



Installation Instructions
 VMR
 VML
 VMM

N Version
 North American Market

Safety solenoid valves for gas

VMR: fast opening/fast closing
 VML: slow opening/fast closing
 VMM: double valve

Installation and Service Instructions



To ensure proper and safe operation, as well as long life of the valve, the installation procedure and a periodical servicing are very important topics. Read carefully and keep in a safe place.

This control must be installed in compliance with the rules in force. All works must be executed by qualified technicians only.

This device complies with the requirements of standard FM 7400.

VMR-L-M Gas Safety Shutoff Valves are suitable for applications pursuant to NFPA 86.



Class 7400

Approval ID
 0003061781

IMPORTANT: Before proceeding with the installation, ensure that all the features of your system comply with the specifications of the valve (connections, media type, operating pressure, flow rate, temperature range, electrical voltage, etc).

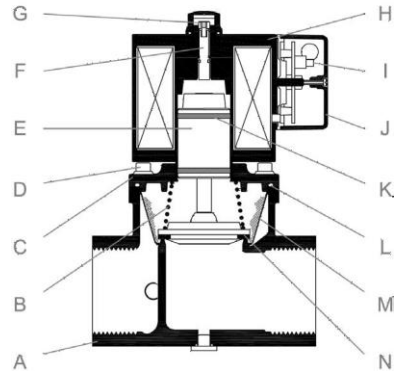
Description

This type of device is suitable for blocking and adjusting gas or air in atmospheric or fan-assisted burners or other gas equipment (qualified for continuous service - 100% ED).

VMR/VML

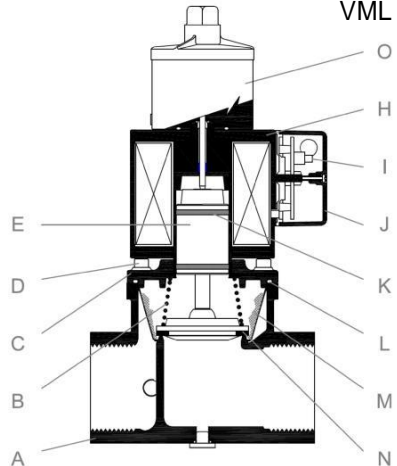
- A - Valve housing
- B - Closing spring
- C - Counterflange
- D - Socked head screws
- E - Plunger assembly
- F - Adjustment screw
- G - Locking screw
- H - Solenoid
- I - Rectifier
- J - Terminal box
- K - Wear rings(x2)
- L - Main O-Ring
- M - Strainer
- N - Seal
- O - Damper

VMR



Spare parts:
 B, H, I, J, K, L, M

VML



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 B, H, I, J, K, L, M, O

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- I - Rectifier
- J - Terminal box
- K - Wear rings (2x)
- L - O-Ring
- M - Strainer
- N - Seal
- O - Damper
- P - Connection flange
- Q - Upper gasket
- R - Bottom gasket

VMM

CAUTION: Shut off the air/gas supply at the main manual shut-off valve and disconnect electrical power to the valve before proceeding with installation or servicing.

TECHNICAL DATA

Connections:

- Threaded
 - ANSI-ASME B1.20, 1/4" to 2-1/2" NPT
 - ISO 7-1, Rp1/4 to Rp2-1/2
- Flanged
 - ANSI-ASA-ASME B16.5 class 150, 2" to 6"
 - ISO 7005 PN16, DN40 to DN150

Media type:

Air and non-aggressive gases as NG, LPG (special versions for biogas or COG - compatibility of gas contents and valve materials to be checked in any installation)

Maximum Pressure:

- Brass version: 3 PSI
- Size 3/8 to 4": 3 to 90 PSI*
- Size 5 to 6": 3 or 5 PSI*
- *See Product Label

Max. Body pressure:

15 psig (100 psig for VM...-60)

Ambient and media temperature:

+5°F to +140°F (-15/+60°C)

Electrical ratings:

See Product Label

Voltage tolerance:

-15% .. +10%

Power Consumption:

See Product Label

Wires cross-section:

- 2.5 mm² (AWG12) for terminal board
- 1.5 mm² (AWG14) for DIN plug

Cable gland:

- M20x1.5 (EN 50262)-cable Ø8..Ø10mm
- PG9 for DIN plug - cable Ø6..Ø8mm

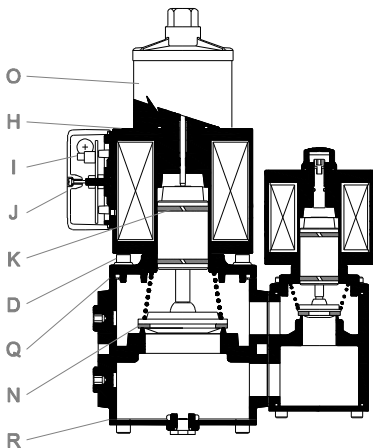
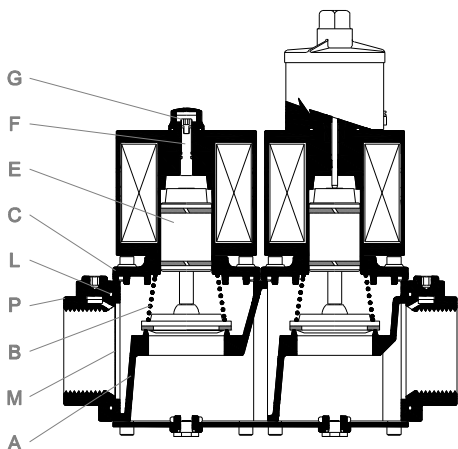
Pressure ports:

- On two sides (except brass models)
 - 1/4" NPT (N version)
 - G1/4 (standard)

Strainer:

600 µm (except 90PSI and brass models)

VMM



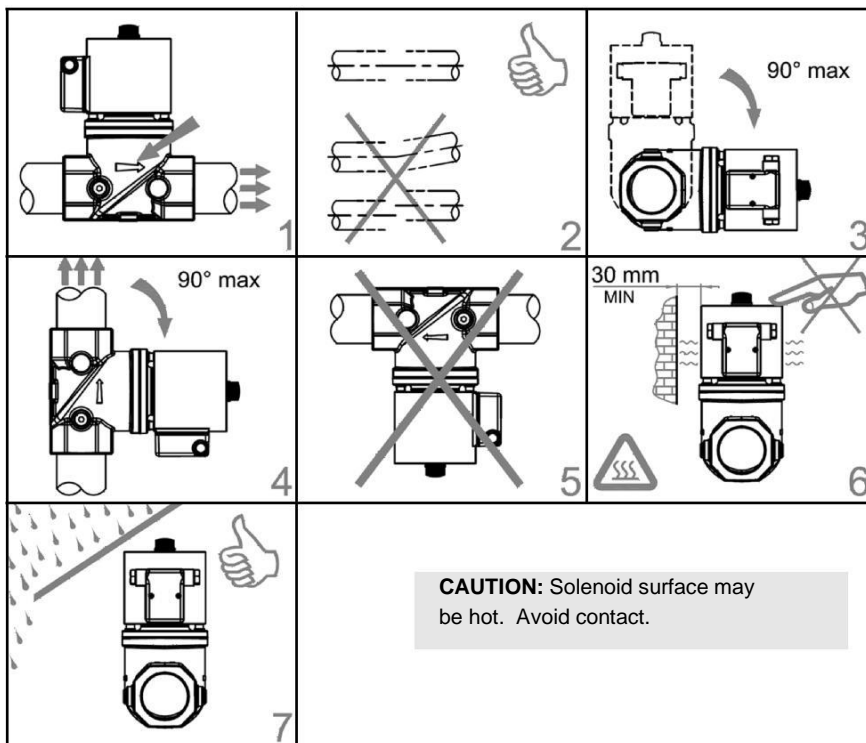
Spare parts:

- B, H, I, J, K, L, M, O, P, Q, R

Model	Size	Kvs (ft/h)	Kvs Bps 1/2" (ft/h)	Kvs Bps 1" (ft/h)	Dims. (in)	Weight (lb)
VMR01..OTN	1/4" NPT	19.42	-	-	1.81x2.95x1.18	0.59
VMR0..OTN	3/8" NPT	24.72	-	-	2.36x4.33x1.18	0.88
VMR1..OTN	1/2" NPT	45.91	-	-	2.36x4.33x1.18	0.88
VMR0	3/8" NPT	102.41	-	-	3.03x5.59x3.46	3.08
VMR1	1/2" NPT	169.51	-	-	3.03x5.59x3.46	3.08
VMR2	3/4" NPT	335.49	-	-	3.78x6.61x3.46	5.51
VMR3	1" NPT	423.78	-	-	3.78x6.61x3.46	5.51
VMR35	1-1/4" NPT	776.92	-	-	6.02x8.82x4.72	12.56
VMR4	1-1/2" NPT	1024.13	-	-	6.02x8.82x4.72	12.56
VMR6	2" NPT	1412.59	-	-	6.14x9.21x4.17	13.22
VMR7T	2-1/2" NPT	2295.45	-	-	8.58x11.81x7.09	25.57
VMR78	2-1/2" ANSI	2295.45	-	-	12.01x13.98x7.87	30.86
VMR78	3" ANSI	2825.17	-	-	12.01x13.98x7.87	30.86
VMR9	4" ANSI	5226.57	-	-	13.86x18.13x9.84	72.75
VMR93	5" ANSI	8828.67	-	-	18.11x23.62x12.2	127.86
VMR95	6" ANSI	11124.1	-	-	18.11x23.62x12.2	132.27
VML0	3/8" NPT	102.41	-	-	3.03x7.72x3.46	3.97
VML1	1/2" NPT	169.51	-	-	3.03x7.72x3.46	3.97
VML2	3/4" NPT	335.49	-	-	3.78x8.74x3.46	5.95
VML3	1" NPT	423.78	-	-	3.78x8.74x3.46	5.95
VML35	1-1/4" NPT	776.92	-	-	6.02x11.57x4.72	13.67
VML4	1-1/2" NPT	1024.13	-	-	6.02x11.57x4.72	13.67
VML6	2" NPT	1412.59	-	-	6.14x11.97x4.17	14.33
VML7T	2-1/2" NPT	2295.45	-	-	8.58x14.57x7.09	26.68
VML78	2-1/2" ANSI	2295.45	-	-	12.01x16.73x7.87	31.97
VML78	3" ANSI	2825.17	-	-	12.01x16.73x7.87	31.97
VMM20..F	3/4" NPT	211.88	162.45	-	7.28x6.5x3.07	11.9
VMM25..F	1" NPT	247.2	162.45	-	7.28x6.5x3.07	11.9
VMM32..F	1-1/4" NPT	759.27	211.88	317.83	11.02x9.05x5	28.7
VMM40..F	1-1/2" NPT	882.87	211.88	317.83	11.02x9.05x5	28.7
VMM50..F	2" NPT	967.62	211.88	317.83	11.02x9.05x5	28.7
VMM78..F	2-1/2" ANSI	2083.57	211.88	317.83	12.2x12.48x7.87	37.5
VMM78..F	3" ANSI	2154.19	211.88	317.83	12.2x12.48x7.87	37.5
VMM20..S	3/4" NPT	211.88	162.45	-	7.28x8.7x3.07	12.8
VMM25..S	1" NPT	247.2	162.45	-	7.28x8.7x3.07	12.8
VMM32..S	1-1/4" NPT	759.27	211.88	317.83	11.02x12x5	30.2
VMM40..S	1-1/2" NPT	882.87	211.88	317.83	11.02x12x5	30.2
VMM50..S	2" NPT	967.62	211.88	317.83	11.02x12x5	30.2
VMM78..S	2-1/2" ANSI	2083.57	211.88	317.83	12.2x15.28x7.87	40.1
VMM78..S	3" ANSI	2154.19	211.88	317.83	12.2x15.28x7.87	40.1
OTN = Brass model			No side valve shown in VMM dims.			

PRELIMINARY CHECKS (1..7)

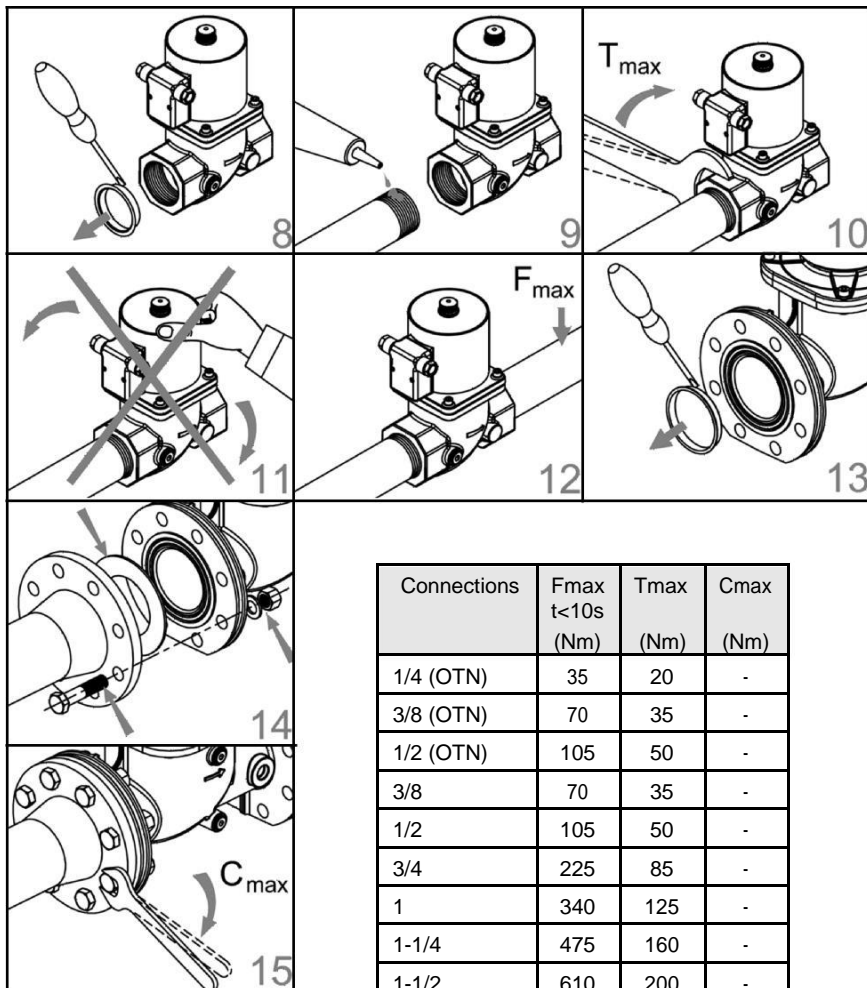
- Install a filter with $d < 1$ mm upstream of the valve.
- Valve may be mounted on horizontal or vertical pipes (flow direction must be from bottom to top).



