

UG Series Linear Actuators



The UG Series is built on PBC Linear's patented SIMO® process (Simultaneous Integral Milling Operation), which machines all critical rail surfaces concurrently in a single pass — delivering machined precision at extrusion prices.

SIMO® Advantage

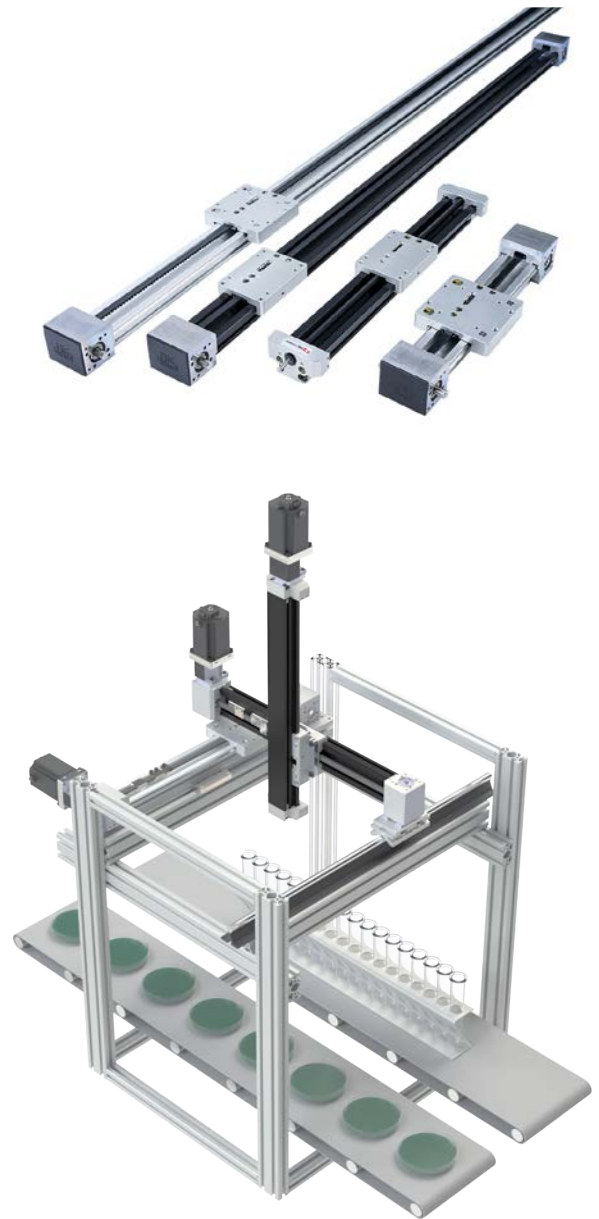
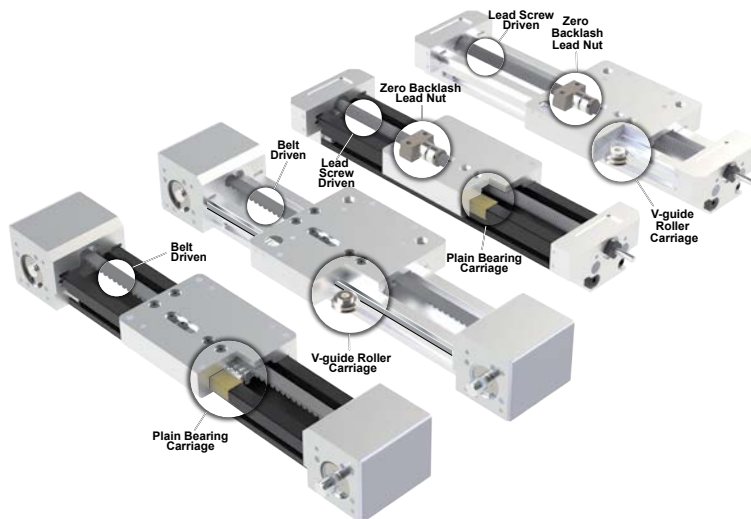
- Straightness (camber): 6× better than typical — $\pm 0.002\text{in/ft}$ [0.167mm/m].
- Twist: 2× better than typical — $< 1/4^\circ/\text{ft}$ [$0.82^\circ/\text{m}$].
- Flatness: 2× better than typical — 0.002in [0.0508mm].

Features

- Rail — hard-anodized (ceramic-coated) aluminum UGT tall rail with 5mm-wide T-slots on each side for clamps and accessories.
- Bearing options — FrelonGOLD® plain bearing (low cost, self-lubricating, vibration-damping) or V-guide cam roller (high speed, higher cantilevered loads, stainless raceways, sealed wheels).
- Drive options — lead screw with anti-backlash nut or belt (high speed, long stroke).
- Motor options — adapter plates available for 40mm-frame servo, 42mm-frame NEMA 17 stepper and 56mm-frame NEMA 23 stepper motors.
- Multi-axis — adapter plates available to join carriage-to-carriage and rail-to-carriage for XY and XYZ positioning of an end-effector tool.

