



MAN-652-OM6

THREE-PHASE SUPPLY MODULE with VOLTAGE from 380 to 480 VAC (50-60Hz)

(for F02 MODEL 063 and 125)

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Rev.	Date	DESCRIPTION	Prepared	Approved

Note:

Biffi Italia has taken every care in collecting and verifying the documentation contained in this Instruction and Operating Manual.

The information herein contained is reserved property of Biffi Italia.

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1 OPTIONAL MODULE 6: THREE-PHASE SUPPLY MODULE (from 380 to 480 VAC @ 50-60 Hz)

1.1 MANUFACTURER


Manufacturer with respect to Machinery Directive 98/37 BIFFI ITALIA as specified on the motor label.


1.2 THREE-PHASE SUPPLY MODULE FUNCTIONALITY


Warning: 	OM6 is at present available for F02 models 063 and 125 only. Please make sure that OM6 received as spare component is not installed onto models 250, 500, 1.000 and 2.000. Biffi will not accept any responsibility for any damage or deterioration that may be caused due to improper installation of the module.
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The OM6 THREE-PHASE SUPPLY MODULE is supplied as an OPTION on BIFFI F02 actuators.

It is possible to have the actuator already equipped with the OM6, ordering it with the basic feature. Alternatively, it is possible to order the OM6 as a separate kit and install it on the basic actuator in the factory or in the field.

Warning: 	F02 actuator must be electrically insulated before all disassembling and reassembling operations. Before any disassembling or reassembling operations, please follow closely the relevant paragraph of the Basic Instruction and Operating Manual MAN 652 (latest revision available).
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Warning: 	The electronic parts of F02 actuators and all the options can be damaged by a discharge of static electricity. Before you start, touch a grounded metal surface to discharge any static electricity.
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Warning: 	It is assumed that the installation, setting, commissioning, maintenance and repair works are carried out by qualified personnel and checked by responsible Specialists.
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Warning:



Repair work, other than operations outlined in this manual, is strictly reserved to qualified BIFFI ITALIA personnel or authorized by the Company itself.

2 INSTALLATION

To assemble the OM6 module onto the F02 actuator, proceed as follows:

- a. Ensure that all the parts received with the OM6 are available (see Picture 1):



Picture 1: OM6 kit for F02 actuator

- b. Gather the necessary tools for installation (3 mm Allen key, 5 mm Allen key, flat screwdriver, cross screwdriver)



Picture 2: Tools for installing OM6 kit

- c. Loosen the 4 cover screws and remove the terminal board enclosure

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Picture 3: Removing Terminal Board Enclosure

d. Loosen the 4 cover screws and remove the actuator enclosure (see Pictures 4 and 5).



Pictures 4a and 4b: Removing F02 Actuator Enclosure



Picture 5: Actuator inner part

Warning:



Pay attention not to damage the joint surfaces of the cover and the cover gasket.

e. Remove the yellow indicator shaft.

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- f. Disconnect all the connectors from the logic card, using the flat screwdriver in order to make the operation easier



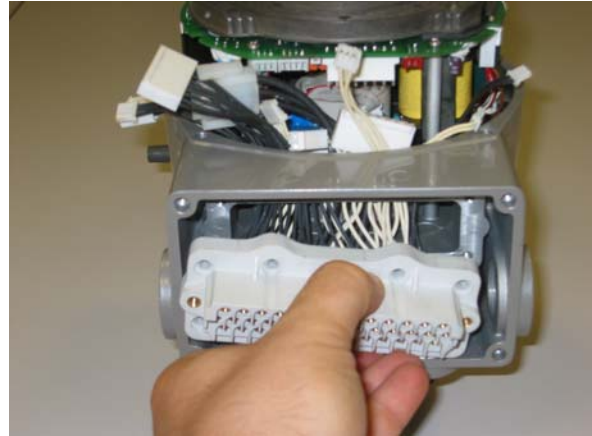
Picture 6: Disconnecting the connectors from the logic card

- g. Disconnect all the connectors from the power card, using the flat screwdriver in order to make the operation easier



Picture 7: Actuator after the disconnection of the connectors

- h. With the Allen key, loosen the 7 screws and then remove the terminal board, extracting from the inner part of the actuator all the cables and the connectors previously disconnected (in operations f. and g.)