CAUTION: Solenoid surface may be hot. Avoid contact.

INSTALLATION (8..15)

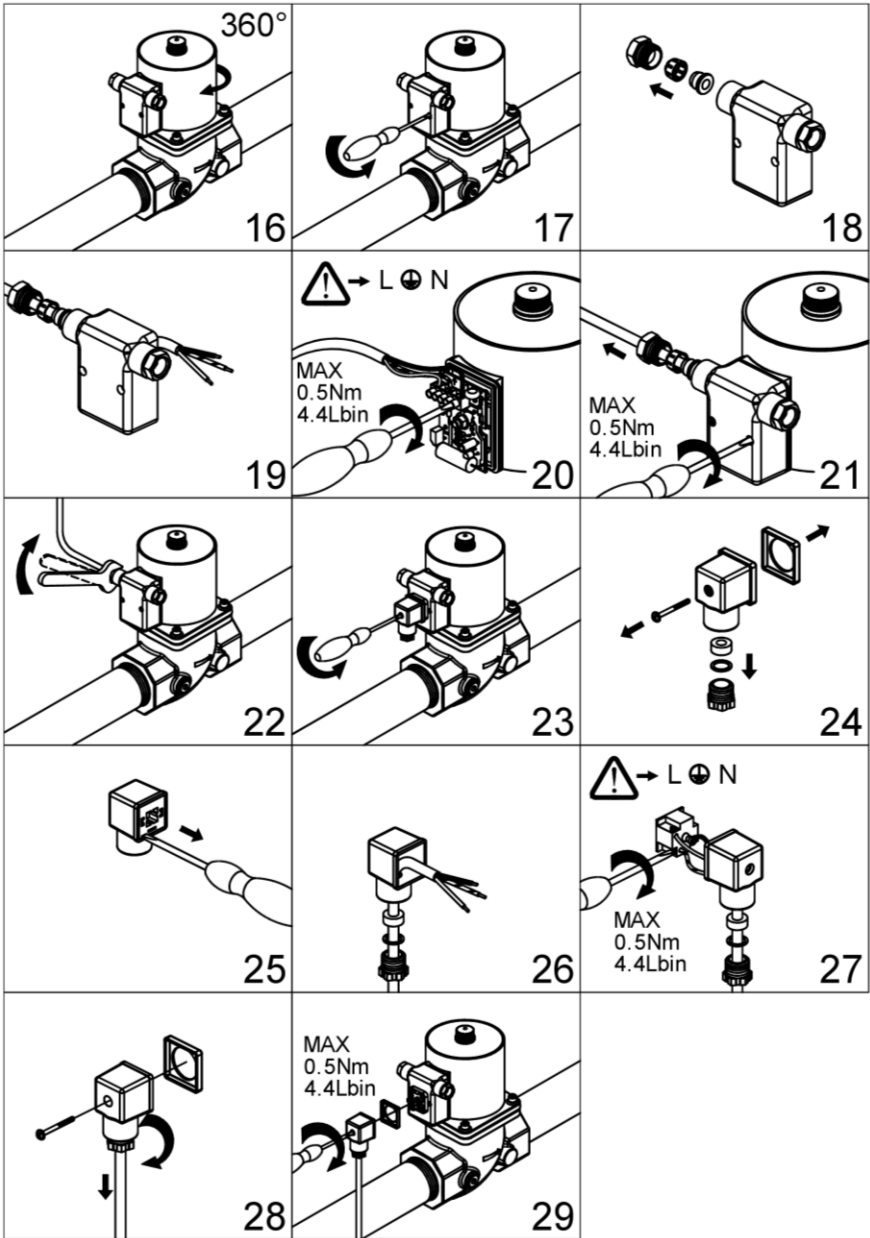
- Avoid excessive quantities of sealing agent which could enter the valve.
- Swarf must not enter the valve.
- Use proper tools only and avoid overtightening (see table, page 6).



