Installation and Operational Instructions for EAS®-NC-lastic Clutch Type 457._ 2 _.0 (B.4.8.4.GB)

Please read the Operational Instructions carefully and follow them accordingly!
Ignoring these Instructions may lead to malfunctions or to clutch failure, resulting in damage to other parts.

Manufacturer's Declaration

This product is intended for installation in a machine or system, based on the machine directive 98/37/EC.

It is forbidden to start use of the product until the machine or system into which it should be built is operating in accordance with the EC directives.

Safety Regulations

These Installation and Operational Instructions (I + O) are part of the clutch delivery.
Please keep them handy and near to the clutch at all times.

Danger!

This warning applies if:

- ❒ the EAS®-clutches are modified.
- ❒ the relevant standards for safety and / or installation conditions are ignored.

User-implemented Protective Measures

- ❒ Cover all moving parts to protect against seizure, dust or foreign body impact.
- ❒ The clutch may not be put into operation without a limit switch unless *mayr*® has been contacted and has agreed otherwise.

To prevent injury or damage, only professionals and specialists should work on the devices, following the relevant standards and directives. Please read the Installation and Operational Instructions carefully before installation and initial operation of the device.

These Safety Regulations are user hints only and may not be complete!

Warning:
Without a conformity inspection, this product is not suitable for use in areas where there is a high danger of explosion. This statement is based on directive 94/9 EC (ATEX-directive).

Safety and Guideline Signs

Danger!
Danger of injury to personnel and damage to machines.

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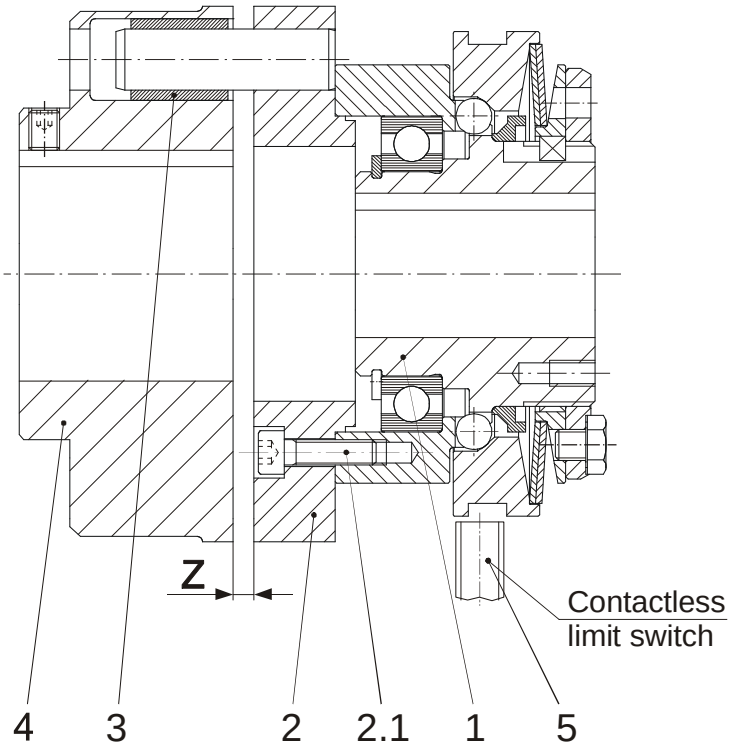

Fig. 1: Sizes 01 – 3 Type 457._ 2_.0

Parts List

(Only use mayr® original parts)

Item	Name
1	EAS®-NC clutch [1)]
2	Claw element
2.1	Fixing screw
3	Rubber buffer
4	Pocket element
5	Limit switch [2)]

1) has its own Installation and Operational Instructions B.4.8.2.GB

2) is not part of the standard delivery

Function

EAS®-NC-lastic clutches are frictionally-locking, torque-limiting overload clutches combined with a flexible coupling for the connection of two shafts.
Under compensation of longitudinal, transverse or angular misalignment, the EAS®-NC-lastic is capable of transmitting torques from the input to the output safely and reliably in normal operation, and of damping occurring vibrations or impacts.
On overload or on reaching the set limit torque, the clutch immediately separates input and output.
The *mayr*®-limit switch registers the overload and transmits a signal to stop the drive or other control functions.

Designs

1. EAS®-NC-lastic ratchetting clutch Type 457._20.0
On overload, this device ratchets and gives an electrical contact free (via limit switch) to switch off the drive. During ratchetting, the torque is much smaller than the set disengagement torque. Re-engagement takes place automatically.

2. EAS®-NC-lastic synchronous clutch Type 457._25.0
On overload, this devices gives an electrical contact free (via limit switch) to stop the drive, releases the drive mechanically and reconnects the drive elements after one turn (360°). Re-engagement takes place at the same point at which it disengaged.

