

ETP BUSH

ETP-EXPRESS

ETP-E/ETP-E-C/ETP-E-R

Instruction Manual

Before use this product, read the instruction manual carefully and use the product safety and correctly.

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1. Before using

1-1 After opening the package

First, please check the following points.

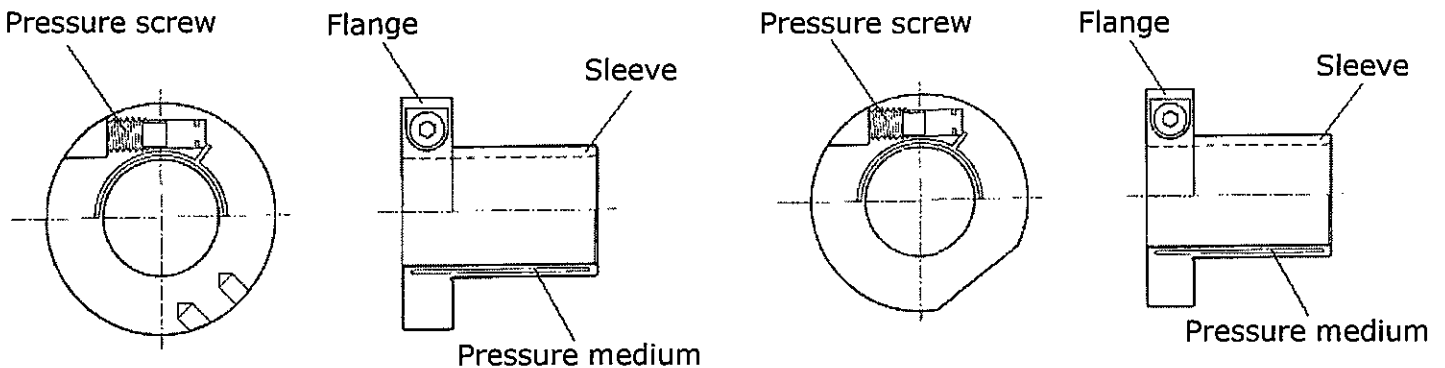
- 1) Is the product what you ordered?
- 2) Is the product damaged during transportation?

If any problems are found, please contact your supplier.

1-2 Structure and Parts



<ETP-E>

<ETP-E-C, ETP-E-R>



2. Safety Precautions




Please read carefully through the instruction manual and the technical information for proper use and safety. In this manual, safety precautions are classified by "DANGER" and "CAUTION".

	DANGER	When death or serious injury may result by mishandling
	CAUTION	When disability or only physical damage may result by mishandling



Equipment use (atomic energy, aerospace, medical treatment, transportation, or various safety devices) that may result in serious bodily injury or loss of life directly by mechanical failure or mishandling, careful examination is necessary. Contact us for further information. The company has taken all possible measures to produce a quality product; however, continuous rotational states when the clutch can not be disengaged or coasting of the machine when the brakes went off is envisioned as emergency. Please pay attention to safety measures in case anything goes wrong.

DANGER




Structural precautions

	Touching the product during operation could cause injury. Place a safety cover to avoid any accident. Additionally, set up a safety mechanism for quick stop of the product when opening the cover.
	Do not use the product near flammable liquids or in the presence of gas and other explosive air particles.
	The driven and driving sides could be completely detached when the product is damaged. Set up a safety mechanism such as a safety brake to avoid any danger.

Mounting precautions

	Depending on the tightening adjustment of bolt or screw, exceptionally dangerous situations such as product damage or performance degradation could occur. Always use a calibrated torque wrench and clamp at the tightening torque specified by Miki Pulley.
	It is very dangerous if the driving part starts by accident while mounting the product. Be sure that the main power of the equipment is turned off.

Cautions during operation

	If the product is used in excess of more than its maximum rated permissible speed, very dangerous product damage could occur by a large vibration.
	Due to the exposed rotor, touching the product during operation may cause injury. Make sure not to touch the product during operation.
	Using the product with more than the "maximum permissible misalignment" could cause damage or adverse effect on the equipment. Always operate the product within the specified "maximum permissible misalignment."

Cautions for maintenance and inspection



It is extremely dangerous if the driving part starts operating by accident while dismantling the product. Make sure that the main power of the equipment is off.

Cautions for disposal



Do not leave the product around where young children may play.

CAUTION

Structural precautions



Do not use the product in an environment where chemicals may spill, humidity is high, or in hot or cold temperature.

Mounting precautions



The installation of the product must be performed within the specified maximum permissible error. Using the product with more than the maximum permissible error could cause damage or adverse effect on the equipment.



Using a bolt or screw that is not specified by our company could damage the product. Do not use any bolt or screw unspecified.



To avoid any injury by stripping, spring pin or keyway, make sure to wear protective equipment such as safety glasses or gloves.



