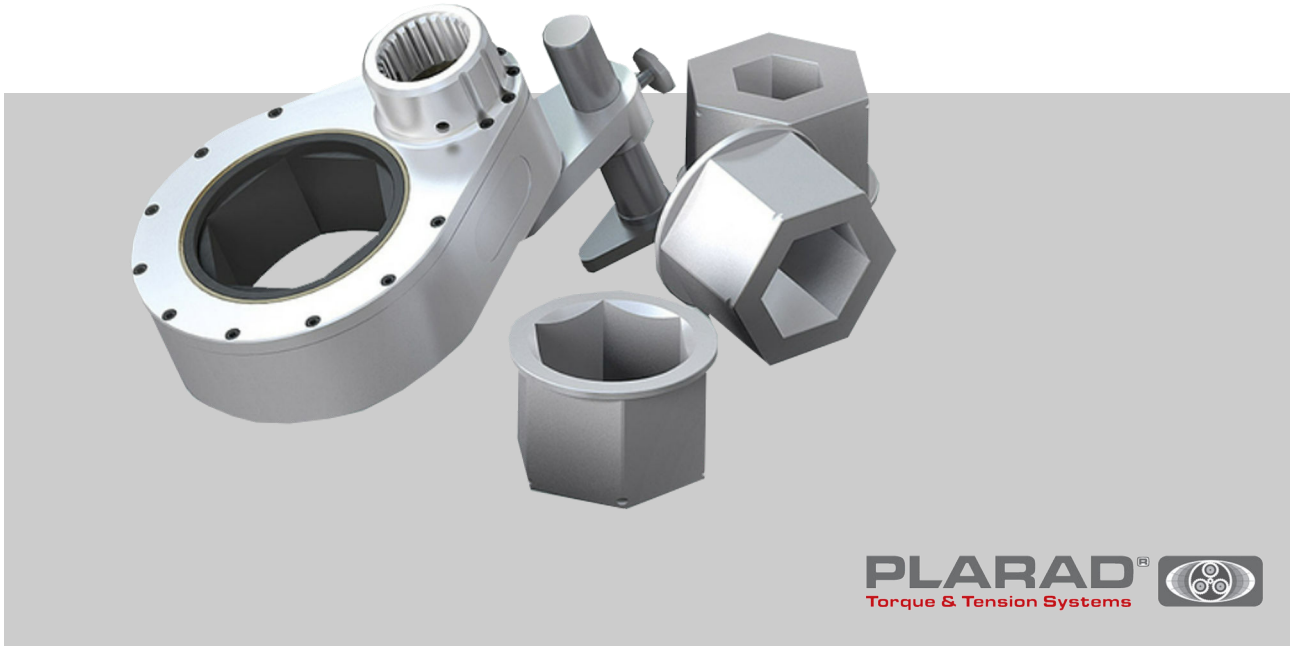
Operating instructions

Offset gear accessories



Read the manual carefully before use!
Keep for future use.

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Translation of the original operating instructions
pA# 83103, 2, en_GB

Information about this manual

This manual enables safe and efficient handling of PLARAD® offset gears.

The manual is a component of the offset gears and must be kept in their immediate vicinity so that the user can access it at any time.

The user must have read and understood this manual prior to commencing any tasks. A basic prerequisite for ensuring that work is performed safely is compliance with all safety instructions and guidelines in this manual. In addition, the local accident prevention regulations and general safety provisions for the offset gears' area of application apply.

Illustrations in this manual serve to provide a basic understanding and may differ from the actual design.

Other applicable documents

The documents for the propelling tool must be observed in addition to this manual.

Copyright

Further development of the manual

This manual was compiled with great care. If you notice any errors, have any questions or identify any inconsistencies, please notify us in writing. Your suggestions for improvement will help us design a user-friendly manual.

Follow-up order

Further copies of this manual can be ordered subject to an additional fee.

Contact ↯ *'Manufacturer' on page 3*.

Manufacturer

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PLARAD® service

Information about PLARAD® service and authorised PLARAD® partners:

- *www.plarad.de*

Table of contents

1 Offset gear accessories

Reference number pA# 83103

1.1 Overview

Versions

Three versions of PLARAD® offset gears are available.

