

# Compact power modules

## ME - MR series

**RE 18306-01**

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## Ordering Details for Compact Power Modules ME with A.C. Motor

01	02	03	04	05	06	07	08	09	10	11	12
ME	-	-	-	-	/	( )	-	/	-	/	-

**Family**

01	Power module type	ME
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**Power module type of motor**

02	Without motor	0
	With 3ph motor	2
	With 1ph motor	3

**A.C. Electric motor**

03	(See page 11-12)	
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**Junction Elements**

04	The code of the Junction Element is showing in the page after the selected AC motor.	
----	--	--

**Central Manifold with Pressure range Relief Valve + Request Setting of the Relief Valve in Bar**

05	Select the required Central manifold with the required pressure range of the Relief valve and put the required setting in bar beetwen bracket.	
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**Built-in Valves**

06	Insert the codes of the required valves following the number of the cavity in the Central Manifold (see page after the selected Central Manifold).	
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**Coil Model and Connector**

07	In case of selection of Solenoid Built-in Valve choice the required coil Voltage and the required Connector. (See page 41-43)	
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**Gears pump**

08	Select the required Gears pump. (See page 46)	
----	---	--

**Oil Tank**

09	Select the required Oil Tank.(See page 47-53)	
----	---	--

**Mounting Position and Mounting Brackets**

10	Select the required working position of the Power Module and the position of the therminal box and Oil Filler cap in case of mounting position V1. If needed select the Mounting Bracket. (See page 54-55)	
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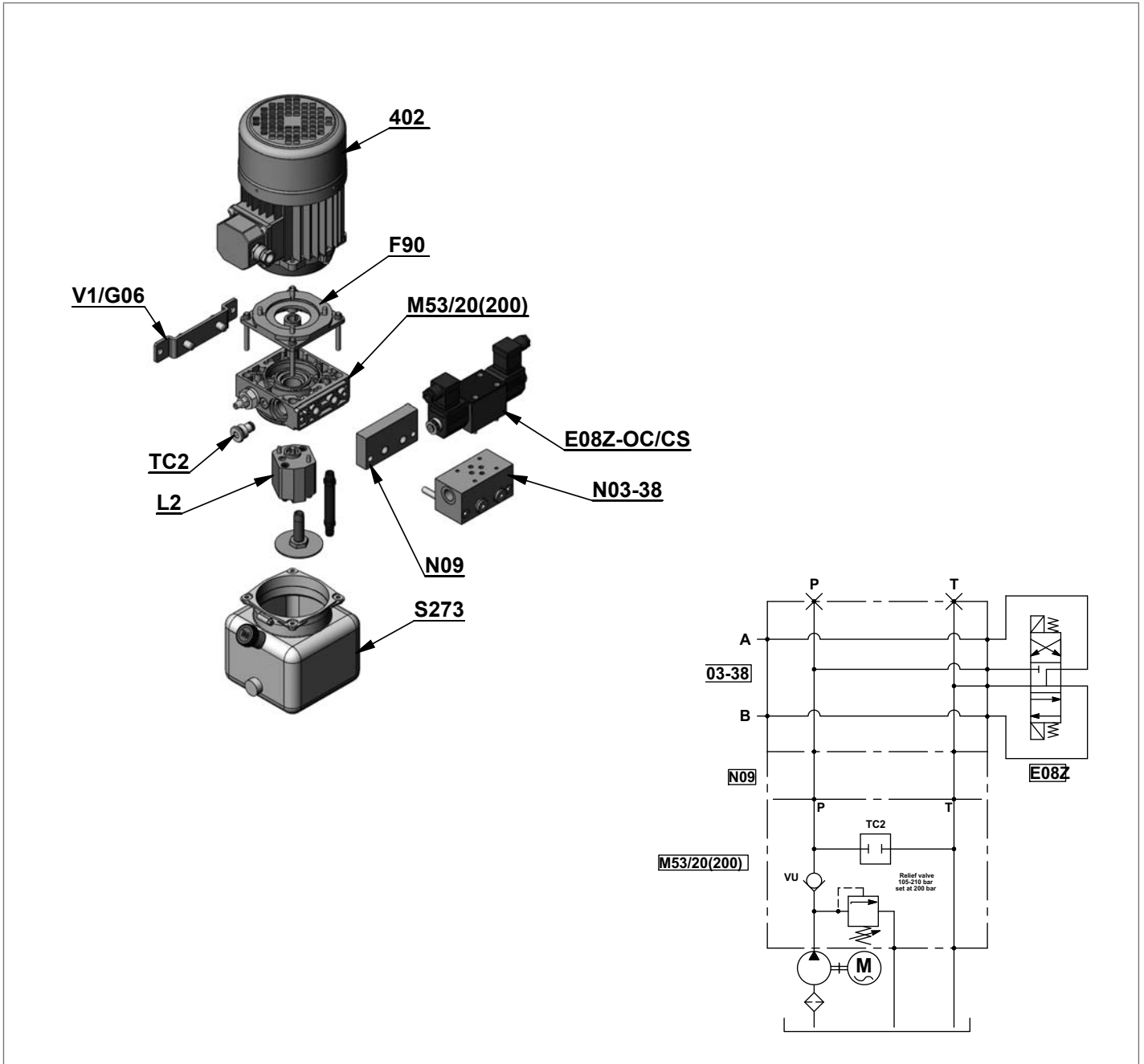
**Modular Stackable Elements**

