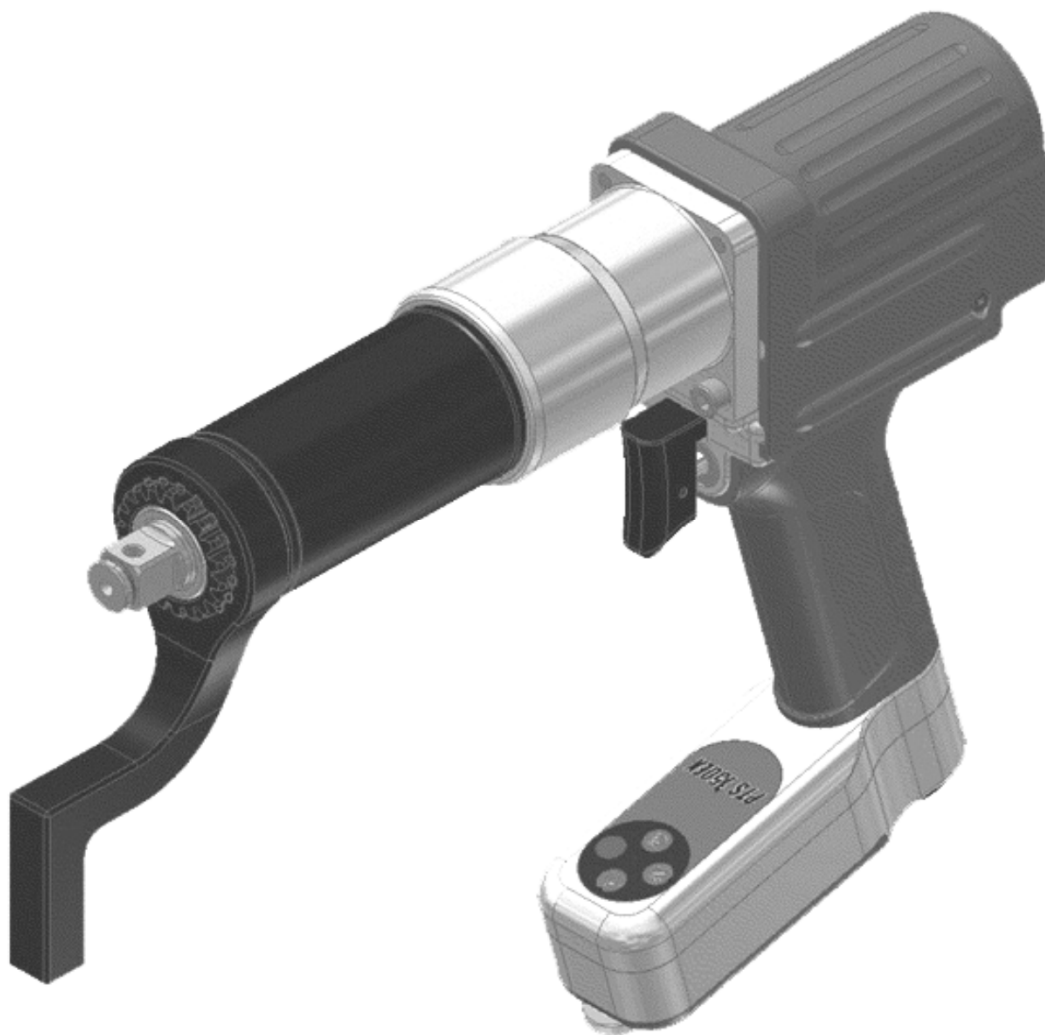


PTS-150EX

Operation Manual



Read this Operation Manual thoroughly and separate "Instruction Manual" before using.
Save all warnings and instructions for future reference.