Applications

- Product positioning
- Tool positioning
- Pick and place
- 2D and 3D plotting
- XYZ Cartesian robot
- Transfer products in and out of work cells
- End-of-line packaging
- Machine tending
- Adhesive and sealant application



UG Series Selection Guide

Part number	UGTDAxxxxxLAX-AD	UGTDBxxxxxLAX-AD	UGTDAxxxxxBOD-AD	UGTDBxxxxxBOD-AD
Bearing type	Plain (FrelonGOLD)	V-guide (cam roller)	Plain (FrelonGOLD)	V-guide (cam roller)
Drive	Lead screw	Lead screw	Belt	Belt
Stroke	150–1,250mm	150–1,250mm	150–1,750mm	150–1,750mm
Max velocity	0.25–0.50 m/s	0.25–0.50 m/s	1.52 m/s	4.00 m/s
Max acceleration	50 m/s ²	50 m/s ²	50 m/s ²	50 m/s ²
Repeatability	$\leq \pm 0.02\text{mm}$	$\leq \pm 0.02\text{mm}$	$\leq \pm 0.127\text{mm}$	$\leq \pm 0.127\text{mm}$
Max drive (input) speed	3,000 rpm	3,000 rpm	3,000 rpm	3,000 rpm
Dynamic Load, C	4,710N [1,059 lbf]	880N [198 lbf]	1,600N [360 lbf]	880N [198 lbf]

UG Series Lead Screw with Plain Bearing Rail



Features

- Motor mount: not included — order [UG-AP-KIT-CH](#)
- Drive type: lead screw
- Rail type: plain bearing rail
- Rail material: ceramic-coated aluminum
- Carriage type: plain bearing
- Carriage bearing material: FrelonGOLD
- Input shaft diameter: 5mm
- Screw diameter: 10mm
- Carriage mass: 0.235 kg
- Lubrication: self-lubricating; none required



Performance Ratings

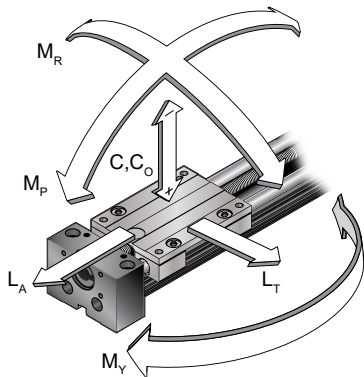
- Repeatability: $\pm 0.02\text{mm}$
- Max acceleration: 50 m/s^2
- Max drive speed: 3,000 rpm
- Operating temperature: $0\text{--}80\text{ }^{\circ}\text{C}$ [$32\text{--}176\text{ }^{\circ}\text{F}$]

[UGTDA0250LAX-AD](#)

UG Series Lead Screw with Plain Bearing Rail								
Part number	Price	Stroke	Screw lead	Max velocity	Rail length	Accuracy	Linear actuator mass	Drawing link
UGTDA0250LAX-AD	\$569.00	150mm	5 mm/rev	0.25 m/s	250mm	$\pm 0.175\text{mm}$	1.089 kg	PDF
UGTDA0250LAJ-AD	\$569.00	150mm	10 mm/rev	0.50 m/s	250mm	$\pm 0.175\text{mm}$	1.089 kg	PDF
UGTDA0400LAX-AD	\$622.00	300mm	5 mm/rev	0.25 m/s	400mm	$\pm 0.28\text{mm}$	1.442 kg	PDF
UGTDA0400LAJ-AD	\$622.00	300mm	10 mm/rev	0.50 m/s	400mm	$\pm 0.28\text{mm}$	1.442 kg	PDF
UGTDA0550LAX-AD	\$674.00	450mm	5 mm/rev	0.25 m/s	550mm	$\pm 0.385\text{mm}$	1.796 kg	PDF
UGTDA0550LAJ-AD	\$674.00	450mm	10 mm/rev	0.50 m/s	550mm	$\pm 0.385\text{mm}$	1.796 kg	PDF
UGTDA0700LAX-AD	\$727.00	600mm	5 mm/rev	0.25 m/s	700mm	$\pm 0.49\text{mm}$	2.149 kg	PDF
UGTDA0700LAJ-AD	\$727.00	600mm	10 mm/rev	0.50 m/s	700mm	$\pm 0.49\text{mm}$	2.149 kg	PDF
UGTDA0850LAX-AD	\$780.00	750mm	5 mm/rev	0.25 m/s	850mm	$\pm 0.595\text{mm}$	2.503 kg	PDF
UGTDA0850LAJ-AD	\$780.00	750mm	10 mm/rev	0.50 m/s	850mm	$\pm 0.595\text{mm}$	2.503 kg	PDF
UGTDA01100LAX-AD	\$867.00	1,000mm	5 mm/rev	0.25 m/s	1,100mm	$\pm 0.77\text{mm}$	3.092 kg	PDF
UGTDA01100LAJ-AD	\$867.00	1,000mm	10 mm/rev	0.50 m/s	1,100mm	$\pm 0.77\text{mm}$	3.092 kg	PDF
UGTDA01350LAX-AD	\$955.00	1,250mm	5 mm/rev	0.25 m/s	1,350mm	$\pm 0.945\text{mm}$	3.681 kg	PDF
UGTDA01350LAJ-AD	\$955.00	1,250mm	10 mm/rev	0.50 m/s	1,350mm	$\pm 0.945\text{mm}$	3.681 kg	PDF



NOTE: This actuator type uses plain bearings and must comply with the 2:1 cantilever rule — see 2:1 Cantilever Rule on tLMN-18.



