

Display unit for battery pulse tools

**DS-1**

# Instruction Manual



Thank you for purchasing YOKOTA products.

Before use, please read this Instruction Manual carefully and

Use the product properly after fully understanding Manual.

Please be sure to keep this Instruction Manual.



Head Office/Factory 5-55 Nishiiwata 3-chome, Higashiosaka City, 578-0947 Osaka, Japan

TEL.: +81-6-6788-1381 FAX. +81-6-6781-4519

<http://www.yokota-kogyo.co.jp>

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## 1. Safety Care





### Warning

Please be sure to thoroughly read this Operation Manual and fully understand the instruction to use correctly, before installation, operation and inspection.

In this Instruction Manual, safety precautions prefix either of the following safety alert pictograms.

All are important items relating to safety and must be observed.

 **Warning** . . . Cases where mishandling induces a potentially hazardous situation, which, if not avoided, could result in a death or serious personal injury

 **Warning** . . . Cases where mishandling induces a potentially hazardous situation, which, if not avoided, may result in minor or moderate personal injury or property damage.

※ **Notes:** Even items described in “  **Caution**” may lead to serious consequences depending on circumstances.

- Retain this instruction Manual in a place where it is always available for anyone who needs to use it.
- In cases where you lost this Instruction Manual or the warning label affixed to the product or made it dirty, immediately contact us or your YOKOTA representative to obtain the Manual or the warning label, and then properly retain the Manual or replace the warning label.
- In cases where you transfer or rent this product, be sure to attach this Instruction Manual to it.
- Should you have any questions about the product you purchased or this Instruction Manual, please contact us or your YOKOTA representative.

■ **Please use this product by connecting with the power supply supplied from "Electric work for the business" decided by the Article 38 of Electric Business Act. It is not possible to use it by connecting with "Electric work for general" (generally, commercial power source in the home, the shop, etc.).**

### 1.1. Work Environment



### Warning

- Ensure that the workplace is sufficiently light. Working in a dark place may result in accident or injury.
- Do not operate the tool and charge the battery in explosive atmospheres, such as in the presence of flammable liquids, gases or dusts. There is fear of fire.
- Keep anyone, particularly children, other than those involved in the work away from the work site. Not doing so could induce a hazardous situation. Otherwise, it may cause injury.
- Take drop preventive measures such as use of safety wire to work in high places. Also be careful for the falling-off accident, by confirming surely the safety of scaffolding.

- Do not install this product in a place likely to be exposed to water, direct sunlight, much dust, heat, oil, or moving parts of industrial equipment. Otherwise, it may cause fire, electric shock, or accident.

## 1.2. Electrical Safety



### Warning

- This product is for the indoor exclusive use. Do not use it in rain, in a damp place and a wet place. Moreover, never use it in the place with the fear of the ignition and the explosion, because those are hazardous situations.
- Be sure to use the designated cable. Use of other cable may cause malfunction, heat generation, or fire.
- Do not move by holding the cable. Do not pull the cable to remove the plug from the socket-outlet. Avoid damage of cable due to stepping, entangling, or unreasonable force.
- Avoid pinching of cable in the object to be tightened or surrounding facility in the tool operation and avoid the contact with rotating parts. The cable may be damaged and it may result in accident.
- Keep away from sources generating large electromagnetic noise, such as welder, DC brush motor.
- Be sure to fully insert the cable to connector.  
Failure to do so may result in fire due to heat generation.
- If you do not use the product, unplug from the connector.  
Wipe out dust or stain accumulated on the connector with a dry cloth.  
Failure to do so may result in electric shock or fire.

## 1.3. Human Safety



### Warning

- Do not use the tool when you are tired or under influence of drugs, alcohol or medication. A moment of inattention during the use of tool may result in serious personal injury.
- To protect yourself, wear personal protective equipment such as a hard hat(helmet), safety glasses, safety shoes. And depending on work environment, wear earplugs, a dust mask etc.
- Working in unusual positions is dangerous. Hold the tool securely and carry out working in stable posture, preparing for accidental movement at the same time.
- Dress properly. When working, do not wear loose clothes or jewellery such as necklace. If your hairs are long, bundle them with rubber ring to avoid contact with the tool and wear a protective cover such as cap. Otherwise, it may cause injury.

