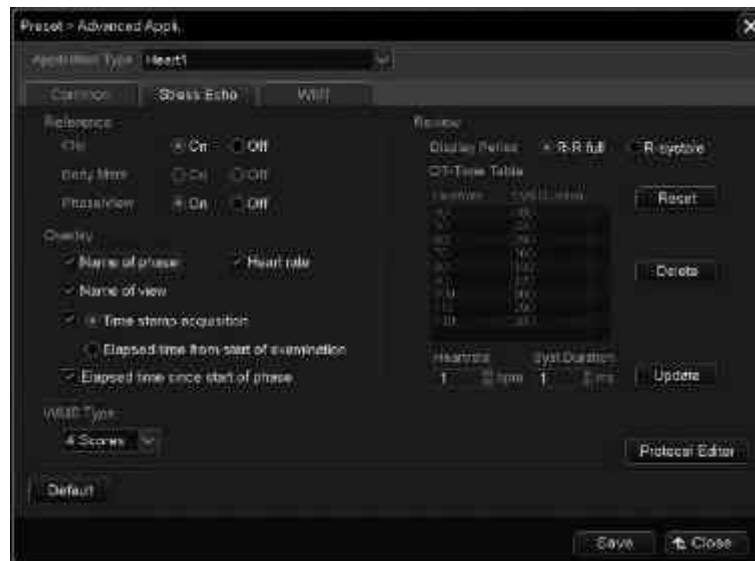
## (1) Common tab




Item	Description
Segmentation type of Polar map	Used to select the segmentation type for Stress Echo examination (Wall Motion Scoring) and Wall Motion Tracking (polar map display). * The options are 16, 17, and AHA17.

## (2) Stress Echo tab

- \* Reboot the system after a change is made to the presets.



Item	Description
Reference	<p>The type of reference display on the acquisition screen in Stress Echo mode can be selected in this area.</p> <ul style="list-style-type: none"> <li>• Clip : The image for the first phase is displayed on the left of the screen as the reference image.</li> <li>• Body Mark<sup>*1</sup> : The symbol corresponding to the view is displayed.</li> <li>• Phase/View : The information (examination phase and scan view) is overlaid on the image.</li> </ul> <p>* It is recommended that this parameter be set to ON if the stored images will be reviewed on a diagnostic ultrasound system manufactured by a company other than Canon Medical Systems.</p>