11	If needed select the additional Modular Stackable Elements.	
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**Accessories**

12	If needed select the additional Accessories.	
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**Example of Ordering Details for Compact Power Modules ME with A.C. Motor**



**Ordering Details for Compact Power Modules with AC Motor**

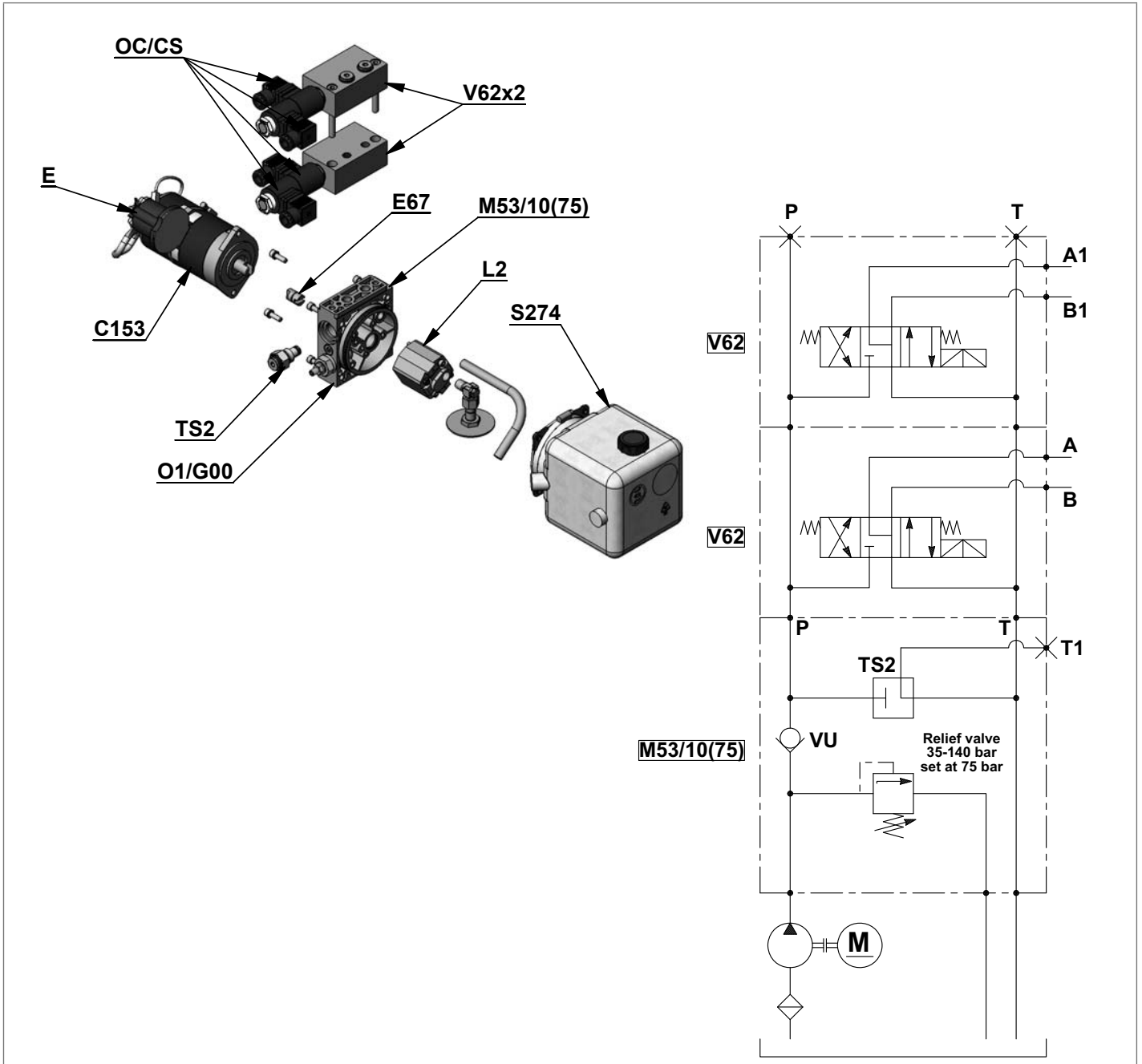
01	02	03	04	05	06	08	09	10	11
<b>ME</b>	<b>2</b>	- <b>402</b>	- <b>F90</b>	- <b>M53/20(200)</b>	- <b>TC2</b>	- <b>L2</b>	- <b>S273</b>	- <b>V1/G06</b>	- <b>N09/N03-38/ E08Z-OC/CS</b>
Power Module Type	Power Module Type of Motor	AC Electric motor	Junction Element	Central Manifold with Pressure range Relief Valve + Request Setting of the Relief Valve in Bar beetwen bracket	Built-in Valves	Gears pump	Oil Tank	Mounting Position and Mounting Brackets	Modular Stackable Elements Coil Voltage Connector

