LUCIFER®

316L St. Steel 3- and 4-way solenoid valves for pneumatic actuator control

Catalogue 8639/GB
May 2000

Certified Management System
SQS
ISO 9001/14001
Reg. No. 10440

Parker

Introduction

Without intending to exclude the other branches, the design and realisation of this series took into account especially those industrial areas which are reputed for their extremely high functional and economic requirements:

Chemical and petrochemical industries
Their task consists in the production of plastics, paint, soaps, detergents, fibres, agrochemicals and medicine. Industrial branches where reliability, atmospheres, ambient temperatures and corrosion are key-words.

Petroleum and gas industries
They deal with the onshore and offshore extraction and the preliminary processing of petroleum. In addition to reliability, atmospheres and corrosion, explosion proofness is determinant.

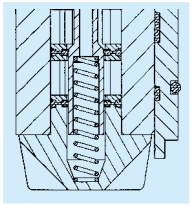
Features and benefits

Ease of operation
Thanks to the change of the 3/2 - 5/2 function simply by a 180° rotation of the intermediate plate of the solenoid valve, the users need only one model in stock.

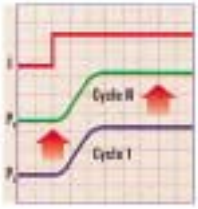
Wide temperature range
In order to meet the most demanding installation requirements, the temperatures of the standard products range from -25 to +80 °C, thus reducing the number of types stored by the users. For extreme operating conditions, some models withstand temperatures as low as -40 °C.

Cost-effective maintenance
The construction of the valves allows a simple and quick preventive maintenance intervention.

Exhaust integrated in the pilot
The integrated exhaust in the pilot gives the valve a 100 % protection against any penetration from outside and eliminates the need for an additional connection when mounted in a sealed enclosure.



Fail-safe operation
In case of a power failure the valve automatically returns to its predetermined preferential position.



Reliable occasional operation
In solenoid valves using a sliding spool, the special shape of the sealing and the material used ensure an immediate change-over of the spool, even after an extremely long break.

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Oil refineries
They transform petroleum to fuel, oil, lubricants and asphalt.
Reliability again, with an accent on the ambient temperature, characterises this activity.

Paper industry
Production of paper pulps and papers. The demand for a wide choice, mounting flexibility and ease of maintenance is a must.

Maximum protection class
The electrical parts meet the highest requirements of the European CENELEC standards and exactly satisfy the variety of your needs: safety and low electrical power consumption.

Body material

Stainless steel
AISI/SAE **316L**
DIN **1.4440**
NACE **MR.01.75**

Resistance to corrosive environments
The severe selection of the materials used provides a maximum resistance to the frequently found corrosive environments of the chemical and petrochemical industries. This leads to an increased versatility at a high safety level.

Manual reset function
It avoids any unintentional restart thanks to the combination of "manual reset" and "electrical re-switching device.

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Function code	Port Size	Orifice	Flow Qn	c_V	Admissible differential pressure [bar]			Max. admissible fluid temperature	Seals material	Order No.	Electrical parts Group	Dimension ref.	General Industry	Chemical Industry	Salt Environment
					min	Max									
-	NPT	mm	L/min.	GPM		DC	AC	°C	-						
3/2 valves – direct operated – normally closed – NAMUR interface															
F1	3/8	5	680	0.6	0	10	10	65	NBR	**U131X1201**	**9, 10**	7668			**A**
3/2 valves – direct operated – normally closed – sub-base mounting															
F2	-	2.5	220	0.25	0	10	10	75	FKM	**U131F5695**	**10**	44			**A**
	-	2.5	220	0.25	0	10	10	75	FKM	**U131F56951D**	**11**	44			**A**
3/2 valves – direct operated – universal – pipe mounting															
F3	1/4	2.5	220	0.25	0	8.5	8.5	75	FKM	**U133V5695**	**10**	42			**A**
		2.5	220	0.25	0	8.5	8.5	75	FKM	**U133V56951D**	**11**	42			**A**
F4		5	680	0.6	0	10	10	65	NBR	**U133X5196**	**9, 10**	43			**A**
		5	680	0.6	0	10	10	75	NBR	**U133X51961D**	**11**	43			**A**
	3/8	5	680	0.6	0	10	10	65	NBR	**U133X5296**	**9,10**	7669			**A**
		5	680	0.6	0	10	10	75	NBR	**U133X52961D**	**11**	7670			**A**
3/2 valves – direct operated – universal with manual reset – pipe mounted															
F5	1/4	5	680	0.6	0	10	10	65	NBR	**U033X5156**	**12**	43			**A**
		5	680	0.6	0	10	10	75	NBR	**U033X51561D**	**11**	43			**A**
	3/8	5	680	0.6	0	10	10	65	NBR	**U033X5256**	**12**	7671			**A**
		5	680	0.6	0	10	10	75	NBR	**U033X52561D**	**11**	7672			**A**
5/2 valves – pilot operated – spool design – pipe mounting															
F6	1/4 – 1/8	4	600	0.40	2	10	10	80	NBR	**2341PRN2JNM1**	**1**	7576	**B**		
F7		4	600	0.40	2	10	10	80	NBR	**7341PRN2JN00**	**2**	7547		**C**	
		4	600	0.40	2	10	10	80	NBR	**7341PRN2JN92**	**7**	7549		**C**	
		4	600	0.40	2	10	10	75	NBR	**7341PRN2JN95**	**10**	7550			**D**
		4	600	0.40	2	10	10	75	NBR	**7341PRN2JN9D**	**11**	7551			**D**
F6	3/8 – 1/4	8	1400	1.40	2	10	10	80	NBR	**2341PRN3NNM1**	**1**	7578	**B**		
F7		8	1400	1.40	2	10	10	80	NBR	**7341PRN3NN00**	**2**	7558		**C**	
		8	1400	1.40	2	10	10	80	NBR	**7341PRN3NN92**	**7**	7560		**C**	
		8	1400	1.40	2	10	10	75	NBR	**7341PRN3NN95**	**10**	7561			**D**
		8	1400	1.40	2	10	10	75	NBR	**7341PRN3NN9D**	**11**	7562			**D**
5/2 valves – control by external pressure supply – spool design – pipe mounting															
F8	3/8 - 1/4	8	1400	1.40	2	10	10	80	NBR	**7541PRN3NNM1**	**-**	7566		**C**	

Application Group	**A**	**B**	**C**	**D**
Body	316L	316L	316L	316L
End Cover	NONE	Polyamid PA 6.6	316L	316L
Electrical Parts	Offshore	Standard	Standard	Offshore

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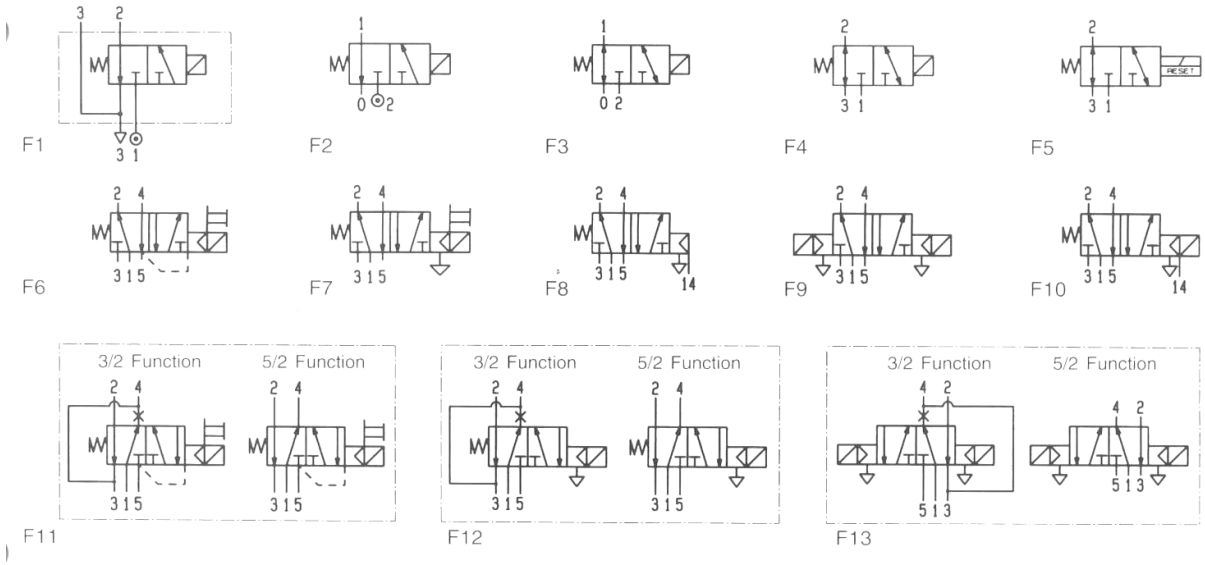
Function code	Port Size	Orifice	Flow Qn	c_V	Admissible differential pressure [bar]			Max. admissible fluid temperature	Seals material	Order No.	Electrical parts Group	Dimension ref.	General Industry	Chemical Industry	Salt Environment
					min	Max									
-	NPT	mm	L/min.	GPM		DC	AC	°C	-						
5/2 valves pilot operated – spool design – control by two solenoid and main pressure supply – pipe mounted															
F9	1/4 - 1/8	4	400	0.40	2	10	10	80	NBR	**7347PRN2HN00**	**2**	7552		**C**	
		4	400	0.40	2	10	10	75	NBR	**7347PRN2HN95**	**10**	7553			**D**
	3/8 - 1/4	8	1400	1.40	2	10	10	80	NBR	**7347PRN3NN00**	**2**	7563		**C**	
		8	1400	1.40	2	10	10	75	NBR	**7347PRN3NN95**	**10**	7564			**D**
5/2 valves pilot operated – spool design – control by solenoid and external pressure supply – pipe mounted															
F10	3/8 - 1/4	8	1400	1.40	0	10	10	80	NBR	**7441PRN3NN00**	**2**	7565		**C**	
5/2 or 3/2 valves – pilot operated – spool design – NAMUR interface															
F11	1/4 - 1/8	4	600	0.40	2	10	10	80	NBR	**2341NRKDHJM1**	**1**	7575	**B**		
F12		4	600	0.40	2	10	10	80	NBR	**7341NRKDHJ00**	**2**	7542		**C**	
		4	600	0.40	2	10	10	80	NBR	**7341NRKDJN1D**	**5**	7543		**C**	
		4	600	0.40	2	10	10	80	NBR	**7341NRKDJN92**	**7**	7544		**C**	
		4	600	0.40	2	10	10	75	NBR	**7341NRKDJN95**	**10**	7696			**D**
F11	3/8 - 1/4	8	1400	1.40	2	10	10	80	NBR	**2341NRKNNNM1**	**1**	7577	**B**		
F12		8	1400	1.40	2	10	10	80	NBR	**7341NRKNNN00**	**2**	7554		**C**	
		8	1400	1.40	2	10	10	80	NBR	**7341NRKNNN92**	**7**	7556		**C**	
		8	1400	1.40	2	10	10	75	NBR	**7341NRKNNN95**	**10**	7695			**D**
5/2 or 3/2 valves pilot operated – spool design – control by two solenoid and main pressure supply – NAMUR interface															
F13	1/4 - 1/8	4	400	0.40	2	10	10	80	NBR	**7347NRKDHNM0**	**2**	7545		**C**	
		4	400	0.40	2	10	10	80	NBR	**7347NRKDHN92**	**7**	7546		**C**	
	3/8 - 1/4	8	1400	1.40	2	10	10	80	NBR	**7347NRKNNN00**	**2**	7557		**C**	



