



- Richtlinie 94/9/EG -
Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung
in explosionsgefährdeten Bereichen

Bestätigung

BVS 08 ATEX H/B 109

entsprechend Artikel 8 (1) b) ii)
über den Erhalt der Unterlagen gemäß Anhang VIII Nummer 3

Hersteller: Maschinenfabrik Wagner GmbH & Co. KG
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Die Zertifizierungsstelle der DEKRA EXAM GmbH, benannte Stelle Nr. 0158 gemäß Artikel 9 der Richtlinie 94/9/EG des Europäischen Parlaments und des Rates der Europäischen Gemeinschaften vom 23. März 1994, bestätigt, die im Folgenden aufgeführte Dokumentation am 09.09.2008 erhalten zu haben:

Unterlagen zu Hydraulische Kraftschrauber
Typ MX-EC, MSX/T, FSX

Die Unterlagen werden weder auf Vollständigkeit noch auf Richtigkeit geprüft. Sie werden von uns 10 Jahre lang archiviert. Falls der Hersteller eine längere Archivierungsdauer wünscht, ist dies rechtzeitig schriftlich mitzuteilen.

DEKRA EXAM GmbH
Bochum, den 11.09.2008

Zertifizierungsstelle

Fachbereich



Plarad Hydraulic Torque Tool

D60-050-1-00102

**Hydraulic Power Torque Tool
MX- EC
MSX/ T**

**EX model
II 2G c IIB T4
 $-10^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$**

User Guide

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IMPORTANT INFORMATION

1. Instructions

1.1.CE label

These products bear the CE Label. The conformity declaration warrants that the product meets the safety guidelines of the European Union.

1.2.General instructions

Before you use the torque tool system...

...please be sure to pay attention to the instructions in this manual. Legislation requires that we give you important instructions for your safety and indicate how you can avoid damage to the equipment.

Read carefully through the operating instructions to become familiar with its operation. Any individual who works with it should do so as well. In this way, you protect yourself and gain important information on the connection, use and safety of the device.

If you do not observe these instructions, then the Maschinenfabrik Wagner is not liable for damage that results from the negligent or deliberate disregard of the instructions in this manual.

- The operating instructions are a component of the device. They are available near the device at any time. The exact observance of the instructions is a pre-condition for its proper usage and operation within the terms of its use.
- The user's safety and the trouble-free operation of this device is only guaranteed when original device parts are used.
- If other components are used, the Maschinenfabrik Wagner can assume no guarantee as to its safe operation and functioning. All claims as a result of the resulting damage are excluded.
- The Maschinenfabrik Wagner only considers itself responsible for the device in terms of safety, reliability and functionality if the assembly, re-adjustment, changes, enhancements and repairs are carried out by the Maschinenfabrik Wagner or by locations that it has authorized, and if the device has been used in accordance with the operating instructions.

General safety instructions

- When the device is being operated, the laws and regulations applicable at the place of use must be observed. In the interests of a safe work process, operators and users are responsible for adherence to these rules.
- The user must make sure that the device is in proper condition and it is functioning safely before each use.
- The user must be familiar with the operation of the device.
- Before operation, the device and its lines must be checked for damage. Damaged lines and plug connections must be immediately replaced.
- For all repairs and maintenance work, the torque tool must generally be separated from the hydraulic supply.

1.3.Symbols and warnings



- CE label



- Pay attention to instructions for assembly and usage



- Pay attention to special instruction



- Special instruction for explosion protection

2. Product information

2.1. Intended use

The Plarad power torque tool is intended for use as a hand-operated tool for tightening and loosening bolt connections.

Only suitable power sockets / tools may be used for bolt connections




If other tools are used from the power socket, they must be configured according to EN 13463-1.

The torque tool is designed for operation indoors and outdoors, at an ambient temperature from -20 to +50°C. There must be consultation with the manufacturer in case of any deviation from this.

The torque tool is not suited to continuous operation as an engine!