## Ordering Details for Compact Power Modules ME with D.C. Motor

01	02	03	04	05	06	07	08	09	10	11	12	13	14
ME	-	-	-	-	-	-	-	-	-	-	-	-	-

<b>Family</b>													
01	Power module type												ME
<b>Power module type of motor</b>													
02	With DC motor												1
<b>D.C. Electric motor</b>													
03	Select the required DC motors. (See page 14-27)												
<b>Relay</b>													
04	The available relays are shown in the page after the selected DC motor.												
<b>Plastic Protection</b>													
05	The possibility to assemble the plastic protection is shown in the page after the selected DC motor.												
<b>Junction Elements</b>													
06	The code of the Junction Element is showing in the page after the selected DC motor.												
<b>Central Manifold with Pressure range Relief Valve + Request Setting of the Relief Valve in Bar</b>													
07	Select the required Central manifold with the required pressure range of the Relief valve and put the required setting in bar beetwen bracket.												
<b>Built-in Valves</b>													
08	Insert the codes of the required valves following the number of the cavity in the Central Manifold. (see page after the selected Central Manifold)												
<b>Coil Model and Connector</b>													
09	In case of selection of Solenoid Built-in Valve choice the required coil Voltage and the required Connector. (See page 41-43)												
<b>Gears pump</b>													
10	Select the required gears pump. (See page 46)												
<b>Oil Tank</b>													
11	Select the required Oil Tank.(See page 47-53)												
<b>Mounting Position and Mounting Brackets</b>													
12	Select the required working position of the Power Module and the position of Relay and Oil Filler cap in case of mounting position V1. If needed select the Mounting Bracket. (See page 54-55)												
<b>Modular Stackable Elements</b>													
13	If needed select the additional Modular Stackable Elements												
<b>Accessories</b>													
14	If needed select the additional Accessories												

**Example of Ordering Details for Compact Power Modules ME with D.C. Motor**



**Ordering Details for Compact Power Modules with AC Motor**

	01	02	03	04	06	07	08	10	11	12	13
<b>ME</b>	<b>1</b>	- <b>C180</b>	- <b>H</b>	- <b>E67</b>	- <b>M53/10(75)</b>	- <b>TS2</b>	- <b>L2</b>	- <b>S274</b>	- <b>O1/G00</b>	- <b>V62x2-OC/CS</b>	
Power Module Type	Power Module Type of Motor	DC Electric motor	Relay	Junction Element	Central Manifold with Pressure range Relief Valve + Request Setting of the Relief Valve in Bar between bracket	Built-in Valves	Gears pump	Oil Tank	Mounting Position and Mounting Brackets	Modular Stackable Elements Coil Voltage Connector	

