Installation and Operational Instructions for EAS®-HTL housed overload clutch, Sizes 4 and 5 Type 490._24.2X

(B.4.15.6.ATEX.EN)

Design according to
Drawing number: individually attributed
Article number: individually attributed

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

Contents:

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

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.

It is forbidden to start initial operation of the product until you have ensured that all applicable EU directives and directives for the machine or system, into which the product has been installed, have been fulfilled.
At the time these Installation and Operational Instructions go to print, the EAS®-clutches accord with the known technical specifications and are operationally safe at the time of delivery.

Danger

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

The EAS®-clutch is permitted for use in areas where there is a danger of explosion.
For application in Ex-areas, please observe the special safety-related guidelines and directives on pages 10 and 11. The product must be especially marked for this area.
The product will only be marked if it is ordered especially for an Ex-area.

User-implemented Protective Measures

- ❒ Cover all moving parts to protect against seizure, dust or foreign body impact.
- ❒ The clutches may not be put into operation without a limit switch (for Ex-areas) 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 prior to installation and initial operation of the device.

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

Safety and Guideline Signs

DANGER

Immediate and impending danger, which can lead to severe physical injuries or to death.

CAUTION

Danger of injury to personnel and damage to machines.

Please Observe!
Guidelines on important points.

Guidelines on explosion protection

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

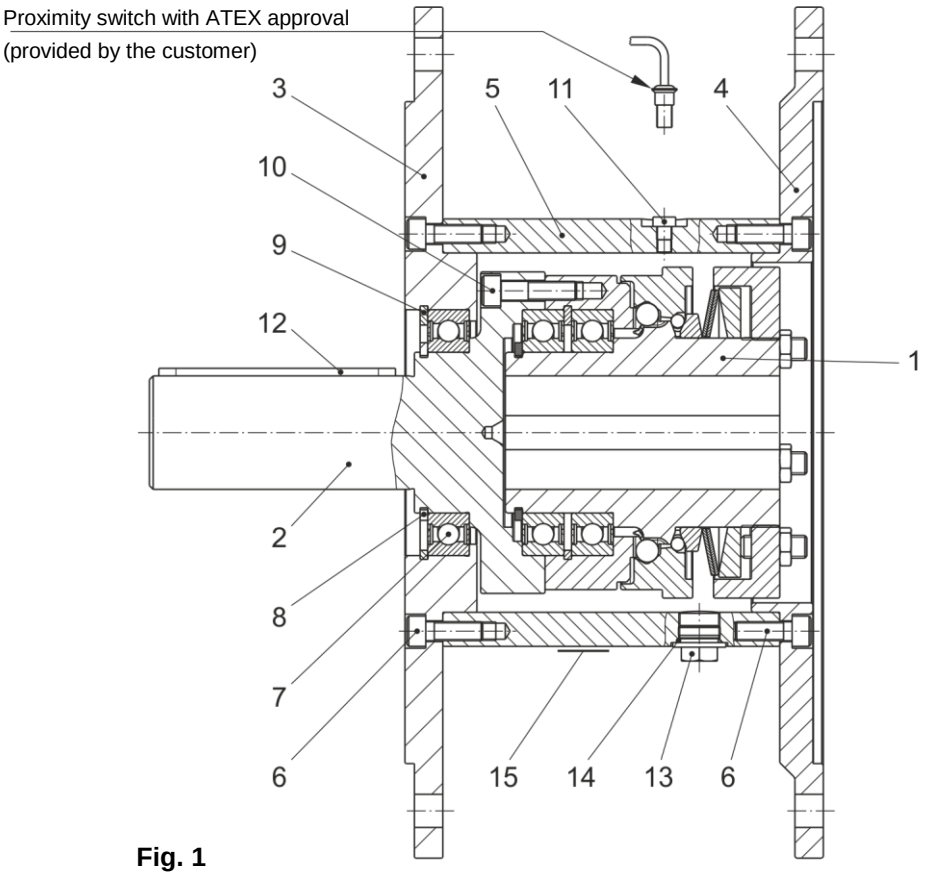


Fig. 1

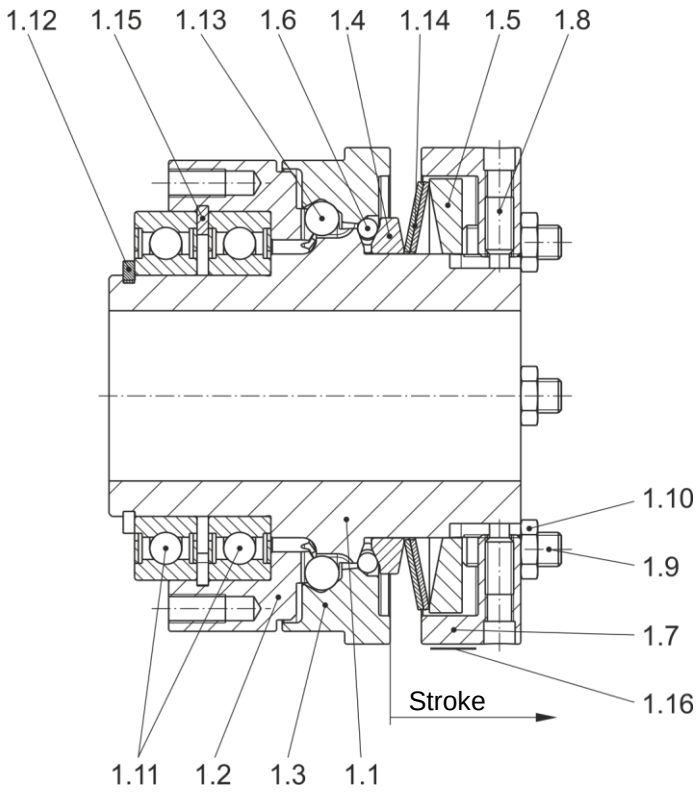


Fig. 2