The torque tool is labeled according to EU directive 94/9 EG ATEX 95:

 II 2G c IIB T4
 $-10^{\circ}\text{C} \leq T_a \leq +50^{\circ}\text{C}$



The torque tool must only be used in the following zones:

1 (Gas) 21 (Dust)

The zones must be evaluated according to ATEX 137 (118a) 1999/ 92/ EG or BetrSichV.

The permissible surface temperature and the permissible minimum ignition energy must be taken into consideration

These power torque tools are suited to operation on compressed air supplies, as long as the conditions as described in Section 4, "Technical Data" are fulfilled.

2.2. Unintended use

Usage that is different from or beyond what is described here is considered non-compliance. The manufacturer is not responsible for the damage resulting from this. The operator / user bears the entire risk.

2.3. Further applicable operating instructions

- Pneumatic hydraulic power unit X2 P-Z
- Castrol Tribol 3020/ 1000
- Shell Tellus DO 32

3. Scope of delivery

Hydraulic power torque tool, oil-filled and ready for operation.

4. Technical data

Maximum operating pressure 800 bar

Lubricating grease: Castrol Tribol
3020/ 1000

If other lubricating grease is used, its specifications must correspond to the further operating instructions, attached to these operating instructions, calling for the lubricating grease Castrol Tribol 3020/ 1000.



Accessories




Caution:

Only use accessories that do not impair the functioning and the safety of the torque tool.



In areas where there is risk of explosion, accessories are only approved for use if they meet the following minimum requirement for explosion protection:

 II 2G c T4

4.1. Hydraulic power unit

The power unit employed as an energy supply for the torque tool must feature the following characteristic values:

Maximum operating pressure:	800 bar
Flow rate:	1.2l/min 10bar 1.0l/min 800bar
Approved oil grade:	Shell Tellus DO 32
Maximum oil temperature:	110°C



Caution:

If a power unit other than the PLARAD X2P-Z ATEX is used, it is necessary for the operator to assure that the characteristic values listed above are absolutely adhered to.



If the hydraulic power unit must be used in areas where there is the risk of explosions, the power unit must at least meet the following requirement:

 II 2G c T4



We recommend the PLARAD hydraulic power unit

X2P-Z ATEX



Maintenance work on the hydraulic power unit must only be performed outside of areas where there is a risk of explosion.

4.2. HD hydraulic hose lines



Caution:

It is essential to only use HD hoses approved by PLARAD.



It is essential to only use supply lines and connecting elements that are approved for EX Zones.

Attention must also be paid to potential bonding of lines and service unit.

Attention must be paid to assuring sufficient clearance for the hose connection.

Do not buckle or contort HD hoses, do not pull them over sharp edges, and do not expose them to temperatures over 70 °C.

Inspect hoses and connections regularly for damage. Pay attention to the proper engagement of hose connections.

Secure hose couplings with threaded rings to avoid unintentional uncoupling.

Improperly connected hoses can lead to malfunctions.



Caution:

In case of hose leaks, stop the equipment immediately. Even change hoses, connectors, etc., with only exterior damage without delay. Safety rules for hydraulic hose lines must absolutely be observed.



Maintenance on the HD hoses must only be performed outside of areas where there is the risk of explosion.

5. Function

5.1. Torque tool mode of operation

The hydro-unit is used to produce hydraulic pressure that can be adjusted using a pressure limiter valve and be read using a pressure gauge. This pressure is fed through HD hoses (forward flow and return flow) into the torque device and converted into torque with a lever and ratchet system.

5.2.Support for counter torque

A standard brace support is part of the scope of delivery for the torque tool. The torque tool can and must be used only with the proper brace support.



Caution

It is essential to only use brace supports approved by PLARAD.

The support arm and outrigger must not be changed beyond the dimensions that we have specified and approved.

Changes in the support structure may invalidate the performance table originally delivered with the device.

