

### FEATURES

- ◆ Available with a 50 N·cm, 160 N·cm stepper motor, 120W servo motor or no motor
- ◆ Resolution for 50 N·cm motor is 0.15 mm/step in half-step mode; for 160 N·cm motor is 0.075 mm/step and 0.0075 mm/pulse with standard servo motor
- ◆ Maximum speed: 1.5 m/s
- ◆ Carriage rides on two Ø8 mm precision ground steel shafts that are supported along the entire length of travel to minimize deflection
- ◆ Belt is 3 mm HTD, 9 mm wide. HTD belt profile helps reduce backlash
- ◆ Home and end reference switch repeatable to < 0.1 mm
- ◆ Lengths up to 3 meters



### CATALOG NUMBER

HL3105MP               

#### Carriage Type

- 0 Bearing Carriage
- 1 Roller Carriage

#### Motor Type

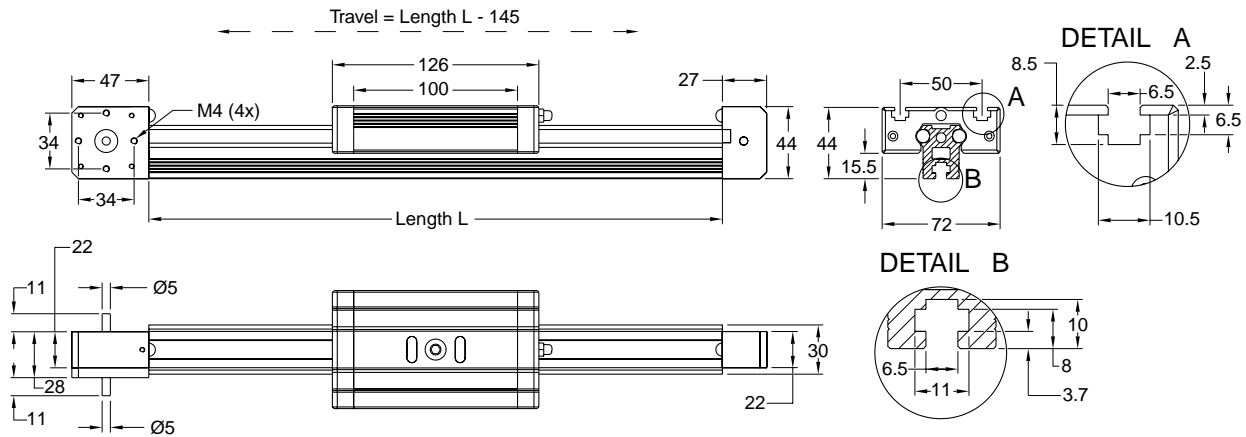
- 0 50 N·cm Stepper motor
- 1 160 N·cm Stepper motor, 2:1 Ratio
- 2 120W Servo motor, 2:1 Ratio
- 3 No motor
- 4 2:1 Ratio Assembly, No Motor (Includes Pulley for Motor)

### ZF1 BELT DRIVE SELECTION

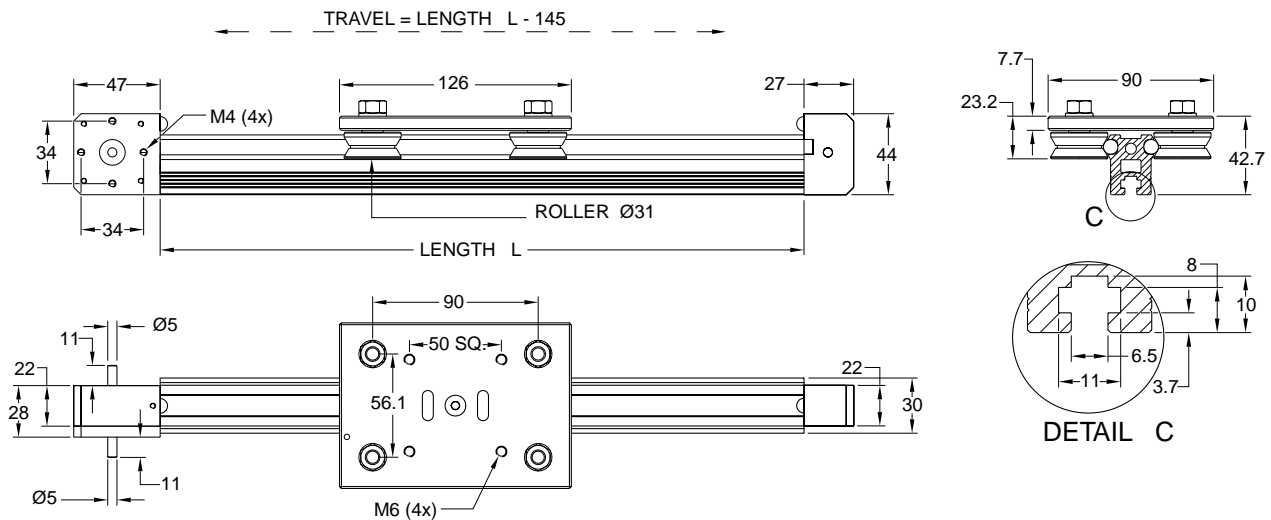
Code	Length (mm)	Travel (mm)
030	298	153
040	398	253
050	498	353
060	598	453
068	675	530
070	698	553
080	798	653
100	998	853
150	1498	1353
180	1798	1653
200	1998	1853
250	2498	2353
300	2998	2853

