

Repair manual ELY Rocker Clamps

Version: 1.1

RPS2020-100

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Contents

1	Safety	4
1.1	General safety instructions for EAS clamping cylinders	4
1.2	Safety symbols.....	5
2	Parts overview	7
2.1	Exploded view ELY20	7
2.2	Exploded view ELY40	8
2.3	Exploded view ELY60	9
2.4	Exploded view ELY100	10
2.5	Exploded view ELY160	11
2.6	Exploded view ELY250	12
3	Disassembly of a standard ELY rocker clamp	13
4	Assembly of a standard ELY rocker clamp	14

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 clamping 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 clamping 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 clamping cylinders must be operated in accordance with the relevant specifications, in particular with respect to the maximum allowed clamping force and pressures. The EAS clamping 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 clamping 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.



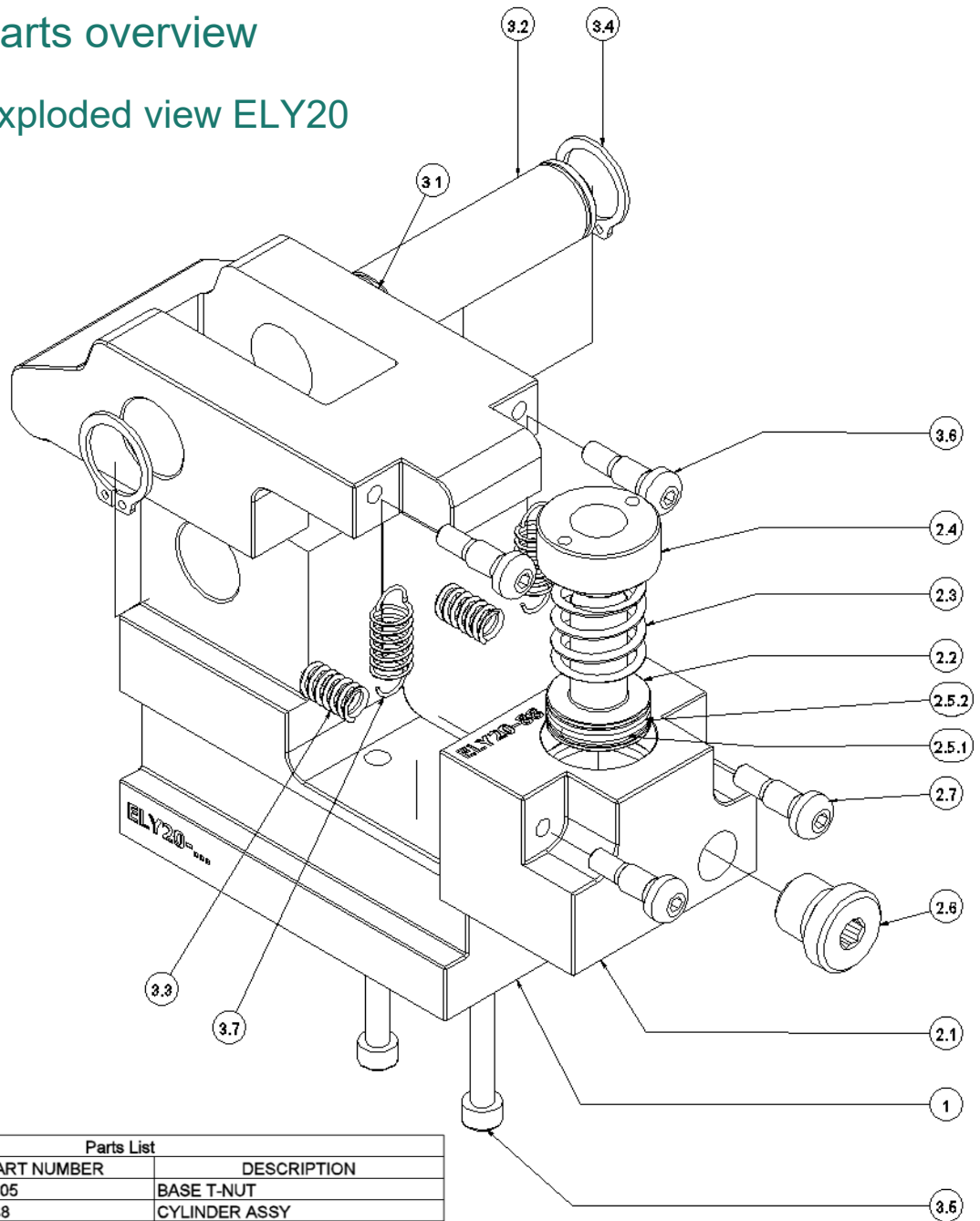
Observe the safety regulations for overhead crane or pallet truck before use. A tool falling from a crane or pallet truck could lead to serious injury or death.



