

USER MANUAL
MONTRAC COMPONENTS
Electric switchable cam

BA-100075
Starting from serial number 421830
English, edition 05/2007

Contents

1.	Important information	2
1.1.	Introduction	2
1.2.	EC conformity (to EC Directive on Machines, Appendix II A)	2
1.3.	EMC guidelines	2
1.4.	Product description and application	3
1.5.	System logistics	3
1.6.	Safety instructions	3
1.7.	Dangers	3
1.8.	Additional information	4
1.9.	Validity of the user manual	4
2.	Technical data	5
2.1.	Technical data	5
2.2.	Dimension sheet	5
3.	Installation and commissioning	8
4.	Maintenance	13
5.	Parts list	14
5.1.	Electric switchable cam "off" (power-off for shuttle visible)	14
5.2.	Parts list electric switchable cam "off" (power-off for shuttle visible)	15
5.3.	Electric switchable cam "on" (power-off for shuttle invisible)	16
5.4.	Parts list electric switchable cam "on" (power-off for shuttle invisible)	17
6.	General information	18
6.1.	Environmental compatibility and disposal	18

1. Important information

1.1. Introduction

These operating instructions describe the mechanical design, the load limits, installation, maintenance and spare parts of the electric switchable cam.

1.2. EC conformity (to EC Directive on Machines, Appendix II A)

Regulations and standards taken into account:

A Montrac transport system is a machine that consists of, depending on the application, a variety of precisely defined components. The regulations and standards taken into account for the components are mentioned in the respective sub-chapter of the operating instructions.

Montrac transport systems may only be put into operation under the following conditions:

- a) when they are operated with a power supply that complies with the standards described in the operating instructions
- b) when the space beneath transfer gates and crossings is inaccessible in an area with a diameter of 1.6 m (danger of crash for shuttles if transfer gate or crossing is incorrectly switched).

Manufacturer

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1.3. EMC guidelines

Emission:

- EMC directives: Noise field intensity according to EN 55011 or EN 55022, Class A.

Immunity:

- To electromagnetic fields according to 801-3: 10 V/m, 1 kHz, 80% AM.
- To burst according to IEC 801-4: 2 kV.
- To line-carried, narrow-band noise according to IEC 801-6: 10 VEMF.
- To 50 Hz magnetic fields according to EN 61000-4-8: 30 A/m.
- To discharge of static electricity.
- To conducted noise.

1.4. Product description and application

Montrac is a monorail transport system with self-propelling shuttles, constructed to carry loads of up to 12 kg or 24 kg (2-axle shuttle) and pallet sizes up to 300 x 550 mm. Montrac is a modular system. Standardized basic components enable customer-specific system configurations to be set up for connection to machining stations, machines, order-picking stations, etc.

Montrac can be used wherever material has to be moved, distributed, processed stepwise (e.g. assembled) or collected together at one point from various senders.

1.5. System logistics

The electrically switchable cam is used so that not every shuttle stops in the defined position or when the shuttle starts backwards.

1.6. Safety instructions

The safety instructions, especially those concerning the electrical connection, must be heeded during commissioning, operation, repair work and decommissioning. Non-compliance with these instructions is an improper use of the transport system and its components.

The operation of a Montrac transport system in an explosive atmosphere (combustible gases, vapors or dust) may lead to their ignition and must therefore not be carried out.

1.7. Dangers

In order to exclude dangers under operating conditions, the requirements specified in the EC Declaration of Conformity with regard to a) the electrical supply and b) the safety equipment must be fulfilled.

User manual

Montrac components electric switchable cam

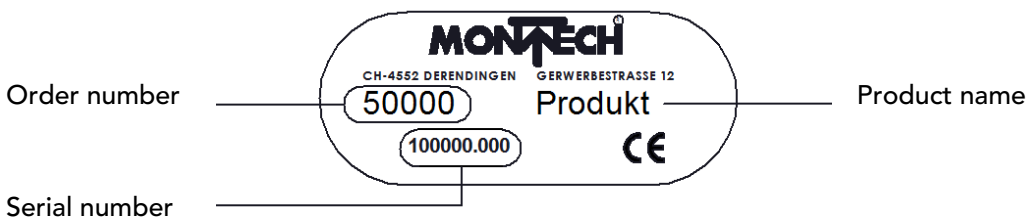
1.8. Additional information

The aim of the present operating instructions is to enable users to employ the electric switchable cam correctly and safely. Should further information be required relating to the particular application, do not hesitate to contact the manufacturer.

When ordering the user manual it is essential to quote the type and serial number.

Additional operating instructions can be obtained from our website at www.montech.com.

Name plate



MONTECH AG
Management

U. D. Wagner

C. Wullschleger

1.9. Validity of the user manual

Our products are continually updated to reflect the latest state of the art and practical experience. In line with product developments, our user manuals are continually updated.

Every user manual has an article number, e.g. BA-100075.

The article number and the date of edition are evident on the title page.