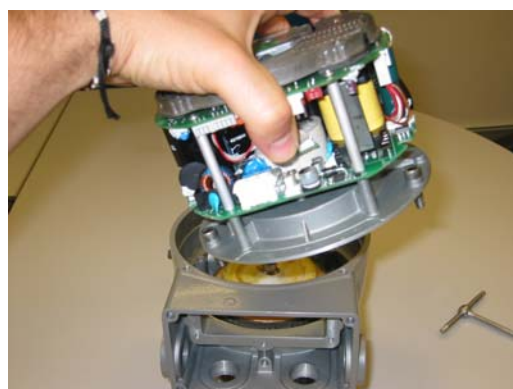
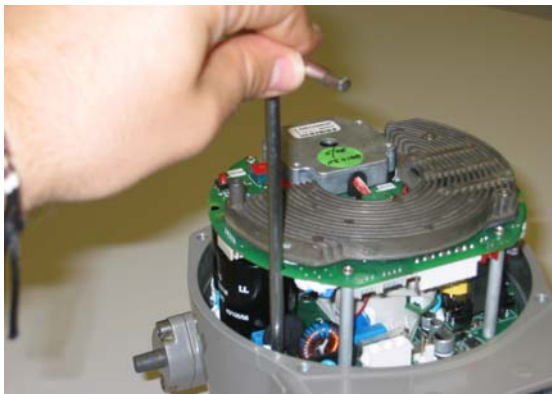


Picture 8: Removing the terminal board



Picture 9: Actuator after the terminal board removal

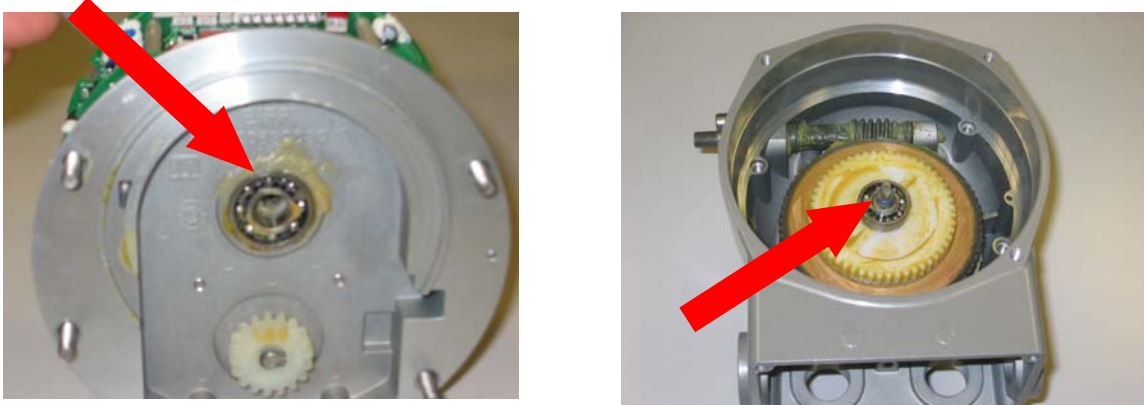
- i. Remove the electronic group (logic card + power card + electric motor + position sensor) from the actuator enclosure, by loosening the 4 screws with the Allen key