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

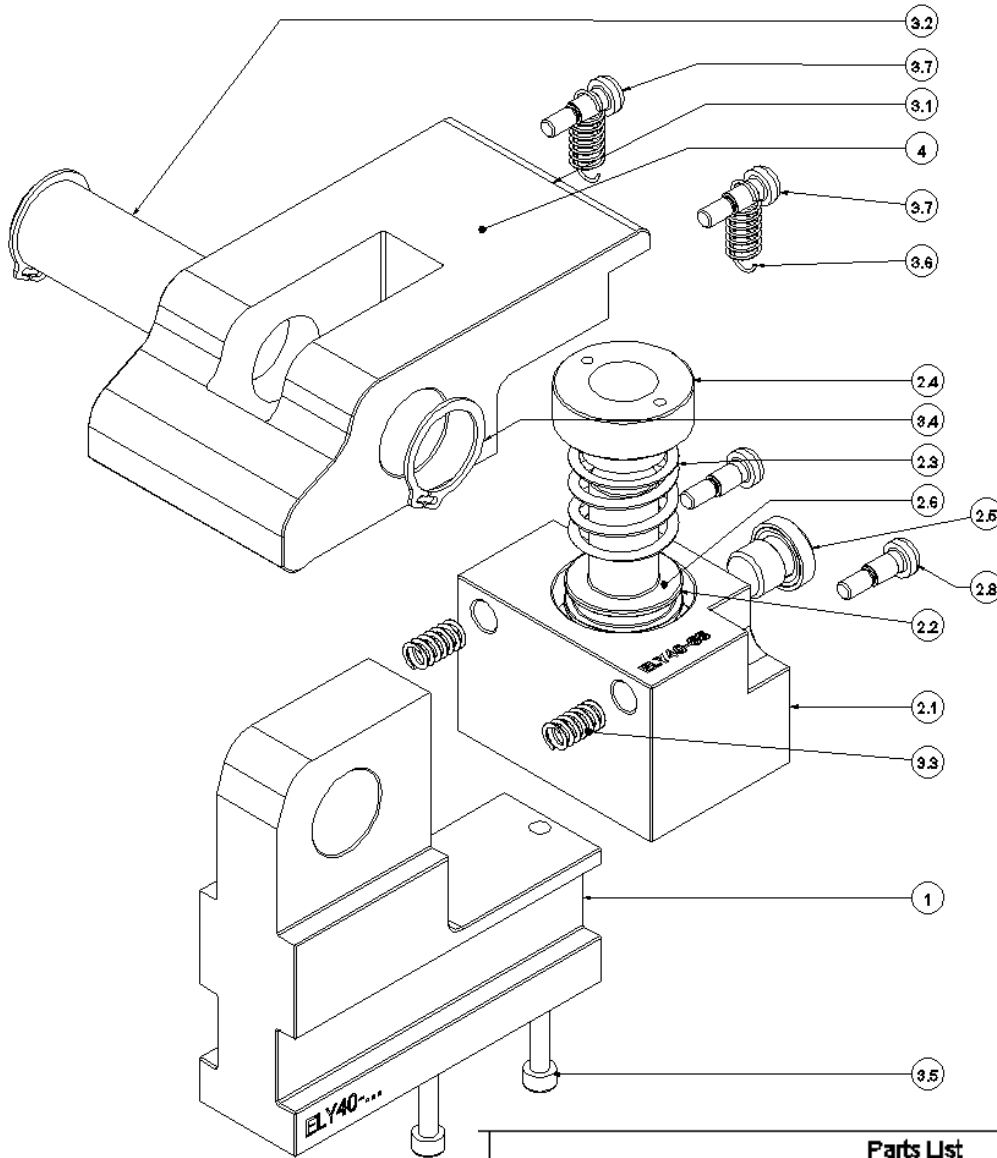
2 Parts overview

2.1 Exploded view ELY20



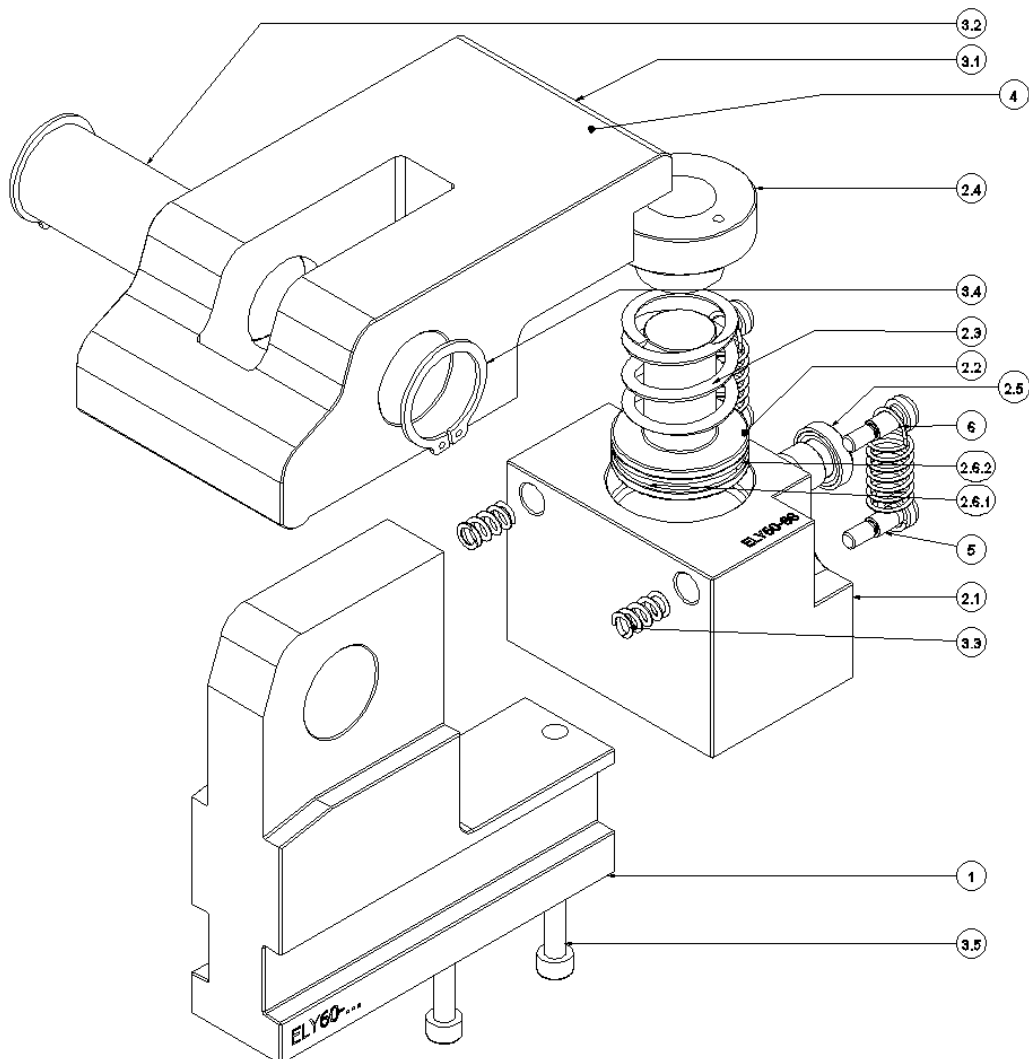
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	FB175-005	BASE T-NUT
2	1	ELY20-88	CYLINDER ASSY
2.1	1	FB179-030	CYLINDER BASE
2.2	1	FB180-040	PLUNGER
2.3	1	FB181-110	SPRING PLUNGER
2.4	1	FB182-039	STOPRING
2.5	1	ELY20-77	SEAL KIT
2.5.1	1	B1013-503	O-RING
2.5.2	1	B1115-564	BACK-UP-RING
2.6	1	CS235-006	TERMINAL PLUG
2.7	2	PP818-028	SHOULDER SCREW M5-Ø6x10
3	1	ELY20-99	ROCKER ASSY
3.1	1	FB176-011	ROCKER
3.2	1	FB177-104	SHAFT
3.3	2	FB178-110	SPRING ROCKER
3.4	2	CCE1018.044-1A	RING-RETAINER 18x1,2
3.5	2	CCA525-0281A	SCREW M5x30
3.6	2	PP818-028	SHOULDER SCREW M5-Ø6x10
3.7	2	PP0723-710	EXTENSION SPRING
4	1	FB3.026	METAL IDENTIF. LABEL 50x25

