

# Assembly and operating manual for Huber clutches



**This assembly and operating manual is a significant component of the Huber clutch. Keep the manual complete and always readily available close to the clutch. All personnel working on assembling, operating, servicing and maintaining equipment should have read and understood the manual. Follow all instructions and the corresponding legal safety protection measures about technical working media (equipment safety law)!**

**Integration of the clutch may only be performed by authorized personnel and drive elements may only be used exclusively for their intended use and used within the specified technical operating limitations.**

## 1. Function

The Huber clutch is a torsionally stiff, flexible clutch that has been constructively designed to compensate for unavoidable misalignments and offset during operation. It compensates the angled, radial and axial clutch offset within specified ranges. The following is valid: The smaller the misalignment during installation, the greater the compensation capacity, lifetime and smoothness of running during operation.

## 2. Transport

Huber clutches are delivered partially or fully mounted. After incoming goods inspection, the clutches should be stored in the original packaging and handed over to assembly from there. Remove transportation safety device at the assembly location only.



**Clutches should always be transported in a horizontal axis position so that no external influencing forces can reach the clutch.**

**The drawing must be provided to the user during installation.**

### 3. Mode of operation and set up

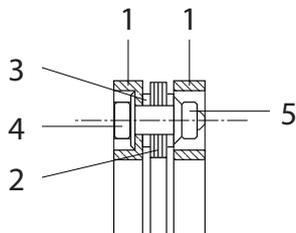


Figure 1

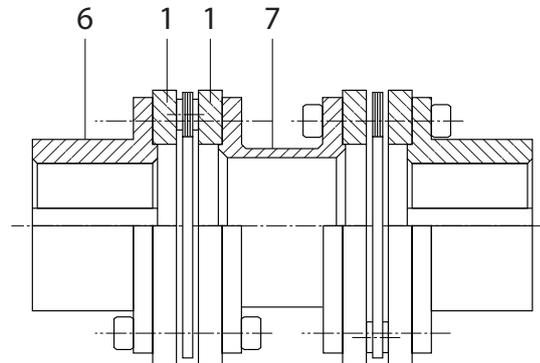


Figure 2

- 1 Flange
- 2 Disk pack
- 3 Plain washer
- 4 Screw
- 5 Lock nut
- 6 Hub
- 7 Center piece

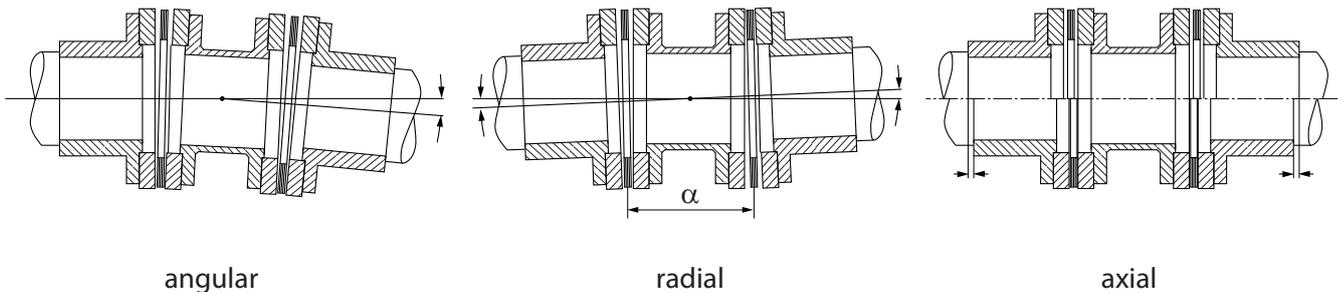
#### To fig. 2:

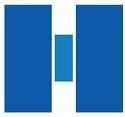
For this version the disk packs are directly mounted to the hub, i.e. screwed to the center section. In general, the disk pack is delivered already screwed to the center section so that the user only has to fasten the hub with the provided screws and washers (used as separators from the disk packs)



**In this design the specified axial and angle deviations can be used simultaneously.**

Schematic of the axis displacements:

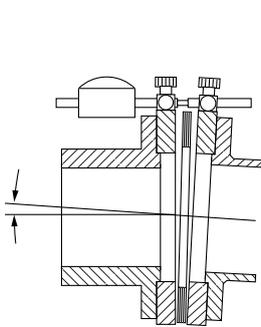




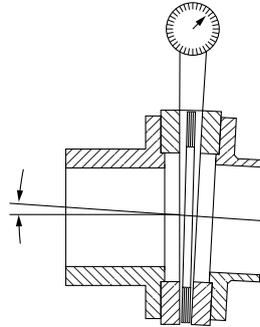
## 4. Assembly

- Follow the assembly dimensions and position and understand the drawing.
- The clutch ends and hubs must be clean, deburred and free of dirt and corrosion particles. If a feather key connection has been provided, then a feather key must be inserted. Check connection dimensions and tolerances!
- If the user produces the final bores or other connection dimensions himself then the tolerances must be performed to our specifications (also for the concentricity and perpendicularity). In case of confusion or any questions please contact us.
- The delivery condition of the clutch, in particular the disk pack is not to be changed and only use screws/nuts and washers according to the drawing. Only insert parts from our scope of delivery and only use for the intended operating purpose.
- Flange units may not be taken apart (Figure 1).
- The hubs must be mounted and secured according to the hub/clutch connection. For special connection adaptors such as flanges, taper bores, oil pressure unions, etc, the length dimension must be maintained to that in the drawing.
- Finally, after hub mounting, the drive and output side machine parts must be aligned so that the center section of the clutch can be inserted. The assembly dimensions, position and permitted displacement must also comply with our drawing.
- The center section of the clutch can only be mounted with the flange units.
- All connections such as screws and nuts are tightened to the specified torque according to the drawing.
- The alignment of the clutch is carried out after assembly. The following is valid: The smaller the misalignment, the greater the lifetime, smoothness of running, and compensation capacity during operation. Initially check the axial displacement and equalize. Take the specified dimensions from the drawing. Deviations in the operating or ambient temperature from a room temperature of 20°C can result in a larger axial displacement than desired. During installation it is required to set a specific axial displacement in order to achieve an optimum axial displacement at operating temperature. This improves the lifetime, smoothness of running and displacement compensation. Such cases should be clarified before the award of a contract. Subsequent checking and balancing of the angle and parallel displacements are performed. Manual and optical options are offered here. The drawing contains the maximum permitted deviations.

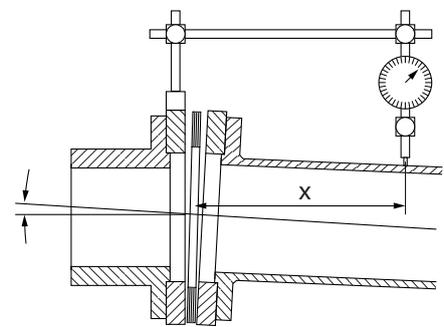
Displacement option and values for adjustment:



**Figure 4**



**Figure 5**



**Figure 6**

**To fig. 4:**

Place the dial gauge and straight edge. The measurement point is close to the exterior diameter of the clutch. Turn the clutch 360°. The deflection of the dial gauge should not exceed 0.015 mm per 10 mm exterior diameter.

Example: External diameter 150mm:  $15 \times 0.015 \text{ mm} = 0.225$  maximum dial gauge deflection.

Drive and output sides are to be adjusted to each other until the maximum value is exceeded or falls short of it.

**To fig. 5:**

Dial gauge with button: Description as in Figure 4 however replaces the gauging diameter of the exterior diameter

**To fig. 6:**

Dial gauge with adapter: Description as in Figure 4, however the maximum permitted deflection of 0.015 mm per 10 mm length „x“.

Example:  $x = 300 \rightarrow 30 \times 0.015 \text{ mm} = 0.45 \text{ mm}$  maximum dial gauge deflection

If the adjustment process is complete then the drive and output side machine parts are to be fixed and fastened so that the position of the clutch can no longer be changed.

Recommendation: Check the clutch again after fastening according to Figures 4 to 6.

Generally valid: After completion of adjustment in the assembled condition, the disk pack should form the highest possible twist-free, homogeneous package, if a specific axial displacement has not already been given.

## 5. Commissioning



**Rotating clutches are hazardous locations. The operator must ensure appropriate safety measures. Do not reach into the working area of the clutch if it is still rotating. Secure the machine against unintended switch on during assembly work.**

The system with the clutch will undergo a test run according to device safety laws. After a one to two hour test run under normal working conditions the screws and nut tensioning should be checked and tightened if required.

The clutch is to be observed during the test run. Irregularities, in particular with smoothness of running, signify insufficient or incorrect adjustment. It can indicate subsequent changes e.g., a „settling“ of the drive or output. Immediately stop the system to perform a check of the alignment of the assembly dimensions and assembly position (see section 4 Assembly) and correct accordingly.

## 6. Running operation

First inspection of the clutch after approx. 500 operating hours. The following points should be clarified:

- Torsional moment of the screws and nuts still correct?
- Is the alignment still correct? For this, check that the displacement values are not used to their maximums at the same time.
- Is the disk pack still level in plane and twist free and homogeneous package?

Perform required correction according to the manual in Section 4 Assembly.

After this first inspection the clutch undergoes the normal inspection intervals of the system.

Perform the inspection as described above. We presume the following inspection and service intervals:

- Once annually for single shift operation
- Twice annually for double shift operation
- Three times annually for triple shift operation



## 7. Maintenance

The most important functional part of the clutch is the flange unit, e.g the disk pack.

Deformations of the disk pack which show up during a clutch inspection, such as disk pack breakage or corrosion damage, signify overloading or clutch displacement outside of the permitted values. The complete flange unit must be exchanged. Before exchanging, remove the source of overload.

For this kind of damage please also check other components of the clutch critically. In case of confusion or any questions please contact us.

To remove errors more quickly, an inventory of flange units can be offered to the system operator.

## 8. Declaration of manufacturer

Clutches are not machines in the sense of the Machine Directive (2006/42/EG Appendix IIB) but rather components to be integrated into machines. Commissioning is prohibited until, by or after integration into the end product, the requirements of the Machine Directive are fulfilled.