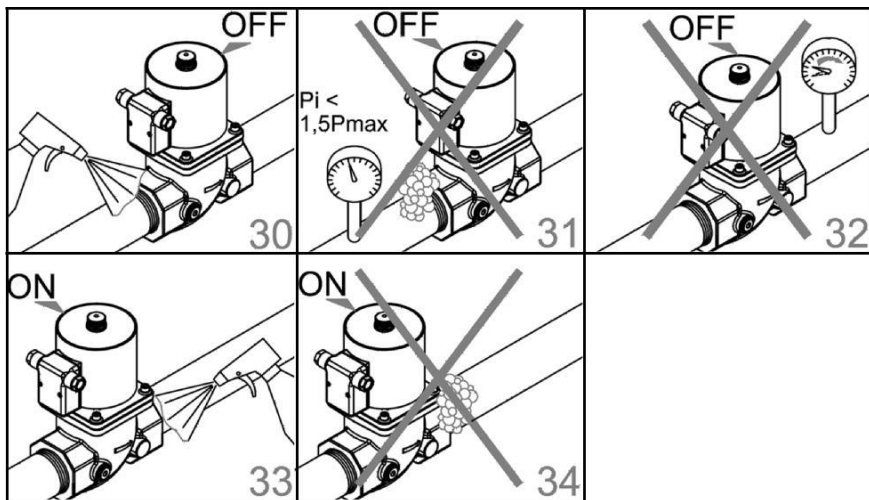
Connections	F _{max} t<10s (Nm)	T _{max} (Nm)	C _{max} (Nm)
1/4 (OTN)	35	20	-
3/8 (OTN)	70	35	-
1/2 (OTN)	105	50	-
3/8	70	35	-
1/2	105	50	-
3/4	225	85	-
1	340	125	-
1-1/4	475	160	-
1-1/2	610	200	-
2	1100	250	-
2-1/2	1600	325	-
2-1/2 (Flange)	1600	-	50
3 (Flange)	2400	-	50
4 (Flange)	5000	-	80
5 (Flange)	6000	-	160
6 (Flange)	7600	-	160

WIRING (16..29)

- Respect printed symbols.
- If wiring must pass through a new opening, use the rubber disc placed beneath the fitting to fill first opening.
- Use all gaskets properly.



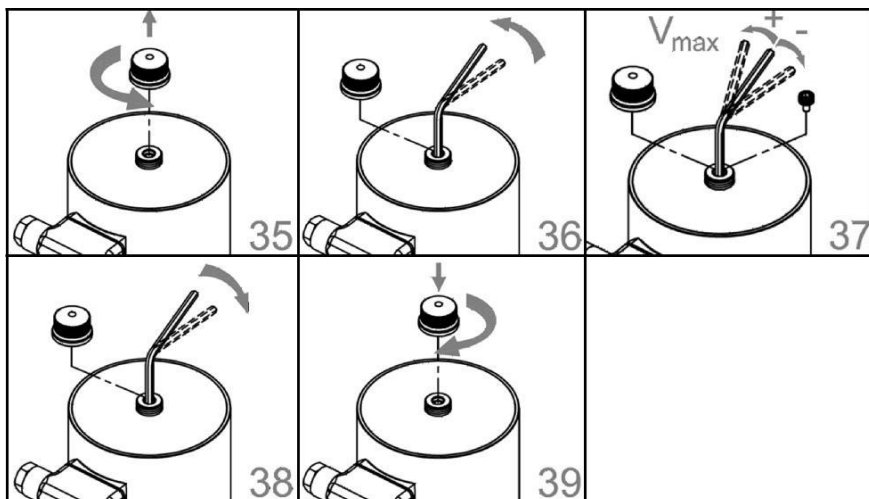
TIGHTNESS TEST (30..34)



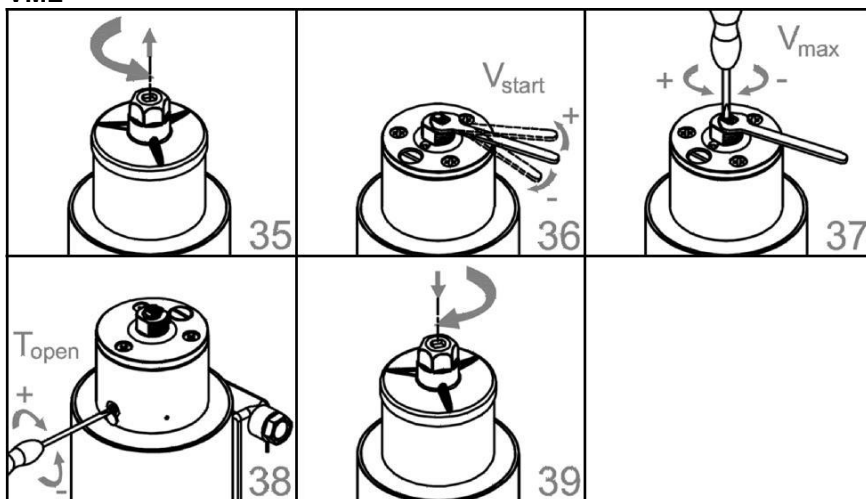
FLOW RATE ADJUSTMENT (35..39)

