Instruction Manual XH Series Disk-type Flexible Coupling

Couplicon®

NBK®

Be sure to read the manual before use to ensure correct usage.

1. Introduction

Thank you very much for purchasing Couplicon.

- Once you unpack the product, make sure that it is what you ordered.
- Check for any damage that occurred during transportation. In the unlikely event that the product is incorrect or parts are missing, please contact the dealer where you purchased the item.

XHW-C

XHS-C

XHW-C-L

2. Safety Precautions

Be sure to read the "Safety Precautions" thoroughly prior to use for the safe use of the product.

⚠ Danger

In the case it is thought that improper handling may cause a person to die or be heavily injured.

- The devices must be covered with our product protection covers. Otherwise your hands or fingers may contact the device in operation and get injured. However, do not fully cover the device but ventilate the surrounding air.
- A safety mechanism must beinstalled on the equipment for hazard prevention.
- When mounting or removing a product, never turn on the device. Otherwise your hands or fingers may contact the device suddenly driven and get injured.
- The screw (hex socket set screw or hex socket head cap screw) must be properly tightened using a torque driver or torque wrench.
- Do not use this unit with rotational frequency exceeding the max. rotational frequency.
- Never disassemble or modify the products.
- Do not use if there are abnormalities such as cracks, chips, wear, or deformation.
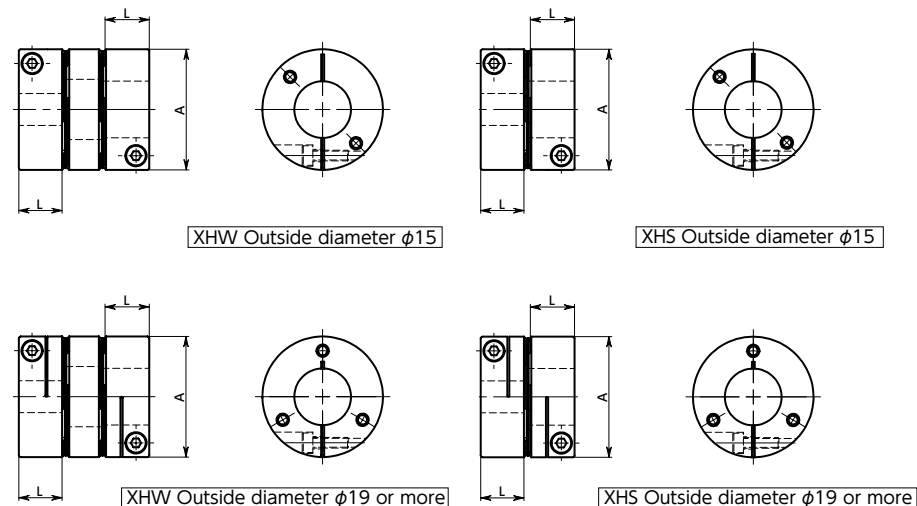
⚠ Precautions

In the case it is thought that improper handling may cause a person to be injured or physical damage to occur.

- Do not store or use the products in an environment that may affect them.
- Be careful about handling the products. Dropping a product may damage them. Also, be careful not to damage your waist or drop a product and damage your feet when transporting products.
- The edges of the product may cause injury during installation or removal. Wear safety gear such as safety glasses and gloves,etc., when working.
- Coupling should be used with misalignment of not more than the allowable value. Use of the unit exceeding the allowable value may damage the product or affect peripheral devices.
- The load torque generated by cont inuous operation must be not more than a rated torque of the coupling. Use of the unit exceeding the allowable value may damage the product or affect peripheral devices.
- In case of a device with large load fluctuation, please apply adhesive agent or upgrade the part number of a coupling to use by one level to prevent screw loosening.
- If any abnormal sound or vibration occurs during operation, immediately stop the operation and check the alignment, interference with peripheral devices, and loosening of screws.
- Screws other than our specified ones (hex socket set screw or hex socket head cap screw) should not be used.
- When discarding the used products, please ask a special dealer to discard them so as to prevent bad influence on environment.
- Never touch the product immediately after stopping the operation. Heat transmission from peripheral devices may cause the product to be highly heated, which may cause the worker to be burned.
- The data in the Technical Information are for reference only. They are not guaranteed values. Carry out tests under conditions similar to actual operating conditions in advance.
- After mounting the coupling, perform a load test for about 10 minutes prior to continuous operation to check the tightness of the screws of each part.

3. Shape Diagram

XHW Outside diameter φ15

XHS Outside diameter φ15

XHW Outside diameter φ19 or more

XHS Outside diameter φ19 or more

4. Mounting the Coupling on Equipment

Be sure to read the "Safety Precautions" and confirm safety before mounting and removal.

- **Cleaning the shaft and bore**
  Wipe away any foreign matter such as dirt, dust, debris, or rust from the surface of the drive shaft and driven shaft to be assembled and the inner periphery of the coupling.

- **Shaft insertion amount**
  The length of the shaft that should be inserted into the coupling is the L dimension in Table 1. If the inserted amount is too short, the shaft may slip or the clamping part may break. If the inserted amount is too long, there may be shaft interference within the coupling, leading to damage. Recommended tolerance for shaft diameters is h6 and h7.

