

BUTTERFLY VALVES

Radiator valves



The optimal solution for easy and safe transformer radiator isolation



THROTTLE VALVES FOR RELAYS AND RADIATORS

Series 2014

1 General Features

1.1 Characteristics

The butterfly valves, metal to metal sealing with thin blade (or full tightening type, with o-ring blade), are used on power transformer with the scope to allow the disconnection of a component of the circuit (ie buchholz relay or radiator) without having to lower the oil below the level of the component itself.

This kind of valve are preferred to the conventional gate valves for their compact overall dimension in the direction of the oil flow.

1.2 Field of Use

The butterfly valves (standard execution) may be used with the following characteristic values:

- Fluid: mineral oil or silicon fluid
- operating pressure in open position max 10 bar
- operating pressure in close position max 8 bar
- operating conditions (depending from material of gasket) see par 4

2 Construction Features, Finish and Accessories

2.1 Construction Features

Butterfly valves are constructed as follows (please refer to drawings):

- Body in forged mild steel or cut from steel sheet
- Spindle made in steel
- Drive and gland made in brass
- Open/close position indicated by an aluminium plate.
- S/steel screws
- Throttle made in carbon steel (thin blade) or made in brass (o-ring blade)
- O/Rings made in oil resistant rubber

2.2 Finish

Body of the wafer type is zinc plated first and after is protected by one coat of epoxy primer and one coat of polyurethane paint (total thickness 80 µm), final colour RAL 7030; in all types screws and pins are in stainless steel; brass parts and aluminium parts are self colour.

In any case the device is suitable for outdoor installation in tropical climate and with normal industrial pollution.

Body of the welding neck type is self colour without any coating or painting

2.3 Accessories

The valve is supplied with one (or two) O/Ring flange gasket

2.4 Special executions

Special execution are available for very low temperatures or very corrosive ambient. Please contact our technical department.

3 Operating features

3.1 Tightness of spindle

The tightness to oil leakage from the spindle on the butterfly valve, is guaranteed by a set of o/rings on the spindle and on the gland obtaining an excellent tightness and at the same time allowing an easy replacement of the gasket

No leakage is tolerated from the spindle in any case.

3.2 Tightness of butterfly

3.2.1 Metal to metal sealing (thin blade throttle)

The oil tightness of the butterfly is obtained by contact metal to metal, thus assuring a constant performance even after a long use .

Leakage at the butterfly is checked during assembly, testing with oil at 20° C, 1 bar and viscosity of 30,5 cSt.

Following values of max admitted leakage:

Nominal diameter of valve in mm	≤ 100	100 < > 175	≥ 175
Admitted leakage in dm ³ /h measured in 1 hour	≤ 0,5	≤ 1,0	≤ 2,0

3.2.2 Full tightening sealing (TW80 with o-ring blade)

The oil tightness of the butterfly is obtained by contact of an o/ring (mounted on the throttle) and the metal body, thus assuring full sealing between throttle and body.

No leakage is present between throttle and body in closed position.

3.3 Operating Torque

The operating torque measured by dynamometric spanner are the following :

Nominal diameter of valve in mm	≤ 100	100 < > 150	≥ 150
Operating torque in Nm.	≤ 10	≤ 30	≤ 30
Closing torque in Nm.	≤ 70	≤ 100	≤ 150
Opening torque in Nm.	≤ 40	≤ 50	≤ 50

Operating torque: Torque necessary to turn the shaft from the open to the closed position;

Closing torque: Torque necessary to obtain the complete closure of the valve;

Opening torque: Torque necessary to open the valve, after complete closure.

