



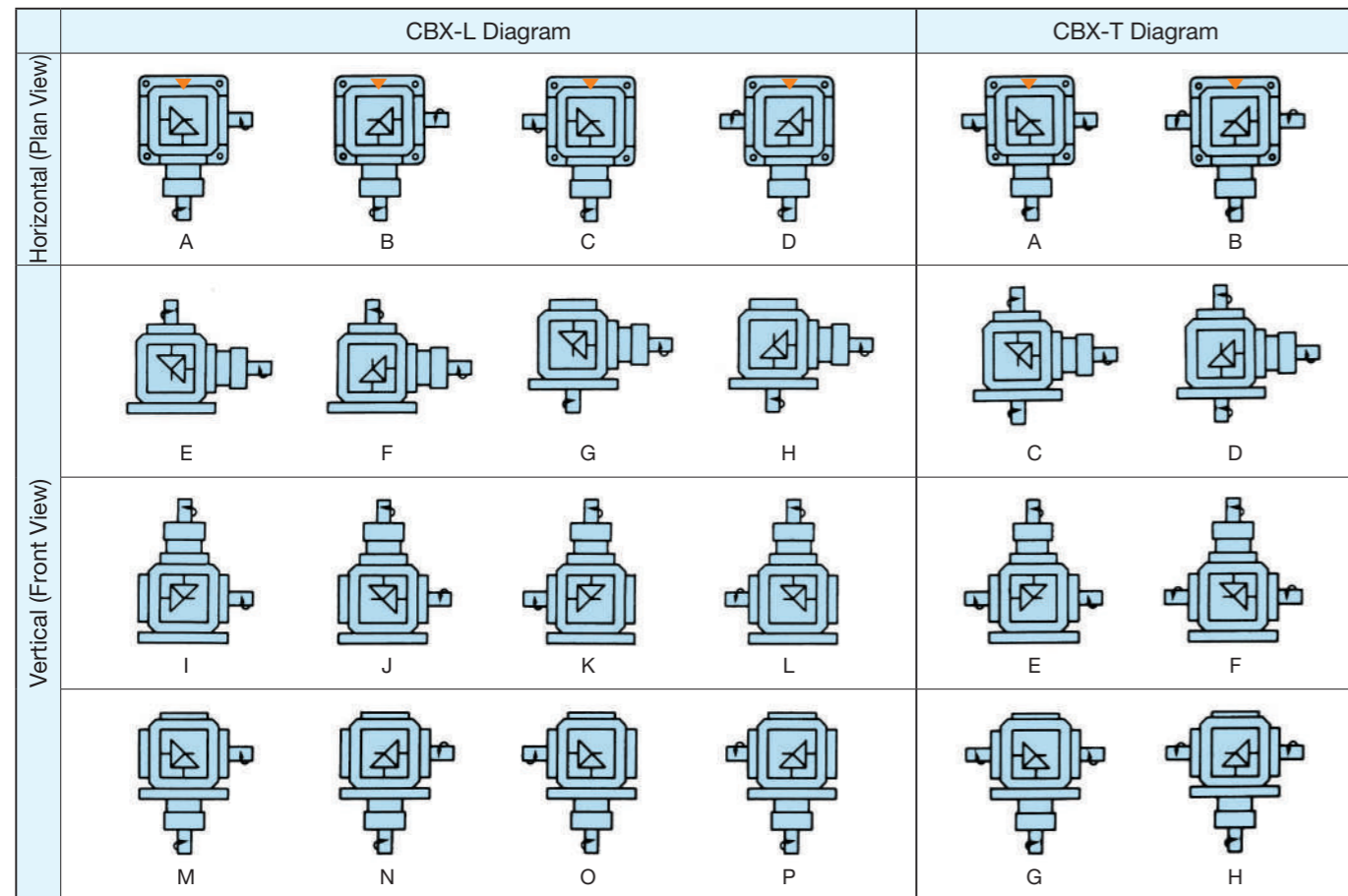
Shaft arrangement and shaft arrangement numbers

The CBX bevel box standardizes 24 different shaft arrangements depending on the rotation direction of the shaft. When using the product, consider not only the catalog number but also the shaft arrangement.