2.2 Exploded view ELY40



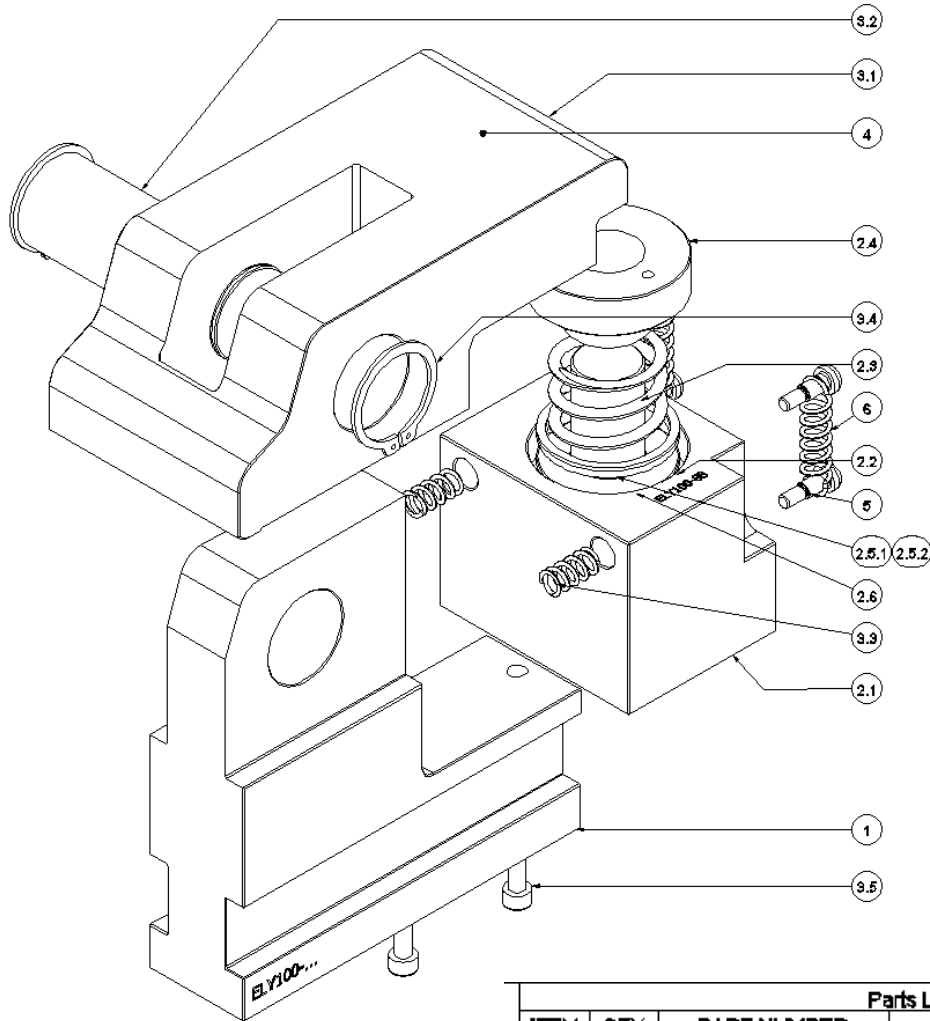
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	FB185-005	BASE T-NUT
2	1	ELY40-66	CYLINDER ASSY
2.1	1	FB189-030	CYLINDER BASE
2.2	1	FB190-040	PLUNJER ROCKERCLAMP
2.3	1	FB191-110	SPRING PLUNJER
2.4	1	FB192-039	STOPRING
2.5	1	CS235-006	TERMINAL PLUG
2.8	2	PP818-028	SHOULDER SCREW M5-Ø6x10
7.3	1	ELY40-77	SEAL KIT
9	1	ELY40-99	ROCKER ASSY
3.1	1	FB186-011	ROCKER
3.2	1	FB187-104	SHAFT
3.3	2	FB188-110	SPRING ROCKER
3.4	2	CCE1024.044-1A	RING-RETAINER 24x1,2
3.5	2	CCA527-0281A	SCREW M6x35
3.6	2	PP0729-710	EXTENSION SPRING
3.7	2	PP818-028	SHOULDER SCREW M5-Ø6x10
4	1	FB3026	METALL.IDENTIF.LABEL 50x25