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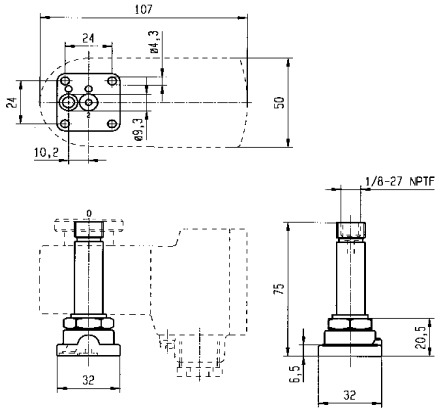

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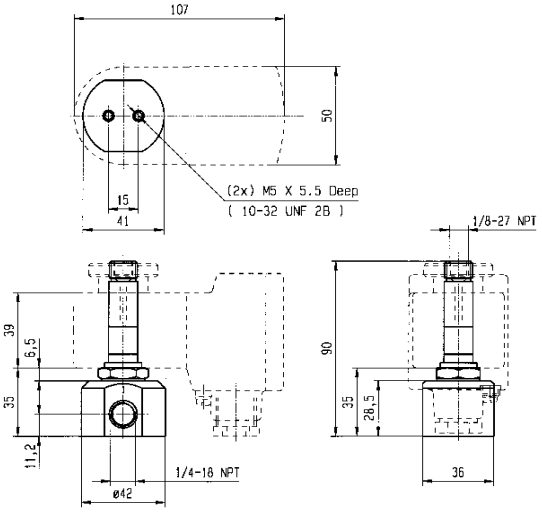

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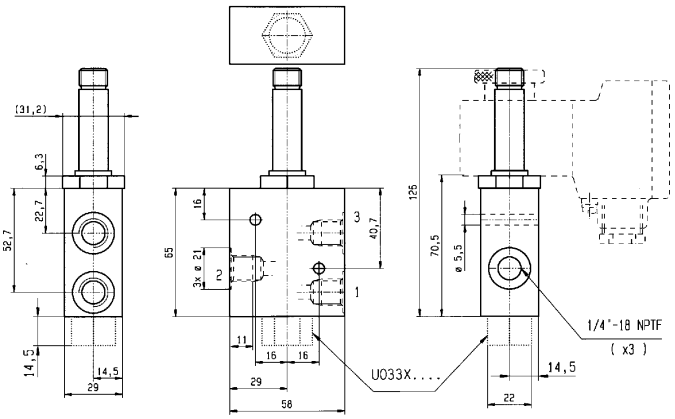

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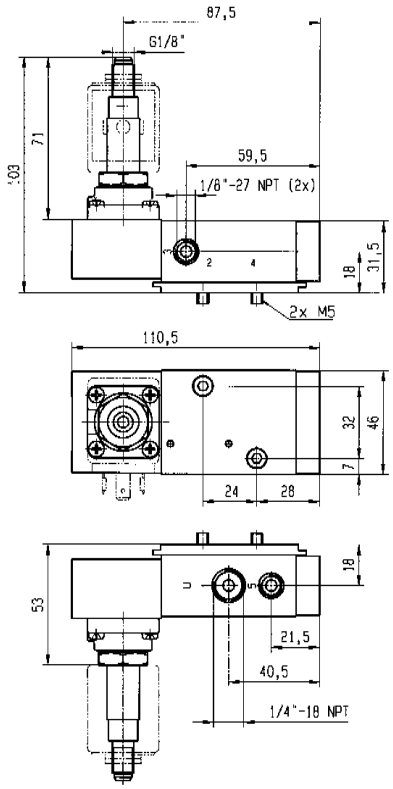

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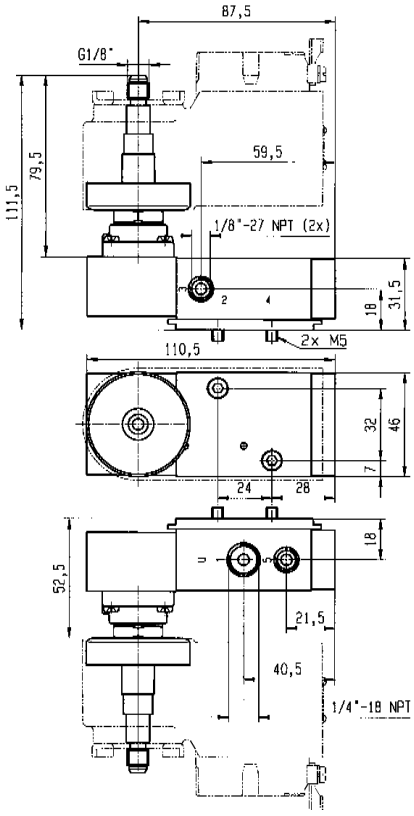

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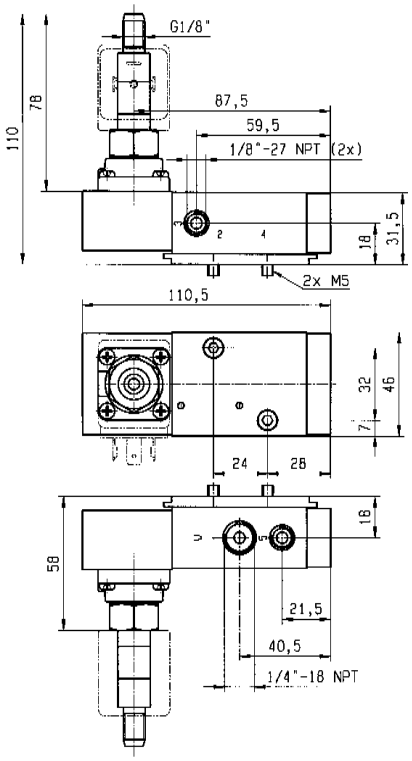

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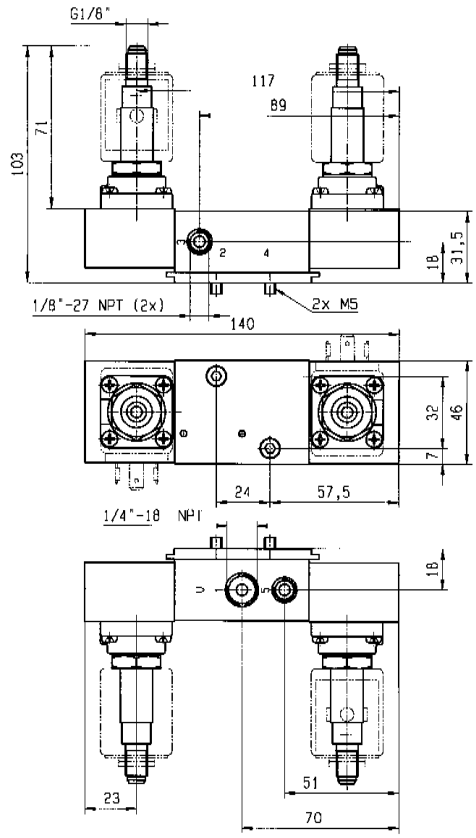

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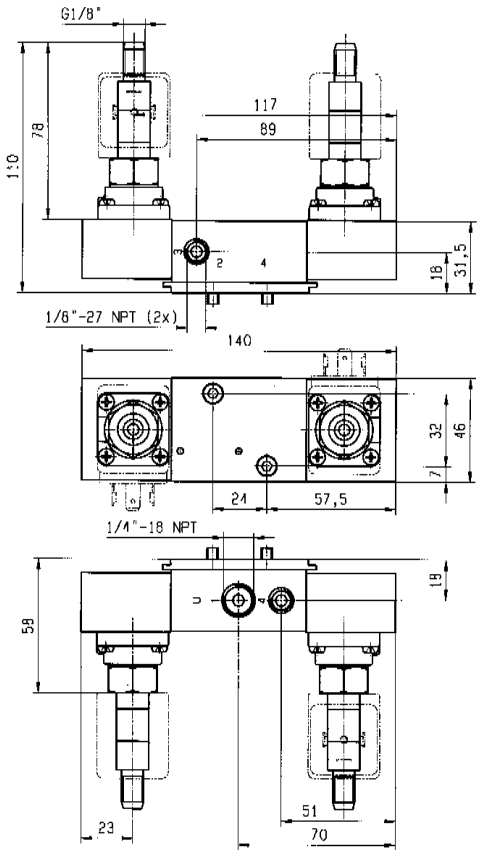

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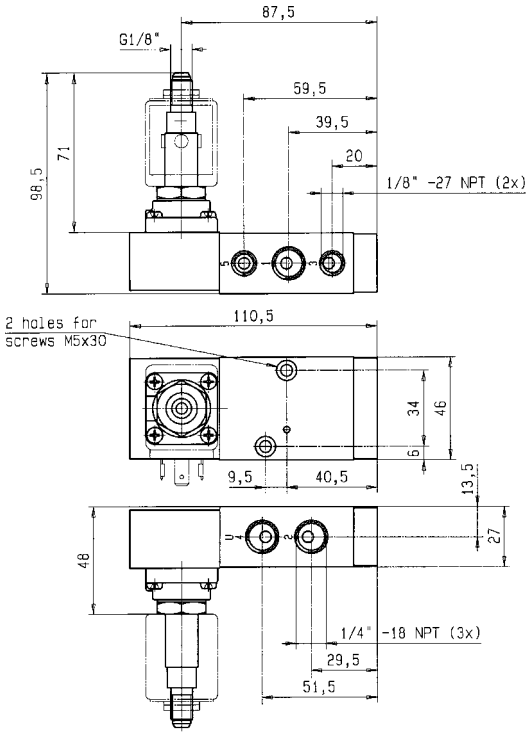

