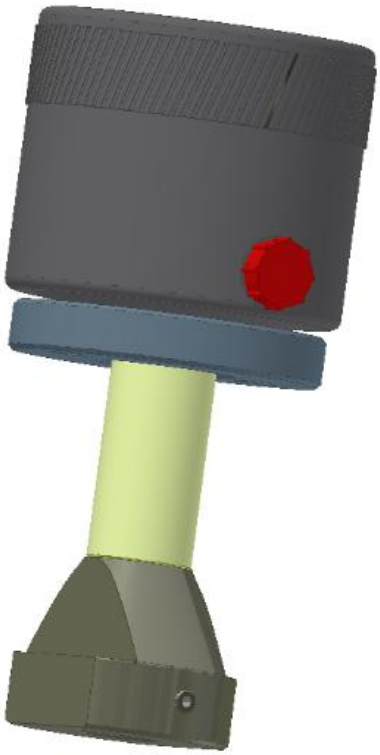
EAS®
CHANGE SYSTEMS



MHC Pull Clamp

Repair Manual

RPS2023-100_rev1.0

Time saving solutions

www.EASchangesystems.com

Repair Manual
MHC Pull Clamp

Version: 1.0

RPS2023-100
06/2023: rev1.0 released

Contents

1 Safety

The equipment described in this manual has been developed to guarantee safe operation when it is installed, handled, used and maintained in the way this manual explains. It is essential, that all information in this manual is available to all persons authorized to install, handle, use or maintain the described equipment and possible accessories, before starting his task.

All our safety requirements and measures are based on EN ISO 12100:2010. Throughout the manual, different safety symbols are used. In this chapter we explain the different symbols and the warnings they issue. Whenever one of the safety symbols is shown, the corresponding warning and protective measures are to be taken. We offer detailed instructions for hydraulic, electric and pneumatic products and systems.

1.1 General safety instructions for EAS hydarulic cylinders

The following general safety instructions are an extract of the EAS change systems safety instructions, selected and composed specifically for the product or installation described in this manual. It will perform as described in the manual and in the referred documents, if the equipment is installed, handled, used and maintained according to the contents of this manual.

Pay attention to the pertinent safety regulations for each product or installation during use. Read all instructions, warnings and cautions carefully and take all safety precautions to avoid personal injury or property damage during operation. The equipment is to be checked periodically. Faulty equipment may never be used. Whenever a part is broken, worn, missing used or deformed, it must be replaced immediately.

The use of an EAS hydraulic cylinder is restricted to installation in machinery or partly completed machinery according to Machinery Directive 2006/42/EC. The machinery or partly completed machinery into which the EAS clamping cylinders are incorporated must not be put into service until the machinery or partly completed machinery has been declared in conformity with the provisions of the machinery directive.

The EAS hydraulic cylinders must be operated in accordance with the relevant specifications, in particular with respect to the maximum allowed clamping force and pressures. The EAS hydraulic cylinders may only be used for its intended purpose within the established limits. Please observe any instructions on the pertinent product drawing!

Installation and initial operation must be carried out properly by instructed and trained personnel. The customary safety regulations of the machine or system in question must be observed during use. Measures must be taken in particular to eliminate any risks to persons and property in the event of a defect. If there are any indications that the EAS hydraulic cylinders are not working properly they must be shut down immediately and secured against unauthorized use.

Make sure the manual is kept near the system, available to operating staff. EAS change systems cannot be held responsible for damage or injury resulting from unsafe product use, lack of

maintenance or incorrect product and/or system operation. Contact EAS when in doubt as to the safety precautions and applications.

1.2 Safety symbols

Personal safety

Indicates important information, read the instructions carefully.

Always use personal protective equipment, in this case safety footwear.

Always wear personal protective equipment, in this case gloves.

Always wear personal protective equipment, in this case a safety helmet.

Always wear personal protective equipment, in this case protective goggles.

Do not wear loose items of clothing near equipment.

Risks of crushing body parts. Stay clear from closing surfaces and lifted weights.

Credit cards, watches and magnetically responsive elements must be kept out of the area of operation to avoid risk of damage to this equipment.

People with a pacemaker, a hearing implant, or any other medical implant sensitive to the magnetic field must remain at a safe distance (minimum of 30 cm) to avoid serious injury or death.

Handling molds

Only instructed and skilled personnel may operate the equipment.

The mold may be hot, do not touch the mold barehanded to avoid serious burns!

When a mold or die is lifted by a crane, ensure no body parts are beneath the tool. If it the mold should fall down unexpectedly, this could lead to serious injury or even death.

