



(ST) S/N:

alkitronic®

Operative Manual

EF-Torque Wrenches Types: EF... to EF-SG

Adresse - Kunde/Customer address
Adresse du client/Dirección del cliente

Type: _____

Series: _____

Delivery Date: _____

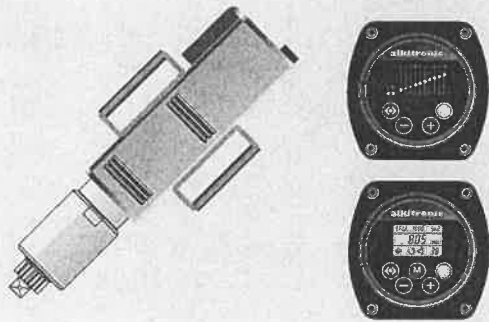
alkitronic-EFCcompact



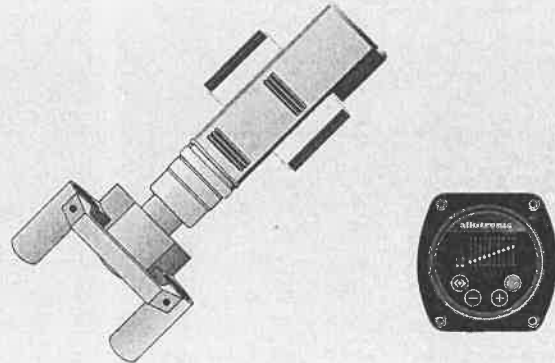
alkitronic-EFC

alkitronic-EFCplus

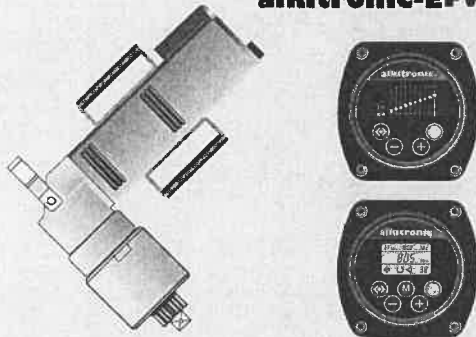
alkitronic-EF
alkitronic-EFplus



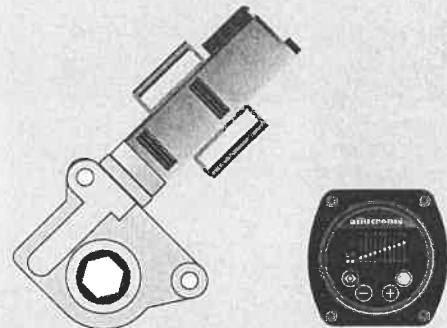
alkitronic-EF-SG



alkitronic-EFW
alkitronic-EFWplus



alkitronic-EFR





Read this manual carefully before putting your **alkitronic-Torque Wrench** into operation.
The Warning Hints (See Page 24) must strictly be adhered to.

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EF.... -Torque Wrenches

A Initial Control and Packaging

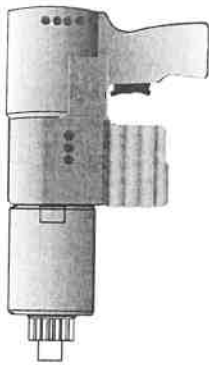
IMPORTANT!



Visually inspect all components for shipping damage. If any damage is found, notify the carrier immediately. All returns must be in original packaging in order to avoid damage to the **alkitronic-EF-Torque Wrench**. Retain packaging.

B General Description of the Electrical alkitronic® - Torque Wrenches

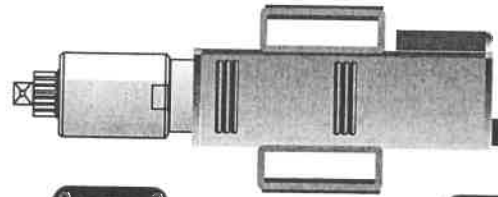
Operation via an electric- and frequency controlled brush-free synchronized motor. High mounting speed. Reducement of shut-off speed when reaching required torque. Exact shut-off and large torque range. Suitable for all international electric networks.



TYPE EFC



TYPE EFCplus



TYPE EF



TYPE EFplus

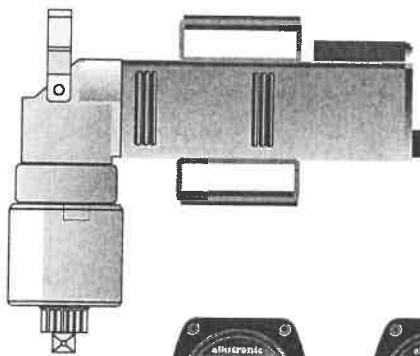
alkitronic® - EF Torque Wrench

Torques up to approx. 42.000 Nm, CW/CCW-direction and tap operation. Required torque exactly obtainable within a wide torque range. TYPE EFplus though computer controlled, presetable screwing programmes. Display: LCD

alkitronic® - EFCompact Torque Wrench

Torques up to approx. 5.000 Nm, CW/CCW-direction and tap operation. Required torque exactly obtainable within a wide torque range. Rigid or any positioning desired of the operation unit.

TYPE EFCplus additionally with computer controlled, presetable screwing programmes. Display: LC-Display

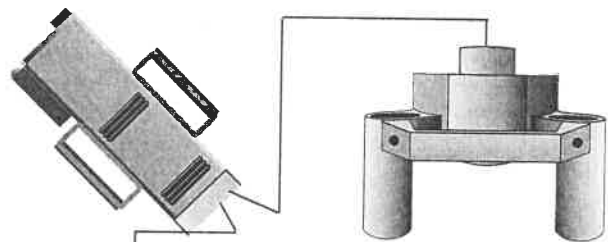


TYPE EFW and TYPE EFWplus

alkitronic® - EFW Angle Torque Wrench

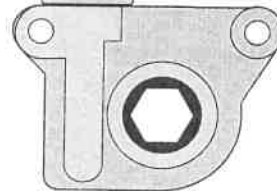
... for applications in narrow spaces.

