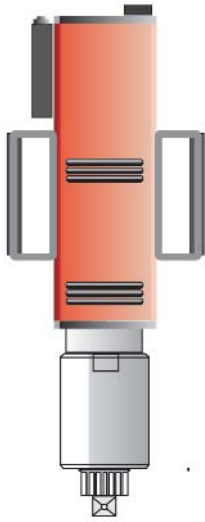


## ***Electric Multipliers Operating Instructions***

(Rev 2.1 4/10/17)

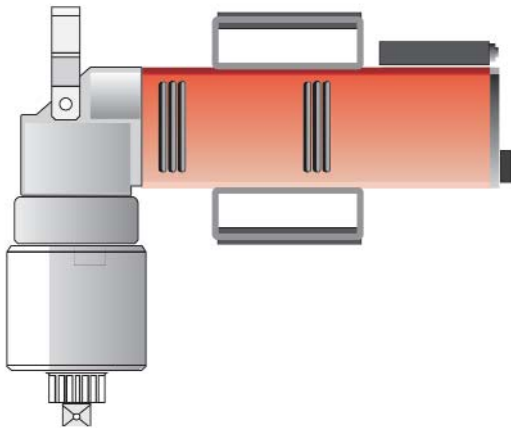
The manual is a guide for operating the following Electric Multiplier models: Eliminator-EF, Eliminator-EF Plus, Eliminator-EFW, Eliminator-EFW Plus, Eliminator EFCip and Eliminator-EFR



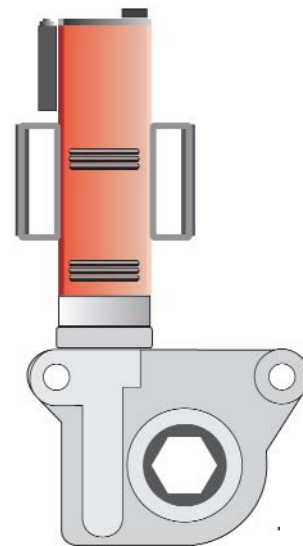
**Eliminator-EF  
Eliminator-EF Plus**



**Eliminator-EFCip**



**Eliminator-EFW  
Eliminator-EFW Plus**



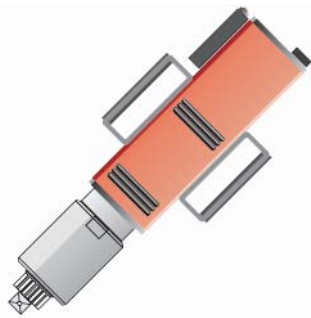
**Eliminator-EFR**

## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### General Description of the Electric Multipliers

Operation via an electric & frequency controlled brush-free synchronized motor. The models feature a high mounting speed and reduce shut-off speed when reaching final torque. The units are suitable for all international electric networks.



LED Display



LC Display

### Eliminator-EF & EF Plus

In-line tool. CW/CCW direction. Features a LED display - light emitting diode displays pre-set torque within 19 stages as well as adjusted torque direction.



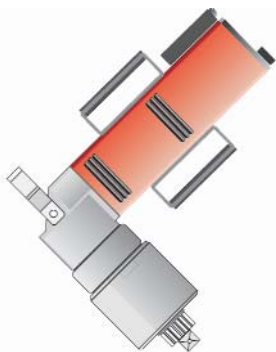
LED Display



LC Display

### Eliminator-EFCip & EFCip Plus

In-line tool. CW/CCW direction. Features a LC display - the pre-set torque and angle rotation can be programmed on an illuminated display.



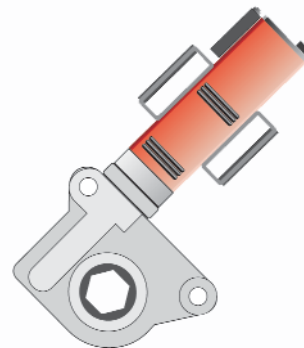
LED Display



LC Display

### Eliminator-EFW & Eliminator-EFW Plus

Right Angle tool. CW/CCW direction. **Eliminator EFW:** Features a LED display - light emitting diode displays pre-set torque within 19 stages as well as adjusted torque direction. **Eliminator EFW Plus:** Features a LC display - the pre-set torque and angle rotation can be programmed on an illuminated display.



LED Display



### Eliminator-EFR

Low profile radial head allows access where clearance is limited like heat exchanger plate applications. CW/CCW direction. Features a LED display - light emitting diode displays pre-set torque within 19 stages as well as adjusted torque direction.

## **Electric Multipliers Operating Instructions**

(Rev 2.1 4/10/17)

### **Safety**

1. The electric multiplier should not be operated or serviced unless the operator has read the Operation Manual and fully understands it.

2. The electric multiplier is designed for continuously tightening and loosening of heavy-duty bolt & fastening applications. It is not suited for operations with mixing or drilling machines. This can damage the tool and/or injure the operator. External mechanical forces - like the use as a crowbar - must not be exerted on the equipment (risk of deformation). For other applications not mentioned herein please consult the manufacturer. No other voltages than those specified in this manual (see Technical data) must be used.