The support (counter arm or counter support) must be positioned against the abutment on the joint, opposite the direction of rotation, before the torque tool is powered up.



Caution

The abutment at the fastening point must be configured in such a way that the support structure cannot slip away from the surface for the device!



To prevent mechanically produced sparks, the material combination of rusty steel and aluminum must be avoided at the counter arm and the abutment.

These guidelines are applicable to the entire swivel range of the brace support.

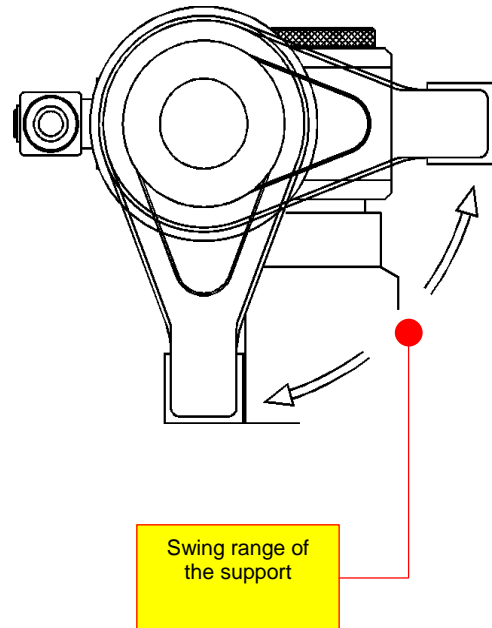


Figure 1: Swing range of the support



5.2.1. Optimal support situation

Provide full-surface application of the support structure!

Correct:

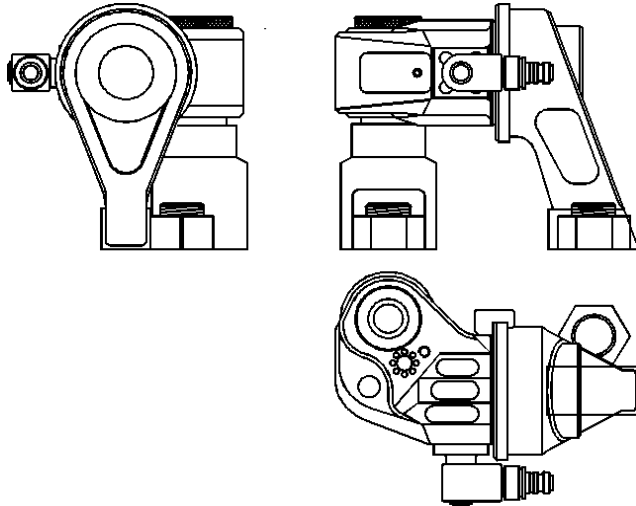


Figure 2: Optimal support conditions

5.2.2. Improper support situation:

Every point of positioning for the support translates into a powerful force that can lead to a break in the support or an accessory.



Improper support situation!

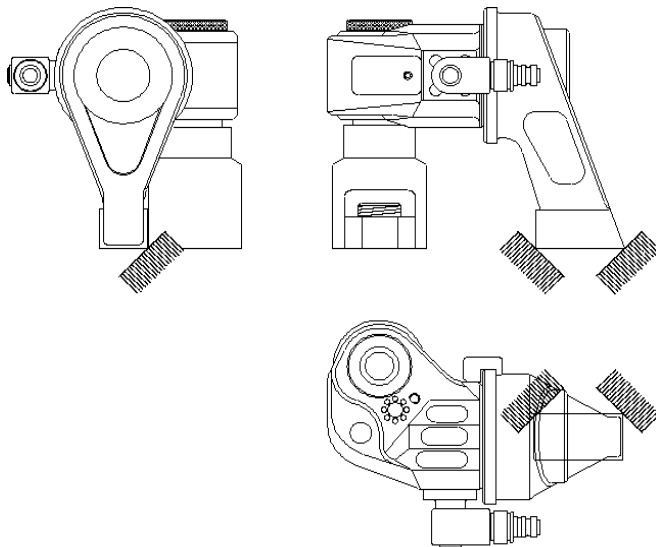


Figure 3: Improper support situation



Caution
Keep hands away from the support structure when the torque tool is rotating! While working with the torque tool, never put your hand on or near the support!

