

Hi-Force®

HYDRAULIC TOOLS

INSTRUCTION MANUAL: PISTOL GRIP PNEUMATIC TORQUE WRENCHES Model Series: TWP-S

Hi-force – Pistol Grip Pneumatic Torque Wrench range: Series TWP-S



Important Note:

Before putting this Pneumatic Torque Wrench into operation, please validate the certificate (provided along with this tool) by completing the section "date of first issue, sign and stamp."

- 1.0 Inspection of the product upon receipt:**
On receipt of the product, visually inspect the item for any evidence of shipping damage. Please note shipping damage is not covered by warranty. If shipping damage is found notify the carrier immediately and refrain from putting the product into service. The carrier is responsible for repair and replacement costs resulting from damage in transit shipment.

2.0 Safety Precautions:



Read and follow all the instructions and safety warnings carefully prior to use of the equipment. Failure to do so could result in equipment damage or failure of the equipment or personal injury. Hi-Force will not be held responsible for any damage to the equipment or personal injury resulting from unsafe use of the product, lack of maintenance or incorrect operation. **If in doubt** on the correct usage of any Hi-Force equipment, contact your nearest Hi-Force office or distributor. If the operator has not been trained on high pressure hydraulic equipment and its safe use consult your local

Hi-Force sales office who can offer you training courses for operators



All operators should ensure that all necessary personal protective equipment as specified by their employer is worn when operating any hydraulic equipment. Safety shoes, safety glasses/ visor and protective gloves should be worn at all times. All relevant risk assessments should be completed prior to use of the equipment.

Available Models and Specifications:

Model number	Torque capacity * Nm	lbf.ft	Square drive size	R.P.M. at max pressure	Overall length mm	Gearbox diameter mm	Weight kg
TWP09S	200-900	150-670	3/4"	24	328	80	3.2
TWP15S	300-1500	220-1110	1"	12	343	88	4.7
TWP22S	500-2200	370-1620	1"	7	360	88	5.1
TWP32S	800-3200	590-2360	1"	4	383	88	5.8
TWP40S	850-4200	620-3100	1"	4	383	88	5.8
TWP60S	1200-6000	880-4400	1 1/2"	4	400	102	7.7

(*) Minimum torque value at 1.5 Bar, maximum torque value at 8 Bar airline pressure. Weight is without reaction arm.



Read this entire manual before operating the torque wrench.

Failure to observe the following warnings could result in serious bodily injury. These instructions are part of the torque wrench. They must be kept in a safe place for later use and be passed along with the torque wrench if it is sold, loaned, or otherwise transferred.

The torque wrench should be used only by TRAINED PERSONNEL who have been taught how to safely use and handle the torque wrench. Using the torque wrench without training may result in SERIOUS INJURIES or DEATH.

Employers purchasing this torque wrench MUST ensure employees using the torque wrench have read and understood these Operating Instructions prior to using the torque wrench. The Operating Instructions MUST be available to the employees for reference at all times.

Before commencing work the tool should be inspected to ensure:-

- All moving parts are in the correct working order and are not jammed.
- No parts of the tool are broken, badly worn or damaged.
- IF IN DOUBT DO NOT USE THE TOOL.

Operation Parameters:

The Hi-Force Pneumatic Torque Wrench is a hand-operated power tool and must be used exclusively for tightening and unscrewing bolted connections.

Never combine the wrench with other tools, such as impact screw drivers or drill.

The minimum and maximum torques can be taken from the table corresponding to the torque wrench and the corresponding setting value must be selected.

The torque wrench must be used only with the reaction arms supplied as standard by Hi-Force. Consult Hi-Force, before modifying any support arm, as an uncontrolled operating state (overturning moment) can occur, and lead to the risk of accidents.

Any modification to the tool or associated parts without prior written permission from Hi-Force, will be deemed as improper use and all warranty and guarantees on the tool are declared invalid.

Use of the tool for any applications other than its intended purpose is deemed to be improper use and warranty will be void.

Any unauthorized conversions or modifications of the device are prohibited on safety grounds. All operating and maintenance provisions contained within this operating manual must be complied with.

EMISSIONS

The continuous sound pressure level according to DIN 45635 is 84 dB(A).

The vibration is below 2.5 m/s².

RISK ASSESSMENT

Incorrect use poses the risk of crushing, shearing and serious damage to the torque wrench.

Risk of crushing and shearing

A jam and shear risk is possible between support arm and abutment (fig. 1+2). The support arm must find a close rest!

