

# **SUPERIOR** BOLTING SOLUTIONS



## **Airtite<sup>TM</sup>** **Pneumatic** TORQUE WRENCHES



**TITAN<sup>®</sup>**  
SUPERIOR BOLTING SOLUTIONS

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## A Foreword

Congratulations on the purchase of a Titan® AirTite torque wrench. This high quality product sets unique international standards and satisfies high levels of safety. In order to preserve these features, regular maintenance is required. Please read this operation and maintenance manual carefully and observe the following information and instructions.

Maintenance and repair of the Titan® AirTite torque wrench must be performed by a Titan® or a certified workshop adequately trained and instructed by Titan®.

Improper maintenance may endanger your health and damage the Titan® AirTite torque wrench. In addition, non-compliance with any of the above items will void all warranty claims. This operation and maintenance manual includes basic information and instructions, which must be observed during operation and maintenance. The operator must read and understand the basic precautions before operating or performing maintenance and this manual must always be available on site.

This operation and maintenance manual applies only to the Titan® AirTite torque wrench. Please observe all special instructions throughout the manual including the “general safety instructions” mentioned in this section.

## B Definition of symbols



Safety instructions, which by non-compliance may result in personal injury or death.



Safety instructions, which by non-compliance may result in damage to the Titan® AirTite torque wrench, its functions and the environment.



Information for proper and safe operation.



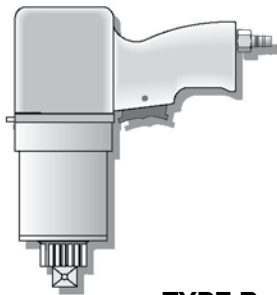
Practical advice and information to make operation easier.

## C Reception control / packaging

Visually inspect all components for possible damage. If shipping damage is found, notify the forwarding agent immediately. Return components in original package to avoid additional damage.

## D General description

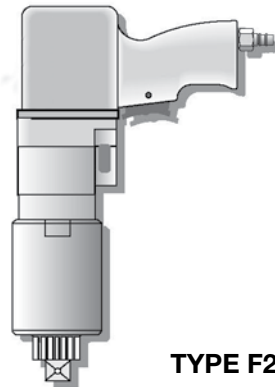
The torque is adjustable through the air supply or through pressure regulators. The precision of the torque depends on the stability of the air supply. An air pressure of 30-100 psi at a bulk current of approx. 2.6 - 4 gallons/sec ensures an optimally operating and explosion-proof working area.



**TYPE R**

### **Titan® Compact air-operated torque wrench**

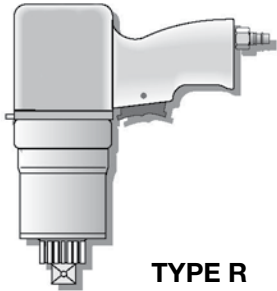
Torques at low size until approx. 1,000 Ft-lb, Right-/ left-hand motion, arbitrary positioning of the operating device by a rotatable bearing.



**TYPE F2**

### **Titan® two-speed Compact air-operated torque wrench**

Torques until approx. 35,000 Ft-lb, 2 speeds (overdrive/power drive), Right-/ left-hand motion.

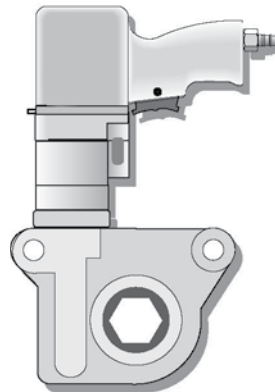


**TYPE R**

**D = Rotable**

### **Titan® Compact air-operated torque wrench**

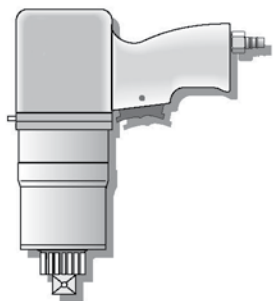
Torques until approx. 8,000 Ft-lb, Right-/ left-hand motion, arbitrary positioning of the operating device by a rotatable bearing.



