■ Features

① Compact

The structure is simple and the case is made of aluminum die-cast

② Low-noise and high-efficiency

Uses spiral bevel gears that are made of carburized special steel

③ Flexible mounting direction

Can be installed in all directions and is easy to install

④ Maintenance-free

Shipped with high-grade grease enclosed

⑤ Gear ratio

Gear ratio of 1 and 2 can be selected according to the application

■ Lubrication

Lubricating oil of specified amount is enclosed at the time of shipment.

Machine Type	Approximate amount of oil	Lubricant type	
KBX-10 KBX-15 KBX-20	10g 30g 50g	Grease	NLGI-00 with Li extreme pressure additive

■ Application Hints

1. Installation Location

① Ambient temperature : −10°C to 40°C
② Ambient humidity : 80% or less
③ Atmosphere : A space free of corrosive gas and steam
A well-ventilated space free of dust and dirt
④ Installation location : Indoors

2. Installation Method

① Securely fix the mounting surface to a machined flat surface without vibration using bolts.
② No secondary operations such as boring can be made on the case. Also, do not disassemble or modify the product. If the device is damaged, the product will not be covered by the warranty.
③ 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

① Check the rotation direction before connecting to the mating machine. There is a risk of the device being damaged due to difference in rotation direction.
② When attaching the coupling, sprocket, pulley, gear or the like to the shaft of the gear box, make sure that it does not interfere with the oil seal or case surface in models that have no steps on the shaft. We also recommend H7 for hole fitting.
③ For direct connection, locate the center accurately so that the axial center of the gear box and mating axis match. We also recommend using flexible fastening supplies.
④ When using a chain, belt or gear, make sure that the gear box shaft and mating shaft are parallel, and install it so that the line connecting the centers of two shafts is perpendicular to the shafts.

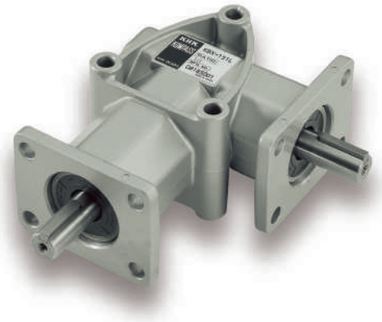
4. Precautions during driving

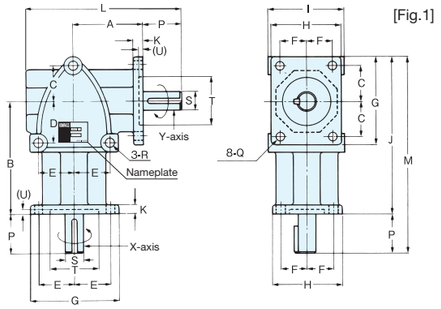
① Do not approach or touch rotating objects such as the shafts during operation. There is a risk of entanglement and injury.
② If there is abnormal noise or temperature rise, stop the operation immediately and do not operate until the cause of the abnormality is investigated and measures are taken.
③ Forward and reverse rotations due to plucking adversely affect the gear box and mating machine, so be sure to stop the unit and then start in the opposite direction.
④ Be sure to set the load torque and O.H.L. (overhang load) within the permissible values before operation.