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Parts List (Only use *mayr*® original parts)

Item	Name
1	EAS®-Compact® overload clutch
1.1	Hub
1.2	Pressure flange
1.3	Thrust washer
1.4	Thrust ring FRSH
1.5	Thrust ring
1.6	Steel ball DIN 5401
1.7	Adjusting nut
1.8	Set screw
1.9	Set screw DIN EN ISO 4026
1.10	Hexagon nut DIN EN ISO 4035
1.11	Deep groove ball bearing DIN 625
1.12	Locking ring DIN 471
1.13	Steel ball DIN 5401
1.14	Cup spring
1.15	Locking ring DIN 472
1.16	Adjustment table
2	Output shaft
3	Output-side flange
4	Input-side flange
5	Distance ring
6	Cap screw DIN EN ISO 4762
7	Deep groove ball bearing DIN 625
8	Locking ring DIN 471
9	Locking ring DIN 472
10	Cap screw DIN EN ISO 4762
11	Thread plug
12	Key DIN 6885/1
13	Screw plug DIN 7604 (for re-engagement bore)
14	O-ring
15	Type tag

Technical Data

Table 1

Sizes	Limit torques for overload M_G				Max. speed [rpm]
	Type 490.524.2 [Nm]	Type 490.624.2 [Nm]	Type 490.724.2 [Nm]	Type 490.824.2 [Nm]	
4	120 – 300	240 – 600	480 – 1200	600 – 1500	3000
5	240 – 600	480 – 1200	960 – 2400	1200 – 3000	3000

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Technical Data

Table 2

Clutch size	Motor size	Tightening torque Item 6 [Nm]	Tightening torque Item 10 [Nm]	Thrust washer stroke (Fig. 2; Item 1.3) on overload [mm]	Bore from – to [mm]
4	200	56	75	5.5	40 – 65
	225	56	75	5.5	40 – 65
	250	56	75	5.5	40 – 65
5	280	122	122	6.5	45 – 80
	315	310	122	6.5	45 – 80

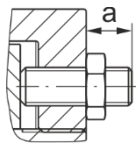
Table 3

Clutch size	Motor size	Dimension h [mm]	Dimension h_2 [mm]	Maximum shaft length h_1 [mm]	Weight [kg]
4	200	110	110	166	78.7
	225	140	140	169	88.4
	250	140	140	168	108.4
5	280	140	140	207	145.7
	315	170	165	204	235.9

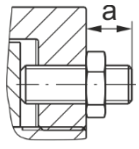
Table 4 (Screws for customer-side attachment onto the flange “Y” and flange “Z” with respective tightening torque)

Clutch size	Motor size	Screws with a strength class of 8.8 (number of pieces per flange)	Tightening torque
4	200	4 x M16	183 Nm
	225	8 x M16	183 Nm
	250	8 x M16	183 Nm
5	280	8 x M16	183 Nm
	315	8 x M20	360 Nm

