



Features

① Lightweight and compact

The structure is simple and the case is made of resin.
The resin has excellent chemical resistance and heat resistance.

② Flexible mounting direction

Through holes and pilot holes are available, allowing mounting in all directions.

③ Maintenance-free

Grease is applied to the tooth surface before shipment.

④ Speed ratio

1:1

Application Hints

1. Installation Location

- Ambient temperature: -10°C to 40°C
- Ambient humidity: 80% or less
- Atmosphere: A space free of corrosive gas and steam
A well-ventilated space free of dust and dirt
- Installation location: Indoors

2. Installation

- Fix the unit on a flat surface without vibration with bolts, screws, etc.
- JIS Class 2 grooved screws are recommended for tap screws.
- The table below shows the recommended tightening torque and dimensions for installation.
- No secondary operations such as boring can be made on the case. The gear box may be damaged.
- For devices for which oil must be avoided such as food machinery, be sure to take measures to prevent damage such as oil reservoir in case of oil leakage due to failure, aging, etc.

3. Connection with the mating machine

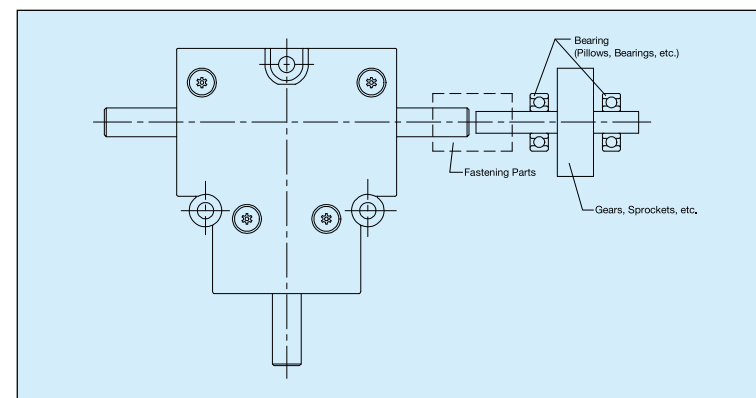
- Check the rotation direction before connecting to the mating machine. There is a risk of injury or the device being damaged due to difference in rotation direction.
- Use flexible fasteners to connect the gear box shaft and mating shaft.
- Install so that the axes of the gear box shaft and mating shaft are aligned.
- There is no step on the gear box shaft. When installing the coupling or the like, make sure that it does not interfere with the case surface.
- There is no keyway on the gear box shaft. Use clamping type couplings or the like so that the product does not slip.

4. Precautions during driving

- Do not approach or touch rotating objects such as the shafts during operation. There is a risk of entanglement and injury.
- If there is abnormal noise or temperature rise, stop the operation immediately and do not operate until the cause of the abnormality is investigated and measures are taken.
- Do not disassemble or modify the product. If the device is damaged, the product will not be covered by the warranty.

Selection Hints

- ① PBX is an economy type gear box. If high accuracy, high strength and high rotation speed are required, consider using the KBX type.
- ② Make sure that O.H.L. (overhang load) and thrust load are not applied to the shaft of the gear box.
If O.H.L. or thrust load is applied, support both ends of the sprocket, gear and the like with bearings such as pillows so that O.H.L. and thrust load are not applied to the gear box. (See the diagrams below)
- ③ It cannot be used under conditions where forward/reverse rotation occurs due to plucking or heavy impact load is applied. Consider using the KBX type.



PBX Performance Table

Model Code	Specification Symbol	X-axis Rotation Speed (rpm)						
		50	100	200	250	300	400	500
PBX-041	Allowable X, Y-axis Torque (N·cm) {kgf·cm}	9.8 {1.0}	9.8 {1.0}	9.6 {0.98}	9.5 {0.97}	9.4 {0.96}	9.3 {0.95}	9.1 {0.93}
	Transmission Efficiency (Reference)	70%						
PBX-061	Allowable X, Y-axis Torque (N·cm) {kgf·cm}	39.2 {4.0}	39.2 {4.0}	38.5 {3.93}	38.2 {3.90}	37.9 {3.87}	37.2 {3.80}	36.5 {3.72}
	Transmission Efficiency (Reference)	80%						
PBX-081	Allowable X, Y-axis Torque (N·cm) {kgf·cm}	78.4 {8.0}	78.4 {8.0}	77.0 {7.86}	76.5 {7.80}	75.7 {7.72}	74.4 {7.59}	73.1 {7.46}
	Transmission Efficiency (Reference)	75%						

[Note] ① Be sure to use the product below the permissible values.

