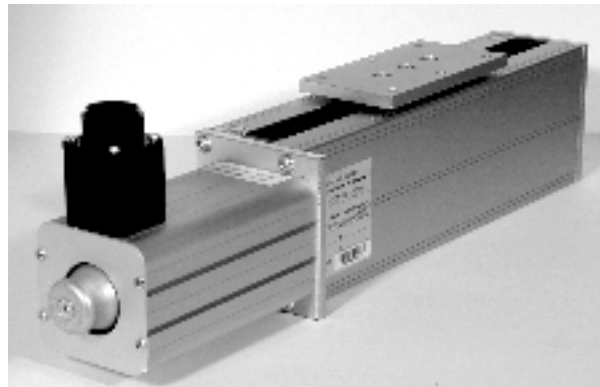


FEATURES

- ◆ Narrow profile housing built from a single rigid, clear anodized aluminum extrusion
- ◆ Aluminum dust cover with plastic lip seals to protect against contaminants
- ◆ All models with stepper motor option feature 125 oz•in stepper motor, model HL2600M210001
- ◆ All models with servo motor option feature motor model HZ2600M1050XY3 with line driver optical rotary encoder, 1000 line
- ◆ Home reference and far end limit switch with a repeatability of ± 0.01 mm
- ◆ Patented double linear rail and patented double bearing block
- ◆ Standard anti-backlash ball screw and nut, 16 mm diameter with 5 mm pitch
- ◆ Work surface is flat milled aluminum 125 x 65 x 8 mm with 6 drilled and tapped M6 mounting holes
- ◆ Optional ball screw is 16 mm diameter, 10 mm or 20 mm pitch



2 MACHINES & SLIDES

CATALOG NUMBER

HL31 M501

Motor Drive
X No Motor
V Servo Motor
S Stepper Motor
C Crank Handle

Screw Pitch
05 5 mm
10 10 mm
20 20 mm

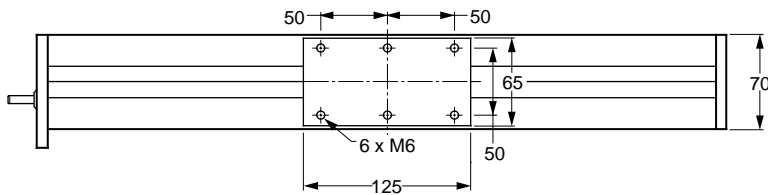
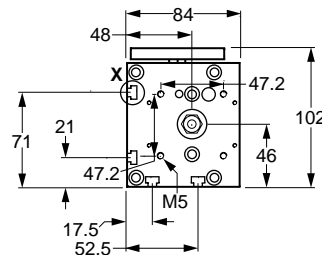
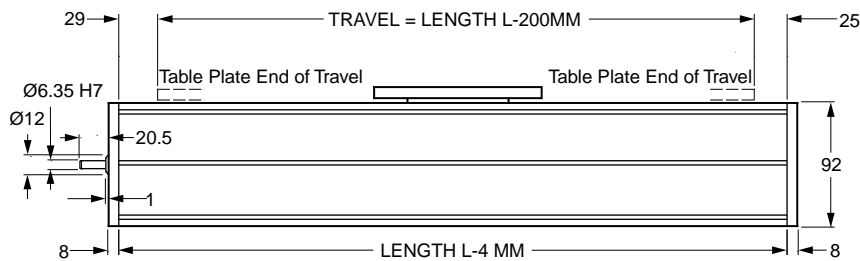
Screw Type
B Ball Screw
X No Screw

