

MOD Wedge Clamp

Repair Manual

RPS1010-100_rev4.0



Time saving
solutions

www.EASchangesystems.com

Repair Manual MOD Wedge Clamp

Version: 4.0

RPS1010-100

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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 hydraulic 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.

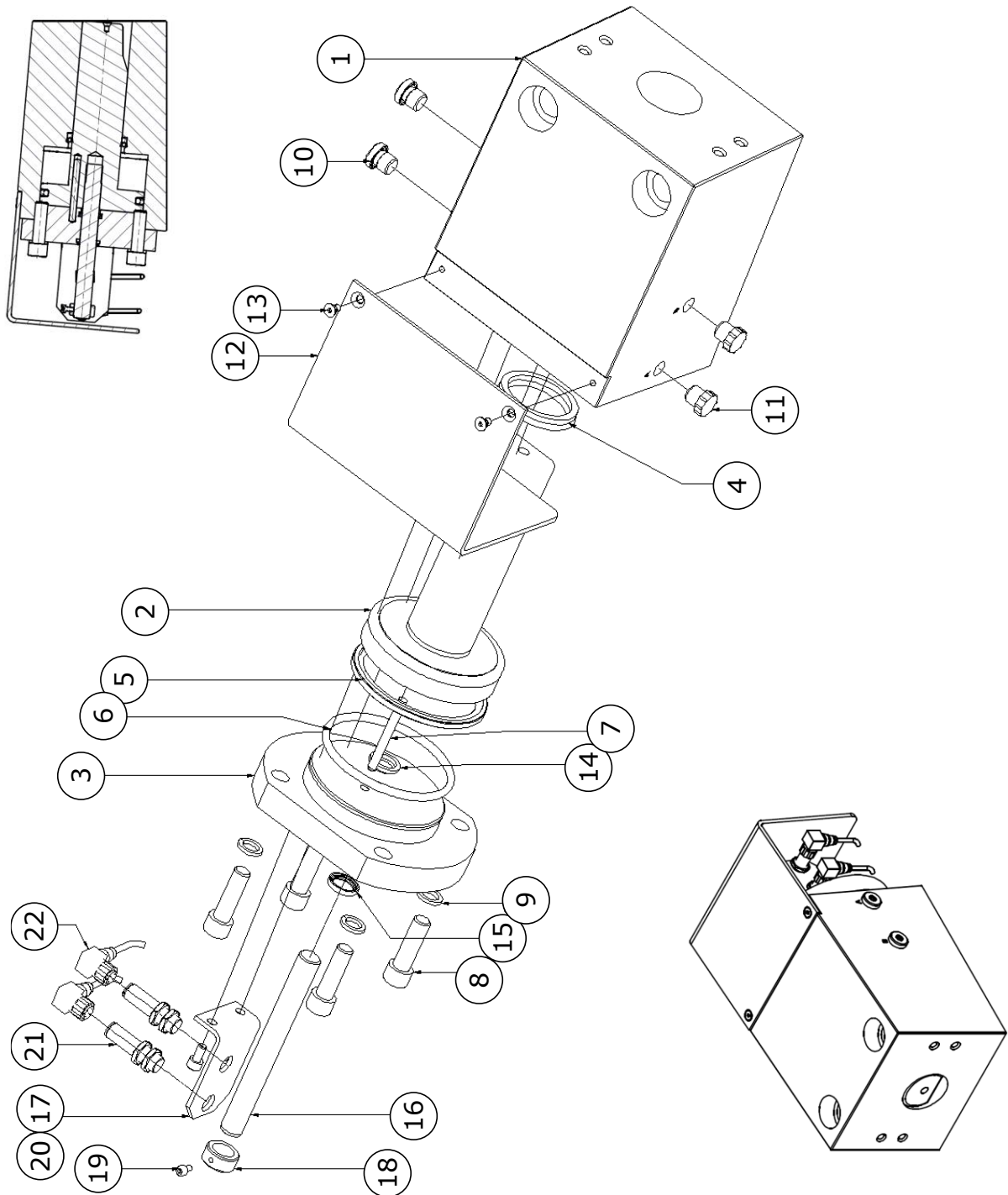


It is forbidden for anyone to be present inside the safety guarded mold change area during mold changing or loading operations!