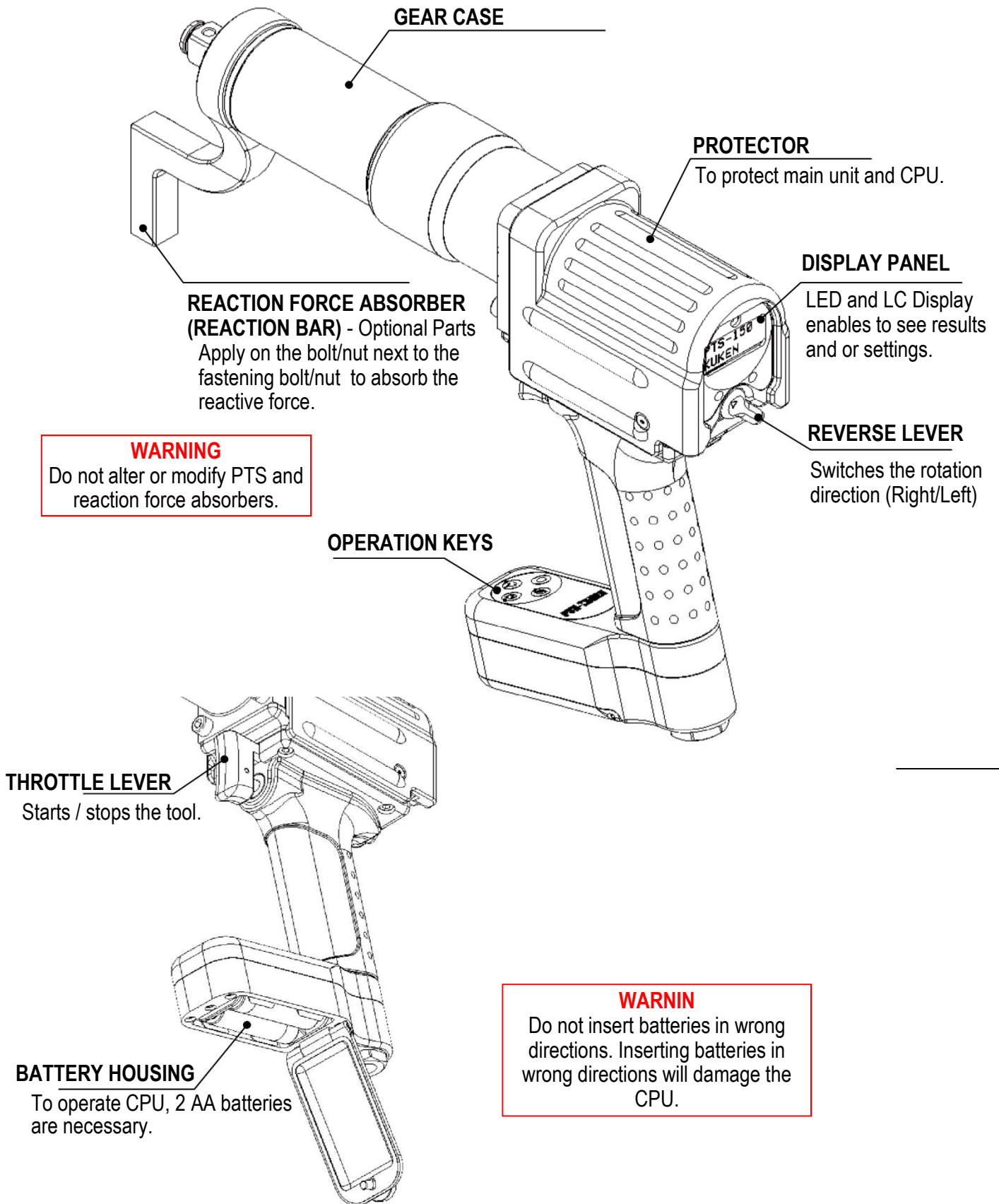
KUKEN CO., LTD.