Torques up to approx. 42.000 Nm, CW/CCW-direction and tap operation, any positioning of service unit due to free joint execution; easy handling via carrying handle located in the centre of gravity. Also available as EFplus version.



TYPE EFR

TYPE EF-SG
(Drawings of gearing without EF-Torque Wrench)

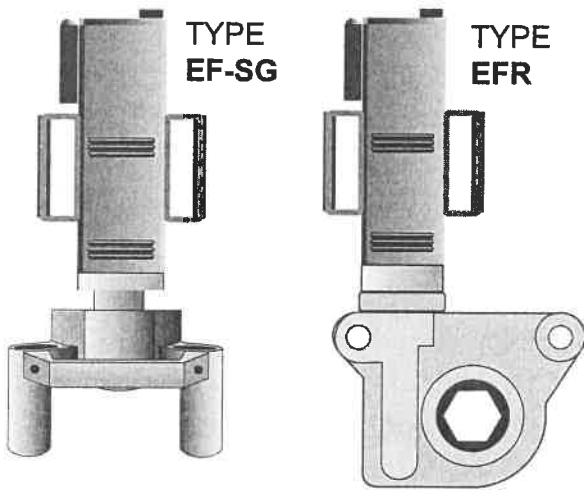


alkitronic® - EFR Radial Torque Wrench and EF-SG, Torque Wrenches with lateral gearing

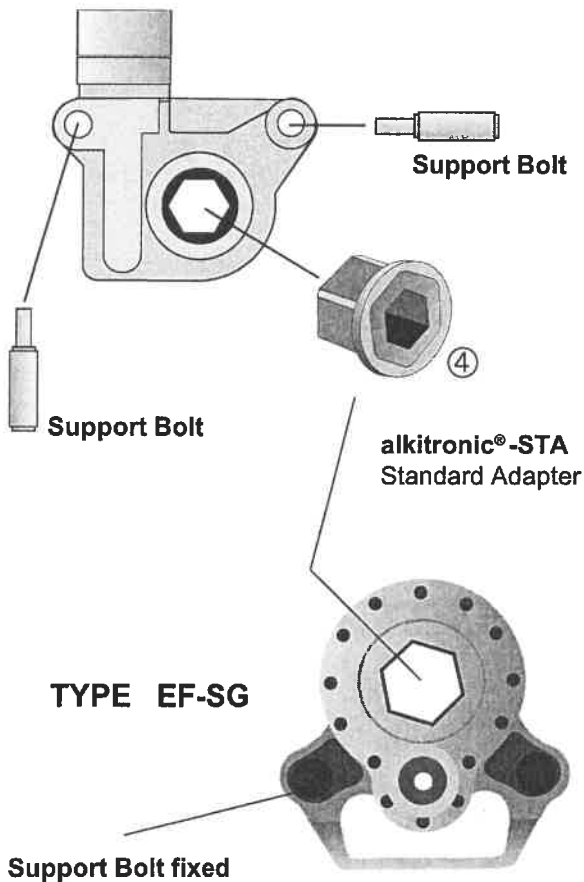
...for applications of protruding screw ends i.e. heat exchanger plates.

EFR: Torques up to approx. 3.600 Nm (higher torque ranges upon request)

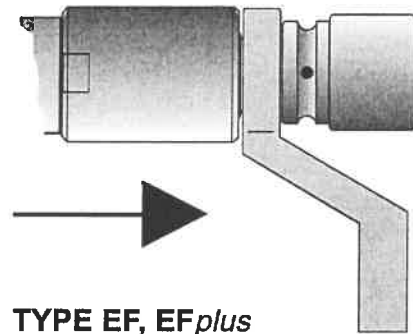
EF-SG (80): Torques up to approx. 4.000 Nm CW/CCW-direction and tap operation.



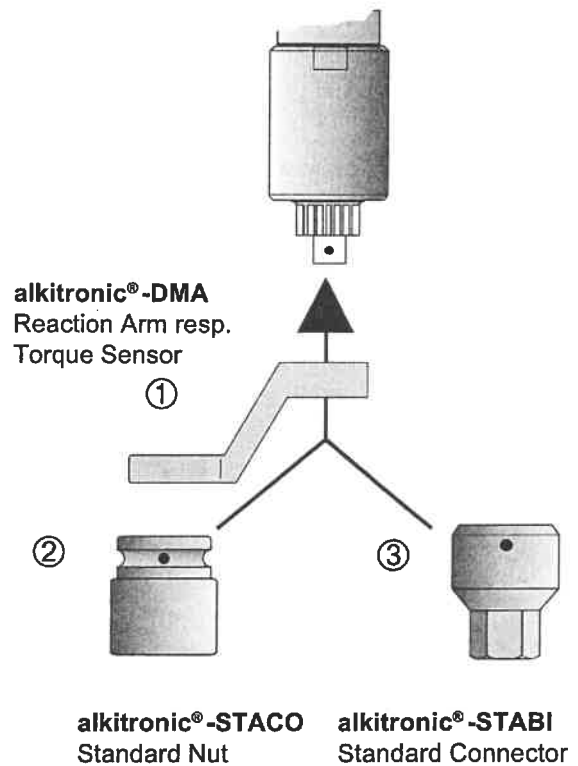
For reduction of the spanner widths
alkitronic®-STA (4)



Original accessories for your special joint:
alkitronic®-DMA (1), alkitronic®-STACO (2),
alkitronic®-STABI (3)



TYPE EF, EFplus
EFW, EFWplus
EFC, EFCplus



EF.... -Torque Wrenches

alkitronic® - EF-Torque Wrench

Types: EF, EF*plus*, EFW, EFW*plus*, EFC, EFC*plus*, EFR, EF-SG

1. Safety Hints

1.1 Operators Responsibilities

The **alkitronic®-EF-Torque Wrench** must not be operated or serviced unless the operator has read the Operation Manual and fully understands it.

