N-EUPEX®

Flexible Couplings

Installation and Maintenance Instructions

N-EUPEX Flexible Couplings Installation

Installation:

Remove all N-EUPEX components from their packaging. Loosely assemble the coupling on a convenient surface. Check to confirm that all mating surfaces and parts are compatible (i.e. bores are correct and on the proper hub; there is proper clearance for the assembly; the keystock matches the keyways; all the coupling parts, flexible elements, etc. are at hand; the proper assembly tools are available, etc.)

Step 1:

Inspect all the coupling components and remove any protective coatings or lubricants from the bores, mating surfaces, fasteners, etc.

Caution: Before cleaning the coupling parts with solvents, remove the flexible elements.

Step 2:

Remove any existing burrs, etc. from the shafts and/or mating surfaces.

Step 3:

Use only recommended industry standards, keystock and tools to mount the coupling hubs onto the shafts. Caution: The shaft ends must not protrude beyond (through) the inside of the coupling hub.

When installing an N-EUPEX style A hub, remember to install the pin ring (part 3) over the shaft first and insure the bolt-in hub (part 2) is oriented properly. Remove the flexible elements before the part is heated.

If the coupling parts are heated, do not exceed 300°F.

Step 4:

Secure the hub axially using a setscrew or an end plate with shaft shoulder. When using a setscrew, it should be tightened with a hexagon socket head wrench (without using extensions). When an end plate is used, consult with Flender regarding the recess in the coupling parts.

Step 5:

After the hubs have been mounted and have cooled, replace the flexible elements. NOTE: Make sure the flexible elements are all the same size and have the same markings.

Step 6:

Position the shafts with coupling hubs into the connected position. Check the S_1 dimension. When using type A, ADS, D and P couplings, slide the pin ring (part 3) into position and connect the two parts (using the screws provided) to the prescribed torque.

Step 7:

Align the shafts to keep radial and angular misalignment as small as possible. This will increase the service life of the coupling.

Step 8:

Check radial alignment by placing a ruler across the top of the two coupling halves. Perform the appropriate adjustments to make the ruler level and in full contact with both coupling halves.

Once aligned, check the amount of radial alignment offset. The amount of offset must not exceed the figure given in the maximum misalignment chart (table 14.1).

Step 9:

Check the angular alignment with a feeler gauge or dial gauge. Measure the S_1 dimension at various intervals around the periphery of the coupling. Determine the maximum and minimum dimensions without rotating the coupling. The difference between the maximum and the minimum must not exceed the figure given under in the maximum misalignment chart (table 14.1). Make the appropriate adjustments as these measurements are made.

Step 10:

Add the amount of radial misalignment (Step 8) and angular misalignment (Step 9) of your coupling. The total must not exceed the allowable maximum misalignment (table 14.1).

Table 14.1

Maximum Misalignment (inches)

Size	RPM				Size	RPM			
	900	1200	1800	3500		900	1200	1800	3500
58	0.005			0.005	**280**	0.019	0.014	0.009	
68	0.007			0.004	**315**	0.016	0.010	0.008	
80	0.008			0.004	**350**	0.018	0.012	0.009	
95	0.009			0.005	**400**	0.020	0.013		
110	0.011		0.009	0.005	**440**	0.015			
125	0.012		0.008	0.004	**480**	0.016	0.013		
140	0.014		0.009	0.004	**520**	0.018	0.014		
160	0.016	0.013	0.008	0.004	**560**	0.019	0.015		
180	0.018	0.015	0.009	0.005	**610**	0.021			
200	0.017	0.013	0.006		**660**	0.018			
225	0.019	0.015	0.007		**710**	0.019			
250	0.017	0.013	0.008						

Step 11:

Before start-up, check the coupling for proper fit, (i.e. the flexible elements are fully installed and flush with the hub face, the set screws tightened to the proper torque, the alignment and S_1 dimension, etc.) making corrections if necessary. Finally, assemble the coupling guard to prevent accidental contact with the coupling.

CAUTION: If irregularities are detected during operation, the drive assembly should be shut off immediately. The cause of the problem should be determined by using the Troubleshooting Table (section 9) of the Operating Instructions. If the cause can not be determined and there is no repair facility nearby, call Flender's service group for the help of a service technician.

N-EUPEX Flexible Couplings Maintenance

Preventative Maintenance:

Once the N-EUPEX coupling has been installed and put into operation, a regular inspection interval and schedule should be established to check the flexible elements for wear. This schedule should be incorporated into your routine inspection schedule to insure the consistency of the inspection process. However, the time period between inspections should not exceed 1 year.

Flexible Element Wear:

The load of the application may create an indentation into the flexible element we refer to as "torsional set". Additionally, the amount of torsional set will vary, depending on the size of the coupling. (On a size 58 coupling, the amount of torsional set could be up to ¼ of an inch deep. The larger the coupling, the larger the torsional set will be.)

The torsional set does not affect the performance of the coupling. It is simply the material reacting to the stress of the load. However, a very large torsional set may suggest a sizing problem and warrant additional analysis of the application.

Normal wear of the flexible elements will begin to eat away the material of the flexible element. This will result in a visible reduction of the flexible element. When half of the flexible element's compressed side (ref. the red line shown in figure 15.1) has been worn away, the elements should be replaced.

Figure 15.1

Flexible Element Replacement:

If a small amount of circumferential backlash is acceptable for the application, the flexible elements do not need to be replaced until they are worn as described above.

In critical applications, the flexible elements should be replaced at regular intervals. The frequency of replacement intervals will depend on the severity of the application and environmental conditions. The service life of the flexible elements can vary depending on many conditions (i.e. ultraviolet light, chemicals, extreme temperature, abrasives, etc.). If the coupling is properly sized and the flexible elements stored and operated under normal conditions, it will provide many years of optimal performance.

Caution! The flexible elements should only be changed in sets. Individual flexible elements with the same color coding should be used within each set.

Storage Conditions:

As with any elastomer or rubber material, N-EUPEX flexible elements are subject to the effects of aging. They should be stored in a dry, dust-free area. They should not be stored together with chemicals, solvents, fuels, acids, etc. Furthermore, they should be protected against light, especially direct sunlight and strong artificial light with a high ultraviolet content (i.e. fluorescent, mercury-vapor, etc.). Additional factors that may impact the life or performance of the flexible elements are exposure to oxygen, ozone, extreme temperatures, moisture, etc. To maximize the service life, we recommended that the inventory should continuously be rotated, with the oldest always being the first to be used.

With proper storage and application, N-EUPEX couplings will provide many years of service and protection for your machinery.

Limitations:

Although the Flender N-EUPEX coupling is designed for most general purpose coupling applications, there are certain limitations that should be considered:

Temperatures: Over +176°F, and/or below –22°F. A combination of high temperature and high humidity will reduce the life and performance of the coupling.

Chemical Environment: Life of the flexible elements are greatly impacted by different chemicals in various ways. A chart of chemical compatibility can be supplied upon request.

For further details, contact the appropriate Flender office.