Ver. 160801_E

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Part Name (1)

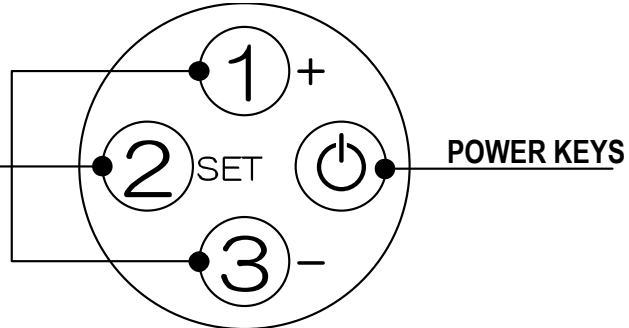


Part Name (2)

OPERATION KEYS

PRE-SET KEYS

Select **PRE-SET** No. 1 to 3.
When torque setting, keys are worked as + / - / SET key.



DISPLAY PANEL

PRE-SET KEY NUMBER

Program No.

LAMP

Lights when changing the **Pre-Set Torque** (programmed torque) or the Pre-Set key

SELECTED PRE-SET KEY & TORQUE

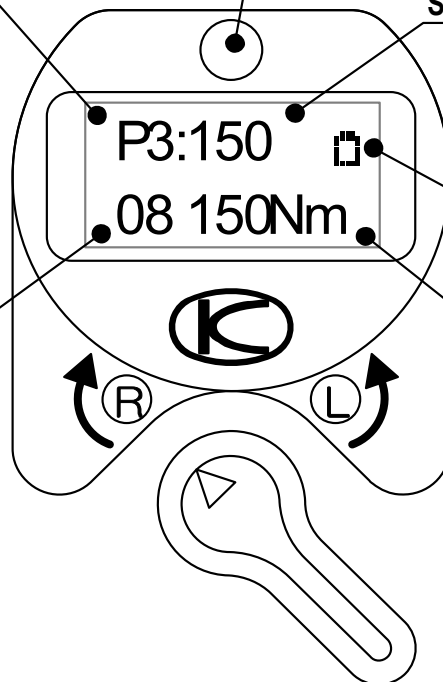
Selected Program No. & programmed torque.

LOW BATTERY WARNING

REMAINING SCREWS

Enable to program from 0 to 99 run-

TORQUE RESULT



Functions (1)

■ RELIABLE FUNCTIONS ■

□ AUTO - START and AUTO - POWER OFF

By pressing the throttle lever, the CPU starts automatically.
If not operating for a certain period of time, the power will be turned off automatically.

□ 2 SPEED ROTATION

High speed rotation until seating and low speed to complete the fastening.

□ TORQUE CONTROL

Its accurate torque is controlled by the strain gauge transducer. Therefore the air pressure does not affect the accuracy of the tool.

The tool shuts off automatically when accomplished. Then the tool start to slowly rotate in reverse direction to eliminate the residual torque.

□ Displays the set torque (programmed torque) and the result.

On the display panel, the **Pre-Set Key No.** (Program No.), **Pre-Set Torque** (Programmed Torque), remaining the Screw Counter, and the Result are shown on the panel.

While operation, torque up-rising is shown in real time.

Once the Screw Counter is completed properly, the green lamp lit.

And the display panel shows the result.

If not properly completed, the display panel show the error message.



P3 150
08 151Nm

■ SAFETY FUNCTIONS ■

□ Fail Safe Function (Poka-Yoke)

If the CPU is not properly functioning or if the battery is very low, the tool will not start.
The spindle slowly moves reverse direction and stops. The tool then will be locked.

□ Function to Prevent Operational Error

This function is to prevent an operational error. If the **Pre-Set Key** (Program No.) which torque is not programed is selected by mistake, the tool will not start.


If the torque is not programmed, the panel shows [- - -].

□ " CHECK OBJECT" (Check Screw) Function

This function detects abnormal torque up-rising and bolt stretching beforehand.

Once detected, this function forces to stop the tool.

This function can be tuned on / off depending on applications.



CHK OBJC
08 104Nm

□ Low Battery Warning


If the battery power is low, the battery mark is shown on the panel.

If the batteries have no power, the tool will be locked.