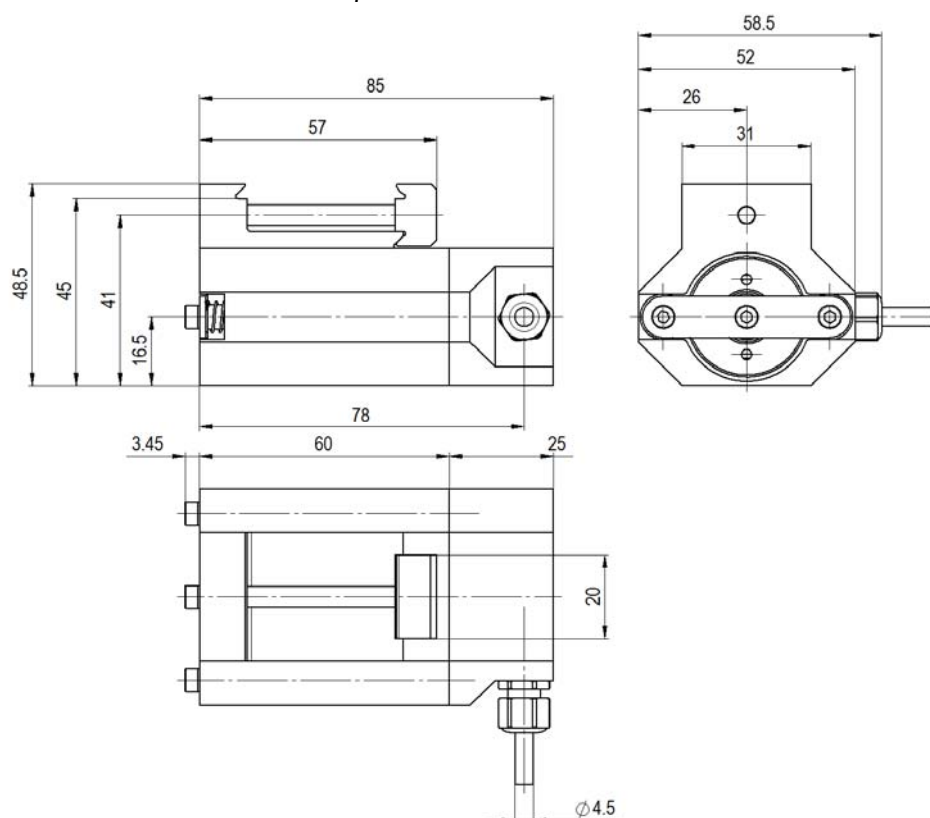
2. Technical data

2.1. Technical data

Weight	[kg]	0.5
Connected voltage	[V DC]	24
Current consumption	[A]	0.5
Ambient conditions: Temperature	[°C]	10 – 40
Rel. humidity		5%-85% without condensation
Air purity		Atmosphere purity for the assembly of precision mechanical products

2.2. Dimension sheet

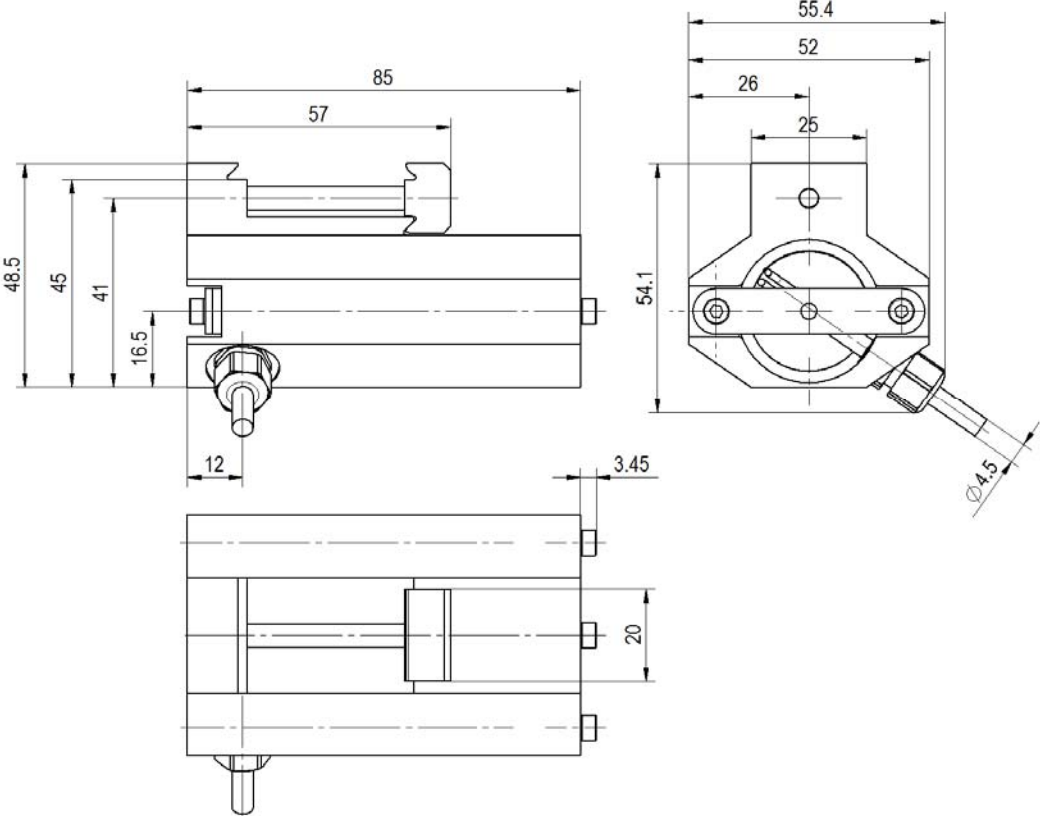
Electric switchable cam "off" (power-off for shuttle visible)