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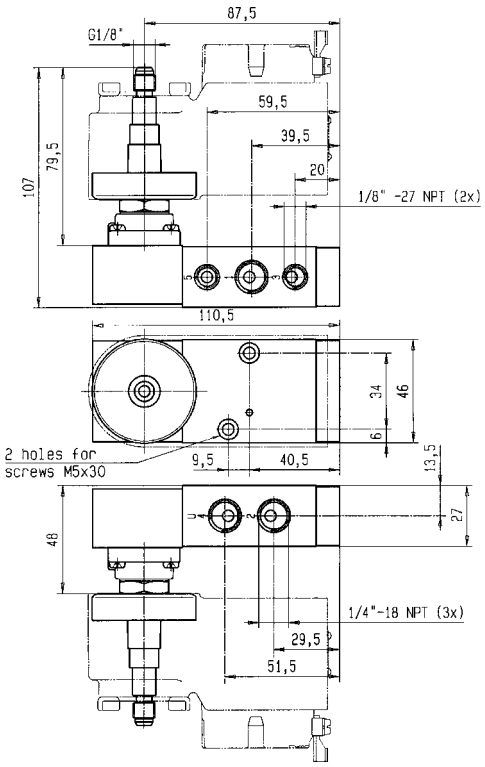

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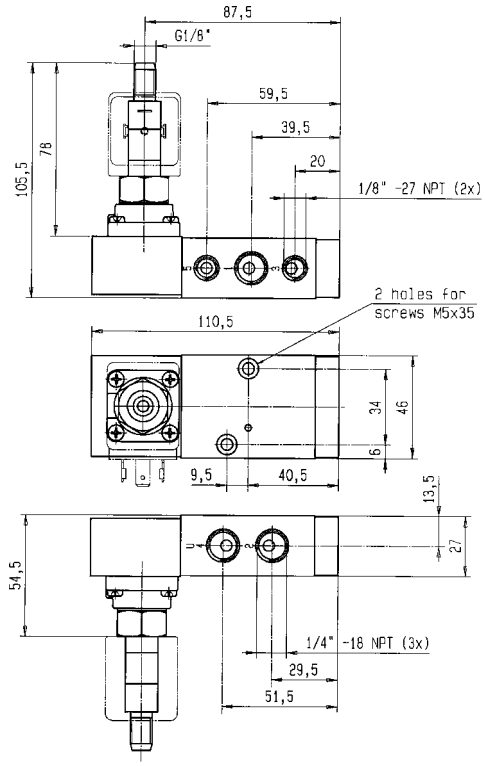

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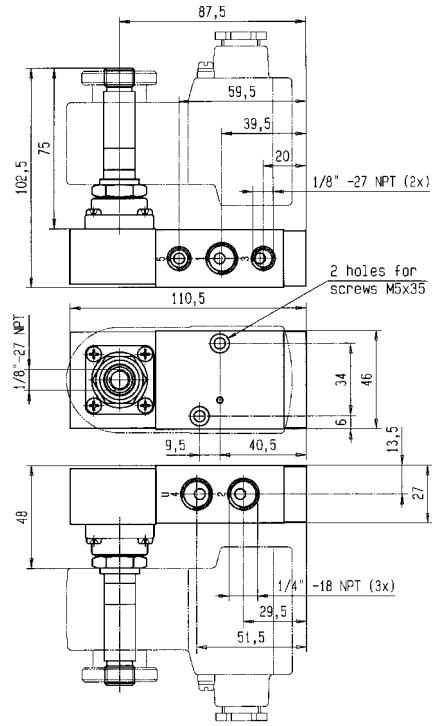

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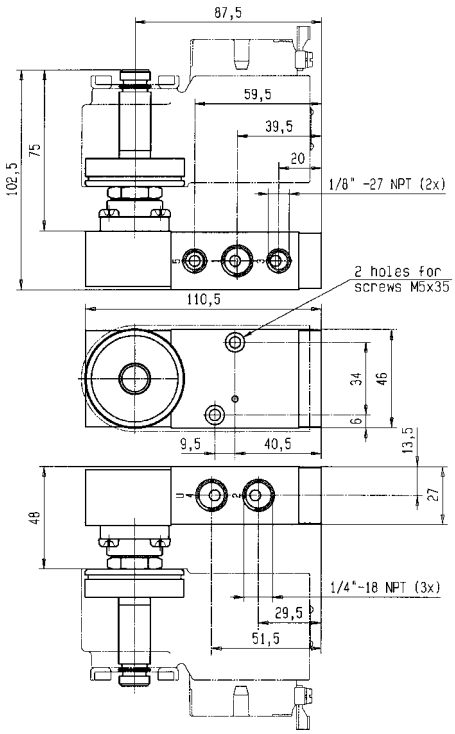

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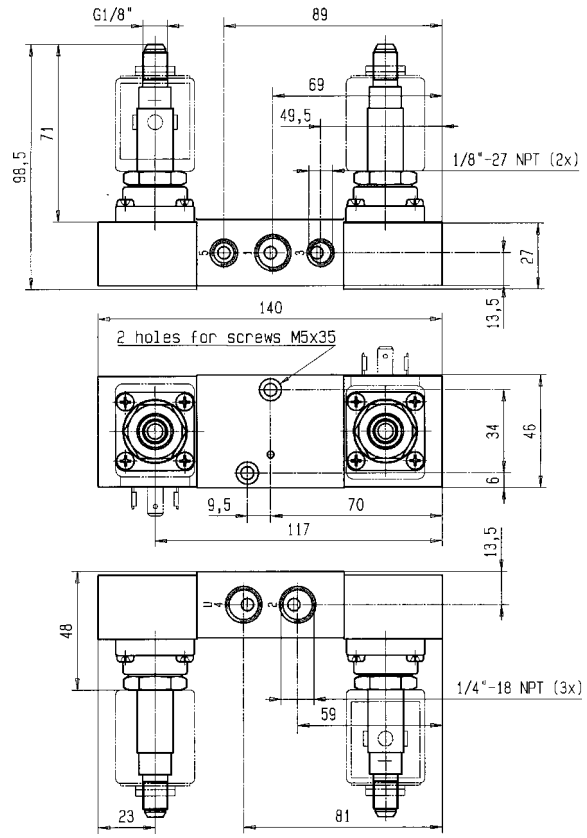

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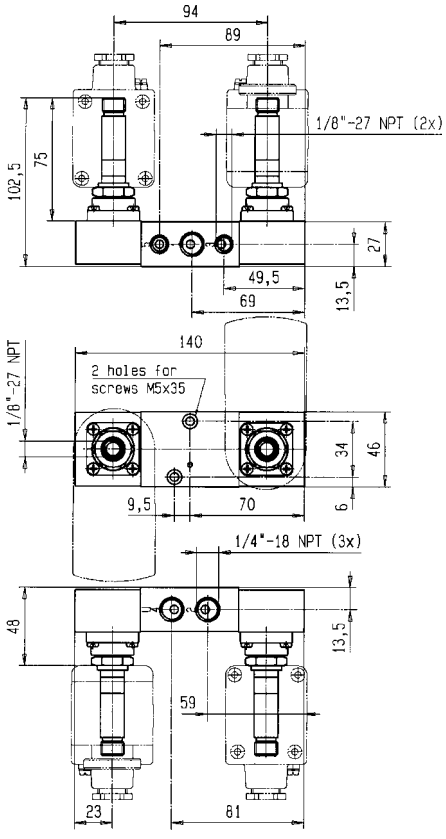

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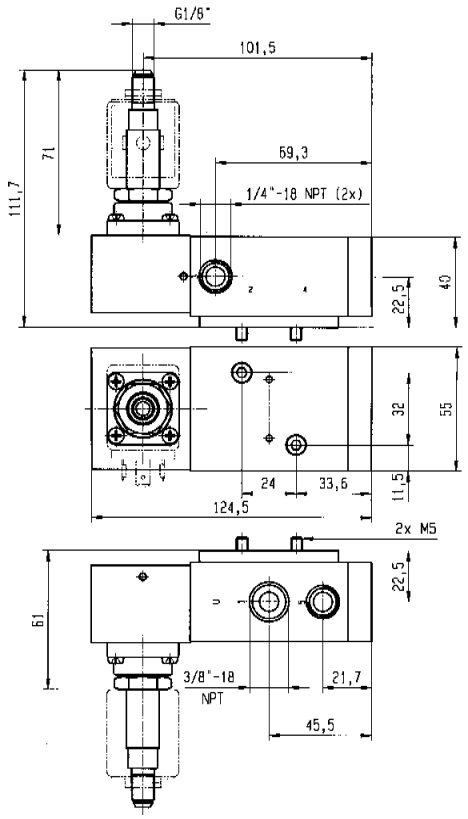

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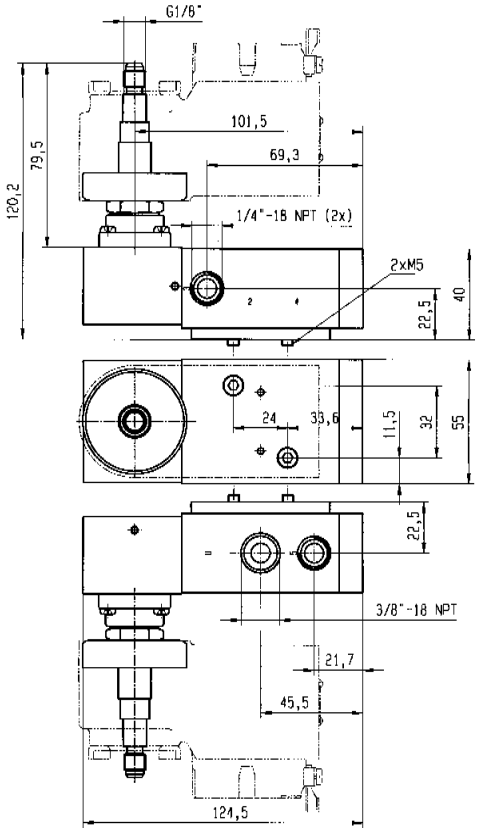