Immediately replace batteries.



P3: 150 
08 152Nm



NO BATT.
= LOCK =

Functions (2)

■ OTHER FUNCTIONS ■

Loosening Function

The left direction of the tool is "loosening". Regardless to the **Pre-Set Torque** (Programed Torque), the tool loosen with its maximum torque.

Batch Control

The Screw Counter can be set to the tool. Remaining number of screws will be shown on the panel.

Pre-Set (Program)Function

3 different torques and number of the Screw Counter can be programmed to each **Pre-Set Key** (Program No.).

This function is to change the program easily and quickly.

Battery Voltage Display

The voltage of the batteries can be checked at the display panel.

Back Light

The back light of LCD display panel makes possible to use the tool in dark area.

Function Settings

This section describes how to set **Back Light**, **Timer**, and **Check Object (Check Screw)** functions. Press (-) key when the tool power is off. While pressing (-) key, press power key to start setting functions.

Back Light

Setting the **Back Light** of the display panel.

1 Press (+) key to select Back Light on / off.

```
BCK_LLGH  
[ON ]
```

2 Press (SET) key to finish the setting.

memo

Back light spend the battery power. If not using in dark area, the back light should be turned off.

The function setting will proceed to the next setting.

Timer

If not operating the tool for certain period of time, the power will turned off automatically. This function is to set **Timer** to control the length of time. The length can be set from 3 to 60 seconds.

1 Press (+) to increase the length of time. Press (-) to decrease. The figure right, the timer is set 10 seconds.

```
OFF TMR  
[10s]
```

2 Press (SET) key to finish the setting.

memo

The battery power is proportionate to the length of timer. The longer the timer is set, faster the batteries will be spent.

The function setting will proceed to the next setting.

Check Object

This section describes how to set "**Check Object**" (Check Screw) function.

1 Press (+) key to select on / off of "Check Object" (Check Screw) function.

```
CHK OBJC  
[ON ]
```

2 Press (SET) key to finish the setting.

memo

If the application is soft joint or objects are not closely contact to each other, This function must be turned off.

How to Change Pre - Sets

Changing Pre-Sets

The **Torques** and the **Screw Counter** can be programmed in each **Pre-Set Key** (Program No.) and can be changed easily and quickly.

- 1 Select **Pre-Set Key** (Program No.) and keep pressing for a few seconds.
In the figure right, changing the **Pre-Set Key** ③ to ①.
- 2 When the buzzer sounds and the lamp blinks, release the **Pre-Set Key** (Program No.).

P3: 150
08 ---Nm

P1: 50
04 ---Nm

memo

The colors of the lamp are green for P1 (Pre-Set Key 1), yellow for P2 (Pre-Set Key 2), red for P3 (Pre-Set Key 3).

Torque & Run-Downs

To change the **Torque** and the **Screw Counter** programmed in each **Pre-Set Key** (Program No.), keep pressing the **Pre-Set Key** (Program No.) which ought to be changed.

- 1 Keep pressing the **Pre-Set Key** (Program No.) for a few seconds.
- 2 Keep pressing the **Pre-Set Key** (Program No.) even after the buzzer sound and the lamp lit.
- 3 Release the **Pre-Set Key** (Program No.) after the second buzzer. Once the torque is shown on the panel with [], the torque is ready to be changed.
- 4 Press (+) or (-) to change the torque. And press (SET) to finish the torque setting.
- 5 After setting the torque, press (+) or (-) to change the **Screw Counter**. If the **Screw-Counter** is set as [- -], the **Batch Control** is not functioning. Press (SET) to finish all the settings.

P1: 50
04 ---Nm

P3: 150
08 ---Nm

SET P3
[150Nm]

SET P3
[120Nm]

SET P3
[--]

The figure on the right is setting P3 (**Pre-Set 3** = Program No. 3) from P1 (**Pre-Set 1** = Program No. 1).
The torque is changed from 150 Nm to 120Nm.
The Screw Counter is changed from 8 to 0.