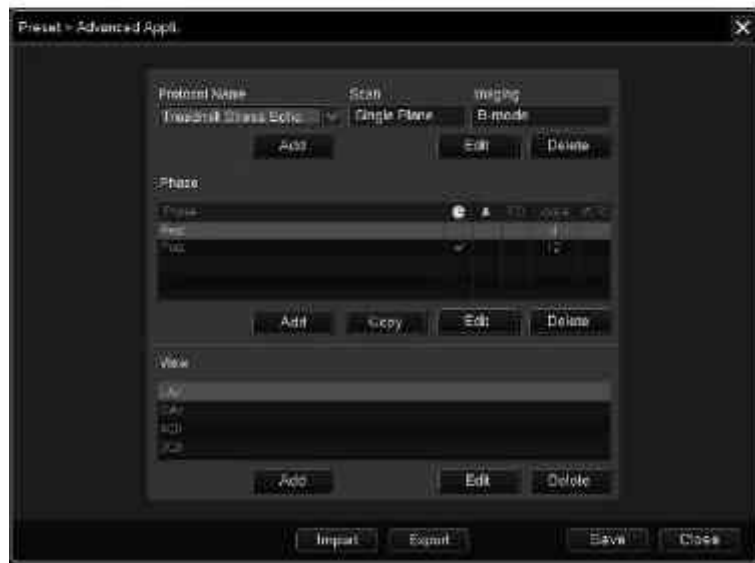
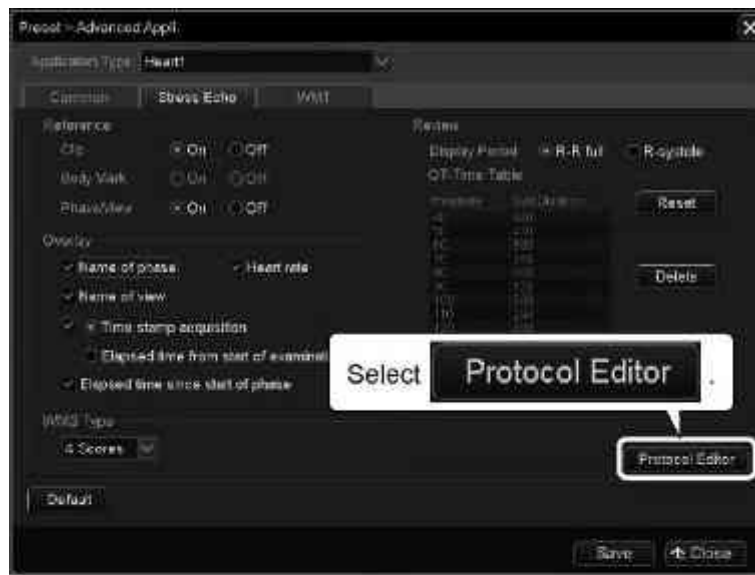
Item	Description
Overlay	<p>The items to be displayed as overlays can be selected in this area.</p> <ul style="list-style-type: none"> <li>• Name of phase: Phase of examination</li> <li>• Name of view: Scan view</li> <li>• Heart rate: Heart rate of the patient</li> <li>• Time stamp acquisition: Time at which the image acquisition switch ([NEXT] in the STRESS ECHO menu on the touch panel or  ) is pressed.</li> <li>• Elapsed time from start of examination: Elapsed time from the start of the Stress Echo examination</li> <li>• Elapsed time from start of phase: Elapsed time from the start of the specified phase * The phase is specified using Protocol Editor.</li> </ul>
WMS Type	Used to select the type of WMS (4 scores, 5 scores, or 7 scores).
Review	<p>The range of image display for image reviewing or best loop storage can be set.</p> <ul style="list-style-type: none"> <li>• R-R full: A full cardiac cycle</li> <li>• R-systole: Systolic phase only</li> </ul> <p>* When R-systole is selected, the QT-Time table can be used.</p>













Item	Description
QT-Time Table	<p>Used to set the conditions for displaying multiple loops acquired at different systolic durations or different heart rates in synchronization with one another. (A new QT-Time table must be registered if the user's own original diagnostic information is to be used.)</p> <ul style="list-style-type: none"> <li>• Heart rate: Enter the heart rate.</li> <li>• Syst. Duration: Enter the systolic duration for the heart rate.</li> <li>• <b>Update</b> : Registers the entered values.</li> <li>• <b>Delete</b> : Deletes the value selected in the list.</li> <li>• <b>Reset</b> : Resets the table to the factory settings.</li> </ul>
<b>Protocol Editor</b>	Starts up Protocol Editor.

\*1: Setting of this parameter is not possible.\*



- (a) Starting up Protocol Editor  
 Original acquisition protocols can be designed using Protocol Editor.



Item	Description
Protocol Name	Used to select the protocol name.
Scan	The scanning method registered for the selected protocol is displayed.
Imaging	The image mode registered for the selected protocol is displayed.
	Used to add a new protocol. * Up to 10 protocols can be registered.
	Enables editing of the selected protocol.
	Deletes the selected protocol.
Phase	A list of the phases in the selected protocol is displayed.
	ON/OFF setting of the protocol timer for each phase <input checked="" type="checkbox"/> : The protocol timer is set. <input type="checkbox"/> : The protocol timer is not set.
	ON/OFF setting of automatic playback after acquisition for each phase <input checked="" type="checkbox"/> : Automatic playback is set to ON. <input type="checkbox"/> : Automatic playback is set to OFF.
FD	ON/OFF setting of FD (Full Disclosure) acquisition for each phase
Loops	The number of loops to be acquired for each phase is displayed.
VCR <sup>*1</sup>	ON/OFF setting of automatic recording
	Used to add a new phase. * Up to 10 phases can be registered to a protocol.
	Copies the selected phase to the bottom of the phase list.
	Enables editing of the selected phase.
	Deletes the selected phase.
View	A list of the views in the selected phase is displayed.
	Used to add a new view. * Up to 10 views can be registered to a phase.
	Enables editing of the selected view.
	Deletes the selected view.