For more details, visit *https://www.plarad.de/download-center.html*

Illustration example STX

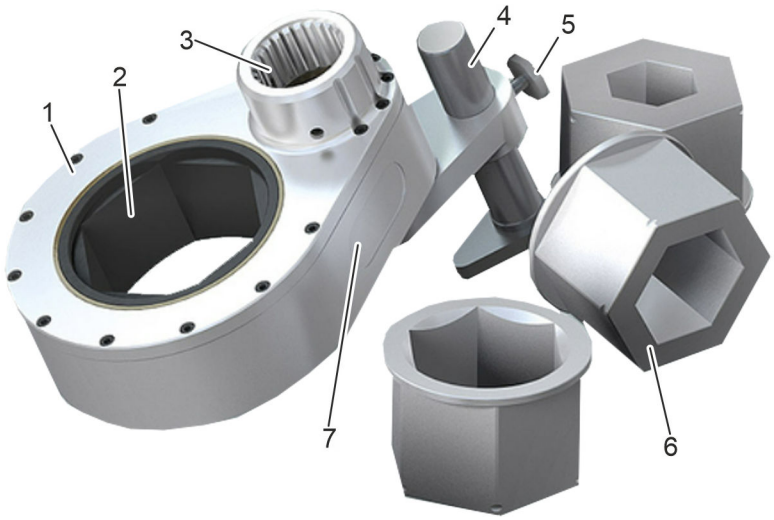

Fig. 1: Illustration example STX

1 STX offset gear
2 Hexagon insert
3 Square drive holder
4 Offset gear brace
5 Locking screw
6 Hexagon reducer pieces
7 Rating plate

Brief description

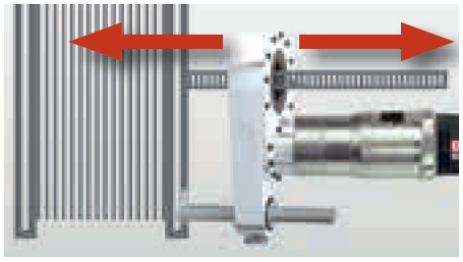

Fig. 2: Example: long threaded spindles

Offset gears let you perform fastening operations in spaces that are too small to accommodate a nutrunner directly above the bolt. The nutrunner's square drive and hexagon insert for bolting are offset to one side.

Offset gears facilitate screwing nuts along long threaded spindles (Fig. 2).

Gearbox damage

NOTICE!

Gearbox damage from exceeding the maximum torque!

Exceeding the maximum torque can lead to gearbox damage.

– Note the following torque calculations for offset gears ST, STX and ST2.
– Never exceed the torque.

ST, STX – torque chart

The following applies to ST and STX offset gears:

The ST and STX offset gears have their own torque chart.

Maximum input torque = output torque ÷ transmission ratio

ST2 – no torque chart

The following applies to ST2xxx offset gears:

The adapted transmission ratio means that no separate torque chart is required for the offset gear.

Input torque = output torque

There is the option of creating a factory certificate.

Technical data sheet

Technical data sheet is available online at: https://www.plarad.de/download-center.html

Rating plate

The rating plate lists the following data:

- Name of the manufacturer including their full address
- Type designation
- Article/serial number
- Maximum torque
- Year of construction
- Weight
- Gear reduction
- Multiplier ‘x’

‘x’ – conversion of the rotation angle

The rotation angle of the square drive and the hexagon insert differ by multiplier x.

Multiplier ‘x’ is specified for each offset gear in the following locations:

- Rating plate
- Technical data sheet

1.2 Installing the offset gear

Personnel:
- Qualified nutrunner personnel

Protective equipment:
- Protective work clothing
- Safety shoes

The following section outlines the installation of an ST2 offset gear on nutrunners from PLARAD® tool generation DE1, DA2, DP1, DP2.

1. Dismantle the union nut and remove the two retaining rings.
2. Dismantle the O-ring behind the serration of the planetary gear.
3. Attach the union nut.
4. Insert the retaining ring without serration. Position the centring spigot facing the gearbox.
5. Insert the retaining ring with serration. Position the centring spigot facing the gearbox.
6. Attach the offset gear and insert the nutrunner into the offset gear holder by turning the square drive.
7. Tighten the union nut by hand.

1.3 Using an offset gear

Personnel:
- Qualified nutrunner personnel

Protective equipment:
- Protective work clothing
- Safety shoes

Further details .

Preparing the offset gear

1. Choose an offset gear suitable for the bolting operation.
2. If necessary, insert a hexagon reducer piece for the offset gear into the hexagon insert.
3. Insert the offset gear's brace. Securely tighten the offset gear brace's locking screw.

   If there are bracing panels available, use these to brace the nutrunner.
4. Attach the offset gear to the bolted connection.