P3: 120
---Nm

memo

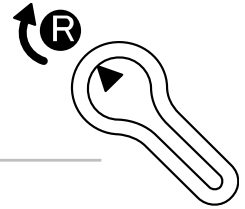
If the Batch Control is not activating, the Screw Counter are not shown on the display panel.

How to fasten

This section describes how to fasten screws after tool settings.

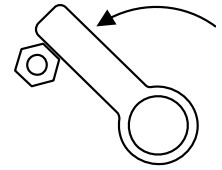
Changing Direction

- Turn the reverse lever to the R (right direction).



Reaction Bar Position

- Be sure to use the reaction force absorber (reaction bar).
- When fastening screws, the reaction bar turns left direction.
- Be sure to apply the reaction bar the screw next to the fastening screw. Also be sure to check if the reaction point is strong enough to hold the torque.
- Do not apply the reaction bar to the thread of the bolt. Be sure to protect the thread with the nut.
- If the reaction bar is not properly set to the reaction point, the object may be damaged. It may also cause the serious injury.



Start Fastening

- Be sure to hold the tool straight to the screw. The screw and the tool must be aligned.
- By pulling the throttle lever, the power is turned on automatically. And the spindle starts to rotate fast.
- High speed rotation until screw seating the object and low speed to complete the fastening.

The display panel shows the torque up-rising.



```
P3: 150
08 67Nm
```

Auto - Stop

- Shuts off automatically at the **Pre-Set Torque** (Programed Torque). Release the throttle lever immediately.
- As soon as the tool shuts off, the buzzer sounds and the lamp blinks green.
- The result will be shown on the display panel.
- The Screw Counter will be subtracted. (If the **Batch Control** is set)



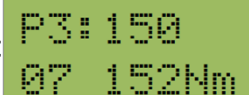
```
P3: 150
07 152Nm
```

memo

As soon as the tool stops, the spindle slowly starts to turn left to clear the residual torque. Once the spindle starts to turn left, release the throttle lever immediately.

To Reset Batch Control

- To clear the Screw Counter before completing, press **Pre-Set Key** (Program No. 3) for a few seconds.



```
P3: 150
07 152Nm
```

The figure on the right, the remaining Screw Counter is 7. By pressing **Pre-Set Key** (Program No. 3) for a few seconds, the Screw Counter will be reset. This case, the 8 Screw Counter was set at the beginning.



```
P3: 150
08 ---Nm
```

How to loosen

The left direction of the tool is "loosening". Regardless to the **Pre-Set Torque** (Programed Torque), the tool loosen screws with its maximum torque.

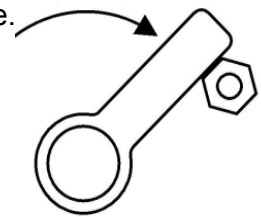
Change The Direction

- Turn the reverse lever to L (left rotation).



Reaction Bar Position

- Be sure to use the reaction force absorber (reaction bar).
- When loosening screws, the reaction bar turns right direction.
- Be sure to apply the reaction bar the screw next to the fastening screw. Also be sure to check if the reaction point is strong enough to hold the torque.
- Do not apply the reaction bar to the thread of the bolt. Be sure to protect the thread with the nut.
- If the reaction bar is not properly set to the reaction point, the object may be damaged. It may also cause the serious injury.



Start Loosening

- Be sure to hold the tool straight to the screw. The screw and the tool must be aligned.
- By pulling the throttle lever, the power is turned on automatically. And the tool starts to rotate left direction.
- Once the screw is loosen, release the throttle lever.

LOOSEN

Torque Limiter

If the torque excesses its maximum torque, the torque limiter activates to protect driving parts and shuts off immediately.

- As soon as releasing the throttle lever, the torque limiter stops.



LOOSEN
=LIMITR=

Trouble Shooting Description of error code

When the error occurs, the message will be displayed on the panel. And also the buzzer and red lamp will warn operators.

