

**LUCIFER®**

***2-way pilot operated  
solenoid valves for  
water, hot water  
and steam***

*Catalogue 8658/GB*



## Technical specifications

<b>General description</b>	The Water Valves are diaphragm operated valves and require a minimum differential pressure to operate	
<b>Applications</b>	They are used for general applications with high flow rates and media such as <b>water, hot water and steam</b> , provided they are compatible with the component materials. <b>Typical applications</b> can be found in: washing machine, car wash installations, cooling of machine tools, Hydrocleaners, autoclaves, irrigation systems etc	
<b>Temperatures</b>	Admissible ambient temperatures: -10 to +50°C Admissible fluid temperature: see table	
<b>Material specifications</b>	Valve body	OT58 UNI 5705 Forged Brass
	Plunger	AISI 430F St. Steel
	Spring	AISI 302 St. Steel
	Seals	NBR (Buna N) – EPDM
	Shading ring	Copper
<b>Installation</b>	The valves can be mounted in any position. It is however recommended to install them with the coil in vertical position above the body.	
<b>Electrical parts</b>	Detailed description: see page 7	

Coil	Protection class / Temperature class	Power (hot)		Order No. <b>Coil</b>	Lucifer. No. Coil	Connection	Housing	Ambient temp. deg C		Fig.
		DC	AC					Min	Max	
32 mm (Std)	Class F	9 W	8 W	<b>DZ02</b>	481865	For DIN plug	N1	-40	50	1
	Class F	9 W	8 W	<b>DZ03</b>	482725	With DIN plug	N1	-40	50	1
	Class H	9 W	8 W	<b>DZ04</b>	492453	For DIN plug	N1	-40	80	1
	Class H	9 W	8 W	<b>DZ05</b>	492726	With DIN plug	N1	-40	80	1
	Class F, 50/60 Hz	-	9 W	<b>DZ06</b>	483510	For DIN plug	N1	-40	50	1
	Class F, 50/60 Hz	-	9 W	<b>DZ07</b>	482635	With DIN plug	N1	-40	50	1
	EEx m II T4	9 W	8 W	<b>HZ05</b>	492670	With 3000mm cable	00	-40	40	6
	Class H	14 W	14 W	<b>DZ08</b>	492425	For DIN plug	N1	-40	80	1
	Class H	14 W	14 W	<b>DZ09</b>	492727	With DIN plug	N1	-40	80	1
50 mm (Std)	Class F	8 W	8 W	<b>EZ01</b>	481000	Screw-terminals	E0	-40	50	3
	Class H	8 W	8 W	<b>EZ02</b>	485100	Screw-terminals	E0	-40	80	3
	Class F, IP 67, Pg 11	8 W	8 W	<b>EZ01</b>	481000	Screw-terminals	G1	-40	50	4
	Class F, IP 67, Pg 13.5	8 W	8 W	<b>EZ01</b>	481000	Screw-terminals	G2	-40	50	4
	EEx m II T4/T5	9 W	8 W	<b>VZ01</b>	492070	With 1500mm cable	00	-40	40/65	8
	EEx e II T4	8 W	8 W	<b>HZ06</b>	483371	For cable connection	00	-40	65	5
	EEx me II T3/T4	11 W	9 W	<b>VZ03</b>	492190	For cable connection	00	-40	75/40	7

## Numbering / ordering system

Normally a complete valve is composed of 3 elements : the **valve** itself, the **housing** and the **coil**. For integrated coil/housings, the housing reference indicates the fixing nut and nameplate.

Therefore please specify:

Valve reference - Housing - Coil - Voltage

*Ordering example: 7321BBG3TN00 – N1 – DZ02 – 220-230/50*

**Important note: each reference may also be ordered separately (for replacement, spare parts)**

Port Size	Orifice	Kv	Qmax	Admissible differential pressure (bar)			Max. admissible fluid temperature °C	Seals material	Reference N°	Dimension ref. N°	Note
				min	DC	AC					
<b>2-way valves, pilot operated, normally closed, for water</b>											
3/8 "	13	3.00	3.00	0.1	20	20	90	NBR	7321BBG3TN00	1	-
1/2"	13	3.00	3.00	0.1	20	20	90	NBR	7321BBG4TN00	1	-
3/4"	20	8.40	8.40	0.1	20	20	90	NBR	7321BBG53N00	1	-
1 "	25	9.60	9.60	0.1	20	20	90	NBR	7321BBG64N00	1	-
1 1/4 "	35	25.20	25.20	0.1	10	10	90	NBR	7321BBG78N00	1	-
1 1/2"	40	30.00	30.00	0.1	10	10	90	NBR	7321BBG88N00	1	-
2 "	50	37.20	37.20	0.1	10	10	90	NBR	7321BBG99N00	1	-
<b>2-way valves, pilot operated, normally closed for water, with manual override</b>											
3/8"	13	3.00	3.00	0.1	20	20	90	NBR	7321BBG3TNM0	1	-
1/2"	13	3.00	3.00	0.1	20	20	90	NBR	7321BBG4TNM0	1	-
3/4"	20	8.40	8.40	0.1	10	10	90	NBR	7321BBG53NM0	1	2
1 "	25	9.60	9.60	0.1	10	10	90	NBR	7321BBG64NM0	1	2
1 1/4 "	35	25.20	25.20	0.1	5	5	90	NBR	7321BBG78NM0	1	2
1 1/2"	40	30.00	30.00	0.1	5	5	90	NBR	7321BBG88NM0	1	2
2 "	50	37.20	37.20	0.1	5	5	90	NBR	7321BBG99NM0	1	2
2 1/2"	65	63.00	63.00	0.5	10	10	90	NBR	7321BBGCBNM1	1	1
3"	75	83.00	83.00	0.5	10	10	90	NBR	7321BBGDCNM1	1	1
<b>2-way valves, pilot operated, normally closed, for hot water and steam</b>											
3/8 "	13	3.00	3.00	0.1	4	4	140	EPDM	7321BBG3TE00	1	-
1/2"	13	3.00	3.00	0.1	4	4	140	EPDM	7321BBG4TE00	1	-
3/4"	20	8.40	8.40	0.1	4	4	140	EPDM	7321BBG53E00	1	-
1 "	25	9.60	9.60	0.1	4	4	140	EPDM	7321BBG64E00	1	-
1 1/4 "	35	25.20	25.20	0.1	4	4	140	EPDM	7321BBG78E00	1	-
1 1/2"	40	30.00	30.00	0.1	4	4	140	EPDM	7321BBG88E00	1	-
2 "	50	37.20	37.20	0.1	4	4	140	EPDM	7321BBG99E00	1	-
<b>2-way valves, pilot operated, normally open, for water</b>											
3/8 "	13	3.00	3.00	0.1	20	20	90	NBR	7322BBG3TN00	2	-
1/2"	13	3.00	3.00	0.1	20	20	90	NBR	7322BBG4TN00	2	-
3/4"	20	8.40	8.40	0.1	20	20	90	NBR	7322BBG53N00	2	-
1 "	25	9.60	9.60	0.1	20	20	90	NBR	7322BBG64N00	2	-
1 1/4 "	35	25.20	25.20	0.1	10	10	90	NBR	7322BBG78N00	2	-
1 1/2"	40	30.00	30.00	0.1	10	10	90	NBR	7322BBG88N00	2	-
2 "	50	37.20	37.20	0.1	10	10	90	NBR	7322BBG99N00	2	-

Note 1 - Manual override and closure speed control standard

Note 2 - For manual override and closure speed control change M0 by M1

**Manual override**

**..00 changes to ..M0 in the reference No.**

The manual control is used to operate the valve without connecting the coil. The control consists in a slotted-head screw for a screwdriver and has two possible positions:

**Closed:** The letter "C" is in the upper position of the screw head (fig.1, 2)

**Open:** The letter "A" is in the upper position of the screw head (fig.1, 2)

In the closed position, the valve operates normally when coil is energised/de-energised.