4 Admitted operating conditions

4.1 Standard execution (N) – Nitrile rubber gaskets

- Ambient conditions:
 - ◇ Ambient temperature: -20 °C to +50 °C
 - ◇ Relative humidity: 95% to 20 °C - 80% to 40 °C - 50% to 50 °C
- Insulating liquid and it's temperature:
 - ◇ Mineral oil: -20 °C to +110 °C
 - ◇ Silicone oil: -20 °C to +110 °C

4.2 Execution H – H-NBR rubber gaskets

- Ambient conditions:
 - ◇ Ambient temperature: -40 °C to +50 °C
 - ◇ Relative humidity: 95% to 20 °C - 80% to 40 °C - 50% to 50 °C
- Insulating liquid and it's temperature:
 - ◇ Mineral oil: -40 °C to +140 °C
 - ◇ Silicone oil: not admitted

4.3 Execution V – Fluor-rubber gaskets (Viton V)

- Ambient conditions:
 - ◇ Ambient temperature: -15 °C to +50 °C
 - ◇ Relative humidity: 95% to 20 °C - 80% to 40 °C - 50% to 50 °C
- Insulating liquid and it's temperature:
 - ◇ Mineral oil: -15 °C to +160 °C
 - ◇ Silicone oil: -15 °C to +160 °C

5 Mounting, Adjustment and Maintenance

5.1 Mounting

The throttle valve has to be mounted as shown on reference drawings or at page 5.86

Valve has to be mounted using screws or rods, washers and nuts and putting the o/ring on the groove for flange tightening

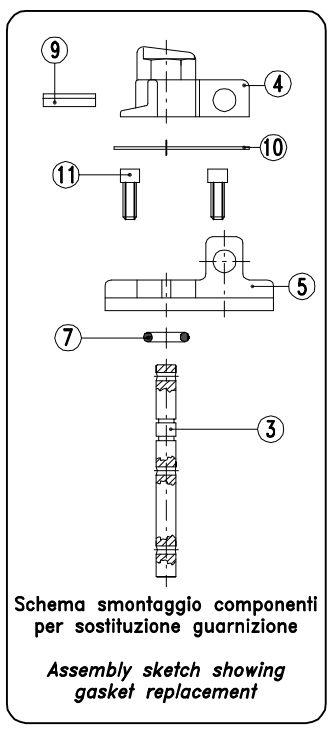
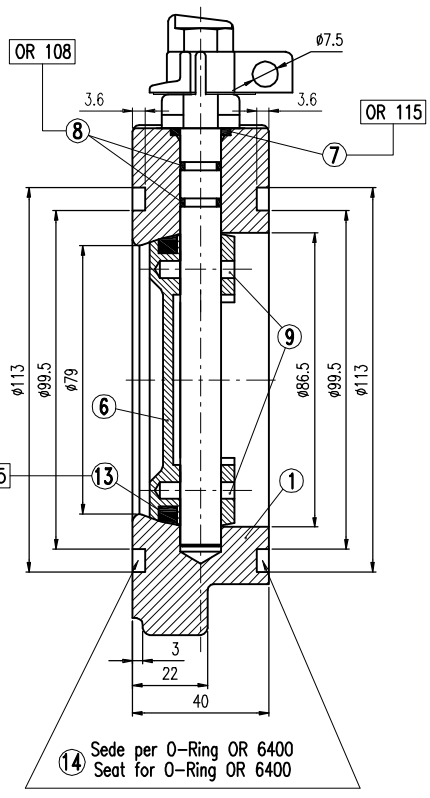
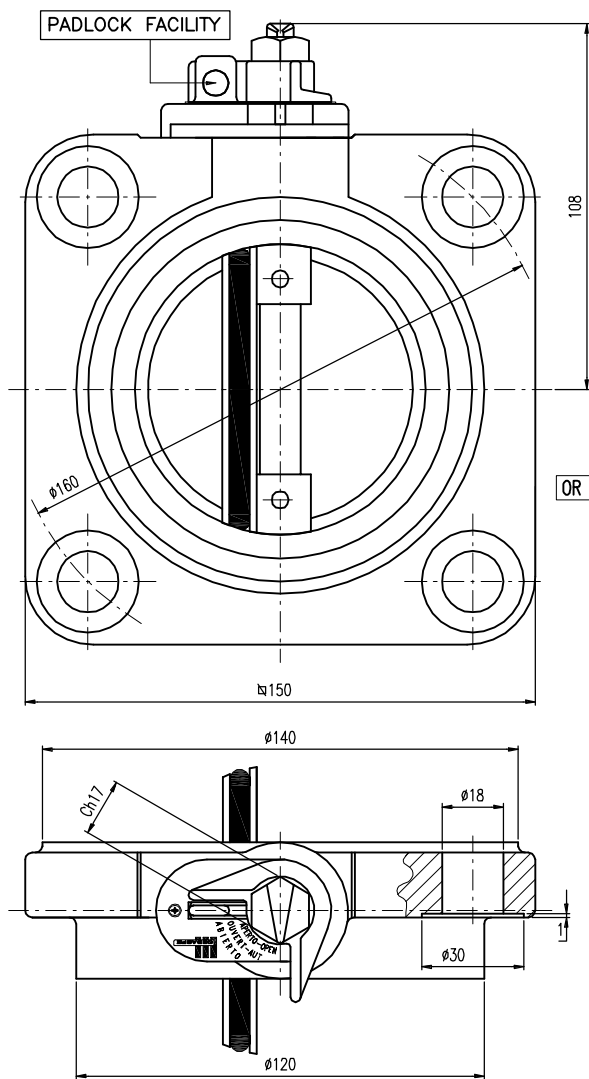
5.2 Operating instructions