User manual

Montrac components electric switchable cam

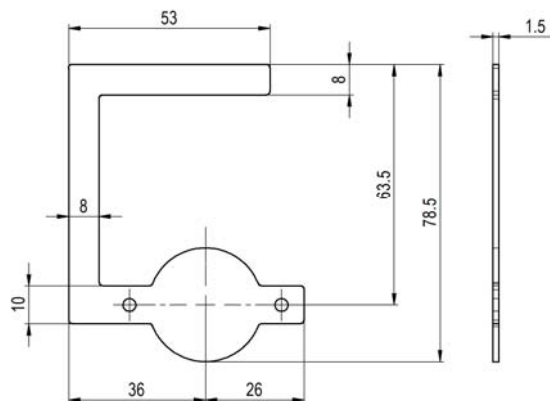
Electric switchable cam "on" (power-off for shuttle invisible)



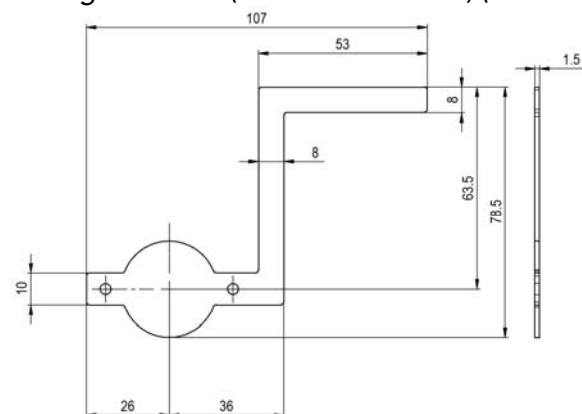
User manual

Montrac components electric switchable cam

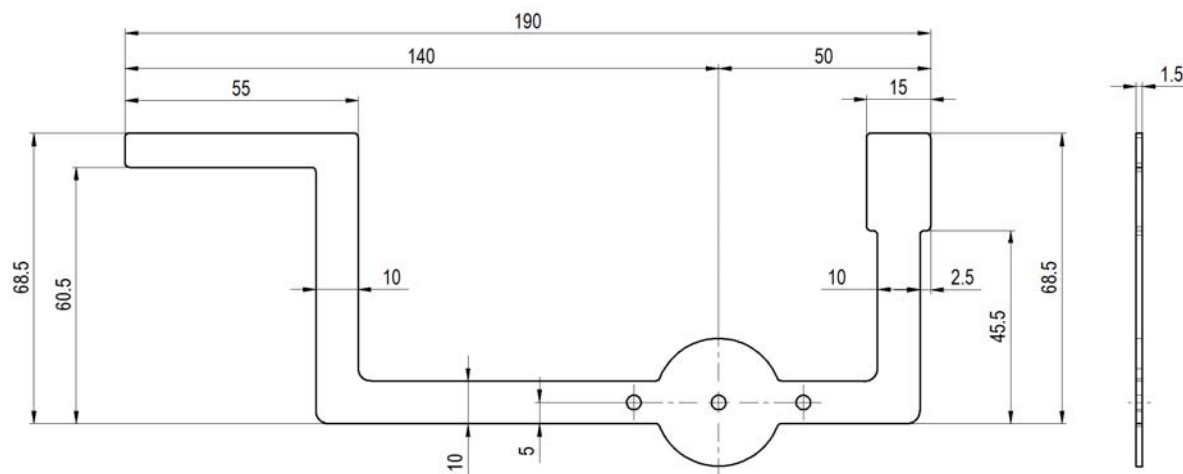
PV flag for A-cam (travel direction U) (order number 57008)



PV flag for A-cam (travel direction GU) (order number 57442)

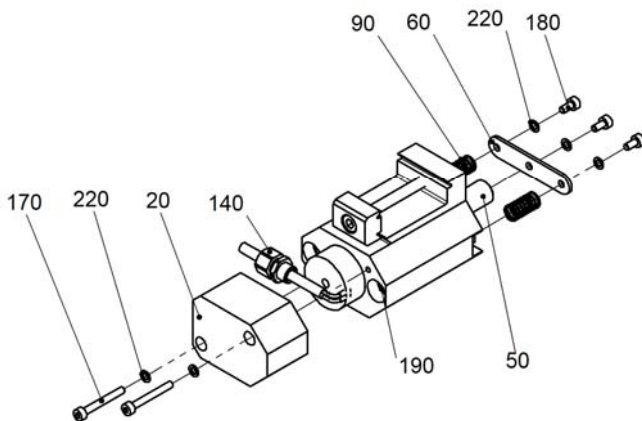


PV flag for AB and A-cam (order number 57020)