[NOTES]

- This figure shows the mounting base and flat surface mounting (floor mounting).
- The rotation direction of the arrow does not limit the direction. Both the forward and reverse rotations are allowed.
- Indicates the wall surface with fuel filler port and drain plug when mounted on a flat surface (floor mounting). Unmarked items are the back of this figure. (standard specifications)
- Shaft arrangement: For products other than LI to LL and TE to TF, the input shaft (X-axis) cannot be installed facing upward.
- When installing the product other than on a flat surface, consider adding an oil drain port (Page 459).

CBX Shaft Arrangement Table



Features

- Tough**  
High-grade cast iron is used for the case and tapered roller bearing is used for the bearing
- Low-noise and high-efficiency**  
Uses spiral bevel gears that are made of carburized special steel
- Flexible mounting direction**  
Various installations are possible depending on the shaft arrangement
- Lubricant enclosed**  
High-grade oil enclosed upon shipment
- Speed ratio**  
Gear ratio of 1/1 and 1/2 can be selected according to the applications

Lubrication

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

Machine Type	Approximate amount of oil	Lubricant type	
CBX-19	0.3L	Oil	JIS gear oil Class 2 for industrial use
CBX-25	0.7L		
CBX-32	1.0L		
CBX-40	1.5L		

Application Hints

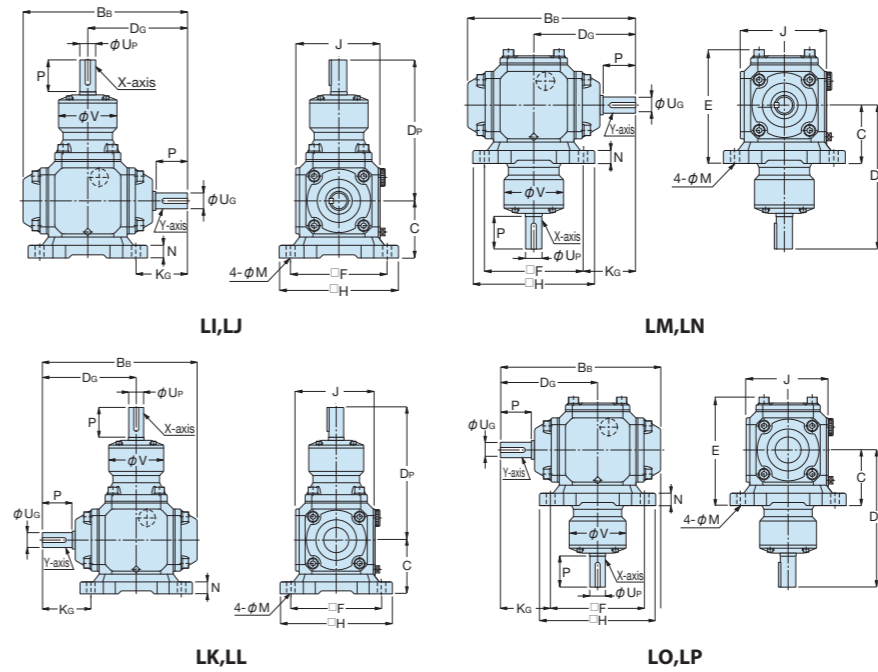
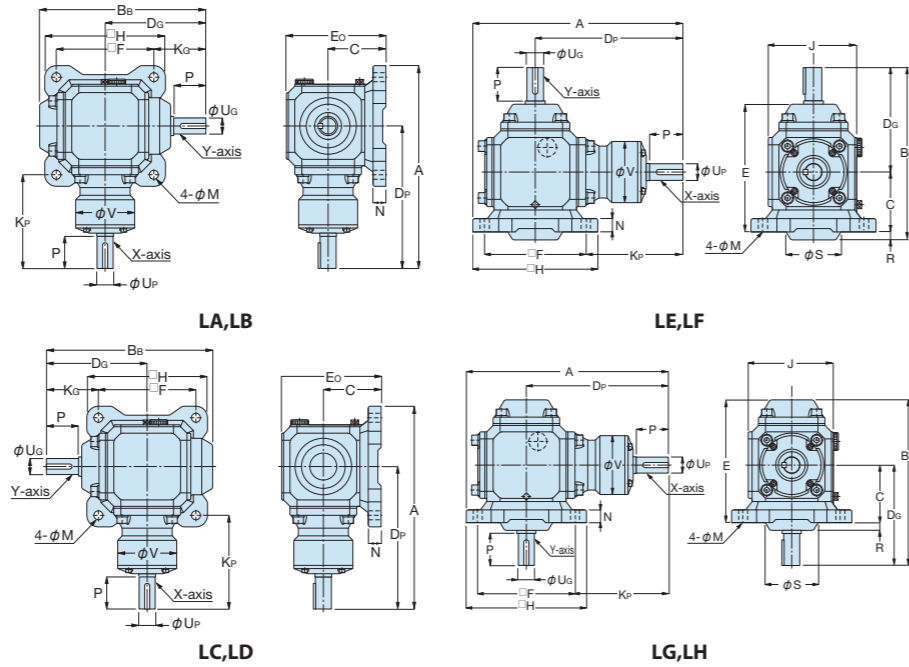
Refer to KBX (Page 452).