■ KBX Performance Table

Speed ratio	Model Code	Specification Symbol	X-axis Rotation Speed (rpm) 50	100	200	300	400	600	900	1200	1500	1800	2500	3600	Allowable Thrust Load (N) {kgf} X-axis	Y-axis
1:1	KBX-101	Allowable Capacity (kW)	0.01	0.02	0.05	0.07	0.09	0.14	0.20	0.26	0.31	0.35	0.38	0.44	59 {6}	69 {7}
		Allowable X, Y-axis Torque (N·m) {kgf·m}	2.35 {0.24}	2.35 {0.24}	2.25 {0.23}	2.25 {0.23}	2.16 {0.22}	2.16 {0.22}	2.06 {0.21}	2.06 {0.21}	1.96 {0.20}	1.86 {0.19}	1.47 {0.15}	1.18 {0.12}		
		Allowable X-axis O.H.L. (N) {kgf}	78 {8}	78 {8}	78 {8}	78 {8}	69 {7}	69 {7}	69 {7}	69 {7}	69 {7}	59 {6}	49 {5}	39 {4}		
		Allowable Y-axis O.H.L. (N) {kgf}	127 {13}	127 {13}	118 {12}	118 {12}	118 {12}	118 {12}	108 {11}	108 {11}	108 {11}	98 {10}	78 {8}	59 {6}		
		Transmission Efficiency (Reference)	90%													
	KBX-151	Allowable Capacity (kW)	0.05	0.09	0.18	0.27	0.35	0.51	0.75	0.96	1.16	1.30	1.44	1.66	98 {10}	118 {12}
		Allowable X, Y-axis Torque (N·m) {kgf·m}	8.82 {0.90}	8.82 {0.90}	8.62 {0.88}	8.53 {0.87}	8.33 {0.85}	8.13 {0.83}	7.94 {0.81}	7.64 {0.78}	7.35 {0.75}	6.86 {0.70}	5.49 {0.56}	4.41 {0.45}		
		Allowable X-axis O.H.L. (N) {kgf}	255 {26}	255 {26}	255 {26}	245 {25}	245 {25}	235 {24}	225 {23}	216 {22}	216 {22}	186 {19}	157 {16}	127 {13}		
		Allowable Y-axis O.H.L. (N) {kgf}	294 {30}	294 {30}	284 {29}	284 {29}	274 {28}	265 {27}	265 {27}	255 {26}	245 {25}	216 {22}	176 {18}	147 {15}		
		Transmission Efficiency (Reference)	90%													
	KBX-201	Allowable Capacity (kW)	0.09	0.18	0.36	0.52	0.68	0.95	1.38	1.78	2.15	2.50	2.55	2.95	196 {20}	274 {28}
		Allowable X, Y-axis Torque (N·m) {kgf·m}	17.6 {1.80}	17.6 {1.80}	17.2 {1.75}	16.7 {1.70}	16.2 {1.65}	15.2 {1.55}	14.7 {1.50}	14.2 {1.45}	13.7 {1.40}	13.2 {1.35}	9.80 {1.00}	7.84 {0.80}		
		Allowable X-axis O.H.L. (N) {kgf}	353 {36}	353 {36}	343 {35}	333 {34}	333 {34}	323 {33}	314 {32}	304 {31}	294 {30}	265 {27}	216 {22}	176 {18}		
		Allowable Y-axis O.H.L. (N) {kgf}	529 {54}	529 {54}	519 {53}	510 {52}	500 {51}	490 {50}	470 {48}	451 {46}	441 {45}	392 {40}	314 {32}	255 {26}		
		Transmission Efficiency (Reference)	90%													
1:2	KBX-102	Allowable Capacity (kW)	0.005	0.01	0.02	0.03	0.04	0.06	0.09	0.12	0.14	0.16	0.17	0.20	59 {6}	69 {7}
		Allowable Y-axis Torque (N·m) {kgf·m}	2.06 {0.21}	2.06 {0.21}	2.06 {0.21}	1.96 {0.20}	1.96 {0.20}	1.96 {0.20}	1.86 {0.19}	1.86 {0.19}	1.76 {0.18}	1.67 {0.17}	1.27 {0.13}	1.08 {0.11}		
		Allowable X-axis O.H.L. (N) {kgf}	88 {9}	88 {9}	88 {9}	88 {9}	88 {9}	78 {8}	78 {8}	78 {8}	78 {8}	69 {7}	59 {6}	49 {5}		
		Allowable Y-axis O.H.L. (N) {kgf}	137 {14}	137 {14}	137 {14}	127 {13}	127 {13}	127 {13}	127 {13}	118 {12}	118 {12}	108 {11}	88 {9}	69 {7}		
		Transmission Efficiency (Reference)	90%										85%			
	KBX-152	Allowable Capacity (kW)	0.02	0.04	0.08	0.13	0.17	0.25	0.36	0.46	0.55	0.62	0.69	0.80	98 {10}	118 {12}
		Allowable Y-axis Torque (N·m) {kgf·m}	8.43 {0.86}	8.43 {0.86}	8.23 {0.84}	8.13 {0.83}	8.04 {0.82}	7.84 {0.80}	7.55 {0.77}	7.25 {0.74}	7.06 {0.72}	6.57 {0.67}	5.29 {0.54}	4.21 {0.43}		
		Allowable X-axis O.H.L. (N) {kgf}	255 {26}	255 {26}	255 {26}	245 {25}	245 {25}	235 {24}	225 {23}	216 {22}	216 {22}	186 {19}	157 {16}	127 {13}		
		Allowable Y-axis O.H.L. (N) {kgf}	294 {30}	294 {30}	284 {29}	284 {29}	274 {28}	265 {27}	265 {27}	255 {26}	245 {25}	216 {22}	176 {18}	147 {15}		
		Transmission Efficiency (Reference)	90%										85%			
	KBX-202	Allowable Capacity (kW)	0.05	0.10	0.19	0.28	0.37	0.53	0.77	0.99	1.15	1.31	1.40	1.57	196 {20}	274 {28}
		Allowable Y-axis Torque (N·m) {kgf·m}	19.6 {2.00}	19.6 {2.00}	18.6 {1.90}	18.1 {1.85}	17.6 {1.80}	17.0 {1.73}	16.4 {1.67}	15.7 {16.0}	14.7 {1.50}	13.9 {1.42}	10.8 {1.10}	8.33 {0.85}		
		Allowable X-axis O.H.L. (N) {kgf}	372 {38}	372 {38}	363 {37}	363 {37}	353 {36}	343 {35}	333 {34}	323 {33}	314 {32}	274 {28}	235 {24}	186 {19}		
		Allowable Y-axis O.H.L. (N) {kgf}	588 {60}	588 {60}	578 {59}	568 {58}	559 {57}	539 {55}	529 {54}	510 {52}	490 {50}	441 {45}	363 {37}	294 {30}		
		Transmission Efficiency (Reference)	90%										85%			