Danger of crushing!

A standard support structure is part of the scope of delivery for the power torque tool. The torque tool can and must only be used with the proper support. For special support problems, appropriate support structures can be designed and delivered as special equipment.

The support arm and outrigger must not be changed beyond the dimensions that we have specified and approved. If necessary, consult with our technical department with a precise graphic presentation of the situation.

Changes in the support structure may invalidate the performance table originally delivered with the device.



6. Operation



Caution!

Proceed according to the following checklist for the operation of the torque tool.



These points are absolutely to be considered to assure safe operation.

Before operation	During operation	After operation
<p>Visual inspection: Approved operating equipment and accessories All the parts correctly mounted or connected</p> <p>Function check: All moving parts OK All articulating joints and anti-friction surfaces sufficiently lubricated Wrench socket and counter arm approved for use Supply lines and connections fully functional and correctly mounted Open space for the HD hose and clearance for the hose connection No leakage from the devices, hoses or power unit Rotational direction correct Hydraulic power unit function check</p>	<p>Torque connection Properly set torque Tool socket approved for the application (approved torque, SW)</p> <p>Usage Abutment sufficiently stable Material combination steel-steel counter arm, abutment Positive connection between counter arm and abutment Avoid rusty steel</p>	<p>Visual inspection: No damage to torque connection and abutment No damage to the torque tool or accessories</p> <p>Function check: After usage, corrosion protection must be provided Cleaning torque tool All moving parts OK Socket and counter arm not damaged After every hose uncoupling, the connectors must be covered with the closing cap, so that no dirt enters the oil circuit. Supply lines and connectors fully functional No leakage from the devices, hoses or power unit</p>

6.1. Setting the torque

Here is an explanation of how to set the torque on the combination of the PLARAD hydraulic power unit X2P-Z and a MX-EC or MSX power torque tool.

Switch on the power unit with the slide valve. Press the button on the remote control and hold it until the pressure adjustment is finished. Set the pressure to reach the needed torque by turning the pressure adjustment valve and reading the pressure gauge on the power unit. If no torque scale is available on the pressure gauge, the pressure for the needed amount of torque is set according to the attached torque table.



Caution

Check to see if you have the right torque table for the tool. The number for the correct torque table is indicated on the tool and on the "Technical Data Sheet Hydro PLARAD Torque Tool." Compare the torque table with the torque scale produced on the pressure gauge. If the desired torque is set, disengage the button on the remote control.



Caution

While setting the torque, you must absolutely assure that the maximum permissible torque for the tool and the accessory parts is not exceeded. The maximum permissible torque is indicated on the tool and the accessory parts.



Caution

When other hydraulic power units are used, it is essential to follow the operating instructions of the power unit being used.



Caution

If a power unit other than PLARAD X2P-Z ATEX is used, it is up to the operator to assure that the characteristic values indicated above are adhered to. (see also Sec. **Fehler! Verweisquelle konnte nicht gefunden werden.**)



If the hydraulic power unit must be used in an area where there is the risk of explosion, then the unit must minimally fulfill the following requirement:



II 2G c T4



7. Bolt Tightening/Loosening

1. Fit the support far enough onto the tool that the catch on the support engages.



Caution

It is essential that only PLARAD supports and extensions be used.

2. Fit and secure socket onto drive-square on the tool. Use only power-drive power sockets for this.
3. Connect tool to the hydraulic power unit using HD hoses.
4. Switch on the hydraulic unit and set the required torque based on the torque table for the tool.
5. Attach the tool to the bolt head or nut using the socket.
6. Position the torque tool onto the connection so that the bolt head or nut is affixed into the entire height of the socket or the insert for the hexagonal socket key.