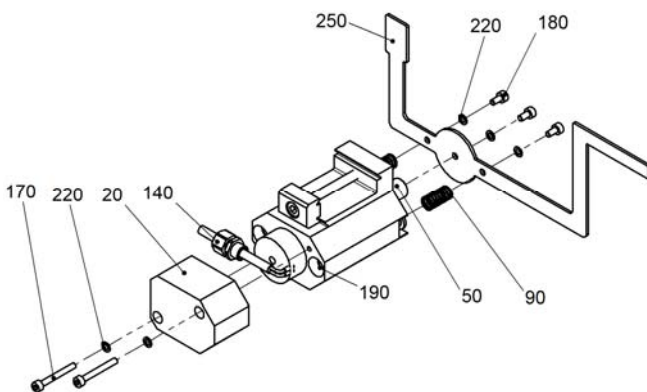
3. Installation and commissioning

Electric switchable cam "off"



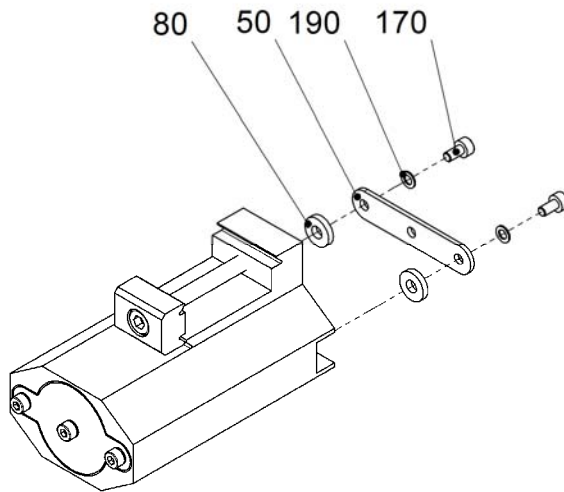
1. Secure the IRM at the desired stopping point. Undo the cable gland pos. 140 and the two cylinder screws pos. 170 and remove the cover pos. 20. By undoing the three screws pos. 180, remove the mounting plate pos. 60. (Pay attention to the two compression springs pos. 90 that are behind the mounting plate!)

Electric switchable cam "off"



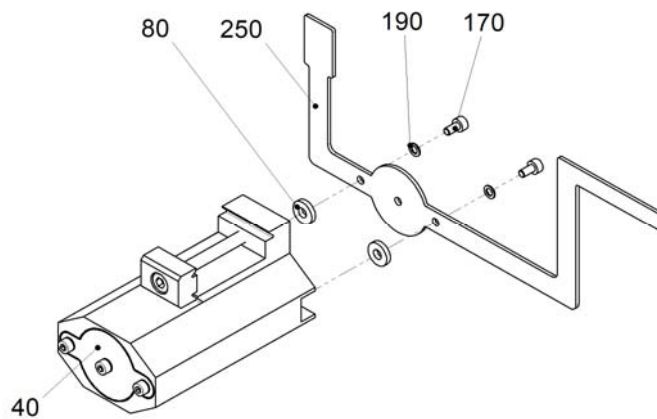
2. Then mount the selected cam pos. 250 in the desired position with the three cylinder screws pos. 180. Make sure when tightening the cylinder screws that the cam pos. 250 is not skewed!
3. Check that the cam is functioning properly. Press the cam from the front to the stop. Remove your fingers; the spring force moves the cam to the initial position. If the compression spring does not move the cam to the initial position, the parts were skewed during assembly. Repeat beginning with step 2.
4. Now the cover pos. 20 is mounted with the cylinder screws pos. 170 and the cable gland pos. 140 is tightened.

Electric switchable cam "on"



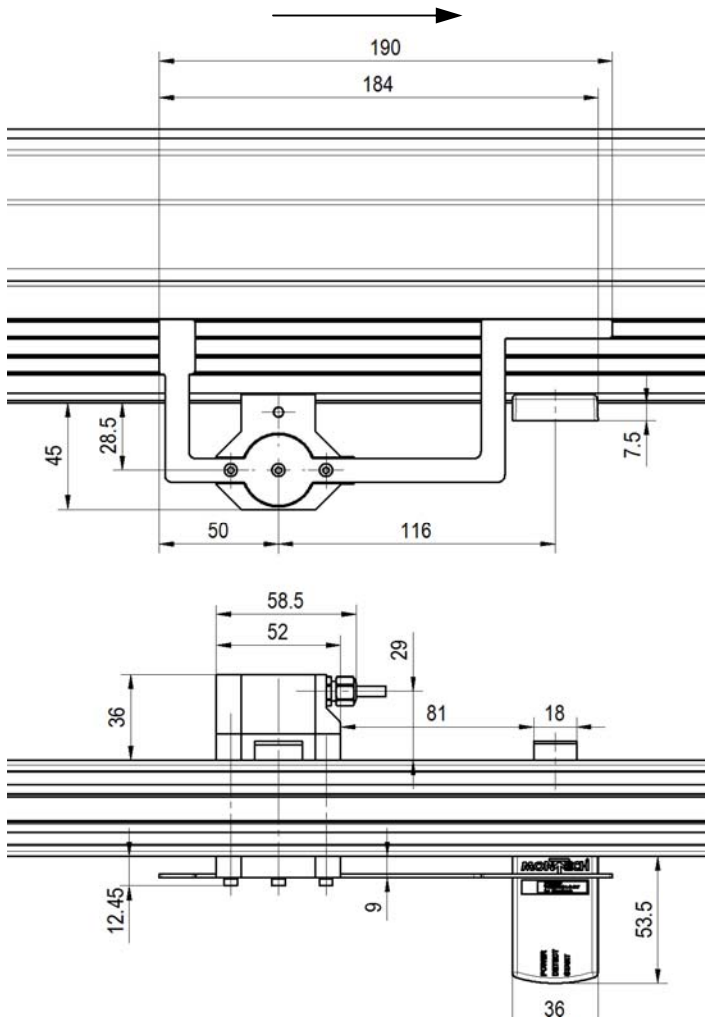
1. By loosening the two screws pos. 170, remove the mounting plate pos. 50. (Pay attention to the two buffer rings pos. 80 that are mounted behind the mounting plate!)