The equipment must not be operated or serviced unless the operator fully understands the purpose, consequences and procedures of each step.

1.2 Due Application

alkitronic®-EF-Torque Wrenches are designed for continuously tightening and loosening of heavy duty screw connections. 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.

2. Service

IMPORTANT



The **alkitronic®-Torque Wrenches** are rated for a voltage from 100 to 253 Volt with a frequency from 45 to 66 Hz. Nominal sensitivity is max. 2 kW.

WARNING!



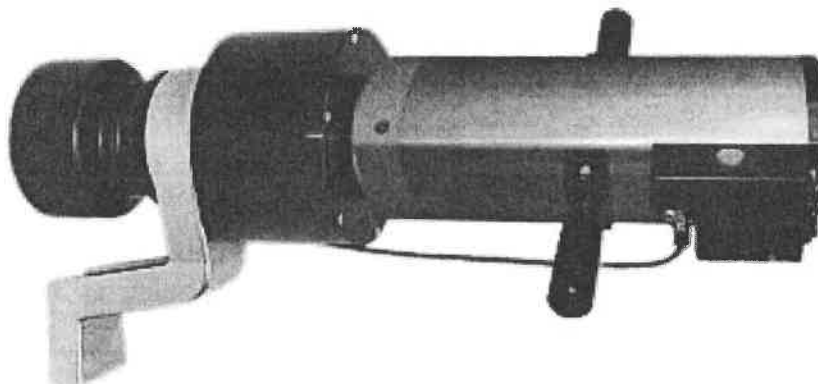
Please observe local laws and regulations when using the tool – the **alkitronic®-EF-Torque Wrench** is not for use in explosive environments or in the presence of combustible materials (gas, varnish, fertilizer, gas stations etc.)

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 tool outdoors be sure to use the properly gauged exterior power cord. The **alkitronic®-EF-Torque Wrench** 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. ear protection, 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).

IMPORTANT!



Should the **alkitronic®-EF-Torque Wrenches** be often used in rain or/and in damp areas, we recommend to use our **alkitronic®-EF-Torque Wrench** with Protection Class "IP 54".



2.1 Placing Tool in Service

alkitronic-EF, EFC, EFW, EFplus, EFWplus and EFCplus.

WARNING!



Beware of high hydraulic pressure components.

Prepare your **alkitronic®-EF-Torque Wrench** for your specific screwing 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. Use original **alkitronic®** - spare parts and accessories only. Replacement of the power supply plug due to nationally different power supplies resp. plug connections, must be performed according to the **Technical Order "Power/Power Supply Plug"** (see Appendix).

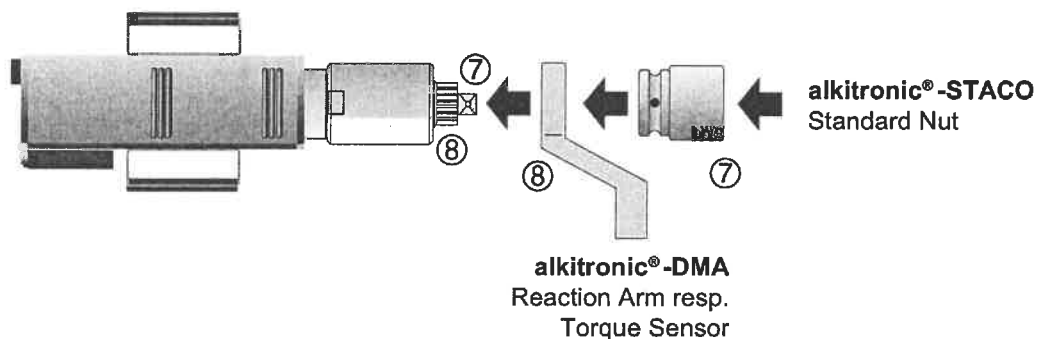
IMPORTANT!



To tighten or loosen hard/soft joints, specific torque take ups or adapters are needed in accordance with a specific screwing application (available as accessories, see Appendix). Standard nuts/-adapters are placed on the square drive and secured. Replacement also see Chapter Service, Paragraph 6.1.