Load Ratings	
Dynamic Load, C (N [lbf])	4,710 [1,059]
Static Load, Co (N [lbf])	4,710 [1,059]
Reverse Static, -Co (N [lbf])	1,640 [369]
Lateral Load, Lt (N [lbf])	3,150 [708]
Axial Load, La (N [lbf])	111.2 [25.0]
Pitch Moment, Mp (N·m [lb·ft])	130 [96]
Yaw Moment, My (N·m [lb·ft])	130 [96]
Roll Moment, Mr (N·m [lb·ft])	100 [74]

Additional Information

Product Manual	Interactive Instructions
PDF	

UG Series Lead Screw with V-guide Bearing Rail



Features

- Motor mount: not included — order [UG-AP-KIT-CH](#)
- Drive type: lead screw
- Rail type: V-guide bearing rail
- Rail material: stainless steel
- Carriage type: V-guide bearing
- Carriage bearing material: stainless steel V cam roller
- Input shaft diameter: 5mm
- Screw diameter: 10mm
- Carriage mass: 0.355 kg
- Lubrication: built-in carriage lubricators

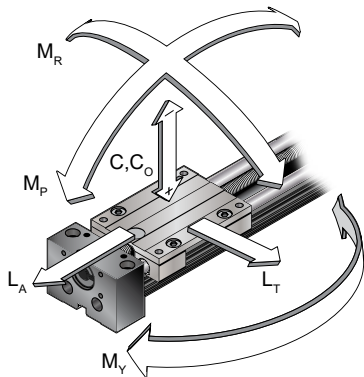


Performance Ratings

- Repeatability: $\pm 0.02\text{mm}$
- Max acceleration: 50 m/s^2
- Max drive speed: 3,000 rpm
- Operating temperature: $0\text{--}80\text{ }^{\circ}\text{C}$ [$32\text{--}176\text{ }^{\circ}\text{F}$]

[UGTDB0250LAX-AD](#)

UG Series Lead Screw with V-guide Bearing Rail								
Part number	Price	Stroke	Screw lead	Max velocity	Rail length	Accuracy	Linear actuator mass	Drawing link
UGTDB0250LAX-AD	\$818.00	150mm	5 mm/rev	0.25 m/s	250mm	$\pm 0.175\text{mm}$	1.264 kg	PDF
UGTDB0250LAJ-AD	\$818.00	150mm	10 mm/rev	0.50 m/s	250mm	$\pm 0.175\text{mm}$	1.264 kg	PDF
UGTDB0400LAX-AD	\$883.00	300mm	5 mm/rev	0.25 m/s	400mm	$\pm 0.28\text{mm}$	1.651 kg	PDF
UGTDB0400LAJ-AD	\$883.00	300mm	10 mm/rev	0.50 m/s	400mm	$\pm 0.28\text{mm}$	1.651 kg	PDF
UGTDB0550LAX-AD	\$949.00	450mm	5 mm/rev	0.25 m/s	550mm	$\pm 0.385\text{mm}$	2.038 kg	PDF
UGTDB0550LAJ-AD	\$949.00	450mm	10 mm/rev	0.50 m/s	550mm	$\pm 0.385\text{mm}$	2.038 kg	PDF
UGTDB0700LAX-AD	\$1,015.00	600mm	5 mm/rev	0.25 m/s	700mm	$\pm 0.49\text{mm}$	2.425 kg	PDF
UGTDB0700LAJ-AD	\$1,015.00	600mm	10 mm/rev	0.50 m/s	700mm	$\pm 0.49\text{mm}$	2.425 kg	PDF
UGTDB0850LAX-AD	\$1,081.00	750mm	5 mm/rev	0.25 m/s	850mm	$\pm 0.595\text{mm}$	2.811 kg	PDF
UGTDB0850LAJ-AD	\$1,081.00	750mm	10 mm/rev	0.50 m/s	850mm	$\pm 0.595\text{mm}$	2.811 kg	PDF
UGTDB01100LAX-AD	\$1,190.00	1,000mm	5 mm/rev	0.25 m/s	1,100mm	$\pm 0.77\text{mm}$	3.456 kg	PDF
UGTDB01100LAJ-AD	\$1,190.00	1,000mm	10 mm/rev	0.50 m/s	1,100mm	$\pm 0.77\text{mm}$	3.456 kg	PDF
UGTDB01350LAX-AD	\$1,300.00	1,250mm	5 mm/rev	0.25 m/s	1,350mm	$\pm 0.945\text{mm}$	4.100 kg	PDF
UGTDB01350LAJ-AD	\$1,300.00	1,250mm	10 mm/rev	0.50 m/s	1,350mm	$\pm 0.945\text{mm}$	4.100 kg	PDF