STANDARD-DUTY SLIDE SELECTION

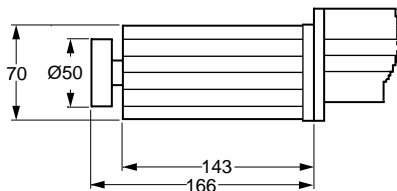
Code	Length, L1 mm (in)	Travel mm (in)	Weight kg (lb)
0300	300 (11.8)	100 (3.9)	2.7 (6)
0400	400 (15.7)	200 (7.8)	4 (9)
0500	500 (19.6)	300 (11.8)	5.9 (13)
0600	600 (23.6)	400 (15.7)	6.8 (15)
0850	850 (33.4)	650 (21.6)	9 (20)
1000	1000 (39.3)	800 (31.4)	10.4 (23)
1100	1100 (43.3)	900 (35.4)	11.3 (25)
1250	1250 (49.2)	1050 (41.3)	12.7 (28)
1300	1300 (53.1)	1150 (43.2)	14 (31)
1500	1500 (59.0)	1300 (51.1)	15 (33)

EXAMPLE: To order a Narrow Profile Slide with Stepper Motor (**S**), 5 mm Pitch Ball Screw (**B**) & 200 mm Travel (**0400**), the Catalog Number is **HL31SBM501040005**

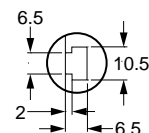
For mating connectors and cables, see page 166.
 For motor standoffs and couplings, see page 132.



STEPPER MOTOR MODULE



X1:1



DETAILS OF T-SLOT



SPECIFICATIONS				
Repeatability		± 0.01 mm (± .0004 in)		
Accuracy		± 0.1 mm / 300 mm (± .004 in / 12 in)		
Vertical Static Load Capacity		23 kg (50 lb)		
Motor Drive	Ball Screw Pitch mm	Thrust Force at Low Speeds, kg (lb)	No Load Speed mm/sec (in/sec)	Resolution mm (in)
Stepper Motor	5	91 (200)	127 (5)	0.0125 (.0005)
	10	45 (100)	254 (10)	0.025 (.001)
	20	23 (50)	510 (20)	0.05 (.002)
Servo Motor	5	113 (250)	152 (6)	0.0025 (.0001)
	10	57 (125)	305 (12)	0.005 (.0002)
	20	28 (63)	610 (24)	0.01 (.0004)

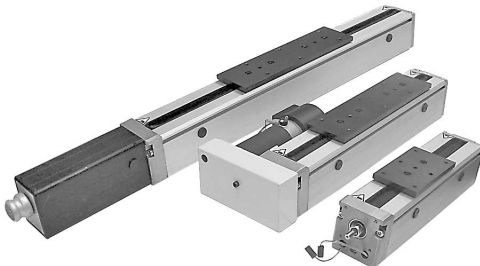
NOTES ON SPECIFICATIONS: Stepper motor is model HL2600M210001 as described on page 152, operating in half step mode, with 4.5A / phase, 40V chopper driver. Servo motor is model HZ2600M1050XY3 as described on page 164, operating with 6A / 80V chopper amplifier and 1000 line encoder operating in quadrature. These figures will, of course, vary with different loads, amplifiers and acceleration profiles provided by the controller.



Narrow Profile Slide 2 for Heavy Loads

FEATURES:

- Constructed from Series 400 Double Rail, a **single rigid aluminum extrusion profile** with aluminum end plates
- Compact, modular design with T-Slots on 3 sides for easy mounting
- Available with many motor options
- Fitted with plastic seals to guard against contaminants
- Home reference and far end limit switch with a repeatability of ± 0.01 mm ($\pm .0004$ in)
- Two precision steel rails $\text{\O}12\text{h6}$ with either one or two **BEARING CARRIAGE 4's (HL46DOM223007)** steel bearing blocks hardened to HRC 62 ± 2
- Antibacklash $\text{\O}16$ mm (.6 in) ball screw drives with pitches of 2.5 (.1), 5 (.2), 10 (.4) and 20 mm (.8 in) available
- Linear carriage is capable of speed up to 5 m/sec (16.4 ft/sec)
(speed subject to motor and drive package)



(Carriage Plate Included)