### **Operation**



Please observe local laws and regulations when using the tool. The electric multiplier is not for use in explosive environments or in the presence of combustible materials (gas, varnish, fertilizer, gas stations etc.). Compare motor nameplate against power availability to prevent motor burnout or dangerous electrical overloading. Make sure that the plugs and cords are secure before operating. When using the tools outdoors be sure to use the properly gauged exterior power cord.



The electric multipliers must not be used in wet areas. Depending on the working area and how the tool is used, local health and safety regulations may require you to wear protective gear (e.g. safety shoes, protective glasses, protective helmet etc.). In case external forces are exerted on the equipment non-compliance with these regulations may result in major injuries (e.g. electric shocks, bruises, head injuries due to moving parts). You should wear ear protection when placing the tool into operation.



If the Electric Multipliers are going to be used in rain or/and damp conditions, we recommend you to purchase the Electric Multipliers with Protection Class "IP 54". For further information contact customer service.



## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### Placing Tool into Service



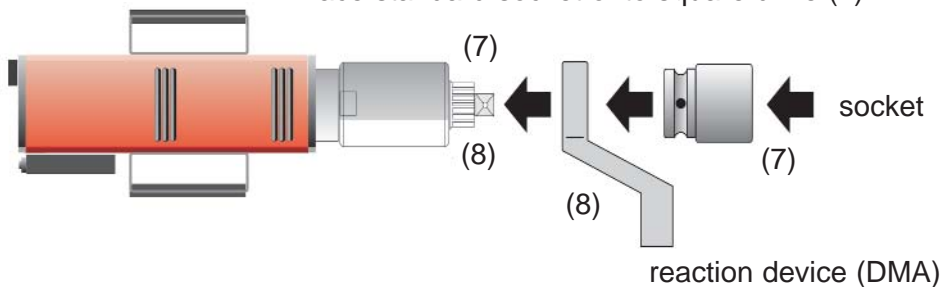
Prepare the electric multiplier for fastening application, before you connect the plug. Double check that the standard sockets or any adapter are correctly fitted and undamaged. Never use damaged parts under any circumstances.



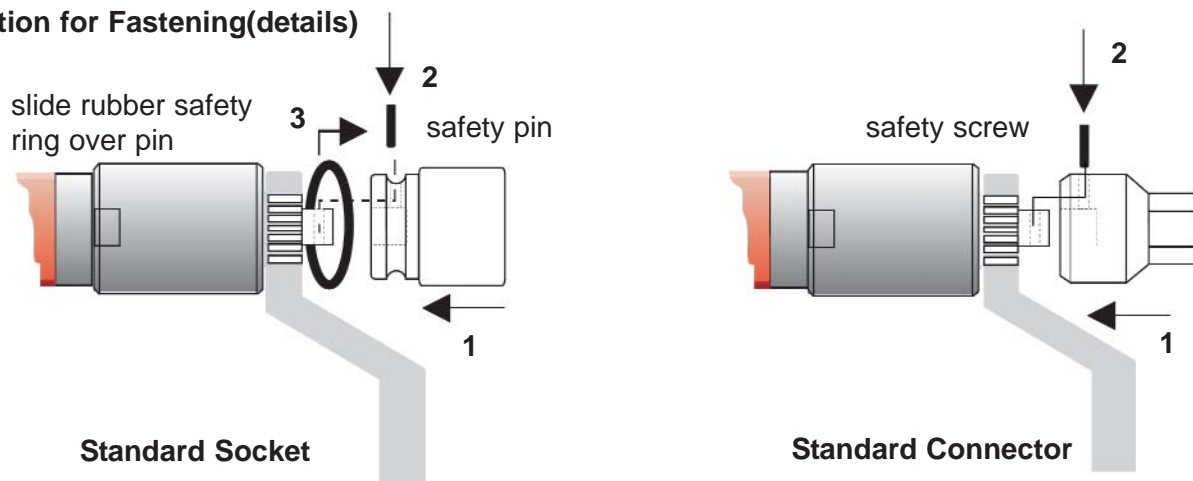
To tighten or loosen hard or soft joints, specific torque ups or adapters are needed in accordance with a specific fastening application (available as accessories). Standard sockets or adapters are placed on the square drive and secured.

### Preparation for Fastening

- Place Electric Multiplier on flat surface
- Insert reaction device onto spline (8)
- Place standard socket onto square drive (7)