Fig: 1

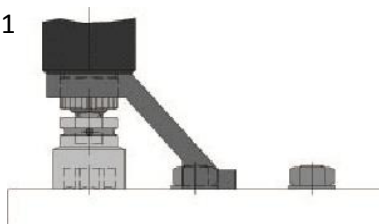
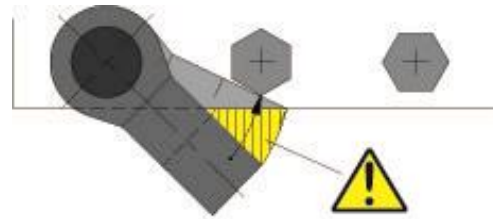


Fig: 2



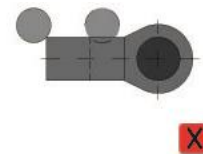
Risk of tool breakage.

Incorrectly applied support arms can fracture (Fig: 3).

The support arms should always be applied in opposition to the direction of rotation of the torque wrench.



Fig: 3



The risk of overturning moment, by extension of the impact socket, modification of the support arm or reverse fitting of the support arm. The impact socket can fracture and the torque wrench can fail.(Fig:4).

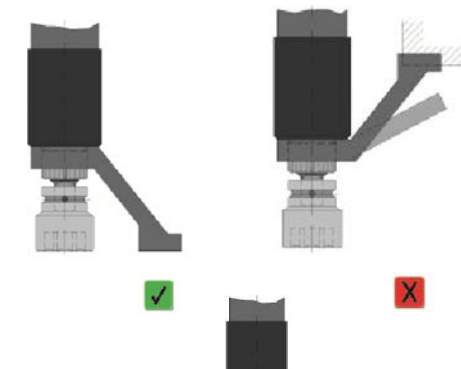


Fig: 4

Hazards

A risk of crushing between the pistol-grip and surrounding components. The pistol-grip and /or driving unit are designed to rotate.

The impact socket and the support arm can become detached if they are not correctly fixed in position.

Always lock the impact socket and the support arm, with the locking pin and the rubber collar (fig. 6). Only use impact sockets which conform to DIN 3129 (Sockets) power torque wrenches. Keep the hose of the compressed air supply away from the support arm!

If there is a cut in the supply of the compressed air, put the wrench safely away. After return of the air supply, loosen the last bolt again and repeat the tightening procedure.

The exhaust air of the pneumatic wrench can contain oil!

Remove the supply of compressed air, before working on the wrench.

Do not disconnect the air supply with the tool working at full operating pressure.

TECHNICAL DATA

Consumption of compressed air: 20 l/s at 6.3 bar

Nominal capacity: 0.85 KW

Min. and max. torque values are recorded in the supplied with each tool.

OPERATION

The wrench should only be put into operation using an air control unit with pressure reduction valve, oiler, filter and water trap.

General Arrangement-Air Control Unit



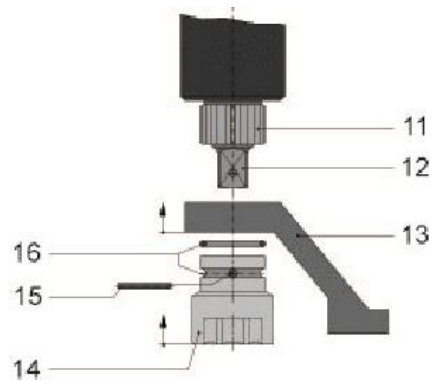
- 30: Air Control Unit Complete
- 35: Air Supply
- 36: Water Trap
- 37: Pressure Gauge
- 38: Oiler
- 39: Hose
- 40: Pressure Reduction Valve

TOOL SET-UP

Connect the air control unit (30) by a hose of min. NW 13 (35) to the compressed air supply. The hose (39) from the air control unit (30) to the wrench is 4m long and is permanently installed on the control unit (30). The length of the hose (39) may not be altered.

Put the support arm (13) onto the spline (11) of the wrench. Then put the impact socket (14) on to the square drive (12). Fix the impact socket (14) and support arm (13) with locking pin (15) and rubber collar (16), see fig. 6.

Fig. 6.



Put the wrench onto the bolted connection set with the pre-selected torque (see TORQUE SETTING). For the tightening procedure move the support arm (13) against the abutment. For the loosening procedure turn the support (13) slowly towards the abutment by starting the motor. If necessary start motor at intervals! Make sure the support arm has a tight rest against the abutment. The reaction torque must be absorbed by the support arm at the level of the socket.



ATTENTION!