Adjustment Tables (Item 1.16)



Größe / Size 4 FRSH	Tellerfeder Cup springs	M-Bereich Torque range	"a" [mm] 100 %	90 %	80 %	70 %	60 %	50 %	40 %
49-.5-4._ 49-.6-4._ 49-.7-4._ 49-.8-4._	1x1 / 1x2 // 1x4 //// 1x5 /////	120-300 Nm 240-600 Nm 480-1200 Nm 600-1500 Nm	a + 1.0	a + 0.6	a + 0.3	a	a – 0.2	a – 0.5	a – 0.8



Größe / Size 5 FRSH	Tellerfeder Cup springs	M-Bereich Torque range	"a" [mm] 100 %	90 %	80 %	70 %	60 %	50 %	40 %
49-.5-4.2 49-.6-4.2 49-.7-4.2 49-.8-4.2	1x1 / 1x2 // 1x4 //// 1x5 /////	240-600 Nm 480-1200 Nm 960-2400 Nm 1200-3000 Nm	a + 1.5	a + 0.9	a + 0.4	a	a – 0.4	a – 0.8	a – 1.2

Fig. 3

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Installation and Operational Instructions for EAS®-HTL housed overload clutch, Sizes 4 and 5 Type 490._24.2X

(B.4.15.6.ATEX.EN)

Design

The EAS®-HTL overload clutch is designed as a mechanically disengaging overload clutch, based on the ball detent principle. It is designed as a housed clutch (Protection IP53) for attachment to an IEC B5 flange according to DIN EN 50347.
The connection dimensions are designed according to the motor sizes 200, 225, 250, 280 and 315.
EAS®-HTL clutches as a complete unit provide overload protection between the motor and the gearbox.

State of Delivery

The clutch is completely manufacturer-assembled and set to the torque stipulated in the order.
Unless the customer requests a particular torque setting when ordering, the clutch will be pre-set to approx. 70 % of the maximum torque.
The adjusting nut (1.7) is marked with dimension “a” (70 % of the maximum torque).
Please check state of delivery!

Function

The clutch protects the drive line from excessively high, unpermitted torque impacts which can occur due to unintentional blockages. After overload has taken place, the transmitting mechanism is completely disconnected. Only the bearing friction continues to have an effect.
This means that no re-engagement impacts or metallic sliding movements occur on the clutch torque transmission geometries when using this clutch variant.
When in operation, the set torque is transmitted backlash-free onto the output from the motor shaft via the EAS®-Compact® overload clutch (pressure flange (1.2)).
If the set limit torque is exceeded (overload), the clutch disengages and remains disengaged.
The input and the output are separated residual torque-free.
A signal is emitted via a mounted **limit switch with ATEX certification** (provided by the customer), which can be used to shut down the entire system or machine. Optionally, the limit switch can also be procured from *mayr*® with the clutch.
After-acting masses can run free.

CAUTION

After overload occurrence, the clutch has no load-holding function.

General Installation Guidelines

- ❒ **Important!**
  EAS®-HTL clutches do not compensate for shaft misalignments.
- ❒ Do not introduce radial / axial forces onto the clutch bearing due to component distortion.
- ❒ Minimum screw quality 8.8 for customer-side attachment.
- ❒ Please observe the max. permitted bearing loads acc. Table 5 on page 11.

The determination of the max. permitted bearing load is based on a nominal lifetime estimation of 32000 h according to the usual specifications provided by the bearing manufacturers.
Possible bearing distortion must be ruled out via temperature measurement on the housing in the deep groove ball bearing (7) area during initial operation: **ΔT ≤ 40 °C**
The steady-state temperature must be evaluated.

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Installation Preparations (Customer-side)

- ❑ Bore and shaft surface quality: Ra = 1.6 µm acc. DIN 4287.
- ❑ Shaft material: Yield point at least 400 N/mm², e. g. St 60, St 70, C 45, C 60.
- ❑ Bore tolerance: F7
- ❑ Shaft tolerance: k6.
- ❑ Shape and position tolerances (flange geometry): Manufactured for clutch transmission part acc. Fig. 4.