- Units below 40% capacity are inadvisable since they may cause turbulence.
- not available for models 2"½ 24V, 3" 24V, 4", 5" and 6"
- Screw back the locking dowel (VMR).

VMR



VML



PROOF OF CLOSURE SWITCH (I-II)

Valves are available with a proof-of-closure switch (S) mounted on the bottom:

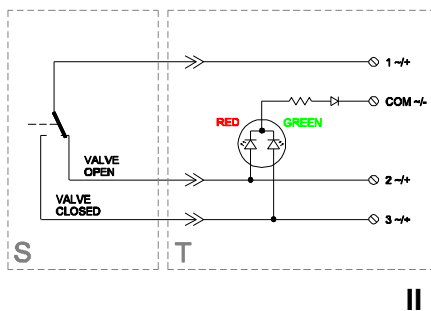
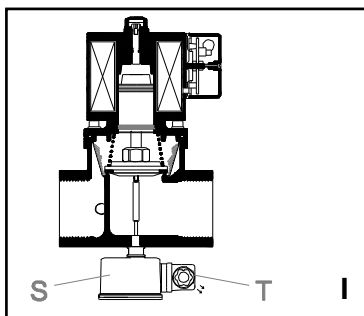
RED LED on: valve OPEN

GREEN LED on: valve CLOSED

- Use a screwdriver to remove the plug (T) and make wiring respecting the diagram below

WARNING: Plug with LEDs is suitable for voltage from 24 to 120 V, for 230V installations use a 15kΩ 1/4W resistor in series with COM terminal

- During reassembly use the cable gland properly



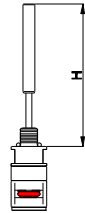
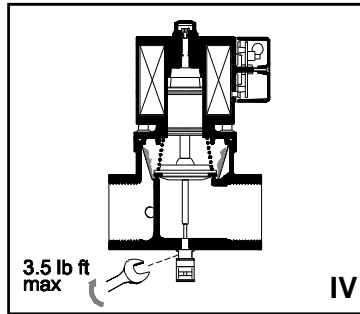
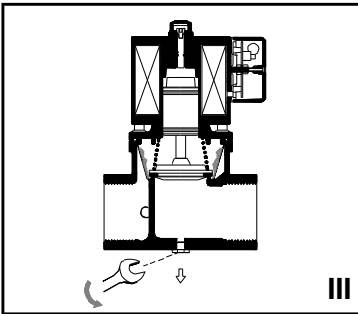
Contact rating	
Version	MAX resistive load
P	250V AC – 2A 125V AC – 3A 30V DC – 3A
P6	125V AC – 0.1A 30V DC – 0.1 A (min 2mA)

VISUAL INDICATOR (III-IV)

A mechanical operating visual indicator may be mounted in the field:
RED INDICATOR visible: valve OPEN

- Ensure that the VI model is suitable for the valve (see chart below – size H according to valve model)
- Shut off the gas supply and remove the 1/8" plug from the bottom of the valve (III)
- Insert the rod of the VI unit inside the 1/8" hole and screw the item with o-ring (IV)
- Tighten using a 9/16" open-ended spanner. Avoid overtightening
- Perform a leak and functional test

Size	VMR, VML	VMx-60	VMM
3/8" - 1/2"	VI1	VI1-60	
3/4" - 1"	VI3	VI3-60	VI3M
1-1/4" - 1-1/2"	VI4	VI4-60	VI6M
2"	VI6	VI6-60	VI6M
2-1/2" threaded	VI7T	VI7T-60	
2-1/2" - 3" flanged	VI8	VI8-60	VI8M
4"	VI9	VI9-60	
5" - 6"	VI95		

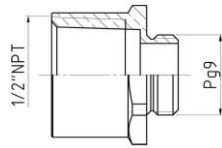


ACCESSORIES FOR INSTALLATION:

METAL FITTING

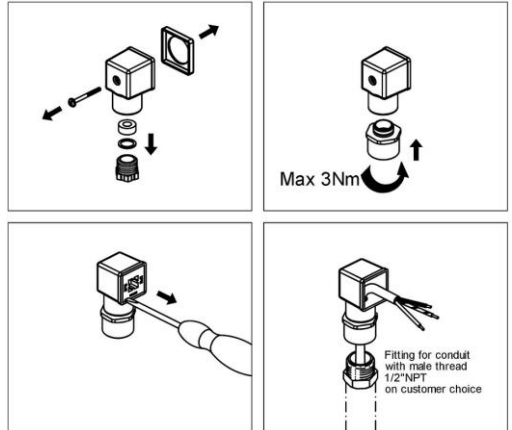
PG9 MALE - 1/2" NPT FEMALE

Fitting made of nickel-plated brass; suitable for Elektrogas devices with DIN plug and Pg9 cable gland.