Low Torque

Cause The throttle lever was released before reaching the **Pre-Set Torque** (Programmed Torque).



LOW TRQ
08 87Nm

Remedy Loosen the screw once and start fastening again.

Over Torque

Cause The result of the operation may exceed the **Pre-Set Torque** (Programed Torque) if the fastening is done twice.

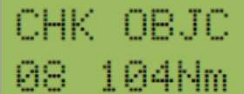


OVER TRQ
08 168Nm

Remedy Loosen the screw once and check the lubrication condition and the surface of the screw and the object.
If nothing wrong with the surfaces and lubrication, start fastening again.
If "Over-Torque" occurs often, please ask your dealer for repair.

Check Object

"Check Object" (Check Screw) function is very efficient for hard joint applications. To activate this function, please see Page 6 "Setting".



CHK OBJC
08 104Nm

Cause This function is to detect the abnormal up-rising of the torque caused by the bolt stretching and or bolt sticking.

Remedy Loosen the screw and check if it is not stretched, sticking, abnormal surface, or excessive lubrication.


Remarks If the application is soft joint or objects are not closely contact to each other, the function must be turned off.
It may false detect.

Warning & Error

Low Battery Warning

Remaining battery power is displayed on the display panel in 2 different stages.

- If the battery power is low, the battery mark is shown on the panel as the figure right.
As soon as the battery mark is shown on the panel, immediately replace the batteries.
- Furthermore, the tool will be locked if no battery power.
Replace the batteries immediately to continue the operation.



P3: 150 
08 152Nm



NO BATT.
= LOCK =

Off Set Error

CAUSE Failure of torque sensor. Zero point error.

REMEDY The tool has the auto-adjustment function.
When the tool is switched on, this function start to adjust the zero point of the torque sensor.
If this function does not work and still see the error message, please ask your dealer for repair.



OFFSET
ERROR

Cautions for Operations

 **Please do not ignore. Read carefully and follow the instruction. Failure to follow the safety warnings and instructions may result the tool damage and / or serious injury.**

- The tool should be used with the air pressure of 0.5 to 0.7 MPa(Pe).
 - Air Pressure beyond 0.7 MPa(Pe) may cause the CPU failure.
 - Air Pressure below 0.5 MPa(Pe) may not reach the set torque or may not stop automatically.
- In any case, do not touch the reaction force absorber and the socket when operating.
- If anything wrong with the tool, immediately release your finger from throttle button to stop operation.
- Ensure to release the throttle lever immediately when the tool shuts off itself.
The tool starts to rotate reverse to eliminate the residual torque. It may start loosening.
- Avoid excessive oil application to the air motor. It may cause the defect of the solenoid valve and CPU.
As a guideline, apply "one or two tiny drops of the machine oil ISOVG 10 once a day."
- To set the reaction force absorber to the application, hold the gear case of the tool and slowly operate the tool.
Do not hold the reaction force absorber. Holding the reaction force absorber may cause serious injury.
- Do not pour "liquid" or "oil" onto the tool.
- Do not make a high impact to the tool. Do not strike the tool.
- In case the tool does not stop even though the green lamp is on, it might be the failure of the tool.
Stop using the tool immediately.
- Replace batteries when the power is off.
- When replacing batteries, make sure to replace both batteries at the same time.
Using the new battery and the old battery at the same time may cause the degradation of the tool.
- Do not use batteries other than instructed. Use alkaline batteries and or Ni-MH batteries.
Please make sure to use the same kind.
- Do not insert batteries in wrong direction. Setting batteries in wrong direction may cause the failure of the tool.
- Do not use batteries in following conditions.
 - The exterior package of the battery is peeled of or scratched.
 - Liquid leaking batteries.
- Take out the batteries from the tool if not using the tool long period of time.