Item	Description
<b>Import</b>	Loads a protocol from the CD/DVD cache or USB flash drive to the hard disk.
<b>Export</b>	Stores the protocol in the CD/DVD cache or USB flash drive.

\*1: Setting of this parameter is not possible.

## (b) Operations in Protocol Editor

- NOTE
- The following symbols cannot be used in a protocol name or phase name.  
"#", "\*", "?", "^", "=", "\", "|", ";", "[", "]", ":", "&", "|"
  - DICOM limits the maximum number of characters used for a protocol name to 64 and that for a phase name to 16.

## &lt;1&gt; Creating a protocol

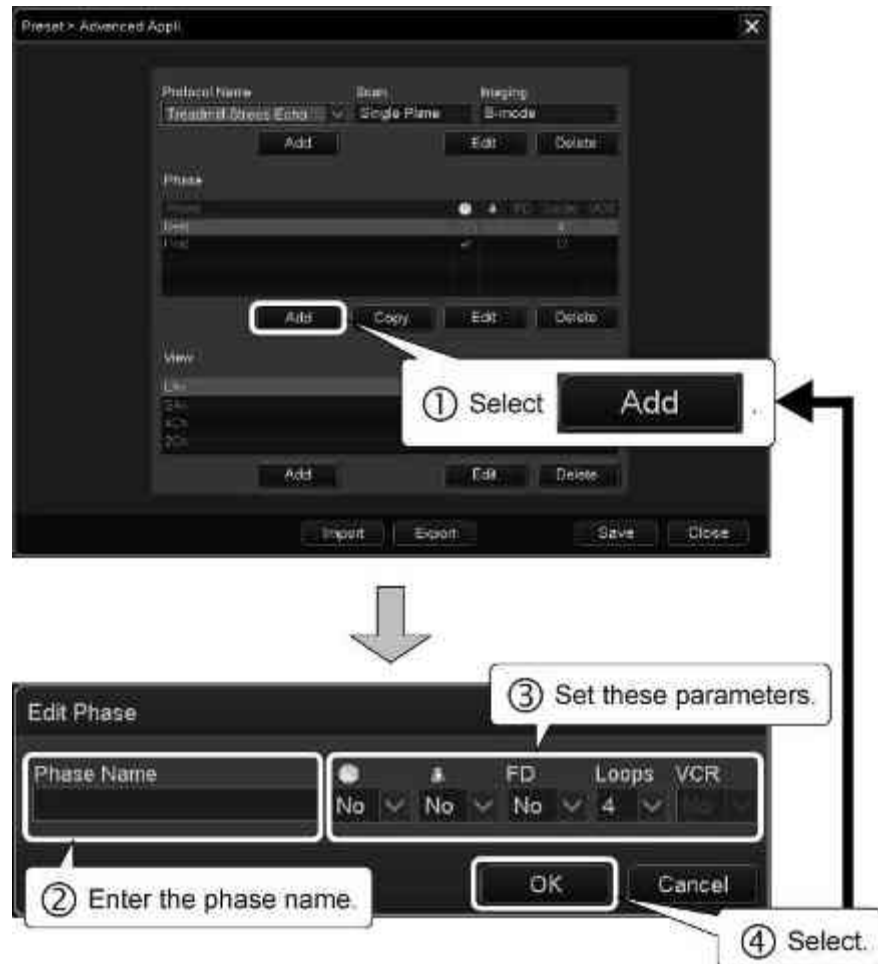






Item	Description
Protocol Name	Enter the protocol name (up to 64 characters). * If Russian is used for input, it is impossible to export.
Scan	Select the scan method (only Single Plane is available).
Imaging	Select the image mode (only B-mode is available).