### Preparation for Fastening(details)



### Maintenance



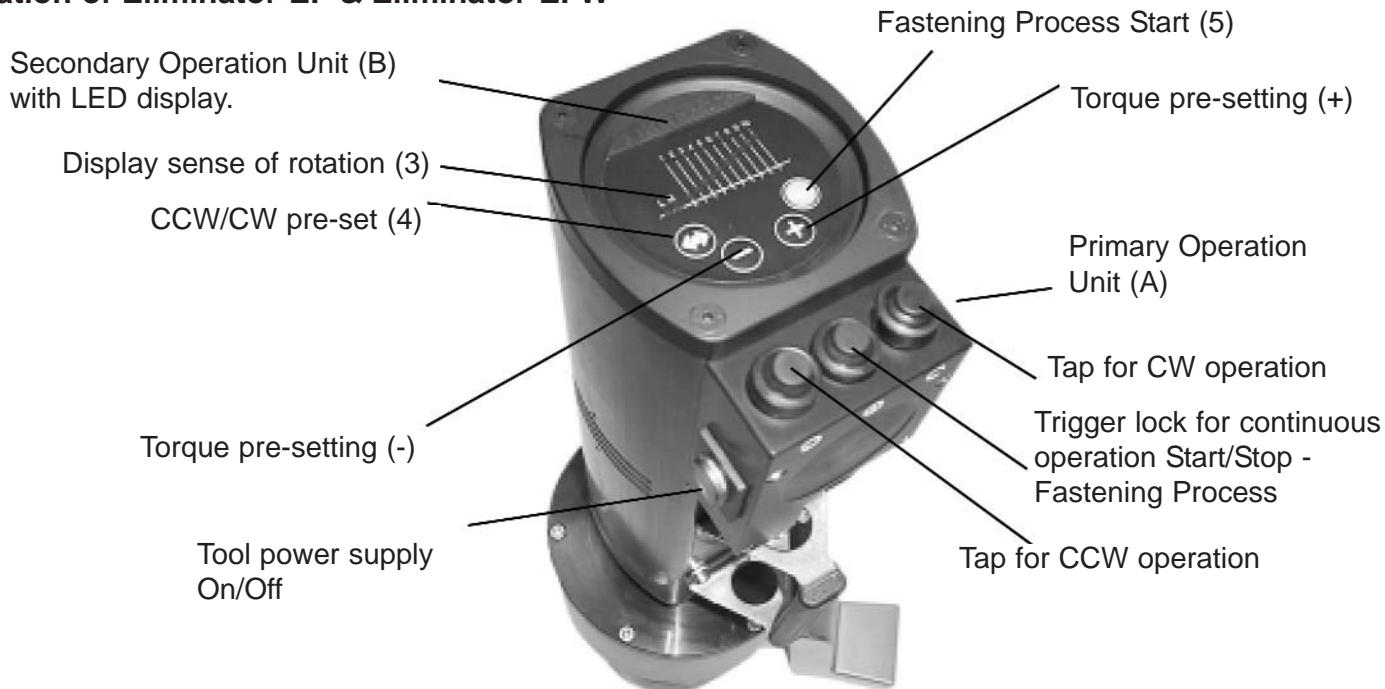
We recommend you send the electric multiplier for recalibration after approximately 25 operational hours. Please note that accuracy of the tool is +/- 5% when used at the correct operating temperature, corresponding voltage (100-253 V / 45-66Hz) and nominal sensitivity (2 kw).

If you suspect that electric multiplier is losing power or recognize any damage, the tool requires service and should be sent back.

## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### Operation of Eliminator-EF & Eliminator-EFW



### Primary Operation Unit (A)

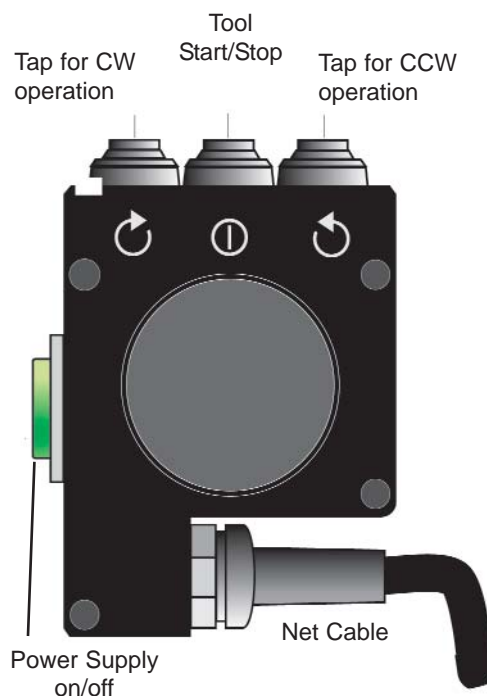
1. Switching tool On/Off of tool, i.e. connection/separation with/from power supply.
2. Operation of tool during Mounting/Dismounting
  - Tap for CW operation (tool stops when releasing the button).
  - Tap for CCW operation (tool stops when releasing the button).
  - Tool Start (when pressing the button the tool changes to trigger lock for continuous operation) and when reaching pre-set torque tools shuts off precisely.
  - Tool stops when pressing the button again



Before starting trigger lock for continuous operation

The electronic of the tool stores rotation which has been carried out last e.g. key for CW-direction is activated - sense of rotation is automatically pre-set to right direction when starting trigger lock for continuous operation etc.. Corresponding LED (3) is flashing in Secondary Operation Unit (B) and displays sense of rotation. If you would like to change sense of rotation press key CW/CCW pre-set (4) or briefly press corresponding key (tap for CW/CCW operation) The start trigger lock for continuous operation.

3. Pressing any button during trigger lock for continuous operation - the fastening process stops.



## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### Secondary Operation Unit (B)

1. Pre-setting of desired torque limit-value via keys (+/-)  
 Steps 1-10 (one LED is flashing) and 9 intermediate steps (two LEDs are flashing) are selected. The figures 1-10 correspond to the Nm values according to the torque chart. Intermediate values are to be taken from the flow chart.
2. Display of sense of rotation (3) and torque preset (changeover button 4)
3. Trigger lock for continuous operation starts (start button 5)



While mounting or dismounting we recommend to use the Primary Operation Unit.