The support arms will always move for abutment against the direction of rotation of the wrench.

Press the trigger (4) on the pistol grip (1) according to the direction of rotation required and hold it depressed until the preselected torque is reached. When the torque is reached, the wrench will come to a standstill. Run the wrench briefly in the opposite direction, so that the support arm (3) is removed from the abutment. The wrench can now be moved onto the next bolted connection and tightened as described above.

SETTING THE TORQUE

Read off the required torque from the chart (6) fixed to the motor housing and set the necessary air pressure on the pressure gauge (37) by means of the pressure reduction valve (40) while the wrench is running under no-load conditions (dynamic pressure). Between the numbers (e.g. 3 and 4) the torque can be adjusted continuously (interpolation).

The wrench should only be operated using the air control unit (30) with water trap (36), oiler (38) and hose (39) from Hi-Force, this is necessary in order to guarantee the precision of the torque values.

The precision of the torque values is only guaranteed, if the torque wrench is used with the original Hi-Force air control unit. Oiler setting: 1 drop/20 seconds. Oil type: HL 25 DIN 51524 - ISO VG32.

The exhaust pipe (34) of the pneumatic motor must always be slightly oiled.

Non-observance of this will result in loss of capacity, malfunction and fluctuations in torque.

TIGHTENING AND LOOSENING BOLTS

Tightening bolts

Put the wrench onto the bolted connection set with the pre-selected torque (see TORQUE SETTING). For a tightening procedure move the support arm (13) to the abutment. For a loosening procedure turn the support arm (13) slowly towards the abutment by starting the motor. If necessary start motor at intervals! Make sure the support arm has a tight rest against the abutment. The reaction moment must be absorbed by the support arm at the level of the socket.

The support arms will always move for abutment, against the direction of rotation of the wrench.

Keep the toggle switch (4) on the pistol-grip (1) pressed down until the pre-set torque is reached. When the required torque is reached, the motor cuts out automatically. Then change the direction of rotation at the right / left switch (5), press again shortly the on / off switch (4), so that the support arm (13) is removed from the abutment.

Now choose again the required direction of rotation, put the wrench onto the next bolted connection and tighten the bolt as the procedure described above.

Loosening bolts

Select the required direction of rotation, using the reversing switch (5) above the on/off switch (4) on the pistol grip (1).

If the torque wrench switches off, the torque adjuster setting must be set higher or the higher speed must be selected.

IMPORTANT TECHNICAL NOTES

In order to achieve constant and accurate repetition of the cut-off points, the bolt must be tightened in one operation without interrupting the procedure from the motor start until the wrench cuts off. Before increasing the torque, the rated speed must be reached. The speed when running idle is in accordance with the selected torque (dynamic air pressure).



ATTENTION!

If the tightening procedure is stopped too soon, this bolt must be loosened again. Then repeat the tightening procedure! A bolt which has already been tightened to the required torque must not be tightened again with the same torque: This will lead to excess torque being applied.

A precise repetition of the cut-off points requires constant monitoring of the air pressure and flow.

Fluctuations in air pressure and/or unstable air supply can result in impermissible fluctuations in the tightening torque!

At constant pressure and flow the accuracy of repetition for the cut-off points lies within a tolerance of +/-5%.

The calibrated torque values at the different settings are for a bolt with a short length of grip. Bolted connections of other types can result in a different torque.

After the gears have been run in (approx. 1000 to 2000 bolts) and thereafter once a year, it is necessary to check and possibly re-calibrate the torques.

After use the wrench should always be stored in dry and clean conditions!

MAINTENANCE AND REPAIR

The gear parts of the wrench are maintenance-free.

All repairs must be made by the manufacturer or its authorized service workshop, as - after the exchange of parts - the accuracy of the torque values must be checked and the wrench must be recalibrated.

Use only genuine Hi-Force accessories and genuine Hi-Force spare parts.

Hi-Force is not responsible for any personal injury or machine damage that occur due to the use of non-genuine Hi-Force accessories and spare parts or repairs carried out by unauthorized service workshops.

See www.hi-force.com for more information

For full and comprehensive details on this piece of equipment and all of the Hi-Force range of lifting and jacking equipment please go to:

www.hi-force.com

GENERAL ARRANGEMENT – TWP-S



- 1: Pistol Grip
- 4a: Toggle switch right
- 4b: Toggle switch left
- 6: Torque Setting
- 11: Spline
- 12: Square Drive
- 13: Reaction/ Support Arm
- 14: Socket (output force)
- 34: Air Inlet