Load Ratings	
Dynamic Load, C (N [lbf])	880 [198]
Static Load, Co (N [lbf])	880 [198]
Reverse Static, -Co (N [lbf])	880 [198]
Lateral Load, Lt (N [lbf])	740 [166]
Axial Load, La (N [lbf])	111.2 [25.0]
Pitch Moment, Mp (N·m [lb·ft])	25 [18]
Yaw Moment, My (N·m [lb·ft])	35 [26]
Roll Moment, Mr (N·m [lb·ft])	15 [11]

Additional Information	
Product Manual	Interactive Instructions
PDF	

UG Series Belt Drive with Plain Bearing Rail

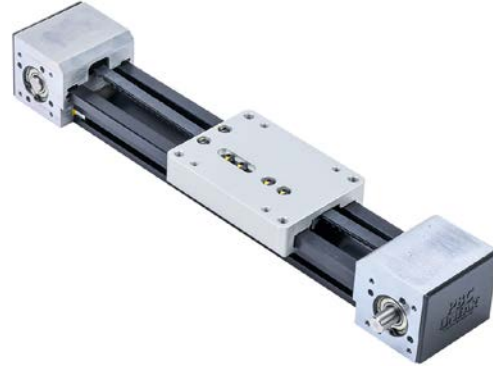


Features

- Motor mount: not included — order [UG-AP-KIT-CH](#)
- Drive type: toothed belt
- Rail type: plain bearing rail
- Rail material: ceramic-coated aluminum
- Carriage type: plain bearing
- Carriage bearing material: FrelonGOLD
- Input shaft diameter: 10mm
- Travel per revolution: 80 mm/rev
- Carriage mass: 0.235 kg
- Lubrication: self-lubricating; none required

Performance Ratings

- Repeatability: $\pm 0.127\text{mm}$
- Max continuous velocity: 1.52 m/s
- Max intermittent velocity: 4.00 m/s (with lubrication)
- Max acceleration: 50 m/s^2
- Max drive speed: 3,000 rpm
- Operating temperature: $0\text{--}80\text{ }^{\circ}\text{C}$ [$32\text{--}176\text{ }^{\circ}\text{F}$]

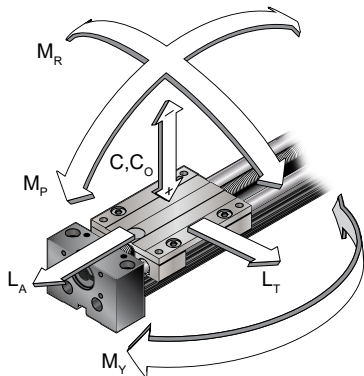


[UGTDA0250B0D-AD](#)

UG Series Belt Drive with Plain Bearing Rail							
Part number	Price	Stroke	Max velocity	Rail length	Accuracy	Linear actuator mass	Drawing link
UGTDA0250B0D-AD	\$939.00	150mm	1.52 m/s	250mm	$\pm 0.13\text{mm}$	0.932 kg	PDF
UGTDA0400B0D-AD	\$985.00	300mm	1.52 m/s	400mm	$\pm 0.20\text{mm}$	1.192 kg	PDF
UGTDA0550B0D-AD	\$1,032.00	450mm	1.52 m/s	550mm	$\pm 0.28\text{mm}$	1.452 kg	PDF
UGTDA0700B0D-AD	\$1,078.00	600mm	1.52 m/s	700mm	$\pm 0.35\text{mm}$	1.711 kg	PDF
UGTDA0850B0D-AD	\$1,125.00	750mm	1.52 m/s	850mm	$\pm 0.43\text{mm}$	1.970 kg	PDF
UGTDA01100B0D-AD	\$1,202.00	1,000mm	1.52 m/s	1,100mm	$\pm 0.55\text{mm}$	2.403 kg	PDF
UGTDA01350B0D-AD	\$1,280.00	1,250mm	1.52 m/s	1,350mm	$\pm 0.68\text{mm}$	2.836 kg	PDF
UGTDA01600B0D-AD	\$1,357.00	1,500mm	1.52 m/s	1,600mm	$\pm 0.80\text{mm}$	3.268 kg	PDF
UGTDA01850B0D-AD	\$1,435.00	1,750mm	1.52 m/s	1,850mm	$\pm 0.93\text{mm}$	3.700 kg	PDF



NOTE: This actuator type uses plain bearings and must comply with the 2:1 cantilever rule — see 2:1 Cantilever Rule on tLMN-18.