If that is not possible, the accessory can only be subjected to reduced torque or a special socket or other attachment must be used.

7. Position the support structure at the abutment counter to the desired rotational direction for the torque tool.



Caution

During operation, do not stop in the longitudinal axis of the torque tool, since components or the fitting can tear away and throw the tool from the connection.

Only subject the socket tool and accessories to the torque approved for these parts.

The approved amounts of torque for normal operating conditions are engraved on the devices.



Caution

In case of an unconnected return lift hose or defective return lift line, a relief pressure valve opens in the hose connection of the two-hose devices. The pent-up oil escapes safely.



7.1.Tightening

Insert the appropriate accessory into the device based on rotational direction. Attach and secure bushing onto the shaft.

At each change, it must be assured that the bushing and the bearing area are sufficiently oiled.

1. Pre-tighten bolt to be tightened hand-tight. We recommend the use of a lubricant (e.g. Molykote, Gleitmo or the like) to keep the friction in the thread and the connecting surface as low as possible.
2. Launch the bolting process by activating the button.



Caution

At each return stroke, the ratcheting of the carrier must be audible. That assures that the ratchet lever is pulled back each time by the piston.

7.2.Loosening



Caution

To loosen the connection, it takes substantially higher torque than for tightening.

In these situations, standard sockets and accessory parts often do not have the necessary stability. The output of the device is usually greater than the accessory parts.

It must absolutely be assured that the accessory parts are only subjected up to the maximum torque for which they are labeled.

Insert the appropriate accessory into the device based on rotational direction. Fit and secure bushing onto the shaft.

At each change, it must be assured that the bushing and the bearing area are sufficiently oiled.

3. Launch the bolting process by activating the button.



Caution

At each return stroke, the ratcheting of the carrier must be audible. That assures that the ratchet lever is pulled back each time by the piston.



7.3.Guidelines for use

Type of operation	Please observe	Possible results of not observing	Remedy
Continual load	Use the torque tool only up to a max. 75% of its torque output	Damage to device	If necessary choose device with higher output
Support situation	Observe guidelines in operating instructions	Overload of drive square by bending forces; Deformation of counter arm; Reduced torque delivery or imprecise torque	Configure support structure or situation according to instructions
Working with maintenance unit	Absolutely necessary in work with PLARAD torque tools Observe maximum permissible pressure based on torque table	Torque tool defect from overload	Use PLARAD maintenance unit
Normal operation	Observe tool's torque table and torque limits for the accessories Adhere to maintenance interval based on operating instructions No hydraulic pressure builds up in the tool	Breakage in the tool or accessory Tool malfunction Hose connection between the power unit and the tool not OK Hose lines not tight Device not tight, oil escapes	See torque table in the operating instructions and specifications on the device or accessories Pay attention to wear and correct lubrication Connect hoses correctly, pay attention to correct engagement of hose connections Secure hose connections with threaded ring Exchange hose lines or connectors, inform customer service

8. Maintenance/ Service

8.1.General



To assure the full functionality and safety of the torque tool, it must undergo maintenance at regular intervals.



Regular maintenance of the torque tool is a component of explosion safety.

Explosion protection is only assured by adhering to the required maintenance intervals.



Caution

Service work must only be carried out by the manufacturer.

(see Maintenance / Service Table)
It is required that only original **PLARAD** replacement parts be used.