**TYPE AT**

### **Titan® two-speed radial Compact air-operated torque wrench**

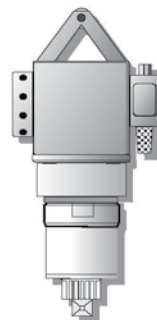
For use with far extended screw ends, such as plate heat exchangers. Torques to approx. 3,400 Ft-lb (higher torques on inquiry), 2 speeds.



**S = Fixed**

### **Titan® Compact air-operated torque wrench**

Torques until approx. 8,000 Ft-lb, Right-/ left-hand motion, arbitrary positioning of the operating device by a rotatable bearing.



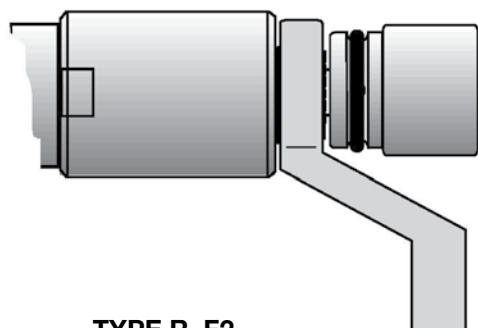
**TYPE R**

### **Titan® Compact air-operated torque wrench**

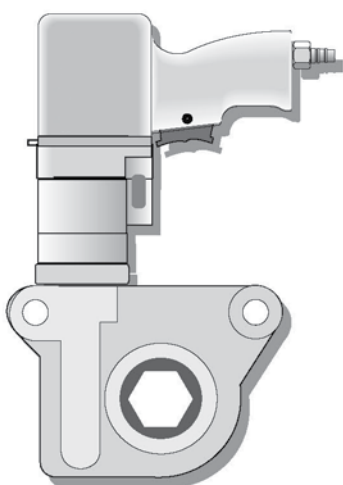
The pneumatic ATC torque power wrench is especially for the remote control. Usable as a single power wrench or in the combination with several ATC power wrenches. Torques of 37 - 2,600 Ft-lb.



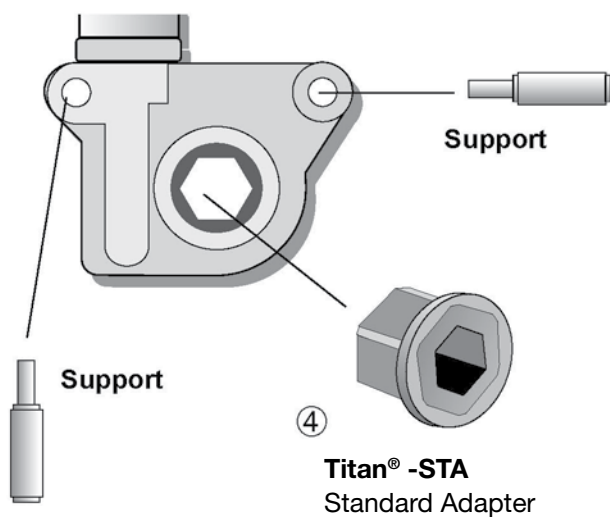
## Chapter 2: Operation and Maintenance Manual



TYPE R, F2,



For reduction of the spanner opening  
**Titan® -STA (4)**

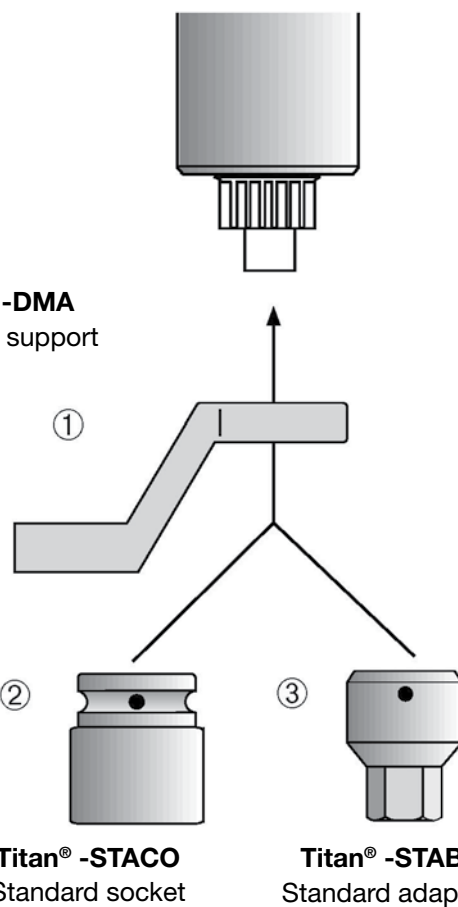


For special operating original accessories:

**Titan® -DMA (1), Titan® -STACO (2), Titan® -STABI (3)**



**Titan® -DMA**  
Torque support



**IMPORTANT!**

For a long lifetime of the air motor;  
use a maintenance unit (FRL) to  
ensure proper air oil mixture.



- water trap extends the life time of the motor vanes.
- DRV (pressure control valve) for torque setting.

## **1. Safety information**

### **1.1 Operator responsibilities**

The operator must have read and understood the instructions of this operation and maintenance manual before using or servicing the Titan® AirTite torque wrench. Operation and service may not be performed if the person does not understand purpose, consequences, and precise performance of each procedure.

### **1.2 Intended use**

The Titan® AirTite torque wrench may only be used to tighten and release heavy bolted joints. Every other use (i.e. as a mixer or drill) can cause damages to the equipment and operator. No external loading may be performed on the torque wrenches -- i.e. the use of a crowbar (possibility of deformation). Do not use the unit for any other purpose than its intended use. Use only the pressurized air oil listed in the technical data. (see section 3.1, recommended oils).



## 2. Operation



Depending on the working environment and application of the Titan® AirTite torque wrench, existing local regulations can require protective items (e.g. safety shoe, helmet, etc.). Non-observance of such regulations can cause severe physical injury. Ear protection must be used. Please wear gloves for safe handling of tool.

### 2.1 Putting into operation

Before the compressed air is attached, the Titan® AirTite torque wrench and operator must be prepared for each unique bolting operation:

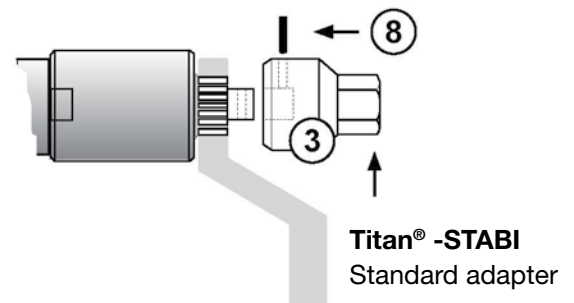
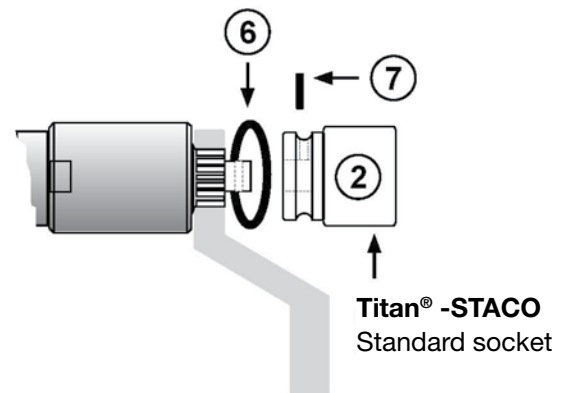
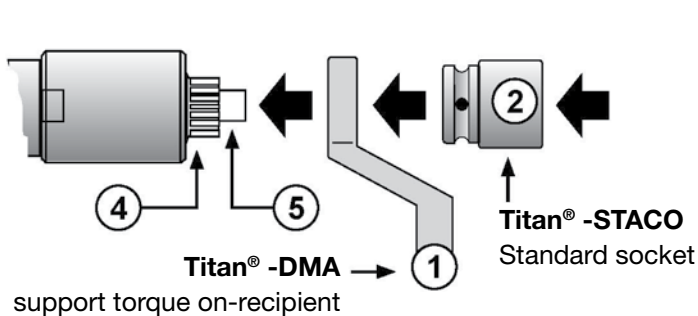