Lifting of a heavy weight could cause back injury. Use a hoist when carrying or mounting the product.

Cautions during operation



Using the product with more than the specified permissible torque could cause damage or adverse effect on the equipment.



If abnormal noises or vibrations occur during operation, improper mounting should be considered. Do not leave the situation as it is. It may cause damage to the equipment itself. Also, for reasons other than above, the belts and other screws may loosen or become defective even if the product is mounted correctly.



Using the product when the locking part is in a slip condition could over heat the product, which could cause damage to the equipment.

Cautions for maintenance and inspection



We will refuse to take responsibility as to the damaged product that is dismantled, remodeled or repaired by a third party except our company and the designated company. Therefore, for the product that the assembly process or procedure of dismantlement is described in the manual, we will not be responsible as well. Please use our service network for repair and dismantlement.

Cautions for disposal



Call for a waste-control-collection company for disposal.

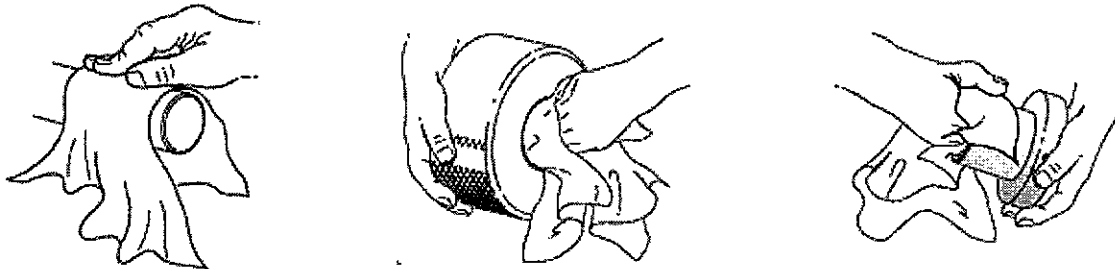
3. Installation procedure

3-1 Cleaning the shaft and hub

Wipe off any rust, dust and oil contents adhering to the surface of the shaft and hub with cloth. If any grease is attached, remove the grease completely. Meanwhile, the oil content attached on the surface of the ETP-EXPRESS should be also removed.

(Notice)

Do not use molybdenum-containing oil. It will affect a change in the coefficient of friction.

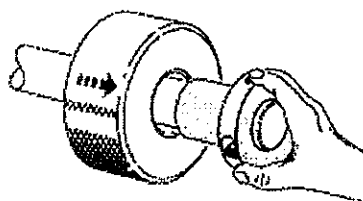


3-2 Mounting on the shaft and hub

Place the ETP-EXPRESS by the hub and mount in the shaft. If a correct positioning for the shaft and hub is necessary, adjust their positions before fastening the pressure screw.

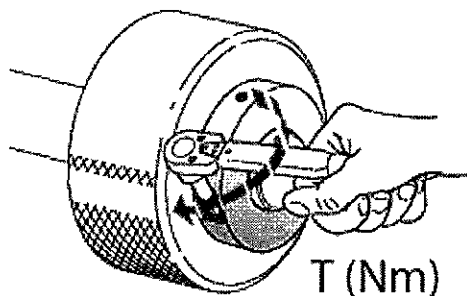
(Notice)

Do not fasten the pressure screw until the ETP-EXPRESS is completely set to the shaft and hub.



3-3 Fastening the pressure screw

By using a torque wrench, fasten the pressure screw with the specified torque.



ETP-EXPRESS	Bolt tightening torque T [N · m]
15-35	5
38-60	21
70-80	39
90*-100*	39

*Two screws.

3-4 Points to be checked

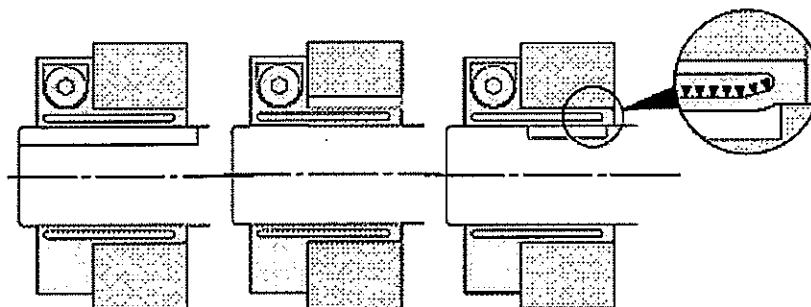
■ Operating temperature limit

Model	Operating Temp. limit [°C]
ETP-E	-30~+85
ETP-E-C	
ETP-E-R	

■ Mating shaft tolerance, mating hub tolerance, and surface roughness

Model	Size	Mating shaft tolerance	Mating hub tolerance	Surface roughness
ETP-E	15	h7	H7	25S (Ave.roughness of center line 6.3a) or less
	20,25,30,35,40,45,50,60,70,80,90,100	h8		
	19,22,24,28,32,38,42,48,55	k6~h7		
ETP-E-R	15	h7		
	other than above	h8		
ETP-E-C	15,20,25,30,40,50	h8		

