

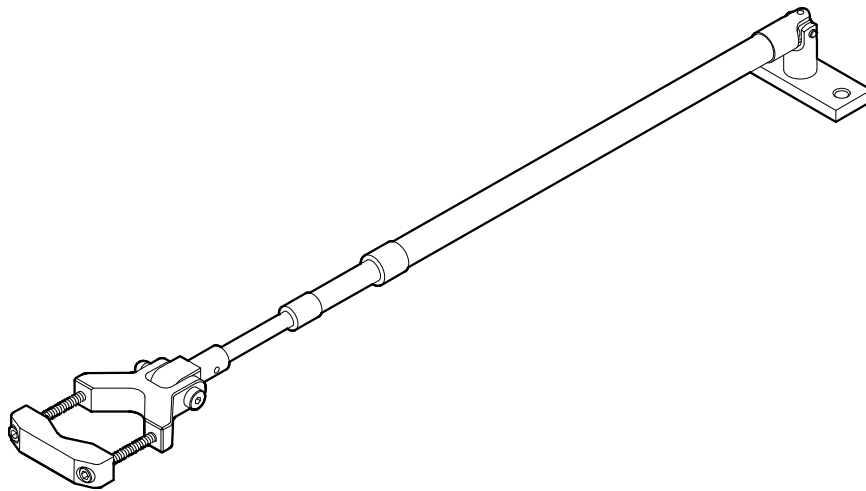
取扱説明書

INSTRUCTION MANUAL

delvo

トルクリアクションアーム TORQUE REACTION ARM

型式：DRA-TS-1000
Model: DRA-TS-1000



《仕様》

| 型式 | DRA-TS-1000 | |
|-----------------|-------------|----------------------------|
| 使用範囲 (アーム長さ) | [mm] | 503 ~ 1000 (503 ~ 1123) |
| 重量 | [kg] | 0.47 |
| 適合ドライバ外径 | [mm] | φ 30 ~ 52 |

[Specifications]

| Model | DRA-TS-1000 | |
|--|-------------|--|
| Range of use (Arm length) | [mm (in)] | 503 to 1000 (19.8 to 39.4) (503 to 1123 (19.8 to 44.2)) |
| Weight | [kg (lbs)] | 0.47 (1.04) |
| Compatible outer diameter of screwdriver | [mm (in)] | 30 to 52 (1.18 to 2.05) DIA |

- 正しく安全にお使いいただくために、ご使用前にこの取扱説明書を必ずお読みください。
- この取扱説明書は、必要ときにすぐ見ることができる場所に保管してください。
- Please read the manual carefully before you attempt to use your tool so that you may use it properly and safely.
- Keep the manual handy - so you can use it whenever necessary.

- ・改良のため、仕様および形状等は予告なしに変更することがありますので、ご了承ください。
- ・ Due to continuous product development/improvement, the specifications and configurations in this document are subject to change without prior notice.

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(Original Instructions)
TV08129-0 10/2019

Instructions

Thank you very much for your purchase of this NITTO KOHKI product.

Before using your tool, please read this manual carefully so that you may use it properly to get the most out of it.

Please keep this manual handy - so you can use it whenever necessary.

The following Safety notations are used throughout the manual to highlight safety precautions for the user and for the tool.



WARNING:

Indicates a potentially hazardous situation which, if not avoided by following the instructions given, could result in death or serious injury.



CAUTION:

Indicates a potentially hazardous situation which, if not avoided by following the instructions given, could result in injury or material damage.

* Please note, however, that failure to observe safety precautions under the “**CAUTION**” category could result in a serious occurrence depending on the situation.

Please observe all safety precautions in the manual.

CAUTION: Important precautions for tool setup, operation and maintenance.

About pictograms



WARNING:

Failure to follow the instructions for handling could cause danger when using the tool.



Using this tool improperly could result in serious injury. Read this instruction manual before using the tool.