Picture 10: Removing the electronic group

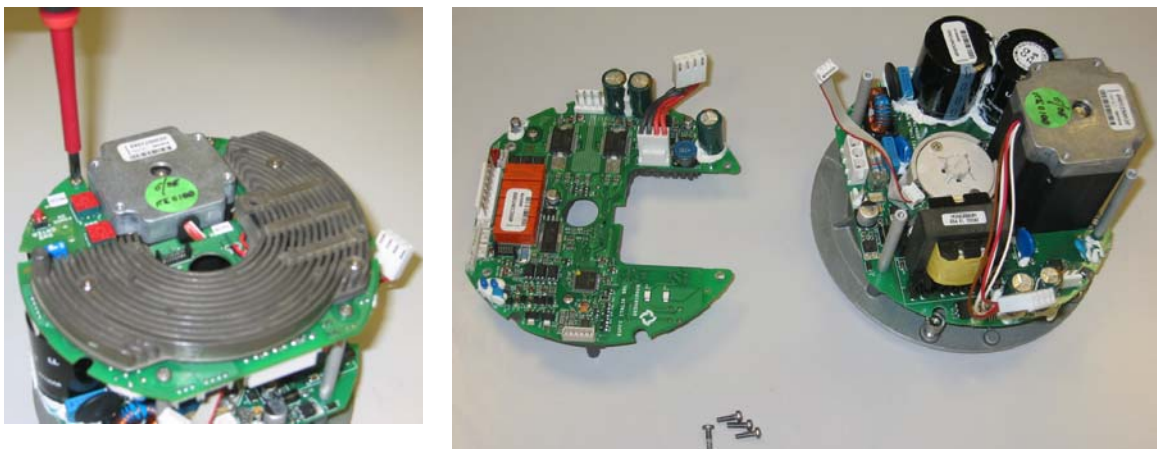
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- j. If the bearing remains in its housing in the removed motor support plate, extract it (using the screwdriver or a pliers) and then position it on the plastic gear in the actuator's enclosure, centring the inner ring of the bearing in the position shaft.



Picture 11: Re-positioning of the bearing

- k. Disconnect the connectors between the two cards: the electric motor and position sensor connectors must be disconnected from the logic card, while the connection cable between the logic and the power card must remain connected to the logic card (as shown in Picture 12). Then loosen the 4 screws and remove the logic card from the electronic group.



Picture 12: Logic card removed

- l. Remove the electric motor from the power card, loosening the 4 motor screws with the 3 mm Allen key
- m. Remove the position sensor from the power card, loosening the 3 screws with the cross screwdriver.



Picture 13: Removing of Electric Motor and Position Sensor

Important:



Pay attention not to lose the screws removed during operations l. and m.: they will be necessary to assemble the motor and the position sensor onto the 3-phase card



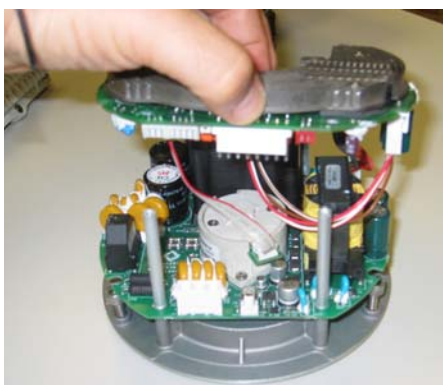
Picture 14: Motor and Position Sensor removed

- n. Assemble the electric motor (removed in operation l.) onto the three-phase card received as option, fixing it with the 4 screws and orienting it in order to have the cable turned to the centre of the card (as shown in Picture 15). Assemble the position sensor (removed in operation m.) onto the three-phase card, fixing it with the 3 screws.



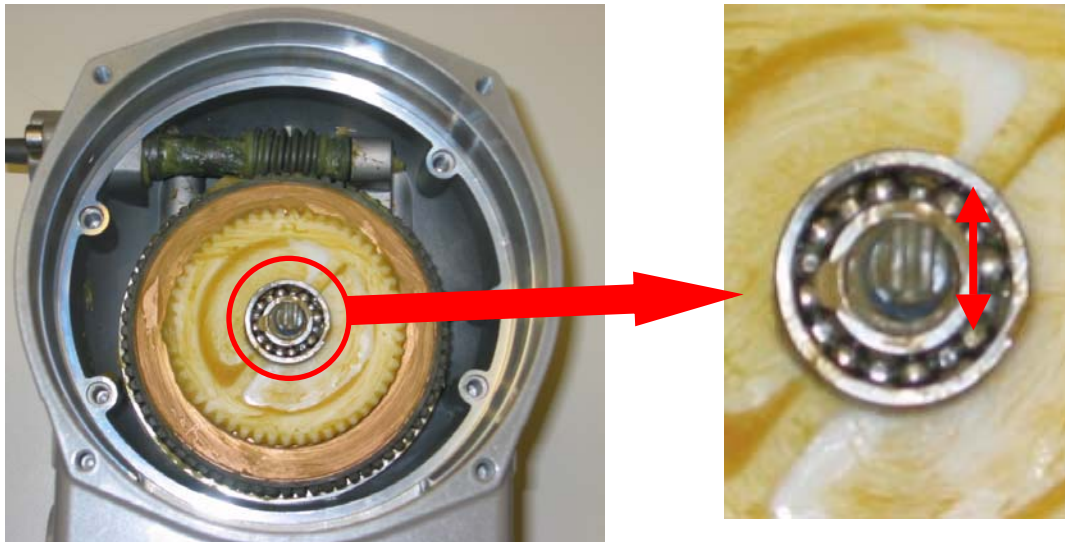
Picture 15: Electric Motor and Position Sensor Assembled onto the 3-phase card