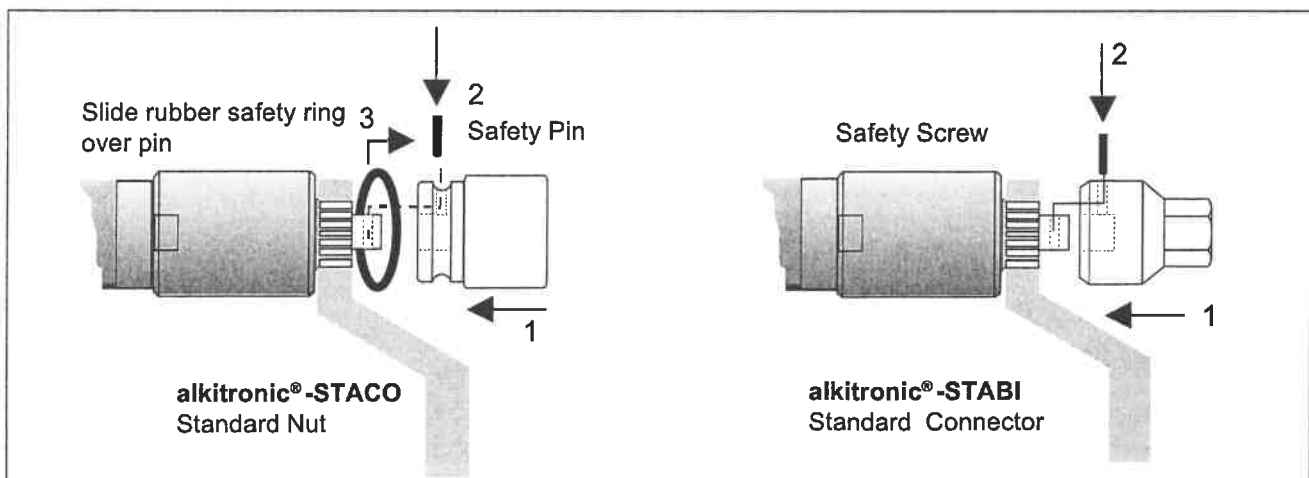
Preparation for the Screwing:

- Place the **alkitronic®-EF-Torque Wrench** on a flat surface
- Insert support arm/reaction arm onto toothing (8)
Either secure with optional Rubber Safety Ring or with a special DMA (Safety screw is integrated), see Drwg. DMA-Examples with **alkitronic®-EFC**
- Place standard nut/-connector on square drive (7)



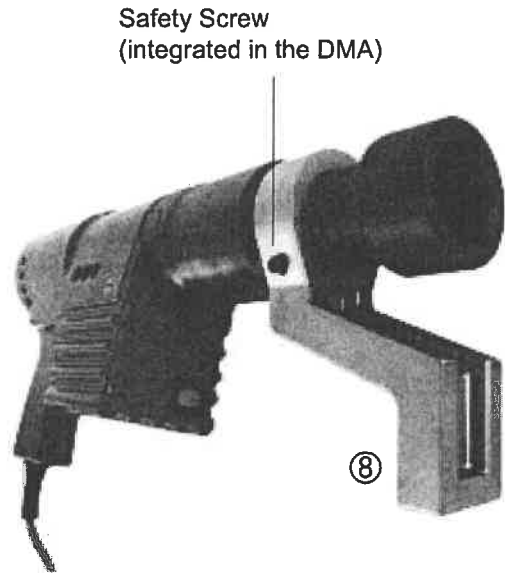
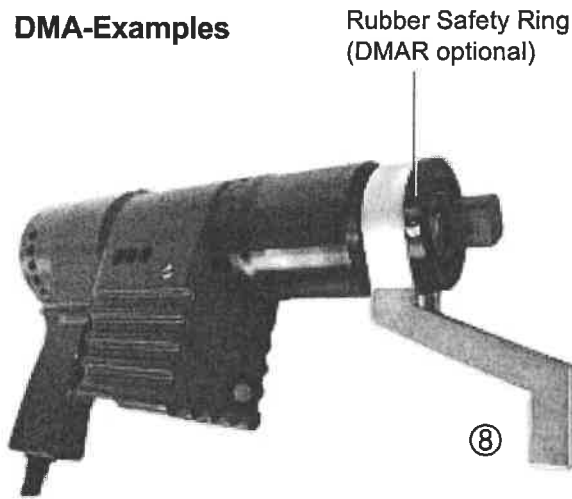
Preparation for the Screwing (2):

- Place rubber safety ring over pin, see Drawing below



EF.... -Torque Wrenches

DMA-Examples

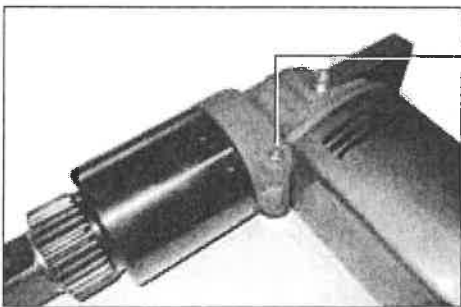


Preparation for the Screwing (3)

Two principles of construction within one tool:

A - free joint tool-/service unit independent of position of torque pick-up DMA.

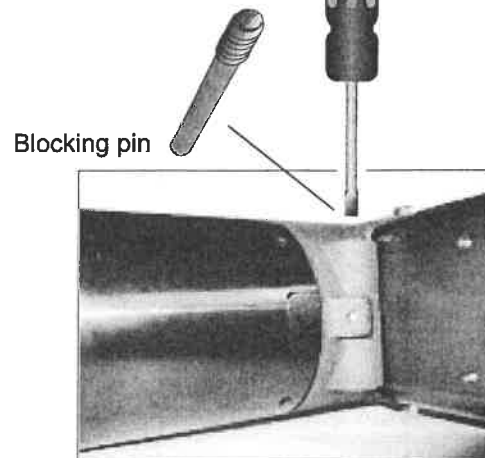
B - fixed joint between motor-/service unit and power gear - mechanically reversible (rigid connection).



screw in blocking pin ----->
remove blocking pin ----->
Example: alkitronic-EFW

power gear is fixed (rigid)
power gear is turnable

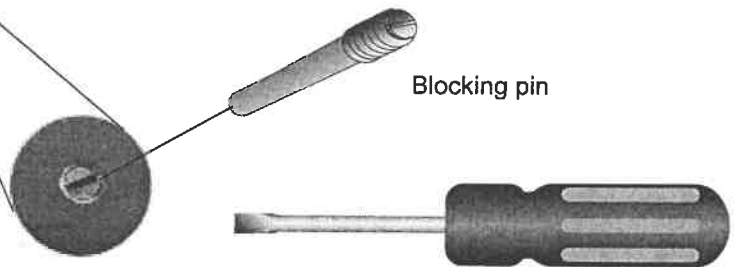
Locking with blocking pin
(rigid connection)