**Manual override plus closure  
Speed operator**

**..00 changes to ..M1 in the reference No.**

The closure time of certain types can be changed by means of the adjusting screw (fig. 3 and 4). The latter, by acting as a throttle on the inlet equalisation (pilot) hole of the valve, slows down the closure speed of the valve, thus reducing the water hammer effect. The regulation range is as follows:

**Fig. 3 - Screw fully open:** max. closure speed.

**Fig. 4 - Screw fully closed:** valve always open.

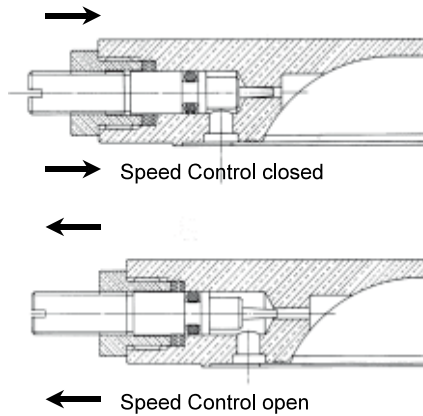
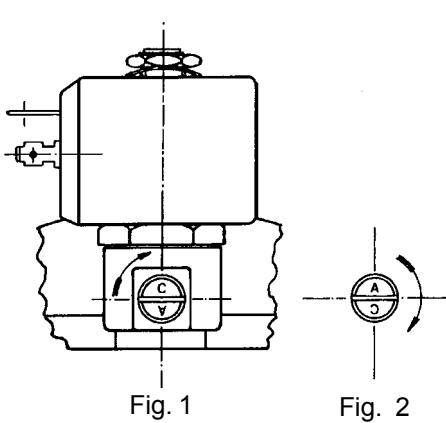
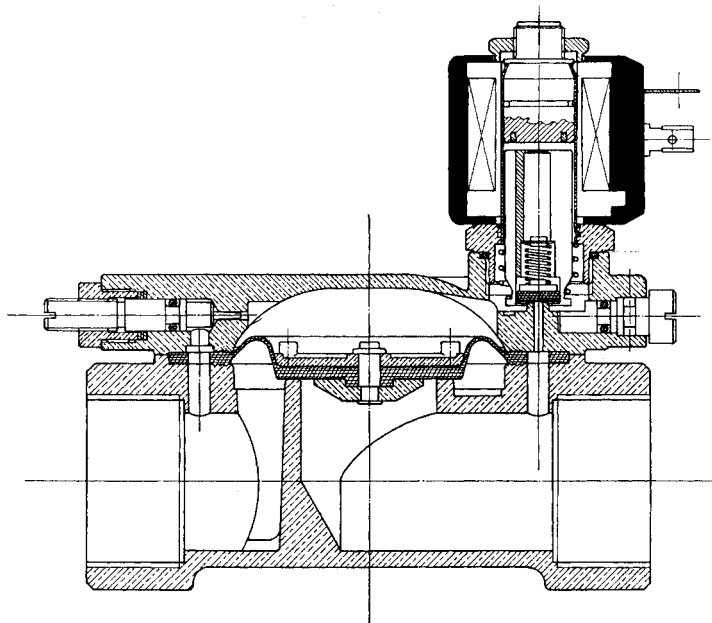