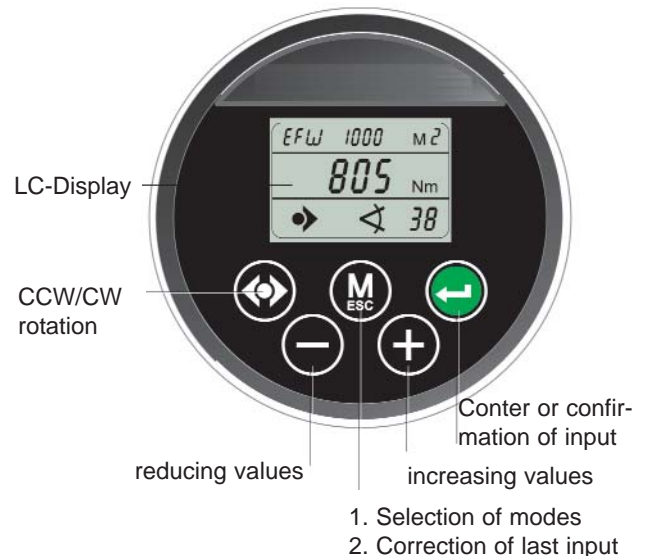
### Operation of Eliminator-EF Plus & Eliminator-EFW Plus

#### Standard Program (Modes)

Mode	Description
M 1	Tightening with torque Option: automatic loosening according to pre-settable angle degrees*
M 2	Tightening with pre-torque and finishing-angle torsion. Option: automatic loosening according to pre-settable angle degrees*

Mode	Important Operational Steps
M 1	Enter sense of rotation, nominal torque, Enter released angle
M 2	Enter sense of rotation, pre-set torque, and finishing-angle torsion Enter released angle

**Secondary Operation Unit  
(EF Plus & EFW Plus)**



\* **Attention:** Releasing only serves to “run free” the DMA (reaction device) not loosening the screw or nut.

Selection of mode by pressing



Important:  
Each operational step has to be confirmed by pressing:



Cancellation of last input by pressing:



Escape - function

Values or functional symbols are flashing continuously until confirmation is carried out

## Electric Multipliers Operating Instructions

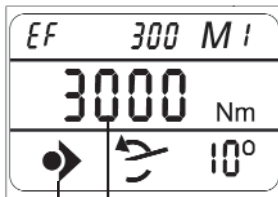
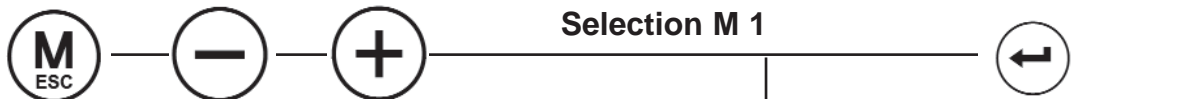
(Rev 2.1 4/10/17)

### Adjustment of Programs (Modes) for Eliminator-EF Plus & Eliminator-EFW Plus

#### Adjustment Mode 1

Tightening with torque. Option: Automatic release

#### Step 1



#### Step 2



#### Step 3



#### Step 4



No automatic release:  
Set angle to zero



Tool ready to start

## Electric Multipliers Operating Instructions

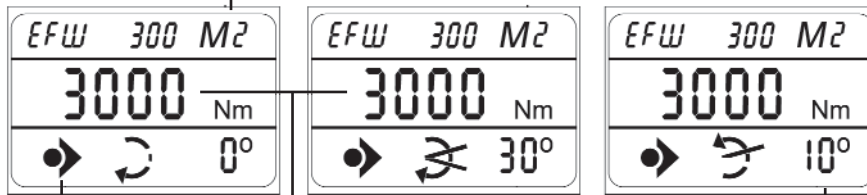
(Rev 2.1 4/10/17)

### Adjustment Mode 2

Tightening with pre-set torque and finishing-angle torsion. Option: automatic release

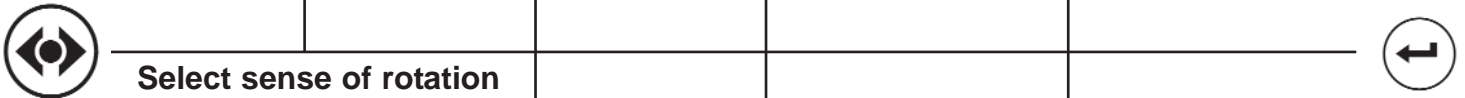
#### Step 1

Confirm input



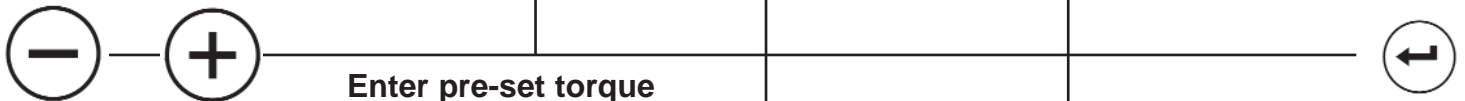
#### Step 2

Confirm input



#### Step 3

Confirm input



#### Step 4

Confirm input



#### Step 5

Confirm input



No automatic release:  
Set angle to zero



IM Adjustment Mode



## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### (Optional) Adjustment Mode 3