The design of the operating system is common to all valves; to open and close the valve operate as follows (please refer to drawings):

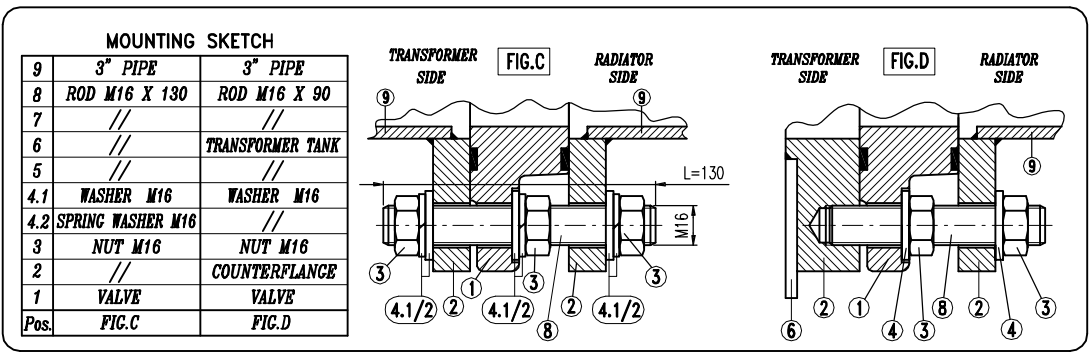
- The visible symbol or inscription on plate (10) indicates the valve position;
- To close the valve first remove the seal or padlock (if present),
- With the appropriate spanner turn the drive (2) clockwise 90° to close the valve; counter clockwise 90°
to open the valve
- The visible part of plate (10) indicates the actual valve position;

5.3 Maintenance

The Throttle valves do not need periodic maintenance; however it is advisable to check regularly the external tightening of valve