- Be sure it is correctly seated on the standard socket/- adapter
- Check for possible damage of the standard socket/- adapter, or if another adapter is necessary
- Never continue to use damaged parts. Only use original Titan® spare parts



### 2.2 Preparation for bolting operation

- Put the Titan® AirTite torque wrench on a flat pad
- Put the support or torque-on recipient (1) on gearing (4)
- Put the standard socket/- adapter (2) / (3) on square (4) - install lock pin (7) secure with rubber ring (6) and screw in safeguarding screw (8) respectively

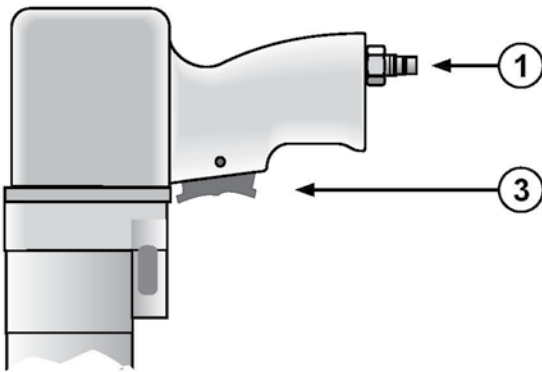








Illus. 3



The supplied compressed air must be clean and particle free, without water and other objects. Pollutions of the hose couplings or aggressive materials which reach the motor through the air pressure hose can cause damages to the tool. The use of the FRL is necessary for proper oil air mixture to reduce wear on the motor. Performance may become hindered if the FRL is not used. (also see service, period 4.3 maintenance).

## 2.5 Operation of Titan® AirTite torque wrench

The operation of right-/ left-hand motion is carried out via a rocker switch (3) at the handle (a switch for continuous operation is available). The pressurized air is supplied through a coupling at the nipple (1) (Illus.3).

Titan® - F2

Adjust air pressure at air supply device to required pressure before connecting the air tube (see technical characteristic data sheet). The maximum operating pressure of approx. 100 psi may not be exceeded. Increased wear or even destruction of the motor is possible.



Never block the rocker switch (3) (illus. 3) with foreign objects. Control of the motor would be lost. An uncontrolled air-operated torque wrench can cause physical damage and/or property damage.



Manipulations within the motor or at the valves of the Titan® compact air-operated torque wrench can lead to a loss of warranty.



Components are under high pressure. Do not fold the tube and check for damages before using. A damaged tube may not be used. Danger of a tube leak and/or injury by an uncontrolled tube may result. Check hose couplings for damages. Damaged hose couplings may not be used.



## 2.6 Tight and release

Rotating torque on-recipient/support or rotating standard socket/adaptor. Keep loose garments, long hair, cable, and other objects away from the danger-/ rotation area. During operation, ear muffs, steel toed shoes, and safety glasses must be worn.

Always be alert while the Titan® AirTite torque wrench is in operation and always keep the off switch readily accessible. Keep a safe distance of 1 arm length from any dangerous areas.

Always fully fasten the standard socket/ adaptor on the bolt/nut. An unsatisfactory bolted joint can cause material breakage by overload. Splintering parts can cause bruises or other serious injuries.

Due to a fine air-oil mist caused by the torque wrench, a protective breathing mask must be worn, especially in confined spaces.

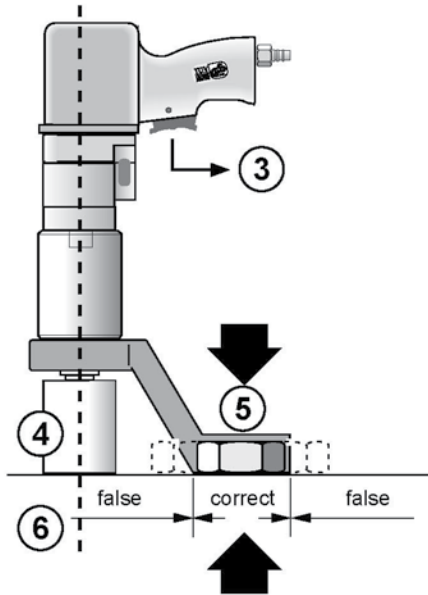
Due to the heavy use of the Titan® pressurized air motor, it is necessary to provide a sufficient oil supply. Danger may include damage to the motor vanes if improperly oiled. For oiling, 2-3 drops per min are sufficient in continuous operation (also see section 3.1 pressurized-air oil).



