

Seibu

ELECTRIC VALVE ACTUATOR

Semflex VM Series

Handling Instruction



西部電機株式会社

SEIBU ELECTRIC & MACHINERY CO., LTD.

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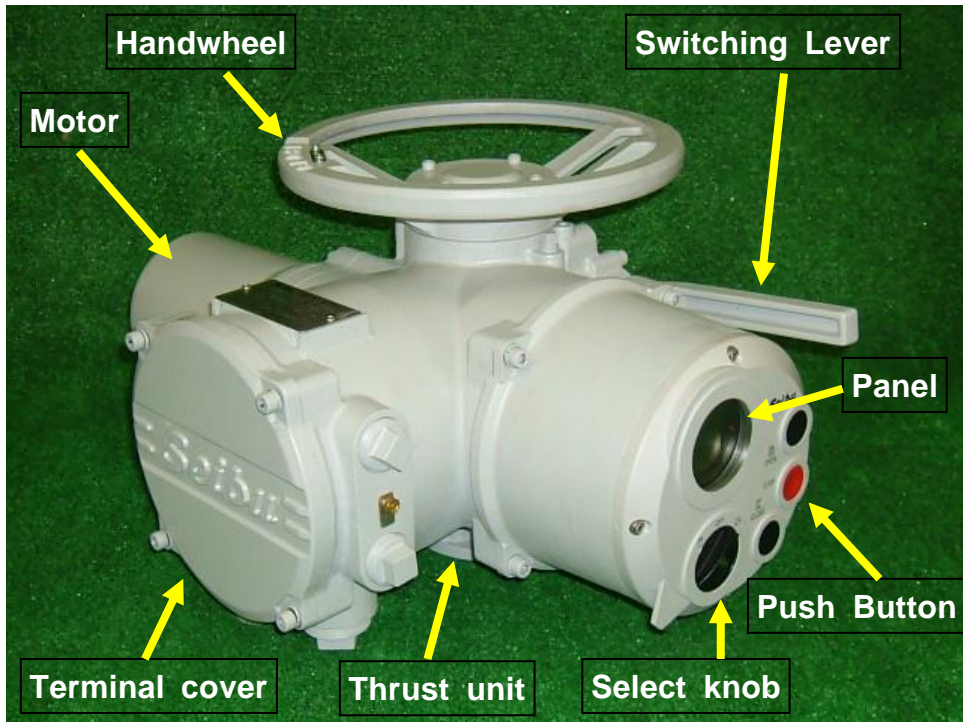
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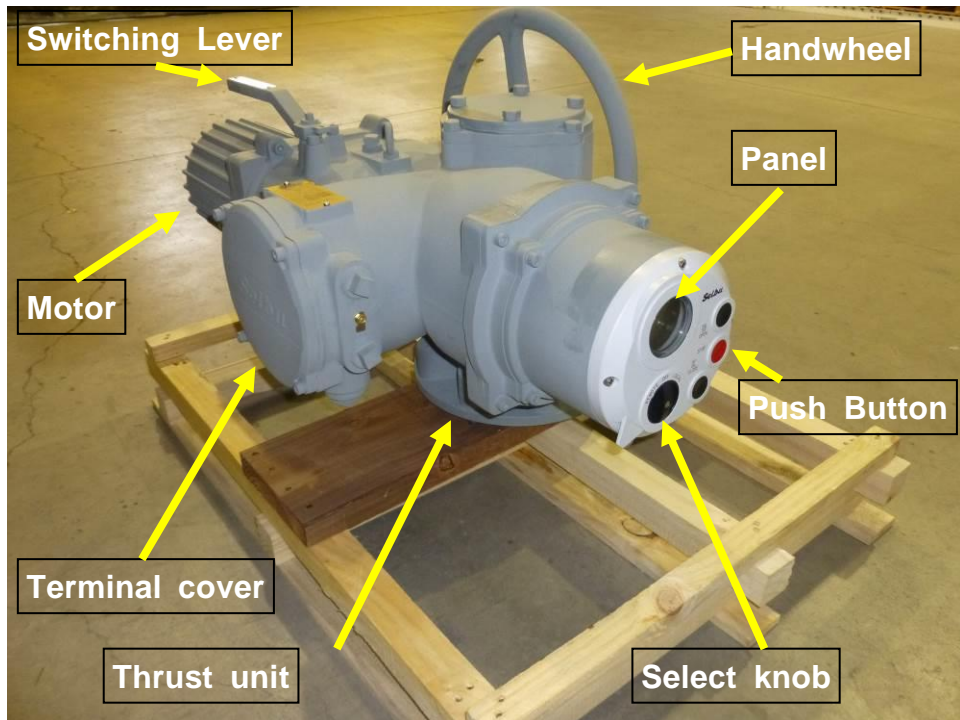
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Main parts