WEIGHT: 4 Kg



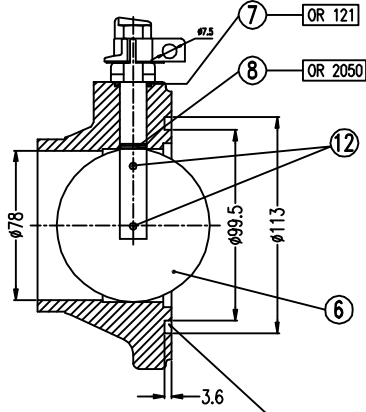
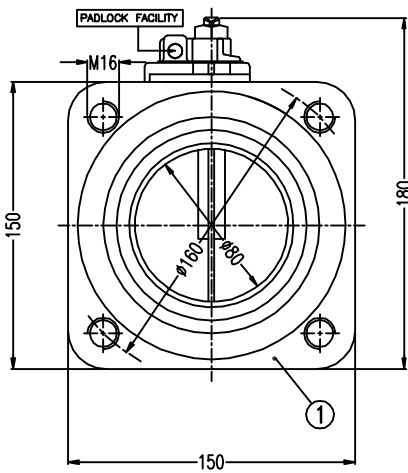
POS	DESCRIPTION	NORMAL AMBIENT				CORROSIVE AMBIENT/OFF SHORE		
		-25°C	-15°C	-45°C	-60°C	-25°C	-45°C	-60°C
1	Body	A350LF2 *	A350LF2 *	A350LF2 *	A350LF2 *	AISI 316 L	AISI 316 L	AISI 316 L
3	Spindle	A2	A2	A2	A2	A2	A2	A2
4	Drive	Brass NKPL	Brass NKPL	Brass NKPL	Brass NKPL	Brass NKPL	Brass NKPL	Brass NKPL
5	Gland	Brass NKPL	Brass NKPL	Brass NKPL	Brass NKPL	Brass NKPL	Brass NKPL	Brass NKPL
6	Throttle	ALUMINIUM	ALUMINIUM	Brass	Brass	Brass	Brass	Brass
7	Gland O-Ring	HNBR	VITON	FLUOROSILICONE	FLUOROSILICONE	HNBR	FLUOROSILICONE	FLUOROSILICONE
8	Shaft O-Ring	HNBR	VITON	FLUOROSILICONE	FLUOROSILICONE	HNBR	FLUOROSILICONE	FLUOROSILICONE
9	Pin Drive	A2	A2	A2	A2	A2	A2	A2
10	Label open/closed with colour code	Aluminium Silver colour	Aluminium Red colour	Aluminium Yellow colour	Aluminium White colour	Aluminium Silver colour	Aluminium Yellow colour	Aluminium White colour
11	Screw M5	A2	A2	A2	A2	A2	A2	A2
13	Throttle O-ring	VITON	VITON	FLUOROSILICONE	FLUOROSILICONE	VITON	FLUOROSILICONE	FLUOROSILICONE
14	Flange O-ring	NBR	VITON	HNBR	FLUOROSILICONE	NBR	HNBR	FLUOROSILICONE

EXECUTION CODE	STANDARD		HEAVY DUTY		SPECIAL		
		AVTW080B8A	AVTW080B8A.V	AVTW080B1LHT	AVTW080B1LLT	AVTW080C1L	AVTW080C1LHT

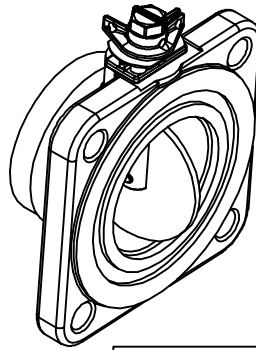
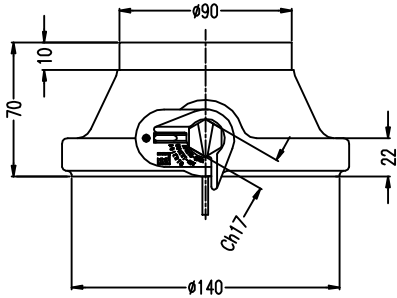
*FORGED STEEL ZINCPLATED + 2 COATS (EPOXY RESIN & POLYURETHANE), C4M

	Titolo RADIATOR VALVE TYPE TW80-B WITH O-RING BLADE (zero leakage)	Data 12/03/13	Dis. Nr 3840		
		Scala ==			
		Dis.			
		Visto			
		11	12		

Tronchetto a saldare / Welding neck



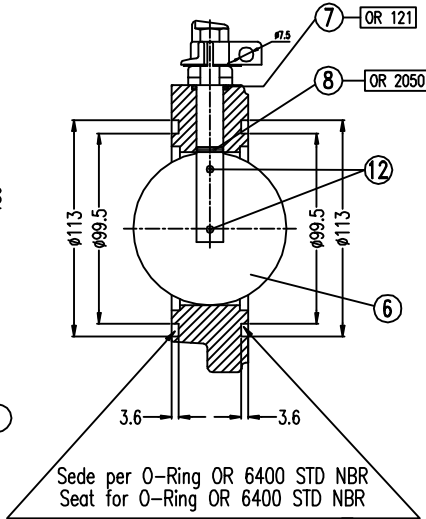
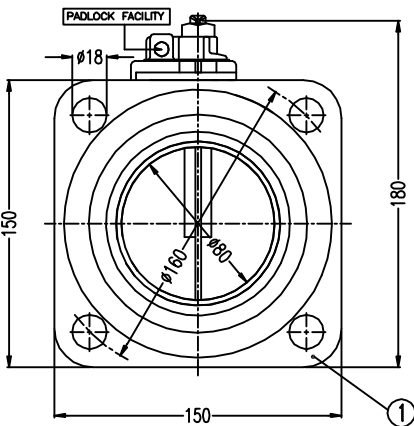
Sede per O-Ring OR 6400 STD NBR
Seat for O-Ring OR 6400 STD NBR



