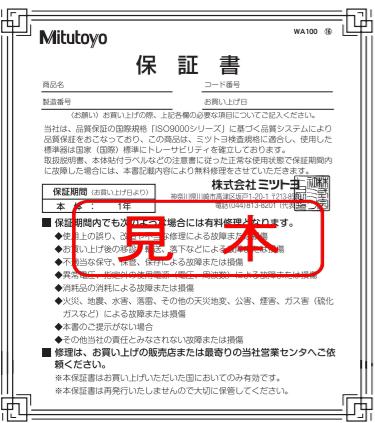
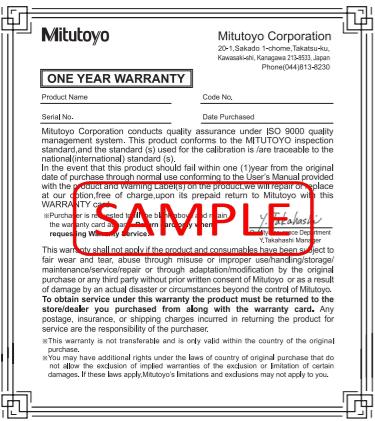
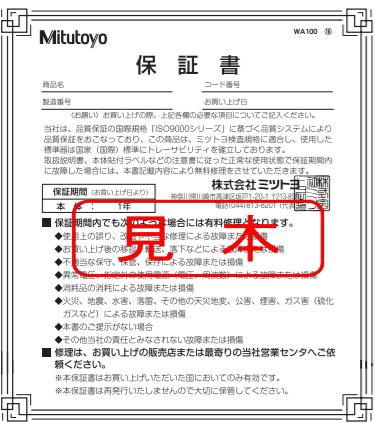
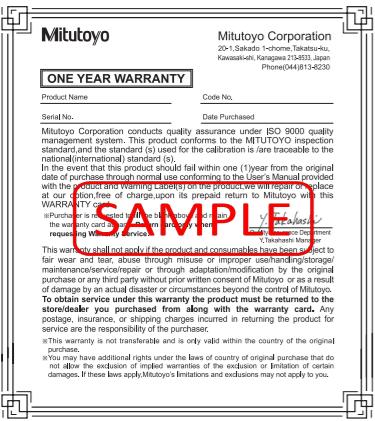
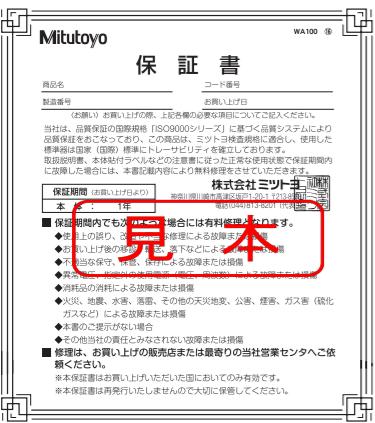
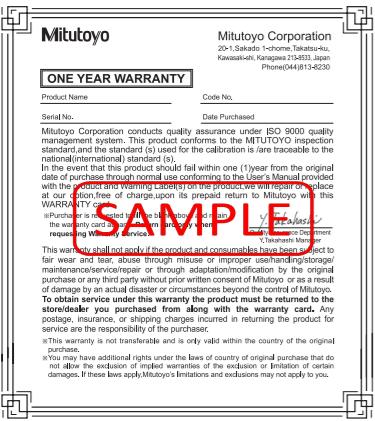
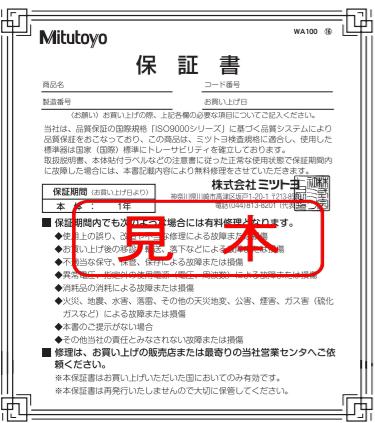
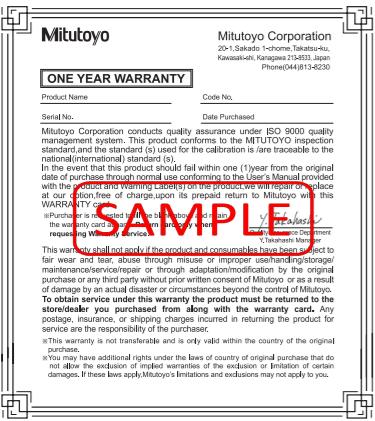
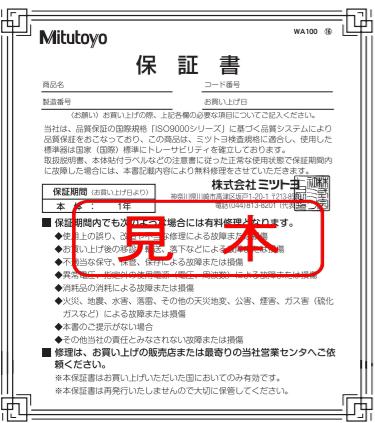
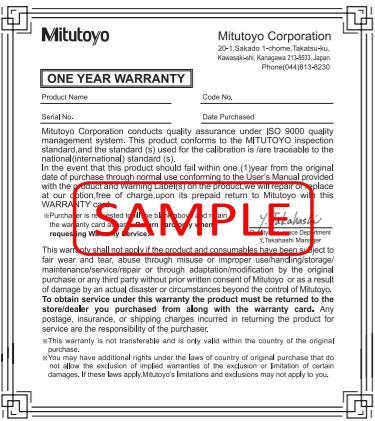
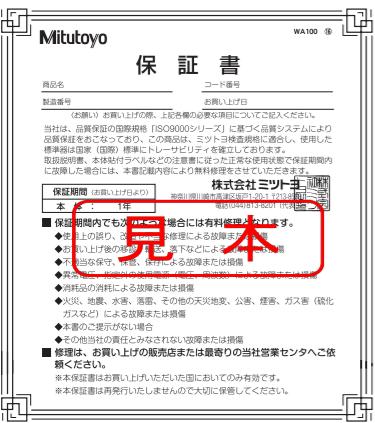
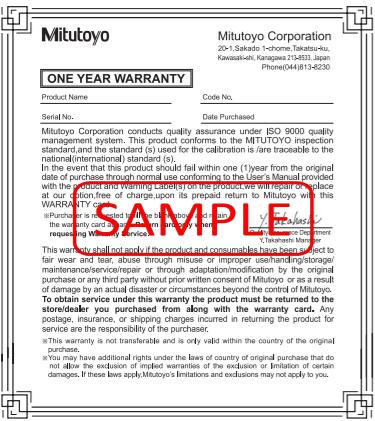
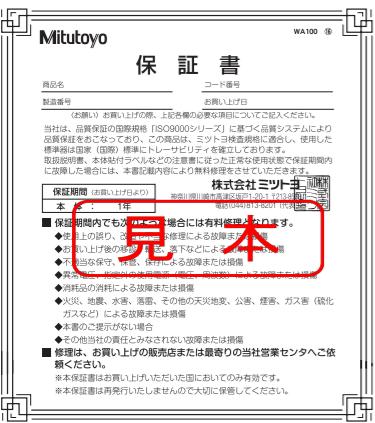
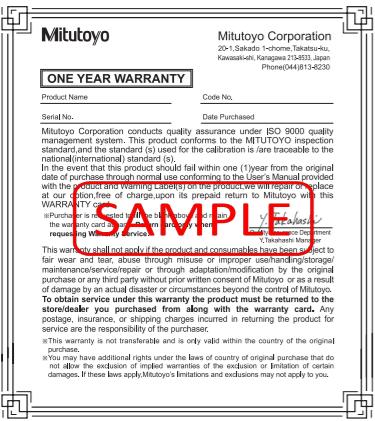
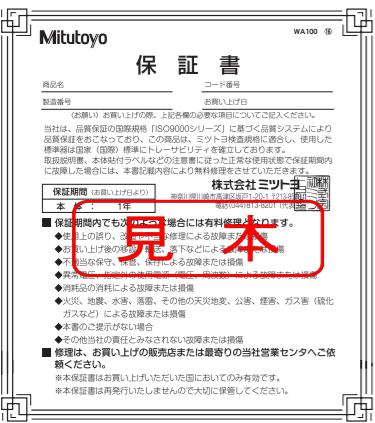
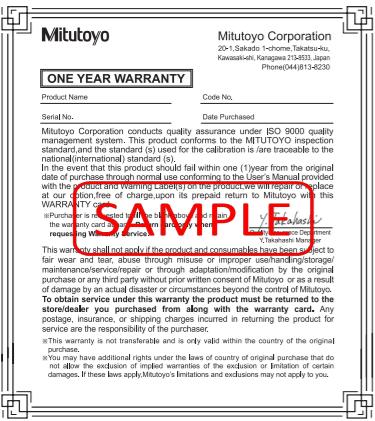
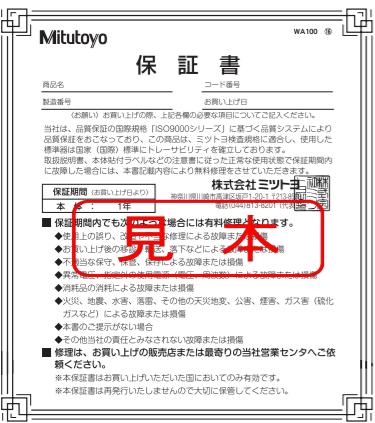
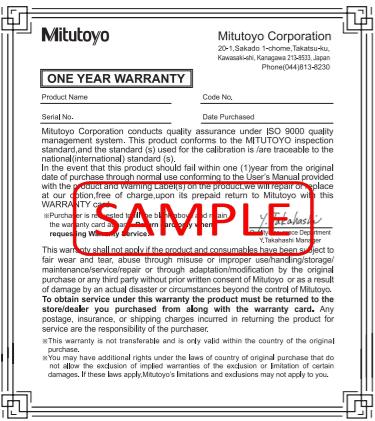
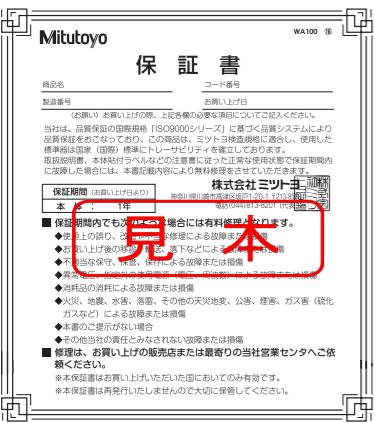
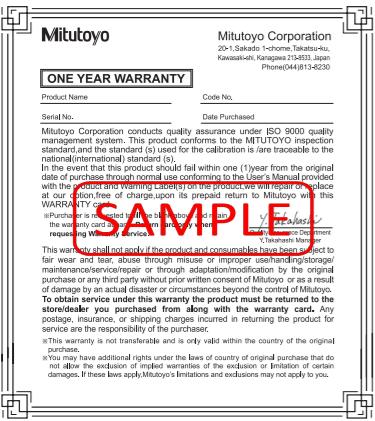
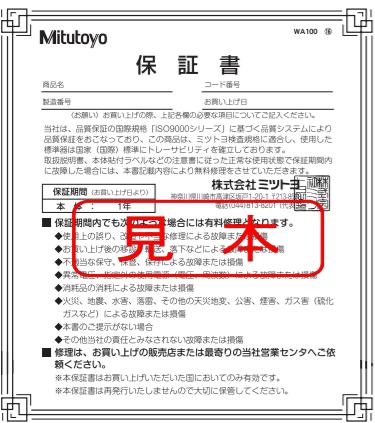