Installation Example

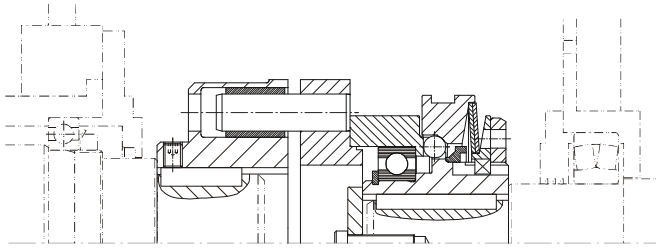

Fig. 2

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Limit Switch

On overload, the *mayr*®-limit switch registers clutch disengagement quickly and precisely and emits a signal to switch off the drive or other control functions.

Coupling Installation

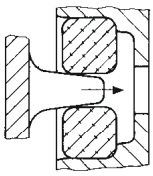
The flexible coupling is designed as a simple plug coupling.
The flexible coupling pocket element (4) and the EAS®-NC clutch (1) are pushed onto the shaft and fixed axially e.g. with a press cover or adjusting screw (see Fig. 2).
The coupling bores have a standard tolerance of H7 (Tolerance of keyways JS9).
We recommend a k6 tolerance for the shaft.

Danger!
If the EAS®-NC clutch part (1) is delivered pilot bored, the claw element (2) will only be partly assembled, meaning that the fixing screws are lightly tightened.
After finish-boring the EAS®-NC clutch part, (1) the fixing screws (2.1) must be tightened to the torque shown in Table 1 and secured using Loctite 243 (medium hard).

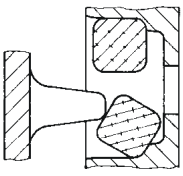
Assembly of the Coupling Halves

The rubber buffers (3) are pressed into the pocket element and greased lightly. The claw element (2) is designed so that there is no backlash between the claw and the rubber buffer (3), but rather a light pre-tension. This means that some axial force is needed to push the coupling halves together. The force needed can be greatly decreased by putting a thin layer of acid-free grease onto the claws of the claw element (2).

When joining the coupling halves, please make sure that the claws are **between** and **not on** the rubber buffer, or the rubber buffer may tilt (see Fig. 3) Also, please make sure that the distance dimension "Z" is observed (see Table 1 or Fig. 1) when joining the coupling halves, otherwise the permitted misalignment possibilities become very limited.



Correct



Incorrect

Fig. 2

Table 1

Size	01	1	2	3
Tightening torque for fixing screws (Item 2.1, Fig. 1) [Nm]	2.7	9.5	9.5	23
Distance dimension „Z" (Fig. 1) [mm]	4	4	4	4
Number of rubber buffers	12	12	12	12
Temperature resistance of rubber buffer	+90 ℃ / -30 ℃			

Permitted Shaft Misalignment

The misalignment possibilities on the flexible couplings, shown in Table 2, are maximum values. It is however important for a long lifetime and smooth running that the alignment is as exact as possible.

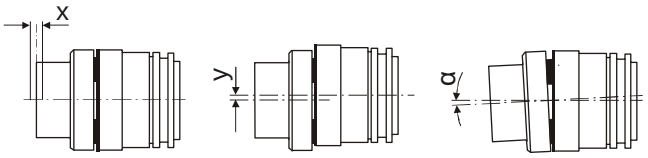


Fig. 3

Table 2

Size		0	1	2	3
X	**[mm]**	+/- 1.0	+/- 1.0	+/- 1.0	+/- 1.0
Y	**[mm]**	0.5	0.5	0.5	0,5
α	**[°]**	0.5	0.5	0.5	0.5

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Maintenance

The EAS®-NC clutch (1) has a grease filling and therefore requires no greasing for the rest of its service lifetime. The axial backlash on both clutch-supporting shafts should be inspected at regular intervals. Too much bearing backlash can misalign the clutch axially. This leads to changes in switching distances and therefore to changes in disconnection torque. Apart from this, the EAS®-NC clutch needs no further maintenance.
Special maintenance is necessary should the device be subject to very dirty, dusty or extreme ambient conditions. In this case, please contact the manufacturers.

Disposal

Electronic Components
(Limit switch):
Products which have not been dismantled can be disposed of under 160214 (Mixed Materials) or Components under Code No.160216; or the objects can be disposed of by a certified waste disposal firm.

All Steel Components:
Steel scrap (Code No. 160117)

Seals, O-rings, V-seals, elastomere, rubber buffers:
Plastics (Code No. 160119)

Malfunctions / Breakdowns

Malfunction	Possible Causes
Disturbed running; bearings overheat during running	1. Excessive axial pressure on the pressure flange 2. Clutch is incorrectly aligned
Clutch does not disengage on overload	1. Torque is set too high 2. Cup springs are layered wrongly 3. The axial pressure from the drive element is greater than the cup spring pre-tension
Clutch disengages too quickly	1. Torque is set too low 2. Large amount of wear on the ball or roller recesses
Clutch does not disengage on overload or disengages too late	1. Incorrect limit switch adjustment
Switching element (1.1) constantly performs axial movements when in operation	1. Torque on clutch set too low 2. (Difference between operating torque and overload torque is too small) 3. Torque peaks at low energy (in this case, please contact the manufacturers)

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