VM-01/-04



VM-07/-1

1. Installation

1.1 Prior Inspection

- *Check specification by referring Name plate on Actuator.
- *Check wiring diagram which is attached inside of Terminal cover.
- *Check that each dimension of Stem bush and stem, actuator and valve flange is match.

1-2. Mounting on Valve

1)Assembling Stem bush

Refer to Structure drawing for Thrust unit structure.

When to use Non-rising type Stem bush within standard size, Seibu can machine before delivery. In case to use Non-rising type out of standard size or Rising type, the Stem bush need to be machined to fit with Valve shaft.

Please follow the instruction below when need to machine Stem bush.

- 1) Remove 2 bolts by Hex wrench and open Thrust cover.
- 2) Remove Stem bush from actuator.
- 3) Remove retaining ring and nut. Then remove Thrust ball bearings (balls and raceway wheels).
- 4) Be careful not to put dust or particles on bearing.
- 5) Be careful not to scratch the parts that come into contact with bearings or O-rings.
- 6) Clean the stem bush after processing. Put grease on bearings thoroughly and install the bearings, nuts and retaining rings.
- 7) Install Thrust cover and tighten bolts.



2) Mounting on Valve

- 1) Before mounting on valve, shift Switching Lever to Manual Operation mode.
- 2) Lift the actuator using a belt, etc..
- 3) In case of Rising type screw, screw the valve shaft into stem bush while turning the actuator itself. After actuator flange and valve flange come into contact, tighten the flange with bolts. At this time, turn handwheel slightly to Opening direction so that the valve body is not overtightened.
- 4) In case of Non-Rising type screw, the thrust force of valve stem may be received on either valve side or actuator side. In the latter case, remove thrust unit and install locknut on stem bush.



When lifting actuator, use a belt to lift actuator body as shown in below picture. Do not lift handwheel, which may be broken by weight.



Before lifting or slinging actuator, check weight of actuator and allowable load of belt to be used. And do not enter under the suspended actuator.



When lifting valve and actuator after connecting them, do not lift only actuator part. The actuator may be broken by weight of valve.



VM-01/-04



VM-07/-1

1-3. Wiring

- 1) Open terminal cover. And remove plug of cable entry to be used.
- 2) Connect ground wire to ground terminal.
- 3) For outdoor installation, use waterproof wire penetration fittings to prevent rainwater intrusion from terminal box.
- 4) Connect power supply to R-U, S-V, T-W.
- 5) Connect control wiring to the place as shown on Wiring diagram specifications.
- 6) After connecting, keep internal wires tidy and be careful not to get them caught in the hippo.
Remove dust from mounting surface and make sure to attach terminal cover securely.



Make sure there are no insulation defects due to humidity or moisture when wiring, and ground wiring is made securely.



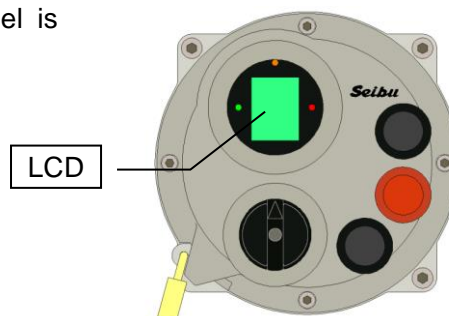
2. Trial run

2-1. Manual Operation

1) Shift Switching lever to set it to manual mode. (You can lock it in manual position.) Turn handle and turn lever sufficiently while checking that clutch engages.

* Do not force Switch Lever while clutch is not engaged. The lever may be broken.