#### 1.4. Operation and Care



### Warning

- To prevent bodily injury due to installation, e.g. in the event of earthquake, install the product firmly.
- Install the product on nonflammable material such as metal. Failure to do so may result in fire.
- Do not place flammables near the product. Failure to do so may result in fire.
- Install the product in a stable, less vibrating place capable of withstanding its weight, in consideration of the communication range with the tool used.
- Ask electrical work professionals to do wiring work. Failure to do so may result in electric shock or fire.
- Ensure correct and secure wiring.
- Avoid tangle or pinching of the power supply cord.
- Avoid the use by persons inexperienced for handling. Otherwise, it may result in injury and/or accident.
- Handle the power tool carefully. Abuse may cause accident and/or malfunction. Do not give impacts on it by throwing or dropping it.
- Do not make the foreign object such as metal pieces, invaded to the product. There is fear of fire.
- NEVER make any modification. Doing so could result in accidents. In addition, never use the spare part other than the genuine one.
- Do not remove the parts. If you use as the mounted parts or screws removed, it may cause accident.
- If you feel uneasiness during the use, stop using the tool immediately and ask repair and inspection to YOKOTA or YOKOTA-authorized or designated servicing factory via the sales outlet or sales representative. If any accident or problem occurs due to the customer's intended action such as disassembly of this product, we shall not be liable for such trouble.
- Store the product in the dry area, where children or untrained person cannot get access to. It is dangerous for the untrained person to use it.

#### 1.5. Maintenance, Inspection and Repair



### Warning

- Before maintenance, inspection, or replacement, unplug the power supply cord.
- Only qualified service personnel are allowed to do maintenance and repair. Repair or maintenance performed by non-qualified personnel may result in serious personal injury of the user.
- Wipe out the dirt on the housing of the tool by using the dry and soft cloth.  
Do not use the chlorinated solvent, gasoline, thinners and the like, which work to melt the plastic.
- Ask repair and inspection to YOKOTA or YOKOTA-authorized or designated servicing factory via the sales outlet or sales representative where you bought the product. If any accident or problem occurs due to the customer's intended action such as disassembly of this product, we shall not be liable for such trouble.

## 2. Specification

Model	DS-1
External dimension	165mm(W)×170mm(H)×35mm(D)
Weight	0.36Kg
Ambient operating temperature	0~40°C
Ambient operating humidity	35~80%RH (without condensation)
Power supply capacity	DC12V±10% 0.25A
Connector	I2C male connector (5-pin) The length of the cable must be less than 10m
Standard accessory cable	PRC05 connector harness 5m (with sleeve ferrite clamp GRFC-6)  ※ If you use a cable other than the above length, please attach the noise filter (sleeve ferrite clamp GRFC-6 Kitagawa industry) to the harness. (Refer the below picture)




Attaching the noise filter

### 3. Each part description



① Mounting hole	
② 7-segment at the top	Display TOOL number, WORK number and Torque value
③ 7-segment at the bottom, Display LED	Display 「free-running angle」 or 「final angle」 or 「The remaining number / bolt number, pulse number」 Lightening LED corresponding the display contents
④ ALL OK LED	Lighten when tightening OK
⑤ TORQUE NG LED	Lighten when the torque is 「OVER」 or 「UNDER」 or 「SLOW2」
⑥ ANGLE NG LED	Lighten when the free-running angle is 「OVER」 or 「UNDER」, or when the final angle is 「OVER」 or 「UNDER」
⑦ COUNT NG LED	Lighten when the tightening number is less than the setting number
⑧ DISP. CHANGE button	Use for the display switching of 7-segment at the bottom Each press of the button will switch in the order of 「free-running angle」 ⇒ 「final angle」 ⇒ 「remaining number / bolt number, pulse number」
⑨ Power LED	Lighten when the power is ON
⑩ PRC05 connector	Connector for connecting to a cable
⑪ Rotary switch	Use when you connect DS-1 more than two to one unit of WU-1
⑫ Dip switch	Use when you set the TOOL number or 7-segment at the bottom

● Descriptions of symbols

 **WARNING** : Indicating that mishandling may result in death or serious injury of the user.



: Be sure to read this Manual before use and use the product correctly after you fully understand contents.