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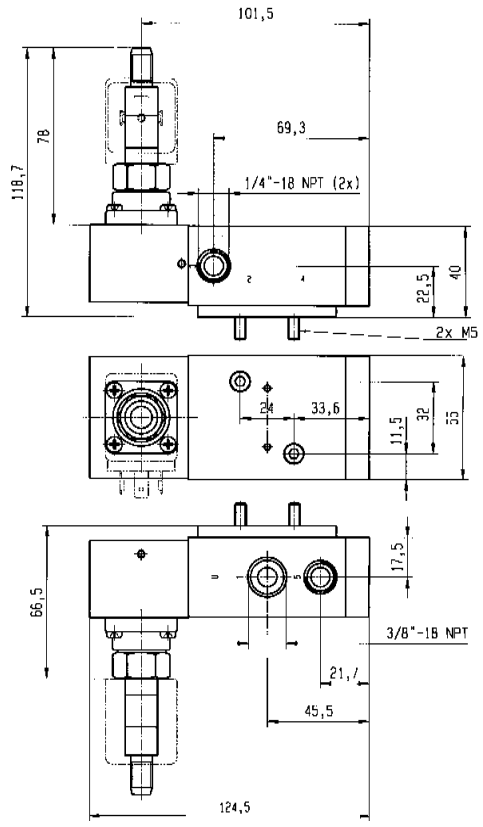

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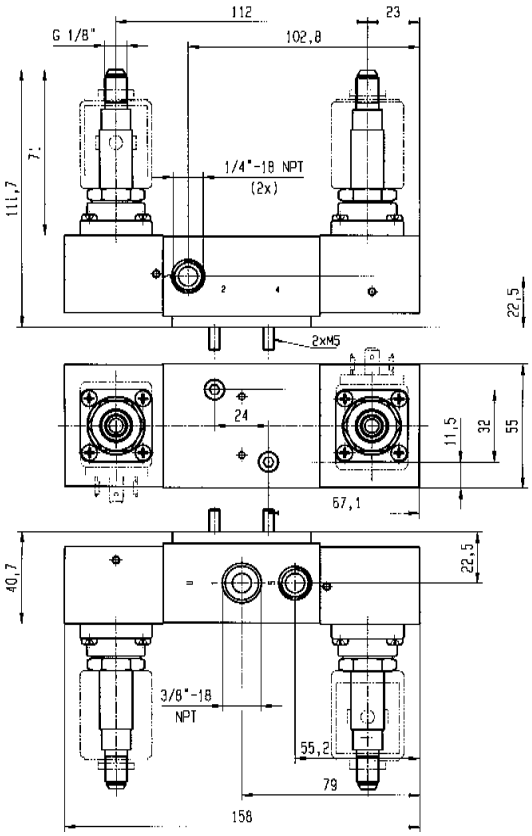

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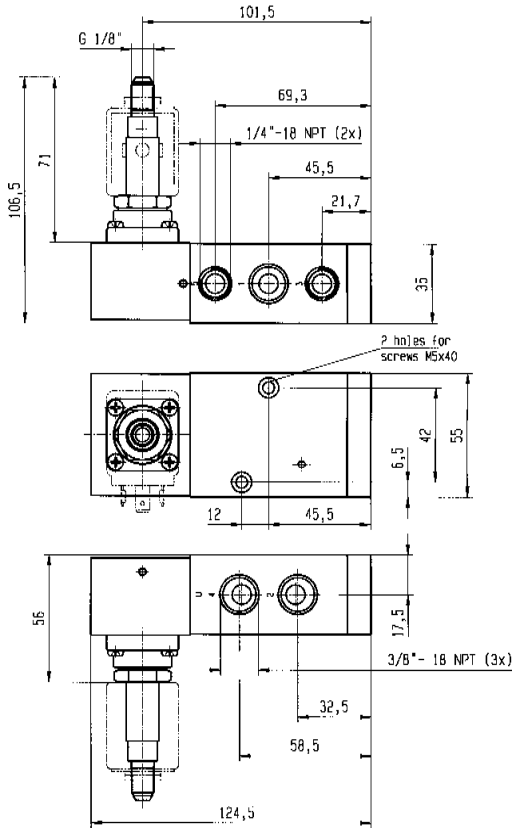

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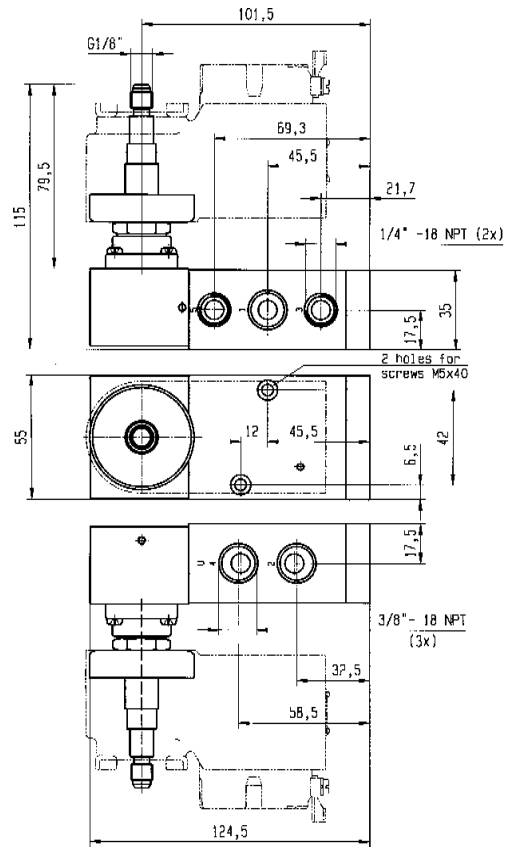

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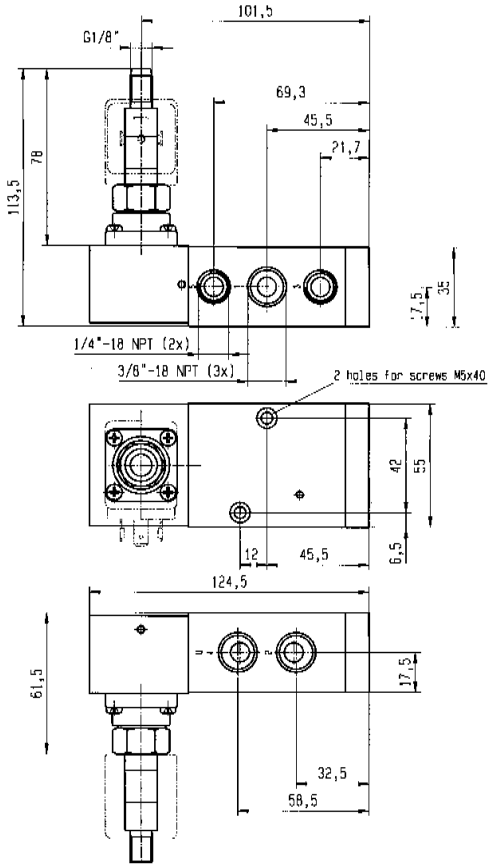

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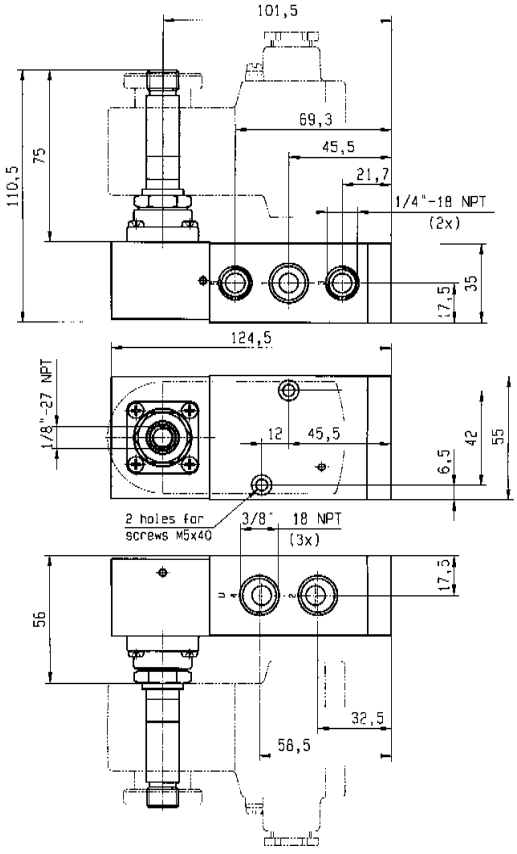

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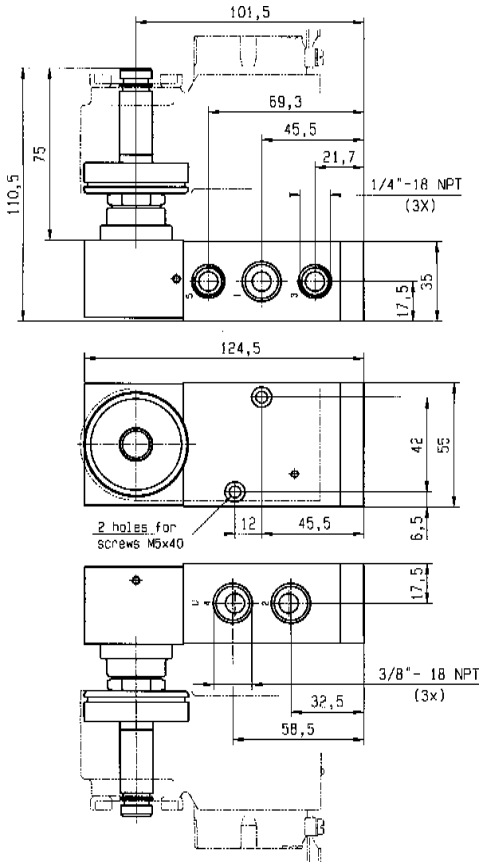

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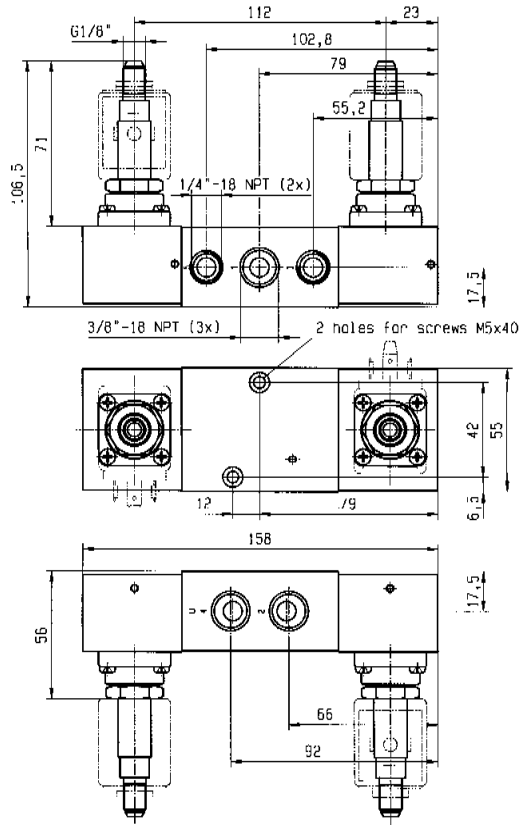