[Note] ① Be sure to use the product below the permissible values. The speed ratio (1:2) decelerates to the Y axis.
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 Guide.
③ O.H.L. (overhang load) is the allowable load that can be applied to the center of the shaft. When using the product under other conditions, refer to the coefficients K_1 and K_2 in the Selection Guide (Page 460).
④ When the speed ratio (1:2) type is used at increased speed (from Y-axis to X-axis), the allowable X-axis torque is 1/2 of the value in the performance table (allowable Y-axis torque).
⑤ Y-axis torque of the model T is the total value of the left and right axes.
⑥ Y-axis O.H.L. of the model T is the total value of the left and right axes.

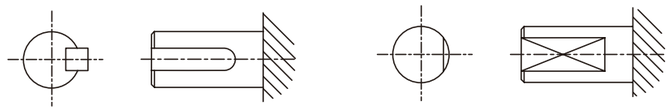




[Fig.1]

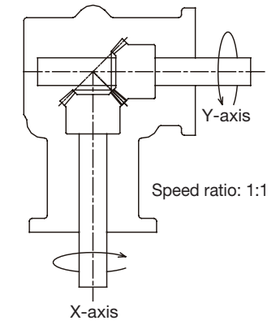
Catalog Number	Speed ratio	A	B	C	D	E	F	G	H	I	J	K	L	M	P	Q	R	S
KBX-101L	1:1	37	58	18	18	18	14	46	38	40	82	5	82	102	20	ϕ5.5	ϕ6.5	ϕ10
KBX-102L	1:2																	
KBX-151L	1:1	66	100	31	36	31	22	80	62	66	140	8	137	170	30	ϕ8.5	ϕ8.5	ϕ15
KBX-152L	1:2																	
KBX-201L	1:1	80	120	36	36	36	26	92	72	76	166	10	168	206	40	ϕ8.5	ϕ8.5	ϕ20
KBX-202L	1:2																	

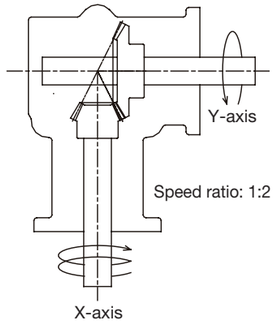
[NOTES]
① The rotation direction of the arrow does not limit the direction.
Both the forward and reverse rotations are allowed.
② The X-axis rotates clockwise and the Y-axis rotates counterclockwise.
③ The phases of the X-axis and Y-axis key grooves do not always match.
④ The shaft diameter tolerance is JIS h7.
⑤ The 1:2 speed ratio type decelerates from the X-axis (input axis) to the Y-axis (output axis).
⑥ JIS B 1301-1976 (normal) is used for the key dimensions
⑦ The indicated angular backlash is reference values measured on the X-axis (input axis).