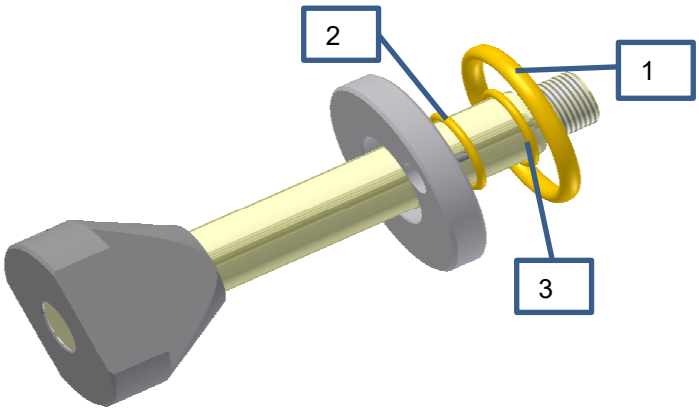
Before use, check the size of lifting eyebolts. Check if they are inch or metric screw to avoid eyebolts coming loose, dropping the tool.

Observe the safety regulations for overhead crane or pallet truck before use. A tool falling from a crane or pallet truck could lead to serious injury or death.

It is forbidden for anyone to be present inside the safety guarded mold change area during mold changing or loading operations!

2 Overview of available seal kits

Each seal kit of a MHC clamp contains following parts:



MHC50K, seal kit for MHC50 clamp		
Pos	Part number	Description
1	B1128.903	Outer O-ring plunger
2	B1115.903	Shaft O-ring (inside cylinder)
3	B1115.903	Shaft O-ring (inside plunger)

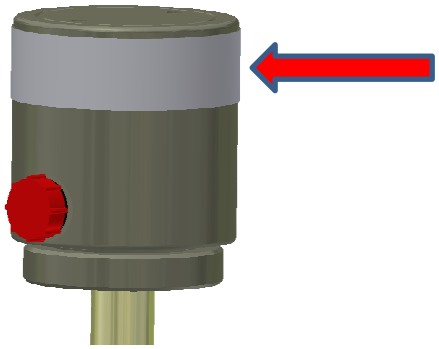
MHC70K, seal kit for MHC70 clamp		
Pos	Part number	Description
1	B1326.903	Outer O-ring plunger
2	B1118.903	Shaft O-ring (inside cylinder)
3	B1118.903	Shaft O-ring (inside plunger)

MHC110K, seal kit for MHC110 clamp		
Pos	Part number	Description
1	B1332.903	Outer O-ring plunger
2	B1121.903	Shaft O-ring (inside cylinder)
3	B1121.903	Shaft O-ring (inside plunger)

3 Repair procedure

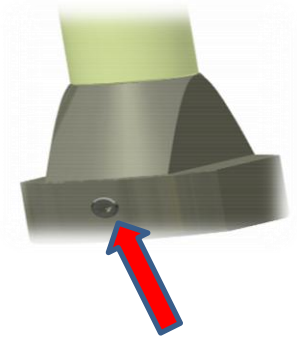
3.1 Disassembly

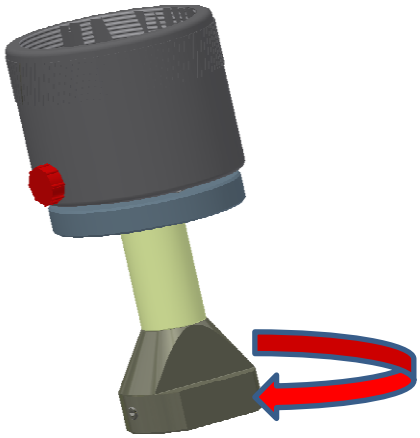
1. Secure the MHC clamp in a vice. Put the hatched area of the cylinder housing in the clamps of the vice. Use soft brackets (plastic) in your vice, to prevent damage.

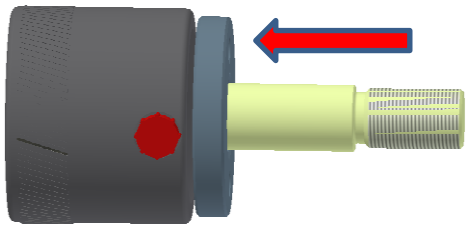


2. Unscrew the cover with a Pin Spanner.
Warning: cover will come loose with high force because of underlying spring!

3. Remove the spring(s), depends on the type 1 or 2 springs

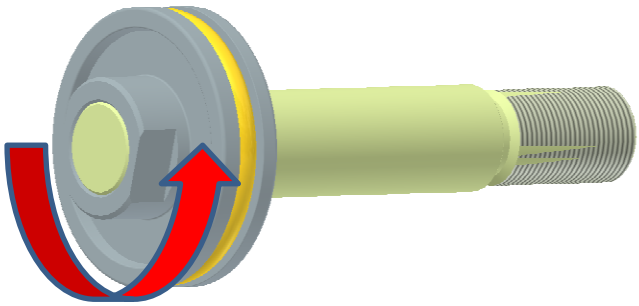
5. Unscrew the set-screw from the T-adapter.


