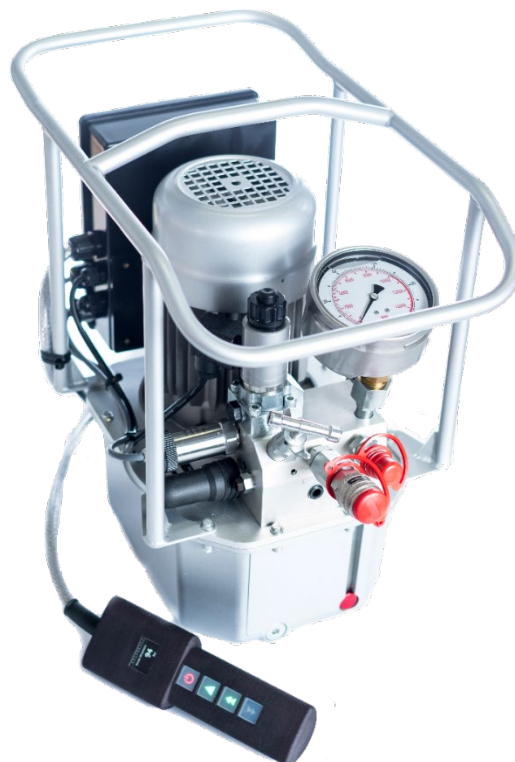


Original User Manual

Hydraulic High Performance Pump with Documentation System

- HEM 7-037-3-D
- HEM 7-110-8-D
- HEM 8-037-3-D
- HEM 8-110-8-D



1. Introduction

Congratulations on your purchase of our hydraulic high performance pump with documentation system. The hydraulic pump is specifically designed to operate hydraulic square or hex wrenches.

Make sure that every operator has read the manual carefully before using the device. The pump has been specially adapted to the needs of our customers.

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3. EC Declaration of Conformity

We M-PT Matjeschk-PowerTools GmbH & Co. KG
Am Saegewerk 11
01920 Ralbitz-Rosenthal
GERMANY

declare under our sole responsibility that the product

Product Name: Electric Hydraulic Power Pump
Series: HEM 7-D/HEM 8-D

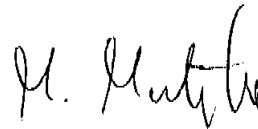
complies with the provision of the following standards and directives:

- DIN EN ISO 12100 : 2011-03 + 2013-08
- DIN EN ISO 4413 : 2011-04
- DIN EN 60204 : 2014-10

acc. to directive 2006/42/EG, Appendix II A.

Ralbitz-Rosenthal 23.04.2021

Place Date



Dipl.-Ing. (FH) Michael Matjeschk
-CEO-

4. Scope of Delivery

- Hydraulic high performance pump
- Operating instructions

5. Technical Data

Type	Flow rate [l/min]	Pressure [bar]	Power [kW]	Volume [l]	Weight [kg]	Dimensions [mm]
HEM 7-037-3-D	HD: 0.3 MD: 1.0 ND: 2.8	700	0.37	3	21.6	310x425x464
HEM 7-110-8-D	HD: 0.8 MD: 1.6 ND: 7.0	700	1.1	8	29.2	302x445x482
HEM 8-037-3-D	HD: 0.3 MD: 1.0 ND: 2.8	800	0.37	3	21.6	310x425x464
HEM 8-110-8-D	HD: 0.8 MD: 1.6 ND: 7.0	800	1.1	8	29.2	302x445x482

Current supply: 230 V / 115 V
Viscosity: VG46

6. Safety Constructions

- Do not use this device before you have read and understood this manual. If the device is faulty or damaged, do not try to repair it by yourself. Please contact the service immediately.
- To avoid injury and tool damage, please assume that every hydraulic device will operate at a pressure of 800 bar. Please use pressure gauges to avoid overloading the system.
- Only use hoses and devices that have been designed and tested for the pressure at which they are used.
- Never use your hands to seal leaky spots at the hose. Leaking hydraulic oil can cause serious injury.
- To avoid personal injury, never open the housing of a device and never exchange parts. Only qualified personnel should operate, calibrate or repair the tool. Unauthorised personnel may be injured by rotating objects.
- Make sure the device is level and secure in place.
- Please watch the hose coupling is correctly interlocked.
- At an oil temperature above 70°C the pump has to be shut-off and cooled down.
- The pump has a safety valve, which is set to the maximum allowable pressure. Do not change the adjustment of the pressure valve.

- Please carry and hold the device on the handles provided. Never hold the hydraulic pump by moving parts or hoses during operation.

When dealing with hydraulic hoses, please consider the specification DGUV norm 113-015 (Hydraulic hose assembly – Standards for a safety operation).