Specifications

Fastening Control Method	Torque method
Torque Resolution	1 Nm
Accuracy	Within $\pm 5\%$
Screw Direction	Right handed screw
The Number of Pre-Set Parameters	3
Parameters	Torques. Screw Counter (Batch control)
Torque Range	50 - 150 Nm 1Nm / Step
Batch Setting	0 - 99 Run - downs
Loosening	Left - direction Maximum 160 Nm
Off timer	3 - 60 sec. (10 sec. factory setting)
Display	3 colors LED (R / G / B), 8 letters x 2 lines, LCD (With Back Light)
Buzzer	When completed the fastening. Error warnings
Operational Keys	4 Keys (① / ② / ③ / Power)
Automatic Gear Shifting	2 speed (high speed / low speed)
Auto - Stop	When reaching the set torque, limiter
Length	277 mm
Weight	2.5 kg (without reaction force absorbers or sockets)
Air Pressure Range	0.5 - 0.7 MPa(Pe)
Drive Size	1/2 "
CPU Power Supply	AA Batteries x 2 pcs
Recommended Batteries	Alkaline or Ni-MH rechargeable batteries

Memo



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U.K.	:EC DECLARATION OF CONFORMITY	- Individual machinery and safety components
France	:DÉCLARATION DE CONFORMITÉ CE	- Machine seule et composants de sécurité
Deutschland	:EG KONFORMITÄTSEKTLÄRUNG	- Gesamtmaschine und Sicherheitseinrichtungen
España	:DECLARACIÓN DE CONFORMIDAD CE	- Maquinaria individual y componentes de seguridad
Italia	:DICHIARAZIONE DI CONFORMITÀ CE	- Macchina singola e componenti di sicurezza
Portugal	:DECLARAÇÃO DE CONFORMIDADE CE	- Maquinaria individual e dispositivos de segurança
Nederland	:EG KONFORMITEITSVERKLARING	- Individuele machine en veiligheidscomponenten
Danmark	:EF ERKLÆRING OM OVERENSSTEMMELSE	- Enkle maskin og sikkerhedskomponenter
Sverige	:EG-DEKLARATION OM ÖVERENSSTÄMMELSE	- Individuell maskin och säkerhetskomponenter
Norge	:EF EVERENSSTEMMELSESEKTLÆRING	- Individuel maskine og sikkerhedsudstyr
Suomi	:EY:N VAATIMUSTENMUKAISUUSILMOITUS	- Erilliset koneistot ja turvalaitteet
Hellas	:ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ ΣΕ ΟΔΗΓΙΑ ΤΗΣ ΕΥΡΩΠΑΙΚΗΣ ΚΟΙΝΟΤΗΤΑΣ	- Ανεξάρτητο μηχανήματα και εξαρτήματα ασφαλείας

We **KUKEN CO.,LTD.** -Osaka, Japan declare under our sole responsibility that the product: to which declaration relates, is in conformity with the requirements of the Council Directive of 17 May 2006 on the approximation of the laws of the Member States relating to machinery(2006/42/EC).

Nous **KUKEN CO.,LTD.**-Osaka, Japon déclarons sous notre seule responsabilité exclusive que le produit: auquel se réfère cette déclaration est conforme à la directive du conseil du 17 mai 2006, concernant le rapprochement des législations des états membres, relatives aux machines (2006/42/CE).

Wir **KUKEN CO.,LTD.**-Osaka, Japan erklären hiermit in alleiniger Verantwortung, daß das Produkt auf das sich diese Erklärung bezieht, den Anforderungen der "Richtlinie des Rates vom 17. Mai 2006 zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten für Maschinen (2006/42/EG) entspricht.

Nosotros **KUKEN CO.,LTD.**-Osaka, Japón declaramos bajo nuestra sola responsabilidad que el producto a que se refiere esta declaración, es conforme a los requisitos de la Directiva del Consejo de 17 de mayo de 2006 sobre la aproximación de las leyes de los Estados Miembros con relación a la maquinaria (2006/42/CE).