: Power

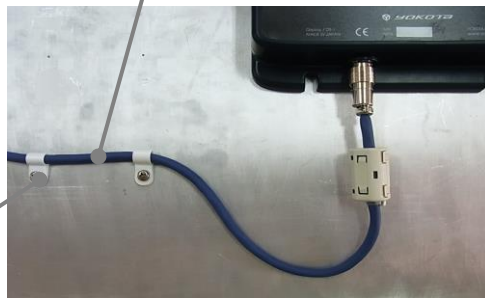
● Fixed cable

Please fix the cable if there is a possibility that the PC-1 or WU-1 (wireless unit) is dragged by the cable.

- Below is an example of fixing method. Please select the appropriate method depending on the situation.
- Fix the cable with some spaces not to apply strong stress on the connector part of the cable
- Inspect the fixed part regularly and confirm whether clamp has no abnormality such as looseness.

Fixing DS-1 side

Cable for DS-1



**【Nylon Clamp】**

Model: NK-4N

Fixed inner diameter :  $\phi$  5 . 6

Maker : Kitagawa Industry

Fixing WU-1 side

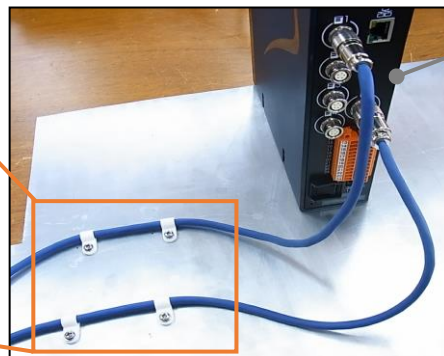
**【Nylon Clamp】**

Model: NK-4N

Fixed inner diameter :  $\phi$  5 . 6

Maker Kitagawa Industry

Cable for DS-1



WU-1

Cable for PC-1



## 4. Setting of Rotary switch and Dip switch

Before use, please set the rotary switch and dip switch if necessary.

Rotary switch : Set the TOOL number to be displayed on this unit.

※Please set when you connect DS-1 more than two to one unit of WU-1.

Dip switch : Set the TOOL number or 7-segment at the bottom to be displayed on this unit.

※Please remove the cable from DS-1 when you set the rotary switch and dip switch.

### 4.1. Setting of Rotary switch

#### 4.1.1. Open the back cover

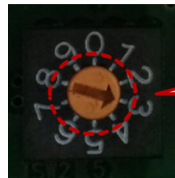
#### 4.1.2. Set the rotary switch to either of the "0", "1", "2", "3"

"0" : Display the tightening result of TOOL1

"1" : Display the tightening result of TOOL2

"2" : Display the tightening result of TOOL3

"3" : Display the tightening result of TOOL4



Set to either of "0", "1", "2", "3"

※Do not set to "4"~"9"

#### 4.1.3. Close the back cover

### 4.2. Setting of Dip switch (TOOL number)






#### 4.2.1. Open the back cover

#### 4.2.2. Turn ON Dip switch corresponding to TOOL number

※Turn ON the only one of "1", "2", "3" and "4"

When you turn ON plural switches, you might not be displayed properly.

Figure 1. Relationship of TOOL number and Dip switch

	Dip switch	
Displaying tightening result of TOOL1	Set "1" to ON	
Displaying tightening result of TOOL2	Set "2" to ON	
Displaying tightening result of TOOL3	Set "3" to ON	
Displaying tightening result of TOOL4	Set "4" to ON	