2 Parts list MOD

2.1 Exploded view

RPS1010-100 /RPS1015-100



TO PROTECT YOUR WARRANTY, USE ONLY HYDRAULIC OIL

2.2 Parts list MOD

MOD-150 / MOD-250 / MOD-510
MOD-1010 / MOD-2010 / MOD-4010

Item No.	MOD-150	MOD-250	MOD-510	MOD-1010	MOD-2010	MOD-4010	Qty	DESCRIPTION
1	-	-	-	-	-	-	1	Base
2	CY509-040	CV791-040	CV797-040	CV803-040	CV354-040	CV551-040	1	Plunger
3	CS561-044	CV792-044	CV798-044	CV804-044	CV553-044	CV552-044	1	Stopring
*4	CS563-041	CH870-041	CF379-041	CV805-041	CS599-041	CV345-041	1	U-Cup
*5	CS24-041	CV793-041	CS17-041	CV806-041	CV348-041	CV346-041	1	Stepseal
*6	B1026-903	B1135-903	B1148-903	B1341-903	B1344-903	B1435-903	1	O-Ring
7	CAA429-061-2B	CV794-061	CAA639-061-2B	CAA641-061-2B	CCA841-061-2B	CAA843-061-2B	1	Pin
8	CCA625-028-1A	CCA821-028-1A	CCA1025-028-1A	CCA1229-028-1A	CCA1229-028-1A	CCA2037-028-1A	4	Screw
9	CCE1006-108-5C	CCE1008-108-5C	CCE1010-108-5C	CCE1012-108-5C	CCE1012-108-5C	CCE1020-108-5C	4	Washer Spring
10	CS235-006	CS235-006	CS235-006	CS235-006	CS235-006	CS235-006	2	Plug
11	CV853-271	CV853-271	CV853-271	CV853-271	CV853-271	CV853-271	2	Thread Protector
12	CV535-298	CV536-298	CV800-298	CV807-298	CV537-298	CV538-298	1	Protection Shiled Screw
13	CBA515-028-1B(2x)	CBA515-028-1B(2x)	CBA515-028-1B(2x)	CBA515-028-1B(2x)	CBA617-028-1B(2x)	CBA617-028-1B(4x)	-	Screw
*14A	B1009-803	B1009-803	B1009-803	-	-	-	1	O-Ring
*14B	-	-	-	BSS6820D	BSS6820D	BSS6820D	1	Wiper
*15A	BSS2907D	BSS2907D	BSS2907D	-	-	-	1	Wiper
*15B	-	-	-	CS732-041	CS732-041	CS732-041	1	U-Cup
16	CV531-061	CV532-061	CV801-061	CV533-061	CV533-061	CV534-061	1	Pin
17	CV543-111	CV795-111	CV545-111	CV545-111	CV545-111	CV546-111	1	Bracket
18	CV547-039	CV548-039	CV548-039	CV549-039	CV549-039	CV549-039	1	Sensor Bushing
19	CY187-028	CY187-028	CY187-028	CY188.028	CY188-028	CY188-028	1	Screw
20	-	CBA615-028-1A	C BA615-028-1A	CBA617-028-1A	CBA617-028-1A	CBA617-028-1A	2	Screw
**21	CZ446-372	CZ446-372	CZ446-372	CZ446-372	CZ446-372	CZ446-372	2	Proximity Switch
**22	CZ64-008	CZ64-008	CZ64-008	CZ64-008	CZ64-008	CZ64-008	2	Cable + Connector
•23	CZ618-028	CZ618-028	CZ618-028	CZ618-028	CZ618-028	CZ618-028	1	Decal
	MMD150K	MOD250K	MOD510K	MOD1010K	MMD2010K	MMD4010K		Repair Kit Contains parts marked with * • Not shown ** Optional

When ordering spare parts always specify the complete roll stamp number of the mold clamp.