HEAVY-DUTY SLIDE SELECTION

CATALOG NUMBER
HL31NPM

Screw Type	Code	Motor Drive
B Ball Screw	0390	X No Motor
K Ball Screw with Side Mount Motor	0490	V Servomotor (200W)
	0590	B Servomotor (200W) with 24V DC Brake
	0690	L Servomotor (100W)
	0790	M Servomotor (100W) with 24V DC Brake
	0890	S Stepper Motor
	0990	A Stepper Motor with 24V DC Brake
	1090	C Crank Handle
	1190	
	1290	Setup
	1390	2 1 Carriage
	1490	3 2 Carriages
	1790	
	1990	Pitch Code
	2490	00 No screw
	2990	02 2.5 mm (.1 in)
		05 5 mm (.2 in)
		10 10 mm (.4 in)
		20 20 mm (.8 in)

Code	L Length mm (in)	Travel* mm (in)
0390	390 (15.4)	122 (4.8)
0490	490 (19.3)	222 (8.7)
0590	590 (23.2)	322 (12.7)
0690	690 (27.2)	422 (16.6)
0790	790 (31.1)	522 (20.6)
0890	890 (35)	622 (24.5)
0990	990 (39)	722 (28.4)
1090	1090 (42.9)	822 (32.4)
1190	1190 (46.9)	922 (36.3)
1290	1290 (50.8)	1022 (40.2)
1390	1390 (54.7)	1122 (44.2)
1490	1490 (58.7)	1222 (48.1)
1790	1790 (70.5)	1522 (59.9)
1990	1990 (78.3)	1722 (68)
2490	2490 (98)	2222 (87.5)
2990	2990 (117.7)	2722 (107.2)

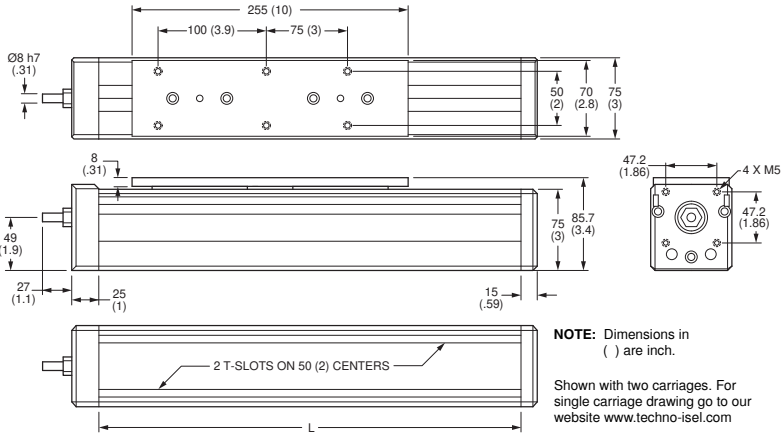
*Travel spec is based on a slide with 2 bearings. For a slide with only one bearing, add 130 mm (5.1 in) to the travel. Dimension L is unchanged.

EXAMPLE: To order a Narrow Profile Slide 2 with 200W Servomotor (V), 10 mm (.4 in) Ball Screw (B), and 2 carriages (3), and 390 mm (15.4 in) length, the Catalog Number is **HL31NPMB0390103V**.

For mating connectors, cables, motor standoffs and couplings see accessories.



Narrow Profile Slide 2 for Heavy Loads



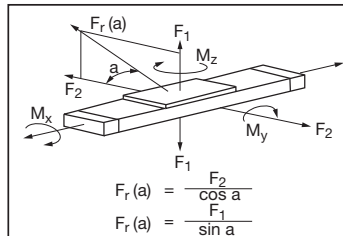
SPECIFICATIONS	
Repeatability	± 0.01 mm (± .0004 in)
Accuracy	± 0.1 mm / 300 mm (± 0.004 in / ft)