Load Ratings	
Dynamic Load, C (N [lbf])	1,600 [360]
Static Load, Co (N [lbf])	4,710 [1,059]
Reverse Static, -Co (N [lbf])	1,640 [369]
Lateral Load, Lt (N [lbf])	3,150 [708]
Axial Load, La (N [lbf])	200 [45]
Pitch Moment, Mp (N·m [lb·ft])	130 [96]
Yaw Moment, My (N·m [lb·ft])	120 [89]
Roll Moment, Mr (N·m [lb·ft])	100 [74]

Additional Information

Product Manual	Interactive Instructions
PDF	

UG Series Belt Drive with V-guide Bearing Rail



Features

- Motor mount: not included — order [UG-AP-KIT-CH](#)
- Drive type: toothed belt
- Rail type: V-guide bearing rail
- Rail material: stainless steel
- Carriage type: V-guide bearing
- Carriage bearing material: stainless steel V cam roller
- Input shaft diameter: 10mm
- Travel per revolution: 80 mm/rev
- Carriage mass: 0.355 kg
- Lubrication: built-in carriage lubricators

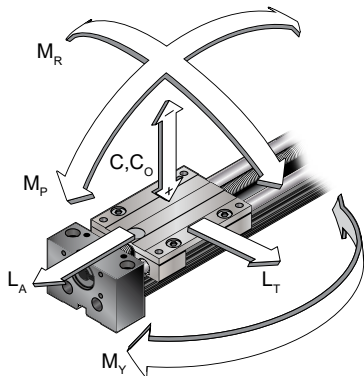
Performance Ratings

- Repeatability: $\pm 0.127\text{mm}$
- Max velocity: 4.00 m/s
- Max acceleration: 50 m/s^2
- Max drive speed: 3,000 rpm
- Operating temperature: $0\text{--}80\text{ }^{\circ}\text{C}$ [$32\text{--}176\text{ }^{\circ}\text{F}$]



UGTDB0250B0D-AD

UG Series Belt Drive with V-guide Bearing Rail							
Part number	Price	Stroke	Max velocity	Rail length	Accuracy	Linear actuator mass	Drawing link
UGTDB0250B0D-AD	\$1,231.00	150mm	4.00 m/s	250mm	$\pm 0.13\text{mm}$	1.115 kg	PDF
UGTDB0400B0D-AD	\$1,293.00	300mm	4.00 m/s	400mm	$\pm 0.20\text{mm}$	1.412 kg	PDF
UGTDB0550B0D-AD	\$1,355.00	450mm	4.00 m/s	550mm	$\pm 0.28\text{mm}$	1.709 kg	PDF
UGTDB0700B0D-AD	\$1,417.00	600mm	4.00 m/s	700mm	$\pm 0.35\text{mm}$	2.006 kg	PDF
UGTDB0850B0D-AD	\$1,479.00	750mm	4.00 m/s	850mm	$\pm 0.43\text{mm}$	2.303 kg	PDF
UGTDB01100B0D-AD	\$1,583.00	1,000mm	4.00 m/s	1,100mm	$\pm 0.55\text{mm}$	2.798 kg	PDF
UGTDB01350B0D-AD	\$1,686.00	1,250mm	4.00 m/s	1,350mm	$\pm 0.68\text{mm}$	3.293 kg	PDF
UGTDB01600B0D-AD	\$1,789.00	1,500mm	4.00 m/s	1,600mm	$\pm 0.80\text{mm}$	3.788 kg	PDF
UGTDB01850B0D-AD	\$1,892.00	1,750mm	4.00 m/s	1,850mm	$\pm 0.93\text{mm}$	4.283 kg	PDF

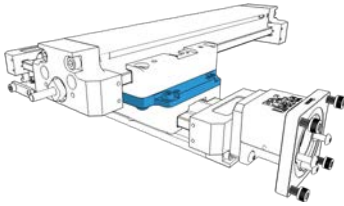
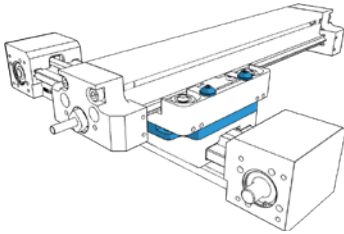
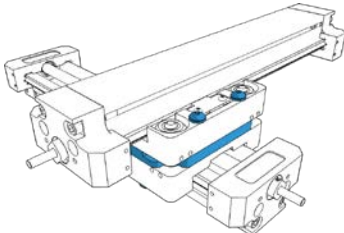
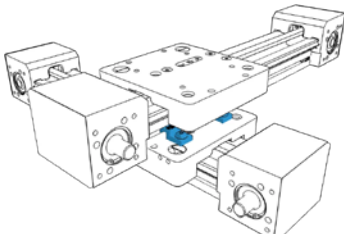
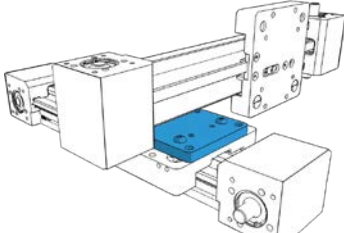