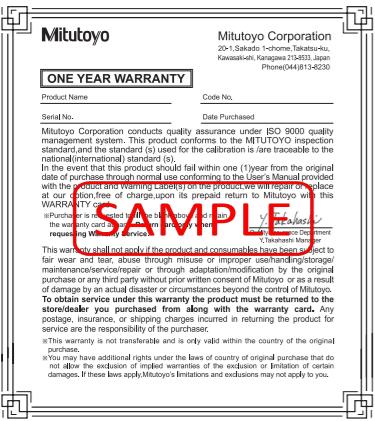
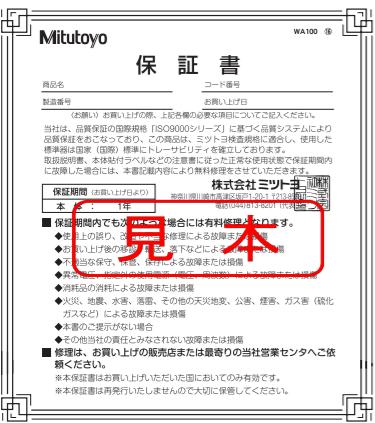
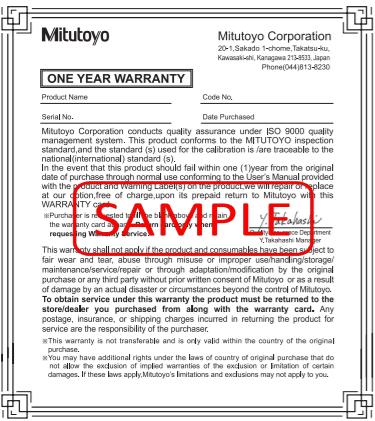
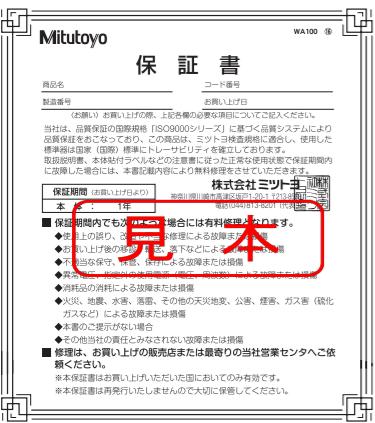
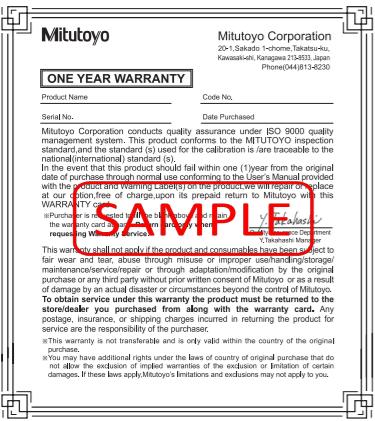
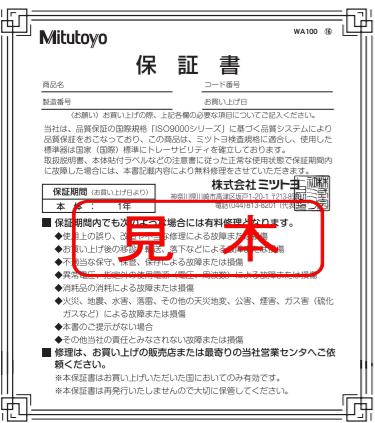
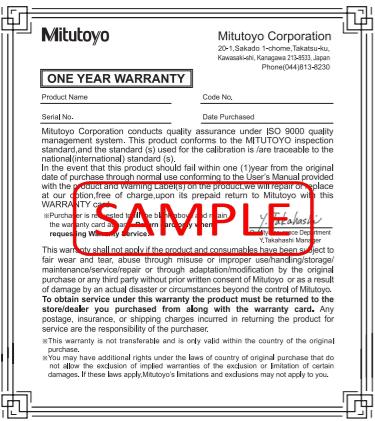
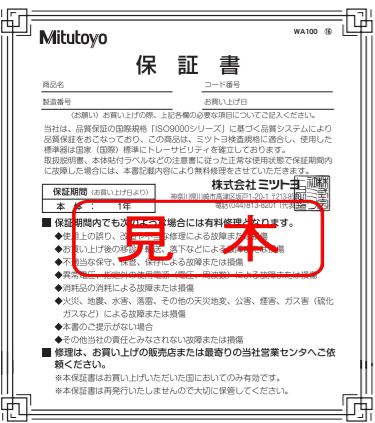
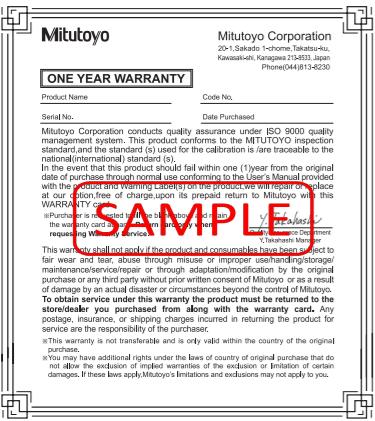
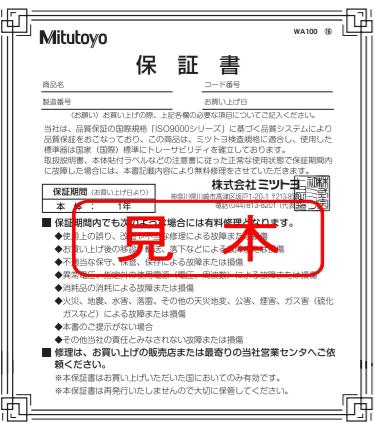
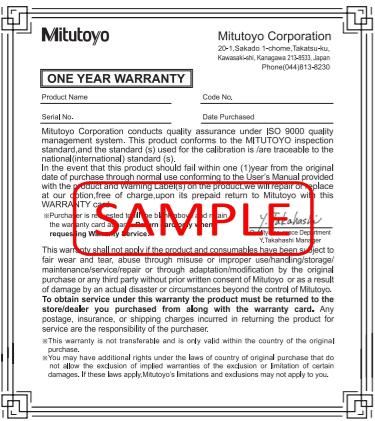
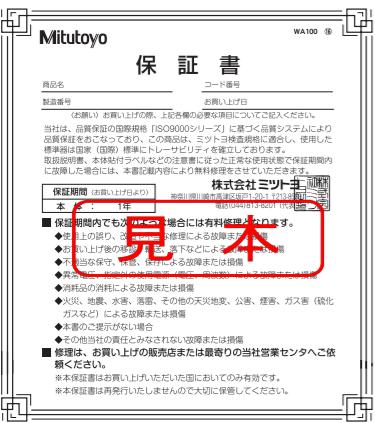
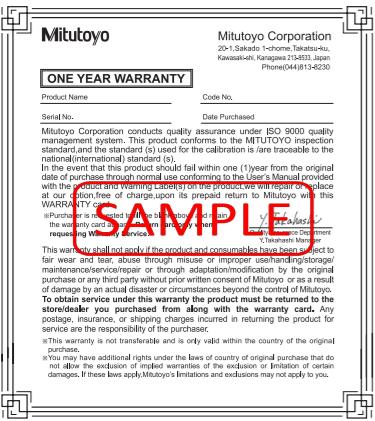
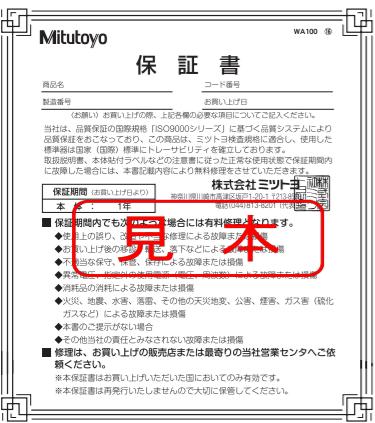
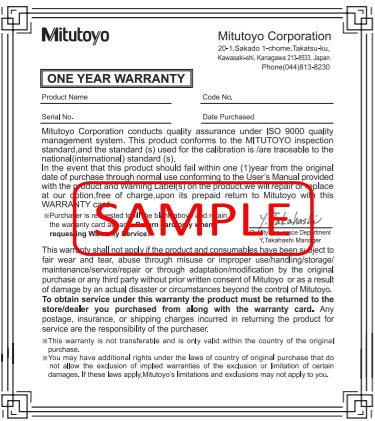
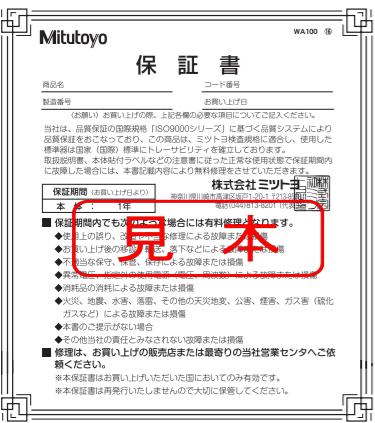
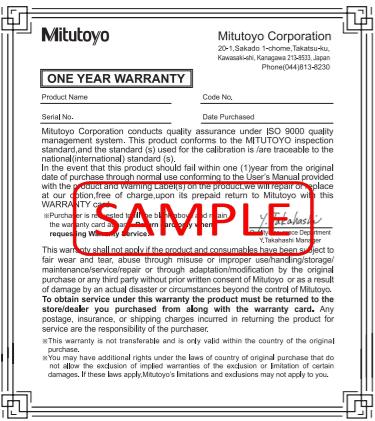
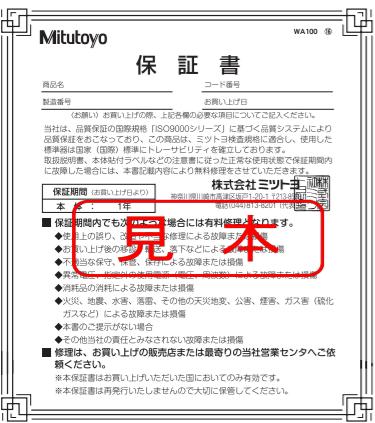
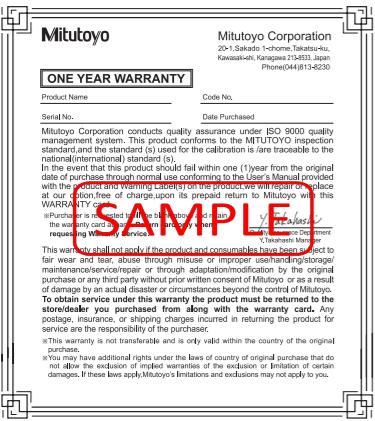
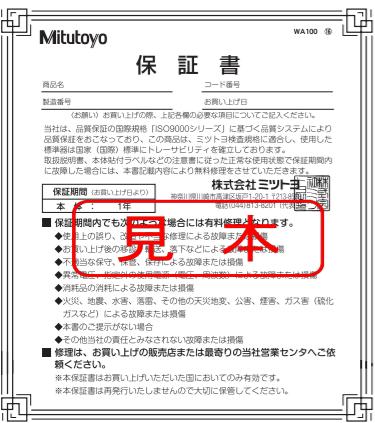
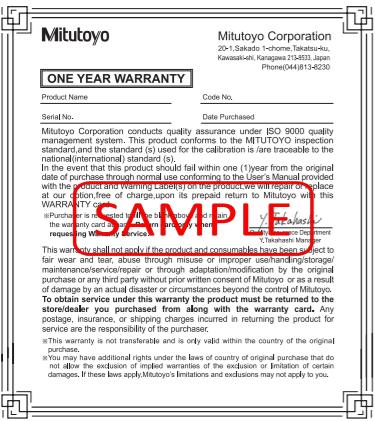