Fig. 4

Fig. 3

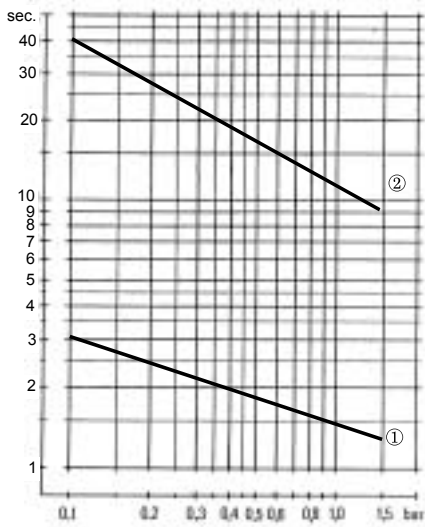
**Section drawing**



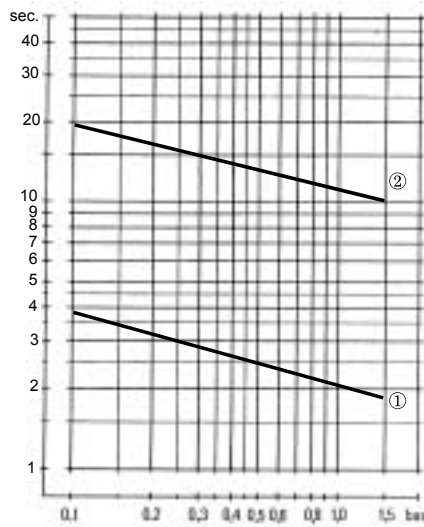
**Diagrams of the closing times**

Curve 1 – Closing time with adjusting screw completely open

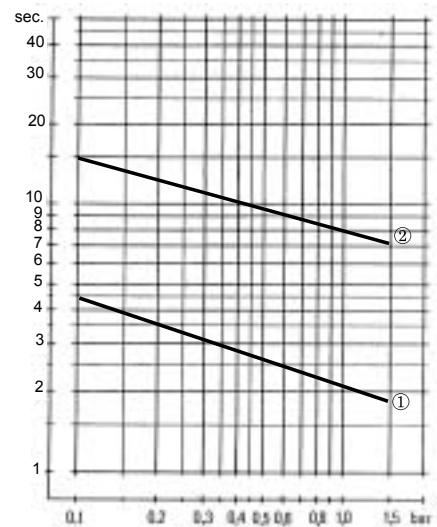
Curve 2 – Closing time with adjusting screw open by 1/2 turn



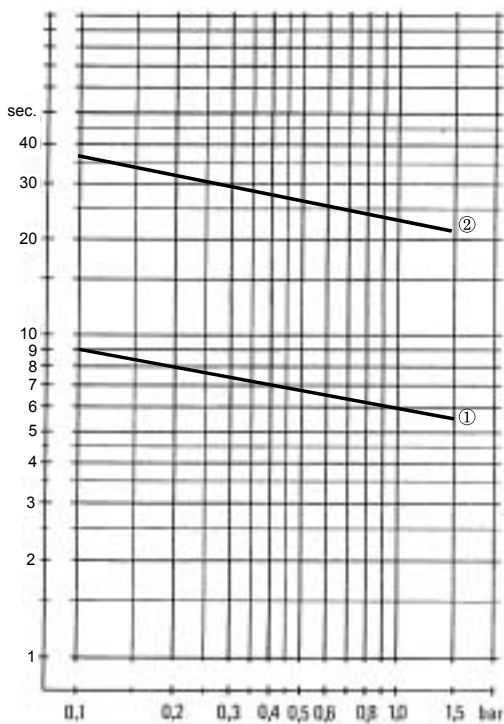
3/4" - 1"



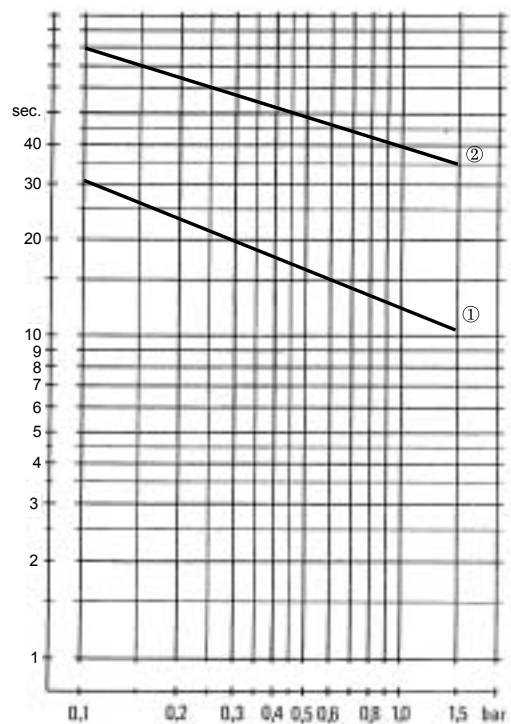
1 1/4" - 1 1/2"



2"



2 1/2"