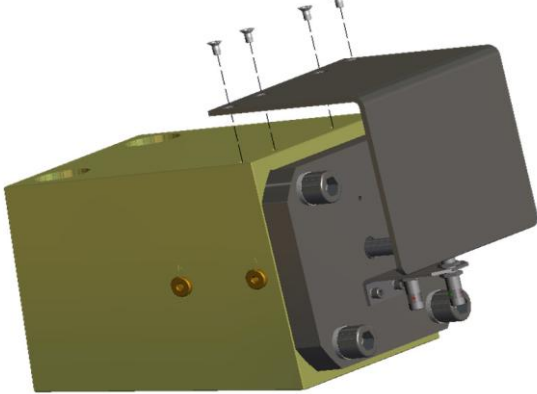
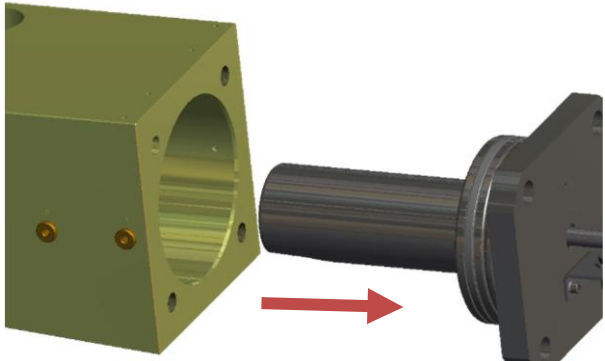
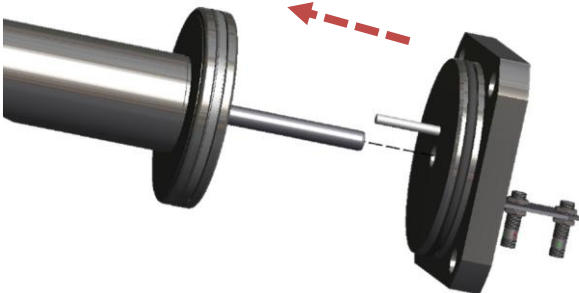
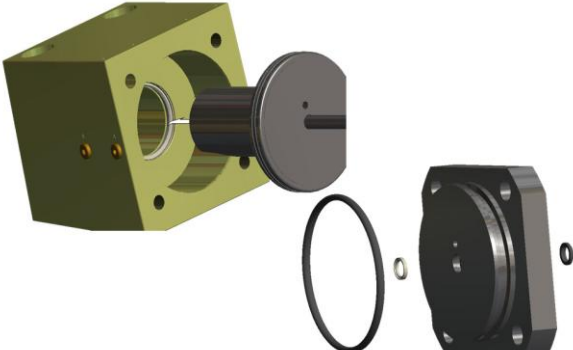
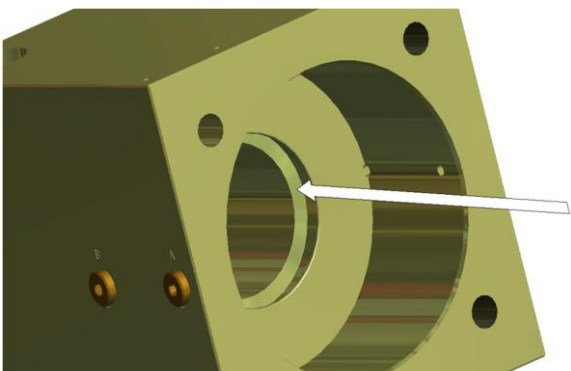
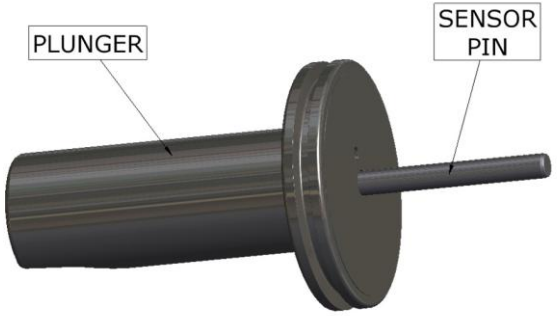
2.3 Parts list MOD VITON