Futhermore follow the general advices:

- People, who operate the device for the first time, have to be briefed.
- Wear safety glasses during operation.
- Follow VDE-standards for electrical connection.

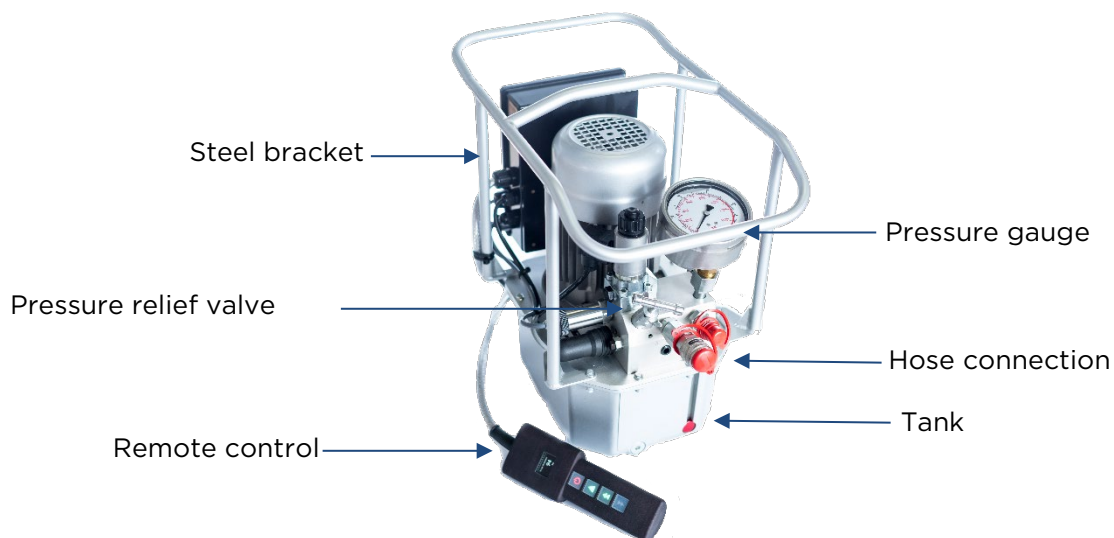
To clarify any uncertainties, please contact M-PT customer service. Damage and injuries due to incorrect operation are not covered by the warranty.

7. Functional Description

The hydraulic unit generates hydraulic pressure, the level of which can be infinitely adjusted via a pressure relief valve. The torque is entered in automatic mode. The pressure is set automatically.

Consider the warning labels, which are placed on devices and accessory components.

7.1. Design



7.2. General information

- Protect the device from impact and shock.
- After uncoupling make sure to put on the protecting caps onto the couplings.
- Hydraulic oil must not get into soil, groundwater or sewage.
- When in- or refilling hydraulic oil, make sure that no dirt gets into the tank.

7.3. Operation

1. Inspect the device for wear and damage prior to every use.
2. Check the oil level. If necessary refill oil.
3. The available power supply must correspond with the specifications on the type plate.

4. Establish electrical connection.
5. Couple hose assembly and mind for correct interlocking.

7.4. Switching on the hydraulic pump

Connect the device to the power supply. Then switch on the motor protection switch. The control electronics will start up and the device will be ready for use after a few seconds. Finally, the date, time and open log file are displayed on the digital remote control.

All menus can be selected with the arrow buttons on the remote control as shown:

- ⏻ Switch off / Back
- ▲ Select / Confirm / Switch on
- ⬆ Forward / Upward
- ⬇ Back / Downward

Note: Only the illuminated buttons on the remote control are active.

7.5. Display in main menu

After starting, the main menu opens automatically. This consists of the following submenu items:

- Mode selection
- Statistics
- Information
- Extended
- Settings

7.6. Manual mode

Manual mode is selected in the main menu as „Mode selection“. In this mode the pressure is set via the pressure relief valve. Each tightening process takes place individually in one stroke.

WARNING!

No bolting data is recorded in manual mode. The documentation system only works in automatic mode!

After manual mode has been selected, a message is displayed on the remote control:

WARNING! Pressure adjustment via manual pressure relief valve. Check setting!

WARNING!

First set the pressure on the pressure relief valve to 0 bar. To do this, turn the valve counter-clockwise.

7.6.1. Pressure setting on pressure relief valve

The pressure is always set aside from the bolt connection. To do this, place the hydraulic wrench on a table or other solid surface. Never adjust the pressure when the hydraulic wrench is resting on a bolt connection.

Switch on the pump motor by pressing the button ▲.