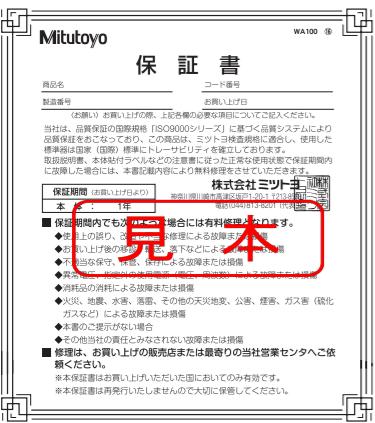
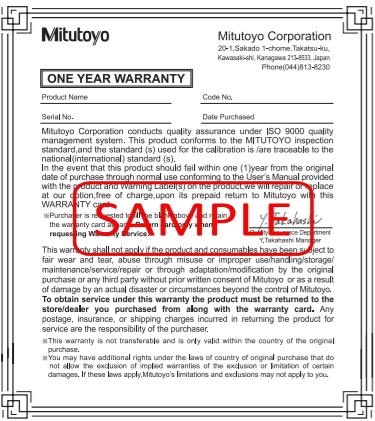
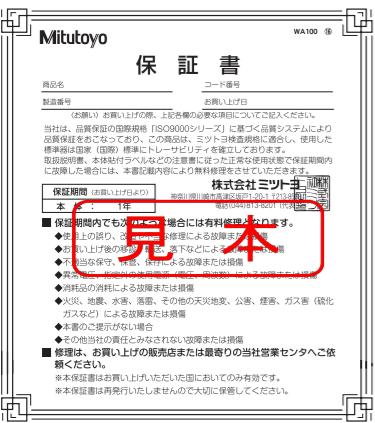
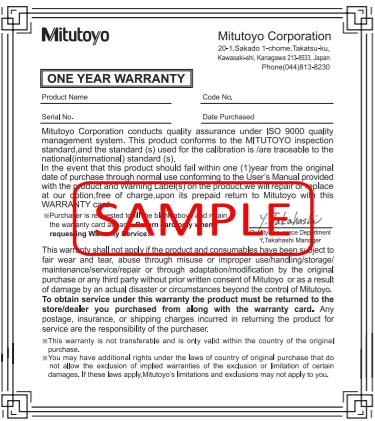
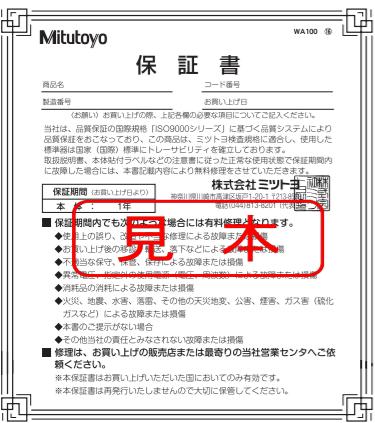
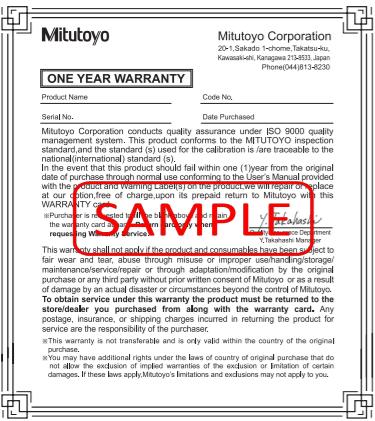
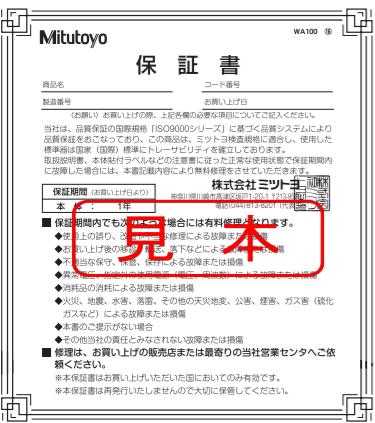
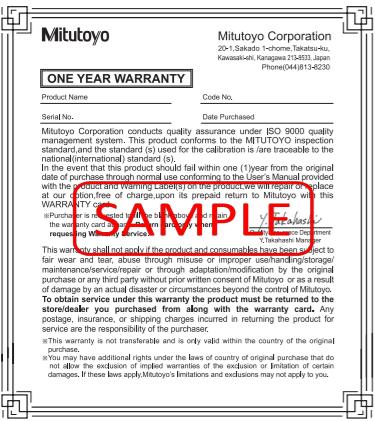
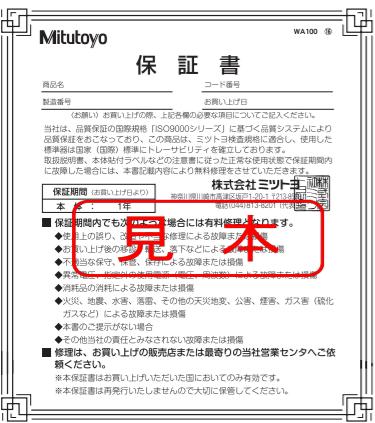
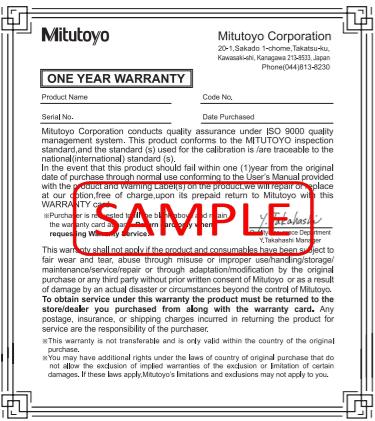
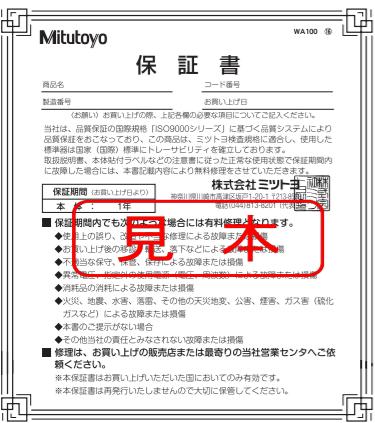
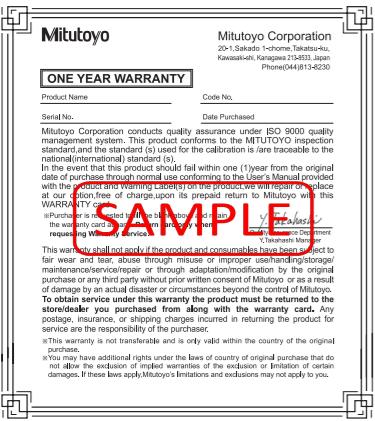
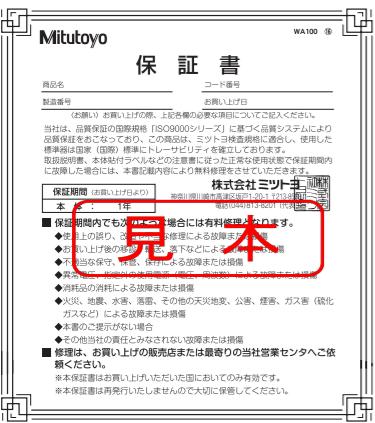
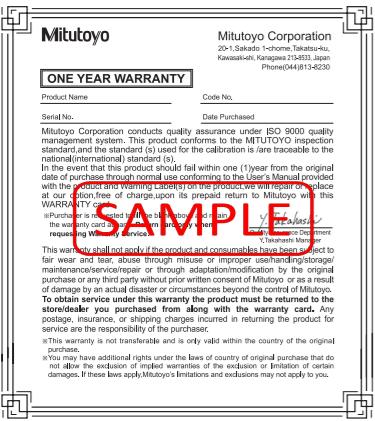
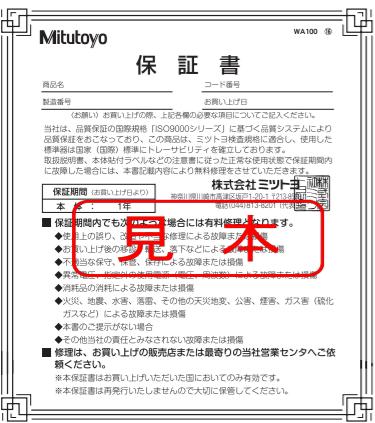
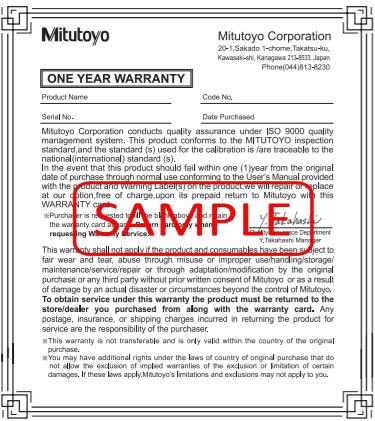
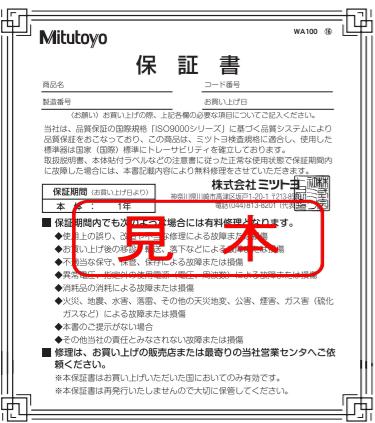
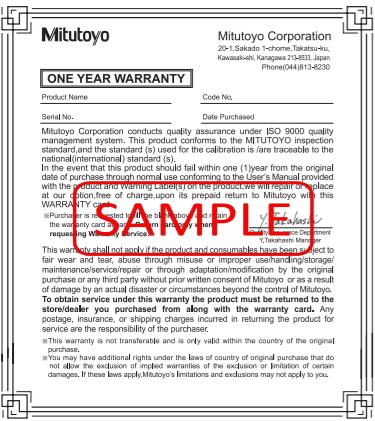
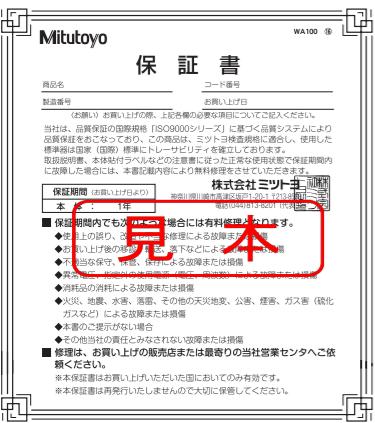
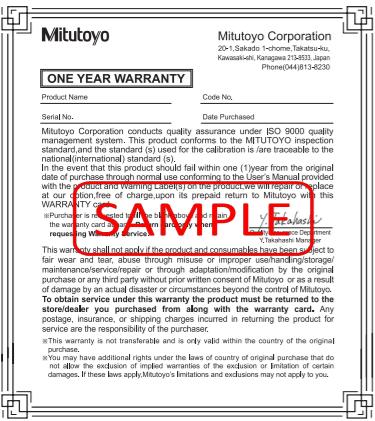
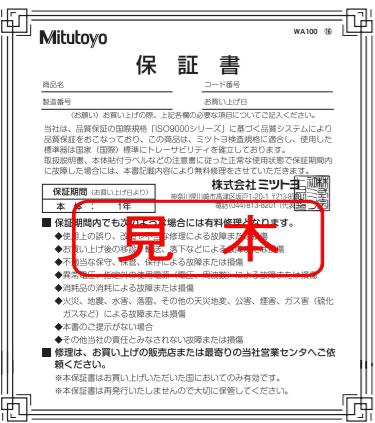