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Maintenance and inspection

WARNING

- **Do not disassemble or modify the tool.**
Using the tool after disassembling or modification could cause an accident or injury.
- **Inspect tip tools and accessories.**
Always inspect the tool for damage or deterioration first.
If a damage or deterioration is found, stop using the tool immediately.
- **Inspect for damage.**
- **Use genuine parts.**
If inappropriate parts are used, it could cause an accident or injury.
- **Do not remove the labels or nameplates on the tool.**

Product specific safety rules

WARNING

- **Be cautious of the surroundings when carrying or using the tool.**
Be aware not to hit any people or objects nearby.
- **After adjustment, be sure to remove tools such as spanners, wrenches, etc.**
- **Do not use the tool in an unreasonable manner.**
When the specifications are followed, the tool can be used efficiently and safely.
Do not use the tool outside the specified range of use. Pulling it excessively could cause damage.

CAUTION

- **Do not use the tool for anything other than screw fastening.**
- **Firmly hold the electric screwdriver when working.**
- **Inspect for damage.**
Carefully check for damage to accessories or other parts. Check that the tool operates normally and functions appropriately. If the tool is damaged or broken, stop using it immediately.
- **For operation of the electric screwdriver to be attached, refer to the instruction manual for the electric screwdriver.**

Safety rules for tightening of screws

⚠ CAUTION

- **The electric screwdriver torque measured by the Torque Checker (torque sensor) is different from the torque generated at the screw.**

The torque of the electric screwdriver is measured using the Torque Checker (torque sensor) after creating certain conditions at the measurement joint. The torque generated at the screw changes based on the screw (type, size, material, surface roughness, etc.), workpiece wherein the screw is tightened (material, prepared hole diameter, screw tightening depth, surface roughness, stiffness, temperature, etc.), fit of the bit against the screw, tightening speed, lubricant, and human factors (how it is held or the way it is being pressed, such as diagonal tightening).

- **Control the torque properly.**

Be sure to test more than once based on actual screw tightening conditions (screw, workpiece and other conditions). Perform the test periodically.

Operating Procedure

- (1) Under actual screw tightening conditions, use the screwdriver to tighten the screw.
 - (2) Using a torque wrench, etc., make sure the screw is tightened at the target torque. (Check using the loosening torque method or refastening torque method.)
 - (3) If the screw is not tightened at the correct torque, adjust the torque of the electric screwdriver. Use the electric screwdriver to tighten it again.
 - (4) If the screw is tightened at the correct torque, use the Torque Checker (torque sensor) to maintain the torque of the electric screwdriver that output the correct torque.
- **Specify the value of the actual screw tightening torque based on the tolerance from torque of the electric screwdriver (standard deviation) and the tolerance of the screw tightening conditions (torque coefficient). For details on how to specify the value, refer to JIS B 1083 (latest version) Screw Tightening Rules.**

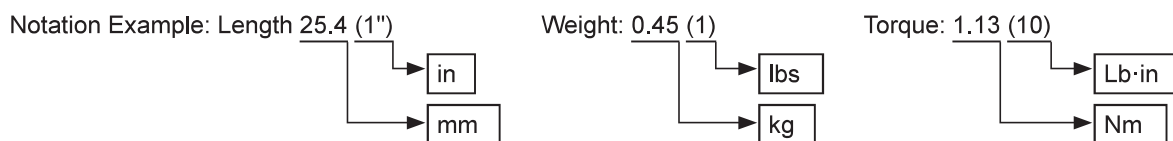
We provide information about the tightening torque accuracy of the electric screwdriver as technical data. For details, contact the retailer from whom you purchased the screwdriver or our company.

- **Depending on the speed, the displayed value of the Torque Checker (torque sensor) changes even with the same setting.**

At the measuring joint, certain conditions are created; however, since the impact value fluctuates based on the speed, the value displayed on the Torque Checker changes. The torque value generated from the electric screwdriver does not change. Low-speed rotation has less impact, and tends to suppress the tolerance of the screw tightening conditions (torque coefficient). However, low-speed rotation needs to be held in the hand longer, causing recoil to increase as a result.