Refer to the torque table and use the required torque to determine the pressure you need to set on the power pump.

Press and hold the button ▲. With the other hand, slowly turn the pressure relief valve clockwise. You will see the pressure rise on the pressure gauge. Close the valve until the pressure is displayed on the pressure gauge, which was determined according to the torque table.

When the pressure setting is complete, release the button ▲. The piston on the hydraulic cylinder will now retract. To check the setting, the pump must be pressurised again. To do this, press and hold the button ▲ repeatedly. If the check corresponds to the set pressure, you can continue with the application. If the pressure is set too high, release the pressure relief valve and repeat the setting.

To reduce the pressure, the pressure relief valve must be turned counter-clockwise.

It is not possible to reduce the pressure while the pump is running. To reduce the pressure, release the button ▲ and open the pressure relief valve so that the pressure drops to 0 bar.

NOTE:

The calibration of the pressure gauge is valid for one year. The date of calibration is shown on the test certificate.

7.6.2. Tightening and loosening a bolt

Place the hydraulic wrench on the bolt connection.

Press the button ▲ to start the motor. To perform a stroke, press and hold the button until the cylinder stops in the end position. If the bolt stops turning, release the button. The piston will now retract. It is important to wait until the piston is fully retracted. You can now start the second stroke by pressing and holding the button ▲. Continue to tighten the bolt until it stops. Secure the bolt with a further two or three strokes. The bolt is now tightened to the specified torque value.

Proceed in the same way to loosen a bolt.

Press the button ▼ to exit the submenu.

7.7. Automatic mode

The automatic mode is selected in the main menu at „Mode selection“. In this mode bolts are tightened or loosened automatically. This means that the piston moves forwards and backwards automatically when the selection button is held down. The programming of the electronics in the hydraulic pump has been optimized so that the end position of the piston is recognized and the next stroke starts immediately. That way the hydraulic pump is extremely fast compared to conventional models.

After automatic mode has been selected, a message is displayed on the remote control:

WARNING! Pressure setting via pressure sensor.
Set the pressure relief valve to maximum!

WARNING!

Set the pressure on the pressure relief valve to maximum. The valve must therefore be fully closed clockwise.

Select the hydraulic wrench and set the torque:

Once the automatic mode has been selected, all hydraulic wrenches created are displayed. Use the buttons ▲ or ▼ to scroll through the device menu. Each hydraulic tool is displayed on its own page. In the lower area you can see which page you are on and how many tools have been created in total, e.g. „1/1“ or „3/5“.

Select the hydraulic wrench you wish to use and confirm with the button ▲. The hydraulic pump is now connected to the selected bolting tool so that all bolting data can be recorded in the documentation system.

Once you have selected the corresponding hydraulic wrench, the torque setting menu opens. Set the required torque using the buttons ▲ or ▼ and confirm with ▲.

Initialisation:

Each time the hydraulic pump is switched on and a hydraulic wrench is used for the first time, it will be initialized, i.e. assigned to the pump. This process starts automatically and only needs to be confirmed with the button ▲.

Initialisation always takes place away from the bolt connection. Place the hydraulic wrench on a table or other solid surface. Never start the initialisation when the hydraulic wrench is resting on a bolt connection.

The current torque and the set target torque are now displayed at the top left. Use the button ▲ to switch on the electric motor of the hydraulic pump. You can start bolting by pressing and holding the button ▲. The piston will now automatically move in and out. The bolt is continuously tightened or loosened in individual strokes.

As soon as the bolting process is completed the result is shown on the display:

IO The bolting process is OK, i.e. the bolt has been tightened to the required torque value.

NIO The bolting process is not OK, i.e. an incorrect bolt connection has been made, which must be checked and repeated.

The bolting result is displayed for 3 seconds.

7.8. Submenu „Statistics“

The maintenance counter and the life counter can be viewed in this menu.

Maintenance counter (page 1/2)

- Strokes: Number of strokes since the last maintenance.
- Operating hours: Number of operating hours since the last maintenance.

Life counter (page 2/2)

- Strokes: Total number of strokes.
- Operating hours: Total number of operating hours.

7.9. Submenu „Information“

This menu item shows the serial number of the hydraulic pump and the phone number of the M-PT customer service.

7.10. Submenu „Extended“

This submenu is password protected. It is up to the managers to decide to whom they want to give this password. Once the extended menu is called up, the password has to be entered.

7.10.1 Extended menu „Level 1“

Password:
17580

The following settings can be made in this menu:

- New log file
- Data transfer (see 7.12)

When creating a new log file use the button ▲ or ▼ to enter an 8-character name and using the characters A-Z and 0-9.

