

Electric Vertical Toggle Clamp

CLM-10x-EVTC



Product Description

The Electric Toggle Clamp features an advanced JVL NEMA 17 profile integrated ServoStep Motor providing unparalleled control and accuracy of the clamping arm throughout the clamping stroke. This integrated motor comes with current protection, allowing for sensor-free homing and operation. Its rugged construction and high-grade components guarantee outstanding durability and reliability, ensuring maximum performance during extended periods of use. Like all Toggle Clamps the Electric Toggle Clamp uses an over-center locking principle known as a “toggle action.” Actuating the clamp first moves the mechanism into position, then applies clamping force by compressing or stretching the linkage elements after contacting the workpiece, then positively locks the mechanism by moving the toggle action’s center pivot past the centerline of the other two pivots, against a stop making this electric clamp is incredibly versatile. Boasting a compact design and adaptable mounting options that make it suitable for a wide range of applications, including CNC machining, woodworking, metalworking, welding, and more.

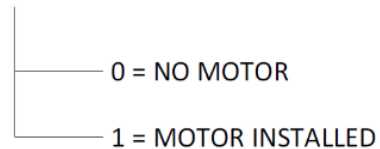
The clamp is also available without a motor, enabling the use of any NEMA 17 motor. This flexibility suits virtually any specific need or preference, further enhancing the versatility and adaptability of this innovative clamping solution.

Material


Description	Material
Clamp Body	Aluminum
Clamp Cam	Aluminum
Clamp Link	Aluminum
Rod End	Aluminum
Clevis Pin with Retaining Ring	Stainless
Clamp Arm	Steel, Black Oxide
Dowel Pin	Steel, Black Oxide
Nylon Tipped Set Screw	Stainless, Nylon Tip
Linear Actuator	Stainless, see vendor data sheet for full specs
Motor	See vendor datasheet