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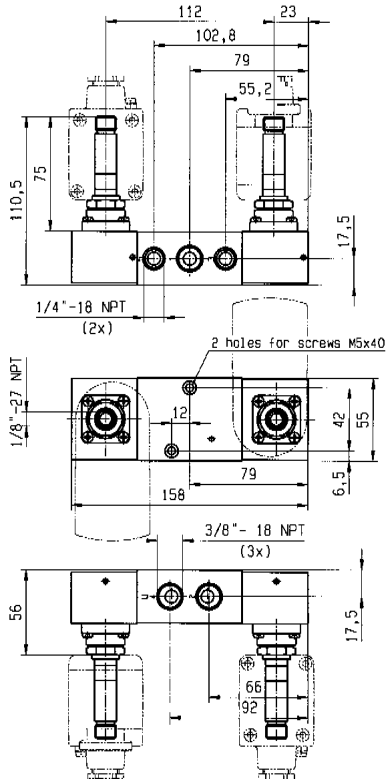

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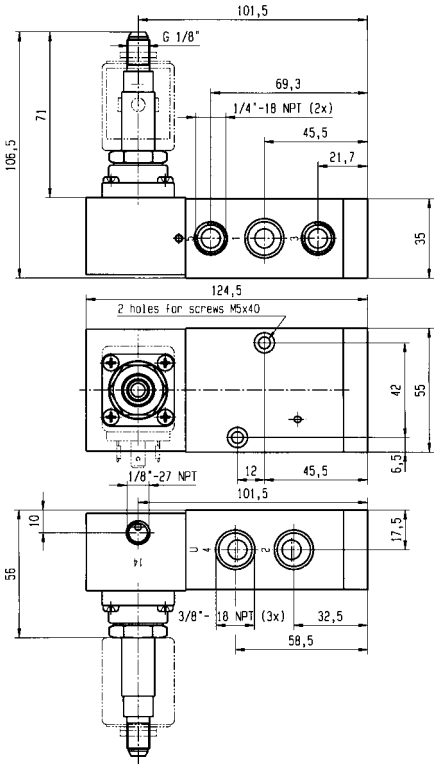

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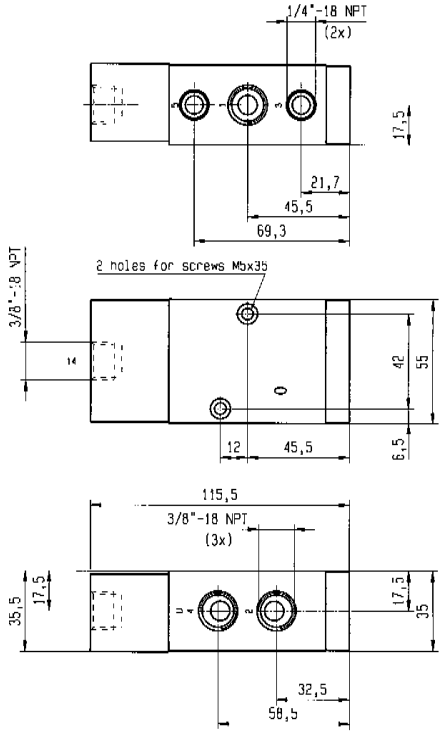

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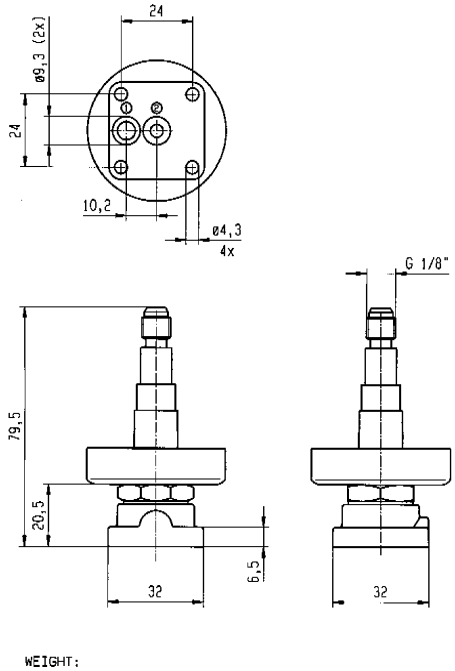

WEIGHT:

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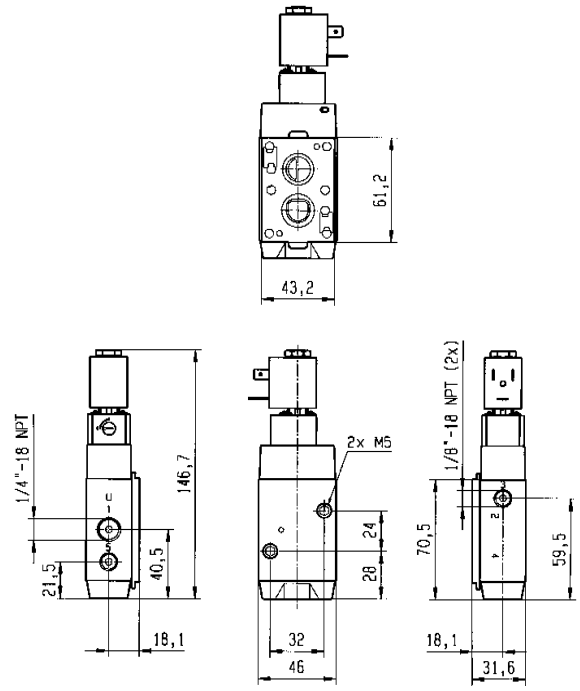

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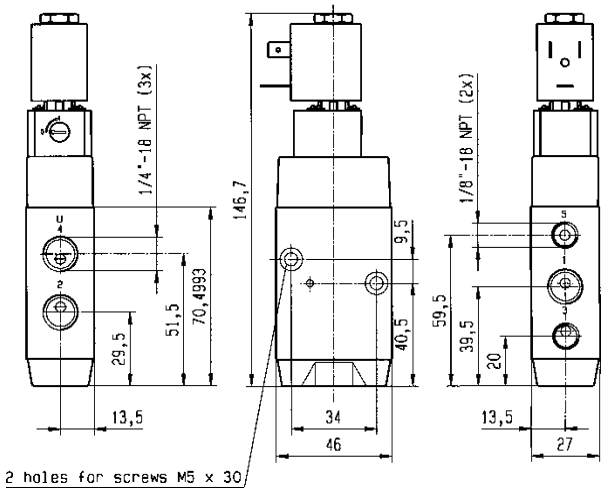

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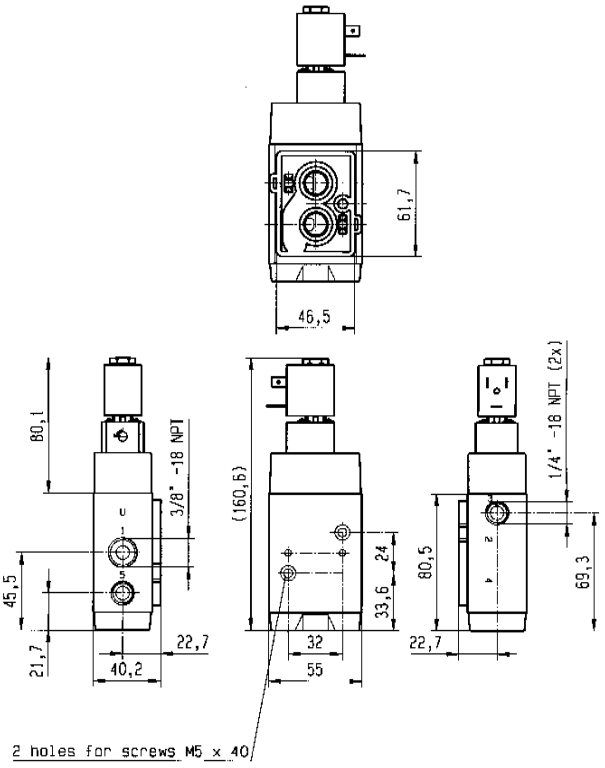
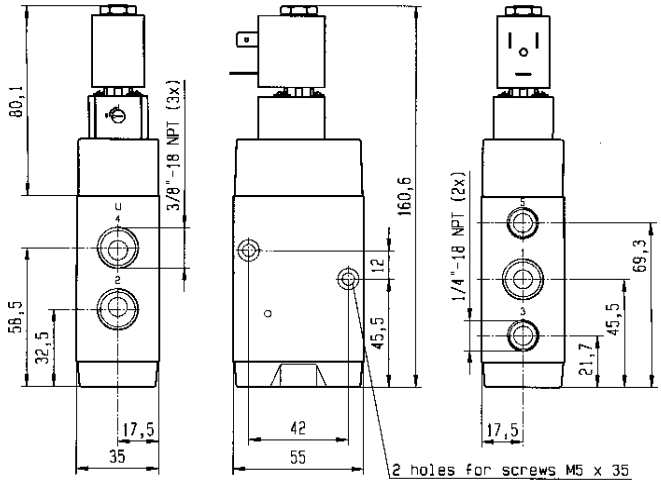