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

Bearing Carriage



Roller Carriage

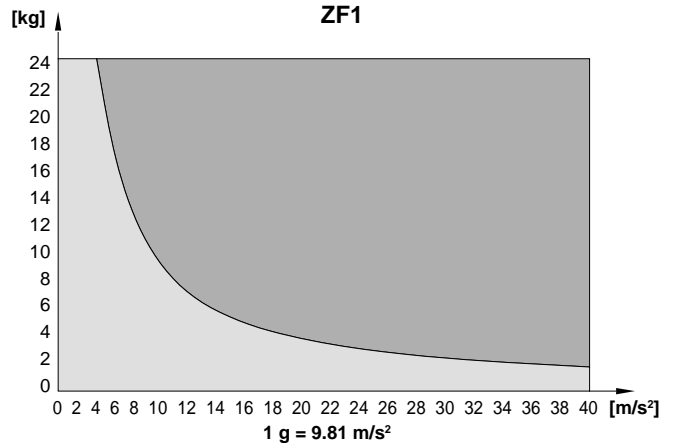


Technical Data

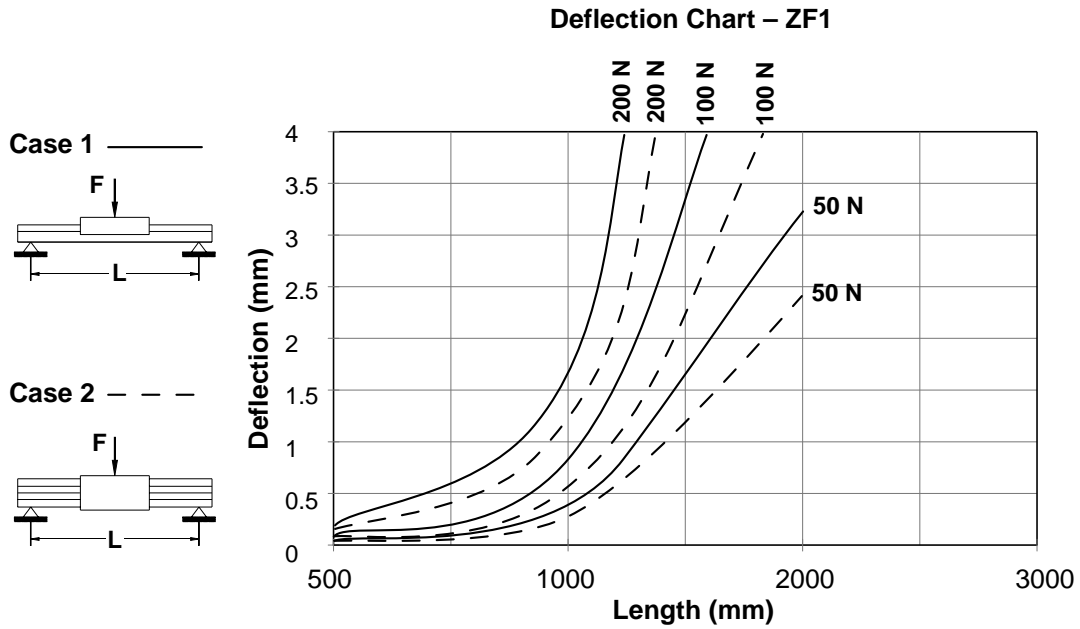
- Belt type: 3 mm HTD, 9 mm wide
- Mass of bearing carriage = 0.43 kg
- Mass of roller carriage = 1.03 kg
- Weight without motor module: ≈ 3.00 kg/1000 mm
- Specific mass of belt: 0.0225 kg/m
- Diameter of pulley: 19.10 mm
- Pulley mass moment of inertia:  $5.585 \times 10^{-7} \text{ kg} \cdot \text{m}^2$
- Effective circumference: 60 mm

**NOTE:** One revolution of motor shaft produces 60 mm of linear travel. This determines travel resolution. When NEMA 23 frame stepper or servo motor is used, two revolutions of motor shaft produces 60 mm of linear travel.