CBX Performance Table

Speed ratio	Model Code	Specification Symbol	X-axis Rotation Speed (rpm)												
			20	50	100	200	300	400	600	900	1200	1500	1800	2500	3600
1:1	CBX-191	Allowable Capacity (kW)	0.08	0.20	0.39	0.77	1.15	1.50	2.05	2.67	3.30	3.95	4.40	4.40	4.40
		Allowable X, Y-axis Torque (N·m) (kgf·m)	37.2 {3.8}	37.2 {3.8}	37.2 {3.8}	36.3 {3.7}	36.3 {3.7}	36.3 {3.6}	32.3 {3.3}	28.4 {2.9}	26.5 {2.7}	24.5 {2.5}	23.5 {2.4}	16.7 {1.7}	10.8 {1.1}
		Allowable X-axis O.H.L. (N) (kgf)	1760 {180}	1760 {180}	1760 {180}	1760 {180}	1670 {170}	1620 {165}	1270 {130}	1080 {110}	882 {90}	833 {85}	784 {80}	686 {70}	637 {65}
		Allowable Y-axis O.H.L. (N) (kgf)	1960 {200}	1960 {200}	1960 {200}	1960 {200}	1960 {200}	1810 {185}	1470 {150}	1180 {120}	1030 {105}	980 {100}	931 {95}	784 {80}	735 {75}
	Transmission Efficiency (Reference)	95%													
	CBX-251	Allowable Capacity (kW)	0.25	0.62	1.24	2.47	3.68	4.70	6.40	8.60	10.5	12.3	13.8	—	—
		Allowable X, Y-axis Torque (N·m) (kgf·m)	118 {12.0}	118 {12.0}	118 {12.0}	118 {12.0}	116 {11.8}	112 {11.4}	101 {10.3}	91.1 {9.3}	83.3 {8.5}	78.4 {8.0}	73.5 {7.5}	—	—
		Allowable X-axis O.H.L. (N) (kgf)	3920 {400}	3920 {400}	3920 {400}	3920 {400}	3630 {370}	3330 {340}	2940 {300}	2450 {250}	2160 {220}	1960 {200}	1760 {180}	—	—
		Allowable Y-axis O.H.L. (N) (kgf)	4120 {420}	4120 {420}	4120 {420}	4120 {420}	4020 {410}	3920 {400}	3430 {350}	2940 {300}	2550 {260}	2450 {250}	2250 {230}	—	—
	Transmission Efficiency (Reference)	95%													
	CBX-321	Allowable Capacity (kW)	0.36	0.88	1.77	3.53	5.26	6.72	9.15	12.3	15.0	17.5	19.7	—	—
		Allowable X, Y-axis Torque (N·m) (kgf·m)	167 {17.0}	167 {17.0}	167 {17.0}	167 {17.0}	165 {16.8}	160 {16.3}	144 {14.7}	130 {13.3}	119 {12.1}	112 {11.4}	104 {10.6}	—	—
Allowable X-axis O.H.L. (N) (kgf)		4900 {500}	4900 {500}	4900 {500}	4900 {500}	4610 {470}	4210 {430}	3720 {380}	3140 {320}	2740 {280}	2450 {250}	2160 {220}	—	—	
Allowable Y-axis O.H.L. (N) (kgf)		5190 {530}	5190 {530}	5190 {530}	5190 {530}	5100 {520}	4900 {500}	4310 {440}	3720 {380}	3230 {330}	3140 {320}	2840 {290}	—	—	
Transmission Efficiency (Reference)	95%														
CBX-401	Allowable Capacity (kW)	0.62	1.59	3.18	6.32	9.50	12.0	16.1	22.0	26.5	—	—	—	—	
	Allowable X, Y-axis Torque (N·m) (kgf·m)	294 {30.0}	294 {30.0}	294 {30.0}	294 {30.0}	294 {30.0}	284 {29.0}	225 {26.0}	211 {21.5}	—	—	—	—	—	
	Allowable X-axis O.H.L. (N) (kgf)	9800 {1000}	9800 {1000}	9800 {1000}	7840 {800}	5880 {600}	4900 {500}	4410 {450}	3720 {380}	3430 {350}	—	—	—	—	
	Allowable Y-axis O.H.L. (N) (kgf)	11760 {1200}	11760 {1200}	11760 {1200}	9800 {1000}	7350 {750}	6370 {650}	5880 {600}	5100 {520}	4020 {410}	—	—	—	—	
Transmission Efficiency (Reference)	95%														