### 2.6.1 Titan® - R, F2



Keep the Titan® AirTite torque wrench in line (6) with the nut while in operation, otherwise there is the possibility of deformation/damage to the standard socket/adaptor (4) or the nut may be released.



Illus. 4

Safeguard support only in the shown area

The following steps have to be executed to tighten and release bolted joints: (Illus. 4)

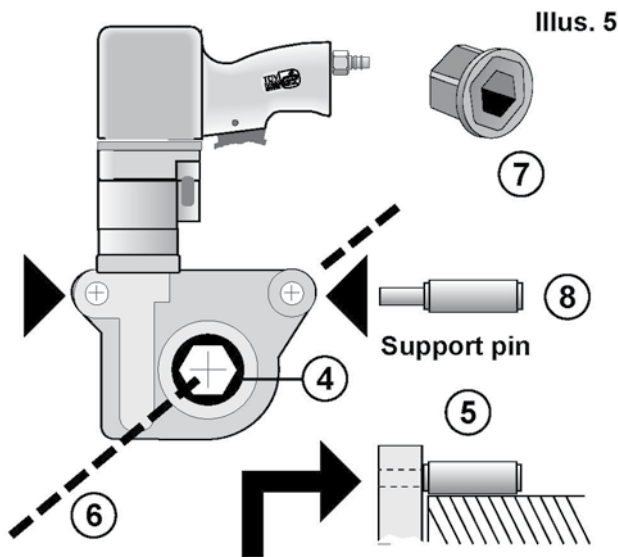
- Put the Titan® AirTite torque wrench completely on the bolt/nut.
- The support or torque on application must be at the same height as the standard sock/adaptor to secure the initial movement.
- A sure, stable reaction point must be ensured.
- Always keep the Titan® AirTite torque wrench on the axis line with the bolt during bolting process.
- Switch on the Titan® AirTite torque wrench with the rocker switch for right or left hand motion. The motor stops when achieving the desired torque:
  - a) Reaction force = motor traction
  - b) Reactive torque = engine torque
  - c) Predefined torque is achieved
- Changing direction of rotation
- Switch on machine to free support or torque after completing bolting
- Switch off machine
- Put on next bolt/nut
- Repeat bolting process



## 2.6.2 Titan® -AT



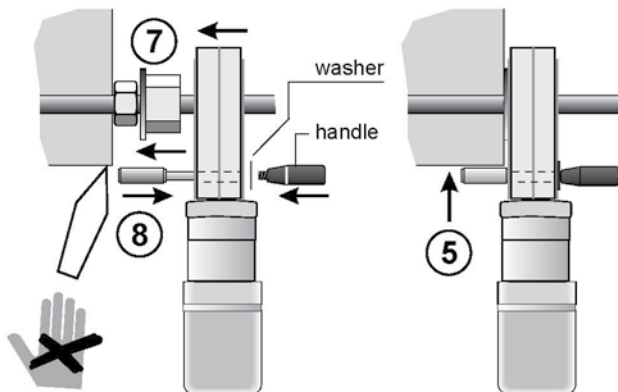
Put the support pin completely into the receiving device of the Titan® radial compact air-operated torque wrench, otherwise there is a danger of case breakage.



Safeguard support only if the support pin is completely put into the receiving device of the case.

Tightening and release of bolted joints should be carried out by the same process as described on the previous page. Due to the radial drive of the Titan® AT, the torque wrench is to be used at a 90 degree angle to the bolting axis. This drive (4) is carried out via a quick spanner opening. For the reduction to a smaller spanner opening, a Titan® STA is necessary. A support pin is used as a torque-on recipient. A strong, stable reaction point must be ensured. (Also see application drawing illus. 6.)