2.3 Exploded view ELY60



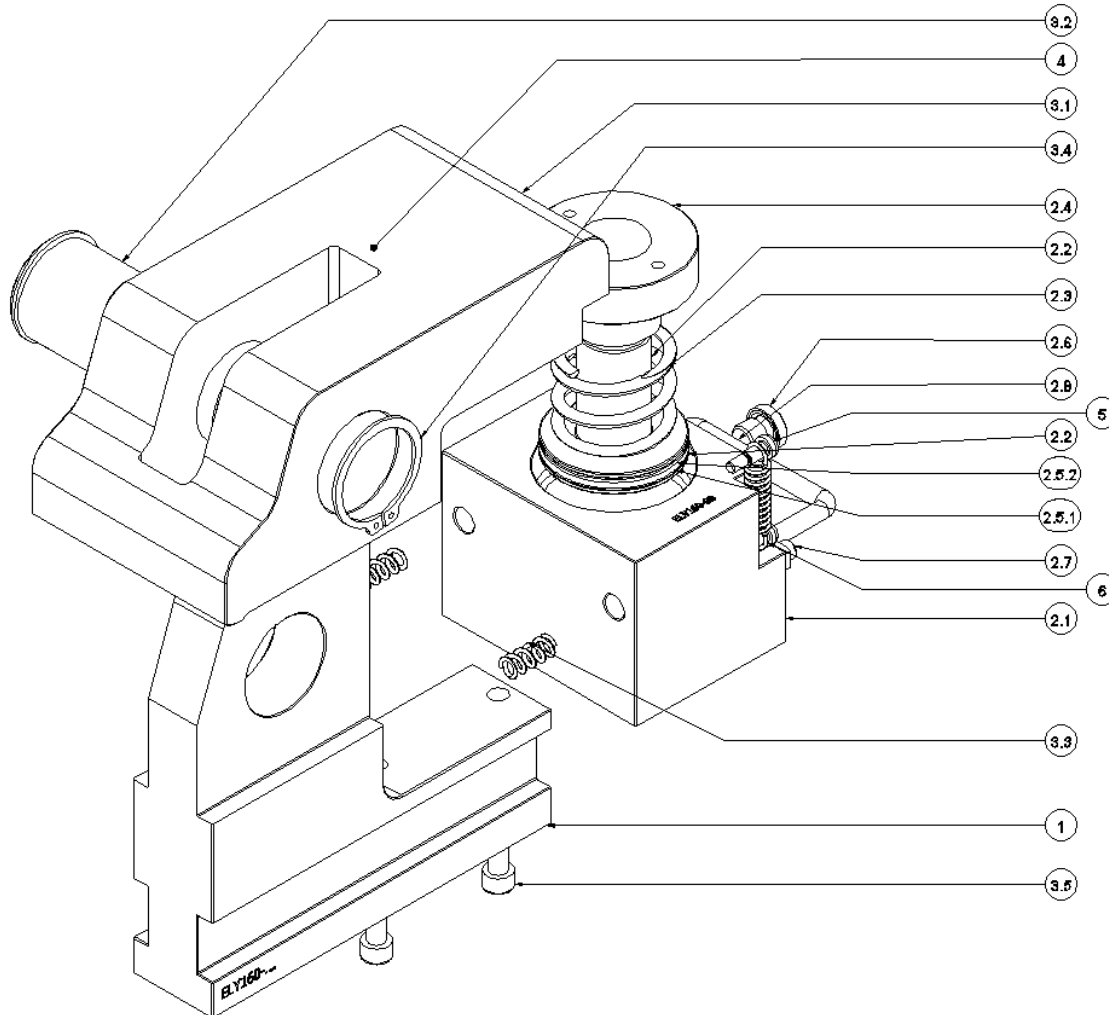
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	FB195-005	BASE T-NUT
2	1	ELY60-88	CYLINDER ASSY
2.1	1	FB199-030	CYLINDER BASE
2.2	1	FB200-040	PLUNJER ROCKERCLAMP
2.3	1	FB201-110	SPRING PLUNJER
2.4	1	FB202-039	STOPRING
2.5	1	GS235-006	TERMINAL PLUG
2.6	1	ELY60-77	SEAL KIT
2.6.1	1	B1259-603	O-RING
2.6.2	1	B1125-564	BACK-UP-RING
3	1	ELY60-99	ROCKER ASSY
3.1	1	FB196-011	ROCKER
3.2	1	FB197-104	SHAFT
3.3	2	FB198-110	SPRING ROCKER
3.4	2	CCE1028.044-1A	RING-RETAINER 28x1,6
3.5	2	GCA627.028-1A	SCREW M6x35
4	1	FB3026	METALL.IDENTIF.LABEL 50x25
5	4	PP818-028	SHOULDER SCREW M5-05x10
6	2	PP0722-710	SPRING