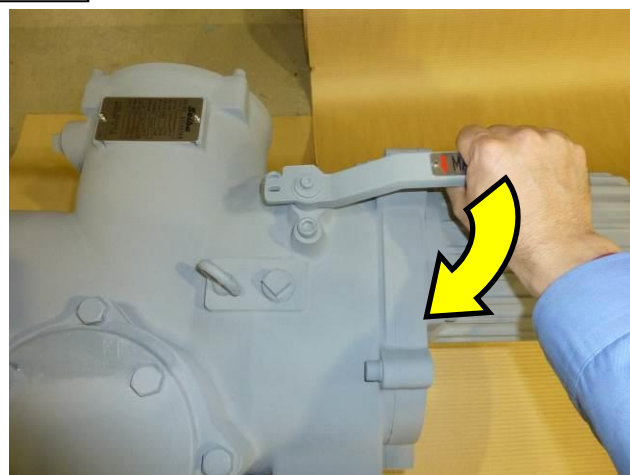
* Do NOT use manual operation when LCD panel is OFF. Limit position need to be readjusted if operated when power is off.



2) If you release the lever after switching to manual position, the lever will automatically return to original position, but internal clutch remains at manual mode.



VM-01/-04



VM-07/-1

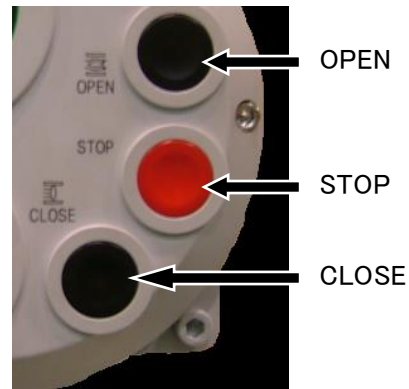
2-2. Setting

After installation on valve, it is necessary to do Full-Close / Full-Open position setting, etc. Refer to the "VM / VP-Series Operation Manual (BO-0808)" for How-to set up.

2-3. Electric Operation

- 1) Make sure that power supply and power supply specifications of actuator match.
- 2) Turn Select knob on panel to LOCAL operation mode and press OPEN or CLOSE button so to automatically switch to electric operation mode.

*Be sure to complete various settings before performing electric operation.



1) Maintenance

3-1. Storage

If actuator is to be temporarily stored alone before mounting on valve, store it according to the following instruction.

- 1) Please keep in any dry place indoors.
- 2) If it is unavoidable to store outdoors, place it higher than floor level and cover it securely to prevent from any water intrusion.
- 3) Grease the stem bush.
- 4) Apply a rust preventive to mounting flange surface.
- 5) After long-term storage, check for rust and paint peeling.

3-2. Maintenance

1) Refueling to Actuator

Actuator is filled with lithium grease, which has a long life, and it is not necessary to replace the grease for several years during normal operation.

When disassembled for periodical inspection or repair, replace it with new grease according to the table below.

If it is a lithium grease, you can mix greases of different brands, but do not mixing greases with different soap bases as they may deteriorate.

Model	Amount (kg)	Recommended grease	Manufacturer or distributor
VM-01	1.0	Nigtit LYW No.0-N General purpose grease No.0-S	Nippon Grease Co., Ltd. Kyodo Yushi Co., Ltd.
VM-04	1.5	Cosmo Grease Dynamax EP No.0 Daphni-Eponex EP0	Cosmo Oil Co., Ltd. Idemitsu Kosan Co., Ltd.
VM-07	4.2	Movilux EP0 Albania EP Grease R0	ExxonMobil Japan G.K Shell Lubricants Japan K.K
VM-1	7.7	Epinoc AP0	ENEOS Holdings, Inc.

2)Refueling to Valve Shaft

Valve with rising-type shaft require lubrication to prevent screw wear on stem bush. Apply the following recommended grease periodically (for example, every six months) according to the frequency of use and environmental condition.

Recommended grease	Manufacturer or distributor
Molub-Alloy OG 936 SF grease	
Alumix EP No.1 grease	Kyodo Yushi Co., Ltd.

Note) Use low temperature grease in an environment of -10 ° C or lower.

How to apply lubricant:

- 1)Remove spindle cover and apply grease to threaded part of valve stem with a brush or bamboo spatula.
- 2)If spindle cover is long and difficult to remove, use lubrication plug and refuel with a grease gun.
- 3)Be careful not to let dust or foreign matter get caught in screw part, and apply grease to cover screw entirely, or collect it properly in grease pocket.

*In case actuator is not used often, set a schedule and activate it at regular intervals (for example every one week) to check that there is no problem.