

ROTARY 90° REVERSIBLE ACTUATOR FOR LARGE VALVES

CVS 808 Eng.

- Power supply : 230 V~
- Three-wire electrical control (common, opens, closes)
- Rotation angle : 90°
- Run time: 55 seconds
- Two auxiliary end-of-run switches
- Option manual control of valve
- Protection IP 55



1. APPLICATION

CVS 808 actuator is a high-power rotary type suitable for the operation of Coster ball valves 2S DN 100S, 2S DN 125, 2S DN 150 and 2S DN 200.

2. OPERATION

CVS 808 actuator permits operating the valve automatically or manually:

– automatic control: can be operated by an On-Off or modulating device (thermostat, on-off switch, modulating controller) provided it is fitted with an SPDT output switch.

The three-wire control (common, opens, closes) powers a reversible electric motor which, coupled to a double speed reduction unit, transmits the movement to the valve stem.

– manual control: the actuator can be operated manually. With the power off, it is possible to position the valve manually by means of the handwheel mounted on the shaft of the speed reduction input. This position will be maintained until power is restored.

The actuator run is 90° and is limited electrically by two end-of-run switches operated by a fixed cam.

The actuator is fitted with two auxiliary switches which, supplying in output two end-of-run switches operated by two separate adjustable cams, permit the maximum versatility of use.

3. MODEL

Model	Power supply Volt ~ (VA)	Run time seconds	Nominal torque kg/cm (Nm)	Starting torque kg/cm (Nm)	Ball valves 2S
CVS 808	230 (120)	55	8.000 (800)	8.000 (800)	DN 100S....DN 200