6. Clamp the shaft in the vice, use special protective brackets to prevent scratches on the shaft. Unscrew the T-adapter from shaft, could be difficult because it is fixed with Loctite.


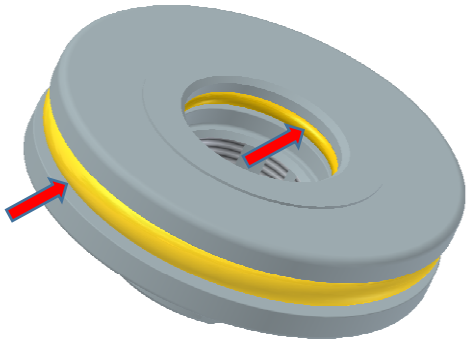
7. Move the shaft with plunger complete out of the cylinder.


3.2 Replacing the seals

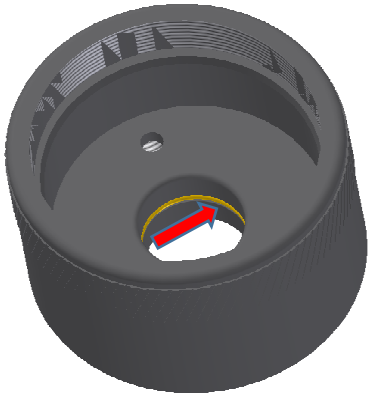
8. Clamp the shaft in the vice, use special protective brackets to prevent scratches on the shaft. Unscrew the plunger from the shaft. This needs above average force because of the use of Loctite.



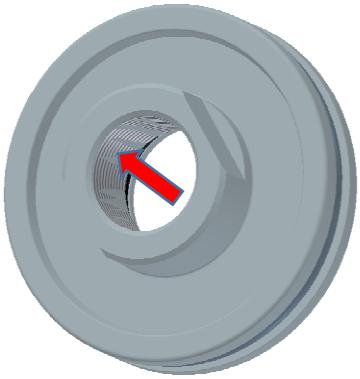
9. Exchange the both O-rings from the plunger, inside and outside. Be careful not to damage the seal groove of the plunger.

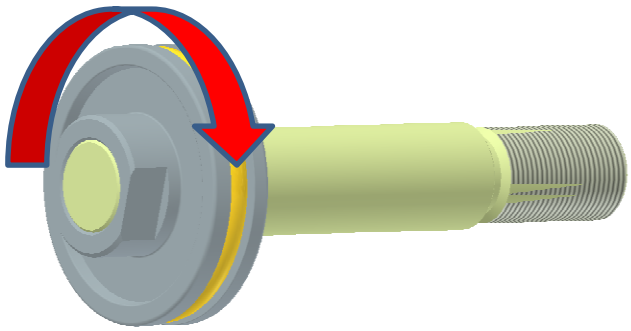


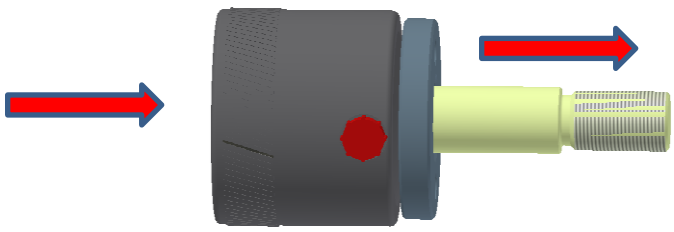
10. Exchange the shaft O-ring (inside cylinder) of the cylinder. Be careful not to damage the seal groove of the plunger.



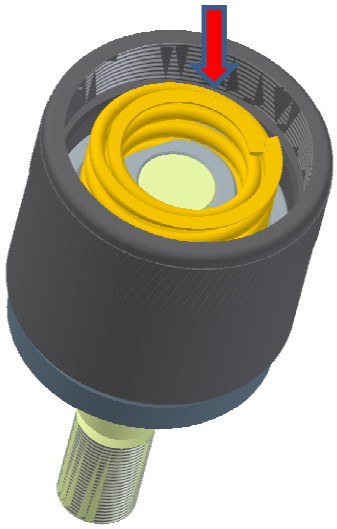
3.3 Assembly of the clamp

1. Clean, degrease and put Loctite 270 on the thread on the inside of the plunger.


2. Screw the plunger on the shaft. Grease lightly the plunger on the outside before mounting (step 3)


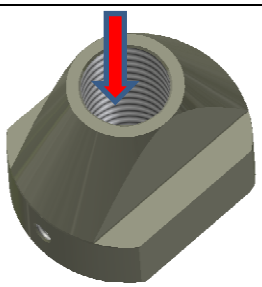
3. Move the shaft with plunger complete through the cylinder. Be careful not to damage the seals.