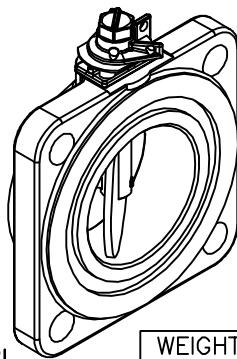
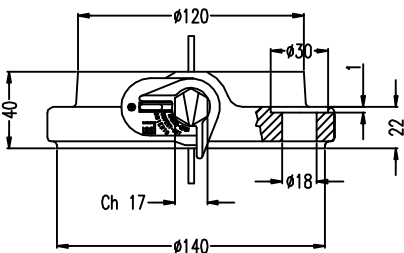
WEIGHT: 4.5 Kg

Fig.1 - Type SW80-A1L CODE: AVSW080A8L

Montaggio tra due flange / Mounting between flanges

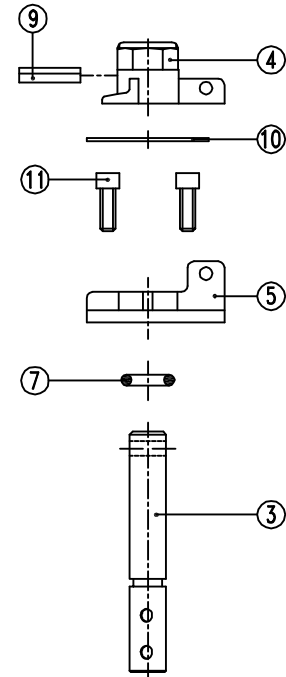


Sede per O-Ring OR 6400 STD NBR
Seat for O-Ring OR 6400 STD NBR



WEIGHT: 4 Kg

Fig.2 - Type SW80-B1L CODE: AVSW080B8L



Schema smontaggio componenti per sostituzione guarnizione

Assembly sketch showing gasket replacement

Pos	Description	Material
1	Body	Steel
3	Spindle	Steel
4	Drive	Brass
5	Gland	Brass
6	Throttle	Steel
7	O-ring	HNBR
8	O-ring	HNBR
9	Pin	Stainless Steel
10	Label open/closed	Aluminium
11	Screw	Stainless Steel
12	Rivet	Stainless Steel

Il presente disegno sostituisce i disegni NR 1297 - 1298 PAG. 5.76.B

The present draw take place drawings NR 1297 - 1298 PAG. 5.76.B

Titolo

THROTTLE VALVE
FOR RADIATORS
TYPE SW80 DIN42560

Data 12/03/13

Scala ==

Dis.

Visto

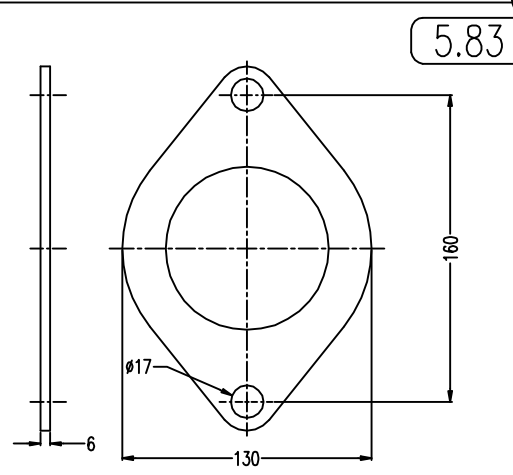
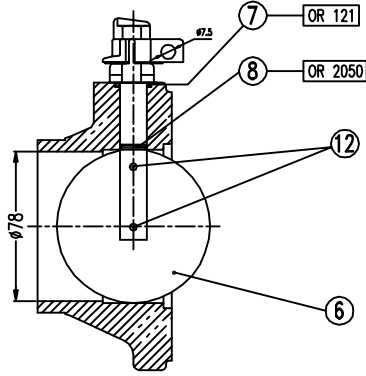
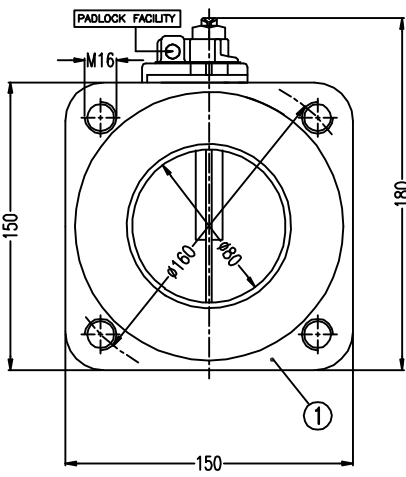
Dis. Nr