## &lt;2&gt; Creating a phase

Repeat steps in the figure below as many times as required to create all the desired phases.

\* To copy a created phase, select the phase and select **Copy**.



Item	Description
Phase Name	Enter the phase name (up to 16 characters). * If Russian is used for input, it is impossible to export.
	Specify whether the protocol timer is set to ON or OFF.
	Specify whether automatic playback after phase acquisition is set to ON or OFF.
FD	Specify whether continuous phase acquisition (Full Disclosure) is set to ON or OFF.
Loops	Enter the number of loops to be acquired.
VCR <sup>*1</sup>	Specify whether automatic recording is set to ON or OFF.
	Adds the phase to the protocol.
	Cancels the addition of the phase to the protocol.

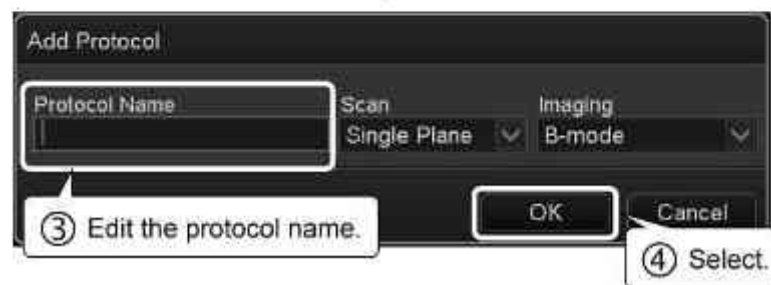
\*1: Setting of this parameter is not possible.

<3> Creating a view



Item	Description
New View Name	Select the view name.

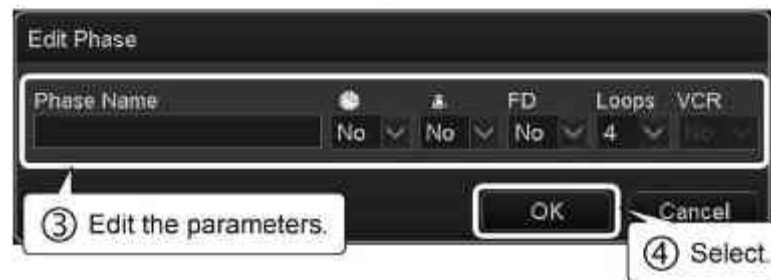
## &lt;4&gt; Editing a protocol







Item	Description
Protocol Name	Edit the protocol name (the name can have up to 64 characters). * If Russian is used for input, it is impossible to export.
Scan	Select the scan method (only Single Plane is available).
Imaging	Select the image mode (only B-mode is available).