2.4 Exploded view ELY100



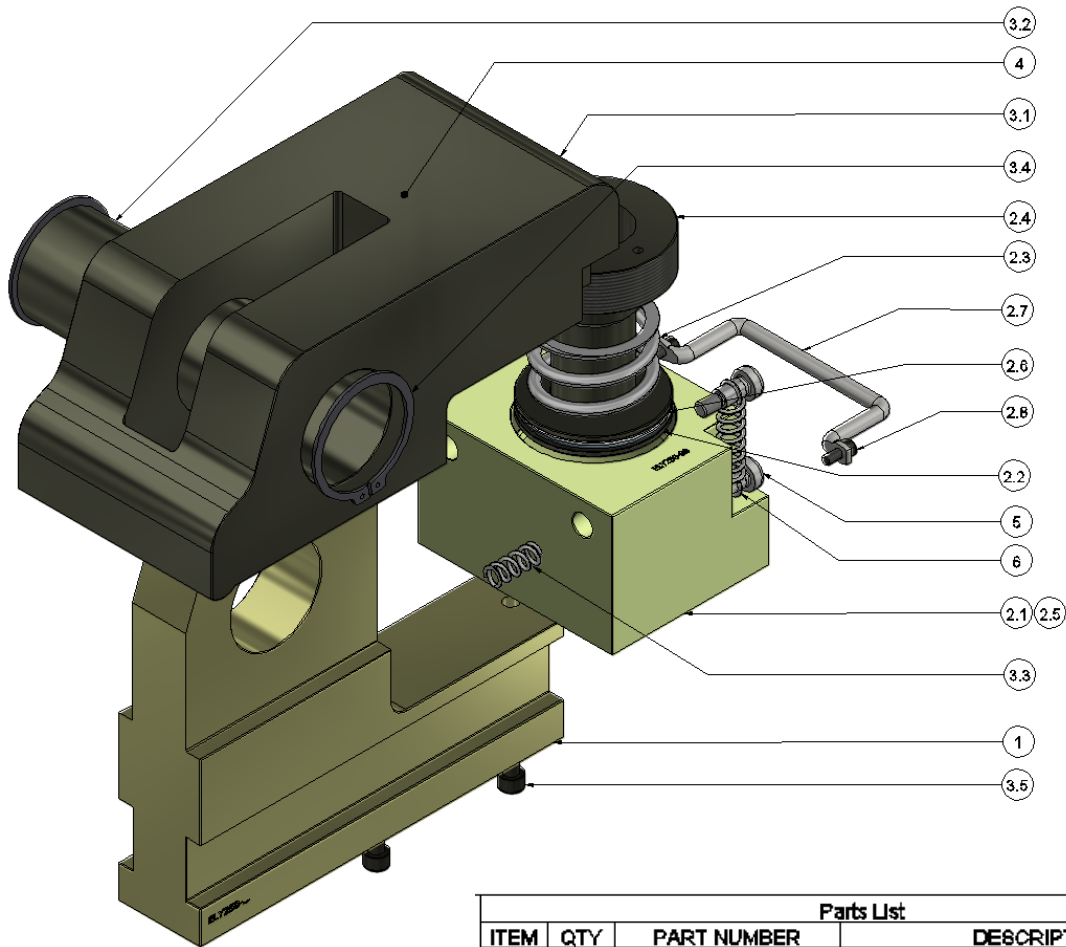
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	FB205-005	BASE T-NUT
2	1	ELY100-08	CYLINDER ASSY
2.1	1	FB209-030	CYLINDER BASE
2.2	1	FB210-040	PLUNJER ROCKERCLAMP
2.3	1	FB211-110	SPRING PLUNJER
2.4	1	FB212-039	STOPRING
2.5	1	ELY100-77	SEAL KIT
2.5.1	1	B1089-503	'O'-RING
2.5.2	1	B1223.664	BACK-UP RING
2.6	1	CS235-006	TERMINAL PLUG
3	1	ELY100-99	ROCKER ASSY
3.1	1	FB206-011	ROCKER
3.2	1	FB207-104	SHAFT
3.3	2	FB208-110	SPRING ROCKER
3.4	2	CCE1035.044-1A	RING-RETAINER 36x1,5
3.5	2	CCA633-0281A	SCREW M6x50
4	1	FB3026	METALL IDENTIF LABEL 50x25
5	4	PP818-028	SHOULDER SCREW M5-06x10
6	2	PP0721-710	PULL SPRING