Noi **KUKEN CO.,LTD.**-Osaka, Giappone dichiariamo sotto nostra unica responsabilità che il prodotto cui questa dichiarazione si riferisce, è conforme ai requisiti della Direttiva del Consiglio del 17 maggio 2006, sul ravvicinamento delle legislazioni degli Stati Membri relative alle macchine (2006/42/CE).

Nós **KUKEN CO.,LTD.**-Osaka, Japão declaramos sob nossa exclusiva responsabilidade que o produto a que se refere esta declaração está em conformidade com os requisitos da Directiva do Conselho de 17 de maio de 2006 na avaliação das leis dos Estados Membros relacionadas com maquinaria (2006/42/CE).

Wij **KUKEN CO.,LTD.**-Osaka, Japan verklaren onder onze exclusieve verantwoordelijkheid dat het product waarop deze verklaring betrekking heeft, in overeenstemming is met de vereisten van de Richtlijn van de Raad van 217 mei 2006 inzake de onderlinge aanpassing van de wetgevingen van de Lid-Staten betreffende machines(2006/42/EG).

Vi **KUKEN CO.,LTD.**-Osaka, Japan erklærer herved under vort fulde ansvar at maskinen, som denne erklæring gælder for, er i overensstemmelse med de krav som findes i Ministerrådets direktiver af 17. maj, 2006 om tilnærmning af medlemsstaternes love vedrørende maskindirektivet (2006/42/EF).

Vi, **KUKEN CO.,LTD.**-Osaka, Japan förklarar härmed på vårt fulla ansvar att maskinen för vilken denna deklaration gäller, överensstämmer med kraven i Ministerrådets direktiv av den 17 Maj 2006 om harmonisering av Medlemsstaternas lagar rörande maskiner (2006/42/EG).

Vi **KUKEN CO.,LTD.**-Osaka, Japan erklærer under eget ansvar, at produktet hvortil denne erklæring relaterer seg, er i overensstemmelse med kravene i Rådets Direktiv av 17. mai 2006 vedr. tilnærmelse mellom medlemslandenes lover for maskiner (2006/42/EF).

Me **KUKEN CO.,LTD.**-Osaka, Japan vakuutamme olevamme yksinomaisessa vastuussa siitä, että tämä tuote johon tämä ilmoitus viittaa on yhdenmukainen EY:n komission direktiivin, annettu 17 toukokuu 2006 kanssa, joka koskee yhteisön jäsenvaltioiden koneita koskevan lainsäädännön lähentämistä (2006/42/EY).

Εμείς **KUKEN CO.,LTD.**-Οζάκα, Ιαπωνία δηλώνει κάτω από τη μόνη ευθύνη μας ότι το προϊόν το οποίο αυτή η δήλωση αφορά, είναι σύμφωνα με τις απαιτήσεις της οδηγίας του Συμβουλίου της 17 Μάη 2006 σχετικά με την ττοσέΥΥιση των νομοθεσιών των κρατών μελών σχετικά με τα μηχανήματα (2006/42/EK).

Model / Modele / Modell / Modelo /
Modello / Modelo / Model / Model /
Typ / Model / Malli / Μοντέλο

PTS-150EX

Name of and position of issuer / Nom et fonction de l'émetteur / Name und Position des Erstellers /
Nomber y cargo del expedidor / Nome e posizione del dichiarante / Nome e cargo do emissor /
Naam en functie van de uitgever / Udsteder, navn og stilling / Usteders navn og stilling / Utfärdarens
namn och befattning / Ilmoituksen antajan nimi ja asema / Ονομα και θέση εκδότη

Masakazu Yamada / Director - Quality Control

Signature of issuer / Signature de l'émetteur / Unterschrift des Erstellers / Firma del expedidor /
Firma del dichiarante / Assinatura do emissor / Handtekening van de uitgever / Udsteder, underskrift /
Usteders signatur / Utfärdarens namnteckning / Ilmoituksen antajan allekirjoitus /

Υπογραφή εκδότη

KUKEN CO.,LTD.

Director - Quality Control