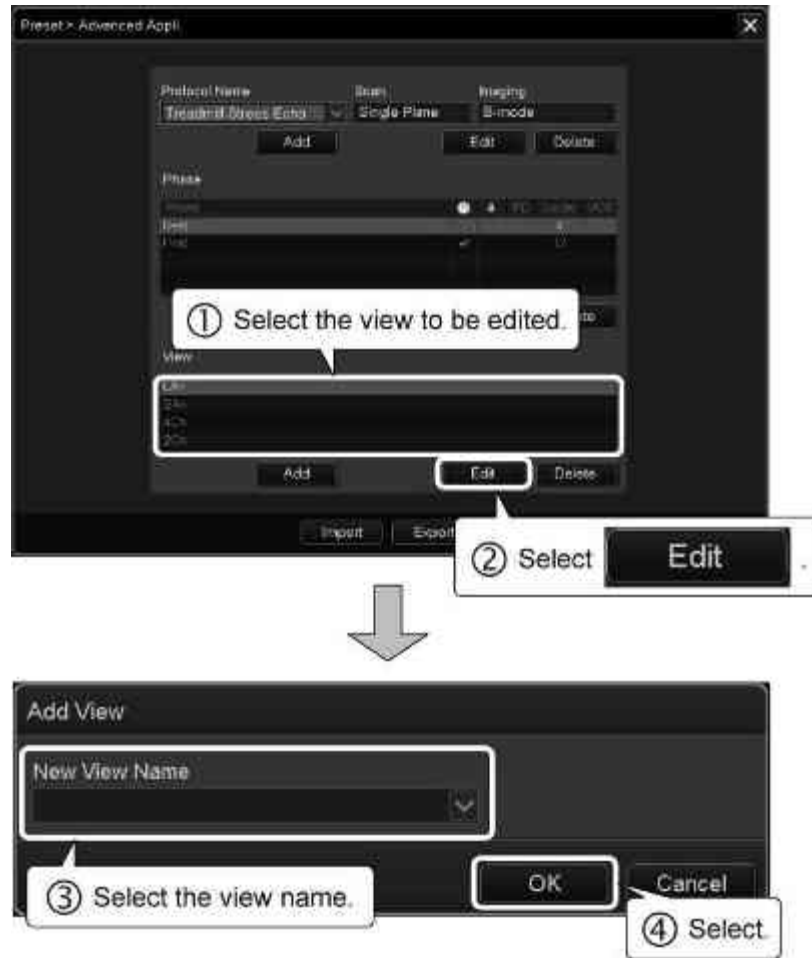
<5> Editing a phase



Item	Description
Phase Name	Edit the phase name (the name can have up to 16 characters). * If Russian is used for input, it is impossible to export.
	Specify whether the protocol timer is set to ON or OFF.
	Specify whether automatic playback after phase acquisition is set to ON or OFF.
FD	Specify whether continuous phase acquisition (Full Disclosure) is set to ON or OFF.
Loops	Enter the number of loops to be acquired.
VCR*1	Specify whether automatic recording is set to ON or OFF.
	Completes editing of the phase and saves the changes.
	Cancels editing of the phase and discards the changes.

\*1: Setting of this parameter is not possible.

<6> Editing a view

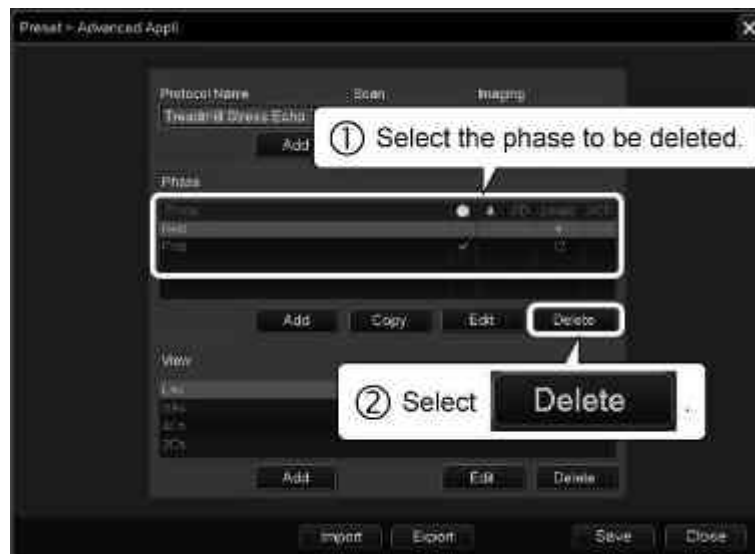


Item	Description
New View Name	Select the view name.