Incorrect entries can be deleted by pressing and holding the button ▲.

7.10.2 Extended menu „Level 2“

Password:
84908

The following settings can be made in this menu:

- Editing
 - The name, serial number, pressure and torque of the stored torque wrench can be edited.
- New
 - New tools can be created (name, serial number, min. pressure, max. pressure, min. torque, max. torque).
 - This information can be found in the torque table supplied with the wrench
- Delete counters
 - Maintenance counters (strokes and operating time) are set to zero.
- Adjust sensor
 - This allows the pressure sensor to be adjusted with a calibrated pressure gauge.


7.11. Settings


The following settings can be made in this menu:

- Language
 - The language can be selected (German or English).
- Unit
 - The torque can be displayed in Nm or Ft-lbs and the pressure in bar, MPa or PSI.
- Date/time
 - The stored data can be viewed and modified.

The settings are made with button ▲ or ▼ and selected with ▲.

The display shows:

„“ ... not activated

„“ ... activated

7.12. PC software for the documentation system

Please refer to the documentation software user manual.
You can find it at our website in the download section.

8. Troubleshooting

8.1. Pump is relatively loud

An internal defect could be the cause. The pump must be returned for service.

8.2. Oil heats up quickly

Check the oil level! There could be too little oil in the tank.
The oil cooler (if present) is not working properly.

8.3. Displayed pressure is not available on device

Check the hose couplings for correct connection. If they are, the couplings may be defective.

8.4. Fuse blows or motor protection switch turns off

Check the power supply. If it is okay, the electronics may have a fault. The pump must be returned for service.

9. Disclaimer of Warranty

This manual has been compiled with the greatest care. However, should you notice any omissions or inaccuracies, please inform us at the address given.

M-PT accepts no liability for technical or typographical errors and reserves the right to make changes to the product and the design at any time without prior notice.

M-PT shall not be liable or responsible for any direct or indirect consequential damage arising in connection with the equipment, performance or use of this product. We accept no liability for the content of this document.

In the event of damage caused by failure to follow the instructions in this manual, the warranty will be void.

M-PT accepts no liability for consequential damage!

10. Maintenance and Service

10.1. General

- The pump must be serviced regularly in order to ensure its functionality and safety.
- Assembly, resetting, modifications, upgrades and repairs must be performed by M-PT or a party authorized by M-PT.
- The safety of the user and the trouble-free operation of the pump can only be guaranteed if original parts from M-PT are used. This applies to all components, accessories and spare parts.

10.2. Visual inspection

Regular visual inspection of the following items is recommended:

- External damage
- Function of the adjustable pressure relief valve
- Damages to electric cables

10.3. Service interval

- The service interval depends on the use of the device.
- Together with the service technicians of M-PT you can define an individual service for your device.

10.4. Time of repair

- If you need a replacement device during the repair, you can request a rental tool at M-PT.

10.5. Calibration

- The pressure gauge certification is valid for one year.
- The validity is independent of the frequency of use of the device.
- Calibration may be required earlier if there is mechanical damage or reasonable doubt as to its accuracy.

10.6. Contact for maintenance and repair



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11. Product Overview

11.1. Battery Torque Wrench

- Torque range 30-15,000 Nm
- Repeatability from ± 2.8 %
- Torque/angle controlled tightening
- Data Logging
- Torque Check Function for maintenance
- Limit value monitoring



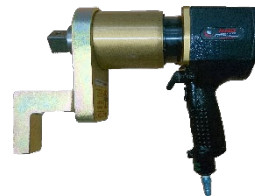
11.2. Electric Torque Wrench

- Torque range 65-16,500 Nm
- Repeatability from ± 2.8 %
- Torque/angle controlled tightening
- Data Logging
- Torque Check Function for maintenance
- Limit value monitoring



11.3. Pneumatic Torque Wrench

- Torque range 35-15,000 Nm
- Repeatability of ± 5.0 %
- Available with ATEX certification



11.4. Hydraulic Torque Wrench

- Torque range 110-101,600 Nm
- Repeatability of ± 3.0 %
- Square drive and cassette type
- 360°x180° multi-positional swivel couplings



11.5. Hydraulic High Performance Pumps

- Pressure range 700-2,000 bar
- For hydraulic torque wrenches and bolt tensioners
- Data Logging



11.6. Software for Bolting Systems

- Documentation System for data logging
- Torque Check Function for bolt maintenance
- PG (CSP) and ProTight™ worker guidance system
- BoltPilot® data monitoring

11.7. Transducer Smart Socket™

- Accuracy of transducer ± 1.0 %
- Graphical display of torque curve
- Data logging software



11.8. Rental

- All tools are also available in our rental park.