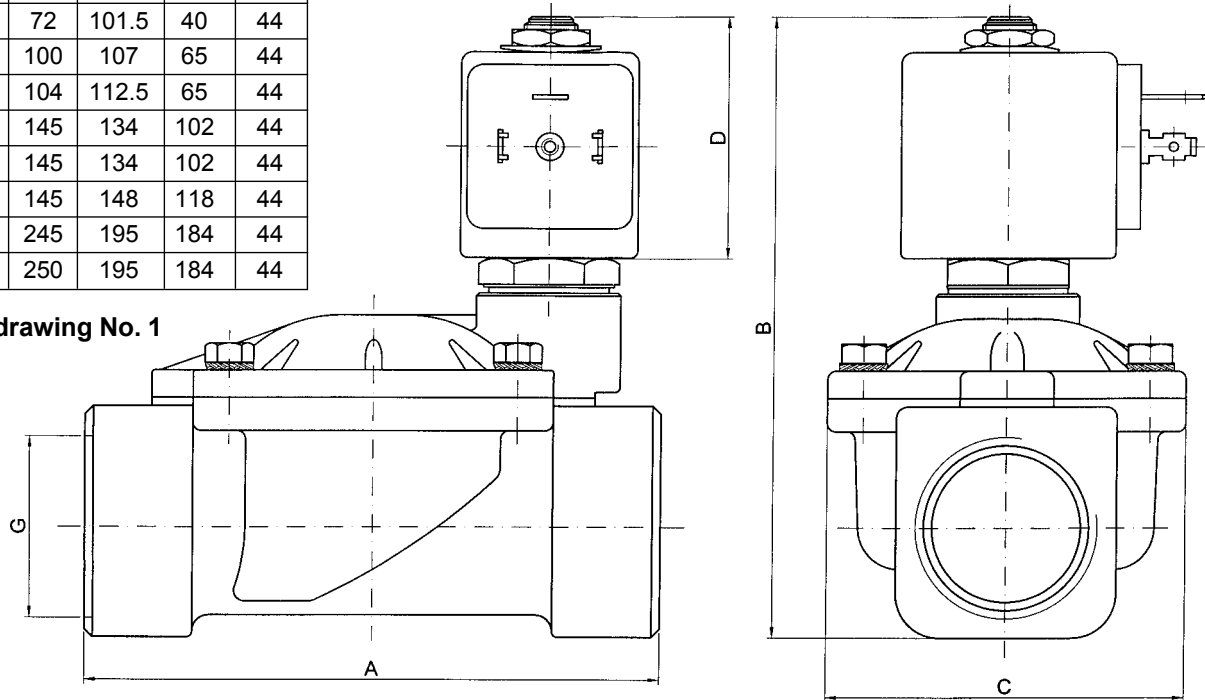


3"

Dimension drawings

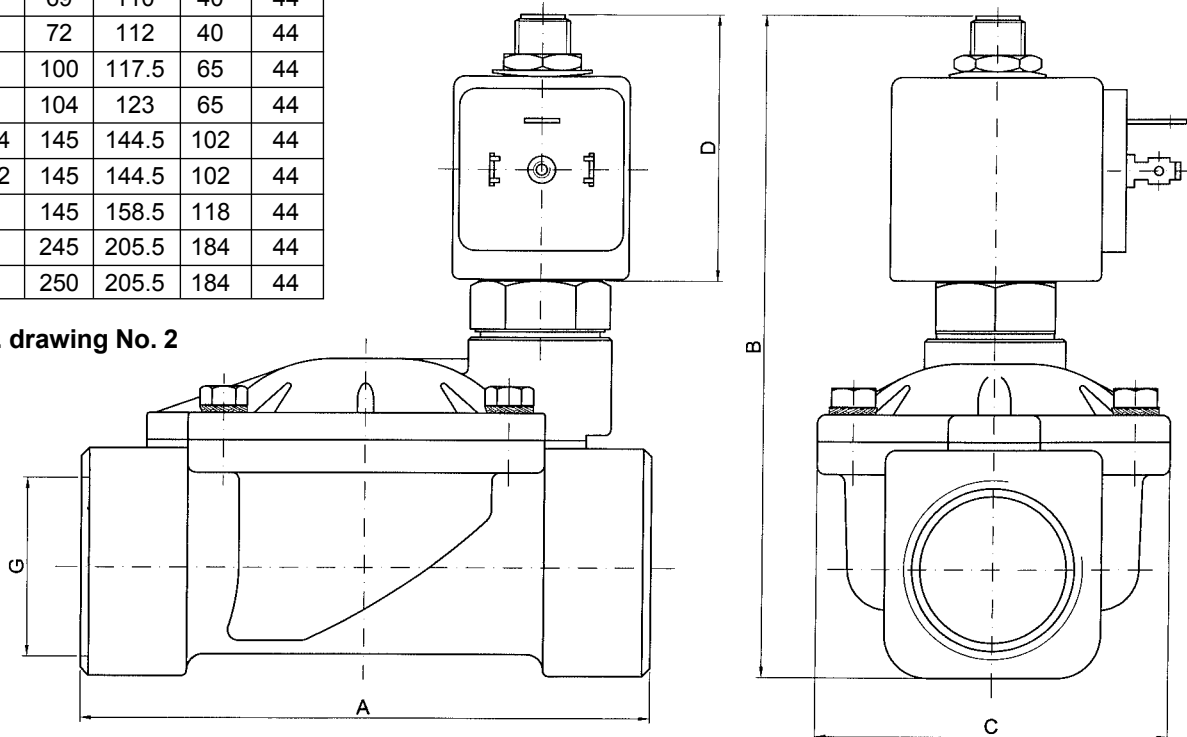
Size				
G	A	B	C	D
3/8	69	99.5	40	44
1/2	72	101.5	40	44
3/4	100	107	65	44
1	104	112.5	65	44
1 1/4	145	134	102	44
1 1/2	145	134	102	44
2	145	148	118	44
2 1/2	245	195	184	44
3	250	195	184	44