Load Ratings	
Dynamic Load, C (N [lbf])	880 [198]
Static Load, Co (N [lbf])	880 [198]
Reverse Static, -Co (N [lbf])	880 [198]
Lateral Load, Lt (N [lbf])	740 [166]
Axial Load, La (N [lbf])	200 [45]
Pitch Moment, Mp (N·m [lb·ft])	25 [18]
Yaw Moment, My (N·m [lb·ft])	35 [26]
Roll Moment, Mr (N·m [lb·ft])	15 [11]

Additional Information	
Product Manual	Interactive Instructions
PDF	

UG Series Mounting Brackets

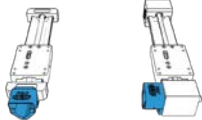
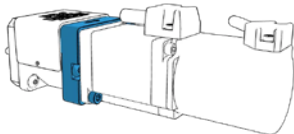
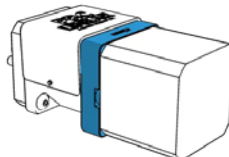
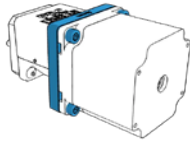


UG Series Mounting Brackets							
Part number	Price	Description	Fits Carriage	Fits Rail	Assembly Illustration	Image	Drawing link
<u>LATA-KIT-038-CH</u>	\$51.00	PBC UG series mounting plate, anodized aluminum, XY bracket.	UGTDA-xxx	PBC UG series plain bearing actuators			<u>PDF</u>
<u>LATA-KIT-039-CH</u>	\$72.00	PBC UG series mounting plate, anodized aluminum, XY bracket.	UGTDA-xxx UGTDB-xxx	PBC UG series plain bearing carriages to v-guide roller bearing carriages			<u>PDF</u>
<u>LATA-KIT-041-CH</u>	\$92.00	PBC UG series mounting plate, anodized aluminum, XY bracket.	UGTDB-xxx	PBC UG series v-guide bearing rail actuators			<u>PDF</u>
<u>LATA-KIT-042-CH</u>	\$22.00	PBC UG series base mounting plate, anodized aluminum, XY bracket.	UGTD-xxx	all PBC UG series actuators			<u>PDF</u>
<u>LATA-KIT-043-CH</u>	\$106.00	PBC UG series side mounting plate, anodized aluminum, XY bracket.	UGTD-xxx	all PBC UG series actuators			<u>PDF</u>

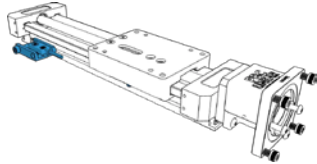
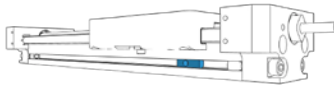
All brackets include the required mounting hardware.

UG Series Motor Mounts and Hardware



UG Series Motor Mounts and Adapters						
Part number	Price	Description	Fits	Assembly Illustration	Image	Drawing link
<u>UG-AP-KIT-CH</u>	\$94.00	PBC UG series motor mount kit, anodized aluminum, axial.	all PBC UG series actuators			PDF
<u>3PMM-40A-KIT-CH</u>	\$74.00	PBC motor adapter, anodized aluminum, axial, 40mm frame.	all PBC Compact and UG series actuators			PDF
<u>3PMM-42A-KIT-CH</u>	\$74.00	PBC motor adapter, anodized aluminum, axial, NEMA 17 frame.	all PBC Compact and UG series actuators			PDF
<u>3PMM-56A-KIT-CH</u>	\$74.00	PBC motor adapter, anodized aluminum, axial, NEMA 23 frame.	all PBC Compact and UG series actuators			PDF

All motor mounts and adapter plates include the required mounting hardware.

UG Series Rail Hardware and Maintenance						
Part number	Price	Description	Fits	Assembly Illustration	Image	Drawing link
<u>LATA-SENBRKT-01-KIT</u>	\$40.00	PBC UG series sensor bracket, anodized aluminum.	all PBC UG series actuators			PDF
<u>A-NOR-20634</u>	\$2.75	igus M5 slot nut, zinc plated steel. Package of 8.	all igus ZLW and SAW series and PBC UG series actuators			PDF
<u>UGA040A-LHA-KIT</u>	\$53.00	PBC UG series lubricant, replacement.	PBC UG series v-guide roller bearing carriages			PDF

The sensor bracket includes the required mounting hardware.

UG Series Drive Couplings



UG Series Drive Coupling Selection			
Actuator	40mm-frame (8mm motor shaft)	42mm-frame, NEMA 17 (5mm motor shaft)	56mm-frame, NEMA 23 (6.35mm motor shaft)
Lead screw UGTDxxxxxLAX-AD (5mm stub shaft)	SRB-19C-5-8 SHR-18C-5-8 SJC-20C-5 + SJC-20C-8 + spider	SRB-19C-5-5 SHR-18C-5-5 (2) SJC-20C-5 + spider	SRB-19C-5-6.35 SHR-18C-5-6.35 SJC-20C-5 + SJC-20C-6.35 + spider
Belt drive UGTDxxxxxB0D-AD (10mm stub shaft)	SRB-22C-8-10 SJC-20C-8 + SJC-20C-10 + spider	SRB-22C-5-10 SJC-20C-5 + SJC-20C-10 + spider	SRB-22C-6.35-10 SJC-20C-6.35 + SJC-20C-10 + spider

Choose one coupling per driven axis. Prices, descriptions, and drawing links are in the table below.