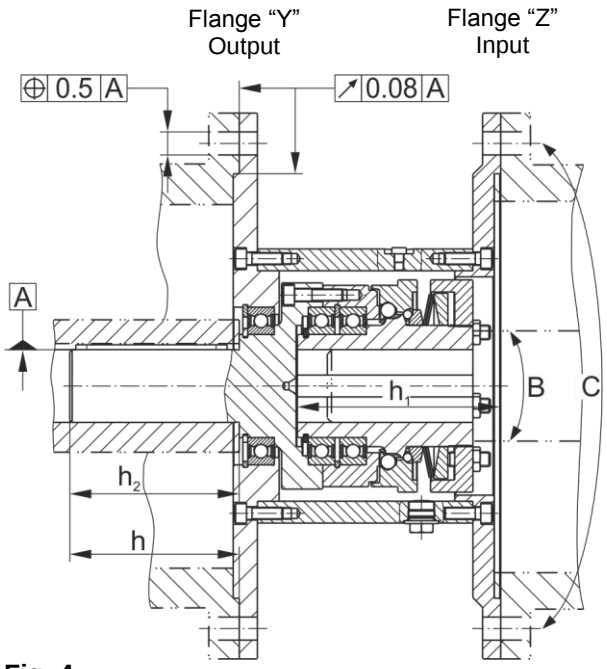


Fig. 4

Installation (Figs. 1, 2 and 4)

- ❒ Join the manufacturer-assembled and adjusted clutch on the output side, turn it to the correct position (flange bores must align with the fixing threads) and bolt it together with the mounting part (flange "Y"). Please observe the attachment specifications indicated in Table 4.

Please observe clutch dimensions h and h_2 (see Table 3 and Fig. 4).

- ❒ Insert flange "Z" with the shaft into the clutch hub bore (Item 1.1) or in the flange inner centring (Item 4), turn it to the correct position (flange bores must align with the fixing holes) and bolt it together with the mounting part (flange "Z"). Please observe the attachment specifications indicated in Table 4.

Please observe the maximum shaft length h_1 (see Table 3 and Fig. 4).

Re-engagement (Fig. 5)

Please observe the information on the dangers of re-engagement in areas where there is a danger of explosion on page 10.

Re-engagement must only take place when the device is not running.

There are two bores (180° offset to one another) for manual clutch re-engagement. They are locked with screw plugs (13). In order to re-engage the clutch, at least one of the two screw plugs (13), including its O-ring (14), must be loosened and removed. EAS®-Compact® overload clutch re-engagement is carried out by applying axial pressure to the thrust washer (1.3) in the direction of the output (flange Y) using a suitable lever tool (Fig. 5). It may be necessary to turn slightly between the pressure flange (1.2) and the thrust washer (1.3).

Please make sure that the bore threads (for screw plugs Item 13) in the distance ring (5) are not damaged by the lever tool.

For high torque ranges (Types 490.7_ _._ and 490.8_ _._), engagement using a lever tool is no longer easily possible. Alternatively, re-engagement can take place by evenly screwing three screws M8 (not included in the standard scope of delivery) into the adjusting nut (Item 1.7 / Fig. 5). On this variant, it may be necessary to turn slightly between the pressure flange (1.2) and the thrust washer (1.3).

CAUTION

After re-engagement has taken place, the three screws must be removed immediately, as they could stop the clutch functioning (blockage).

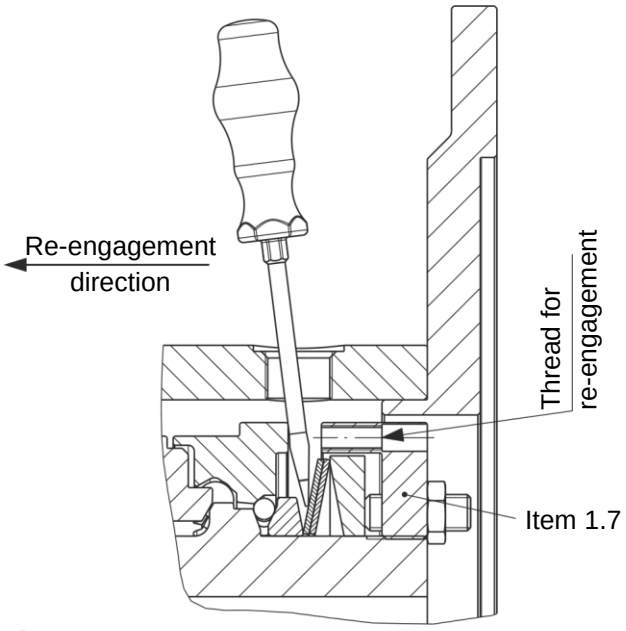


Fig. 5

After re-engagement has been completed successfully, the access bore must be re-closed using the screw plug (13) and the O-ring (14) placed under it.

