

GX20

Single-axis AC servo motor robot



Ordering method

GX20			EU				A30		
Model	Lead	Motor specification	Motor type ^{Note1}	Stroke	Cable length ^{Note2}	Cable entry location	Driver	Brake unit ^{Note3}	Absolute battery
	40: 40mm 20: 20mm 10: 10mm	S80: Standard / With no brake BK80: Standard / With brake BL80: Battery-less absolute / With no brake BKBL80: Battery-less absolute / With brake		100 to 1450 (50mm pitch)	R: 3m R5: 5m R10: 10m	R: From rear of motor F: From front of motor	A30:YHX-A30-SET	V: With brake unit N: None	B: With absolute battery N: None

Note 1. RoHS2 (EU) 2015/863 compliant motor
 Note 2. All robot cables are flexible cables. The robot cable dimensions drawing is provided on page 733.
 Note 3. The brake unit cannot be used with an external brake power input.

Specifications

Motor	80 □ / 750 W
Repeatability ^{Note 1}	+/-0.005 mm
Deceleration mechanism	Ground ball screw ϕ 20 (Class C5)
Stroke	100 mm to 1450 mm (50mm pitch)
Maximum speed ^{Note 2}	2400 mm/sec/1200 mm/sec/600 mm/sec
Ball screw lead	40 mm 20 mm 10 mm
Maximum payload	Horizontal 65 kg 130 kg 160 kg Vertical 15 kg 35 kg 65 kg
Rated thrust	320 N 640 N 1280 N
Maximum dimensions of cross section of main unit	W 200 mm x H 140 mm
Overall length (Horizontal)	ST + 385.5 mm
Overall length (Vertical)	ST + 432.5 mm
Degree of cleanliness ^{Note 3}	ISO CLASS 3 (ISO14644-1) or equivalent
Inlet air ^{Note 4}	30 N \dot{L} /min to 90 N \dot{L} /min
Controller	YHX series

Note 1. Positioning repeatability in one direction.
 Note 2. The maximum speed may not be reached if the travel distance is short or because of other operation conditions.
 If the effective stroke exceeds 800 mm, the ball screw may resonate. (Critical speed)
 At this time, make the adjustment to decrease the speed while referring to the maximum speed shown in the table.
 Note 3. When using in a clean environment, attach a suction air joint. The degree of cleanliness is the cleanliness when using at 1000 mm/sec or less.
 Note 4. The required suction amount will vary according to the operating conditions and operating environment.

Static loading moment

MY	MP	MR
1423	1423	1251

(Unit: N·m)

Allowable overhang ^{Note}

GX20-40	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
20kg	5318 2821 2096	2171 2751 5211	5kg 8187 8187
40kg	4836 1609 1369	40kg 1417 1539 4667	10kg 5203 5203
65kg	4824 1088 1001	65kg 1013 1018 4575	15kg 4810 4810

GX20-20	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
50kg	5436 1493 1377	50kg 1390 1423 5265	20kg 3436 3436
80kg	4417 911 854	80kg 849 841 4253	30kg 2600 2600
100kg	4592 756 727	100kg 708 686 4253	35kg 3073 3073
130kg	4338 596 584	130kg 550 526 3933	

GX20-10	Horizontal installation (Unit: mm)	Wall installation (Unit: mm)	Vertical installation (Unit: mm)
	A B C	A B C	A C
40kg	22519 2607 2713	40kg 2704 2537 22210	20kg 5157 5157
80kg	16716 1274 1331	80kg 1293 1204 16141	40kg 2553 2553
120kg	14066 830 868	120kg 818 760 13223	65kg 1600 1600
160kg	12284 608 637	160kg 580 538 11190	

Note. Distance from center of slider upper surface to carrier center-of-gravity at a guide service life of 10,000 km.
 Note. Service life is calculated for 600mm stroke models.