## &lt;7&gt; Deleting a protocol



## &lt;8&gt; Deleting a phase



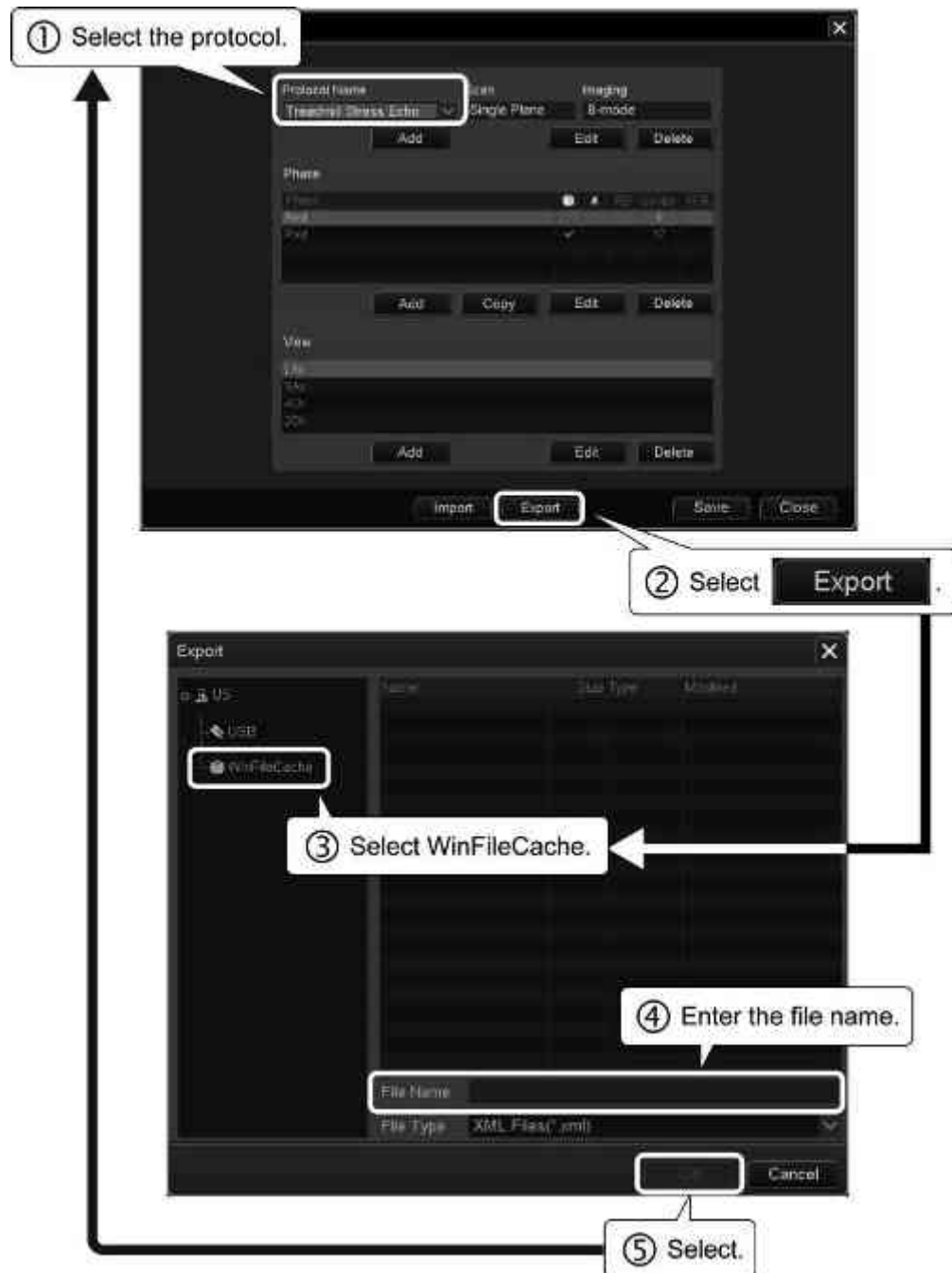
<9> Deleting a view



<10> To write data onto a CD/DVD (Windows file format)

<a> Repeat steps in the figure below for each of the desired protocols to temporarily store them in the Windows cache.

NOTE Russian cannot be used for the file name.