Part Number

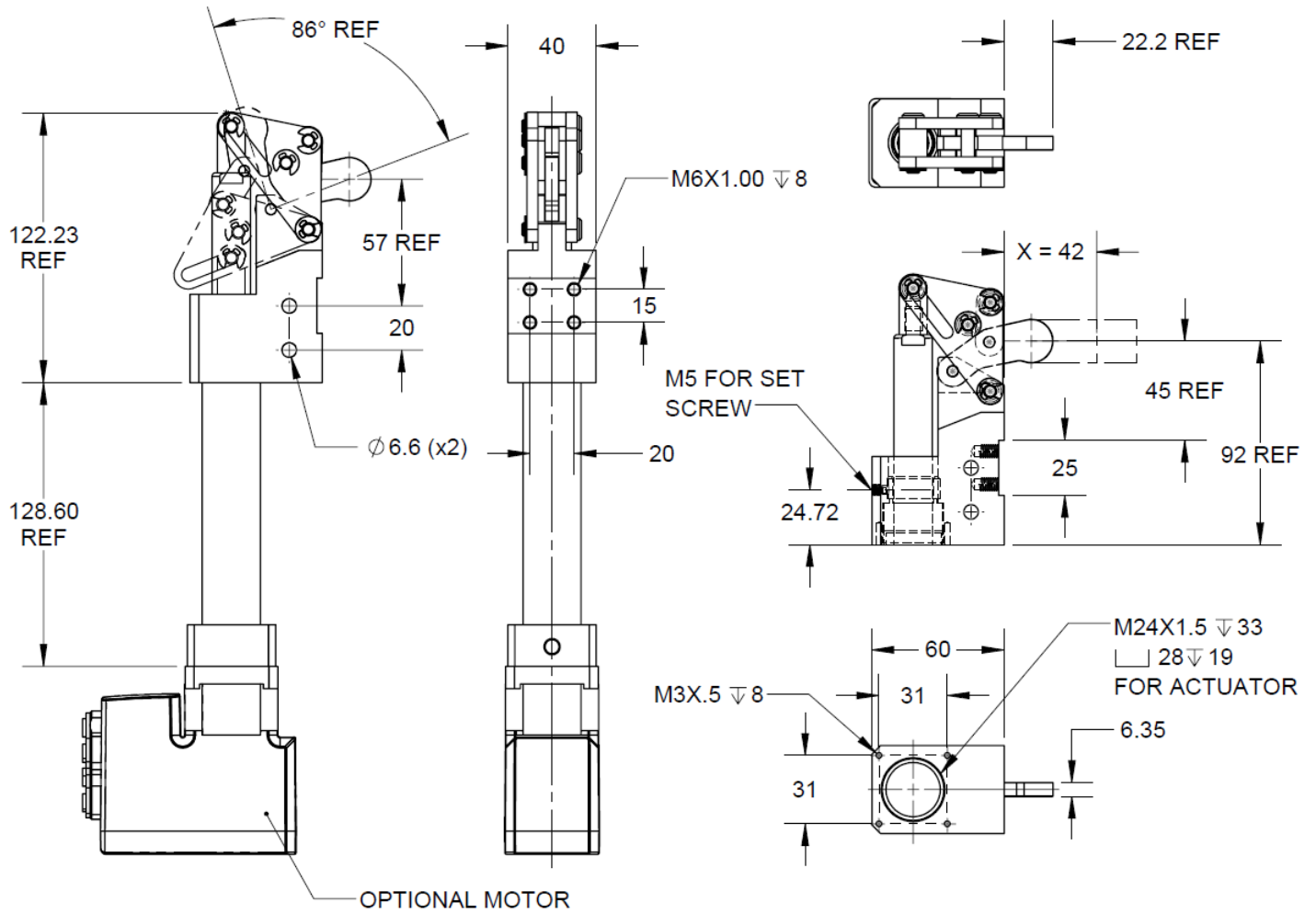
CLM-10_x-EVTC



Accessories

Part Number	Description	Product Image
<u>CL-1-HVTC-A</u>	Weld on Clamping Arm	

Technical Drawing



PART NO.	MOTOR SHAFT DIA	MOTOR SIZE	HOLDING CAPACITY	MOTOR INCLUDED	MAX EFFECTIVE FORCE @ X
CLM-100-EVTC	5mm	NEMA 17	500 lbs (226.80 Nm)	NO	200 lbs (90.72 Nm)
CLM-101-EVTC	5mm	NEMA 17	500 lbs (226.80 Nm)	YES	200 lbs (90.72 Nm)

The maximum effective clamping force will vary depending on factors such as the spindle and distance from body.

Motor Information

Manufacturer	JVL
Website	JVL MIS Motors
Model	MIS173S16Q5H266
Supply Voltage Driver	7-72V DC
Supply Control & IO	7-28V DC
Holding Torque	0.40 Nm
Nominal Speed Range	0-3000 RPM
Shaft Diameter	5mm
Integrated PLC Control	Input/Output Voltage Range 7-28V DC
User Manual	EN , DE
Brochure	Brochure

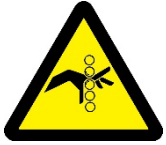
Programming Requirements

Programming Software	JVL MacTalk® This software is REQUIRED to program the MIS173 motor and is NOT included.
Programming Cable	USB to RS485 and JVL M12M5T05

Linear Actuator Information

Manufacturer	Tolomatic
Website	ToloMatic - ERD10
Model	ERD10-BNM05SM70LMIST1
Stroke	70mm
Max Thrust	100 lbf (445 N) <i>If a motor other than the recommended JVL motor is used maximum thrust will be dependent on motor torque. Contact Carr Lane Manufacturing with torque data for assistance on determining maximum thrust.</i>

Installation and Removal Instructions



WARNING! This device includes a possible pinch point. Always de-energize the device and use proper lock-out/tag-out procedures prior to servicing the device. Failure to do so may result in serious injury.

If ordered with the JVL motor the Electric Vertical Toggle Clamp will be delivered with the linear actuator and motor pre-installed. To disassemble the clamp or reposition the motor, please refer to the instructions provided below to prevent damage to the unit. To assemble your own motor to the device, see “Stepper Motor Installation” instructions below.

Linear Actuator Removal:

1. Remove Rod End
2. Remove the nylon-tipped set screw.
3. Remove Linear Actuator.

Linear Actuator Installation:

1. Ensure threads are dry and free of any debris, then carefully attach the linear actuator to the clamp body by threading it into the desired position with a gentle hand motion.
2. After the linear actuator has been installed in the desired orientation, install the provided nylon-tipped set screw to secure the actuator to the clamp body.
3. Install Rod End

⚠ Warning DO NOT OVERTIGHTEN THE LINEAR ACTUATOR. Doing so could potentially cause the actuator to disassemble and become lodged within the clamp body. Only apply slight hand torque and tighten in place with provided set screw.

Stepper Motor Removal:

1. Use an M2.5 hex key to loosen and remove the set screw from the shaft collar. The shaft collar is accessible through the two holes in the side of the actuator body.
2. Remove the (4) socket head cap screws that attach the linear actuator to the motor.
3. Separate the motor from the linear actuator.

Stepper Motor Installation:

If a motor other than the JVL motor sold by Carr Lane Mfg is being installed, review step 4 prior to beginning installation.

1. Slide the 5mm motor shaft into the linear actuator clamp collar.
2. Use the M2.5 hex key to tighten the set screw into the clamp collar, securing the motor in place.
3. Attach the motor to the linear actuator by installing the (4) socket head cap screws. Make sure they are tightened securely to ensure the proper functioning of the motor and actuator.
4. NOTE: If a motor other than the JVL motor is being used, please confirm that the controller/driver supports sensor-less homing. In the absence of this feature, it is necessary to procure a sensor such as a reed or solid-state switch to ensure accurate positioning.