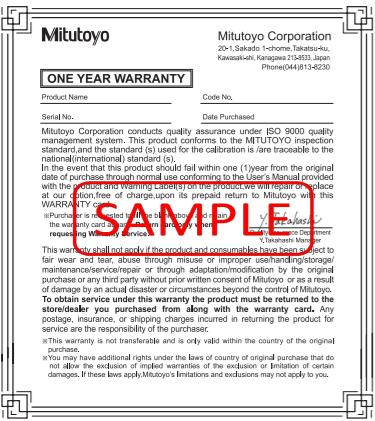
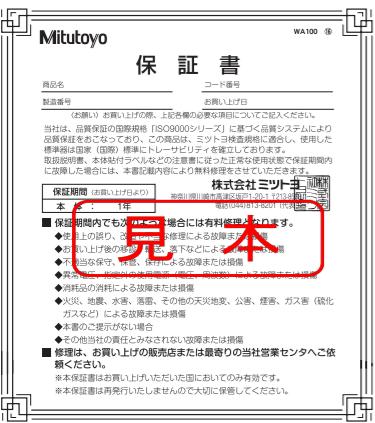
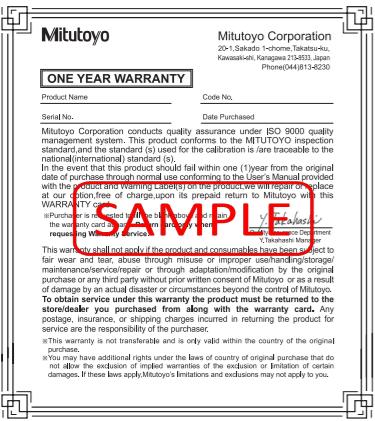
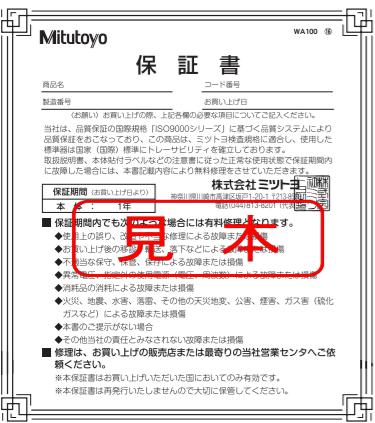
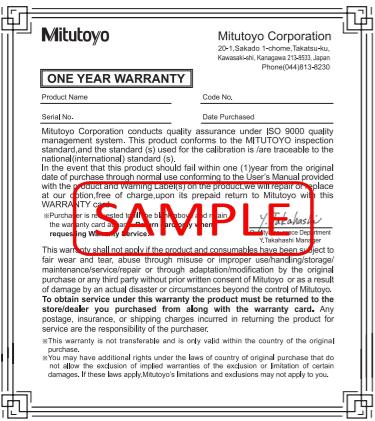
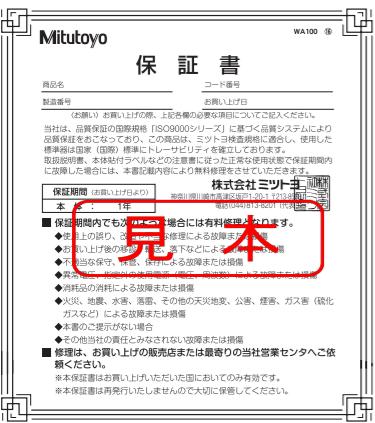
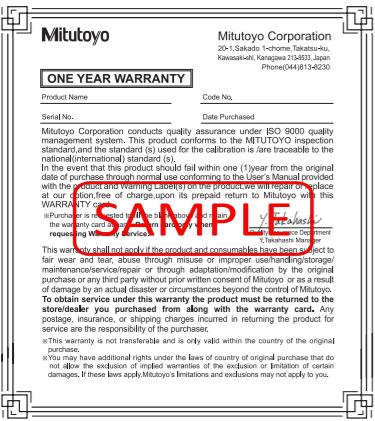
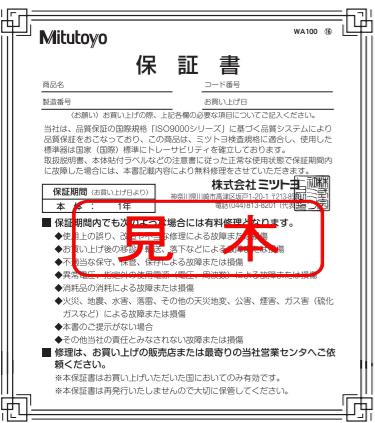
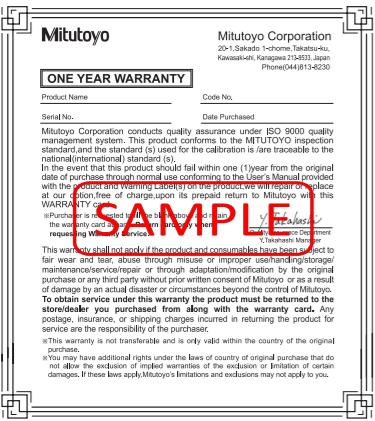
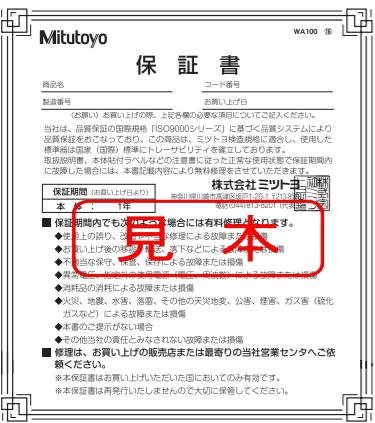
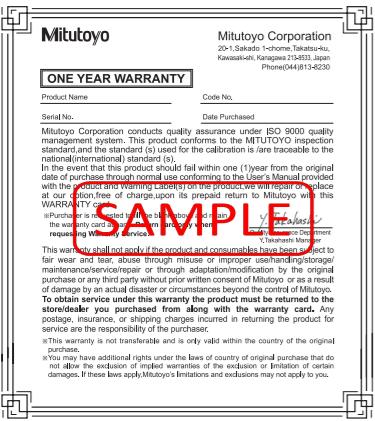
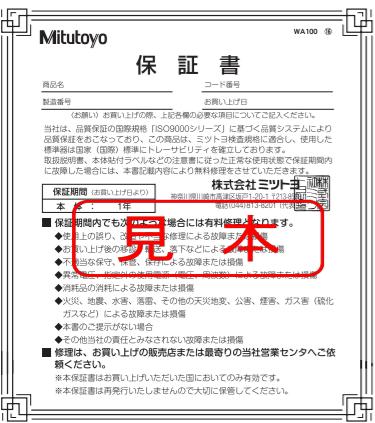
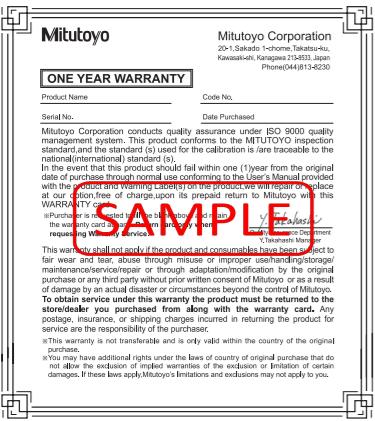
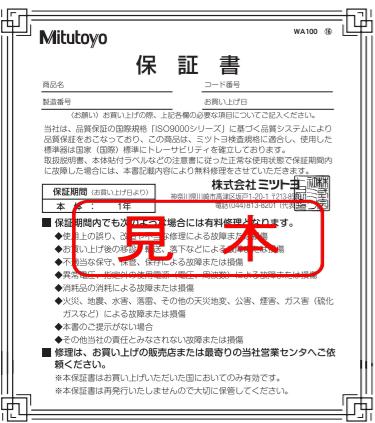
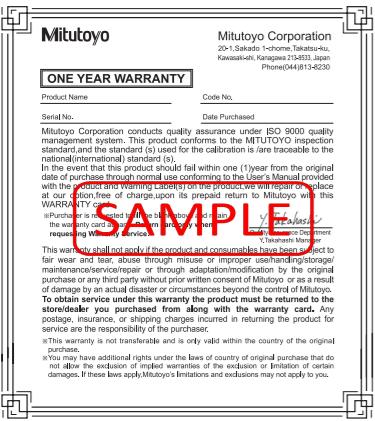
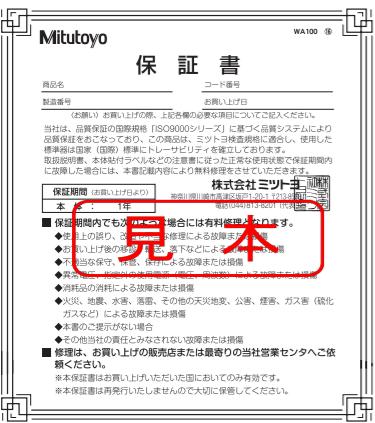
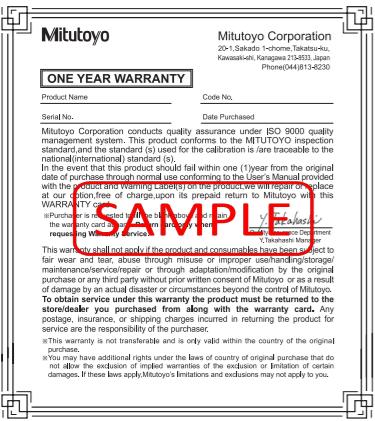
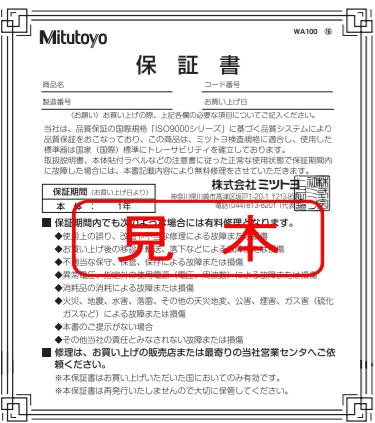
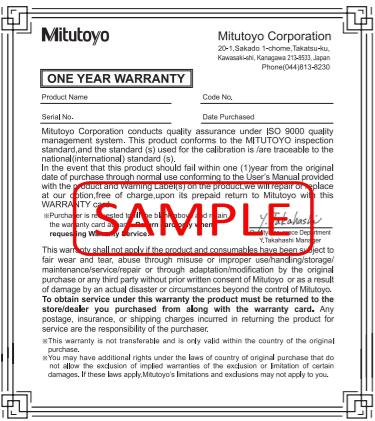
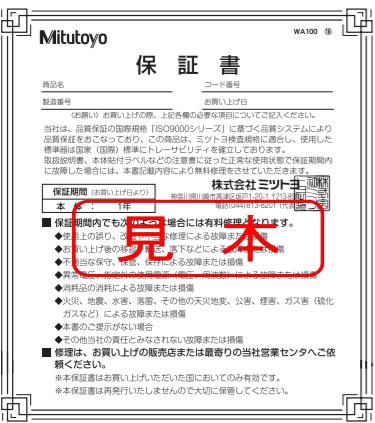
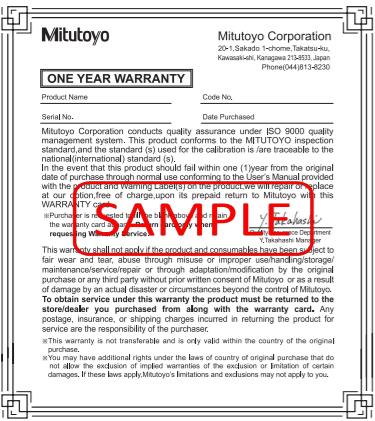