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Torque Adjustment (Figs. 6 and 7)

The torque is set manufacturer-side according to the customer's request.
If no particular torque adjustment is requested customer-side, the clutch will always be **pre-set** to approx. 70 % of the maximum torque.The adjusting nut (1.7) is marked with dimension “a” (70 % of the maximum torque).
Adjustment is carried out via dimension “a” by turning the set screws (Item 1.9, Fig. 2 and Fig. 6).
The adjusting nut (1.7) remains turned in flush position with the hub (1.1).
The installed cup springs (1.14) are operated in the negative range of the characteristic curve (see Fig. 7); this means that a stronger pre-tensioning of the cup spring results in a decrease of the spring force.

Turning the set screws (1.9) clockwise causes a reduction in torque (Fig. 7, dimension "a -" acc. Adjustment Table (Item 1.16) and Fig. 3 / page 5).
Turning it anti-clockwise causes an increase in torque (Fig. 7, dimension "a +" acc. Adjustment Table (Item 1.16) and Fig. 3 / page 5).
You should be facing the adjusting nut (1.7) as shown in Fig. 6.

Changing the Torque (For this, the clutch must be removed from the housing.)

The torque is changed exclusively via the set screws (1.9) and not via the adjusting nut (1.7).

a) Loosen all hexagon nuts (6 pieces, Item 1.10).
b) Find dimension “a” in the Adjustment Table (Item 1.16, Fig. 3). (The Adjustment Table (1.16) is glued onto the outer diameter of the adjusting nut (1.7), see Fig. 6).
c) Adjust all set screws (6 pieces, Item 1.9) evenly to the required dimension “a” using a hexagon socket wrench, wrench opening 6.
d) Counter (secure) the set screws (6 pieces, Item 1.9) again with hexagon nuts (1.10).

Adjusting the adjusting nut (1.7) or distorting the cup spring (1.14) outside of the cup spring characteristic curve (see Fig. 7) stops the clutch functioning.
The inspection dimension “a” (markings on adjusting nut) can show deviations due to construction tolerances or to clutch wear. After de-installing the clutch (e.g. due to cup spring replacement or changes to the cup spring layering), the clutch must be re-adjusted and calibrated using dimension “a” (acc. markings on the adjusting nut and the adjustment table).

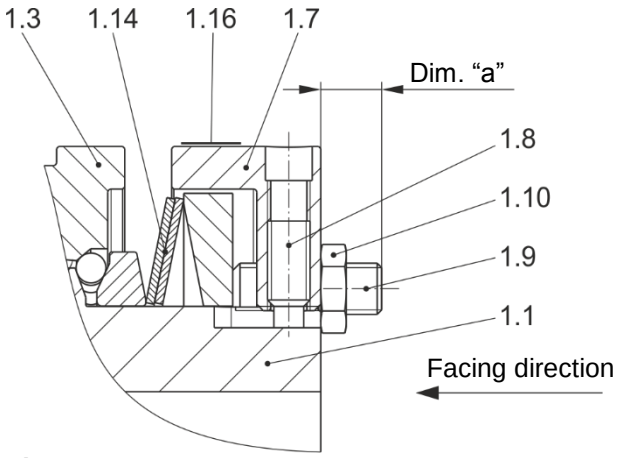


Fig. 6

The adjusting nut (Item 1.7) is marked with dimension “a” (70 % of the maximum torque). The adjusting nut (1.7) is turned in flush position with the hub (1).