Adjustment of Operation Unit "swivelling or rigid"

Example: alkitronic-EFC



Blocking pin

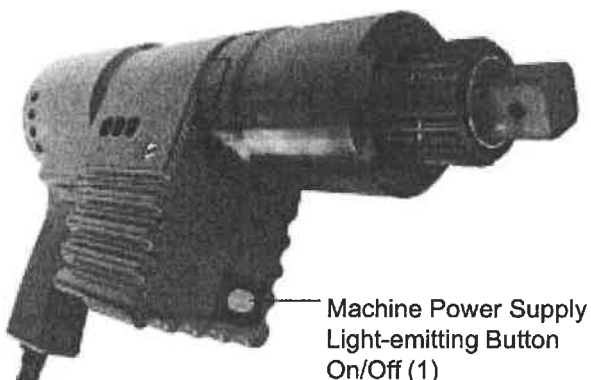
Two principles of construction within one tool:

- A** - free joint tool-/service unit due to loosening (and removal) of locking screw, independent of position of torque pick-up DMA.
- B** - fixed joint between motor-/service unit and power gear due to tightening of the locking screw - (rigid connection).

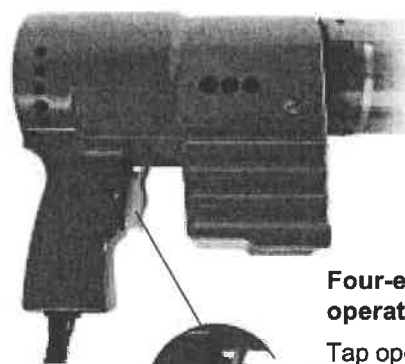
3. Electrical Operation

3.1 Electrical Operation of the **alkitronic-EFC**

Primary Operation Unit



Machine Power Supply
Light-emitting Button
On/Off (1)



**Four-edge
operation button (2)**

Tap operation left
and quick CCW-rotation

Tap operation right
and quick CW-rotation

EF.... -Torque Wrenches

Primary Operation Unit

Light-emitting button (1) - Switching On/Off of tool, which means Connection/Separation with/from power supply

Operation of tool with four-edge operation button (2)

Action point below: **CW-direction** - tap operation

In case the rocker button is pressed down continuously the torque wrench changes over to standard operation (when releasing the rocker button the tool stops)

Action point above: **CCW-direction** - tap operation

In case the rocker button is pressed down continuously the torque wrench changes over to standard operation (when releasing the rocker button the tool stops)

Tool shuts off precisely when reaching the required torque.

ATTENTION!



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 wish to change sense of rotation press key CW/CCW pre-set (4) or briefly press corresponding key (tap for CW/CCW-operation). Then start trigger lock for continuous operation.

Information: Pressing any button during trigger lock for continuous operation - screwing process stops

Secondary Operation Unit (B)

with LED Display

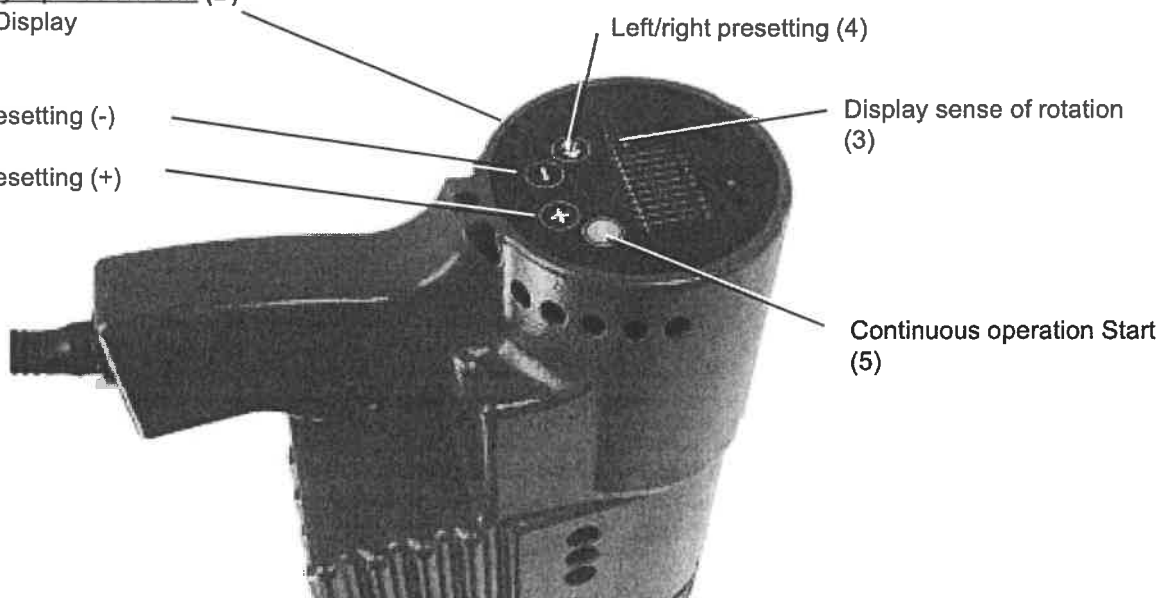
Torque presetting (-)

Torque presetting (+)

Left/right presetting (4)

Display sense of rotation (3)

Continuous operation Start (5)



Secondary Operation Unit (B)

1. Presetting of desired torque limit-value via keys (+ / -)
Steps 1-10 (one LED is flashing) and 9 intermediate stages (two LEDs are flashing) are selected.
The figures 1-10 correspond with 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 CCW-/CW presetting (Change Over Button 4)
3. Trigger lock for continuous operation starts via the "Start" Button (5).