Speed ratio	Model Code	Specification Symbol	X-axis Rotation Speed (rpm)												
			20	50	100	200	300	400	600	900	1200	1500	1800	2500	3600
1:2	CBX-192	Allowable Capacity (kW)	0.03	0.07	0.14	0.27	0.40	0.53	0.78	1.15	1.50	1.85	2.17	2.20	2.20
		Allowable Y-axis Torque (N·m) (kgf·m)	25.5 {2.6}	25.5 {2.6}	25.5 {2.6}	25.5 {2.6}	25.5 {2.6}	24.5 {2.5}	24.5 {2.5}	24.5 {2.5}	23.5 {2.4}	23.5 {2.4}	22.5 {2.3}	16.7 {1.7}	10.8 {1.1}
		Allowable X-axis O.H.L. (N) (kgf)	1180 {120}	1180 {120}	1180 {120}	1180 {120}	1180 {120}	1130 {115}	1130 {115}	1080 {110}	1080 {110}	882 {90}	833 {85}	784 {80}	735 {75}
		Allowable Y-axis O.H.L. (N) (kgf)	1760 {180}	1760 {180}	1760 {180}	1760 {180}	1760 {180}	1720 {175}	1670 {170}	1470 {150}	1270 {130}	1080 {110}	980 {100}	833 {85}	784 {80}
	Transmission Efficiency (Reference)	90%													
	CBX-252	Allowable Capacity (kW)	0.09	0.23	0.45	0.90	1.34	1.78	2.67	4.00	5.30	6.33	7.50	7.50	—
		Allowable Y-axis Torque (N·m) (kgf·m)	85.3 {8.7}	85.3 {8.7}	85.3 {8.7}	85.3 {8.7}	85.3 {8.7}	84.3 {8.6}	84.3 {8.6}	84.3 {8.6}	84.3 {8.6}	80.4 {8.2}	79.4 {8.1}	56.8 {5.8}	—
		Allowable X-axis O.H.L. (N) (kgf)	3920 {400}	3920 {400}	3920 {400}	3920 {400}	3920 {400}	3720 {380}	3630 {370}	3530 {360}	3230 {330}	2740 {280}	2250 {230}	1670 {170}	—
		Allowable Y-axis O.H.L. (N) (kgf)	4120 {420}	4120 {420}	4120 {420}	4120 {420}	4020 {410}	3920 {400}	3820 {390}	3720 {380}	3430 {350}	3040 {310}	2650 {270}	2350 {240}	—
	Transmission Efficiency (Reference)	90%													
	CBX-322	Allowable Capacity (kW)	0.13	0.32	0.64	1.28	1.91	2.54	3.80	5.72	7.57	9.05	10.7	—	—
		Allowable Y-axis Torque (N·m) (kgf·m)	123 {12.5}	123 {12.5}	123 {12.5}	123 {12.5}	122 {12.4}	122 {12.4}	121 {12.3}	121 {12.3}	120 {12.2}	115 {11.7}	114 {11.6}	—	—