3841

1 2 3 4

CEDASPE

Tronchetto a saldare / Welding neck



5.83

Flange In NBR: Code: GGNW085SP6
gasket for In CORK: Code: GSNW085SP6
A0-B0

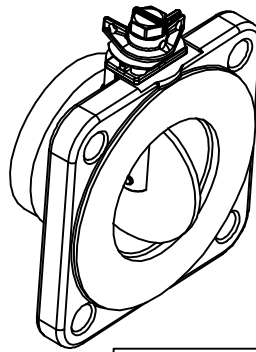
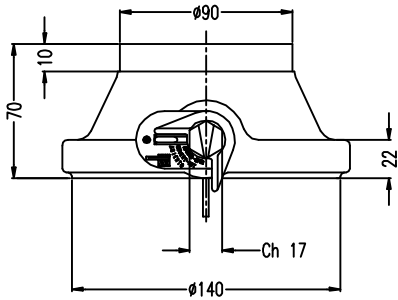
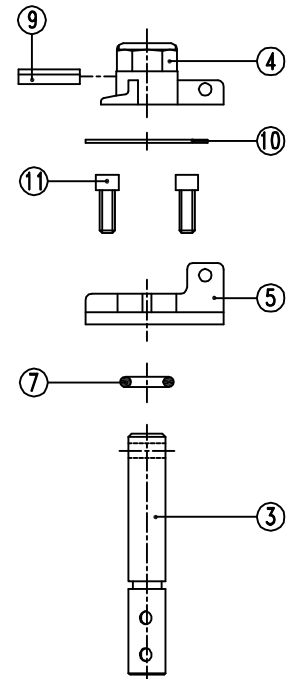
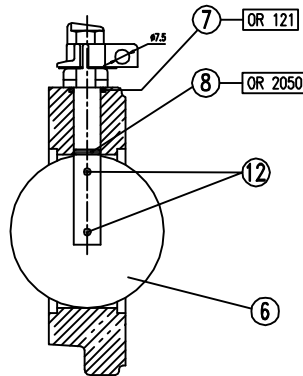
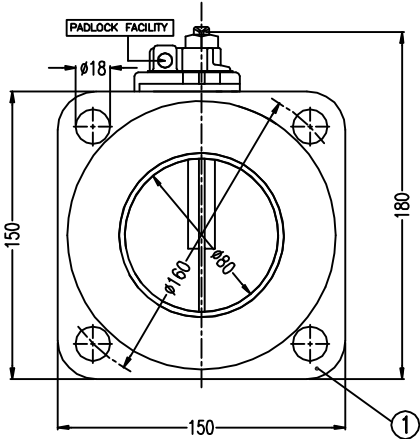


Fig.1 - Type SW80-A0L CODE: VASW080A0L

WEIGHT: 4.5 Kg

Montaggio tra due flange / Mounting between flanges



Assembly sketch showing gasket replacement

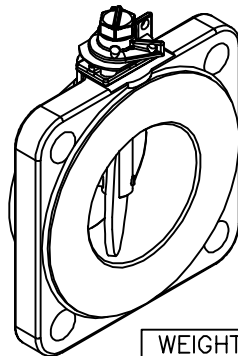
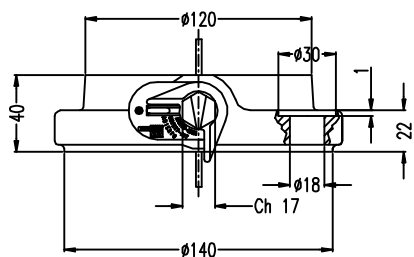