Motor Drive	Ball Screw Pitch mm (in)	Thrust Force @ Low Speeds kg (lb)	No Load Speed mm/sec (in/sec)	Resolution mm (in)
Stepper Motor	2.5 (.1)	182 (400)	64 (2.5)	0.0062 (.0002)
	5 (.2)	91 (200)	127 (5)	0.0125 (.0005)
	10 (.4)	45 (100)	254 (10)	0.0250 (.0098)
	20 (.8)	23 (50)	508 (20)	0.0500 (.0197)
Servomotor	2.5 (.1)	226 (500)	77 (3)	0.0013 (.00005)
	5 (.2)	113 (250)	152 (6)	0.0025 (.00010)
	10 (.4)	57 (125)	305 (12)	0.0050 (.00020)
	20 (.8)	28 (62)	610 (24)	0.0100 (.00040)

For notes on specifications to produce this data, refer to page xxx.

LOAD and MOMENT DATA

Model	Narrow Profile Slide 2	
	1 Carriage	2 Carriage
Carriage Type	Bearing Carriage 4	Bearing Carriage 4
F1 stat	800 N (179.8 lb)	1600 N (359.7 lb)
F1 dyn	500 N (112.4 lb)	1000 N (224.8 lb)
F2 stat	800 N (179.8 lb)	1600 N (359.7 lb)
F2 dyn	500 N (112.4 lb)	1000 N (224.8 lb)
Mx stat	12.6 N-m (111.52 lb-in)	25.2 N-m (223.02 lb-in)
My stat	22 N-m (194.72 lb-in)	71.2 N-m (630 lb-in)
Mz stat	12.6 N-m (111.52 lb-in)	25.2 N-m (223.02 lb-in)
Mx dyn	7.4 N-m (65.49 lb-in)	14.8 N-m (130.98 lb-in)
My dyn	13 N-m (115.06 lb-in)	44.7 N-m (395.64 lb-in)
Mz dyn	7.4 N-m (65.49 lb-in)	14.8 N-m (130.98 lb-in)



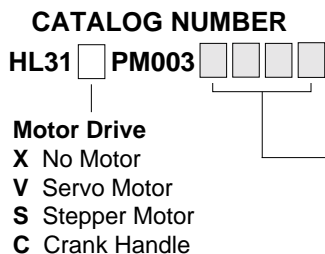
NOTE: See formulas in load bearing mechanisms section of technical section.

FEATURES

- ◆ Constructed from a single rigid aluminum extrusion profile
- ◆ Tooth belt drive with virtually no backlash
- ◆ Home reference and far end limit switches with ± 0.01 mm repeatability
- ◆ All models with stepper motor option feature 125 oz•in stepper motor, model HL2600M210022
- ◆ All models with servo motor option feature motor model HZ2600M0242601 with line driver optical rotary encoder, 1000 line
- ◆ Patented double linear rail and patented double bearing block
- ◆ Fitted with plastic seals to guard against contaminants
- ◆ Work surface is flat milled aluminum 125 x 65 x 8 mm with 6 drilled and tapped M6 tapped holes.