- o. Assemble the logic card (removed in operation k.) to the 3-phase card, first by connecting the 3 connectors (disconnected in operation k.) and then fixing it on the 4 spacers of the 3-phase card with the 4 screws. If the 4 screws removed from the logic card in operation k. result damaged or unusable, please use the 4 screws supplied with the OM6 kit.



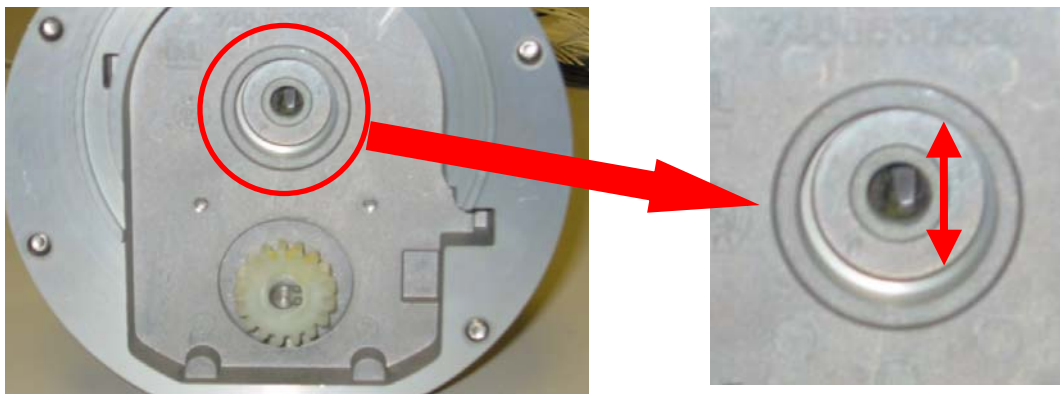
Picture 16: Assembling the logic card onto the 3-phase card

- p. Before assembling this group onto the actuator, orient the position shaft of the actuator as shown in picture 17, by rotating the actuator's handwheel.



Picture 17: Orientation of the Position Shaft

- q. Rotate the slot of the position sensor in the same direction of the position shaft, so that it can receive the position shaft.



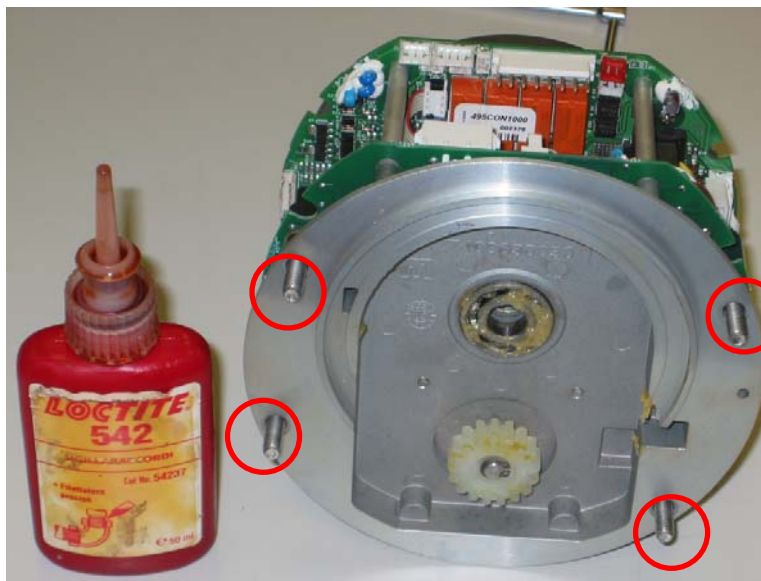
Picture 18: Orientation of the Position Sensor Slot

- r. Replace the terminal board onto the actuator, inserting the cables as shown in picture 19. Do not tighten the screws: this will make the next operation easier (inserting the three-phase electronic group).