4. Put the spring(s) back in position.

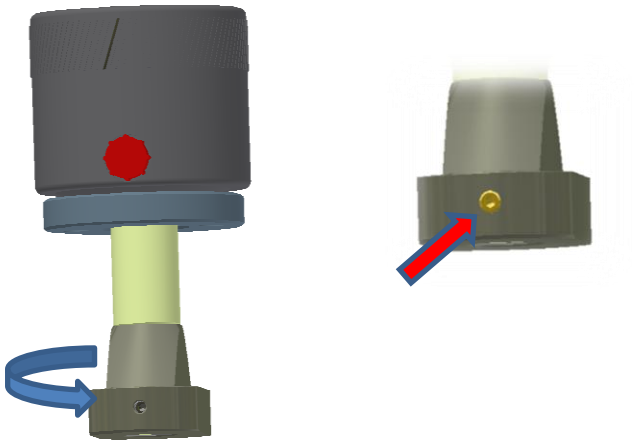


5. Fix the cover with a Pin Spanner.
Warning: fixing the cover could be difficult because of the springs inside!

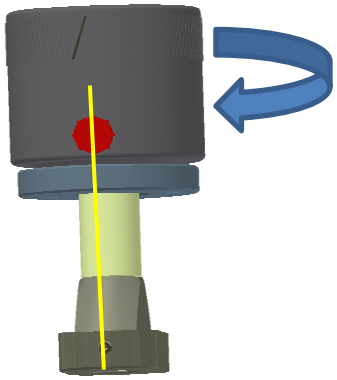
6. Clean, degrease and put Loctite 220 on the thread on the inside of the T-adapter



7. Turn the T-adapter on the shaft until the end of the thread, and lock with the set screw



8. Align the oil port with the setscrew.
Warning: ONLY rotate CLOCKWISE, otherwise it can loosen the T-adapter.



4 Troubleshooting

Problem	Cause	Solution
No clamping.	Plunger does not retract.	Check if the oil port receives the right pressure. Check system pressure and valves.
	Clamp is blocked.	Check if the clamp is mechanically blocked, remove the blockage.
	Back plate is too thin.	Check if the back plate thickness is in accordance MHC specifications
Plunger doesn't extend (unclamp).	Pressure on A port.	Check the valves and release pressure on A port. If this doesn't help check if the return connection allows enough flow
Plunger loosens gradually.	Pressure did not remain on port A.	Check the check-valves or re-activation of the pump.
Oil leaks out sideways.	Hose connectors or sealing plugs are loose or damaged.	Tighten or repair connections or plugs.
Oil leaks out on the top or bottom.	Seals are damaged or incorrectly mounted.	Replace seals using the repair parts sheet.

5 Maintenance

Maintenance of your MHC clamps is minimized to a regular visual inspection. This can be done during the scheduled maintenance of your machine. Periodically inspect all components of the clamp and its hydraulic connections to detect any problem, wear or leakage requiring service. EAS offers spare part kits for repair and maintenance.
Contact EAS for more information.

- Replace damaged parts immediately;
- Oil temperature should not exceed 60°C;
- Keep all hydraulic components clean;
- Periodically check the hydraulic system for loose connections and leakage;
- Renew hydraulic oil as recommended in the pump instruction sheet.

IMPORTANT: Hydraulic equipment must only be serviced by a qualified hydraulic technician. For repair service, contact the Authorized EAS Service Center in your area:

Complete Solutions from one source

EAS change systems is a global, leading edge innovator in factory automation solutions.
Thanks to EAS the clamping and release of molds and dies has become a process of minutes instead of hours.

EAS change systems offers quick clamping and quick changing systems for plastic injection molding machines (QMC) and metal stamping presses (QDC), as well as multi coupler solutions. The company also offers consulting and engineering expertise to ensure maximum machine productivity.

Designed and built for integration into existing as well as new equipment (OEM), our solutions include:

- Adaptive clamping systems
- Ejector couplers
- Mono & multi coupler systems
- Mold change tables & transportation vehicles
- Inspection & mold tilting units
- Die lifters
- Pre-rollers
- Project management
- Application engineering
- System installation
- Service and maintenance
- ROI calculations

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