UG Series Drive Couplings				
Part number	Price	Description	Fits	Drawing link
SRB-19C-5-5	\$29.50	Sung-II Machinery drive coupling, servo-beam, 7075-T6 aluminum alloy, clamp, size 19, 5 x 5mm bore.	UGTDx lead screw (5mm stub shaft); 42mm NEMA 17 motor (5mm shaft)	PDF
SRB-19C-5-6.35	\$29.50	Sung-II Machinery drive coupling, servo-beam, 7075-T6 aluminum alloy, clamp, size 19, 5 x 6.35mm (1/4in) bore.	UGTDx lead screw (5mm stub shaft); 56mm NEMA 23 motor (6.35mm shaft)	PDF
SRB-19C-5-8	\$29.50	Sung-II Machinery drive coupling, servo-beam, 7075-T6 aluminum alloy, clamp, size 19, 5 x 8mm bore.	UGTDx lead screw (5mm stub shaft); 40mm servo motor (8mm shaft)	PDF
SHR-18C-5-5	\$52.00	Sung-II Machinery drive coupling, servo high gain, aluminum alloy, clamp, size 18, 5 x 5mm bore.	UGTDx lead screw (5mm stub shaft); 42mm NEMA 17 motor (5mm shaft)	PDF
SHR-18C-5-6.35	\$52.00	Sung-II Machinery drive coupling, servo high gain, aluminum alloy, clamp, size 18, 5mm x 1/4in bore.	UGTDx lead screw (5mm stub shaft); 56mm NEMA 23 motor (6.35mm shaft)	PDF
SHR-18C-5-8	\$52.00	Sung-II Machinery drive coupling, servo high gain, aluminum alloy, clamp, size 18, 5 x 8mm bore.	UGTDx lead screw (5mm stub shaft); 40mm servo motor (8mm shaft)	PDF
SRB-22C-5-10	\$31.50	Sung-II Machinery drive coupling, servo-beam, 7075-T6 aluminum alloy, clamp, size 22, 5 x 10mm bore.	UGTDx-B0D belt drive (10mm stub shaft); 42mm NEMA 17 motor (5mm shaft)	PDF
SRB-22C-6.35-10	\$31.50	Sung-II Machinery drive coupling, servo-beam, 7075-T6 aluminum alloy, clamp, size 22, 6.35 (1/4in) x 10mm bore.	UGTDx-B0D belt drive (10mm stub shaft); 56mm NEMA 23 motor (6.35mm shaft)	PDF
SRB-22C-8-10	\$31.50	Sung-II Machinery drive coupling, servo-beam, 7075-T6 aluminum alloy, clamp, size 22, 8 x 10mm bore.	UGTDx-B0D belt drive (10mm stub shaft); 40mm servo motor (8mm shaft)	PDF
SJC-20C-5	\$13.00	Sung-II Machinery drive coupling hub, jaw type, aluminum alloy, clamp, size 20, 5mm bore.	5mm shaft: UGTDx lead screw stub shaft or 42mm NEMA 17 motor	PDF
SJC-20C-6.35	\$13.00	Sung-II Machinery drive coupling hub, jaw type, aluminum alloy, clamp, size 20, 1/4in bore.	6.35mm shaft: 56mm NEMA 23 motor	PDF
SJC-20C-8	\$13.00	Sung-II Machinery drive coupling hub, jaw type, aluminum alloy, clamp, size 20, 8mm bore.	8mm shaft: 40mm servo motor	PDF
SJC-20C-10	\$13.00	Sung-II Machinery drive coupling hub, jaw type, aluminum alloy, clamp, size 20, 10mm bore.	10mm shaft: UGTDx-B0D belt drive stub shaft	PDF
SJC-20-GR-SLEEVE	\$8.50	Sung-II Machinery drive coupling spider, jaw type, size 20, Hytrel, 98A durometer.	all SJC-20C series hubs	PDF
SJC-20-BL-SLEEVE	\$8.50	Sung-II Machinery drive coupling spider, jaw type, size 20, thermoplastic polyurethane, 98A durometer.	all SJC-20C series hubs	PDF
SJC-20-RD-SLEEVE	\$8.50	Sung-II Machinery drive coupling spider, jaw type, size 20, Hytrel, 63D durometer.	all SJC-20C series hubs	PDF

SRB servo-beam and SHR servo high gain couplings are one piece. An SJC jaw coupling needs one hub for each shaft diameter plus one SJC-20 spider. Every coupling listed fits inside the UG-AP-KIT-CH main frame: 25mm maximum outside diameter and 26mm maximum length.