Picture 19: Replacing the terminal board onto the actuator

- s. Put a bit of red Loctite on the 4 screws of the motor support plate supplied with the OM6 optional kit, before fixing the three-phase electronic group onto the actuator.



Picture 20: Put red Loctite on the highlighted screws

- t. Insert the three-phase electronic group (assembled in operations n. and o.) in the actuator, keeping all the cables of the terminal board out of the actuator, and paying attention not to press them during this operation, as shown in Picture 21.

Warning:



Pay attention to the coupling of the position shaft with the position sensor, in order not to damage the position shaft. If this operation is difficult, remove the electronic group and check the orientation of the shaft and the position sensor, and the repeat the operation.



Picture 21: Inserting the 3-phase electronic group in the actuator

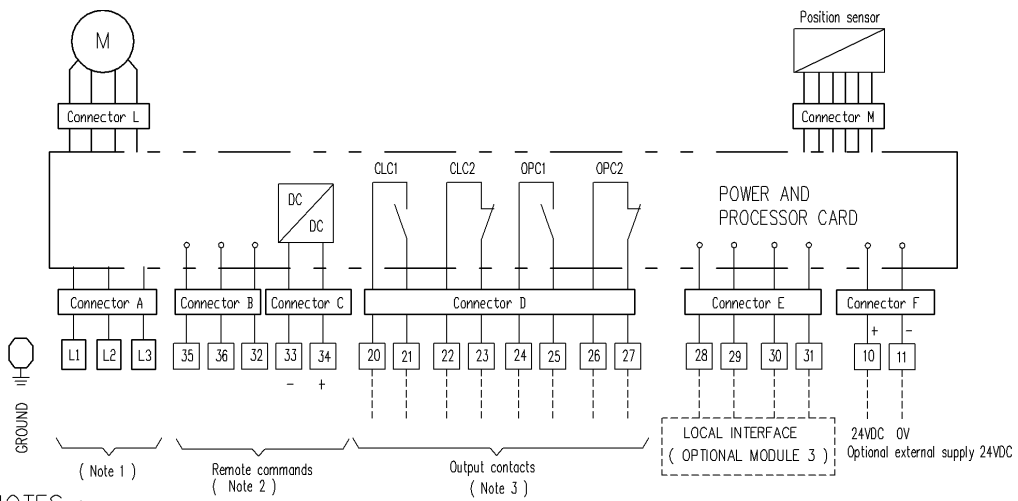
- u. Restore the connections removed in operations f. and g.
- v. Fix the terminal board with the 7 screws previously removed in operation h.
- w. Tighten the 4 screws of the motor support plate fixing it onto the actuator.



Picture 22: 3-phase module assembled onto F02 actuator

- x. Assemble the yellow indicator shaft removed in operation e.
- y. Assemble the terminal board enclosure (previously removed in operation c.) and the actuator enclosure (removed in operation d.)

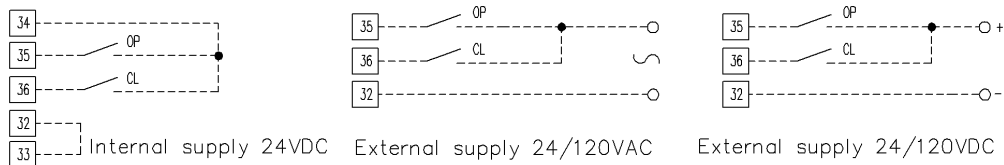
3 OM6 WIRING DIAGRAM



NOTES :

- 1) Connection L1-L2 FOR VDC or VAC single phase motor supply from 24 to 240 Volt
 Connection L1-L2-L3 for 3 phase motor supply from 208 to 575V (Check on the actuator label the correct voltage to be applied.)

2) Remote commands options



- 3) Contacts shown in intermediate position CLC1-CLC2 end of travel signalling in CLOSING
 Contacts shown in intermediate position OPC1-OPC2 end of travel signalling in OPENING



tyco flow control

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