TRIAC
VALVES & ACTUATORS

Division of A-T Controls Inc.
11363 Deerfield Road
Cincinnati, Ohio 45242
(513) 247-5465 Fax (513) 247-5462

INSTALLATION & MAINTENANCE MANUAL

WE-690 thru WE-25900
On / Off Control

Installation Instructions

Introduction

The WE Series electric actuators have fan cooled class F induction motors, double reduction worm drives and lockable manual handwheels. The body is hard anodized aluminum with polyester powder coating for a NEMA 4, 4X and 6 rating The WE series with worm drive is available from 690 in-lbs up to 25900 in-lbs and voltages from 24VDC thru 480VAC/3PH. The WE Series is available with an optional servo card for modulating service. Please see the TMC manual for instruction on the servo card.

Storage

1. Keep conduit entries plugged.
2. Store in a dry enviroment.

Manual Operation

Pull the lever towards the handwheel to engage the manual override. If the lever does not stay engaged, pull the lever again and rotate the handhwheel at the same time. The direction of output is casted on the handwheel.

The manual override will automatically disengage when the electric power is turned on and the motor starts to turn.

Please do not try to pull or force the lever to disengage the manual override, this can damage the lever shear pin.

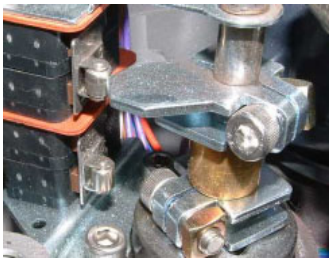
Limit Switch Setting

The clockwise motor control limit switch and the clockwise auxiliary limit switch share the same cam, likewise of the counterclockwise limit switches.

The limit switches can be set by rotating the actuator to the closed position with the manual handwheel and rotating the top cam clockwise until the switches just trips. The cams clamp to the cam shaft with a 4MM Allen head screw.

To adjust the open position, manually rotate the actuator to the desired open position and rotate the bottom cam counter clockwise until the switches just trips. Make sure you tighten the 4MM Allen head screw holding the cam after making adjustments.

CW Switch Setting



CCW Switch Setting

Torque Switches

The torque switches are set by the factory for rated torque output. Adjustments to the torque switches can cause damage to the motor and gears.

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Mechanical Stops

The mechanical travel stops are for proper positioning during manual operation and for valve / damper protection.

Loosen jam nuts for both the CW and CCW travel stops.
Manually operate the actuator CW until the CW limit switch trips. Then turn the CW travel stop bolt (right) clockwise until the bolt touches the worm gear. Turn the travel stop bolt counter clockwise three turns and tighten the jam nut.

Manually operate the actuator CCW until the CCW limit switch trips. Then turn the CCW travel stop bolt (left) clockwise until the bolt touches the worm gear. Turn the travel stop bolt counter clockwise three turns and tighten the jam nut.

Electrical Wiring

The wire terminations are per the wiring diagram included with each package. The actuator should be wired and grounded in accordance with local and national electrical codes. Conduit should be sealed at the actuator housing to keep water and moisture from entering the actuator. The compartment heater should be energized continuously to reduce moisture buildup.

3 Phase Wiring

Please see SICU or ICU manual for 3 phase operating manual.

Commissioning

Manual operate the actuator to the mid position. Electrical operate the actuator and check the direction of rotation. Drive the actuator to end of travel making sure the limit switches stop the actuator and de-energize the motor. If the limit switches are incorrectly adjusted and the actuator is stopped by the mechanical travel stops the worm gear will jam, the motor will overheat and go into thermal overload.

Jamming

If the actuator travels into a mechanical travel stop the worm gear will jam. The actuator can not be reversed electrically or manually until the mechanical travel stop bolt is loosened. Loosen the jam nut on the mechanical travel stop bolt, then turn the bolt counterclockwise three turns. The actuator now can be manually operated once the pressure is off the worm gearThe limit switches and mechanical travel stops should be recalibrated per the manual if jamming occurred.

Troubleshooting

Trouble	Cause	Solution
Actuator does not work at all	No power to actuator	Turn power on
	Low voltage to actuator	Check power supply and wire gage
	Motor and supplied voltage is different	Check nameplate
	Wires are loose	Check connection to terminal strip
	Limit switch or torque switches tripped	Manually operate to mid position
	Worm gear is jammed	See section on jamming
Torque switch open	Mechanical travel stop set prior to limit switch	Reset travel stops
	Foreign object between valve seat and ball / disc	Clear objects
	Actuator is undersized	Check torques
Switching to manual operation is not possible	Lever is not fully engaged	Turn handle slowly, pull lever
	Worm gear is jammed	See section on jamming
	Power is still on	Turn power off
Actuator performs erratically	Motor is over heating and thermal overloading	Check duty cycle
	Motor is over heating and thermal overloading	Check ambient temperature

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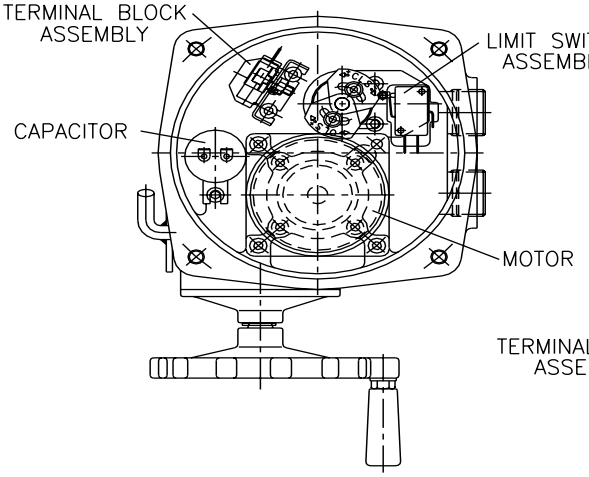
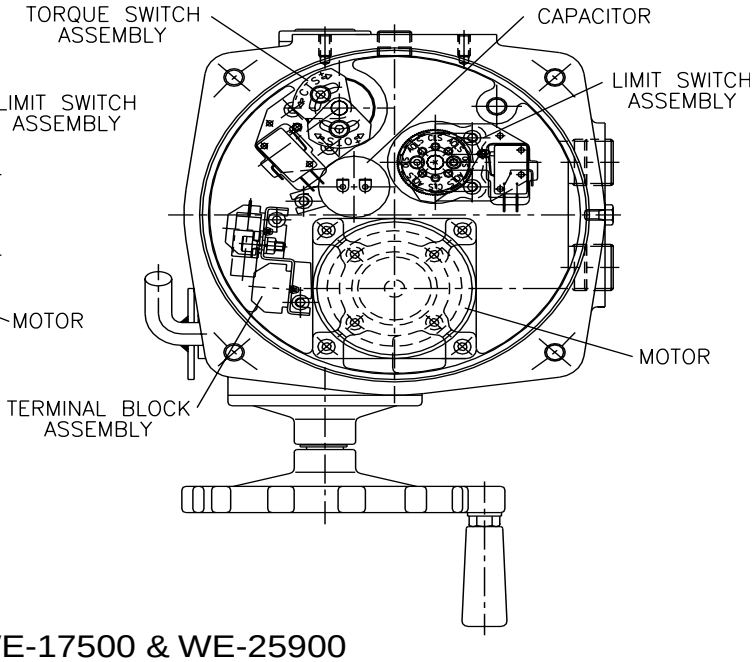
WE-690



WE-1350 thru WE-10500



WE-17500 & WE-25900