Fig.2 - Type SW80-B0L CODE: VASW080B0L

WEIGHT: 4 Kg

Pos	Description	Material
1	Body	Steel
3	Spindle	Steel
4	Drive	Brass
5	Gland	Brass
6	Throttle	Steel
7	O-ring	HNBR
8	O-ring	HNBR
9	Pin	Stainless Steel
10	Label open/closed	Aluminium
11	Screw	Stainless Steel
12	Rivet	Stainless Steel

Il presente disegno sostituisce il disegno NR P2224 - PAG.5.76.G

The present draw take place drawing NR P2224 - PAG.5.76.G

CEDASPE

Titolo
**THROTTLE VALVE
FOR RADIATORS
TYPE SW80 DIN42560**

Data 12/03/13

Scala ==

Dis.

Visto

Dis. Nr

3842

1 2 3

LATO TRASFORMATORE
TRANSFORMER SIDE

LATO RADIATORE
RADIATOR SIDE

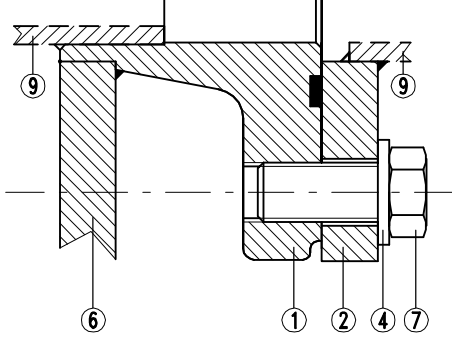


FIG.A

LATO TRASFORMATORE
TRANSFORMER SIDE

LATO RADIATORE
RADIATOR SIDE

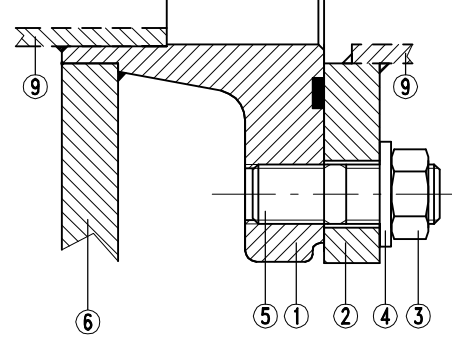


FIG.B

MOUNTING KIT

CODE: AVZT130A00

Montaggio tra due flange / Mounting between flanges

LATO TRASFORMATORE
TRANSFORMER SIDE

LATO RADIATORE
RADIATOR SIDE

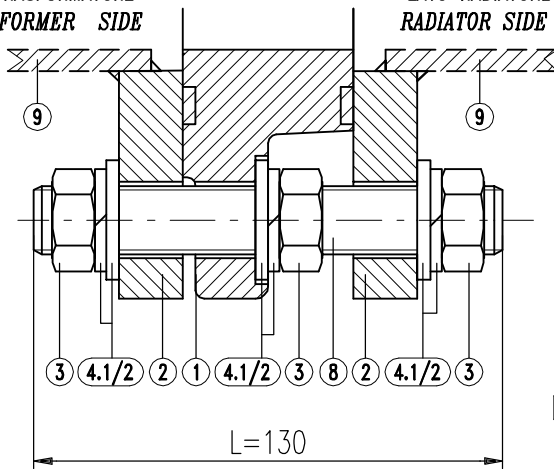


FIG.C

LATO TRASFORMATORE
TRANSFORMER SIDE

LATO RADIATORE
RADIATOR SIDE

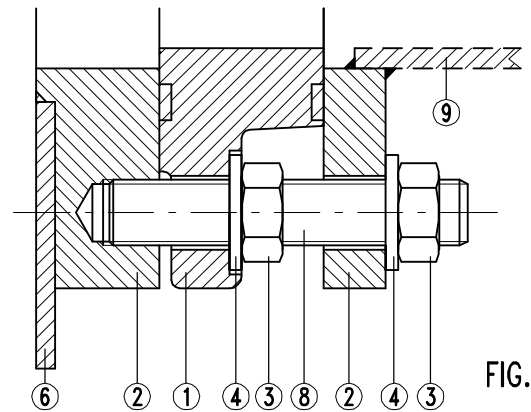


FIG.D

9	TUBO	TUBO	TUBO	TUBO
8	//	//	TIRANTE M16 X 130	TIRANTE M16 X 90
7	VITE T.E. M16X35	//	//	//
6	CASSA TRASFORMATORE	CASSA TRASFORMATORE	//	CASSA TRASFORMATORE
5	//	PRIGIONIERO M16X30	//	//
4.2	//	//	RONDELLA GROWER	//
4.1	ROSETTA PIANA M16	ROSETTA PIANA M16	ROSETTA PIANA M16	ROSETTA PIANA M16
3	//	DADO M16	DADO M16	DADO M16
2	CONTROFLANGIA	CONTROFLANGIA	CONTROFLANGIA	CONTROFLANGIA