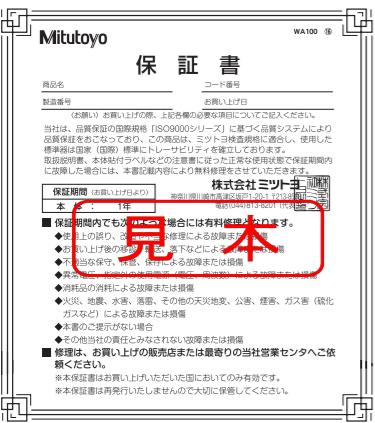
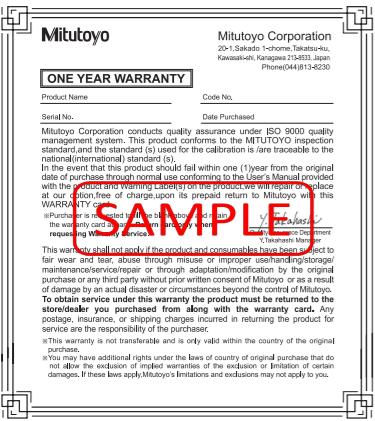
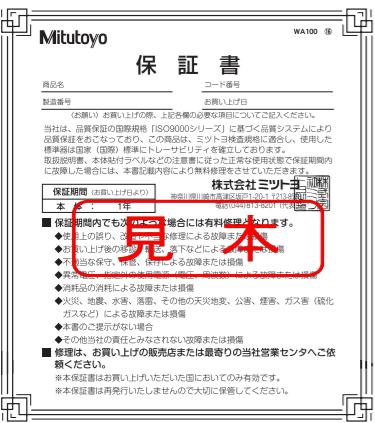
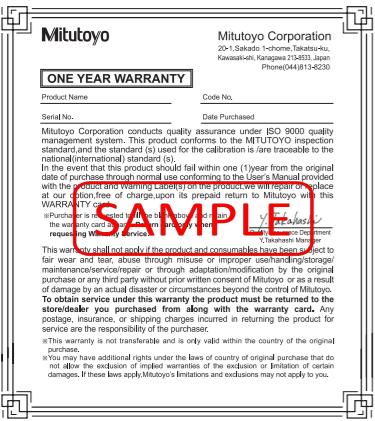
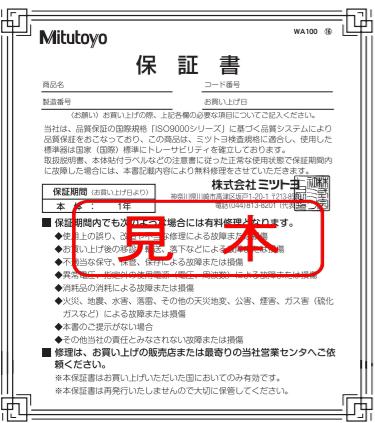
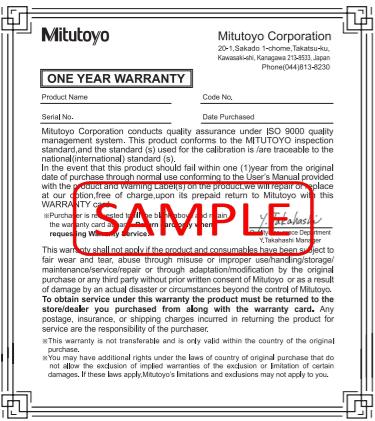
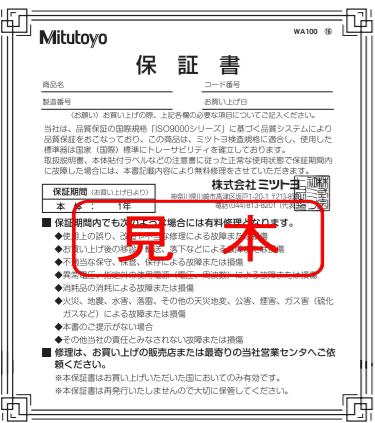
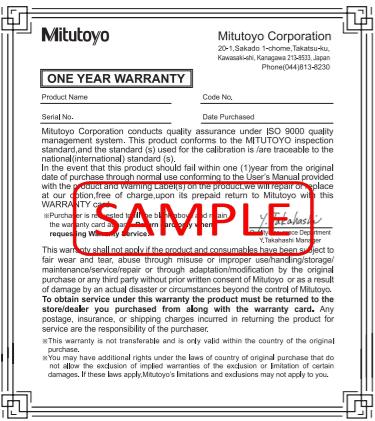
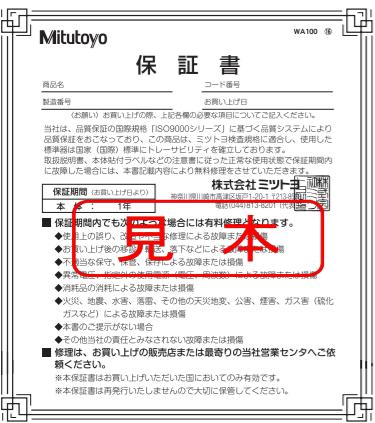
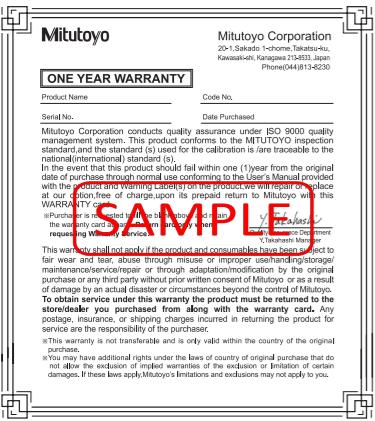
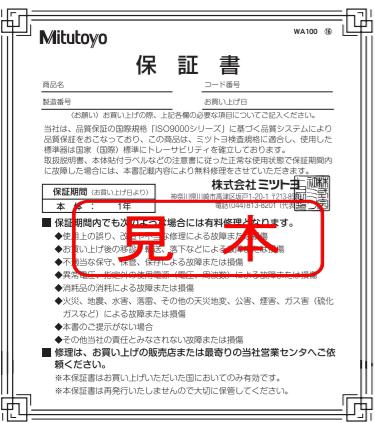
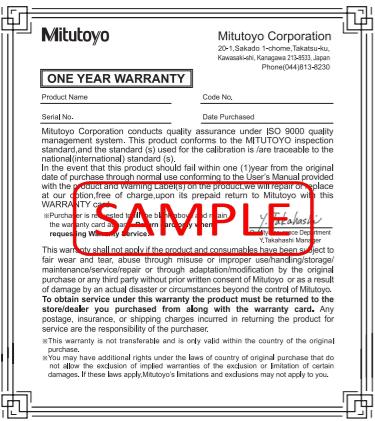
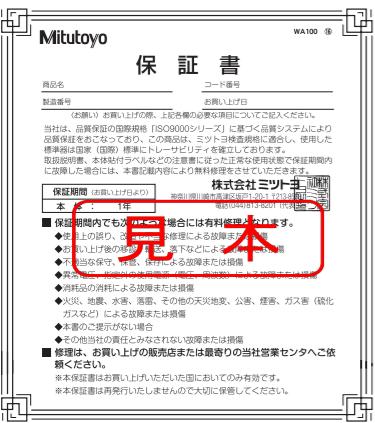
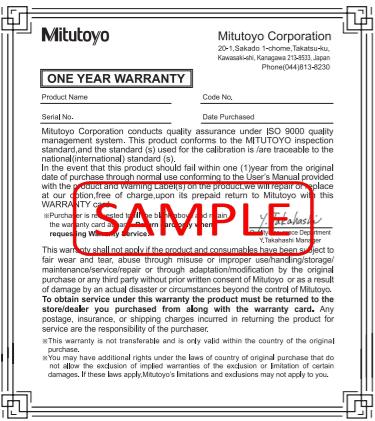
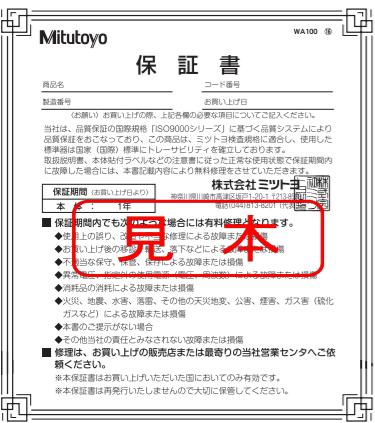
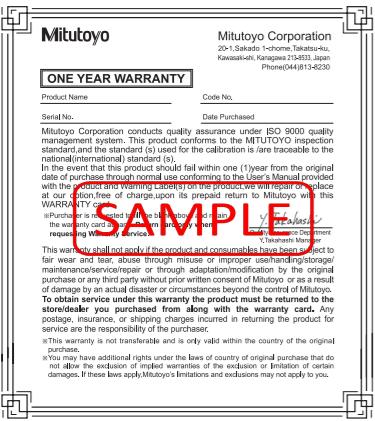
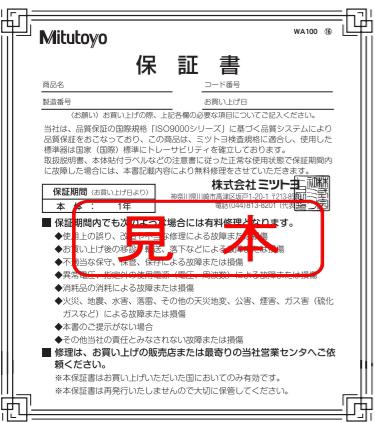
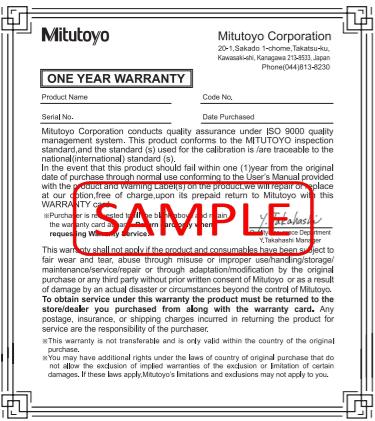
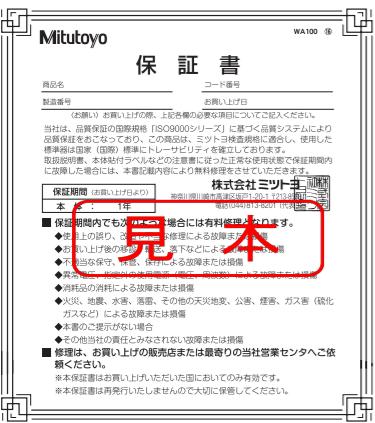
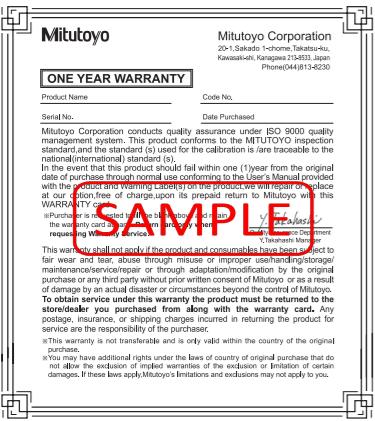
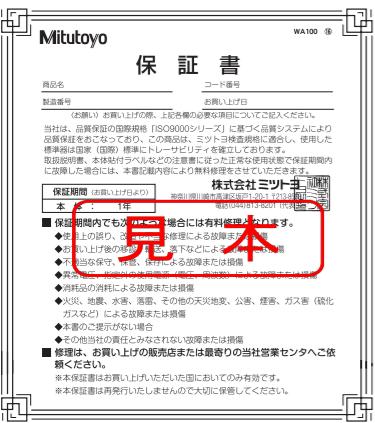