2.5 Exploded view ELY160



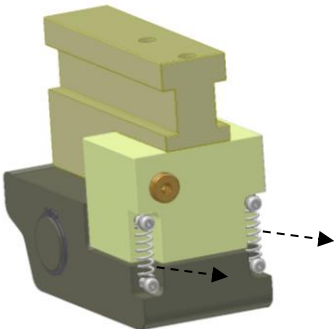
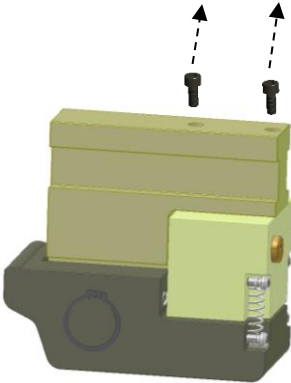
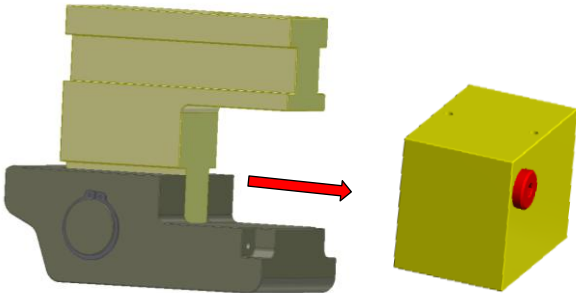
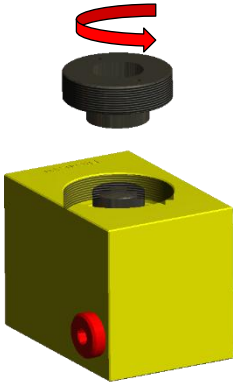
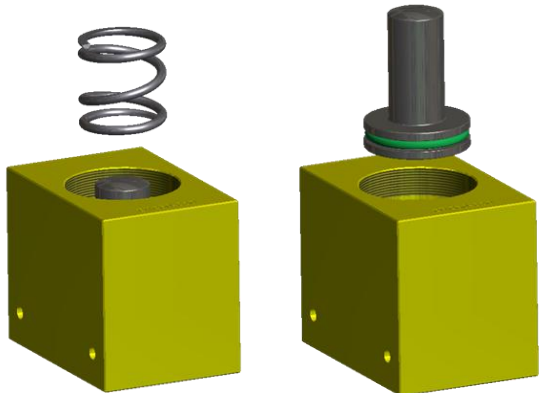

Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	FB215-005	BASE T-NUT
2	1	ELY160-68	CYLINDER ASSY
2.1	1	FB219-030	CYLINDER BASE
2.2	1	FB220-040	PLUNJER ROCKERCLAMP
2.3	1	FB221-110	SPRING PLUNJER
2.4	1	FB222-039	STOPRING
2.5	1	ELY160-77	SEAL KIT
2.5.1	1	B1093-503	*O*-RING
2.6.2	1	B1227.664	BACK-UP RING
2.6	1	GS235-006	TERMINAL PLUG
2.7	2	CCA517.028-1A	SCREW M5x12
2.8	1	FB393-070	HANDLE
3	1	ELY160-99	ROCKER ASSY
3.1	1	FB216-011	ROCKER
3.2	1	FB217-104	SHAFT
3.3	2	FB218-110	SPRING ROCKER
3.4	2	CCE1045-0441A	RING-RETAINER 45x1,75
3.5	2	CCA833.028-1A	SCREW M8x50
4	1	FB4026	METALL.IDENTIF.LABEL. 76x50
5	4	PP818-028	SHOULDER SCREW M5-08x10
6	2	PP0691-710	PULL SPRING STAINLESS

2.6 Exploded view ELY250

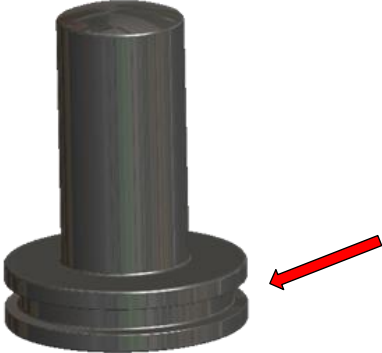
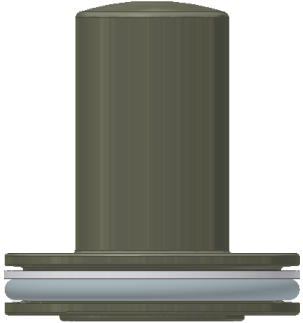
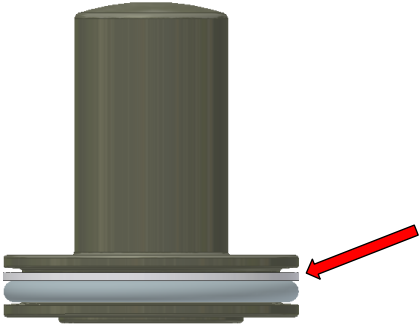
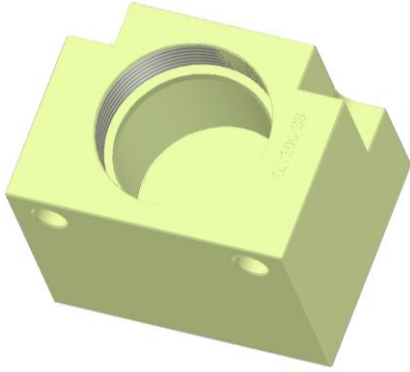