Allowable X-axis O.H.L. (N) (kgf)		4900 {500}	4900 {500}	4900 {500}	4900 {500}	4900 {500}	4700 {480}	4610 {470}	4410 {450}	4120 {420}	3430 {350}	2840 {290}	—	—	
Allowable Y-axis O.H.L. (N) (kgf)		5190 {530}	5190 {530}	5190 {530}	5190 {530}	5100 {520}	4900 {500}	4800 {490}	4700 {480}	4310 {440}	3820 {390}	3330 {340}	—	—	
Transmission Efficiency (Reference)	90%														
CBX-402	Allowable Capacity (kW)	0.20	0.48	0.96	1.93	2.90	3.84	5.72	8.55	11.0	13.8	16.4	—	—	
	Allowable Y-axis Torque (N·m) (kgf·m)	183 {18.7}	183 {18.7}	183 {18.7}	183 {18.7}	183 {18.7}	182 {18.6}	181 {18.5}	180 {18.4}	174 {17.8}	173 {17.6}	172 {17.5}	—	—	
	Allowable X-axis O.H.L. (N) (kgf)	9800 {1000}	9800 {1000}	9800 {1000}	9800 {1000}	9800 {1000}	8820 {900}	7840 {800}	6860 {700}	5880 {600}	4900 {500}	3920 {400}	—	—	
	Allowable Y-axis O.H.L. (N) (kgf)	11760 {1200}	11760 {1200}	11760 {1200}	11760 {1200}	11760 {1200}	9800 {1000}	8820 {900}	8820 {900}	8820 {900}	7840 {800}	6860 {700}	—	—	
Transmission Efficiency (Reference)	90%														

- [Note]
- Be sure to use the product below the permissible values. The speed ratio (1:2) decelerates to the Y axis.
  - The values in this performance table are where the service factor is 1. When using the product under other conditions, refer to Table 1 (Page 460) Service Factors.
  - O.H.L. (overhang load) is the allowable load that can be applied to the center of the shaft length. When using the product under other conditions, refer to the coefficients K<sub>1</sub> and K<sub>2</sub> in Table 2 and 3 (Page 460).
  - 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).
  - Y-axis torque of the model CBX-T is the total value of the left and right axes.
  - Y-axis O.H.L. of the model CBX-T is the total value of the left and right axes.
  - The allowable thrust load is half of respective O.H.L. value.