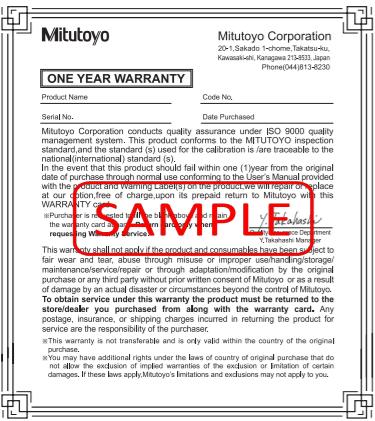
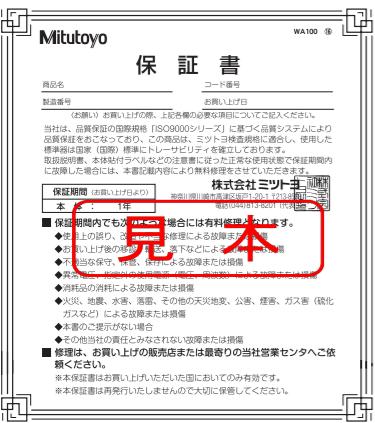
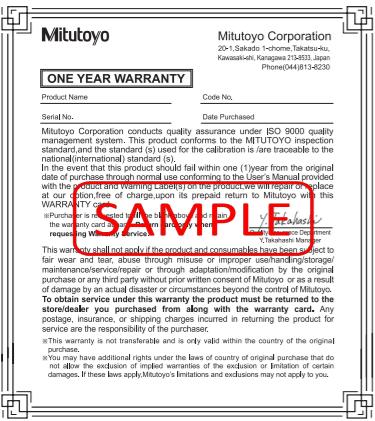
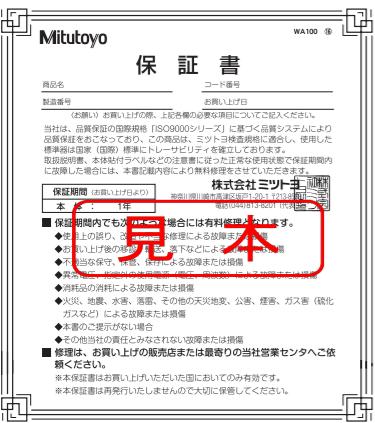
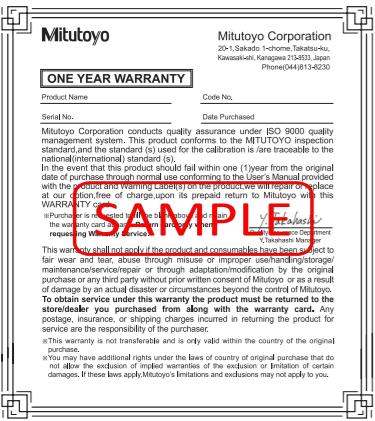
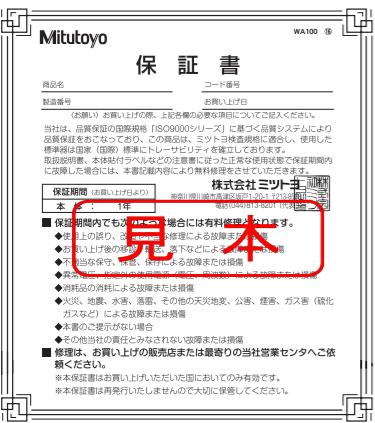
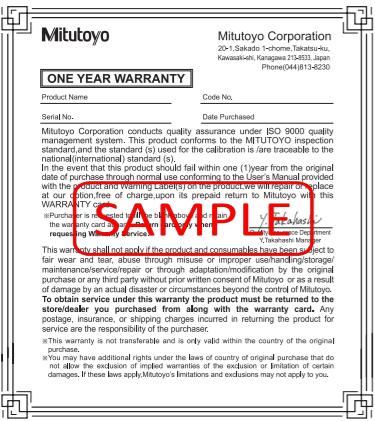
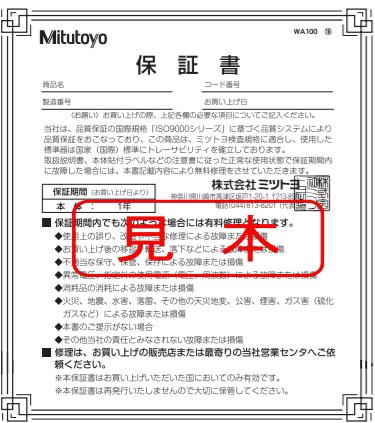
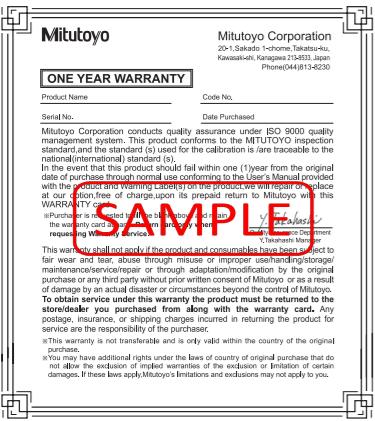
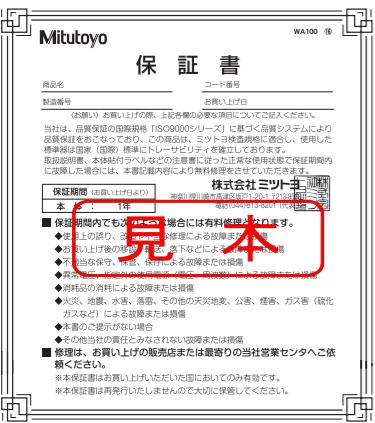
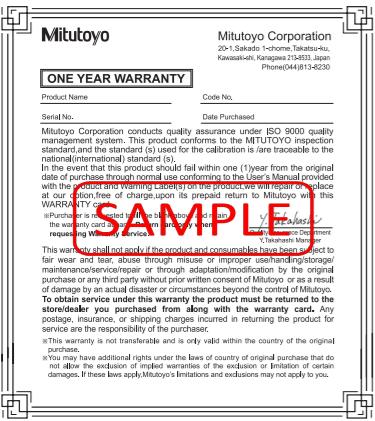
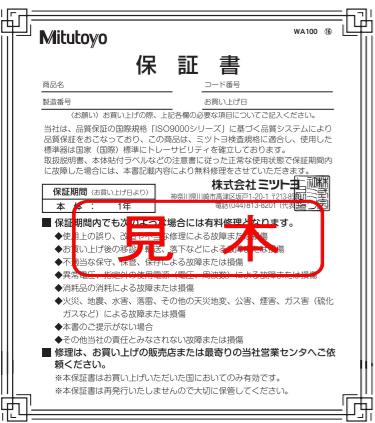
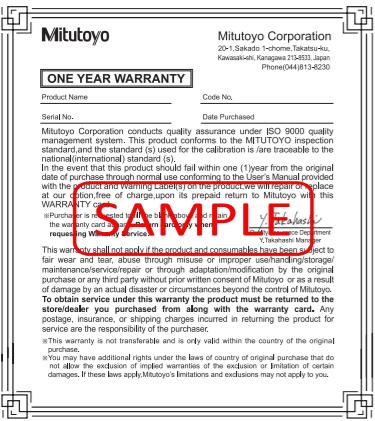
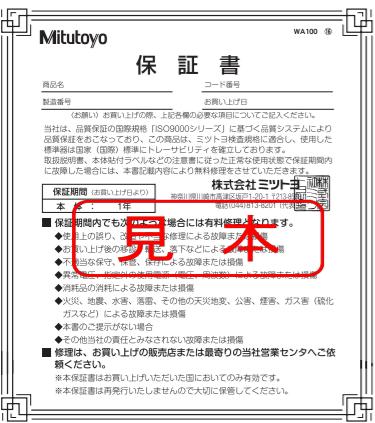
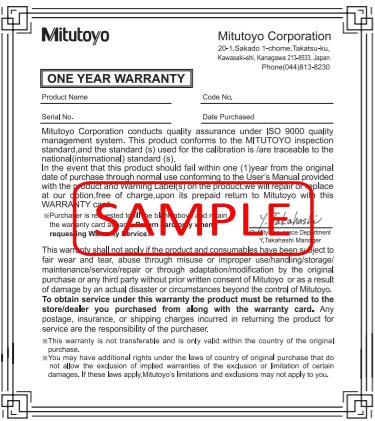
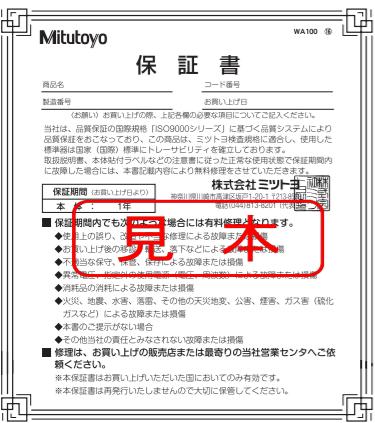
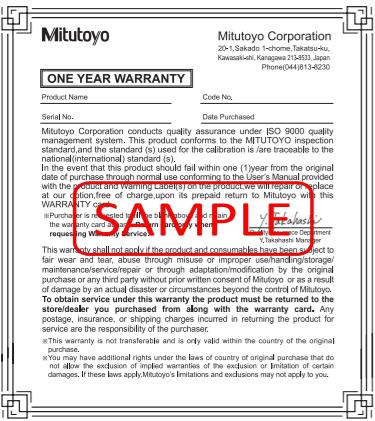
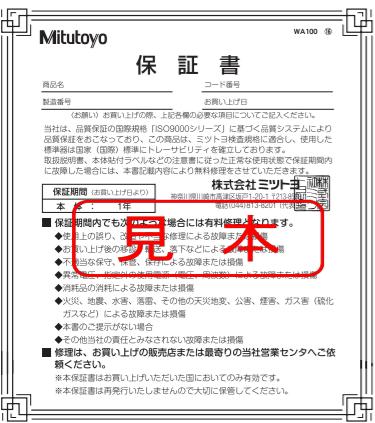
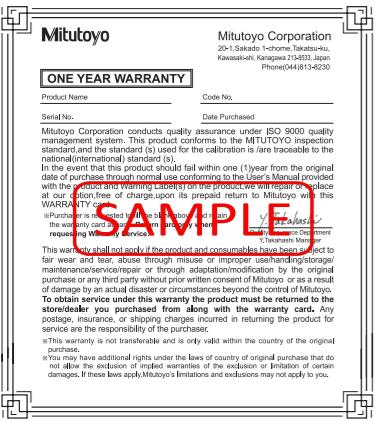
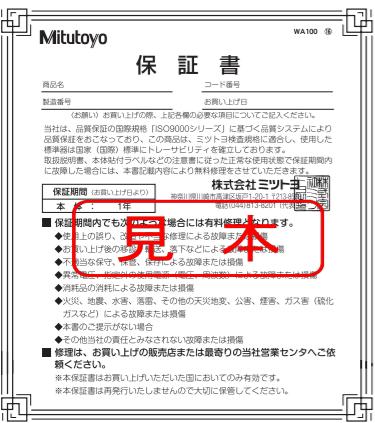
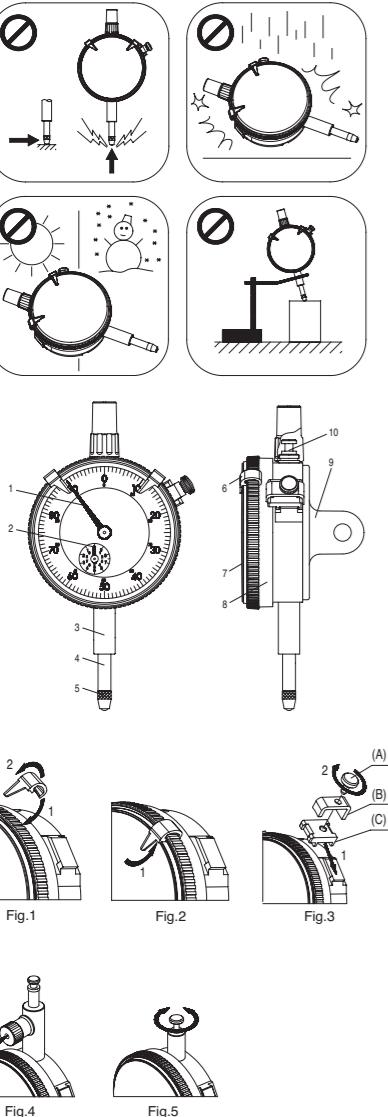