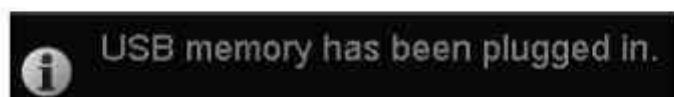


<b> Select **Close** to close Protocol Editor (preset screen).



<11> Storing protocols on a USB flash drive

<a> Insert a USB flash drive into the USB port.

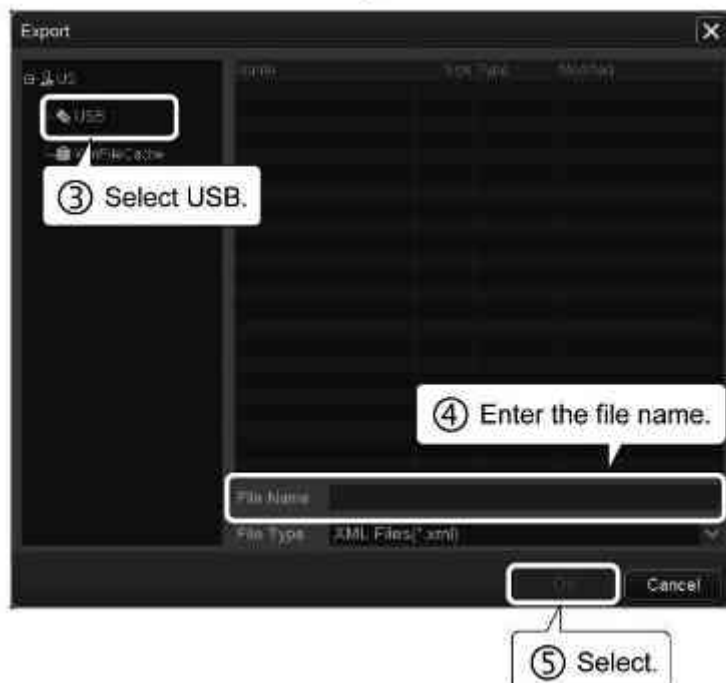


\* The above message is displayed on the screen when the USB flash drive is recognized by the system.

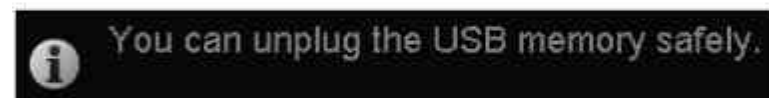
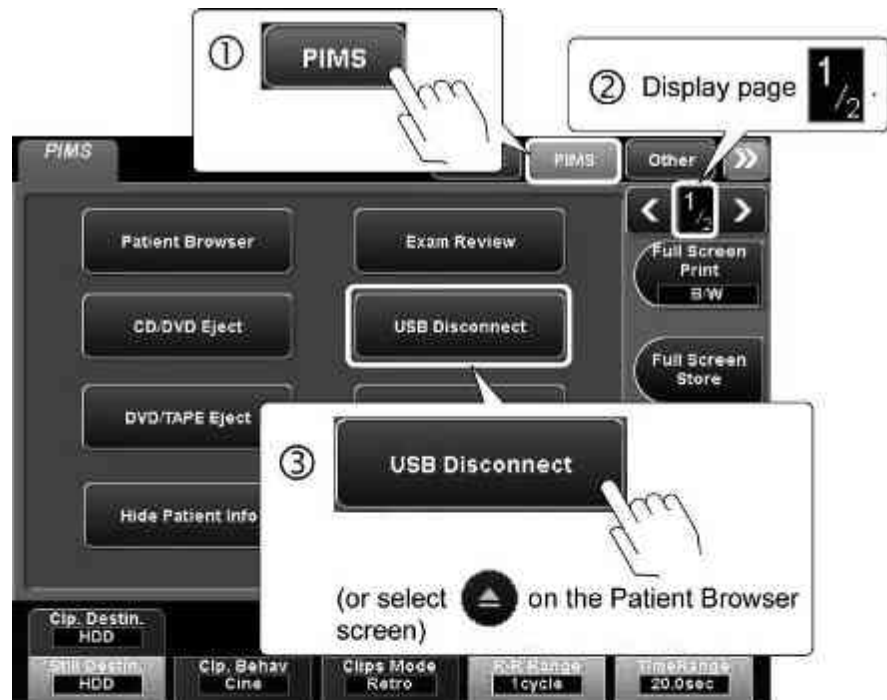


<b> Select the desired data and export it.