Catalog Number	Speed ratio	A	B <sub>B</sub>	C	D <sub>P</sub>	D <sub>G</sub>	E	E <sub>0</sub>	F	H	J	K <sub>P</sub>	K <sub>G</sub>	φ <sub>M</sub>	N	P	R	φ <sub>S</sub>
CBX-191L	1:1	257	193	76	180	116	146	129	125	154	109	117.5	53.5	10.5	17	38	—	—
CBX-192L	1:2																	
CBX-251L	1:1	316	259	90	222	157	177.5	155	152	188	133	146	81	14	20	50	12	82.5
CBX-252L	1:2																	
CBX-321L	1:1	340	277	100	242	168	192.5	174	160	196	151	162	88	14	20	55	9	88.5
CBX-322L	1:2																	
CBX-401L	1:1	425	337	115	308	208	225	200	195	234	173	210.5	110.5	14	22	75	14	114.5
CBX-402L	1:2																	

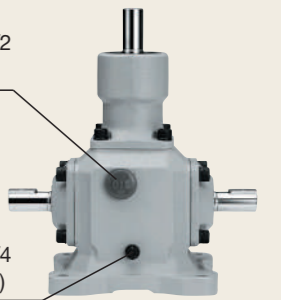
φ <sub>V</sub>	X-axis diameter φ <sub>U<sub>P</sub></sub>	Y-axis diameter φ <sub>U<sub>G</sub></sub>	Key	Angular Backlash	Weight (kg)	Catalog Number
66	19	19	6 x 6 x 27 ℓ	11'~30'	10.0	CBX-191L
	18			17'~47'		CBX-192L
92	25	25	8 x 7 x 40 ℓ	9'~22'	17.0	CBX-251L
				15'~36'		CBX-252L
100	32	32	10 x 8 x 50 ℓ	9'~21'	22.0	CBX-321L
				15'~36'		CBX-322L
124	40	40	12 x 8 x 60 ℓ	8'~20'	33.0	CBX-401L
				15'~37'		CBX-402L

[NOTES]

- The phases of the X-axis and Y-axis key grooves do not always match.
  - The shaft diameter tolerance is JIS h6.
  - JIS B 1301-1976 (normal) is used for the key dimensions
  - The indicated angular backlash is reference values measured on the X-axis (input axis).
  - The standard specifications of the oil plug are flat surface mounting (floor mounting), oil filler port → PF1/2, and oil drain port → PT1/4.
- When mounting on the ceiling or on the wall, an oil drain port can be added to the position shown in the figure below as a custom order.

Standard specifications

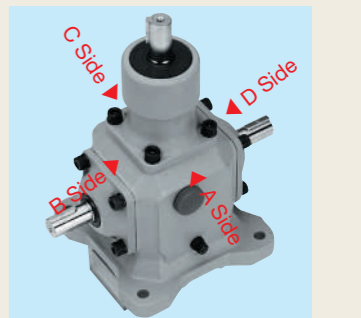
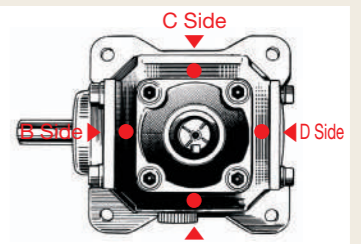
Oil plug PF1/2 (oil filler port)



Oil plug PT1/4 (oil drain port)

Oil drain port added (estimated separately)