Dim. drawing No. 1



Size				
G	A	B	C	D
3/8	69	110	40	44
1/2	72	112	40	44
3/4	100	117.5	65	44
1	104	123	65	44
1 1/4	145	144.5	102	44
1 1/2	145	144.5	102	44
2	145	158.5	118	44
1/2	245	205.5	184	44
3	250	205.5	184	44

Dim. drawing No. 2



**ELECTRICAL PARTS DESCRIPTION**

**1. Standard coil N1- DZ02**  
(DC 9W, AC 8W) encapsulated in synthetic material. Connection for 2 P + E DIN 43650 A plug. Degree of protection IP 65.

**2. High Temperature coil N1-DZ08**  
(14W DC, AC) or N1-DZ04 (9W DC, AC) encapsulated in synthetic material. Connection for 2 P + E DIN 43650 A plug. Degree of protection IP 65.

**3. Metallic coil housing E0** with standard coil EZ01 (8W), high temperature EZ02 (8W) coils, encapsulated in synthetic material with screw terminals. Ground terminal on housing subplate. Degree of protection IP 10 or IP 44 when equipped with Pg 9 cable gland.

**4. Waterproof coil housing G1** with standard coil EZ01 (8W) encapsulated in synthetic material. Housing internally and externally fitted with an earth screw connection. Cable connection with outer diameter 4-11 mm through rubber cable gland Pg 11/13,5. Degree of protection IP 67.

**5. Electrical part 00-HZ06** with "increased safety" EEx e II T4 CENELEC rating. Certification from LCIE. Degree of protection IP 67. This electrical part includes a standard coil type EZ01(8 W).

**6. Explosion-proof EEx m II T4** (IP 65) coil/housing assembly 00-HZ05. Coil and magnetic circuit encapsulated in synthetic material. The complete housing is supplied with an encapsulated connection cable (3 x 0.75 mm<sup>2</sup> section), cable length is 3000 mm with cable gland Pg 11. Power consumption: 8W AC, 9W DC.

**7. Explosion-proof EEx me II T4** coil/housing assembly 00-VZ03. Glassfiber reinforced synthetic housing with encapsulated solenoid coil, rectifier, fuse and protection into epoxy resin. Degree of protection IP 65. Cable connection through cable gland Pg 13,5 (DIN 46320). Power consumption AC 11 W, DC 9 W.

**8. Explosion-proof EEx m II T4** coil/housing assembly 00-VZ01. Epoxy coated steel housing with encapsulated solenoid coil, rectifier, fuse and protection into epoxy resin. Degree of protection IP 67. The complete housing is supplied with an encapsulated connection cable consisting of three wires of each 1.5 mm<sup>2</sup> sectional area, cable length is 1500 mm with cable gland Pg 11. Power consumption AC 8 W, DC 8 W.