② The values in this performance table are where the service factor is 1. When using the product under other conditions, refer to the Selection Hints.

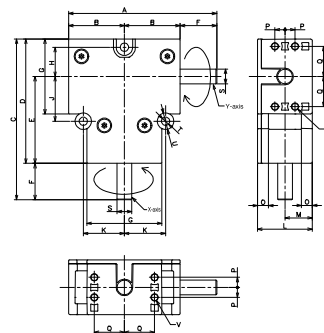
Recommended Tightening Torque

Machine Type	Through Hole		Hole for End Face Tapping Screw		
	Size	Fastening Torque (N·m)	Nominal Diameter	Effective Length (mm)	Fastening Torque (N·m)
PBX-04	M3	0.3~0.6	3	7~11	0.4~0.8
PBX-06	M3	0.4~0.8	3	9~13	0.5~1.0
PBX-08	M4	0.5~1.0	4	9~14	0.5~1.0



PBX L Miniature Bevel Gearboxes

Bevel Gearboxes



Catalog Number	Speed ratio	A	B	C	D	E	F	G	H	J	K	L	M	O	P	Q	S	T
PBX-041L	1:1	51	20.5	55	45	32	10	26	9.5	16	15	18	9	4.5	3	10	φ4	φ3.5
PBX-061L		70	27.5	73	58	41	15	34	13.5	20	19	26	13	4.5	4.5	14	φ6	φ3.5
PBX-081L		81	30.5	88	68	47.5	20	41	16	24.5	22.5	30	15	6	5.5	16.5	φ8	φ4.5

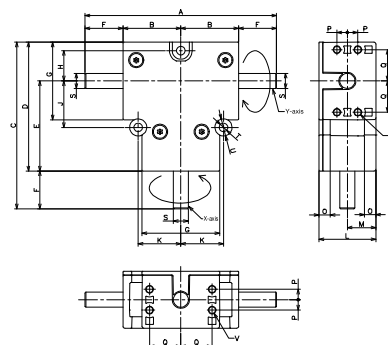
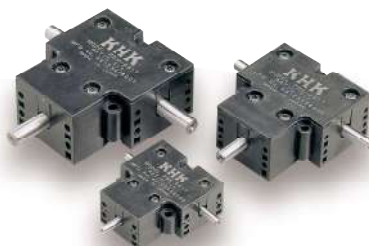
- [NOTES] ① The rotation direction of the arrow does not limit the direction. Both the forward and reverse rotations are allowed.
 ② Normally, the X-axis rotates clockwise and the Y-axis rotates counterclockwise.
 ③ The shaft diameter tolerance is JIS h8.
 ④ There is no key groove on the gear box shaft. Use clamping type couplings or the like so that the product does not slip.
 ⑤ The angular backlash on the X-axis (input axis) side is within about 3°.

U	V		Weight (g)	Catalog Number
	Diameter	Depth		
7	φ2.5	11	45	PBX-041L
7	φ2.5	13	120	PBX-061L
9	φ3.3	14	200	PBX-081L



PBX T Miniature Bevel Gearboxes

Bevel Gearboxes



Catalog Number	Speed ratio	A	B	C	D	E	F	G	H	J	K	L	M	O	P	Q	S	T
PBX-041T	1:1	61	20.5	55	45	32	10	26	9.5	16	15	18	9	4.5	3	10	φ4	φ3.5
PBX-061T		85	27.5	73	58	41	15	34	13.5	20	19	26	13	4.5	4.5	14	φ6	φ3.5
PBX-081T		101	30.5	88	68	47.5	20	41	16	24.5	22.5	30	15	6	5.5	16.5	φ8	φ4.5

- [NOTES] ① The rotation direction of the arrow does not limit the direction. Both the forward and reverse rotations are allowed.
 ② Normally, the X-axis rotates clockwise and the Y-axis rotates counterclockwise.
 ③ The shaft diameter tolerance is JIS h8.
 ④ There is no key groove on the gear box shaft. Use clamping type couplings or the like so that the product does not slip.
 ⑤ The angular backlash on the X-axis (input axis) side is within about 3°.

U	V		Weight (g)	Catalog Number
	Diameter	Depth		
7	φ2.5	11	45	PBX-041T
7	φ2.5	13	120	PBX-061T
9	φ3.3	14	200	PBX-081T