MOD-150V / MOD-250V / MOD-510V
MOD-1010V / MOD-2010V / MOD-4010V

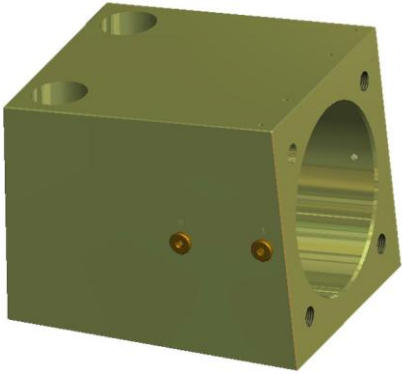
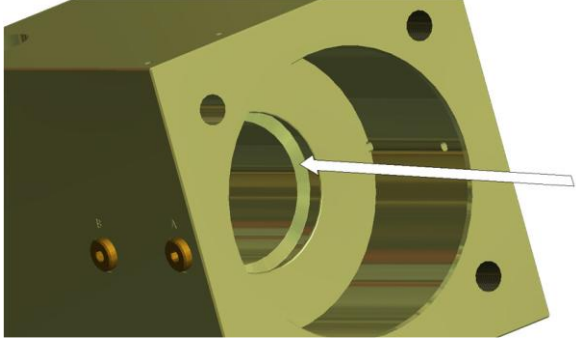
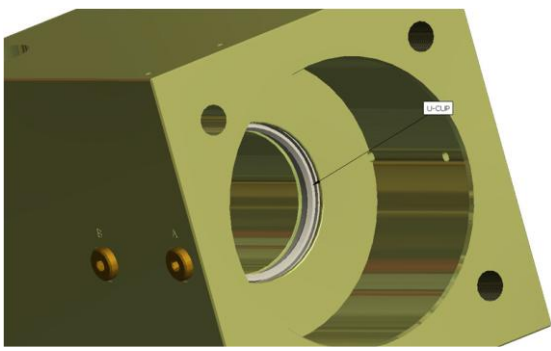
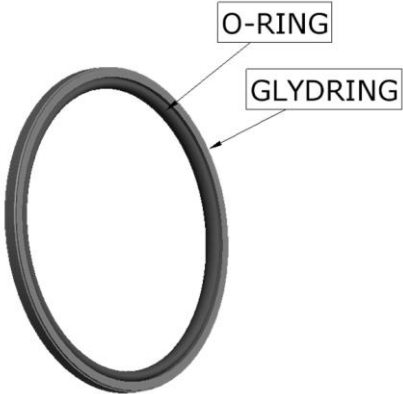

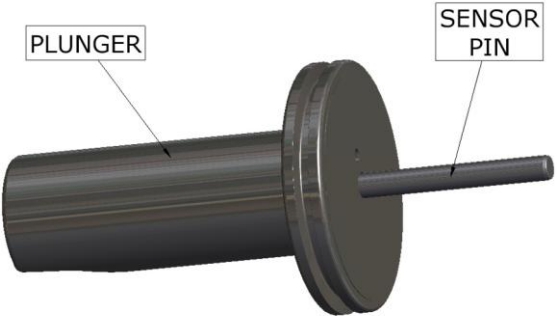
Item No.	MOD-150V	MOD-250V	MOD-510V	MOD-1010V	MOD-2010V	MOD-4010V	Qty	DESCRIPTIO N
1	-	-	-	-	-	-	1	Base
2	CY509-040	CV791-040	CV797-040	CV803-040	CV354-040	CV551-040	1	Plunger
3	CS561-044	CV792-044	CV798-044	CV804-044	CV553-044	CV552-044	1	Stopring
*4	PA1331-041	PA1332-041	PA1333-041	PA1334-041	PA1335-041	PA1336-041	1	U-Cup
*5	CY512-041	CY513-041	CY514-041	CY517-041	CY519-041	CY521-041	1	Stepseal
*6	B1026-203	B1135-203	B1148-203	B1341-203	B1344-203	B1435-203	1	O-Ring
7	CAA429-061-2B	CV794-061	CAA639-061-2B	CAA641-062-2B	CCA841-061-2B	CAA843-061-2B	1	Pin
8	CCA625-028-1A	CCA821-028-1A	CCA1025-028-1A	CCA1229-028-1A	CCA1229-028-1A	CCA2037-028-1A	4	Screw
9	CCE1006-108-5C	CCE1008-108-5C	CCE1010-108-5C	CCE1012-108-5C	CCE1012-108-5C	CCE1020-108-5C	4	Washer Spring
10	CS235-006	CS235-006	CS235-006	CS235-006	CS235-006	CS235-006	2	Plug
11	CV853-271	CV853-271	CV853-271	CV853-271	CV853-271	CV853-271	2	Thread Protector
12	CV535-298	CV536-298	CV538-298	CV807-289	CV537-298	CV538-298	1	Protection Shiled Screw
13	CBA515-028-1B(2x)	CBA515-028-1B(2x)	CBA515-028-1B(2x)	CBA515-028-1B(2x)	CBA617-028-1B(2x)	CBA617-028-1B(4x)	-	
*14A	B1009-203	B1009-203	B1009-203	-	-	-	1	O-Ring
*14B	-	-	-	PA314-776	PA314-776	PA314-776	1	Wiper
*15A	PA309-776	PA309-776	PA309-776	-	-	-	1	Wiper
*15B	-	-	-	PA315-041	PA315-041	PA315-041	1	U-Cup
16	CV531-061	CV532-061	CV801-061	CV533-061	CV533-061	CV534-061	1	Pin
17	CV543-111	CV795-111	CV545-111	CV545-111	CV545-111	CV546-111	1	Bracket
18	CV547-039	CV548-039	CV549-039	CV549-039	CV549-039	CV549-039	1	Sensor Bushing
19	CY187-028	CY187-028	CY187-028	CY188.028	CY188-028	CY188-028	1	Screw
20	-	CBA615-028-1A	CBA615-028-1A	CBA617-028-1A	CBA617-028-1A	CBA617-028-1A	2	Screw
**21	CZ446-372	CZ446-372	CZ446-372	CZ446-372	CZ446-372	CZ446-372	2	Proximity Switch
**22	CZ64-008	CZ64-008	CZ64-008	CZ64-008	CZ64-008	CZ64-008	2	Cable + Connector
•23	CZ618-028	CZ618-028	CZ618-028	CZ618-028	CZ618-028	CZ618-028	1	Decal
	MMD150KV	MOD250KV	MOD510KV	MOD1010KV	MMD2010KV	MMD4010KV		Repair Kit Contains parts marked with * • Not shown ** Optional