Electric switchable cam "on"



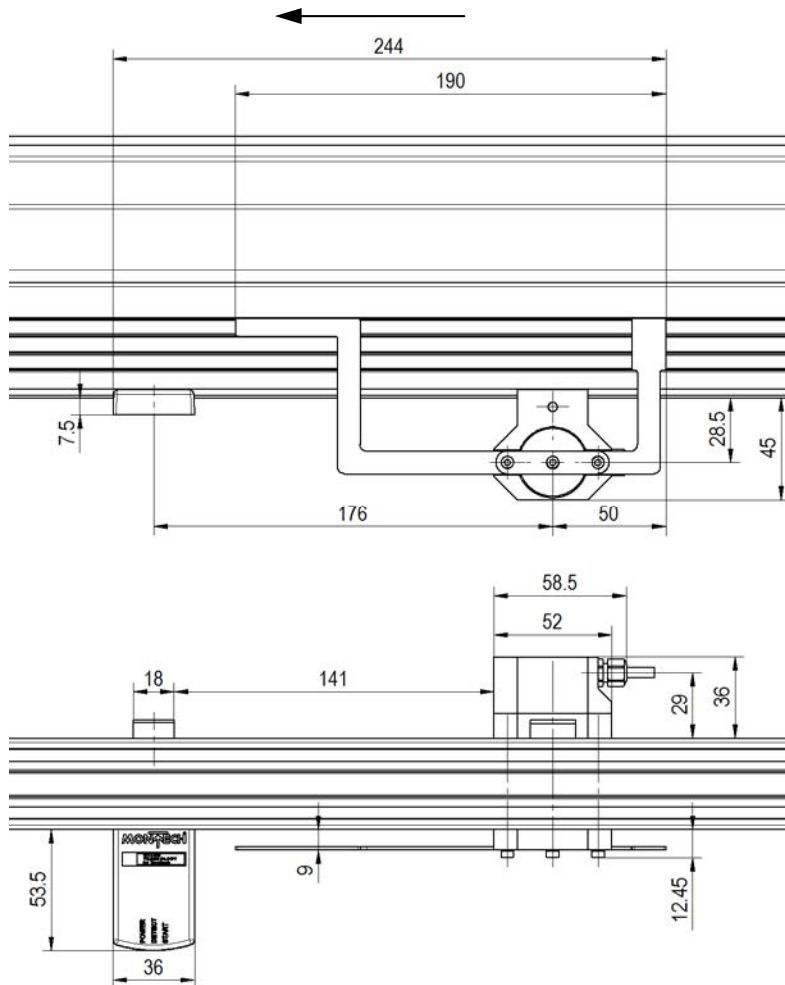
2. Mount the selected cam pos. 250 in the desired position with the two cylinder screws pos. 170. Make sure when tightening the cylinder screws pos. 170 that the cam pos. 250 is not skewed!
3. Check that the cam is functioning properly. Press the magnetic plate pos. 40 from the rear to the stop. Remove your fingers; the spring force moves the cam to the initial position. If the compression spring does not move the cam to the initial position, the parts were skewed during assembly. Repeat beginning with step 2.

Fig. 3-1: Travel direction GU



1. Fasten the cam in the desired position on the track in the system.
2. Fasten the IRM on the track as shown in Fig.3-1, 3-2, 3-3, 3-4, align and tighten.
3. Plug in the electric switchable cam to the PLC.

Fig. 3-2: Travel direction U



1. Fasten the cam in the desired position on the track in the system.
2. Fasten the IRM on the track as shown in Fig.3-1, 3-2, 3-3, 3-4, align and tighten.
3. Plug in the electric switchable cam to the PLC.

Fig. 3-3: Installation variant with PV (travel direction GU)