### Ordering Details for Compact Power Modules MR (reversible pump)

01	02	03	04	05	06	07	08
MR	-	-	-	-	-	-	-

<b>Family</b>							
01	Power module type						MR

<b>Power module type of motor</b>							
02	Without motor						0
	With DC motor						1
	With AC 3ph motor						2
	With AC 1ph motor						3

<b>Electric motor</b>							
03	Select the required DC motors. (See pages 14-21) Or required AC motors. (See pages 11-12)						

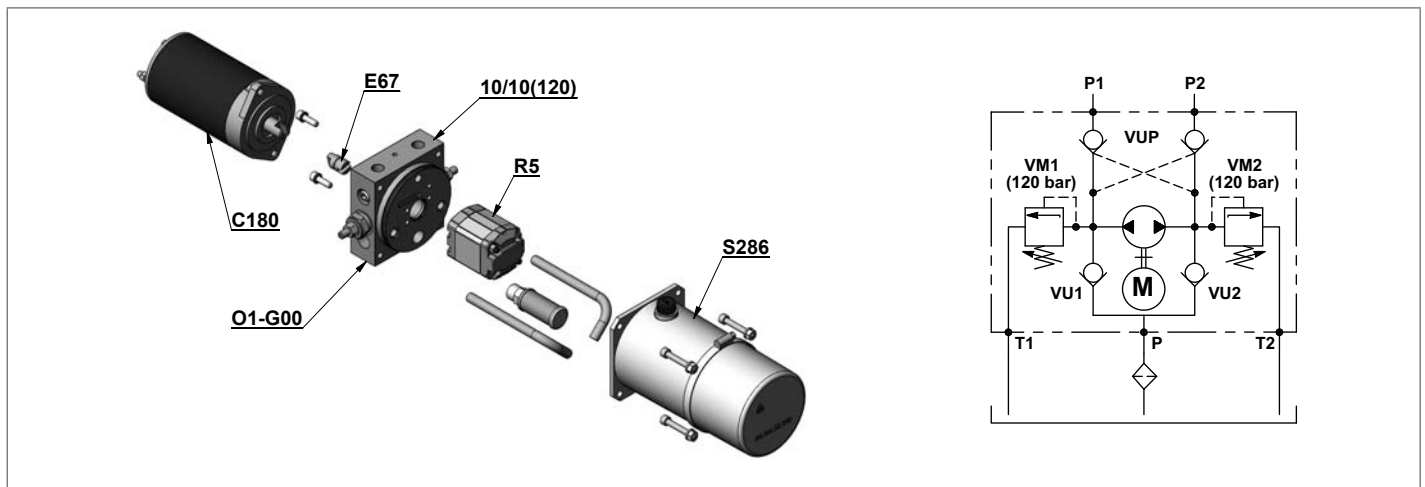
<b>Junction Elements</b>							
04	The code of the Junction Element is showing in the page after the selected motor.						

<b>Central Manifold with Pressure range Relief Valve + Request Setting of the Relief Valve in bar</b>							
05	Select the required Central manifold with the required pressure range of the Relief valve and put the required setting in bar between bracket.						

<b>Gears pump</b>							
06	Select the required gears pump (See page 46)						

<b>Oil Tank</b>							
07	Select the required Oil Tank. (See pages 47-53)						

<b>Mounting Position and Mounting Brackets</b>							
08	Select the required working position of the Power Module and the position of Oil Filler cap in case of mounting position V1. If needed select the Mounting Bracket. (See pages 55-56)						



### Ordering Details for Compact Power Modules MR

01	02	03	04	05	06	07	08
MR	1	- C180	- E67	- 10 / 10 (120)	- R5	- S286	- O1-G00
Power Module Type	Power Module Type of Motor	AC Electric motor	Junction Element	Central Manifold with Pressure range Relief Valve + Request Setting of the Relief Valve in Bar between bracket	Reversible Gears pump	Oil Tank	Mounting Position and Mounting Brackets

## General Technical Data for Compact Power Module ME and MR series

Through the years DCOC has developed a highly evolved modular system resulting in powerful, flexible and cost effective power pack range, identified as “**compact power modules**”. In its easier configuration, a “compact power module” is an assembly of electric motor, central manifold with valves, pump, oil tank and a few connection elements. The central manifold, with its built-in valves, allows to achieve a large variety of hydraulic control circuits. If more complex circuits are needed, modular integrated blocks can be added by flange mounting, or interfacing, to the central manifold to extend its capabilities.