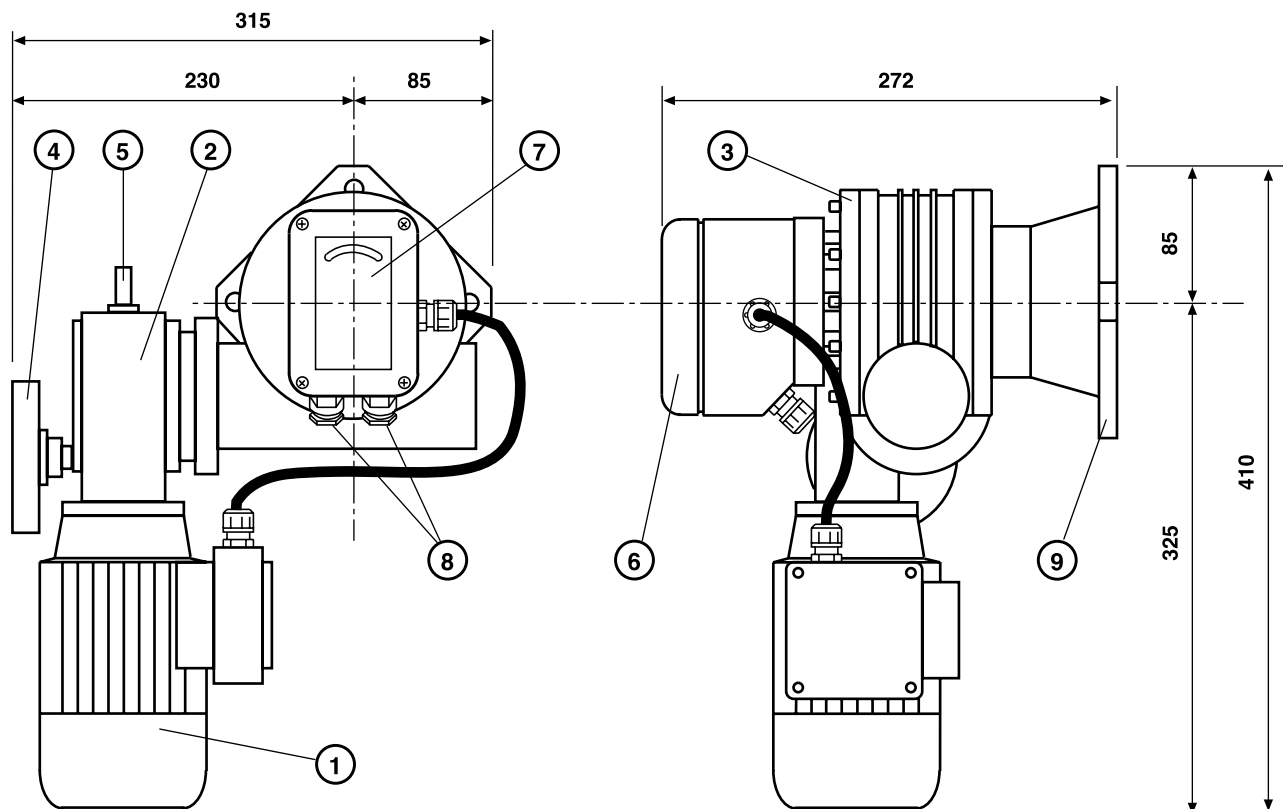
4. ACCESSORIES

Model	Description
AVS 201	Linkage kit for valves 2S DN 100S and 2S DN 125
AVS 202	
	Linkage kit for valves 2S DN 150 and 2S DN 200

5. TECHNICAL DATA

Power supply	230 V ~	Nominal torque	8,000 kg/cm (800 Nm)
Frequency	50...60 Hz	Starting torque	8,000 kg/cm (800 Nm)
Consumption	120 VA	Temperature fluid valve	0...120 °C
Rotation angle	fixed a 90°	Ambient temperature :	
Auxiliary switches:		– operating	0...45 °C
– maximum applied voltage	250 V ~	– storage	-20...60 °C
– maximum current	5 (1) A	Protection	IP 55
Run time	55 seconds	Weight	14,960 kg

6. OVERALL DIMENSIONS



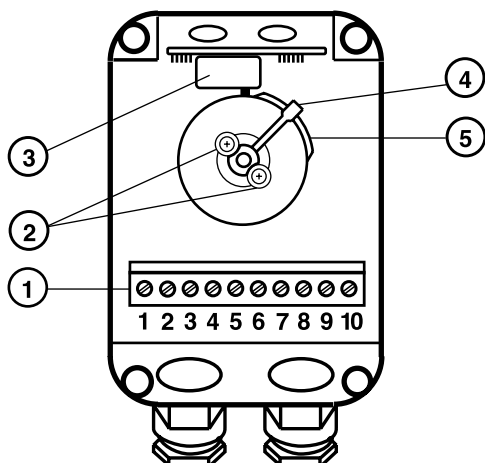
- 1 – Electric motor
- 2 – First power reduction unit
- 3 – Second power reduction unit
- 4 – Handwheel for manual control (shown in ex-works position)
- 5 – Input shaft of first speed reduction unit on which handwheel inserted for manual control of valve

- 6 – Housing for terminal block for electrical, connections, end-of-run switches and auxiliary switches
- 7 – Name plate with slot for valve position indicator
- 8 – PG11 cable entry glands for electrical connections
- 9 – Flange for coupling to valve

7. CONSTRUCTION

The body of the actuator consists of a double mechanical power reduction unit (6.2 and 6.3), of the worm screw type; the housing is made of die-cast aluminium whilst the internal mechanical parts are in tempered steel. On the upper part of the power reduction unit is mounted the housing made of Nylon reinforced with glass wool (6.7) with a polycarbonate cover, in which are housed the switches (8.3), the cams (8.5) and the terminal block for the electrical connections (8.1). In the lower part of the second reduction unit is the flange for coupling the actuator to the valve (6.9). At right angle is positioned the electric motor (6.1) and the handwheel which can be used for the manual control of the valve (6.5).

8. SWITCHES & TERMINAL BLOCK



- 1 – Terminal block for electrical connections.
- 2 – Screws for adjustment of auxiliary cams.
- 3 – End-of-run and auxiliary switches
- 4 – Cam indicating position of the valve
- 5 – Tre camme sovrapposte:
 - a lower, non-adjustable one for end-of-run,
 - two overlapping, adjustable, for operation of auxiliary switches.

7.1 Control of auxiliary cams

Loosen the screws (8.2), rotate the two upper cams (which operate the two auxiliary switches), positioning them so that they trip in the desired condition. Then tighten again the two screws so as to block the auxiliary cams.

For the electrical connections of the auxiliary switches see section 12. WIRING.