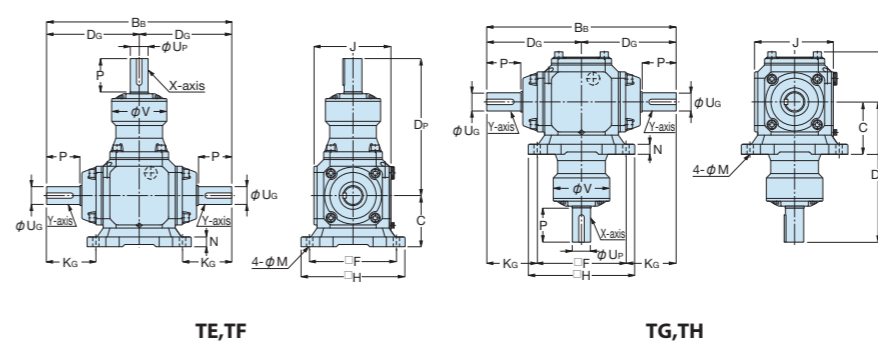
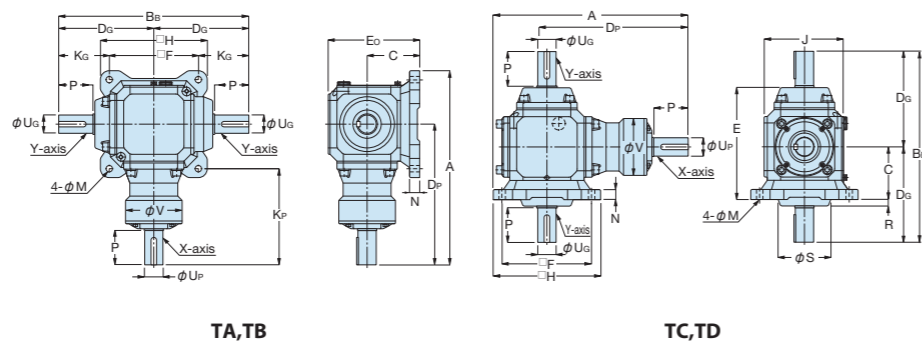
Oil plug drain port PT1/4 can be added at the marked location. Please make the request when asking for a quote.



\* The side with the standard oil plug is the A side, and B, C and D are displayed clockwise when viewed from above.

When placing an order, select the model code (A to P) from the Shaft Arrangement Table on Page 456 in the □ at the end of the catalog number.

CBX T  
Bevel Gearboxes



Catalog Number	Speed ratio	A	B <sub>B</sub>	C	D <sub>P</sub>	D <sub>G</sub>	E	E <sub>0</sub>	F	H	J	K <sub>P</sub>	K <sub>G</sub>	φ <sub>M</sub>	N	P	R	φ <sub>S</sub>
CBX-191T	1:1	257	232	76	180	116	146	129	125	154	109	117.5	53.5	10.5	17	38	—	—
CBX-192T	1:2																	
CBX-251T	1:1	316	314	90	222	157	177.5	155	152	188	133	146	81	14	20	50	12	82.5
CBX-252T	1:2																	
CBX-321T	1:1	340	336	100	242	168	192.5	174	160	196	151	162	88	14	20	55	9	88.5
CBX-322T	1:2																	
CBX-401T	1:1	425	416	115	308	208	225	200	195	234	173	210.5	110.5	14	22	75	14	114.5
CBX-402T	1:2																	

φ <sub>V</sub>	X-axis diameter φ <sub>U<sub>P</sub></sub>	Y-axis diameter φ <sub>U<sub>G</sub></sub>	Key	Angular Backlash	Weight (kg)	Catalog Number
66	19	19	6 x 6 x 27 ℓ	11'~30'	10.0	CBX-191T
	18			17'~47'		CBX-192T
92	25	25	8 x 7 x 40 ℓ	9'~22'	18.0	CBX-251T
				15'~36'		CBX-252T
100	32	32	10 x 8 x 50 ℓ	9'~21'	23.0	CBX-321T
				15'~36'		CBX-322T
124	40	40	12 x 8 x 60 ℓ	8'~20'	34.0	CBX-401T
				15'~37'		CBX-402T

When placing an order, select the model code (A to H) from the Shaft Arrangement Table on Page 456 in the □ at the end of the catalog number.

\* As this product is assembled according to customer specifications, delivery will be made about 10 days after an order is received. Please be aware of this when ordering.