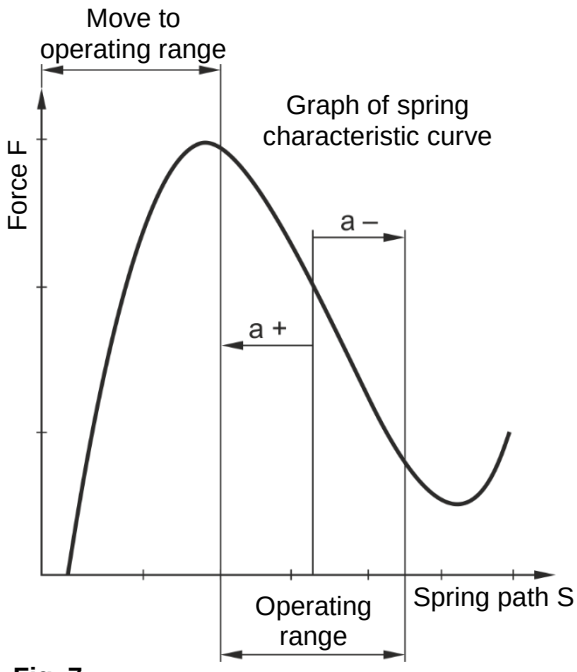


Fig. 7

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Limit Switch

In order to limit run-out times after overload has taken place, a limit switch must be mounted onto the overload clutch.
For this, please remove the thread plug (11) and attach the limit switch to the thread M8 x 1.
Limit switches with appropriate explosion protection certification are suitable.
Grinding, mechanically actuated limit switches are only permitted for application in areas where there is a danger of explosion if it can be proved that there is no danger of ignition caused by the grinding movement of the mechanical limit switch on the clutch.
The contactless limit switch is to be mounted onto the switching edge of the clutch (Fig. 8) so that no signal changes are caused during normal operation on the limit switch by the usual clutch run-out errors.
In case of overload, the thrust washer (1.3) carries out a stroke in the direction of the adjusting nut (1.7) (see Figs. 2 and 8), which is used to change the signal on the limit switch. The signal change should take place at the latest after an axial thrust washer stroke of 0.5 mm. At the same time, please maintain a radial minimum distance of 0.5 mm in order to prevent rubbing of the contactless limit switch, meaning a danger of ignition.

Limit Switch Installation

Adjust the switch distance for the contactless Ex-limit switch acc. Fig. 8.

Contactless limit switch (mounting example)

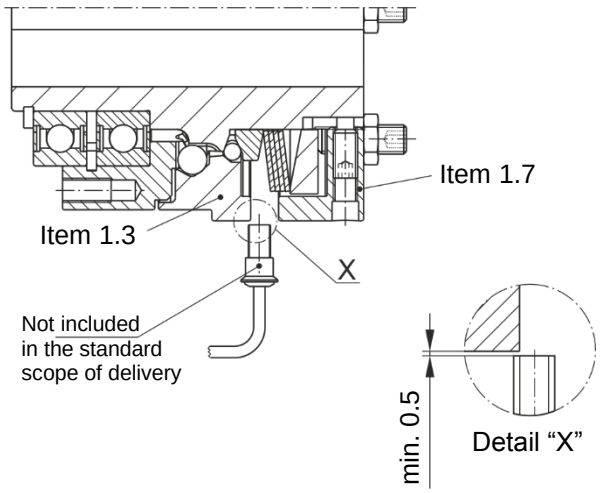


Fig. 8

The correct proximity switch adjustment must be checked and guaranteed by manually disengaging the overload clutch.
In order to secure limit switch function, please keep it free from oil, grease and other dirt particles.

Maintenance

The EAS®-HTL clutches are mainly maintenance-free. Special maintenance work may be necessary, however, if the device is subject to large amounts of dirt or dust or is operating in extreme ambient conditions.
Please see Maintenance and Inspection Intervals for Clutches in Areas Where There is a Danger of Explosion.

Disposal

Electronic components
(Limit switch):
Products which have not been disassembled can be disposed of under Code No. 160214 (mixed materials) or components under Code No. 160216, or can be disposed of by a certified disposal firm.

All steel components:
Steel scrap (Code No. 160117)

All aluminium components:
Non-ferrous metals (Code No. 160118)

Seals, O-rings, V-seals, elastomers:
Plastic (Code No. 160119)

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Guidelines and Directives for Operation in Ex Areas Where There is a Danger of Explosion

Classification of Ex Areas Where There is a Danger of Explosion and Permitted Types

Torque transmission via a key connection acc. DIN 6885/1:

Dimensioning according to the requirements shaft diameter, transmittable torque and operating conditions must be carried out. For this, the corresponding user data must be known or the customer must carry out the dimensioning according to the valid calculation basis DIN 6892.
For the calculation, a hub (1.1) quality of Re = 400 N/mm^2 should be used.
For the dimensioning of the key connections, the permitted tensions common in machine construction must be considered.
During initial operation, check whether the key is inserted correctly and whether the clutch is secured axially.
According to the described clutch combinations and if the measures and guidelines described in the Installation and Operational Instructions are observed, the EAS®-Compact® overload clutch (1) is suitable for use in areas where there is a danger of explosion according to the category:

CE Ex II 2G c T5 –15°C≤Ta≤+80°C D110°C

Conditions to Observe in Ex Areas Where There is a Danger of Explosion

For malfunction-free clutch operation, it is necessary to keep to the clutch characteristic values (Technical Data) indicated on page 5 and in the catalogue.