[SRB-19C-5-5](#)



[SHR-18C-5-8](#)



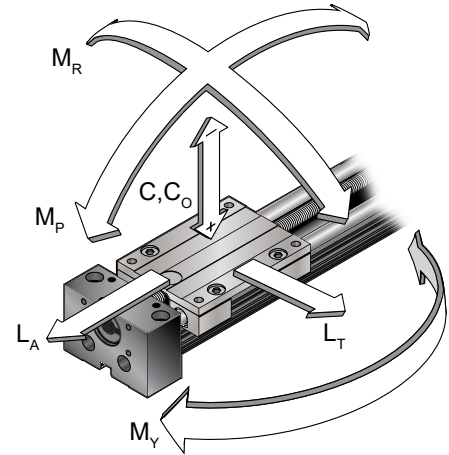
[SJC-20C-5](#) + [SJC-20C-10](#) + [SJC-20-GR-SLEEVE](#)

UG Series Definitions



Load and moment rating definitions for the UG Series. Values are shown in N [lbf] and N·m [lb·ft].

Load and Moment Ratings		
Symbol	Rating	Description
C	Dynamic load — N [lbf]	Normal (vertical) load capacity under motion.
Co	Static load — N [lbf]	Maximum normal load at rest.
-Co	Reverse static load — N [lbf]	Maximum normal load in inverted mounting.
Lt	Lateral load — N [lbf]	Side load, perpendicular to the direction of travel.
La	Axial load — N [lbf]	Thrust load along the direction of travel.
Mp	Pitch moment — N·m [lb·ft]	Rotation about the lateral axis (nose up / down).
My	Yaw moment — N·m [lb·ft]	Rotation about the vertical axis.
Mr	Roll moment — N·m [lb·ft]	Rotation about the travel axis.



Applying the Load Ratings

Verify an application by dividing each applied load and moment by its rating. Each individual ratio — and the combined sum below — must be $\leq 1/Z$:

$$\frac{F_{na}}{C_o} + \frac{F_{ta}}{L_t} + \frac{M_{pa}}{M_p} + \frac{M_{ya}}{M_y} + \frac{M_{ra}}{M_r} \leq \frac{1}{Z}$$

where the subscript a denotes an applied load or moment: F_{na} normal, F_{ta} lateral, M_{pa} pitch, M_{ya} yaw, M_{ra} roll. Axial thrust (L_a) is reacted by the drive and is checked separately against the drive's thrust rating.

Safety Factor (Z)	
Application condition	Z
Smooth motion, infrequent reversal, slow speed (< 30% max), no shock or vibration, clean environment	1.0–1.5
Normal shop-floor conditions, moderate speed (30–75% max), normal shock and vibration	>1.5–2.0
Frequent travel reversal, high speed (> 75% max), shock and vibration, heavy dirt and dust	>2.0–3.5

- Rated loads and moments are maximum values; consult PBC Linear for edge cases.
- Plain-bearing (Gliding Surface) values shown are for dry operation; lubrication can reduce them by up to 50%.
- Plain-bearing configurations must comply with the 2:1 cantilever rule — see below.
- Lead-screw accuracy: ISO Class 10 (± 0.0007 mm/mm). Operating temperature 0–80 °C [32–176 °F]. Conversions: N $\times 0.2248$ = lbf; N·m $\times 0.7376$ = lb·ft.

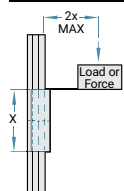
Worked Example — UG Series Lead Screw with Plain Bearing Rail

A 12 kg payload is carried 150mm from the carriage center along the direction of travel, together with a 40N lateral process force at the same offset. Duty is normal shop-floor (moderate speed, normal shock and vibration), so Z = 1.75. Ratings used are the plain-bearing lead screw values from this series: C_o = 4,710N, L_t = 3,150N, M_p = 130 N·m, M_y = 130 N·m, M_r = 100 N·m.

$$\frac{117.7}{4,710} + \frac{40}{3,150} + \frac{17.7}{130} + \frac{6}{130} + \frac{0}{100} = 0.22 \leq 0.57$$

Applied values: F_{na} = 117.7N · F_{ta} = 40N · M_{pa} = 17.7 N·m · M_{ya} = 6 N·m · M_{ra} = 0 N·m. Largest single-axis ratio 0.14 and the combined sum 0.22 are both within the 1/Z limit of 0.57, so this application is within rating.

2:1 Cantilever Rule



A cantilevered load or drive force must act no farther than 2× the bearing length from the bearing face, or the carriage will bind — regardless of load size. V-guide bearings are exempt. If 2:1 is exceeded, add a carriage or move the load closer to the rail.

Lubrication

Plain-bearing rails and Constant Force™ nuts are self-lubricating — no lubrication required. Relubricate profile-rail and V-guide raceways every 1,000km, 50,000 cycles, or 6 months. Use way lube or lightweight oils, or ISO VG32–100 lithium-soap grease. Never use WD-40, motor oil, oils with additives, moly or filled greases, PTFE sprays, or silicone.