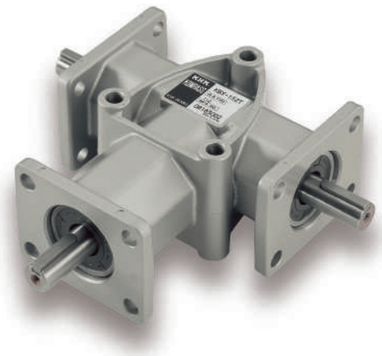


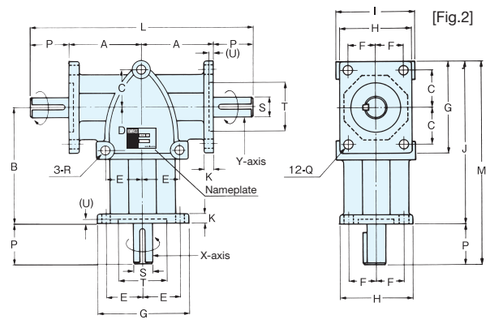
Key Detail Diagram

T	(U)	Key	Angular Backlash	Weight (kg)	Catalog Number
ϕ26$_{H7}$	(2)	Depth 1 x 15 ℓ Horizontal	16′~44′	0.40	**KBX-101L**
			30′ ~1° 23′		**KBX-102L**
ϕ42$_{H7}$	(3)	5 x 5 x 27 ℓ	10′~37′	1.80	**KBX-151L**
			19′ ~1° 09′		**KBX-152L**
ϕ52$_{H7}$	(4)	6 x 6 x 35 ℓ	8′~33′	3.10	**KBX-201L**
			15′~60′		**KBX-202L**









[Fig.2]

Catalog Number	Speed ratio	A	B	C	D	E	F	G	H	I	J	K	L	M	P	Q	R	S
KBX-101T	1:1	37	58	18	18	18	14	46	38	40	82	5	114	102	20	ϕ5.5	ϕ6.5	ϕ10
KBX-102T	1:2																	
KBX-151T	1:1	66	100	31	36	31	22	80	62	66	140	8	192	170	30	ϕ8.5	ϕ8.5	ϕ15
KBX-152T	1:2																	
KBX-201T	1:1	80	120	36	36	36	26	92	72	76	166	10	240	206	40	ϕ8.5	ϕ8.5	ϕ20
KBX-202T	1:2																	

[NOTES]
① The rotation direction of the arrow does not limit the direction.
Both the forward and reverse rotations are allowed.
② The X-axis rotates clockwise and the Y-axis rotates counterclockwise.
③ The phases of the X-axis and Y-axis key grooves do not always match.
④ The shaft diameter tolerance is JIS h7.
⑤ The 1:2 speed ratio type decelerates from the X-axis (input axis) to the Y-axis (output axis).
⑥ JIS B 1301-1976 (normal) is used for the key dimensions
⑦ The indicated angular backlash is reference values measured on the X-axis (input axis).

Key Detail Diagram

T	(U)	Key	Angular Backlash	Weight (kg)	Catalog Number
ϕ26$_{H7}$	(2)	Depth 1 x 15 ℓ Horizontal	16′~ 44′	0.50	**KBX-101T**
			30′~1° 23′		**KBX-102T**
ϕ42$_{H7}$	(3)	5 x 5 x 27 ℓ	10′~ 37′	2.20	**KBX-151T**
			19′~1° 09′		**KBX-152T**
ϕ52$_{H7}$	(4)	6 x 6 x 35 ℓ	8′~ 33′	3.40	**KBX-201T**
			15′~ 60′		**KBX-202T**