Clutch dimensioning:

A suitable adjustment factor (service factor) is required so that the clutch can protect the drive line from overload without excessive wear over a long lifetime. The service factor is the relationship between the maximum load torque on the system in normal operation and the set clutch torque. This factor must be at least 1.5 and is selected depending on the complex of loads acting on the system. Adjustment factors of up to 3 may be necessary for very severe impacts and load peaks or alternating loads.
Regular functional inspections on the clutch (see Maintenance Intervals) confirm the functioning, unworn condition of the clutch. Wear on the clutch can lead to changes in the switch-off torque, or even to clutch blockage.
On overload, the clutch run-out times must be limited via a limit switch capable of recognising a clutch overload occurrence (usually with an inductive proximity switch for Ex-areas). Max. permitted run-out time: 3 minutes, with reference to an average speed of 1750 rpm. After overload has been registered, the sensor must emit a signal to stop the drive line. The blockage or malfunction must be removed.

CAUTION

Operation outside of the indicated characteristic data is not permitted. There is a danger of clutch destruction.

Torque Adjustment:

The clutch must only be adjusted within the specified torque range. The torque range is defined through the adjustment dimension “a” from 40 % to 100 %.
If the clutch is set outside of the permitted adjustment range, it is possible that the clutch will not actuate in case of overload. This means that the overload protection will be blocked. This does not mean that the clutch can directly cause ignition. However, if the system torque increases to an unpermitted value, component breakage can be expected.
The user must ensure via simulated disengagement of the clutch before initial operation that the clutch actuates at the required torque value after torque adjustment or torque changes have taken place.

CAUTION

Danger of ignition!

Re-engagement

Attention: Impacts using metal tools made of steel or aluminium are not to be used for re-engagement, as there is a danger of impact sparks. Tools made of plastic or bronze are suitable. Please observe the danger of electrostatic charging when using plastic tools. In general, please observe the Guidelines in EN 1127-1. When using an automatic re-engagement mechanism, a locking device must be provided which guarantees free stroke on the thrust washer (1.3) in case of overload, even if re-engagement is actuated. Interfering contours which prevent the thrust washer (1.3) from disengaging or which are mounted especially for this purpose are not permitted. Free rotation of the clutch and free movement of the clutch components must be ensured before initial operation.

CAUTION

Danger of ignition!

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Guidelines and Directives for Operation in Ex Areas Where There is a Danger of Explosion

Initial Operation

The phosphate coating serves as surface protection for the clutch. The clutch must only be used in areas protected from the weather. Additional corrosion protection is required for use in the open air or if the device is subject to weather conditions.
Severely corroded clutch components mean a danger of ignition.
The functional components of the clutch must not be stuck together due to paint coatings or other sticky media, and electrostatic charges must not be caused (see EN 13463-1 7.4).
A functional inspection must be carried out before initial operation.
The penetration of dirt or dust influences the grease condition of the clutch and therefore its lifetime. Organic dust binds the grease filling and the lubrication qualities of the grease are lost.

Operation in dust layers or in piles of dust is not permitted.

Only minor radial and axial forces or transverse force torques are permitted to be transferred onto the clutch bearing (Table 5).

Modifications of the clutch are not permitted. This also refers to changes to the cup spring layering.

Maintenance and Inspection Intervals for Clutches in Ex Areas Where There is a Danger of Explosion

The maintenance intervals refer to the set clutch torque inspections, shaft-hub connection inspections and screw tightening torque inspections. Please keep to the tightening torques specified on page 5. Clutch re-greasing must only be carried out by specially trained personnel and is only necessary in extreme operating conditions such as heavy dust, dirt or very high operating speeds. In these cases, the ball transmission geometries must be re-greased.