8. MOUNTING THE ACTUATOR ON THE VALVE

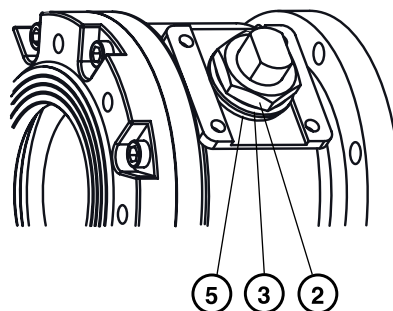
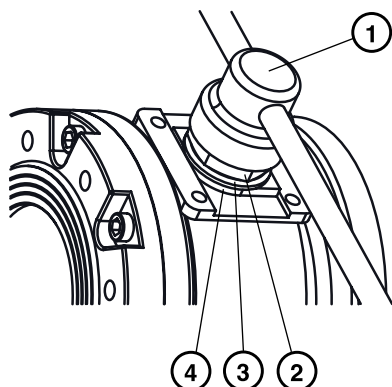
In the actuator packing will be found all the accessories necessary for mounting on ball valves:

- a round washer for inserting on the valve stem;
- an aluminium flange for coupling valve and actuator;
- four Allen screws for securing the flange to the head of the valve;
- four hexagonal-headed screws, with washers, for securing the actuator to the flange.

8.1 Preparation of the valve

The valve must be prepared as follows:

- remove the handle (1)
- unscrew the hexagonal nut (2)
- remove the spring washers (3)
- **very important!!!: remove the mechanical stop (4)**
- insert the washer (5) (supplied with the actuator)
- re-insert the springs (3)
- tighten up the hexagonal nut (2)

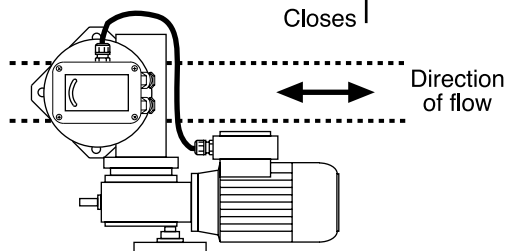
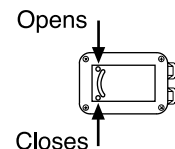
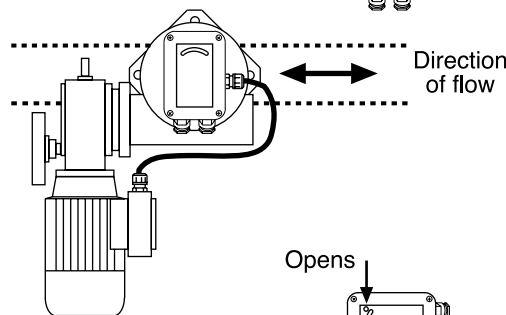
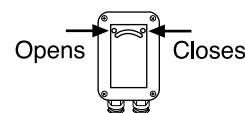
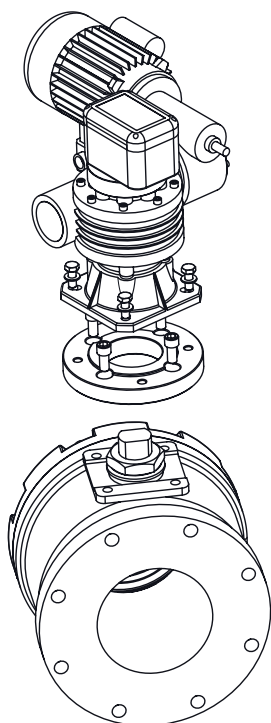


8.2 Mounting the actuator on the valve

Important: during the mounting of the actuator on the valve, check the “Opens” and “Closes” positions of the latter and make a note of them on the spaces provided on the front label (two circles on each side of the pit where the cam- indicator is visible).

After having prepared the valve, proceed as follows:

- mount the valve-actuator coupling flange on the valve and secure it with the Allen screws,
- rotate the valve stem so that the millings correspond with those on the actuator shaft,
- insert the actuator on the valve (the actuator can be mounted parallel to or at right-angles to the pipe) and then secure it using the hexagonal- headed bolts with washers..



9. MANUAL CONTROL OF THE VALVE

The handwheel for the manual control of the valve (5.4) is, ex-works, mounted on a fixed support bracket on the actuator. If the valve is to be mounted by hand, loosen, using an Allen key, the security dowel which locks the handwheel to the fixed support and then insert it on the input spindle of the first reduction gear (6.5).

Tighten up the security dowel ensuring that it enters in the seat of the ? on the spindle.