Maximum Acceleration Based On Belt Specification  
ZF1



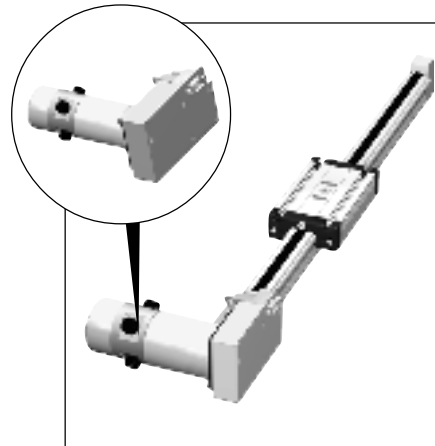
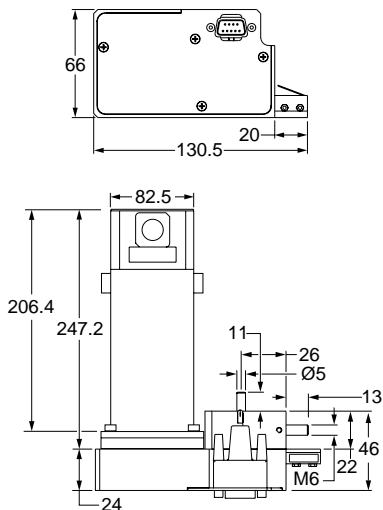
2 MACHINES & SLIDES



## DC Servo Motor

CATALOG NUMBER: HZ2600M05NEMA23V

Specifications	
Power .....	120W
Maximum Operating Speed .....	6000 rpm
Continuous Stall Torque .....	50 oz•in
Maximum Continuous Current .....	4.2A
Maximum Terminal Voltage .....	60V
Peak Stall Torque .....	350 oz•in
Maximum Pulse Current .....	31A
Operating Temperature .....	0°C to 40°C

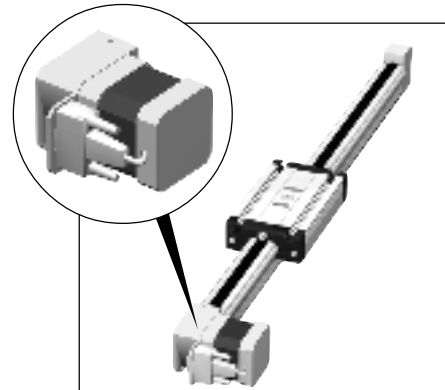
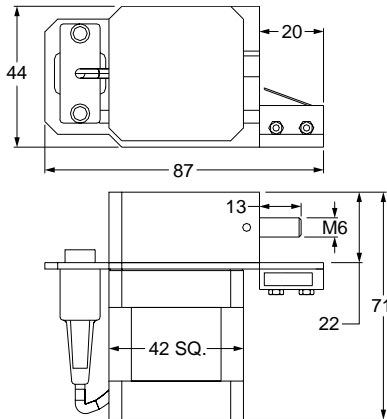


2 MACHINES & SLIDES

## 50 N·cm Stepper Motor

CATALOG NUMBER: HL2600M05NEMA17

Specifications	
<b>Holding Torque</b> .....	50 N·cm
<b>Step Size: Full</b> .....	1.8°
<b>Half</b> .....	0.9°
<b>Voltage – bipolar</b> .....	3.2V
<b>Resistance</b> .....	1.1Ω
<b>Inductance</b> .....	1.85mH
<b>Current – bipolar</b> .....	1.8A



2 MACHINES & SLIDES

## 160 N·cm Stepper Motor

CATALOG NUMBER: HL2600M05NEMA23

Specifications	
<b>Holding Torque</b> .....	160 N·cm
<b>Step Size: Full</b> .....	1.8°
<b>Half</b> .....	0.9°
<b>Voltage – bipolar</b> .....	1.7V
<b>Resistance</b> .....	1.2Ω
<b>Inductance</b> .....	2.2mH
<b>Current – bipolar</b> .....	4.1A