Illus. 6



## 2.7 Ending or interrupting the work (or during accessory change)

- Interrupt the air pressure by switching the pressurized air supply off at the FRL or at the supply system on the machine
- Remove residual air by briefly switching on the machine
- Remove air connector at the machine

**DANGER!**

Components are under high pressure. Injury or damage to property by an unintentional start-up of the torque wrench can occur. When adjusting the air supply, always remove air pressure hose at the compressor first.

**NOTE!**

When in extended operation, oil must be used in the motor through the air inlet nipple. This will help avoid damage or wear on the motor vanes. (see section 3.1, recommended oils.)

## 3. Technical data

### 3.1 Pressurized air oil

Brand: Aral  
Type: Vitam DE 10  
Characteristic: resin-free and acid-free, humidity definite, high corrosion- and wear protection  
Specification / Use: SAE 10W Oil viscosity 40°C: -10 cST, 2-3 drops per min. at continuous operation

(no guarantee is taken for other brands)

### 3.2 Acoustic emission and vibrations

The sound pressure level measured at a maximum performance exceeds 85 dB (A). The measuring was in accordance with the machine noise information ordinance. (3rd GPSGV dated 18.01.1991), § 1, paragraph 2, 1 e)

Vibrations: No considerable vibrations appear.

Titan® AirTite torque wrenches with lower effective sound pressure values (< 85 dB (A)) are available as custom-built models. By equipping with sound absorbing elements, the torque characteristics can be corrected accordingly.





## 4. Service

### Maintenance

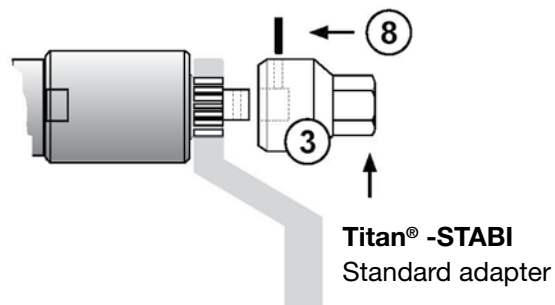


To ensure lifetime performance for the Titan® AirTite torque wrenches, a regular maintenance schedule is necessary (performance check, motor check, safety check).

Extended operation oil must be supplied to the motor of the Titan® AirTite torque wrench through the plug of the pressurized air supply (1) (Illus. 8). Avoid corrosion damages to the motor vanes (oils recommended, see section 3.1). The pressurized air supply must be protected against dirt.

Maintenance periods: Once a year or after 1000 service meter hours. After this please send the torque wrench to your Titan sales rep or dealer in the original packaging for full servicing.

Illus. 7.2

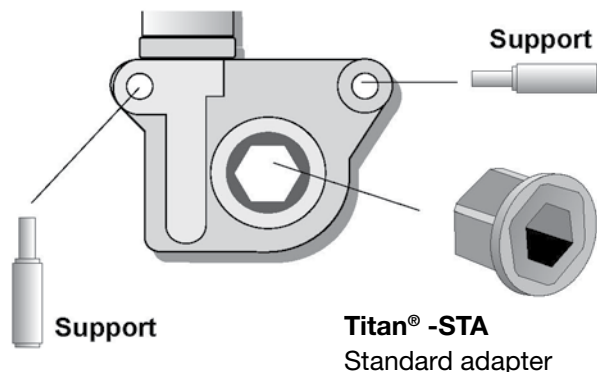
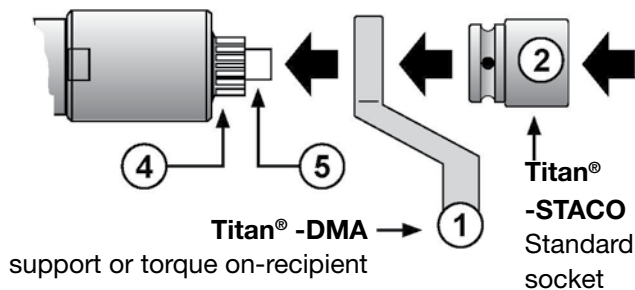


### 4.2 Replacing the Titan® -STA (standard adapter)

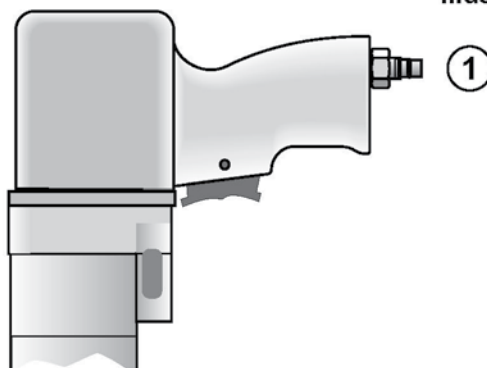


Support and/or standard adapter always completely plugs in; otherwise the case can be damaged strongly.