Tightening with pre-set torque angle degrees

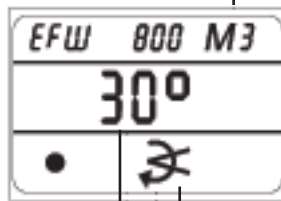
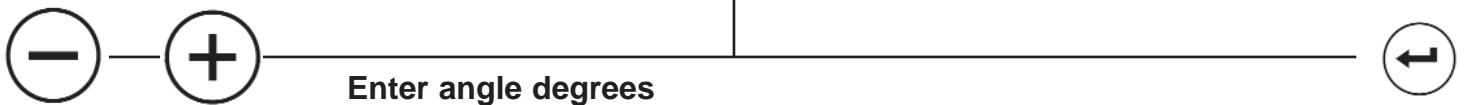
#### Step 1



#### Step 2



#### Step 3



**Tool Ready to Start**

Note: Tightening with max. torque - low speed

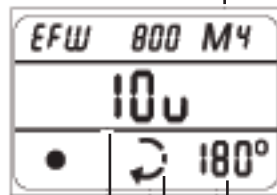
## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### (Optional) Adjustment Mode 4

Tightening with pre-set rotations

#### Step 1

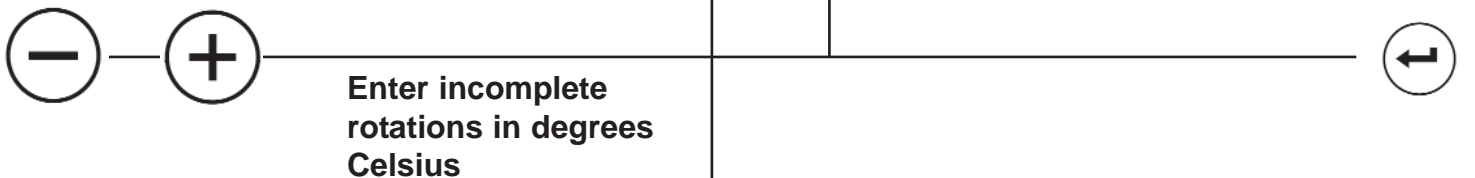


Example shows  
10 1/2 rotations.

#### Step 2



#### Step 3



#### Step 4



**Tool Ready to Start**

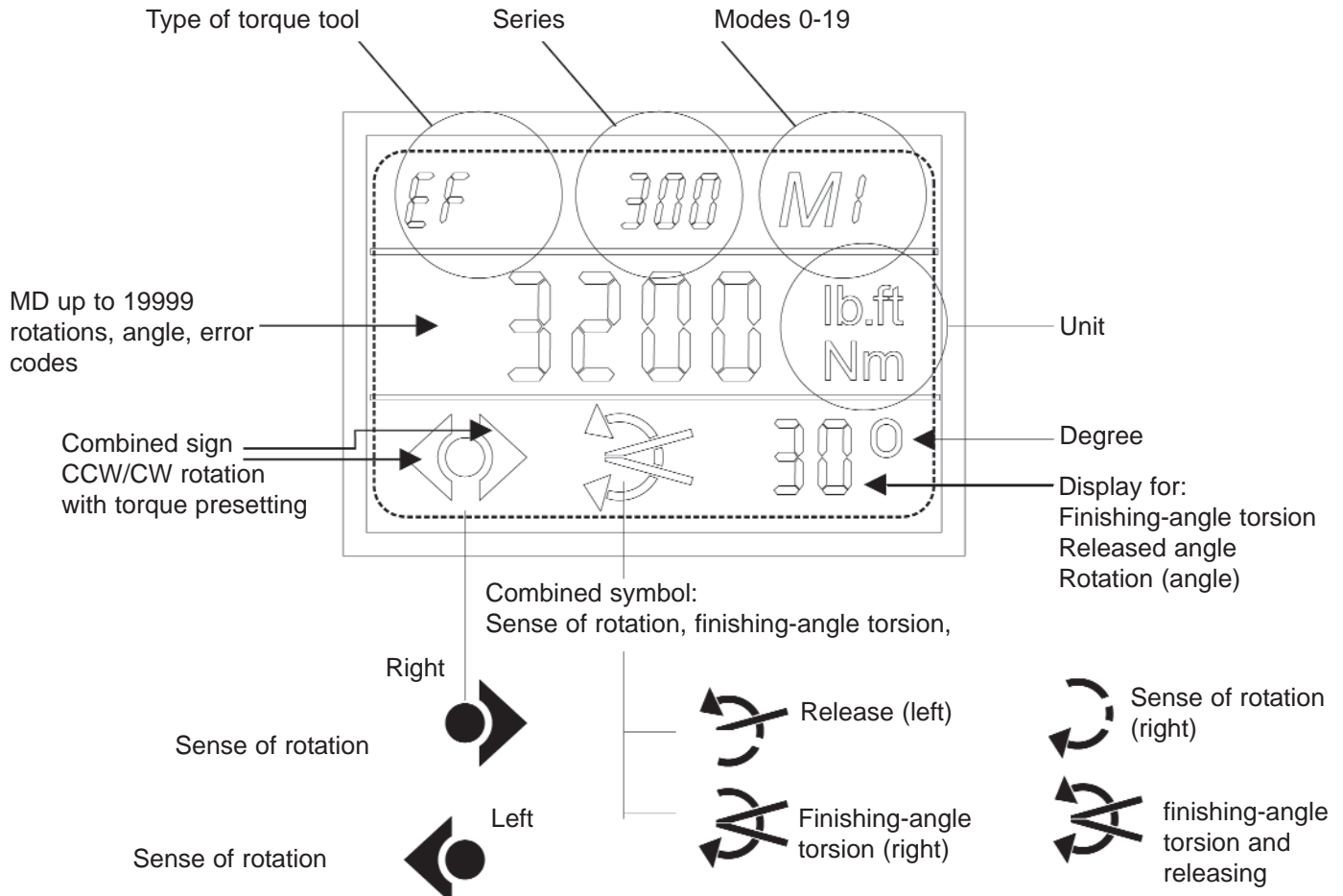
### Display of rotation during operation:

Generally rotations are counted counter "0", which means always the remaining rotations are being displayed. When operation is interrupted remaining rotations are also displayed.

# Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

## LC - Display



## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### Mechanical Operation of Electric Multipliers

Two principles of construction within the tool.

- 1) Free joint tool/service unit independent of position of torque pick-up DMA (reaction device).
- 2) Fixed joint between motor/service unit and power gear - mechanically reversible (rigid condition).

### Eliminator-EFW & Eliminator-EFW Plus



Reverse swivelling/rigid  
for Eliminator-EFW & Eliminator-EFW Plus

locking with  
screwdriver



locking with thumbwheel screw

## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### Tightening and Loosening



Be aware of rotating support arms or impact sockets. Keep clothing, hair, or any loose objects clear of moving parts. Always wear proper protective clothing such as glasses, ear protection and gloves during tool operation.

Do not leave the electric multiplier unattended while in operation. A safe distance of operation is approximately one arms length from the tool while in operation. Never place hand on reaction device (DMA) while in operation. Serious bodily injury can occur.

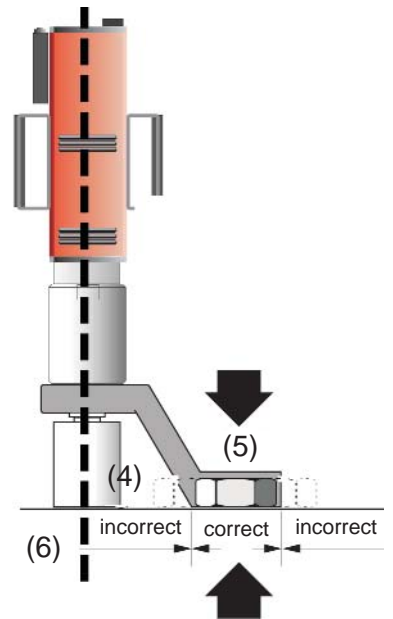
Always place standard socket or connector completely on screw or nut. Faulty screw connections may lead to materials overload. Moving parts may cause bruises or serious bodily injury.



Keep the electric multiplier in a vertical position (6) to the multiplier axis while fastening in order to avoid damage to socket and/or the application due to side loading (5).

### Tightening and loosening screw connection procedures are as follows:

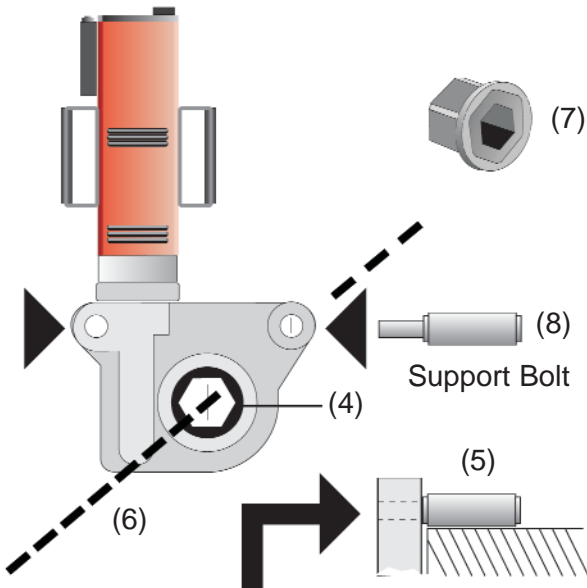
- Place the electric multiplier with a socket or connector completely on the screw or nut.
- Support arm of the electric multiplier must be placed on the same level as the socket or connector (4). Make sure a safe and stable counter mounting (5) is provided.
- Keep the electric multiplier in a vertical position while fastening.
- The motor will stop upon reaching the preset torque
  - a) Counter Force = Motor Force
  - b) Torque Reaction = Motor Force
  - c) The Pre-set torque has been reached
- Torque direction can now be changed - switch on tool shortly until reaction device is free - switch off motor. (This procedure is not necessary with the "Automatic function of the Eliminator-EF Plus or Eliminator-EFW Plus model).
- Remove tool, place it on the next screw or nut. Repeat fastening process.



## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

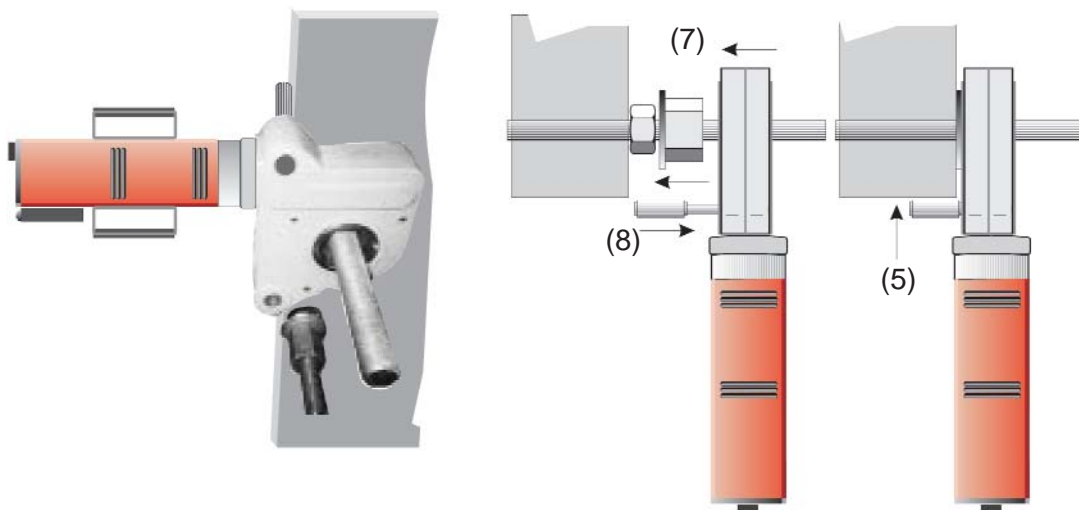
### Eliminator-EFR



Insert the support bolt (8) completely in the housing hole of the Eliminator-EFR in order to avoid damage.

For tightening and loosening screw connections follow the instructions as stated before. On the radial drive of Eliminator-EFR the torque multiplier can be operated in a 90-degree angle due to the drive direction (6). The drive is carried out by a fixed socket size (4). The STA is used to reduce the socket size (7). Torque support is done by a support bolt (8). Make sure to have a safe and stable support (5). Also see drawing below.

Safe support is only achieved when the support bolt is completely inserted into the shells of the casing.



### Finishing or interrupting operation (also with replacement)

- Always disconnect the tool from the power supply when not in use or while changing sockets and/or support.



Never carry the tool by the power cord. Always disconnect the cord by pulling at the plug. Protect cord from heat, oil and sharp edges to avoid accidental shock.

## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### Noise and Vibration

Due to sound pressure level, it's recommended to use ear protection. The vibrations become moderate just prior to reaching the pre-set torque.

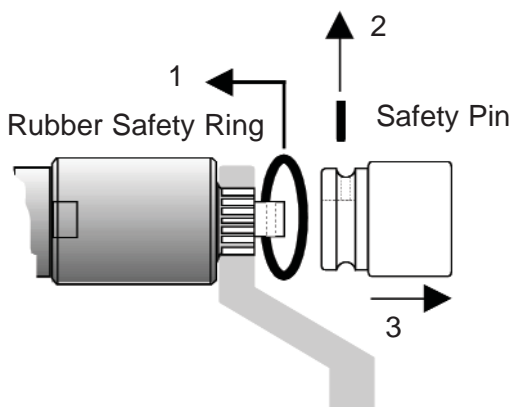
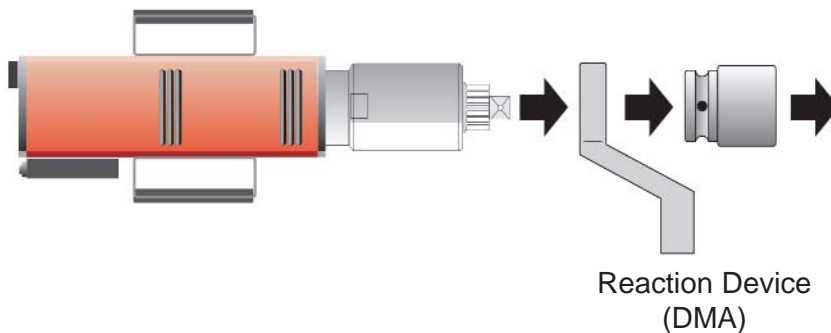
### Service

#### Replacement of Standard socket / connector and reaction device (EF/EFW models)

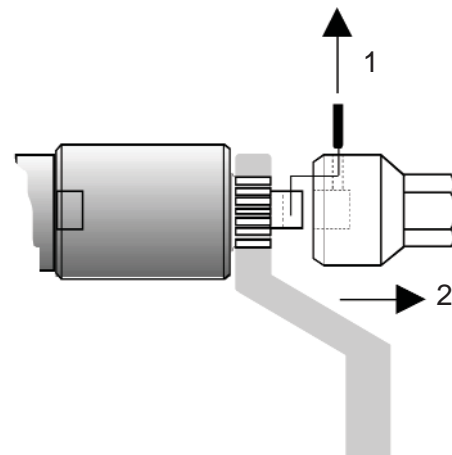


Never use a tool that has been damaged. Use only manufacturer's parts.