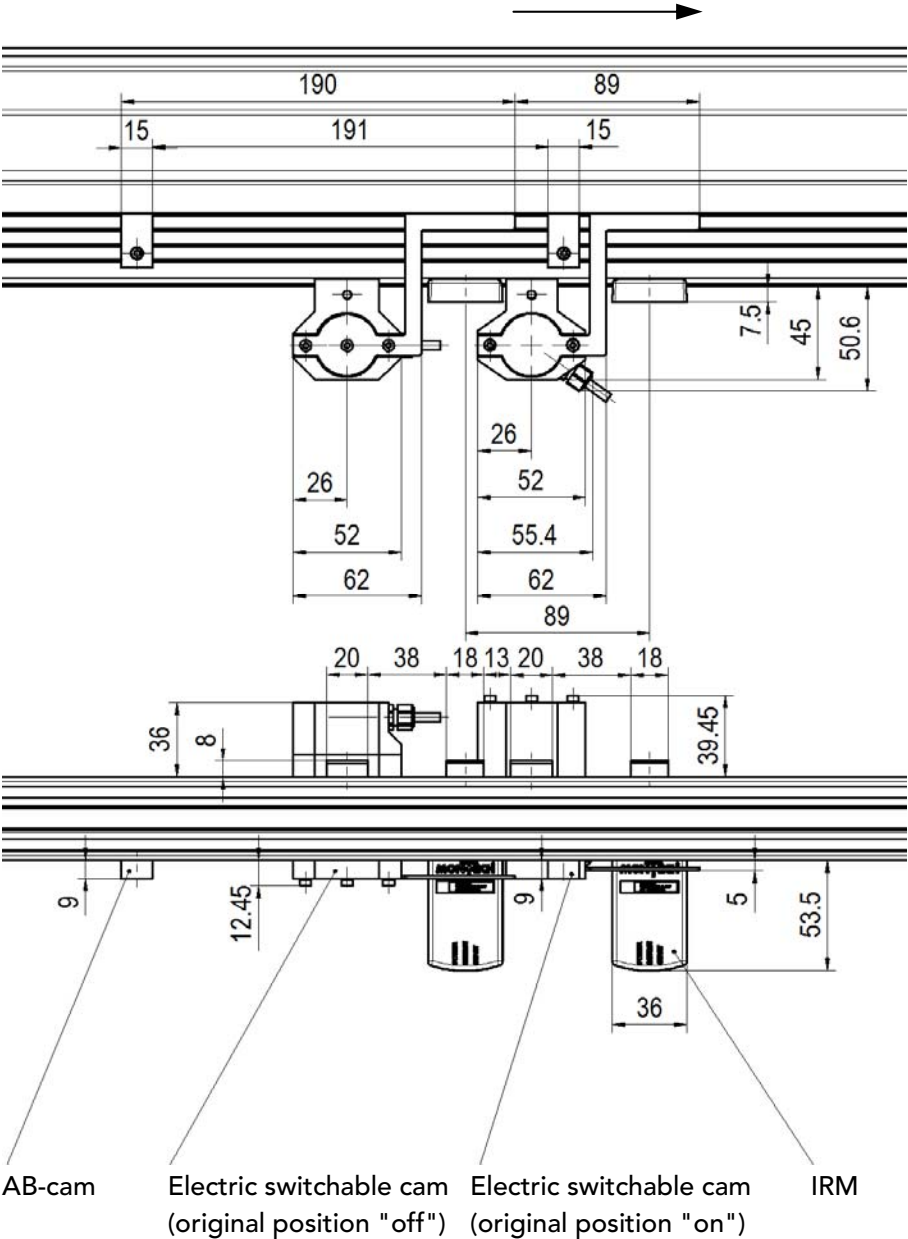
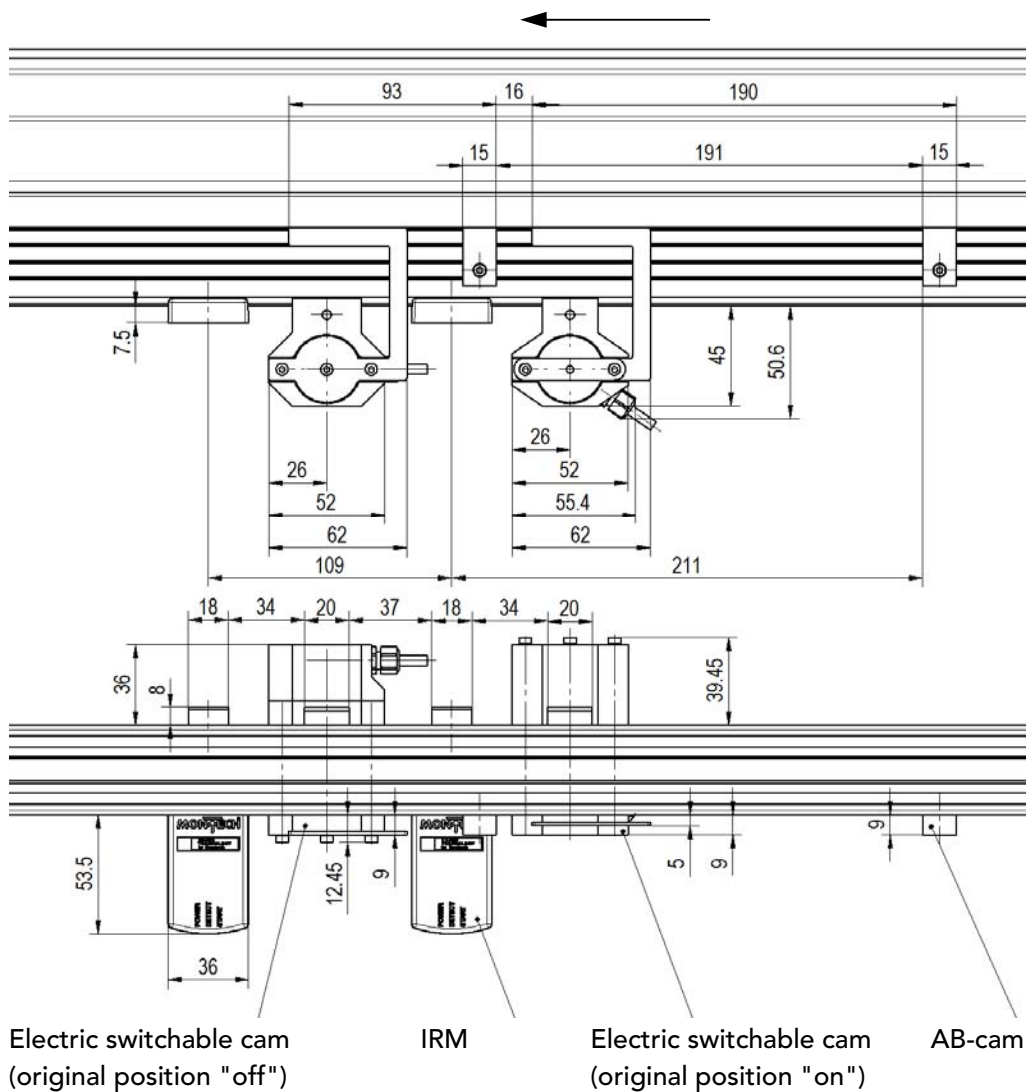