ダイヤルゲージ



Dial Indicator

Comparatore analogico a quadrante

Indikatorklocka

다이얼 게이지

指針式千分表

指示量錶

To obtain the highest performance from the dial indicator, (GB) carefully read this user's manual prior to use. It is recommended that receiving inspection be performed to confirm all performance requirements are satisfied.

Notes on Export Regulations

You shall agree to commit no act which would, direct or indirect, violate any law or regulation of Japan or your country, or any other international treaty, relating to the export or re-export of any commodities.

Name of Each Part

1. Long hand	2. Short hand	3. Stem
4. Spindle	5. Contact point	6. Limit hand
7. Crystal	8. Bezel	9. Lug
10. Spindle stop		

Operating environments

- Temperature : 0°C to 40°C
- Relative humidity : 30% to 70% (no condensation)
- Use the indicator at sites with as little dust, oil, and oil mist as possible and where it will not be exposed to direct sunlight.

Precautions on use

- Important**
- Do not displace the spindle quickly. Do not apply force perpendicular to the spindle.
 - If any shock is exerted on the indicator due to a drop, etc., inspect the measuring accuracy before use.
 - Check the long and short hands, and the spindle for smooth movement at the position to be used.
 - Check that the long and short hands rest still at the specified position.
 - Check the contact point and the back for looseness.
 - Use only the stem or the lug to mount the indicator. (If the dial indicator is mounted by clamping the stem, exercise care so as not to exert an excessive tightening torque on the stem. Otherwise, the indicator spindle may not operate properly.)
 - Use a rigid holder to mount the indicator. To check the rigidity give gentle finger-pushes to the indicator case up and down in a measurement setup and confirm that the long hand returns to the initial position.
 - If using the indicator at a site with a significant temperature fluctuation, frequently adjust the indicator zero point using the master gage.
 - If the spindle stop is removed, the gears could be disengaged. Do not remove the spindle stop.

Limit hand

- Attach and remove the limit hand as described below.