- Disconnect power cord from power source
- Place the electric multiplier on a flat surface
- Remove rubber ring and safety pin/bolt - socket
- Reverse operation for replacement



Standard Socket

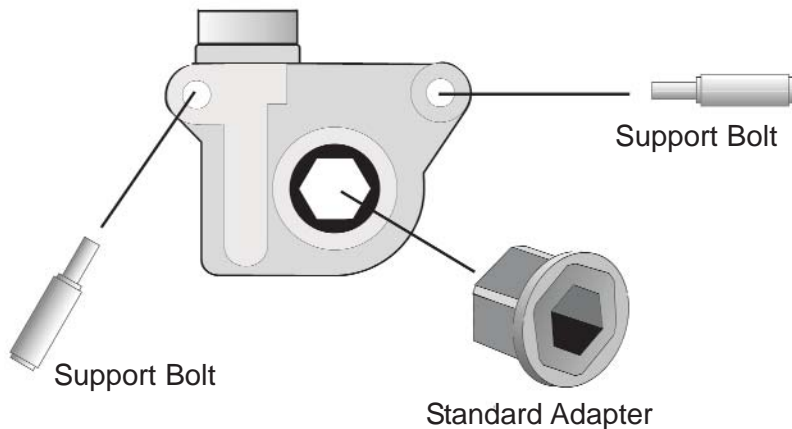


Standard Connector

## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### Replacement for STA (Standard Adapter) and the Support Bolt for Eliminator-EFR



Properly insert support bolt and/or standard adapter to avoid damage.

### Maintenance

Have the tool electric multiplier inspected regularly and maintained regularly (Power Check, Motor Check & Safety Check).

Have the tool inspected once a year or after a maximum of 1,000 operational hours.

### Power Supply Plug

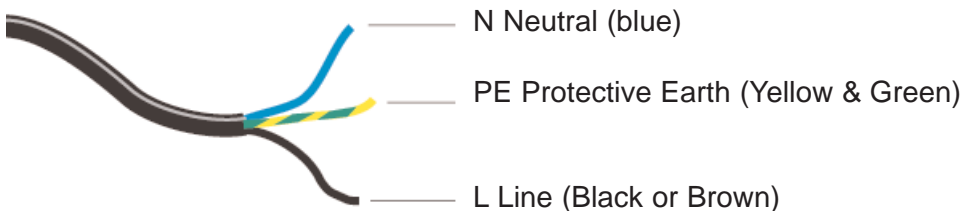


Replacing the power supply plug.

Replacement of plug must only be performed by authorized, factory trained personnel.

1. Disconnect tool from the power supply.
2. Cut off plug from cable.

Tools are equipped with a 3-wired cord.







## Electric Multipliers Operating Instructions

(Rev 2.1 4/10/17)

### Mountz Calibration & Repair Services

Mountz Inc. features an experienced calibration and repair staff. Our trained technicians can calibrate and repair most any tool. Mountz provides rapid service with quality that you can trust as we offer three state-of-the-art calibration lab and repair facilities that can calibrate up to 20,000 lbf.ft.

Since 1965, Mountz Inc. has proven its in-depth knowledge of torque and torque solutions by consistently developing, producing, marketing and servicing highly sophisticated, cutting-edge tools. We perform calibrations in accordance with ANSI/NCSL-Z540. Mountz is dedicated solely to the manufacturing, marketing and servicing of high quality torque tools.

### Tool Service & Repair Capability

- Torque Wrench Calibration: Click Wrench, Dial Torque Wrench, Beam Wrench, Cam-Over & Break-Over Wrench
- Torque Screwdrivers: Dial, Micrometer, Preset & Adjustable
- Torque Analyzers/Sensors: All brands
- Electric Screwdrivers: All brands
- Air Tools: All brands  
Impact Wrenches, Drills, Pulse Tools, Grinders, Percussive Tools, Air Screwdrivers, Nutrunners, DC Controlled Nutrunners
- Torque Multipliers: All brands

### Mountz Torque Testers and Calibration Equipment

Torque tools go out of calibration with use. Calibrating a torque tool is a fine-tuning process of bringing the tool back within its tolerance. Torque testers can also be used for quick tools tests on the line or in the lab to determine whether torque tools are holding a given setting.

A regular torque tool calibration and re-calibration guarantees the operator repeatable accuracy and adherence to international standards. Torque testing also ensures torque equipment is operating to peak performance and can highlight potential tooling problems before they arise perhaps due to tool wear or broken components.

Controlling torque is essential for companies to ensure their product's quality, safety and reliability isn't compromised. The failure of a three-cent fastener that isn't properly tightened can lead to catastrophic or latent failures. Fasteners that are insufficiently torqued can vibrate loose and excessive torque can strip threaded fasteners. Using a quality torque tool has become increasingly important for many companies to ensure that proper torque is being applied and maintains gauge requirements associated with the ISO 9001 Quality Standard. Look for the Mountz hexagon logo - it's a stamp for quality tools, service and knowledge in the field of torque control.

### Mountz Service Locations

#### Eastern Service Center

19051 Underwood Rd.  
Foley, AL 36535  
Phone: (251) 943-4125  
Fax: (251) 943-4979

#### Western Service Center

1080 N.11th Street  
San Jose, CA 95112  
Phone: (408) 292-2214  
Fax: (408) 292-2733

[www.mountztorque.com](http://www.mountztorque.com)  
[sales@mountztorque.com](mailto:sales@mountztorque.com)



Twitter: @mountztorque

Download a "Service Form" and include a copy when you send the tools in to be serviced.

Looking for fasteners?  
[www.mrmetric.com](http://www.mrmetric.com)

**mr.  
metric**