- **Mounting on a D-cut shaft**
  As a rule, use round shafts with clamping types. When using D-cut shafts or shafts with key grooves, mount the D-cut surface or key groove in a position which avoids slits and bolt spot facing. If the D-cut surface or key groove is not in the recommended position, the clamp part may be damaged if excessive load is applied due to hexagon socket head cap screw tightening.

Table 1 Hub length L for each coupling size

Part Number	O.D. A (mm)	Hub Length L (mm)
XHW-C XHW-C-L XHS-C Common for products above	15	7.5
	19	9.2
	25	11
	27	11
	34	12.5
	39	15.5
	44	15.5
	56	20.5
	64	24
	79	30
	98	32

Spot facing hole

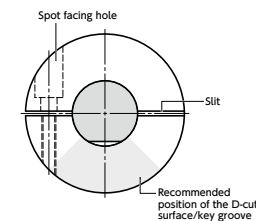Slit

Recommended position of the D-cut surface/key groove

Fig. 1 Positions of D-cut shaft and hub

● **Alignment adjustment**

① Although flexible coupling permits misalignment and transmits rotation angle and torque, if the misalignment exceeds the allowable value, vibration may occur or the life may be rapidly shortened. Be sure to perform alignment adjustment.

② Shaft center misalignment includes eccentricity (parallel error of both shaft centers), angular (angle error of both shaft centers), and end-play (shaft direction movement of the shaft). Adjust the shaft alignment so that it is not more than an allowable value described in Table 2.

③ The allowable values of misalignment described in the Dimension/Performance table are for the case where any one of eccentricity, angular, and endplay occurs independently. Mixing of two or more misalignment causes each of the allowable values to be reduced to half.

④ Misalignment may occur not only in mounting into the device but also due to vibration, thermal expansion, and shaft bearing abrasion during operation. Therefore, misalignment is recommended to be not more than one third of the allowable value.
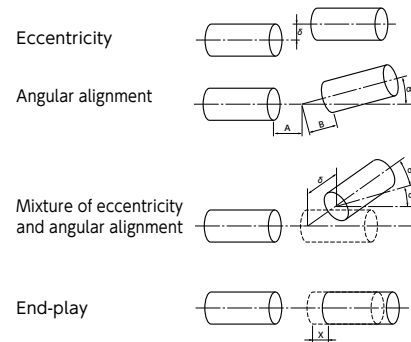
Eccentricity

Angular alignment

Mixture of eccentricity and angular alignment

End-play

Fig. 2 Types of misalignment

● **Confirmation before screw tightening**

When the positions of the drive shaft and driven shaft are determined, make sure that the coupling can be moved smoothly by sliding the coupling in the axial direction while the shaft is loose. Alternatively, slide the coupling in the rotational direction to make sure that it can be rotated smoothly.

● **Screw tightening**

Be sure to tighten the hex socket head cap screws properly, using a torque screwdriver or torque wrench. Refer to Table 3 for the tightening torque.

● **Trial run**

After mounting the coupling on the equipment, perform a trial run and confirm that there is no vibration, abnormal noise, or shaft slippage.

Table 2 Allowable misalignment value for each coupling part number

Part Number	O.D. A (mm)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)
	15	0.1	1.4	±0.2
	19	0.12	2	±0.2
	25	0.15	2	±0.3
	27	0.15	2	±0.4
	34	0.2	2	±0.5
XHW-C	39	0.25	2	±0.5
	44	0.25	2	±0.6
	56	0.3	2	±0.7
	64	0.35	2	±0.9
	79	0.5	2	±1.1
	98	0.5	2	±1.3

Part Number	O.D. A (mm)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)
	15	0.01	0.7	±0.1
	19	0.02	1	±0.1
	25	0.02	1	±0.15
	27	0.02	1	±0.2
	34	0.02	1	±0.25
XHS-C	39	0.02	1	±0.25
	44	0.02	1	±0.3
	56	0.02	1	±0.35
	64	0.02	1	±0.45
	79	0.02	1	±0.55
	98	0.02	1	±0.65

Part Number	O.D. A (mm)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)
	19	0.25	2	±0.2
	25	0.3	2	±0.3
XHW-C-L	27	0.3	2	±0.4
	34	0.3	2	±0.5
	39	0.4	2	±0.5

Table 3 Screw tightening torque

Part Number	O.D. A (mm)	Hex Socket Head Cap Screw Nominal Size	Screw Tightening Torque (N·m)
	15	M2	0.45
	19	M2	0.5
	25	M2.5	1
	27	M2.5	1
XHW-C XHW-C-L XHS-C	34	M3	1.5
	39	M4	3.5
Common for products above	44	M4	3.5
	56	M5	8
	64	M6	13
	79	M8	28
	98	M8	28

5. Inquiries
Please contact us as below for inquiries regarding the instruction manual.

NBK America LLC
📞 1-484-685-7500
🖷 1-484-685-7600
9:00 to 17:00 on weekdays,Eastern Standard Time

For product specifications and performance, please refer to the Catalog.

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