When ordering spare parts always specify the complete roll stamp number of the mold clamp.

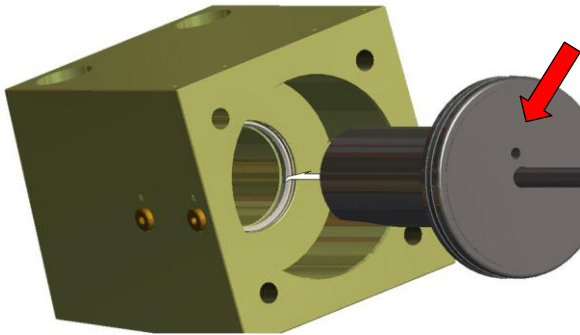
3 Disassembly of an MOD wedge clamp

<p>1) Place the MOD on a workbench and remove the cover. Pay constant care to avoid damaging or scratching components.</p>	<p>2) Unscrew and carefully remove the cylinder cap. The plunger comes away with the cap.</p>
	
<p>3) Pull the plunger from the cylinder cap.</p>	<p>4) Remove the step seal, u-cup, O-ring and wiper.</p>
	
<p>5) Examine the inside of the body. If a sealing surface is damaged or scratched, the body needs to be replaced.</p>	<p>6) Thoroughly check the plunger and sensor pin for damage or scratches. Replace the plunger if damages are found.</p>
	

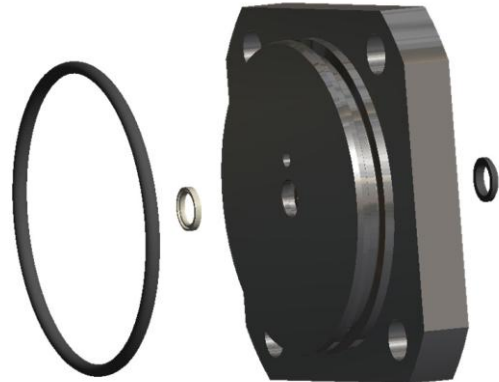
4 Assembly of a MOD wedge clamp

<p>1) Place the body on a workbench. Examine and clean all components before assembling.</p>	<p>2) Clean the groove inside the body, if needed with compressed air.</p>
	
<p>3) Place the u-cup in the groove with the bottom of the u facing downward.</p>	<p>4) Stretch the Glydring to fit over the plunger base.</p>
	
<p>5) Place the O-ring in the groove of the plunger base. Slide the Glydring to cover the O-ring, in the same groove. Shrink the Glydring to its original size.</p>	<p>6) Screw the sensor pin in the base of the plunger and fix with Loctite. Clean the groove in the plunger base.</p>
	

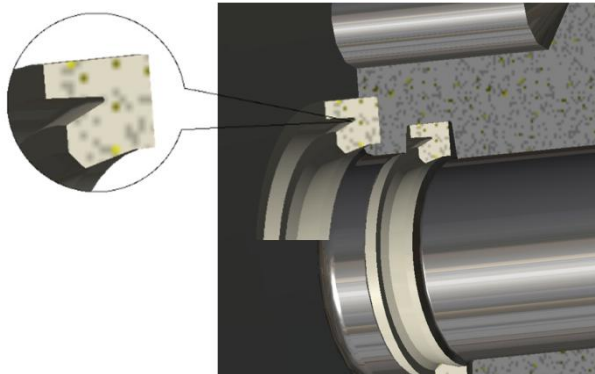
7) Slide the plunger into the body. Position the plunger so that the hole in the plunger base is above the sensor pin.