Illus. 7.1

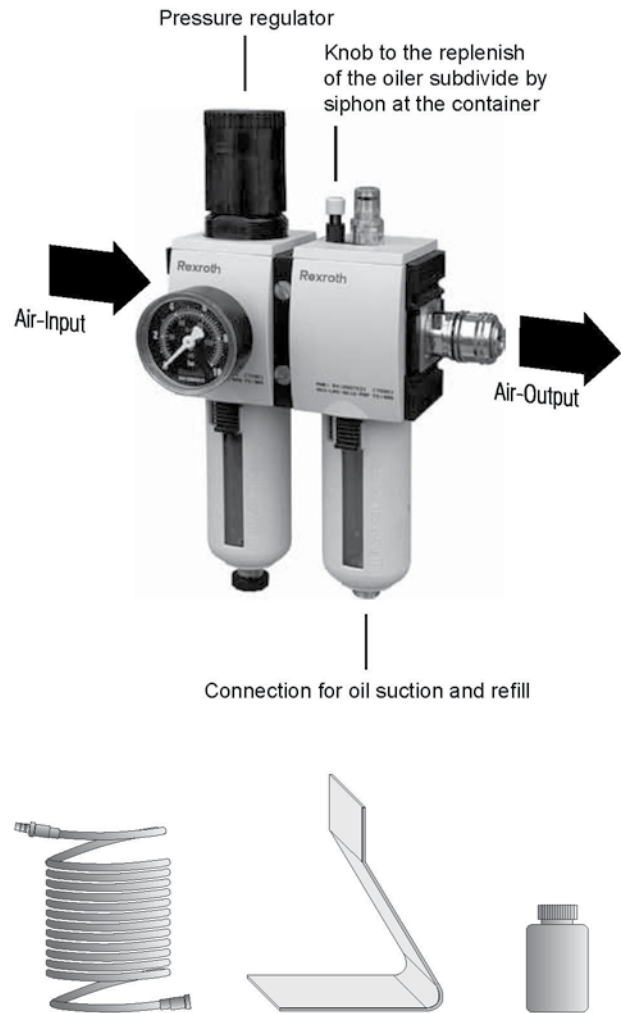


Illus. 8



## E Maintenance unit (FRL)

<b>Regulator type</b>	Diaphragm-type pressure regulator
<b>Regulator function</b>	function with relieving air exhaust
<b>Pressure supply</b>	single
<b>Mounting orientation</b>	vertical
<b>Ambient temperature min./max.</b>	14°F / +122°F
<b>Working pressure min./max.</b>	1.5 bar (21,75 PSI) / 16 bar (232 PSI)
<b>Adjustment range min./max.</b>	0.5 bar (7,25 PSI) / 8 bar (116 PSI)
<b>Filter element</b>	exchangeable
<b>Filter reservoir volume</b>	3 in <sup>3</sup>
<b>Condensate drain</b>	semi-automatic, open without pressure
<b>Type of filling</b>	Manual oil filling Semi-automatic oil filling during operation
<b>Lubricator reservoir volume</b>	4.9 in <sup>3</sup>



**Art. Nr. 20350 - Maintenance unit complete with 5 m tube, bracket and special oil**



Also refer to the instructions of the appropriate maintenance unit (FRL).



9001 Jameel Rd. Suite 180 | Houston, TX 77040  
**Toll-Free** + 1.866.345.8484   **Phone** + 1.281.449.9994   **Fax** + 1.281.449.9996

www.**TITAN**ti.com  
1.866.345.8484



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