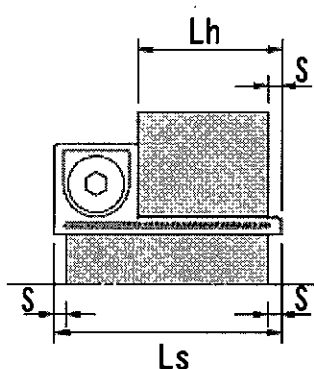
■ Keyway shape that may become unable to disconnect by the sleeve deformation



In case there is a keyway in the shaft and hub as illustrated above, ETP-EXPRESS cannot be used. However, ETPEXPRESS can be used if the keyway is completely filled, and formed with epoxy putty (Recommendation: Bond-all AB).

■ Tolerance of the edge

The performance of the ETP-EXPRESS is defined when the shaft and hub act over the entire length for the shaft-side basic dimension, L_s , and the hub-side basic dimension, L_h . Therefore, set out the shaft and hub to act over the entire length for the basic dimension. If the length of shaft · hub is limited in design, set the size in order that it becomes under the S sizes indicated in the chart below. In case the size is over the S size, the stress becomes concentrated at the edge of sleeve, which causes deformation of the sleeve. In that case, the ETP-EXPRESS becomes unable to disconnect.



ETP-E,ETP-E-C,ETP-E-R size	S[mm]
15	3
19	4
20	4
22	5
24	5
25	5
28	5
30	5
32	6
35	6
38	7
40	7
42	7
45	7
48	7
50	7
55	8
60	8
70	9
80	9
90	10
100	10

4. Removal

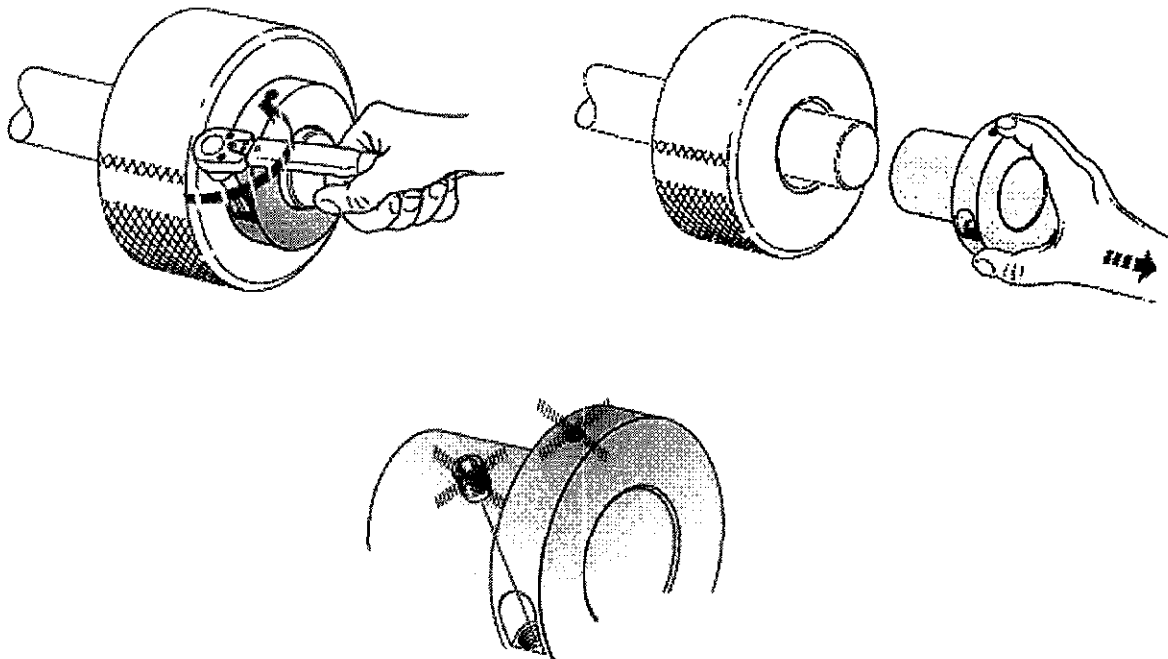
4-1 Safety inspection

Confirm whether any torque or thrust power dose not acting on the ETP-EXPRESS before dismounting. Also, make sure if there is any danger of fall due to the empty weight of the shaft and hub. There is no self-locking mechanism for the ETP-EXPRESS.
By loosening the pressure screw, its fastening power is quickly released.

4-2 Removal

Loosen the pressure screw until the fastening force is released.
The pressure screw should be just slackened, not to be removed.
(Notice)

Do not remove the Set Screw.



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