Fig. 3-4: Installation variant with PV (travel direction U)



4. Maintenance

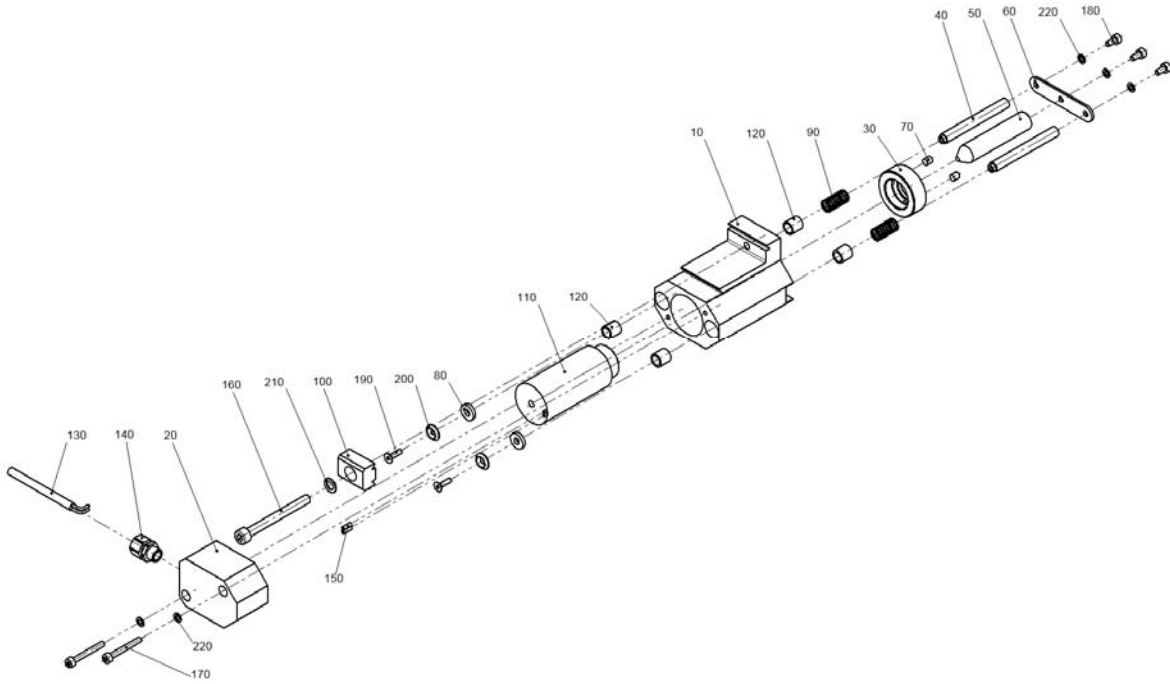
Every 6 months.

Operational check:

Check that the electric switchable cam runs smoothly.