#### 4.2.3. Close the back cover

### 4.3. Setting of Dip switch (7-segment at the bottom display)





#### 4.3.1. Open the back cover

#### 4.3.2. Turn ON the Dip switch corresponding to the 7-segment at the bottom display

※You cannot change the display of upper TOOL/WORK or TORQUE

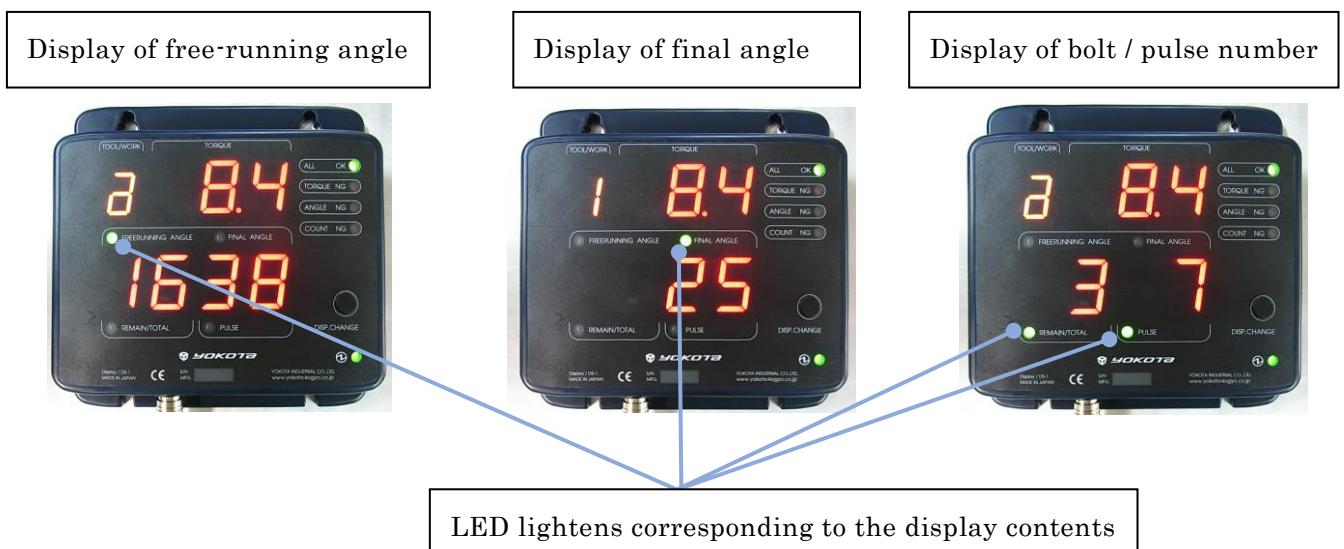
※Regardless of the setting of Dip switch, when you select 「Disp. Change」, 7-segment at the bottom display is switched.

Figure 2. Relationship of 7-segment at the bottom display and Dip switch

Display of 7 segment at the bottom	Dip switch	
Free run angle → Tightening angle → Bolt/Pulse No. (Display to be switched every 2 seconds for each display and the bolt/pulse no. display to be held)	Set "5", "6" to ON	
Free running angle only	Set "5", "6" to OFF	
Tightening angle only	Set "5" to ON Set "6" to OFF	
Bolt/Pulse No. only	Set "5" to OFF Set "6" to ON	

#### 4.3.3. Close the back cover


#### ● Display example of the 7-segment at the bottom



## 5. Connection with WU-1

### Connect WU-1 and PRC05 with connector harness

※However WU-1 has 4 connectors for DS-1, you can connect to any of them.

(  There is no relationship between 1~4 and TOOL number)

※Please be careful of the grooves of harness and direction of the convex of the connector

※The power of WU-1 can be either ON/OFF in connection

Connector for DS-1

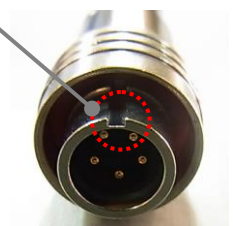
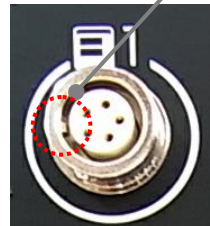
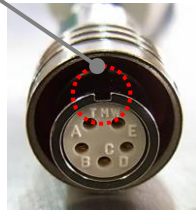


DS-1 side

WU-1 side

Note the convex and groove when you connect

Note the convex and groove when you connect



## 6. Trouble shooting

Before asking repair, carry out the following checks.

If the trouble cannot be solved by the following actions, or if other trouble occurs, stop using this product immediately, and be sure to ask us or our qualified (designated) servicing factory via your sales outlet or sales agent.

Trouble	Probable cause	Action
DS-1 does not operate	WU-1 is not ON.	Turn ON WU-1
	Cable is not connected.	Connect the cable.
Tightening result is not switched	The rotary switch or dip switch was changed while connecting cable	Connect or disconnect the cable.
Tightening result is not displayed	The rotary switch is set to other than "0"~"3"	Set the rotary switch to either of "0"~"3"
	Setting of the rotary switch is duplicated. (When connecting more than 2 units)	Set the rotary switch so as not to duplicate with the range of "0"~"3"
	Setting of the dip switch does not correspond to the TOOL number	Set the dip switch corresponding to the TOOL number

7. External view