INSTALLATION

1. Shut off electric power.
2. Remove DIN plug from Elektrogas device.
3. Remove and scrap cable gland, washer and grommet from the plug.
4. Screw metal fitting on DIN plug: use suitable wrench and avoid overtighten (max 3Nm). For better sealing, glue can be put on threads.
5. Remove internal part of DIN plug.
6. Screw conduit gland on fitting with suitable wrench and insert cable.
7. Install wires on internal part of DIN plug according to Elektrogas device instruction.

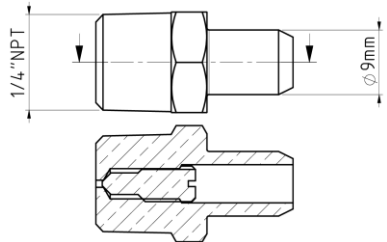


WARNING

To avoid damage to DIN plug, ensure conduit weight is properly supported.

TEST FITTING

Fitting made of brass; suitable for Elektrogas devices with 1/4" NPT pressure point. Suitable for tube Ø9.



WARNING:

this fitting can be use only with low gas pressure (advisable Max 7 psig), verify local rules for its use.

INSTALLATION

1. Shut off upstream gas supply.
2. Vent any gas/pressure in pipe to a safe location (atmosphere).
3. Remove plug in valve body, where you want to install test fitting.
4. Put some sealing agent on 1/4" NPT thread of test fitting and screw it on valve body.
5. Check that internal screw is screwed (Max torque 0.5Nm).
6. Open the gas valve and perform a tightness test.

USE

1. With a flat-blade screw driver, unscrew the internal screw of pressure test point. Make only 2 turns. **BEWARE: There is now a gas leak**
2. Connect the the tube to the test fitting.
3. Make the measurement or test necessary.
4. Remove the tubing.
5. Screw the internal screw of pressure test point (Max torque 0.5Nm).
6. With a bubble agent check the tightness of internal screw.

SERVICE

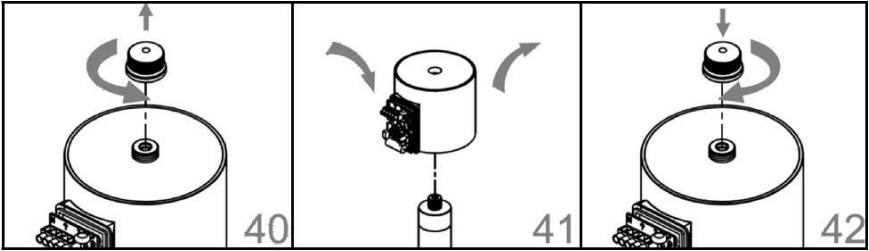
CAUTION: LABEL ALL WIRES PRIOR TO DISCONNECTION WHEN SERVICING VALVES. WIRING ERRORS CAN CAUSE IMPROPER AND DANGEROUS OPERATION.

VERIFY PROPER OPERATION AFTER SERVICING

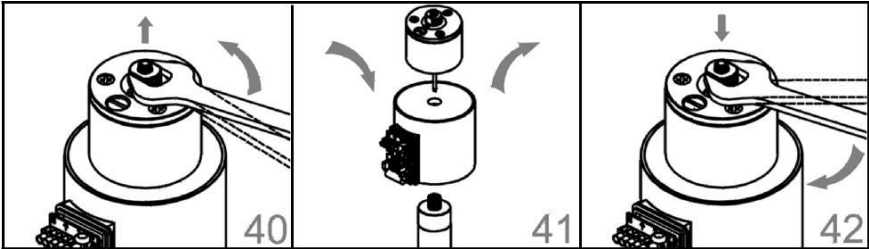
COIL REPLACEMENT (40..42)

- Check that replacement coil is compatible with the valve under maintenance
- First follow steps 22-19 (Wiring)

VMR



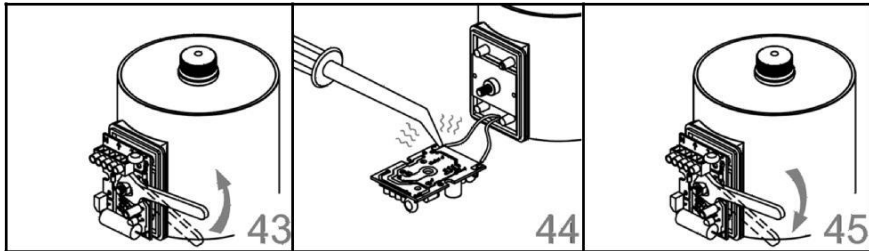
VML



- Follow steps 19-22 (Wiring)
- Mark the label of replacement coil with features of valve under maintenance. Use a waterproof light-resistant marker.