1	VALVOLA	VALVOLA	VALVOLA	VALVOLA
Pos.	FIG.A	FIG.B	FIG.C	FIG.D

9	PIPE	PIPE	PIPE	PIPE
8	//	//	ROD M16 X 130	ROD M16 X 90
7	SCREW M16X35	//	//	//
6	TRANSFORMER TANK	TRANSFORMER TANK	//	TRANSFORMER TANK
5	//	STUD M16X30	//	//
4.2	//	//	SPRING WASHER	//
4.1	WASHER M16	WASHER M16	WASHER M16	WASHER M16
3	//	NUT M16	NUT M16	NUT M16
2	COUNTERFLANGE	COUNTERFLANGE	COUNTERFLANGE	COUNTERFLANGE
1	VALVE	VALVE	VALVE	VALVE
Pos.	FIG.A	FIG.B	FIG.C	FIG.D

The present draw take place drawing PAC.5.76.N

Titolo

Radiator valve
- Mounting sketch -

Data 12/03/13

Scala == ==

Dis.

Visto

Dis. Nr

3845

1

CEDASPE

A4 (210x297)

.DWG LMT [(0,0) (196,286)]

FILE = 3845

REV. 01 DTD 09/06/14

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ORDER FORM

A4 (210x297)

Size:

ø80

LMT [(0,0) (196,286)]

TW80

SW80

Type A
(With Welding neck)

With O/Ring Seat
Without O/Ring Seat

Type B
(Mounting between flanges)

With O/Ring Seat
Without O/Ring Seat

TW80

Operating conditions:

STANDARD
(Mild steel Zinc-Plated)

OFF-SHORE
(S/S AISI 316)

Gasket:

NBR
(-25°C)

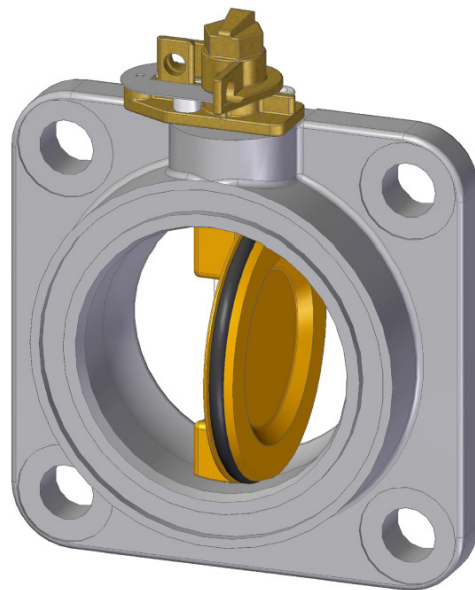
HNBR
(-45°C)

Fluorosilicone Blue
(-60°C)

Heavy Duty
(VITON)

Notes:

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REV. 00 DTD 05/12/17

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Titolo
Radiator valves
Order sheet

Data 05/12/17
 Scala ==
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Dis. Nr
4409