7577



7578

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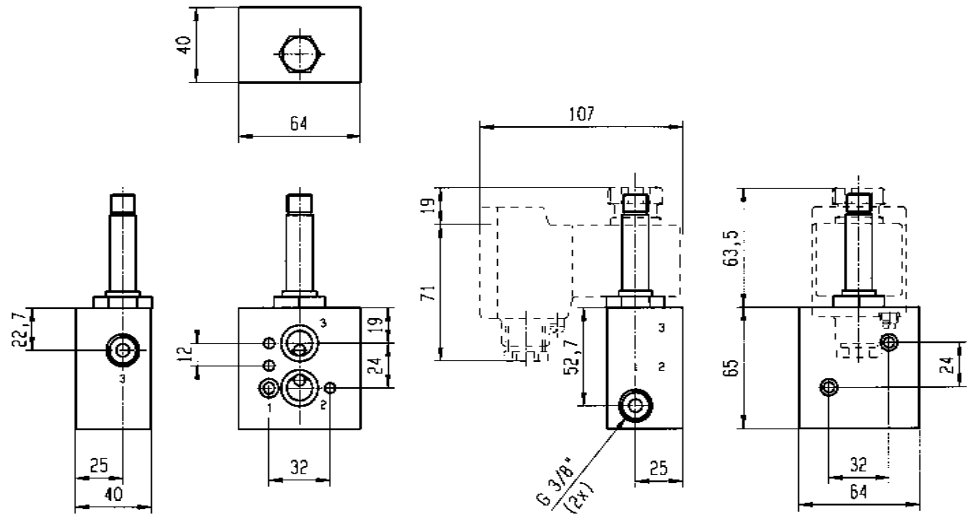
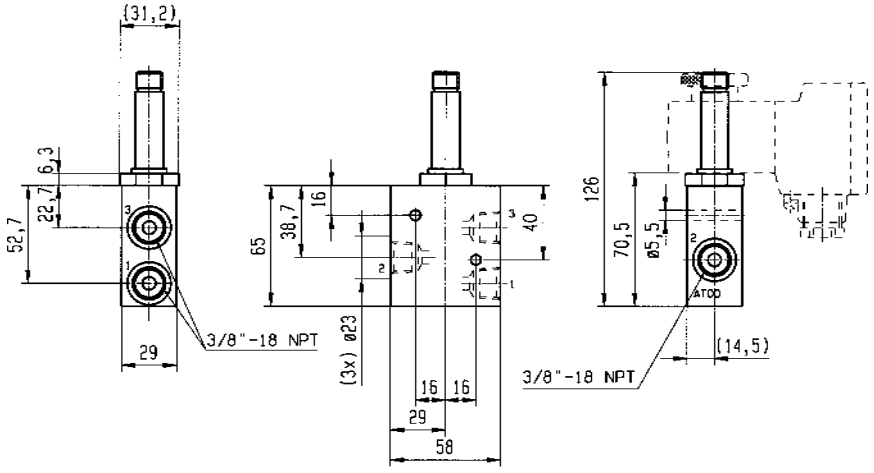
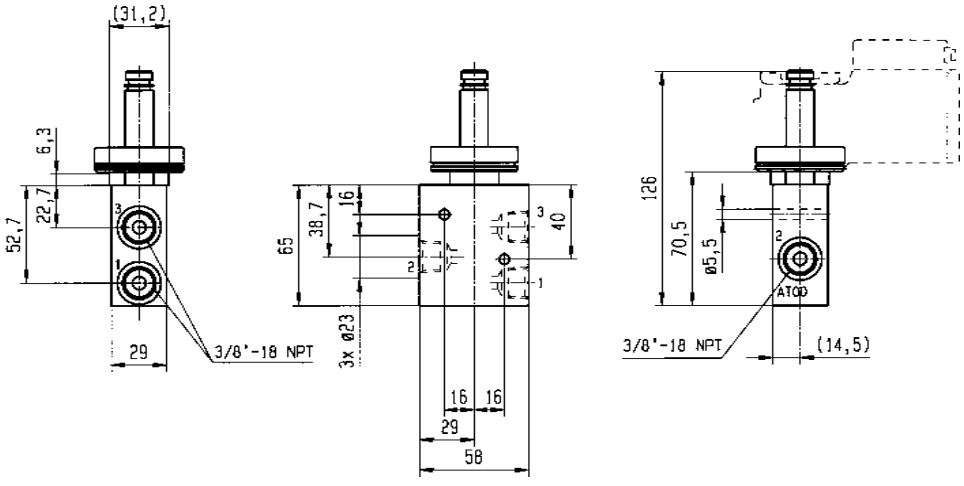


7668



7669



7670

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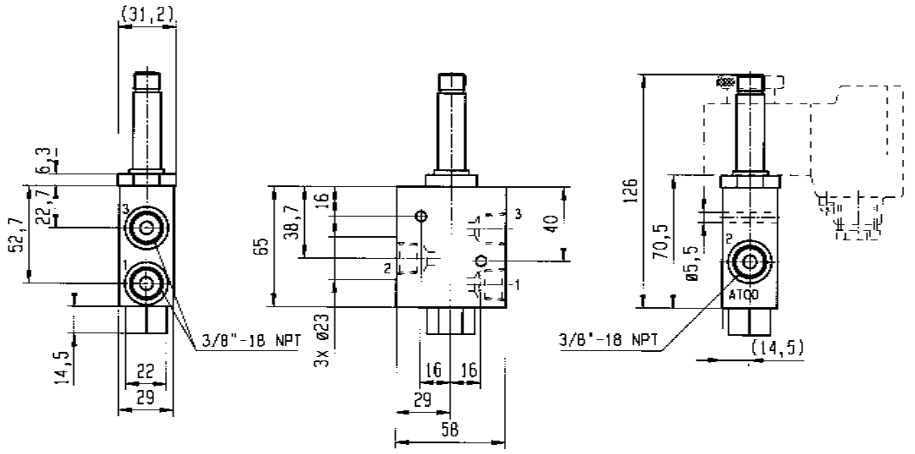
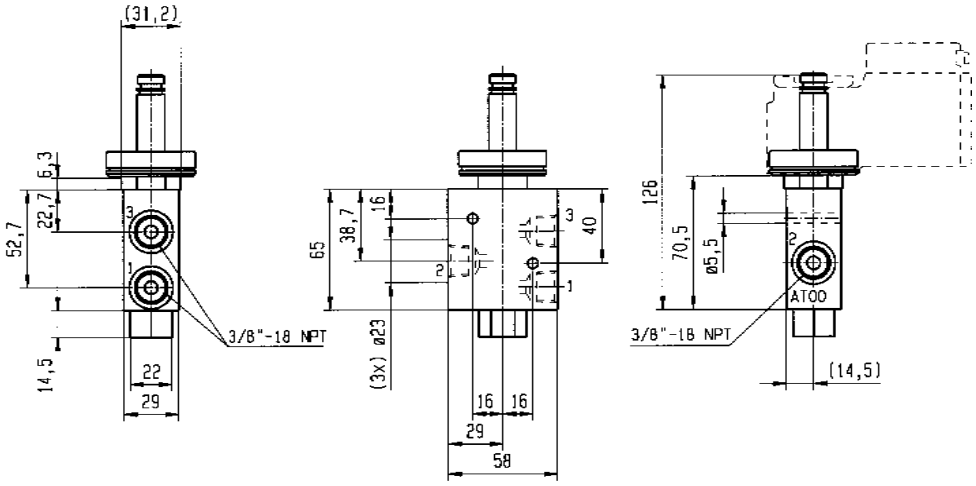


7671



7672

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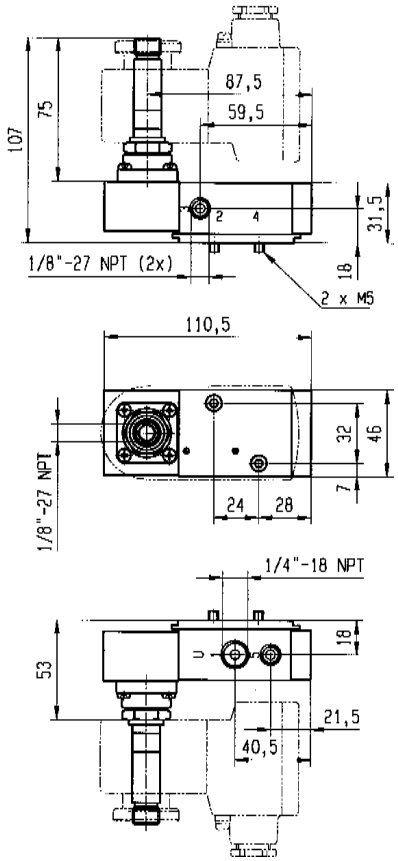
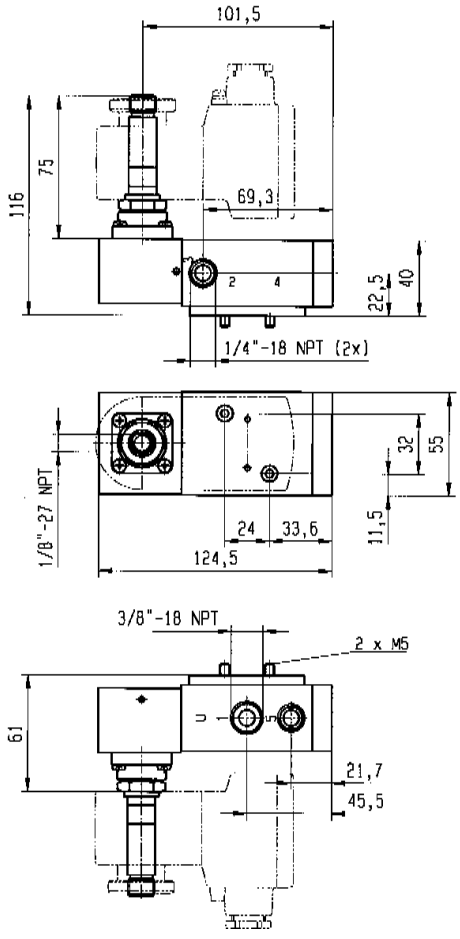


7695



7696

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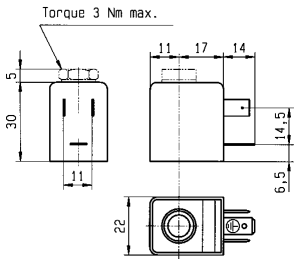