About Unit Notation

This instruction manual is written using both SI units and the imperial measurement method (yards, pounds). Numeric values outside the () are the value in SI units, while those inside the () are the imperial measurement value.



1. Product Overview

Application

This product is dedicated to NITTO KOHKI Delvo series and used for absorbing the tightening reaction. It absorbs the reaction produced when tightening screws or bolts and reduces the strain on the operator.

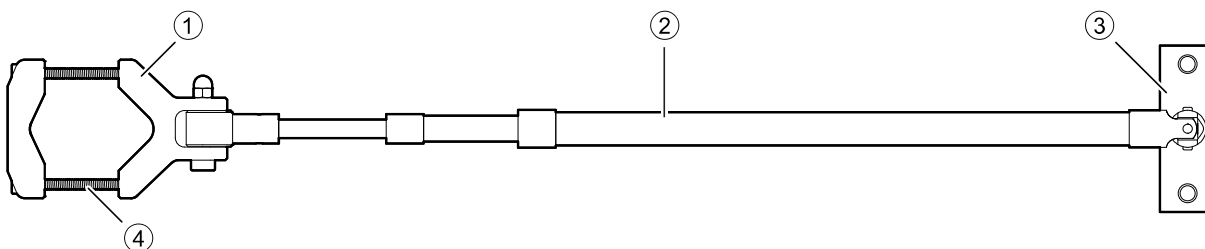
Checking inside the package

When you open the package box, check the contents of the package and also check for any damage caused by incidents during transportation.

If a problem is found, consult with your dealer where you purchased the product.

| Package content and accessories | Quantity |
|------------------------------------|----------|
| Torque reaction arm (main unit) | 1 |
| Instruction Manual (this document) | 1 |

Part names



- ① Tool clamp
- ② Carbon shaft
- ③ Fixing plate
- ④ Hex socket head bolt (M6)

Specifications

⚠ CAUTION

- **Do not use the product with the carbon shaft in a totally expanded state.**
Decide the fitting position of the arm within 90% of the maximum length.
The carbon shaft may be damaged if it is pulled excessively outside the range of use.

| Model | | DRA-TS-1000 |
|--|------------|--|
| Range of use (Arm length) | [mm (in)] | 503 to 1000 (19.8 to 39.4) (503 to 1123 (19.8 to 44.2)) |
| Weight | [kg (lbs)] | 0.47 (1.04) |
| Compatible outer diameter of screwdriver | [mm (in)] | 30 to 52 (1.18 to 2.05) DIA |

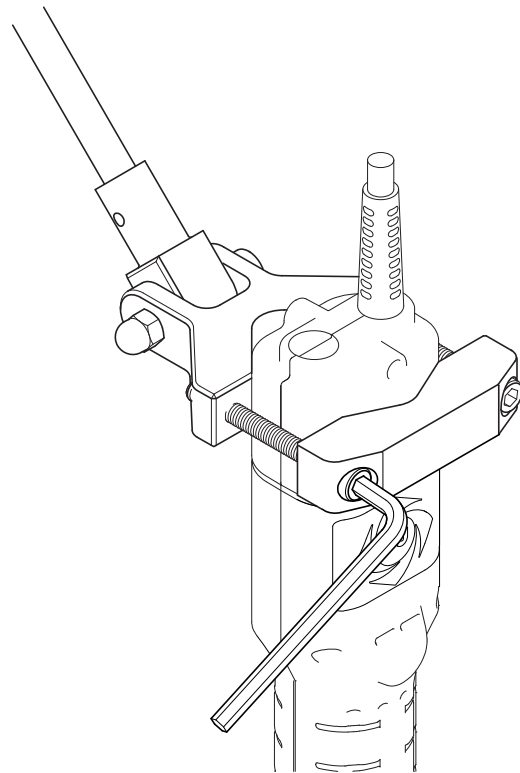
2. Installation

Installing the arm and securing the electric screwdriver

⚠ CAUTION

- Do not use the product with the carbon shaft in a totally expanded state. Decide the fitting position of the arm within 90% of the maximum length.
- Remove the power cord of the electric screwdriver before the installation operation to ensure that the electric screwdriver is not activated.
- Be careful not to damage the electric screwdriver when installing it on the arm.
- Before using the electric screwdriver installed on the arm, make sure that it is fixed firmly.