Attachment (Fig. 1)

1. Attach the limit hand to the bezel.
2. Push the hand all the way until it clicks.

Removal (Fig. 2)

1. To remove the limit hand, push it up in the direction of the arrow.

Bezel clamp

- Attach and remove the bezel clamp. (Fig. 3)

1. Insert clamp bracket (C) in the dovetail groove.

2. Hold in place using clamping plate (B) and fix with clamp screw (A).

Be aware that the clamp screw may come loose and fall off due to vibration, etc., when the dial indicator is used in a horizontal position.

Peak hold type hand dial indicator

Clearance of peak hold: push the clamp nut to the direction shown in the Fig. 4.

Adjustable hand dial indicator

The hand position can be adjusted independently of the position of the spindle by rotating the top knob. (Fig. 5)

Maintenance, inspection, and repair

- Wipe stains from the spindle using a dry cloth or a cloth dampened with alcohol. Do not oil the spindle.
- Wipe stains from the crystal using a soft, dry cloth or a cloth dampened with neutral detergent. Only use neutral detergents.
- The performance of the indicator may deteriorate depending on the operating environment and conditions. Determine the inspection period according to the user's operating environment and conditions and periodically inspect the performance.
- The warranty of performance is void if the Dial indicator is disassembled or repaired by parties not authorized by Mitutoyo.

● La garanzia di funzionamento è nulla se il comparatore risulta essere aperto o riparato con ricambi non originali Mitutoyo.

Per ottenere le massime prestazioni dal comparatore, (I) si prega di leggere attentamente il seguente manuale d'uso. Si raccomanda, al ricevimento dello strumento, che tutti i controlli previsti siano soddisfatti.

Note sulle Norme di Esportazione

Rimane implicito che vi impegnere e sarete d'accordo a non compiere alcuna azione che, diretta o indiretta, violi leggi o norme del Giappone o del vostro Paese, o qualsiasi altro trattato internazionale relativo all'esportazione o rieportazione di qualsiasi prodotto.

Nomi dei singoli

1. Lancetta lunga	2. Lancetta corta	3. Gambo
4. Asta scorrevole	5. Punto di contatto	6. Limit hand
6. Indice di tolleranza	7. Vetro	8. Ghiera
9. Asola	10. Blocco asta	

Ambiente operativo

- Temperatura : da 0°C a 40°C
- Umidità Relativa : da 30% a 70%
- Utilizzare il comparatore in ambienti privi di polvere e olio nebulizzato, quando possibile; evitare di esporre direttamente alla luce solare.

Precauzioni d'uso

- Importante**
- Non far scorrere rapidamente lo asta. Non applicare eccessiva forza nella direzione perpendicolare allo asta.
 - Se il comparatore dovesse aver subito dei colpi o una caduta, prima del suo impiego, occorre verificare tramite un controllo gli errori commessi.
 - Verificare, nella posizione di utilizzo, i due indici (indicatore a lancetta corta; indicatore a lancetta lunga) e il movimento dell'asta che deve essere scorrevole e privo di imputamenti.
 - Verificare che gli indici ritornino nella loro posizione di partenza.
 - Verificare il punto di contatto (tastatore / o puntalino), che sia ben avvitato per garantire l'accuratezza durante la misura.
 - Per il montaggio, utilizzare solo gambo d'attacco cilindrico o il fondello del comparatore. (Se il comparatore viene montato fissando il gambo d'attacco, fare attenzione a non esercitare una forza eccessiva nello stringere il gambo, altrimenti l'asta non scorrerà correttamente.)
 - Utilizzare per il montaggio un supporto rigido. Per verificare la rigidità del supporto, premere leggermente con un dito sulla cassa del comparatore (verso l'alto e verso il basso) e verificare che l'indice del quadrante dopo la sollecitazione prodotta ritorni nella sua posizione di artenza.
 - Se il comparatore è utilizzato in un ambiente con variazioni di temperatura significative, verificare frequentemente con l'ausilio di un riferimento (bloccetto pianparallelo) lo zero.
 - Se il blocco asta viene rimosso, l'ingranaggio potrebbe sganciarsi. Non rimuovere il blocco asta.

Indice di tolleranza

- Applicare e rimuovere l'indice di tolleranza come descritto di seguito.

Applicazione (Fig. 1)

1. Applicare l'indice di tolleranza alla ghiera.

Rimozione (Fig. 2)

1. Per rimuovere l'indice di tolleranza, spingerlo nella direzione indicata dalla freccia.

Morsetto della ghiera

- Applicare e rimuovere il morsetto della ghiera. (Fig. 3)

1. Inserire il supporto del morsetto (C) nella scanalatura a coda di rondine.

2. Enerlo fermo utilizzando la staffa di serraggio (B) e fissarlo con una vite di fissaggio (A).

Tenere presente che la vite di fissaggio potrebbe allentarsi e cadere a causa delle vibrazioni, ecc., se il comparatore è utilizzato in posizione orizzontale.

Lancetta indicatore MAX comparatore analogico manuale

Azzeramento del punto MAX: premere il nottolino di fissaggio nella direzione mostrata nella Fig. 4.

Regolazione azzerramento comparatore analogico manuale

La posizione manuale può essere regolata indipendentemente dalla posizione dello stelo, ruotando la vite di regolazione posta in alto. (Fig. 5)

Manutenzione, controllo, riparazione

● Rimuovere macchie di sporco dalla asta utilizzando un panno asciutto o imbevuto con dell'alcol. Non oliare lo stelo.

● Rimuovere macchie di sporco dal quadrante utilizzando un panno di cotone asciutto o con del detergente neutro. Usare solo detergente neutrale.

● Le prestazioni e le caratteristiche del comparatore possono venire a meno in funzione dell'ambiente operativo, e delle condizioni di utilizzo. Determinare gli intervalli di controllo in riferimento all'ambiente operativo dello strumento e alle sue condizioni d'impegno; verificare quindi periodicamente le caratteristiche e il funzionamento.

● La garanzia di funzionamento è nulla se il comparatore risulta essere aperto o riparato con ricambi non originali Mitutoyo.

För att erhålla bästa prestanda från indikatorklockan (S) ska man noggrant läsa igenom denna användarhandbok före användning. Vi rekommenderar att man genomför en inspektion vid mottagning för att bekräfta att alla prestandakrav uppfylls.

Ang. exportrestriktioner

Ni shall samtycka till att inte begå någon handling som på något sätt, direkt eller indirekt, strider mot japanska, eller lokala, lagar och bestämmelser såväl som andra internationella överenskommelser gällande export eller vidareexport av Mitutoyos produkter.

NAMN PÅ ALLA DELAR

1. Lång visare	2. Kort visare	3. Gambo
4. Asta scorrevole	5. Punto di contatto	6. Limit hand
6. Indice di tolleranza	7. Vetro	8. Ghiera
9. Asola	10. Blocco asta	

Driftmiljö

- Temperatur : 0°C till 40°C
- Relativ luftfuktighet : 30% till 70% (ingen kondens)
- Använd indikatorn i miljöer med så lite damm, olja och oljedrimma som möjligt, där den inte utsätts för direkt sollägen.

Säkerhetsåtgärder vid användning

Viktigt

- Förflytta inte av spindeln för snabbt. Använd ingen kraft vinkelrätt mot spindeln.
- Se om indikatorn utsätts för ytterstötar genom att tappas el. dyl. ska man undersöka mätngrannhetens före användning.
- Kontrollera att de långa och korta visarna samt spindeln rör sig smidigt vid positionen som ska användas.
- Kontrollera att de långa och korta visarna står stilla vid specificerad position.
- Verifiera punkten av kontaktpunkten och baksidan är rörliga.
- Använd endast inspänningsskaffet eller fästet för att montera indikatorn. (Om indikatorklockan monteras genom att inspänningsskaffet spänns fast ska man vara nog med att inte dra åt för hårt på inspänningsskaffet. I annat fall finns det risk för att indikatorspindeln inte fungerar korrekt.)
- Använd en stabil hållare för att montera indikatorn. För att kontrollera stabiliteten, rör försiktigt indikatorn upp och ned med fingret efter att det har monterats för mätning. Bekräfta att den långa visaren återgår till utgångspositionen.
- Om indikatorn är inställd för montering i en plats med stora temperaturvariationer ska man ofta justera indikatorn till nollpunkt med huvudreglage.
- Om indikatorn tas bort kan kugghjulen lossna. Ta inte bort spindelstoppet.

Toleransmärke

- Sätt fast och ta bort toleransmärket såsom beskrivs nedan.

Fastsättning (Fig. 1)

1. Fäst toleransmärket vid ytterkanten.

Skjut toleransmärket hela vägen tills det klickar.

Borttagning (Fig. 2)

1. För att ta bort toleransmärket, skjut det i pilens riktning.

Ytterkanthållare

- Fäst och ta bort ytterkanthållaren. (Fig. 3)

1. Sätt i hållarklämman (C) i inspänningsskåran.

2. Håll på plats med spänblecket (B) och fixera med spännskruven (A).

Spännskruven kan lossna och ramla av p.g.a. vibrationer etc. om indikatorklockan används i horisontell position.

Handindikatorklocka med topp frys-funktion

Nollställa topp frys-funktionen: skjut spännmuttern i riktningen som visas på Fig. 4.

Justerbar handindikatorklocka

Visarpositionen kan justeras oberoende av spindelpositionen genom vridering av den övre knopen. (Fig. 5)

Underhåll, inspektion och reparation

● Avlägsna fläckar från spindeln med en torr trasa eller en trasa fuktad med alkohol. Olja inte i spindeln.

● Avlägsna fläckar från glaset med en mjuk, torr trasa eller en trasa fuktad med neutralt rengöringsmedel. Använd endast neutrala rengöringsmedel.

● Indikatorns prestanda kan försämras beroende på miljö och användningsförhållanden. Inspekitionsintervaller ska bestämmas utifrån miljö och användningsförhållanden. Kontrollera regelbundet enhetens prestanda.

● Le prestazioni e le caratteristiche del comparatore possono venire a meno in funzione dell'ambiente operativo, e delle condizioni di utilizzo. Determinare gli intervalli di controllo in riferimento all'ambiente operativo dello strumento e alle sue condizioni d'impegno; verificare quindi periodicamente le caratteristiche e il funzionamento.

● La garanzia di funzionamento è nulla se il comparatore risulta essere aperto o riparato con ricambi non originali Mitutoyo.