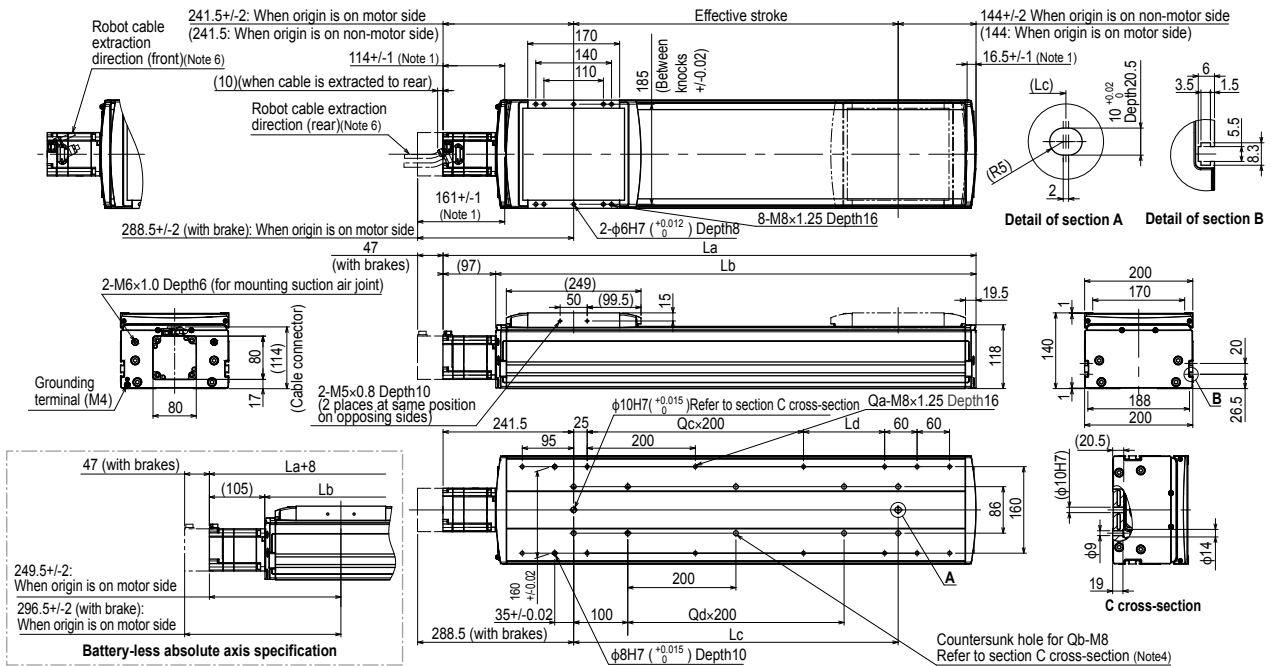
Robot cable

R3R (3 m/extracted to rear)	
Encoder cable + Power cable set model	KEX-M4710-30
R5R (5 m/extracted to rear)	
Encoder cable + Power cable set model	KEX-M4710-50
R10R (10 m/extracted to rear)	
Encoder cable + Power cable set model	KEX-M4710-A0
R3F (3 m/extracted to front)	
Encoder cable + Power cable set model	KEX-M4720-30
R5F (5 m/extracted to front)	
Encoder cable + Power cable set model	KEX-M4720-50
R10F (10 m/extracted to front)	
Encoder cable + Power cable set model	KEX-M4720-A0

Driver unit

30A Spec.	Model	YHX-A30-SET
	Control method	Standard profile

GX20



Note 1. Stop positions are determined by the mechanical stoppers at both ends.
 Note 2. Adjustments are required when changing the return-to-origin direction. (The standard origin is on the motor side.)
 Note 3. The length under head of the hex socket head bolts <M8 x 1.25> used to mount the body with the mounting countersunk holes (section C cross-section) must be <<25mm or more>>. The recommended length under head of the hex socket head bolts <M8 x 1.25> used to mount the body with the mounting tap hole specifications is <<frame thickness + 15 mm or less>>.
 Note 4. When using the mounting countersunk holes (section C cross-section) to mount the body, remove the seal, and then fix.
 Note 5. This is the weight without brakes. When brakes are mounted, the weight will be 1.1 kg heavier than the body weight given in the table.
 Note 6. The specifications of the robot cable will vary according to the extraction direction.
 Note 7. When secured in place, the minimum bending radius of the robot cable is R30.

Effective stroke	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
La	485.5	535.5	585.5	635.5	685.5	735.5	785.5	835.5	885.5	935.5	985.5	1035.5	1085.5	1135.5	1185.5	1235.5	1285.5	1335.5	1385.5	1435.5	1485.5	1535.5	1585.5	1635.5	1685.5	1735.5	1785.5	1835.5
Lb	388.5	438.5	488.5	538.5	588.5	638.5	688.5	738.5	788.5	838.5	888.5	938.5	988.5	1038.5	1088.5	1138.5	1188.5	1238.5	1288.5	1338.5	1388.5	1438.5	1488.5	1538.5	1588.5	1638.5	1688.5	1738.5
Lc	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450
Ld	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400
Qa	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	22	22	22	22
Qb	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	14	14	14	14	14	14	16	16	16	18	18	18
Qc	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
Qd	0	0	0	0	0	1	1	1	1	2	2	2	2	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
Weight (kg) ^{Note 5}	19.4	20.7	22	23.3	24.6	25.9	27.2	28.5	29.8	31	32.3	33.6	34.9	36.2	37.5	38.8	40.1	41.4	42.6	43.9	45.2	46.5	47.8	49.1	50.4	51.7	53	54.2
Lead 40	2400																											
Lead 20	1200																											
Lead 10	600																											
Maximum speed (mm/sec)	-																											
Speed setting	90% 80% 70% 60% 55% 50% 45% 40% 35% 30% 25%																											