- 1** Check that the electric screwdriver installed on the arm can reach the work position.
- 2** Use the two holes on the fixing plate to fix it on a column or wall with bolts.
- 3** Insert the electric screwdriver into the tool clamp.
- 4** Tighten the M6 hex socket head bolts on the tool clamp one by one equally with a hex wrench (5 mm (0.2") width across flats) to fix the electric screwdriver.
Insert the frame top of the electric screwdriver into the tool clamp and fix it securely.
Be careful not to damage the frame of the electric screwdriver.
- 5** Attach the tool balancer to the electric screwdriver.
The torque reaction arm cannot support the weight of the electric screwdriver. Use a tool balancer or the like to suspend the electric screwdriver.
Use a suitable tool balancer considering the weight of the electric screwdriver.



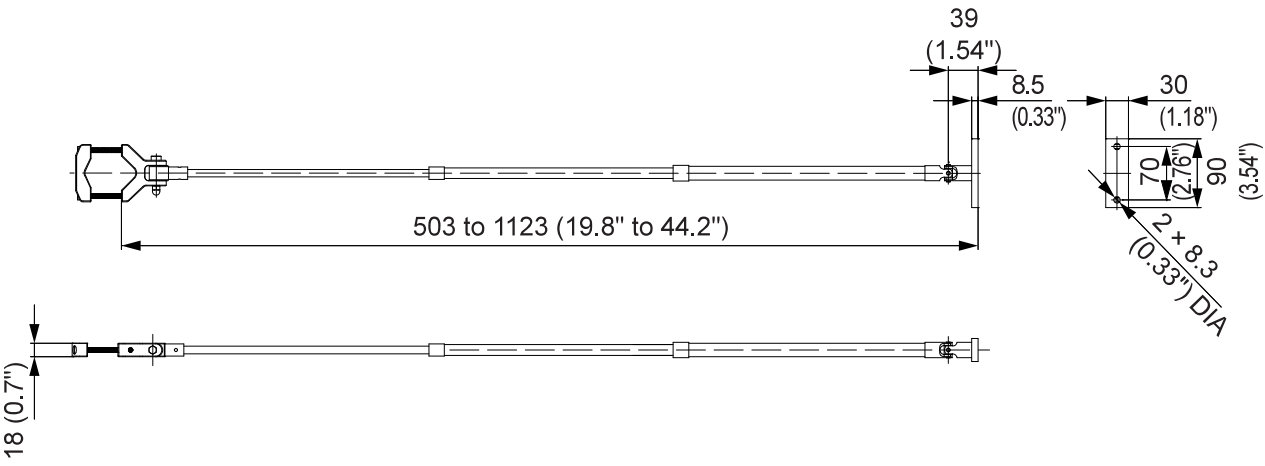
3. Maintenance and Inspection

⚠ WARNING

- Always perform inspection before using the tool.
- Do not disassemble or alter the tool.
- Use genuine parts.

| | |
|-------------|--|
| Inspection | <ul style="list-style-type: none"> ● Check for damage, cracks or breaks on the main unit. ● Check for loose bolts on the main unit. If screws are loose, tighten them. |
| Maintenance | <ul style="list-style-type: none"> ● If the main unit is stained, use a dry cloth to wipe it clean. The carbon shaft may be damaged if there is oil or grease on it. |

4. External Dimensions



EC DECLARATION OF CONFORMITY

We hereby declare that the following product conforms with the essential health and safety requirements of EU Directives.

Brand Name : NITTO KOHKI

Product : TORQUE REACTION ARM

Model : DRA-TS-1000

Serial No. : XX XXXXX —————> Consecutive numbers
(00001-00009)
|
————> Christian era's last digit (00-99)

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