### Typical applications

Passenger lift  
Fork lift  
Car and motorcycle lift  
Lift table  
Dumper  
Tail gate  
Scissor lift  
Gangway and davits for boats  
Material handling  
Foods machinery

### Power module selection

Choose the circuit which meets your application requirements.

Take note of all dimensions resulting from the basic components chosen for your application.

#### Note

dimensions may vary slightly and should be confirmed by DCOC, if the assembly is to be installed in a space with narrow clearance.

The tank capacity and the tank dimensions need to be large enough to assure proper pump suction: there must always be a reserve of oil in the tank when all cylinders are fully extended and avoid overflow when cylinders are fully retracted.

The tank must be evaluated also for best separation of air from oil, and for settling down oil contamination. It should be placed in a space with, at least, natural ventilation and it should permit enough heat dissipation to prevent high fluid temperature.

Select the electric motor by evaluating the power needed and the motor compliance with the heat developed during the expected run time (or “duty cycle”).

### Hydraulic fluid for compact power module

Mineral oil based hydraulic fluids suitable for hydraulic systems can be used; they should have physical lubricating and chemical properties as specified by:

MINERAL OIL BASED HYDRAULIC FLUIDS HL  
(DIN 51524 part 1)

MINERAL OIL BASED HYDRAULIC FLUIDS HL P  
(DIN 51524 part 2)

For use of environmentally friendly fluids please consult DCOC.

### Fluid viscosity, temperature range of the operating fluid, ambient temperature

The fluid viscosity should remain within the range 10 to 300 cSt (centistokes); recommended 15 to 120 cSt.

Permissive cold start viscosity is maximum 2000 cSt.

The fluid temperature should remain within the range -15°C and 80°C (5°F and 176°F).

#### Note

For compact power module with plastic tank the fluid temperature should remain within the range -15°C and 70°C (5°F and 158°F).

Ambient temperature -15°C +40°C (5°F and 104°F).

### Fluid cleanliness requirements and maintenance

We recommend a cleanliness of the operating fluid according to ISO 4406 Class 20/18/15 or cleaner. All components of the hydraulic circuit, including hoses and actuators, must be flushed and cleaned before assembling, because the compact power module has a suction filter only.

The hydraulic fluid should be replaced after the first 50 hours, and then every 1000 hours, or, at least, once a year.

### Power module installation

The mounting position (is basically un-restricted; just avoid installations that could compromise the pump suction, it is recommended to support the power module on vibration dampening blocks when the mounting structure is expected to vibrate.

### Wiring and starting-up

The wiring between battery and electric motor should be selected in order to avoid excessive voltage drop (recommended less than 1 V).

**It is strictly forbidden** to allow the backwards rotation of the pump even at the first starting: to prevent reverse

rotation, the wiring polarities must be correctly connected (except for the reversible pumps).

**Caution:** when energized, the surface temperature of the electric motor could reach temperature levels of 60-80°C (140-176°F): care should be taken to avoid any accidental contact of people with the motor surface.

#### **A.C. motors**

The tolerances on the nominal voltage are:

Single phase motor: 230V +/-5% -

Three phase motor: 230-400V +/-10%.

Protection degree : IP54 (protection against dust and water splash).

Insulation class: F (155°C) (311°F).

All motors are aluminum alloy die cast without painting.

#### **D.C. Motors**

DCOC has a wide range of D.C. motors. In the following pages you will find a selection of our standard range.

For further information about our complete range please contact our Sales department.

Some motors Ø80 have reversible rotation (see the table) and are suitable for application in CPM MR series.

All the others motors shown have clockwise rotation suitable for driving our counter clockwise gear pumps.

For each motor a diagram is shown that enables the customer to select the right pump displacement needed for the required flow and working pressure.

To be sure of selecting the best electric motor for the application, also the duty cycle has to be verified.

Following are the definitions of the type of duty cycles:

S2 = Short time duty cycle: indicate the number of minutes the motor can operate before reaching the maximum allowable temperature. After this time the motor must cool down until the ambient temperature is reached.