RECTIFIER REPLACEMENT (43..45)

- First follow steps 22-19 (Wiring)

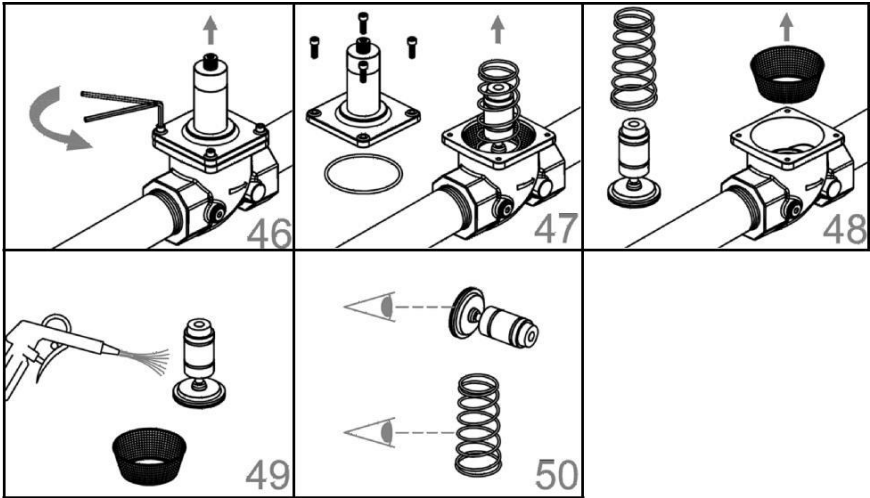


- Follow steps 19-22 (Wiring)

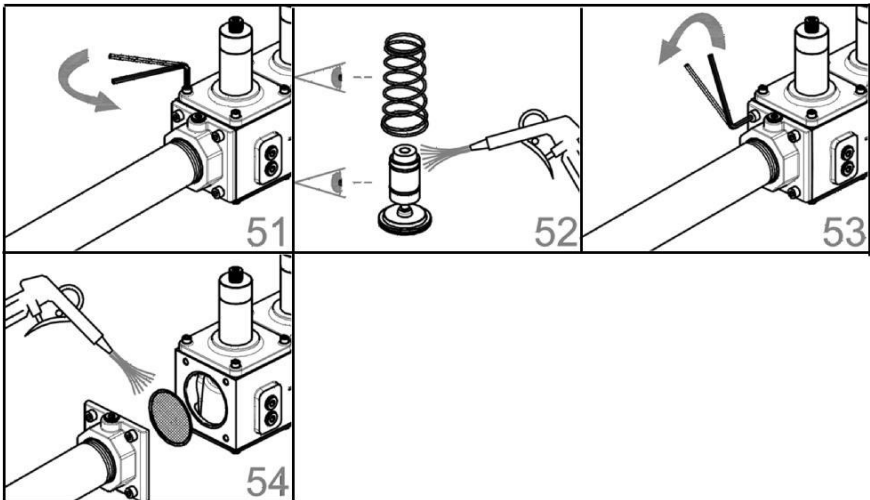
MAINTENANCE (46..50)

- Once per year
- With aggressive gas: twice per year
- Recommended service life: 10 years after date printed on coil (wyyy)
- During reassembly pay attention to the positioning of O-Rings (L) and wear-rings (K) (VMR, VML); Gaskets (N, P) and wear-rings (L) (VMM)
- First follow steps 40-41 (Coil Replacement)

VMR, VML



VMM



• Follow steps 48-46 (Maintenance) and 41-42 (Coil Replacement). See table for torque of screws of valve cover.

Torque for screws of cover		
Recommended value		
Valve	Nm	Lbin
3/8"-1"	5	44
1"¼-1"½-2"	7	62
2"½-3"-4"	12	106
5"-6"	20	177

The manufacturer reserves the right to update or make technical changes without prior notice.

Manufacturer:

ELETTROMECCANICA DELTA SpA
Via Trieste 132
31030 Arcade (TV) - ITALY

Certified Quality System:
ISO 9001
Reg.-No. 11989-A
KIWA Cermet Italia S.p.A.



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