Offset gear brace

5. Brace the offset gear. To do so, loosen the locking screw, position the offset gear's braces on a suitable bracing surface and securely tighten the locking screw.
6. Attach the nutrunner's square drive.

   ⇨ The offset gear is ready to perform bolting.

Note the direction of rotation. Configure the nutrunner correctly.

1.4 Dismantling the offset gear

Personnel:
- Qualified nutrunner personnel

Protective equipment:
- Protective work clothing
- Safety shoes

The following section outlines the disassembly of an ST2 offset gear on nutrunners from PLARAD® tool generation DE1, DA2, DP1, DP2.

1. Loosen the union nut.
2. Remove the nutrunner from the offset gear holder.
3. Remove the retaining ring with serration.
4. Remove the retaining ring without serration.
5. Remove the union nut.
6. Install the O-ring behind the serration of the planetary gear.
7. Insert the two retaining rings and secure the union nut.

1.5 Maintaining an offset gear

Improperly performed maintenance tasks

WARNING!

Danger of injury from improperly performed maintenance tasks!

Improper maintenance can cause serious injuries and significant damage.

- Ensure sufficient assembly space prior to commencing the tasks.
- Ensure that the assembly site is clean and tidy. Loosely stacked or randomly scattered components and tools may cause accidents.
- With regard to maintenance tasks, only allow “Lubricate”, “Clean” and “Check for damage” to be performed by the user.
- Have all repairs performed by the manufacturer.
- Use only PLARAD® original parts.

Maintenance tasks

If routine checks reveal increased wear, shorten the requisite maintenance intervals according to the actual signs of wear. If you have questions about maintenance tasks and intervals, contact PLARAD® service.

Interval	Maintenance task	Personnel
Before and after every use	■ Clean. ■ Check surfaces, warning symbols and pictograms for damage. ■ Check all components for damage and correct operation.	User
Every month if used frequently	If there are any grease nipples, lubricate with Molykote LT165 or Molykote BR2.	User
Once a year	If there are any grease nipples, lubricate with Molykote LT165 or Molykote BR2.	PLARAD® service

Accessories, spare parts and wear parts

Spare parts must meet the technical requirements specified by PLARAD®. This is always ensured by original spare parts. A warranty can only be provided for original spare parts supplied by PLARAD®.

The installation or use of other spare parts can, under certain circumstances, adversely alter the specified design properties and, consequently, impair active or passive safety.

Any liability and warranty for damage resulting from the use of parts other than the original spare parts and accessory parts is excluded.

Have at least the following information about the nutrunner to hand to enable quick and easy processing:

- Client
- Serial number of offset gear
- Desired spare part
- Desired quantity
- Desired mode of shipping

‘PLARAD® service’ on page 4

Offset gear maintenance by the user

Personnel: ■ User

Perform the following maintenance steps before and after every use:

Cleaning

1. **NOTICE!**
   Damage from improper cleaning!

   Clean the offset gear with a soft cloth. Never use strong cleaning agents, water, brushes, sharp-edged tools or high-pressure cleaners.

   WARNING!
   Fire hazard!

   When using isopropyl alcohol, do not clean the offset gear near ignition sources. Do not smoke. Let it evaporate.

Surfaces and markings

2. Check surfaces and markings for damage. Arrange for repairs if there is damage or illegible markings.

Checking components

3. Check all components (offset gear, head, interchangeable inserts, reducer pieces, offset gear braces, safety splints, circlips etc.) for damage, deformation and correct operation. Arrange for exchange if there is damage.

4. **WARNING!**
   Danger of injury from faulty offset gear!

   Do not use the offset gear if it is faulty. Have it repaired immediately or have the faulty parts exchanged. Contact PLARAD® service.

Lubricating

If an offset gear with grease nipples is used frequently, lubricate it once a month.

1. Squeeze Molykote LT165 or Molykote BR2 lubricant into the grease nipple with a grease gun.
2. Dispose of excess lubricant properly.
3. Clean the offset gear and work environment. Dispose of cleaning agents and excess lubricant in an environmentally sound manner.

2 Disposing of an offset gear

The offset gear must be disposed of in an environmentally sound manner at the end of its service life.

Disposal

Insofar as no take-back or disposal agreement has been put in place, scrap of the offset gear in accordance with local regulations. Use authorised collection points for metal reprocessing.

ENVIRONMENT!

Danger to the environment due to incorrect disposal!

Incorrect disposal can be hazardous to the environment.

Do not allow metal to enter bodies of water, the sewage system or the soil.

If in doubt, obtain information about environmentally sound disposal from the local municipal authority or from specialist disposal companies.

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