S3 = Intermittent duty cycle: indicate the maximum time percentage (%) based on 10 minute period within the motor can run until reaching the maximum allowable temperature. For example an S3 value of 15% = 1,5 minutes running time every 10 minutes period. For 8,5 minutes the motor is switched-off.

The S2 and S3 values are related to the current draw. On the label of motor are indicated the S2 and S3 values referred to the nominal power of the motor.

To check the S2 or S3 value at different conditions is necessary to find the value of current in the motor-pumps diagram and related it with the represented list.

All the diagrams motor-pumps are obtained at the nominal voltage of 12 or 24 Volt using fluid ISO VG 46 at 20-30°C (68-86°F).

#### **Central manifolds**

All the Central Manifolds shown in the catalogue are made in die cast aluminium alloy except the manifold code 10 for CPM MR series that is made by extruded bar. The validation of the Central Manifolds follows a life-test with 250 bar (625 psi) pulsed pressure repeated for 300.000 cycles.

#### **Built-in valves**

A wide range of cartridge valves and special plugs is available to be assembled in our Central Manifolds. The cartridge valves shown are designed for use in our Compact Power Module and are manufactured using steel with high mechanical strength. Surface treatments protect the exposed parts to the external environment. Standard seals are NBR (BUNA-N) with backup rings in PTFE. The cartridge valves with "leak proof seat design" have an average leakage of 10-15 drops/minute (< 1 cm<sup>3</sup>/minute 0.06 in<sup>3</sup>/min.) at the maximum pressure using fluid ISO VG46 at 40°C (104°F).

The validation of the cartridge valves follows a life-test at pulsed maximum pressure (indicated for each valve) repeated for 500.000 cycles.

All the solenoid cartridge valves are fitted with protective O-Rings installed between the pole tube and the coil. These O-Rings protect the internal parts from condensation and contaminants, which could cause malfunction.

All the solenoid cartridge valves are designed for operating in D.C..

Power supply in A.C. requires a connector with bridge rectifier included.

#### **External gear pumps**

DCOC offers a wide range of External Gear Pumps to cover different kind of applications. The standard version are suitable for the biggest part of applications. All the pumps are pressure compensated to guarantee the best efficiency.

#### **Oil tanks**

In this catalogue you will find a wide selection of steel and plastic tanks available as a standard product. If a special tank is required please contact our Sales Department. Steel tanks have Black paint finish and are suitable for operating temperature range -15°C / +80°C (5°F / 176°F). Plastic tanks are obtained in one piece in order to avoid welded parts that are weak points at extreme temperature and vibrations. Plastic tanks are suitable for operating temperature range -15°C / +70°C (5°F / 158°F).



**Note**

even if the plastic tank mounting system is designed to avoid oil leakage the tank must be securely anchored when fitted in mobile equipment and when subject to shocks and heavy vibrations. Please check that the anchorages do not stress or deform the tank.

**Note**

All the components shown in the catalogue ARE NOT suitable for use in potentially explosive atmosphere.

**Technical information**

Below you will find the most common equations used in hydraulics:

	<b>Common Units</b>	<b>Symbols</b>	<b>Equations</b>
<b>Flow</b>	l/min	Q	$Q = \frac{D \times n}{1000} \times 0,95$
<b>Operating pressure</b>	bar	P	$P = \frac{F}{0,1 \times A}$
<b>Internal diameter hydraulic cylinder</b>	mm	d	–
<b>Area of hydraulic cylinder</b>	mm <sup>2</sup>	A	$A = \frac{\pi \times d^2}{4}$
<b>Piston force</b>	N	F	–
<b>Drive shaft</b>	rev/min	n	–
<b>Power requirement for motor</b>	kW	N	$N = \frac{P \times Q}{612}$
<b>Pump displacement</b>	cm <sup>3</sup> /rev	D	–
<b>Torque requirement</b>	Nm	M	$M = \frac{D \times P}{62,8 \times 0,87}$

**Modular stackable elements**

Our modular system offers a wide range of standardised elements. They are divided in two main series:  
 Modular Elements “N” series: Modular blocks for different mounting position with mechanical valve or interface for CETOP valves to create parallel or series circuits.  
 Modular Elements “V” series: Modular blocks that incorporate solenoid operated cartridge valves 2,3,4 way. All the Modular Elements are made in extruded aluminum alloy.  
 In the catalogue you will find a selection of the main used models.  
 Note: To reduce the complexity of the system and optimize the available space, special Modular Elements can be designed and manufactured following the customers needs. In this case please contact our Sales Department.