Fig. 50

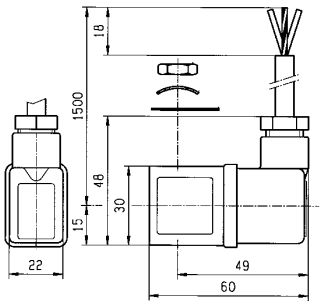

Fig. 51

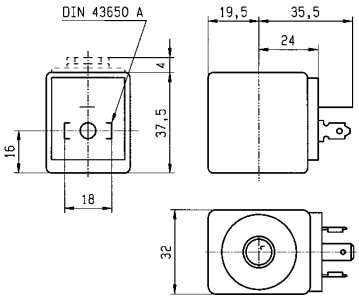

Fig. 52

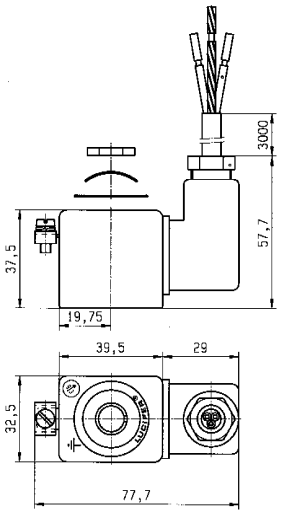

Fig. 53

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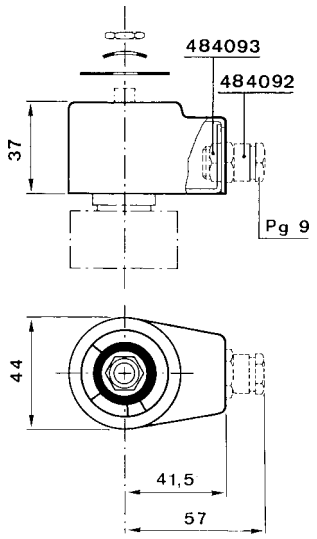

Fig. 54

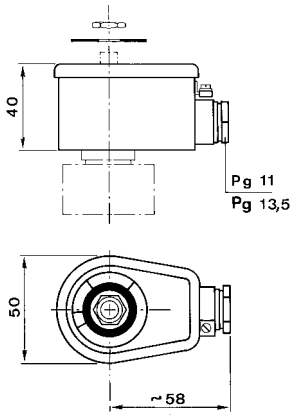

Fig. 55

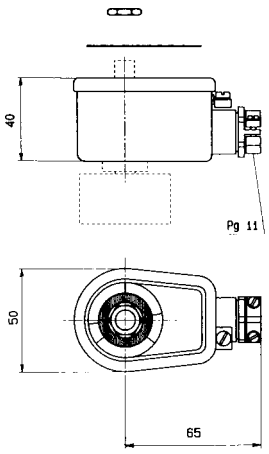

Fig. 56

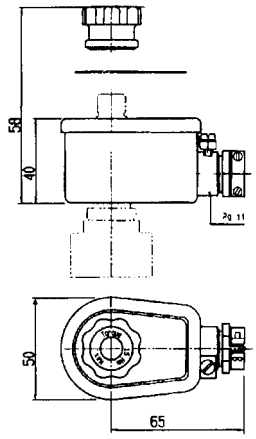

Fig. 57

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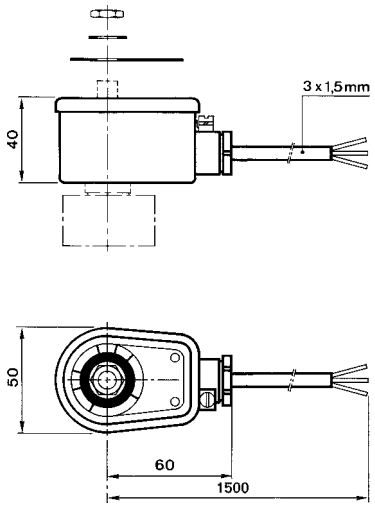

Fig. 58

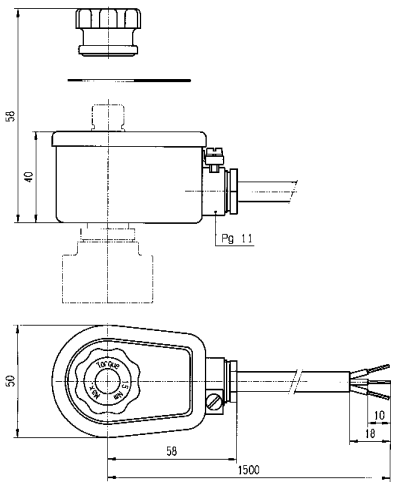

Fig. 59

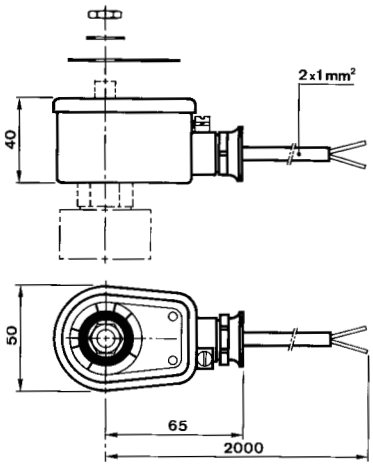

Fig. 60

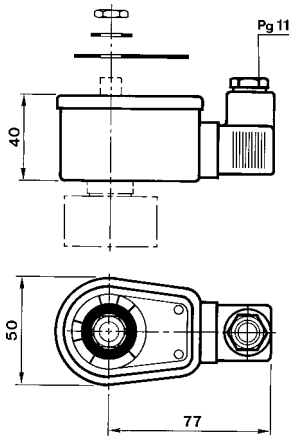

Fig. 61

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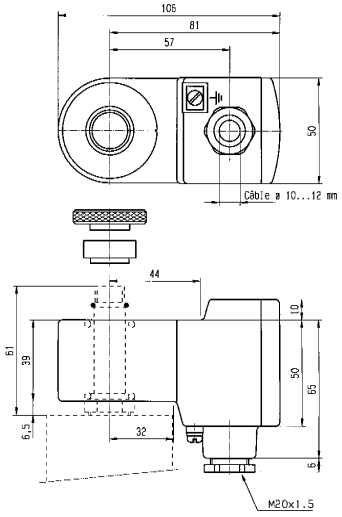

Fig. 62

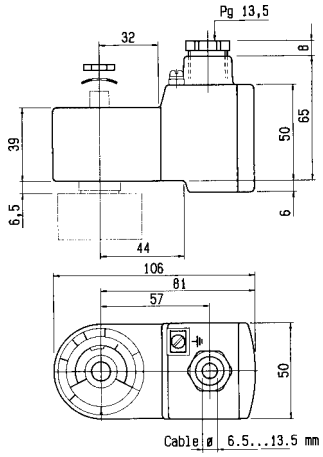

Fig. 63

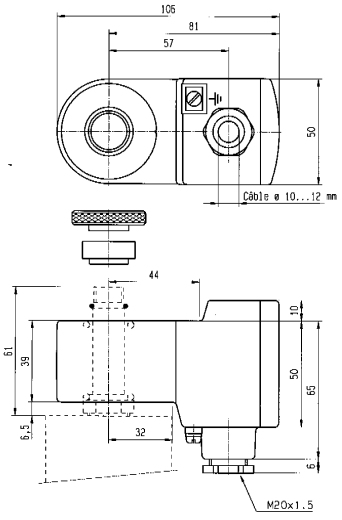

Fig. 64

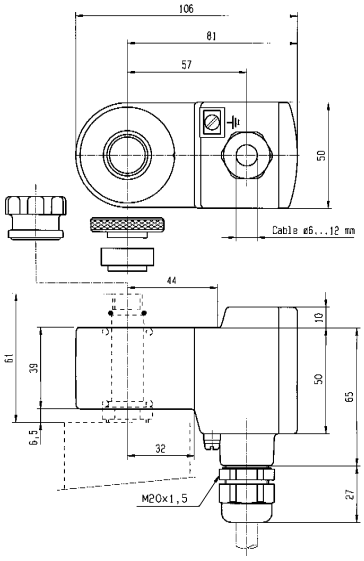

Fig. 65

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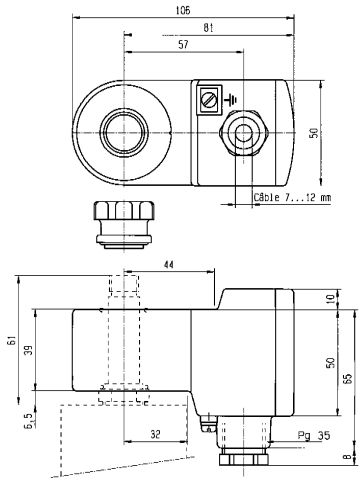

Fig. 66

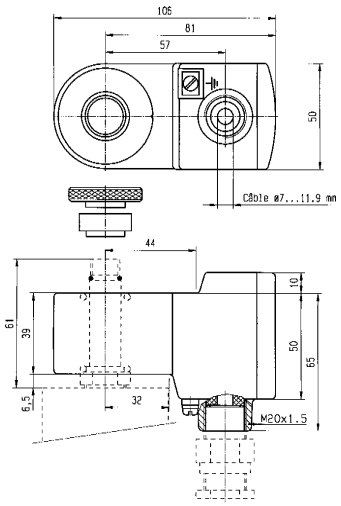

Fig. 67

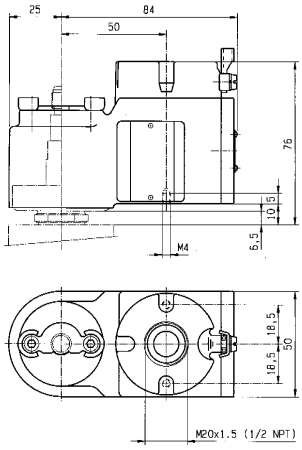

Fig. 68

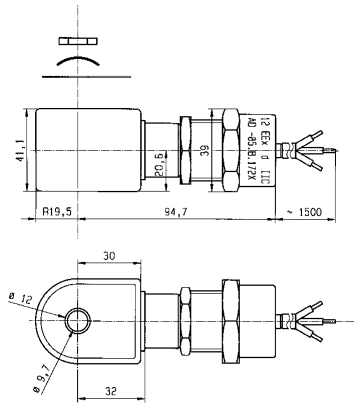

Fig. 69

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Customer references

Chemical and petrochemical industries

Akzo	Givaudan	Orgamol Chimie	Sandoz
Bayer	Hoffmann Laroche	Rhône Poulenc	Solvay
Bio Chemie	ICI	Roussel Uclaf	
Ciba Geigy	Novartis	(Hoechst)	

Petroleum and gas industries

Mobil	Norsk Hydro	Saga	Statoil
NOC	Philips	Shell	

Oil refineries

Elf Atochem	Shell	Exxon	Total
Statoil			

Paper industry

Korsnäs	Munkssö Paper	Kankas	Enzo
			Gutzeit

Food industry

Feldschlösschen	Mars	Nestlé	Vaihinger
			Wala

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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 Code

Refer to page 32 for compatible electrical part group - select your coil - the respective available voltages and voltage codes are visible on page 33.