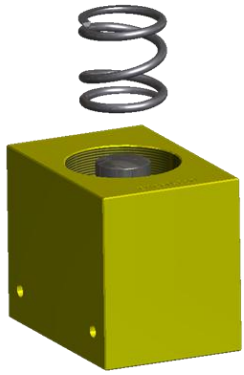


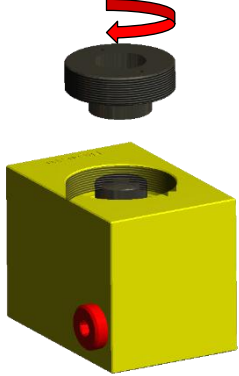
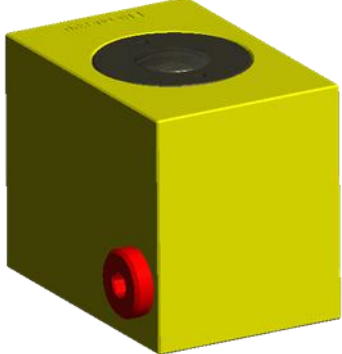
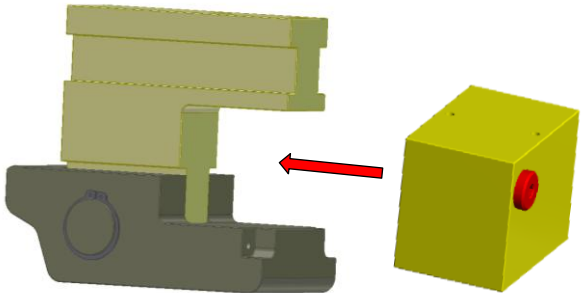
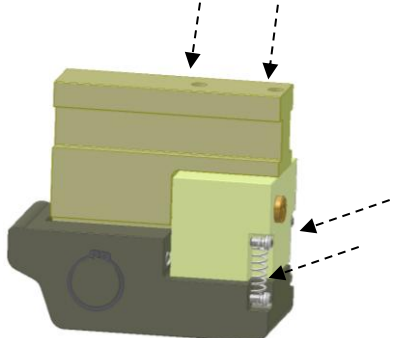
Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	FB225-005	BASE T-NUT
2	1	ELY250-68	CYLINDER ASSY
2.1	1	FB229-030	CYLINDER BASE
2.2	1	FB230-040	PLUNJER ROCKERCLAMP
2.3	1	FB231-110	SPRING PLUNJER
2.4	1	FB232-039	STOPRING
2.5	1	CS235-006	TERMINAL PLUG
2.6	1	ELY250-77	SEAL KIT
2.7	1	FB603-070	HANDLE
2.8	2	GCA517.028-1A	SCREW M5x12
3	1	ELY250-99	ROCKER ASSY
3.1	1	FB226-011	ROCKER
3.2	1	FB227-104	SHAFT
3.3	2	FB228-110	SPRING ROCKER
3.4	2	CCE1060-0441A	RING-RETAINER 60x2
3.5	2	GCAB97-0281A	SCREW M8x60
4	1	FB4026	METALL. IDENTIF. LABEL 76x50
5	4	PP819-028	SHOULDER SCREW M8-Ø10f9x16
6	2	PP0566-710	PULL SPRING STAINLESS

3 Disassembly of a standard ELY rocker clamp

<p>1) Remove the two spring from the backside after plache the ELY upside down on the workbench</p>	<p>2) Remove the two small screws from the bottom.</p>
	
<p>3) Remove the cylinder base from the assembly.</p>	<p>4) Clamp the cylinder base in a bench vice and remove the stop ring with a pin wrench. CAUTION: The stop ring will be forced out by the loaded spring!</p>
	
<p>5) Remove the spring and plunger from the cylinder base.</p>	<p>6) Remove the O-ring and back-up ring from the plunger. Thoroughly check the plunger and cylinder body for damages. Replace damaged parts.</p>
	

4 Assembly of a standard ELY rocker clamp

<p>1) Meticulously purge the groove, if necessary use compressed air.</p>	<p>2) Place the O-ring and back-up ring in the groove.</p>
	
<p>3) Check that the O-ring is undamaged after installation.</p>	<p>4) Clean the cylinder base, if necessary use compressed air.</p>
	
<p>5) Carefully insert the plunger into the cylinder base. Make sure not to damage the O-ring.</p>	<p>6) Slide the spring over the plunger.</p>
	

<p>7) Screw the stop ring in the cylinder base with a pin wrench until it reaches the base. NOTE: Do not use Loctite or any other fixation product.</p>	<p>8) Check if the top of the stop ring is below the surface of the cylinder base. NOTE: During fastening, the stop ring will load the spring.</p>
	
<p>9) Place the rocker & base assembly upside down on a workbench. Slide the cylinder base back in place.</p>	<p>10) Fasten the cylinder base with the two screws and tighten them firmly and re-mount the springs</p>
	

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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