3.2 Electric Operation of the **alkitronic-EF / EFW / EFR / EF-SG**

Primary Operation Unit (A)

Generally comprises:

1. Switching On/Off of tool, i.e. Connection/Separation with/from power supply (1)
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)
 - Start/Stop (when pressing the button the tool changes to trigger lock for continuous operation, pressing the button anew the tool stops - continuous operation is being stopped)

When reaching pre-set torque tool shuts off precisely.

ATTENTION! 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 wish to change sense of rotation press key CW/CCW pre-set (4) or briefly press corresponding key (tap for CW/CCW-operation). Then start trigger lock for continuous operation.

Information: Pressing any button during trigger lock for continuous operation - screwing process stops

Secondary Operation Unit (B) with LED Display

Display sense of rotation (3)
CCW/CW preset (4)

Torque pre-setting (-)

Tool power supply
On/Off (1)

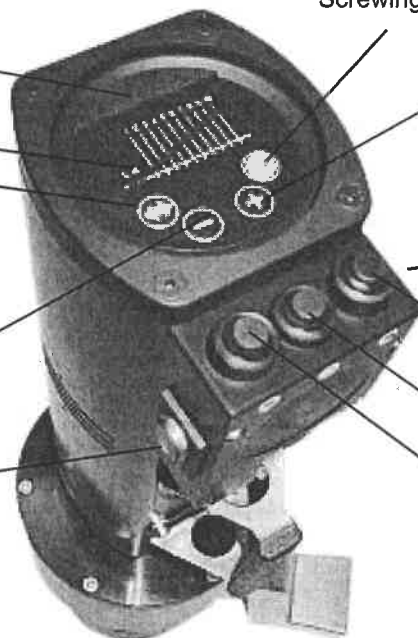
Screwing process Start (5)

Torque pre-setting (+)

Primary Operation Unit (A)

Tap for CW operation

Trigger lock for continuous
operation
Start/Stop -
Tap for CCW operation



Secondary Operation Unit (B)

1. **Presetting of desired torque limit-value** via keys (+ / -)
Steps 1-10 (one LED is flashing) and 9 intermediate stages (two LEDs are flashing) are selected. The figures 1-10 correspond with 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 CCW-/CW presetting (Change Over Button 4)
3. Trigger lock for continuous operation starts via the "Start" Button (5)**

****NOTE!**



We recommend to use the Start Button of the Primary Operation Unit (A) when Mounting- or Dismounting.

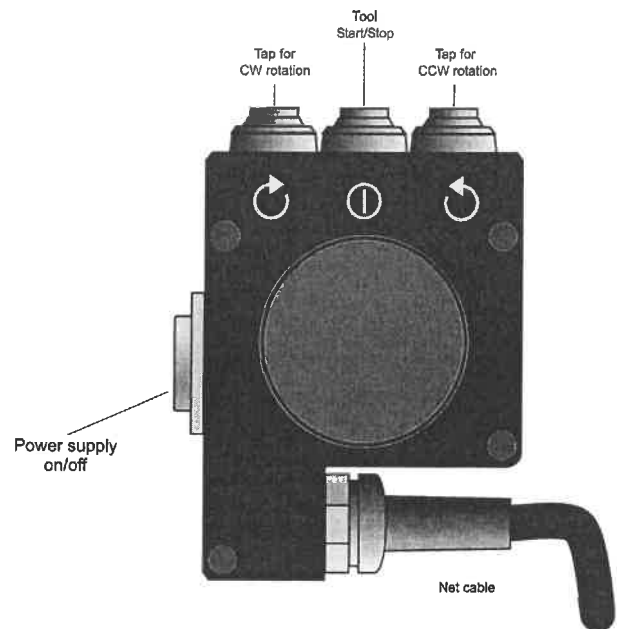
EF.... -Torque Wrenches

3.3. Electric Operation of the **alkitronic-EF plus** and **EFW plus**

3.3.1 Primary Operation Unit

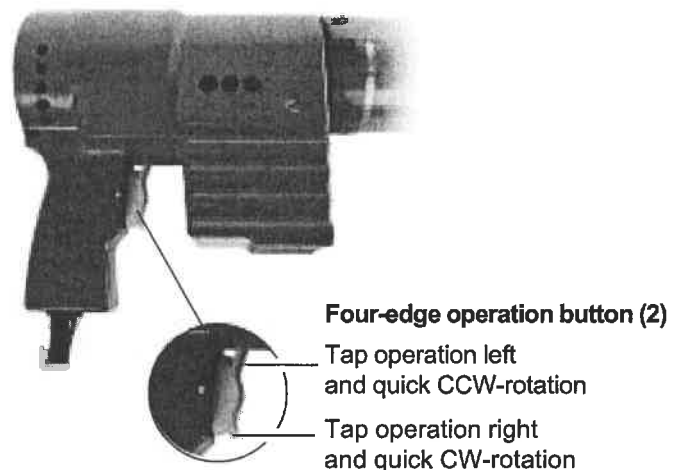
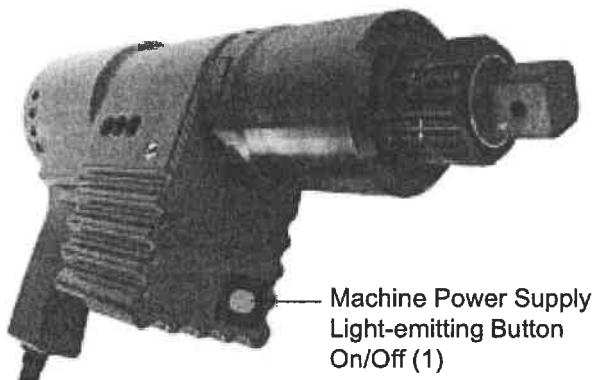
Generally comprises:

1. Switching On/Off of tool, i.e. connection/separation with/from power supply (1)
2. Operation of tool while mounting/dismounting:
 - Tap for CW-operation (tool stops when releasing the button)
 - Tool Start (pressing the button tool changes to trigger lock for continuous operation according to pre-set mode - **Previously check sense of rotation in Secondary Operation Unit!**). When reaching pre-set torque or finishing-angle torsion, tool shuts off precisely.
3. Screwing process is being stopped by pressing any button during trigger lock for continuous operation.



3.4 Electrical Operation of the **alkitronic-EFC plus**

Primary Operation Unit



Primary Operation Unit

Light-emitting button (1) - Switching On/Off of tool, which means Connection/Separation with/from power supply

Operation of tool with four-edge operation button (2)

Action point below: **CW-direction** - tap operation

In case the rocker button is pressed down continuously the torque wrench changes over to standard operation (when releasing the rocker button the tool stops)

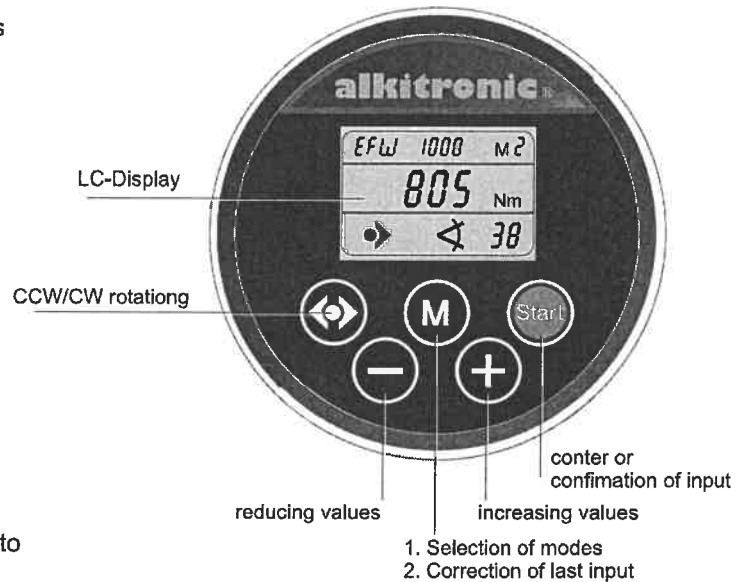
Action point above: **CCW-direction** - tap operation

In case the rocker button is pressed down continuously the torque wrench changes over to standard operation (when releasing the rocker button the tool stops)

Tool shuts off precisely when reaching the required torque.

3.5 Secondary Operation Unit of the **alkitronic-EF plus / EFW plus / EFC plus**

For adjustment of operation data resp. programmes



3.5.1 Screwing - Programmes - Standard

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 tortion Option: automatic loosening according to pre-settable angle degrees*

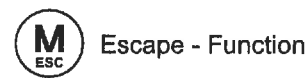
Mode	Important operational steps
M 1	Enter sense of rotation, nominal torque, Enter released angle
M 2	Enter sense of rotation, pre-torque and finishing-angle tortion Enter released angle

* Attention: Releasing only serves to "run free" the DMA (Torque Sensor) not for loosening the screw or nut

Selection of mode by pressing:



Cancellation of last input by pressing:



Important:

Each operational step has to be confirmed by pressing:



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

Optional Programmes

Mode	Description
M 3	Tightening with angle degrees
M 4	Tightening with rotations

Mode	Important operational steps
M 3	Enter sense of rotation and angle degrees
M 4	Enter sense of rotation and rotations