2 MACHINES & SLIDES



NARROW PROFILE BELT DRIVE SLIDE 1 SELECTION

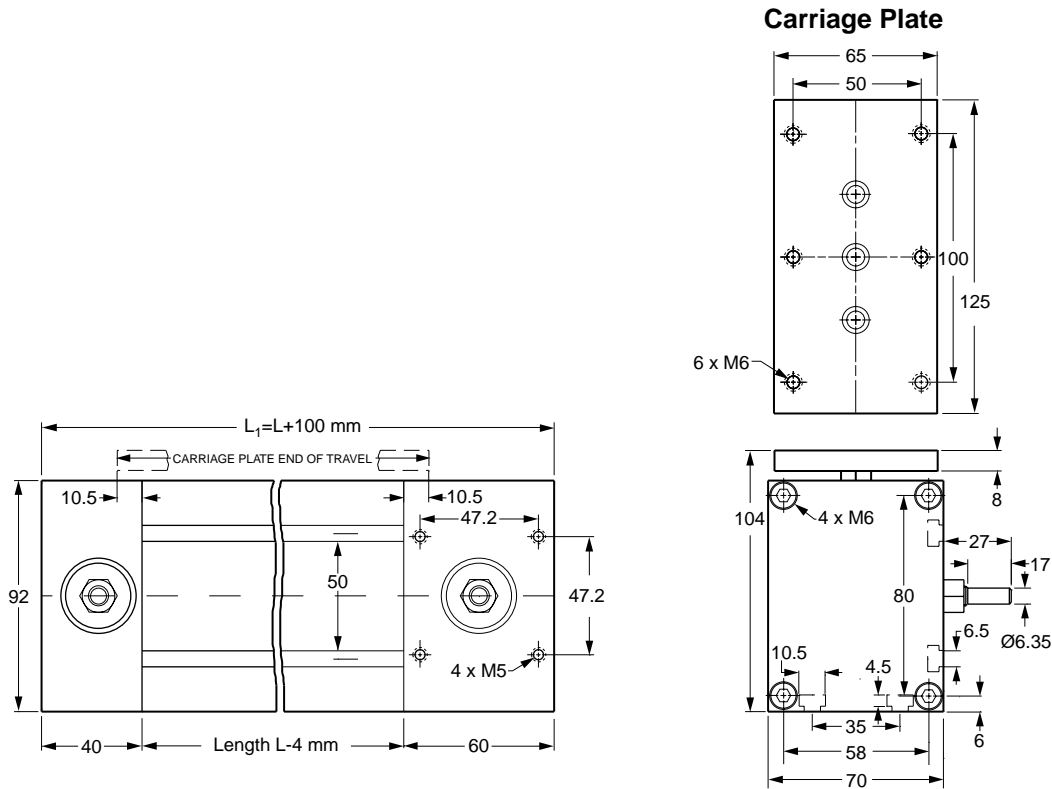
Code	Length, L1 mm (in)	Travel mm (in)
0300	300 (11.8)	100 (3.9)
0400	400 (15.7)	200 (7.8)
0500	500 (19.6)	300 (11.8)
0600	600 (23.6)	400 (15.7)
0700	700 (27.6)	500 (19.6)
0850	850 (33.4)	650 (25.6)
1000	1000 (39.3)	800 (31.4)
1100	1100 (43.3)	900 (35.4)
1250	1250 (49.2)	1050 (41.3)
1350	1350 (53.1)	1150 (45.3)
1500	1500 (59.0)	1300 (51.1)
2000	2000 (78.7)	1800 (70.9)
2500	2500 (98.4)	2300 (90.6)
3000	3000 (118.1)	2800 (110.3)

EXAMPLE: To order a Narrow Belt Drive Slide 1 with Stepper Motor (**S**) & 200 mm Travel (**0400**), the Catalog Number is **HL31SPM0030400**

For mating connectors and cables, see page 166. For motor standoffs and couplings, see page 132.



Narrow Profile Belt Drive Slide 1



SPECIFICATIONS		
Repeatability	± 0.1 mm (± .004 in)	
Accuracy	± 0.2 mm / m (± .002 in / 10 in)	
Vertical Static Load Capacity	22.5 kg (50 lbs)	
Motor Drives	Stepper	Servo
No Load Speed	1 m / sec	1.2 m / sec
Thrust Force at Low Speed	20 lbs	25 lbs
Resolution	0.05 mm (.002 in)	0.01 mm (.0004 in)

NOTES ON SPECIFICATIONS: Stepper motor is model HL2600M210022 as described on page 152, operating in half step mode, with 4.5A / phase, 40V chopper driver. Servo motor is model HZ2600M0242601 as described on page 164, operating with 6A / 80V chopper amplifier and 1000-line encoder operating in quadrature. These figures will, of course, vary with different loads, amplifiers and acceleration profiles provided by the controller.