NOTE Russian cannot be used for the file name.



<c> Remove the USB flash drive from the USB port.



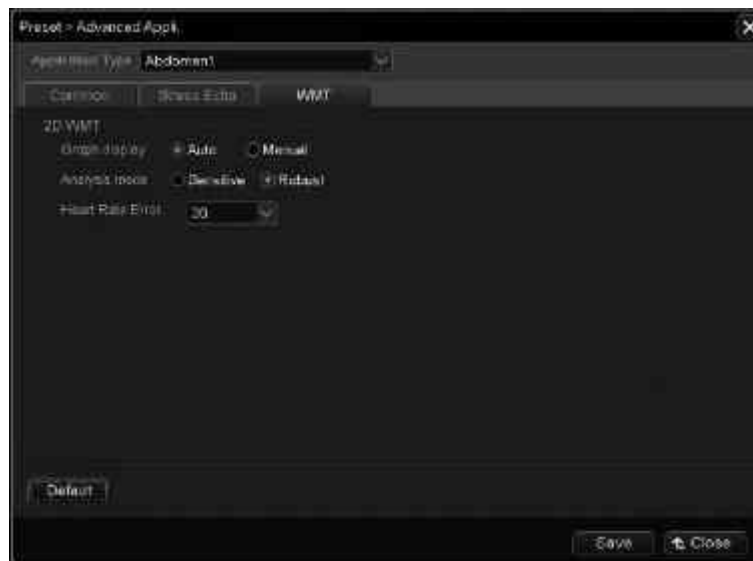
\* The above message is displayed on the screen when the USB flash drive can be disconnected safely.





<d> Loading a protocol from media



## (3) WMT tab



Item	Description
Graph display	Display mode for the screen after 2D Wall Motion Tracking <ul style="list-style-type: none"> <li>• Auto : The parameter image and graph are displayed.</li> <li>• Manual : The parameter image and the [Display Graph] switch are displayed.</li> </ul>
Analysis mode	Tracking characteristics for 2D Wall Motion Tracking <ul style="list-style-type: none"> <li>• Sensitive: Priority is given to the temporal and spatial detection capabilities of the individual parameters.</li> <li>• Robust: Priority is given to the analytical reproducibility of the individual parameters.</li> </ul>
Heart Rate Error	Heart rate setting at the time of generating the polar map for 2D Wall Motion Tracking (maximum difference for each plane) <p>* If the value exceeds the specified value,  and  are displayed on the monitor.</p>



LEGAL MANUFACTURER

**SHIMADZU ELECTRONIC CORPORATION**

---

1385, SHIMOISHIGAMI, OTAWARA-SHI, TOCHIGI 324-8550, JAPAN

Date: September 17<sup>th</sup>, 2019

Ref No.: NX-M110

**Subject: Certificate**

We hereby certify that the Color Doppler Ultrasound Machine Model Xario 200G (CUS-X200G) has following features:

- |                          |                            |
|--------------------------|----------------------------|
| 1. Dynamic Range         | 211 dB                     |
| 2. Gray scale            | 256 scales                 |
| 3. System channel        | 4,718,592 channels or more |
| 4. Maximum HD capability | 500 GB                     |

This certificate is valid until September 17<sup>th</sup>, 2020.

Yours faithfully,

CANON MEDICAL SYSTEMS CORPORATION



MICHIMASA ISHII

Group Manager

Latin America & Canada Group

International Sales Division