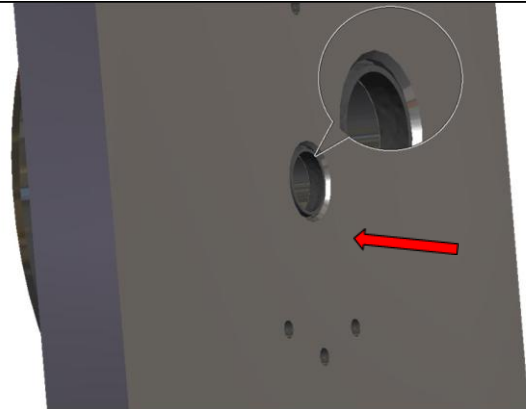
8) Clean the grooves on the cylinder cap. The cap has two grooves on the interior and 1 on the exterior.



9) Small versions are equipped with an O-ring, larger versions with a u-cup, to seal the sensor pin hole from the inside. Make sure the bottom of the u-cup faces downwards.



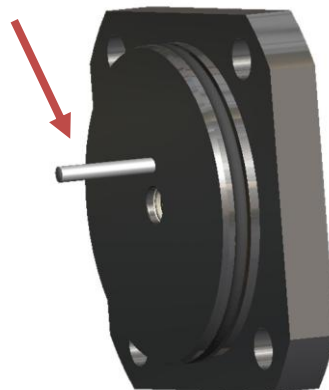
10) Install the wiper on the outside of the sensor pin hole. Pay attention to the right orientation of the wiper, make sure the lip faces outward.



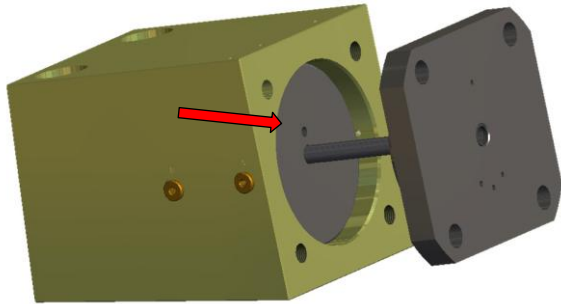
11) Install the O-ring on the outside groove of the interior of the cap.



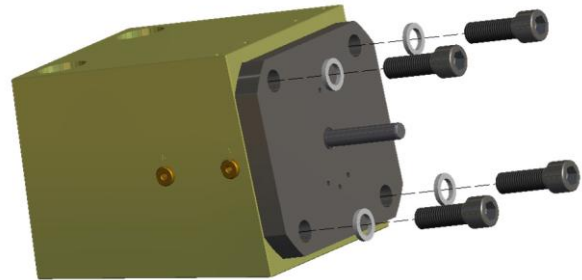
12) Install the dowel pin in the hole above the passage for the sensor pin. Use Loctite



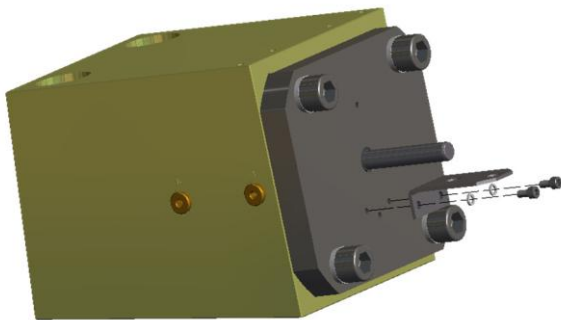
13) Install the cylinder base on the body. If needed, rotate the plunger to level the dowel pin with the hole in the plunger base.



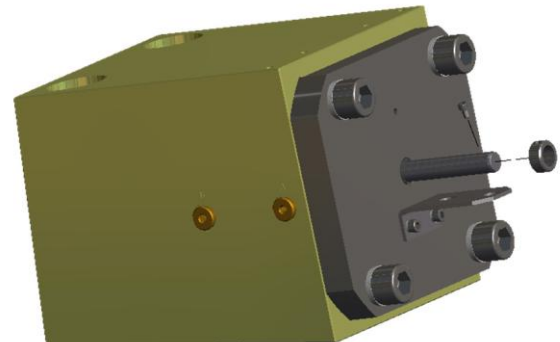
14) Fix the cylinder base with screws and washers.