The following maintenance and inspection intervals are to be maintained:

1.) Visual inspections, installation parameter inspection (tightening torques), clutch running behaviour, clutch release, set torque, possible bearing distortions (temperature measurement on the housing in the deep groove ball bearing (7) area
⇒ ΔT ≤ 40 °C)
before initial operation.

2.) Visual inspection, tightening torque inspection, clutch release inspection, torque inspection and, if necessary, re-greasing
after 2000 hours, after 100 overload occurrences or at the latest every 6 months.

CAUTION

Should any irregularities occur, the system must be stopped independently of imminent maintenance and inspection intervals, and the cause of the malfunction must be determined using the Malfunctions / Breakdowns Table.

Table 5: Max. Permitted Bearing Loads

Clutch size	Motor size	Axial forces [N]	Radial forces [N]	Transverse force torque B [2] (Fig. 4) referring to the clutch flange [Nm]	Transverse force torque C [3] (Fig. 4) referring to the housing [Nm]
4	**200**	5000	7500	50	2000
	225	5000	7500	50	2500
	250	5000	7500	50	3000
5	**280**	7700	11500	70	5000
	315	7700	11500	70	8000

[2] Torques, which put strain on the deep groove ball bearing due to the non-centric axial forces having an effect on the pressure flange.

[2] Value B indicates torques which put strain on the deep groove ball bearing due to the non-centric axial forces having an effect on the pressure flange.

[3] Value C refers to purely static loads. In case of oscillation or vibration occurrence, please use a safety factor of 2.5.

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Malfunctions / Breakdowns

Error	Possible Causes	Danger Guidelines for Ex Areas	Solutions
Premature clutch release	Incorrect torque adjustment Adjusting nut has changed position Worn clutch	None	1) Set the system out of operation 2) Check the torque adjustment 3) Secure the adjusting nut 4) If the cause of malfunction cannot be found, the clutch must be inspected at the place of manufacture
Clutch does not release on overload	Incorrect torque adjustment Adjusting nut has changed position Disengagement mechanism blocked by a foreign body Worn clutch	Danger of component destruction and related danger of ignition	1) Set the system out of operation 2) Check whether foreign bodies influence the disengagement mechanism function 3) Check the torque adjustment 4) Secure the adjusting nut 5) If the cause of malfunction cannot be found, the clutch must be inspected at the place of manufacture
Running noises on overload occurrence as clutch slows down	Bearing on output flange is worn or has been previously damaged Housing bearing is worn or has been previously damaged Worn disengagement mechanism	Bearing heat-up to bearing destruction Danger of ignition	1) Set the system out of operation 2) Inspect the clutch at the place of manufacture
Running noises in normal operation	Insufficient clutch securement Loosened screws Loosened adjusting nut	Danger of ignition	1) Set the system out of operation 2) Check the clutch securement 3) Check the screw tightening torques 4) Check the torque adjustment and that the adjusting nut sits securely

mayr ® will take no responsibility or guarantee for replacement parts and accessories which have not been delivered by *mayr* ®, or for damage resulting from the use of these products.

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com

Declaration of Conformity

According to the EC directive for the approximation of the laws and regulations for member states concerning devices and protective systems intended for use in areas where there is a danger of explosion (ATEX) 94/9/EC, we:

Chr. Mayr GmbH + Co. KG
Eichenstraße 1
D-87665 Mauerstetten

hereby declare that the product described in these Installation and Operational Instructions

EAS®-HTL overload clutch
Type 490._24.0X
Sizes 4 and 5

has been developed, constructed and produced by us in accordance with the EC directive named above.

Applied Standards, Regulations and Inspections (ASRI)

1 DIN EN 1127-1: 2011-10
Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology

2 DIN EN 13463-1: 2009-07
Non-electrical equipment intended for use in potentially explosive atmospheres - Part 1: Basic method and requirements

3 DIN EN 13463-5: 2011-10
Non-electrical equipment intended for use in potentially explosive atmospheres - Part 5: Protection by constructional safety “c”

Mauerstetten, November 25, 2015
Place / Date

Graduate Engineer (FH, University of Applied Science) Günther Klingler
(Managing Director ppa.)

Chr. Mayr GmbH + Co. KG
Eichenstraße 1, D-87665 Mauerstetten, Germany
Tel.: +49 8341 804-0, Fax: +49 8341 804-421
www.mayr.com, E-Mail: info@mayr.com