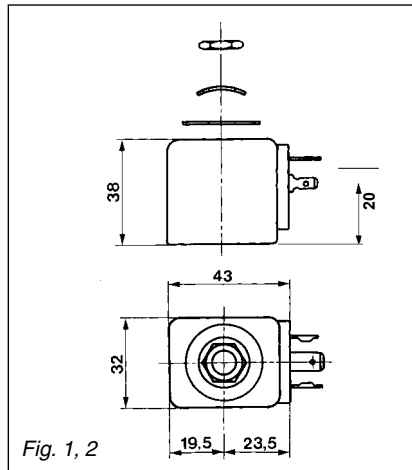


Fig. 1, 2

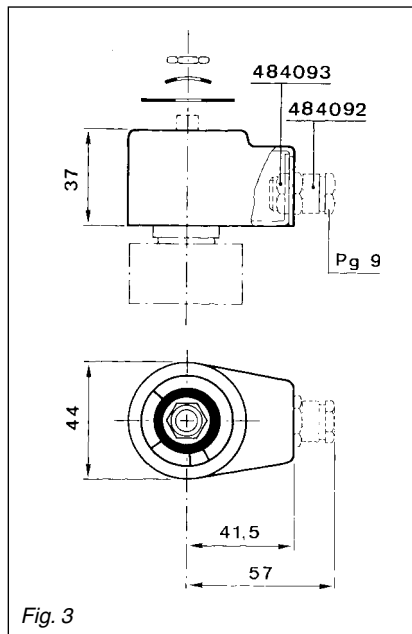


Fig. 3

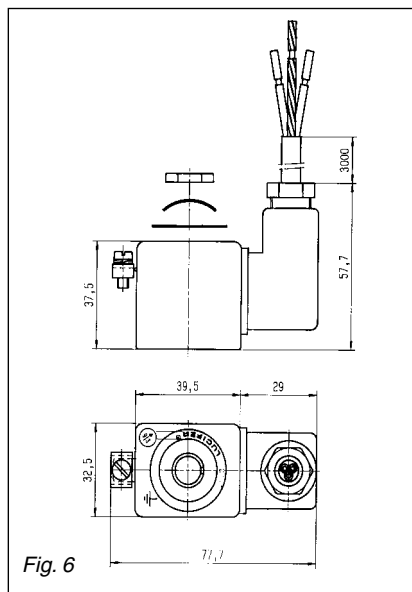


Fig. 6

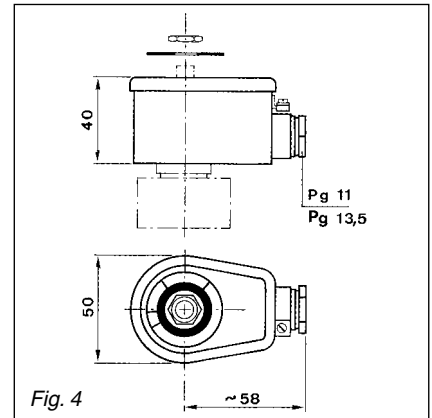


Fig. 4

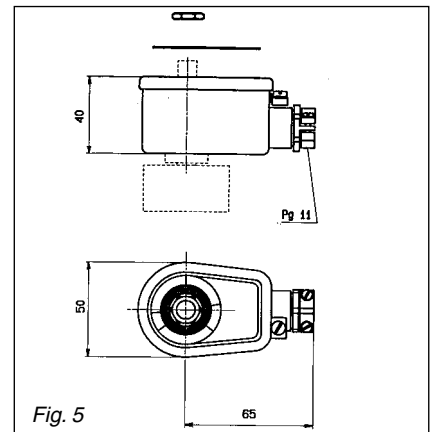


Fig. 5

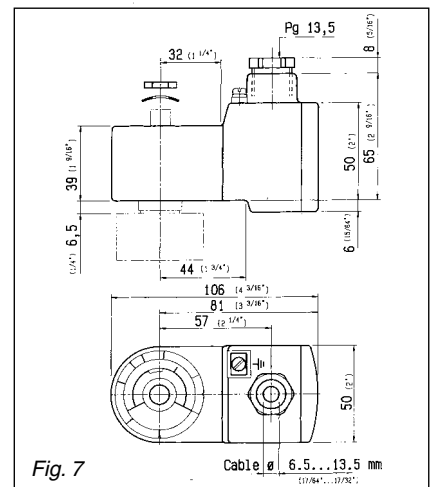


Fig. 7

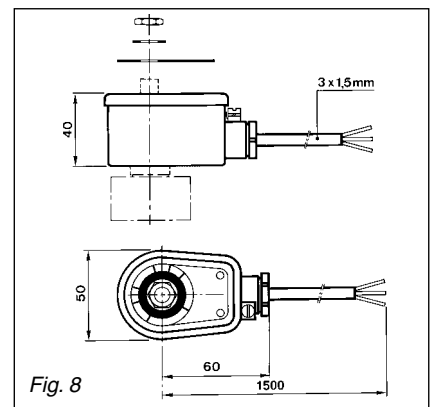


Fig. 8



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