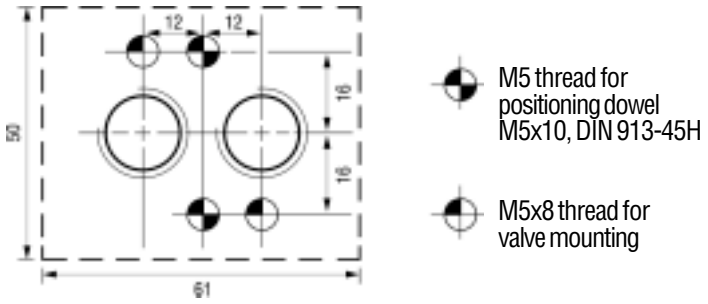
Ordering example: 7341PRN2HNM0 – NL – DZ02 – C2 (24VDC)

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

Maintenance Kits

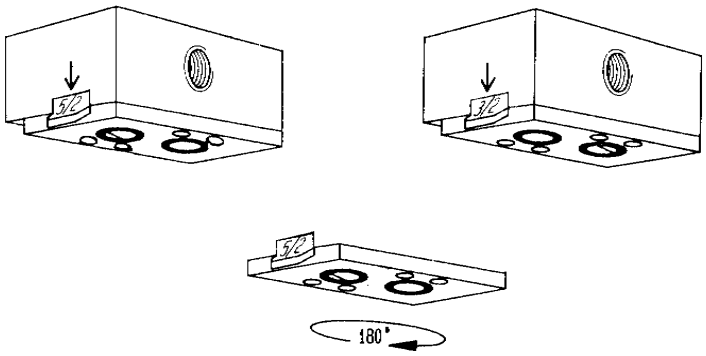
For 5/2 valves - 4mm: 481203.343 (seals & cages)
For 5/2 valves - 8mm: 481203.348 (seals & cages)

NAMUR interface



Important Note : *the user must ensure that the positioning dowel is properly put in place in order to assure the correct position of the main valve when the solenoid of the pilot valve is de-energised.*

5/2 to 3/2 function conversion



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Standard and explosion-proof electrical parts

El. Part. Group	Coil type	Protection class/ Temperature class	Power [W] DC	Power [W] AC	Order No. Coil	Ref. No. Coil	Connection	Order No. Housing	Ambient temp [° C] min	Ambient temp [° C] max	Fig.
1	22 mm	Class F	2.5	2	**DA01**	488980	for DIN B plug	**A2**	-40	50	50
		Class F	2.5	2	**DA02**	481045	with DIN B plug	**A2**	-40	50	50
		EEx m II T5	2.5	2	**VA12**	482606.10	with 1500mm cable	**00**	-40	50	51
2	32 mm (Std)	Class F	9	8	**DZ02**	481865	for DIN A plug	**NL**	-40	50	52
		Class F	9	8	**DZ03**	482725	with DIN A plug	**NL**	-40	50	52
		Class H	9	8	**DZ04**	492453	for DIN A plug	**NL**	-40	80	52
		Class H	9	8	**DZ05**	492726	with DIN A plug	**NL**	-40	80	52
		Class F, 50/60 Hz	-	9	**DZ06**	483510	for DIN A plug	**NL**	-40	50	52
		Class F, 50/60 Hz	-	9	**DZ07**	482635	with DIN A plug	**NL**	-40	50	52
		EEx m II T4	9	8	**HZ90**	492670.10	with 3000mm cable	**00**	-25	40	53
	50 mm (Std)	Class F	8	8	**EZ01**	481000	screw-terminals	**E0**	-40	50	54
		Class H	8	8	**EZ02**	485100	screw-terminals	**E0**	-40	80	54
		Class F, IP 67, Pg 11	8	8	**EZ01**	481000	screw-terminals	**G1**	-40	50	55
		Class F, IP 67, Pg 13.5	8	8	**EZ01**	481000	screw-terminals	**G2**	-40	50	55
		EEx m II T4/T5	9	8	**VZ01**	492070	with 1500mm cable	**00**	-40	40/65	58
		EEx e II T4	8	8	**HZ06**	483371	for cable connection	**00**	-40	65	56
		EEx me II T3/T4	11	9	**VZ90**	492190.10	for cable connection	**00**	-40	75/40	63
		EEx e II T3/T4	8	8	**HZ23**	494040	for cable connection	**00**	-40	90/65	56
		EEx d IIC T4/T5	8	8	**HZ09**	493640	with 1500mm cable	**00**	-40	75/40	69
5	50 mm	EEx d IIC T4/T5/T6	8	8	**HZ08**	483250	for cable, 1/2 NPT	**00**	-40	80/75/60	68
7	32 mm I.S.	EEx ia II C T6	0.4	-	**DZ12**	483580.01	for DIN A plug	**NL**	-25	55	52
		EEx ia II C T6	0.4	-	**DZ13**	483960.01	with DIN A plug	**NL**	-25	55	52
	50 mm I.S.	EEx ia II C T6	0.4	-	**VZ93**	494035.10	for cable connection	**00**	-40	65	63
		EEx ia II C T6	0.4	-	**VZ08**	488660.01	with 2000mm cable	**00**	-25	65	60
		EEx ia II C T6	0.4	-	**VZ09**	488670.01	with DIN A plug	**00**	-25	65	61
9	32 mm	Class F	9	9	**DZ14**	492387	with DIN A plug	**N9**	-40	65	52
	50 mm	EEx ib IIB T6	0.8	-	**VZ11**	482660	for cable connection	**00**	-25	65	72
		EEx ib IIC T6	0.8	-	**VZ12**	483330.01	for cable connection	**00**	-25	65	64
		EEx ia IIC T6	0.8	-	**VZ92**	492965.02	for cable connection	**00**	-25	65	65
		EEx me II T5/T6	1.5	-	**VZ13**	492200	for cable connection	**00**	-40	75/40	66
		EEx e II T4	8	-	**VZ14**	483371.01	for cable connection	**00**	-40	65	57
		EEx me II T4/T5	6	6	**VZ15**	492300	for cable connection	**00**	-40	75/40	66
		EEx m II T4/T5	5	5	**VZ02**	492270	with 1500mm cable	**00**	-40	65/40	59
10	50 mm	EEx ib IIB T6	0.8	-	**VZ11**	482660	for cable connection	**00**	-25	65	62
		EEx ib IIC T6	0.8	-	**VZ12**	483330.01	for cable connection	**00**	-25	65	64
		EEx ia IIC T6	0.8	-	**VZ91**	492965.01	for cable connection	**00**	-25	65	65
		EEx me II T5/T6	1.5	-	**VZ26**	492210	for cable connection	**00**	-40	75/40	67
		EEx me II T4/T5	6	6	**VZ27**	492310	for cable connection	**00**	-40	75/40	67
11	50 mm	EEx d II C T4/T5/T6	8	8	**HZ19**	483270	for cable, M20x1.5	**00**	-40	80/75/60	68
		EEx d II C T4/T5/T6	8	8	**HZ21**	483270.02	for cable, 1/2 NPT	**00**	-40	80/75/60	68
12	50 mm	EEx ia IIB T6	0.8	-	**VZ22**	482160.01	for cable connection	**00**	-25	65	62
		EEx ia IIC T6	0.8	-	**VZ23**	482870.01	for cable connection	**00**	-25	65	62
		EEx me II T4/T5	6	6	**VZ27**	492310	for cable connection	**00**	-40	75/40	67

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Coil / Voltages

Coil / Voltages	12/50	24/50	48/50	110/50	110/50-115/50	220/50	220/50-230/50	230/50	380/50	24/60	115/60	110/60-115/60	220/60	230/60	220/60-230/60	220/60-240/60	24/50-24/60	42/50-48/60	48/50-48/60	110/50-60	110/50-115/60	110-115/50, 115/60	110-115/50, 120/60	100/50-115/60	220/50-60	220-230/50-60	220-240/50-240/60	200/50-230/60	240/50-60	380/50-440/60	12/DC	24/DC	28/DC	48/DC	110/DC	220/DC
481000		A2	A4		0A		3D			B2		6J				4K		S7												5P	C1	C2		C4	C5	C7
481045		A2	A4		0A		3D			B2		6J			7J															C1	C2		C4	C5	
481865		A2	A4	A5			3D		A9	B2	K8			J3																C1	C2		C4	C5	
482160.01																																N7			
482606.10		A2	A4		0A		3D			B2		6J			7J															C1	C2		C4	C5	
482635																	P0		S4				S5				S6								
482660																																N7			
482725		A2	A4	A5			3D		A9	B2	K8			J3																C1	C2		C4	C5	
482870.01																																N7			
483250		A2	A4	A5		A7																								C1	C2		C4	C5	
483270																	P0		S4			1P				3P				C1	C2		C4	C5	
483270.02																	P0		S4			1P				3P				C1	C2		C4	C5	
483330.01																																N7			
483371	A1	A2	A4	A5		A7		F4																						C1	C2		C4	C5	
483371.01																															C2		C4	C5	
483510																	P0		S4				S5				S6								
483520																	P0										S6								
483580.01																																N7			
483960.01																																N7			
485100		A2			0A		3D																												
486265		A2		A5		A7		F4	A9				B7											0P				S2			C1	C2		C4		
488660.01																																N7			
488670.01																																N7			
488980		A2	A4		0A		3D			B2		6J			7J															C1	C2		C4	C5	
492070																	P0		P2						R5				Q1		C2			C5	
492190.10																	P0		P2						R5				Q1		C2			C5	
492200																															C2				
492210																															C2				
492270																	P0		P2						R5				Q1		C2			C5	
492300																	P0		P2						R5				Q1		C2			C5	
492310																	P0		P2						R5						C2		C4	C5	
492387		A2				A7																									C2				
492425		A2		A5		A7		F4																							C2				
492453		A2		A5		A7	3D																								C2				
492670.10	A1	A2	A4	A5																										C1	C2		C4	C5	
492726		A2		A5		A7	3D																								C2				
492727		A2		A5		A7		F4																							C2				
494040		A2			0A		3D																								C2				
494035.10																																N7			

Following electrical parts have to be connected in serie with a safety fuse according to IEC 127 - Values in (mA)

Coil Ref. No.	24/50	48/50	110/50	110/50-115/50	220/50	220/50-230/50	230/50	24/60	110/60-115/60	220/60-230/60	12/DC	24/DC	48/DC	110/DC
482606.10	250	125		63		32		315	63	32	400	200	100	50
483371	630	315	160		80							400	250	
491117												160		
492670.10	1A	500	250				100				1.25A	630	315	125

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