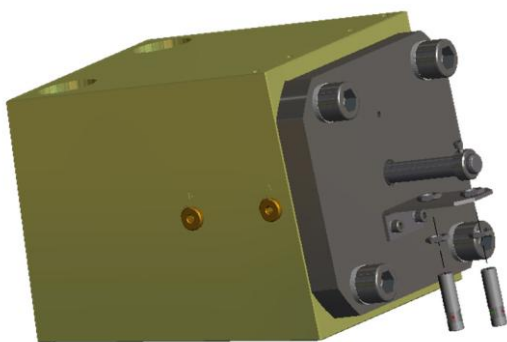
15) Install the support bracket for the sensors.



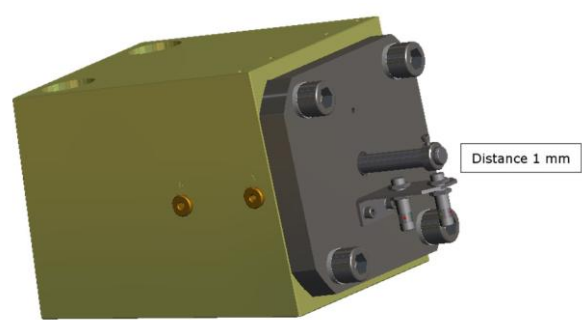
16) Install the sensor bushing.



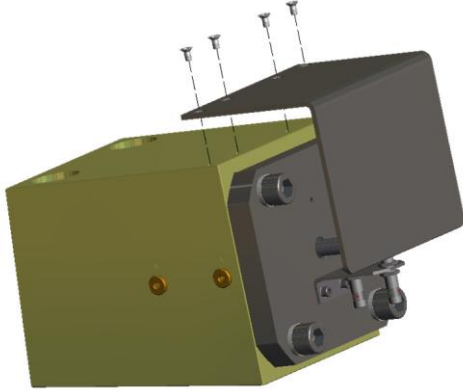
17) Install the sensors on the bracket.



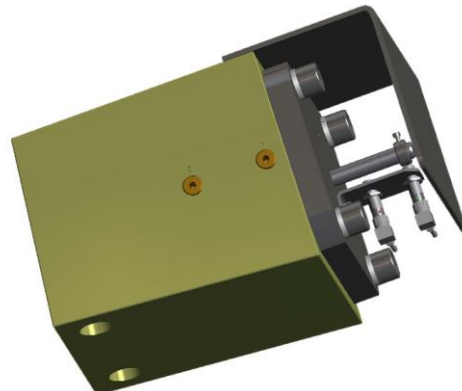
18) The distance between the sensor bushing and the sensor should be ± 1 mm.



19) Install the cover.



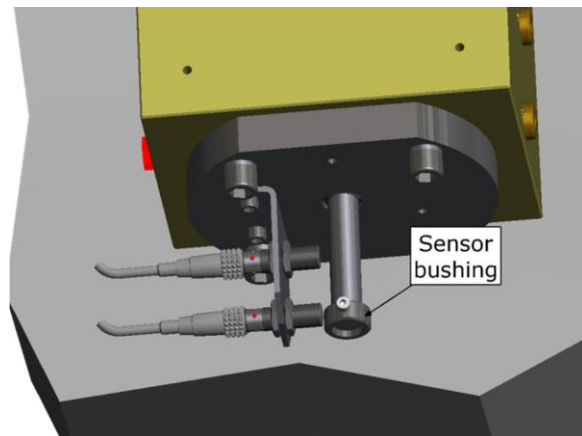
20) After mounting the clamp on the press, install the cables for the sensors.



Adjusting the sensors

The initial setting of the sensors is in the unclamped position. Once the sensors are activated after mounting, the indicator LED's should signal powered and active (green and yellow).

The sensors can be adjusted by calibrating the sensor bushing. Loosen the screw in the sensor bushing and adjust the unclamped sensors until they are activated. Make sure the nuts are well tightened to prevent the sensors from moving.