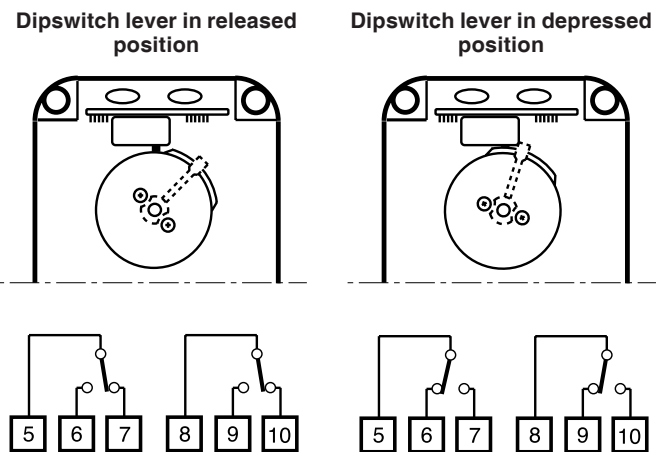
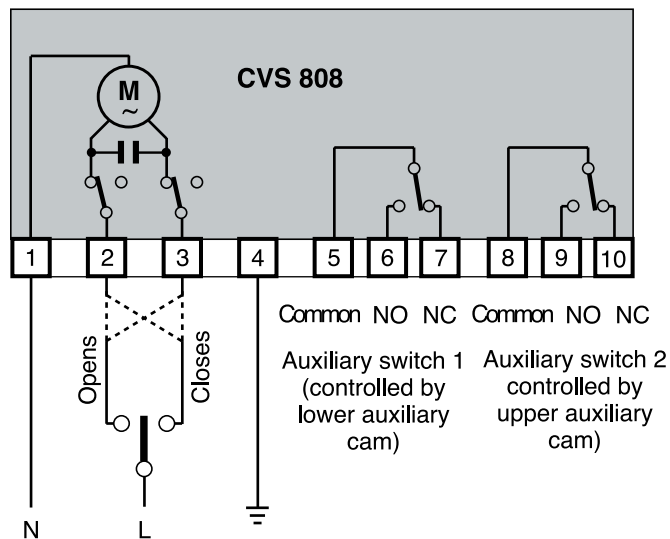
Warning: For safety reasons, the actuator is not provided, with mechanical stops, so that, when operated by hand, it can rotate freely over 360°. Check, therefore, the position of the valve by referring to the position indicator on the cover.

10. ELECTRICAL WIRING

Carry out the wiring as follows::

- remove the protective cover from the terminal block housing (5.6) after loosening the four securing screws.
- introduce the electric cables into the actuator through the appropriate PG11 entry glands (6.8).
- carry out the wiring according to the diagram (see section 12) in accordance with the regulations in force and using 1.5 mm² cables.
- replace the protective cover, ensuring that the seal is correctly positioned, and then tighten up the four securing screws.

11. WIRING DIAGRAM



N. B.: When the auxiliary switches are normally open (NO) and normally closed (NC), as shown in the wiring diagram, it is to be understood that the levers of the dipswitches are in the "not pressed" condition.

IMPORTANT READ CAREFULLY :

- the diagram of the auxiliary miniature switches shows these switches in the Off position (i.e. not depressed)
 - the two cams of the auxiliary miniature switches can be set at any angle in respect of the position of the actuator so as to render completely free and adjustable the actions of the miniature switches themselves according to use requirements.
 - This actuator is of the "ASYNCHRONOUS" type, with two coils + phase shifter capacitor: under simultaneous control the actuator is stationary and absorbs twice the current in respect of the short circuit current of a single winding, irreversibly damaging the windings themselves.
- To avoid giving two simultaneous instructions it is suggested that:
- a single relay is used with a changeover switch for "all open" or "all closed"
 - a single relay with changeover switch "Opens" or "Closes" and a second relay which removes the "Closes" instruction when it is desired to stop the actuator in any position between "all open" and "all closed".

Amendments to data sheet

from version	to version	Page	Section	Details of amendments
26.09.05 MZ	20.11.06 MZ	1	4. ACCESSORIES	Add ACCESSORIES table (linkage kit for valves)
		various	various	The number of valves on which the actuator can be install as been increased
20.11.06 MZ	15.12.06 MM	4	11. WIRING DIAG...	Add Note IMPORTANT



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