5. Parts list

5.1. Electric switchable cam "off" (power-off for shuttle visible)



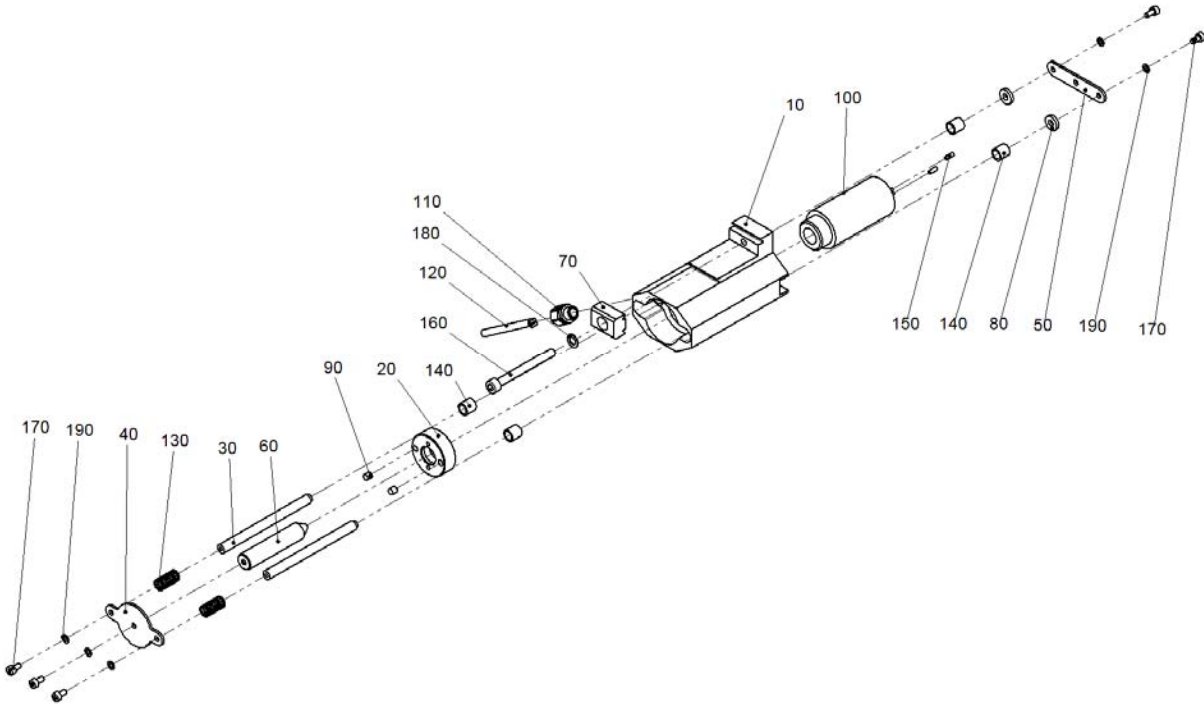
5.2. Parts list electric switchable cam "off" (power-off for shuttle visible)

Item	Sym.	Designation	Art. No.	Material
	■	Electric switchable cam "off"	57023	Various
10	◇	Housing	57018	Aluminum
20	◇	Cover	57098	Aluminum
30	◇	Tension ring	57019	Aluminum
40	◇	Guide rod	56899	Steel
50	◇	Cylinder	57101	Steel
60	◇	Holder	57426	Steel
70	◇	Buffer	57185	NBR
80	◇	Ring	57191	NBR
90	◇	Pressure spring	57171	Steel
100	◇	Linear clamping jaw ø 5.8	41188N	Aluminum
110	◇	Magnet STA 26x52	520182	Steel / Copper
120	◇	Plain bearing 6x8x8	520212	Plastics
130	◇	Cable	505827	Plastics
140	◇	Cable connection M8	505828	Brass
150	◇	Sleeve	520291	Plastics
160	◇	Socket cap screw M 5x50	502517	Steel
170	◇	Socket cap screw M3x25	506707	Steel
180	◇	Socket cap screw M3x6	520043	Steel
190	◇	Countersunk screws M3x10	506735	Steel
200	◇	Washer for Countersunk screws M3	520151	Steel
210	◇	Ribbed washer M5x9x0.6	505254	Steel
220	◇	Ribbed washer M3x5.5x0.45	505385	Steel

◇ Not available ex stock individually (upon request)

■ Price-listed items available ex stock

5.3. Electric switchable cam "on" (power-off for shuttle invisible)



5.4. Parts list electric switchable cam "on" (power-off for shuttle invisible)

Item	Sym.	Designation	Art. No.	Material
	■	Electric switchable cam "on"	57024	Various
10	◇	Housing	57005	Aluminum
20	◇	Tension ring	57019	Aluminum
30	◇	Guide rod	57006	Steel
40	◇	Magnetic plate	57009	Steel
50	◇	Holder	57426	Steel
60	◇	Cylinder	57101	Aluminum
70	◇	Linear clamping jaw \varnothing 5.8	41188N	Aluminum
80	◇	Ring	57191	NBR
90	◇	Buffer	57185	NBR
100	◇	Magnet STA 26x52	520182	Steel / Copper
110	◇	Cable connection M8	505828	Brass
120	◇	Cable	505827	Plastics
130	◇	Pressure spring	57171	Steel
140	◇	Plain bearing 6x8x8	520212	Plastics
150	◇	Sleeve	520291	Plastics
160	◇	Socket cap screw M 5x50	502517	Steel
170	◇	Socket cap screw M3x6	520043	Steel
180	◇	Ribbed washer M5x9x0.6	505254	Steel
190	◇	Ribbed washer M3x5.5x0.45	505385	Steel

◇ Not available ex stock individually (upon request)

■ Price-listed items available ex stock

6. General information

6.1. Environmental compatibility and disposal

Materials used:

- Aluminum
- Copper
- Steel
- Rubber (NBR)

Surface treatment:

- Aluminum anodization
- Brass and steel nickel-plating

Shaping processes:

- Aluminum extrusion
- Aluminum, steel machining
- Cutting plastics with water jet
- Cutting steel with laser

Emissions during operation:

- See EMC emissions

Disposal:

Electric switchable cams which cannot be used any more should be recycled not as complete units but rather after dismantling into individual parts according to type of material. The type of material for each part is shown in the spare parts lists. Material which cannot be recycled should be appropriately disposed of.