5 Troubleshooting

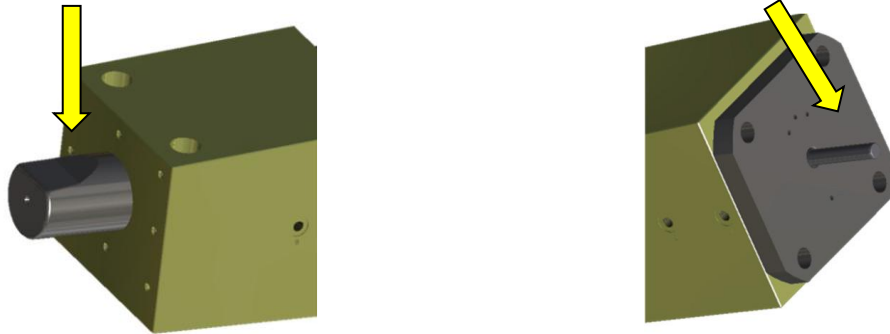
Problem	Cause	Solution
Plunger does not extend.	Not enough pressure on A port.	Check system pressure and valves. Correct according to chapter 5.5.
	Pressure on B port.	Check valves and release pressure on B port.
	Cylinder is blocked.	Check the mold back plate height. Check the plunger for mechanical blockage, remove blockage.
Plunger doesn't retract.	Not enough pressure on B port.	Check system pressure and valves. Correct according to chapter 5.5.
	Pressure on A port.	Check valves and release pressure on A port.
	Too much pressure used for clamping stroke.	Increase the pressure (max. 210 bar). If not enough, loosen bolts, reduce clamping pressure
Plunger loosens gradually.	Pressure did not remain on port A for the additional 5 seconds.	Repeat clamping procedure according to specifications.
Plunger extends without activating valves.	Back pressure on T-line to both A and B port, through valve middle position.	Check valves and release pressure on B port.
Oil leaks out sideways.	Hose connectors or sealing plugs are loose or damaged.	Tighten or repair connections or plugs.
Oil leaks out on the front side.	Seals are damaged or incorrectly mounted.	Replace seals using the repair parts sheet.
No LED signal 'unclamp'.	Proximity switch or detection bush positioned incorrectly.	Adjust position of proximity switch. If not enough, also adjust position of detection bushing.
	Too much back pressure in connections.	Check system for back pressure and release it.
	Incorrect connection to machine controls.	Check electrical scheme and correct error.
	Component failure in cable or switch.	Replace faulty component.

<p>No LED signal 'clamp'.</p>	<p>Proximity switch or detection bush positioned incorrectly.</p> <p>Machine did not close or build up pressure.</p> <p>Mold back plate tolerance is too high.</p> <p>Incorrect connection to machine controls.</p> <p>Component failure in cable or switch.</p>	<p>Adjust position of proximity switch. If not enough, also adjust position of detection bushing.</p> <p>Close machine completely and build up pressure.</p> <p>Check back plate height, correct if necessary.</p> <p>Check electrical scheme and correct error.</p> <p>Replace faulty component.</p>
<p>On and off LED signal 'clamp'.</p>	<p>Plunger makes full stroke; back plate height is not correct.</p> <p>No back plate in the machine.</p>	<p>Check back plate height, correct if necessary.</p> <p>Load mold.</p>

6 Maintenance

Maintenance of your MOD wedge 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 wedge clamp and its hydraulic connections to detect any problem, wear or leakage requiring service.

Pay attention to the surface of the plunger (left) and sensor pin (right).



EASchangesystems offers spare part kits for repair and maintenance. Contact EASchangesystems 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 change systems 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

Europe/The Netherlands

EAS Europe B.V.

De Hooge Hoek 19A / 3927 GG Renswoude
phone: +31 318 477 010 / The Netherlands
info@EASchangesystems.com

France

EAS France S.A.R.L.

218, Voie Aristide Bergès / ZI Alpespace
73800 Sainte Hélène-du-Lac
phone: +33 4 79 65 04 10 / France
easfr@EASchangesystems.com

USA

EAS Mold & Die Change System, Inc.

200 Augusta Arbor Way, Suite B
Greenville / South Carolina 29605
phone: +1 864 603 3386 / United States of America
easus@EASchangesystems.com

China

Suzhou EAS Mold & Die Change Systems Co. Ltd.

No.1188 Pangjin Road / Wujiang City / 215200
phone: +86 51 26 30 91 / PR China
sales-china@EASchangesystems.com

Italy

EAS MED S.r.L.

Via J. F. Kennedy, 19/C2 / 20871 Vimercate (MB)
phone: +39 039 608 3816 / Italy
easmed@EASchangesystems.com