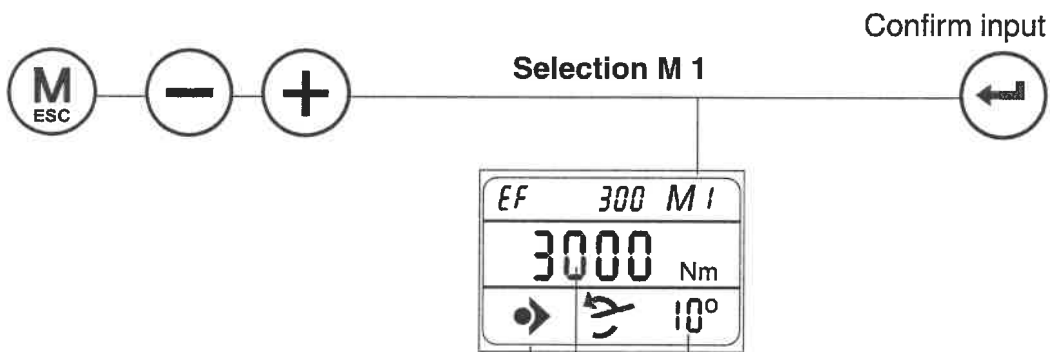
EF.... -Torque Wrenches

3.5.2 Adjustment of Programmes **alkitronic-EF plus**, **EFW plus**, **EFC plus**

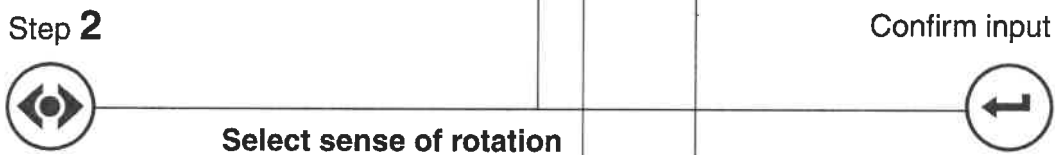
Adjustment Mode 1

Tightening with torque. With/without automatic release

Step 1



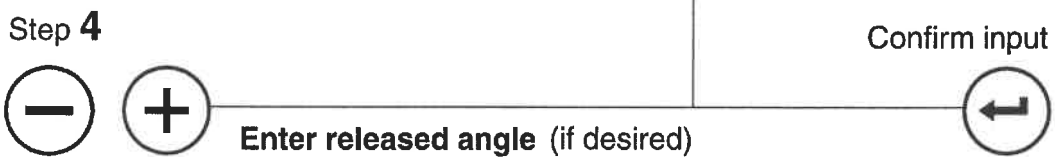
Step 2



Step 3



Step 4



No automatic release:
Set angle to zero



IMPORTANT!

Complete torque range of tool

IMPORTANT!

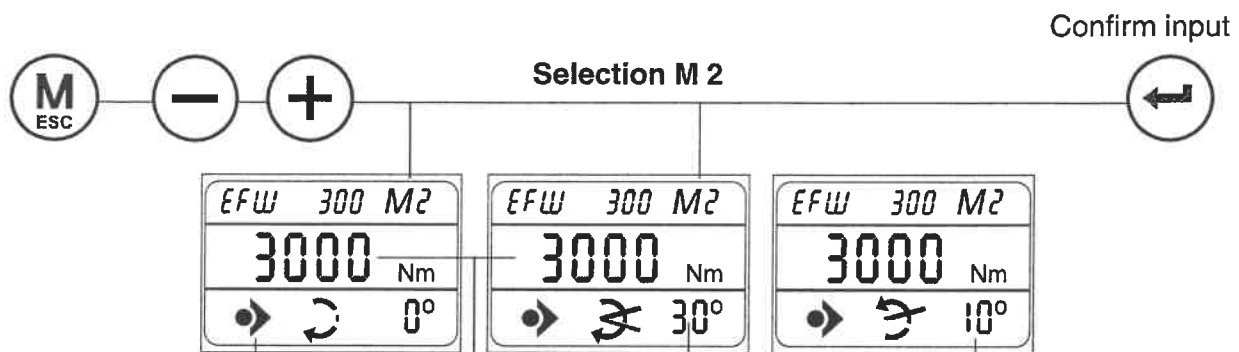
Pre-set torque can also be reached
via tap operation

Tool ready to start

Adjustment Mode 2

Tightening with pre-set torque and finishing-angle tortion. With/without automatic release

Step 1



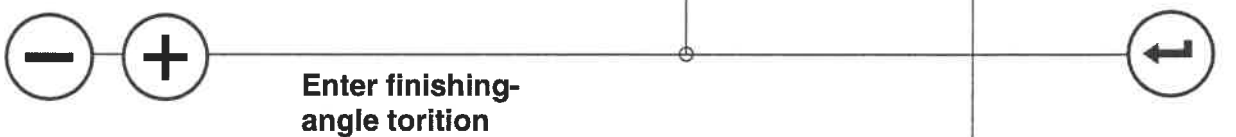
Step 2



Step 3



Step 4



Step 5



No automatic release:
Set angle to zero



IMPORTANT!

When entering pre torque the torque range is restricted (approx. 50 %) of the torque due to tightening with finishing-angle tortion

Tool ready to start

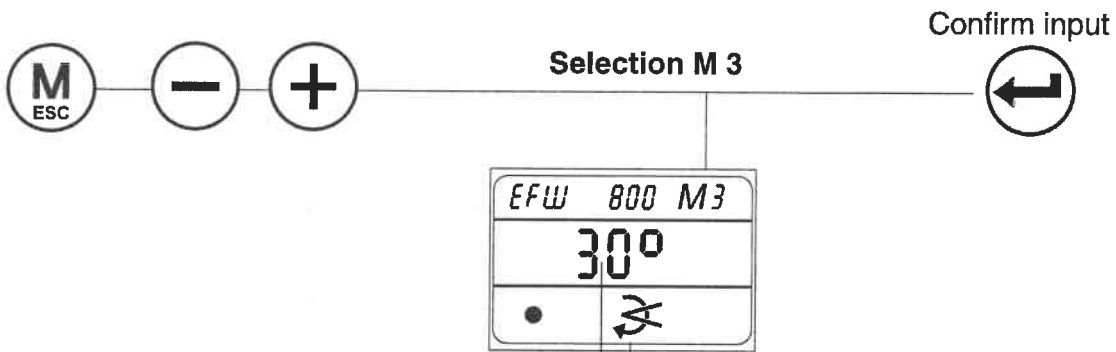
EF.... -Torque Wrenches

Optional

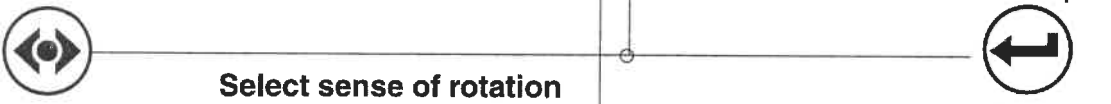
Adjustment Mode 3

Tightening with pre-set angle degrees.

Step 1



Step 2



Step 3



Tool ready to start

IMPORTANT!
Tightening with max. torque - low speed