Maintenance (before or after each use of the tool)	Service (see Sec. 8.2)
Maintenance carried out by:	
Operator	Manufacturer
<p style="text-align: center;">Cleaning:</p> <p>Cleaning the surface of the torque tool If necessary, removal of surface rust</p> <p>Visual inspection: Damage Leakage</p> <p>Function check: All moving parts OK Socket and counter arm with no damage No leakage on the drive square No leakage at the hose connection</p> <p>Maintenance : Before any use of the torque tool, assure good lubrication of the ball joint between the piston and arm Lubricate joint and slide surface a maximum of every 20 operating hours</p> <p>Storage: Only store torque tool in a dry space</p>	<p style="text-align: center;">Cleaning:</p> <p>Cleaning the surface of the torque tool</p> <p>Visual inspection: Damage Leakage</p> <p>Function check: Lubrication of all joints and sliding surfaces Check seals and, if necessary, replace them Check friction bearings, and, if necessary, replace them Calibration of the torque tool Function test</p>

8.2. Service intervals

Service interval every 3 months	Extreme operating conditions	<ul style="list-style-type: none"> <i>Frequent use, e.g. multiple shift operation</i> <i>In case of constant operation in high torque range</i> <i>In case of soft fastening points, etc.</i>
Service interval every 6 months	Normal operating conditions	<ul style="list-style-type: none"> <i>For medium frequency of use</i> <i>For work in the middle torque range</i>
Service interval every 12 months	Little frequency of use	

8.3. Lubrication

At regular intervals, depending on the load on the tool, a check must be made to determine if all joints and sliding surfaces within the device are sufficiently lubricated.

Especially take care that there is good lubrication of the ball joint between the piston and the arm. Lubricant is enclosed with every tool.

Arm/piston connection: **Castrol Tribol TR 3020/1000**

Socket bearing,
Joint: **Castrol Tribol TR 3020/1000**

Carrier
Toothing: **Castrol Tribol TR 3020/1000**



Explosion protection is only assured if the required lubricants are used.
Further applicable instructions attached to this operating manual must be observed.



The ball head of the piston in the MX-EC; MSX tools inserts into the corresponding ball socket in the ratchet arm and is then locked by a spring band there. To lubricate these parts, the piston rod must be separated from the ratchet arm in the following steps:

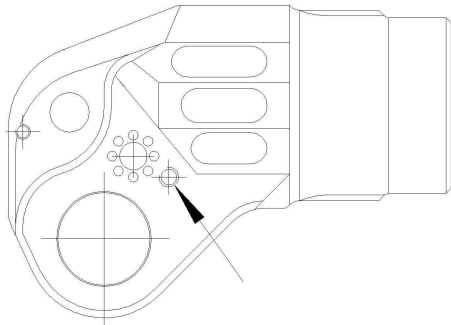


Figure 4: Closing plug lubrication point

Screw off the sealing plug, which has a hexagonal interior, along the side of the housing using the Allen keys delivered with the tool. Drive the piston and ratchet bar into the forward end position with slight pressure (about 10 bar). Insert an Allen key with a fairly long end or another tool (e.g. screw driver) into the now-open bore hole (see Fig. 1), locking the ratchet arm in this position.

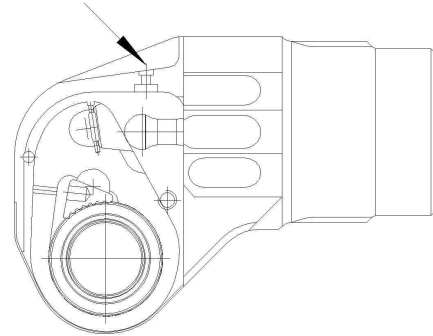


Figure 5: Lube fitting lubrication point

Uncouple it from the ratchet arm by driving back the piston (see Figure 5). With the piston driven back, drip lubricant with the grease gun on the ball head through the lube fitting found on the top of the housing in front of the oil connector.

Then remove the Allen key or other tool used as a block from the bore.

The connection occurs as follows.

The ratchet arm is secured against a shift toward the front with a catch on the front side of the housing. Drive the piston with a light pressure into the forward end position, allowing the ball head of the piston rod to lock into the ball socket in the ratchet arm. Close the bore hole with the sealing plug again using the Allen key. (See figure 4).



Caution

Deficient lubrication can distort torque precision to a substantial degree.