**European machine directive 2006/42/CE**

According to the Machine Directive 2006/42/CE, a complete power module, as described in paragraph 15 and made available to the European market, enters into the definition of “partly completed machinery”.  
 Instead, the power module sub-assemblies (motor, pump, reservoir, central manifold,...), when not assembled into a complete power pack, are considered “components” which can be employed in a “machinery” or a “partly completed machinery”. In this case, the DCOC components and sub-assemblies must be fitted in compliance with all the relevant technical data sheet applicable to the product, and shall not be operated, adjusted or disassembled before the complete machinery where they are incorporated has been declared to be in compliance with the Machine Directive 2006/42/CE.

## Compact Power Module Type

### ME

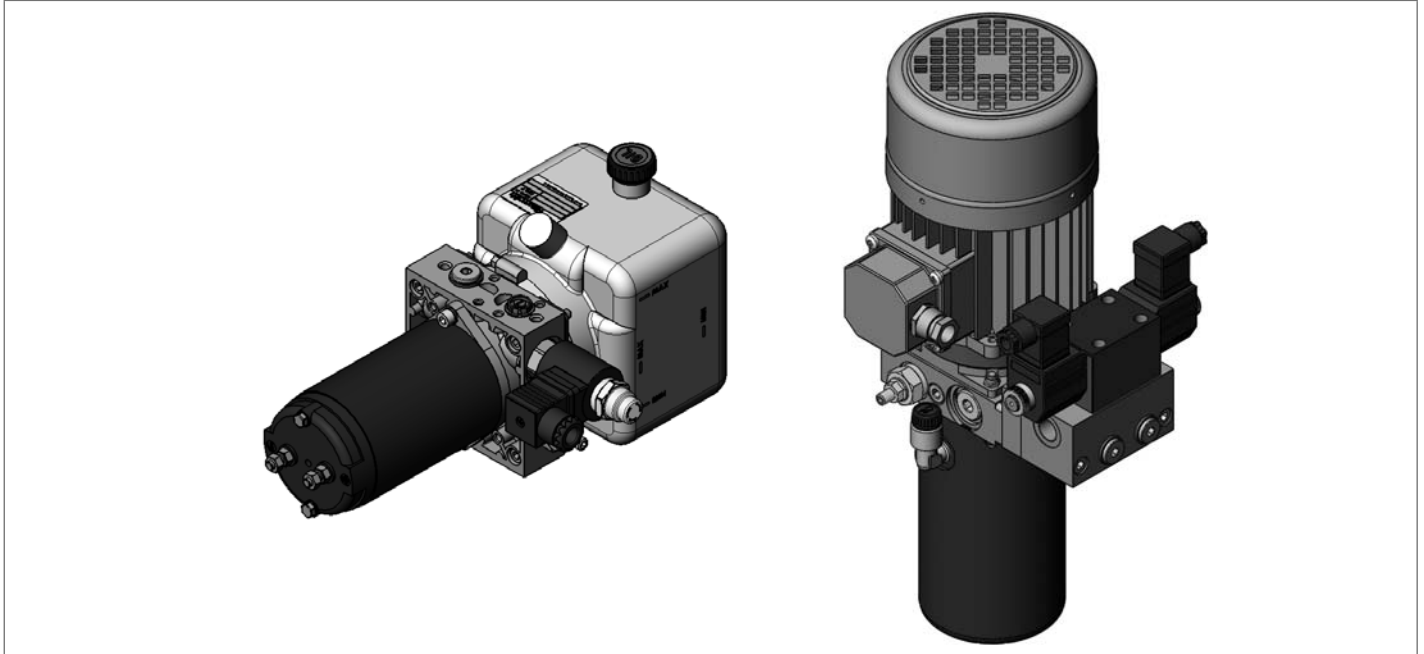
#### Smallest overall dimensions.

DC motors up to 2200 W (2,95 hp).

AC motors up to 1100 W (1,48 hp).

Pump displacement up to 1,5 cm<sup>3</sup> (0,09 inch<sup>3</sup>).

Pressure up to 230 bar (3336 psi).



### Reversible Type **MR series**

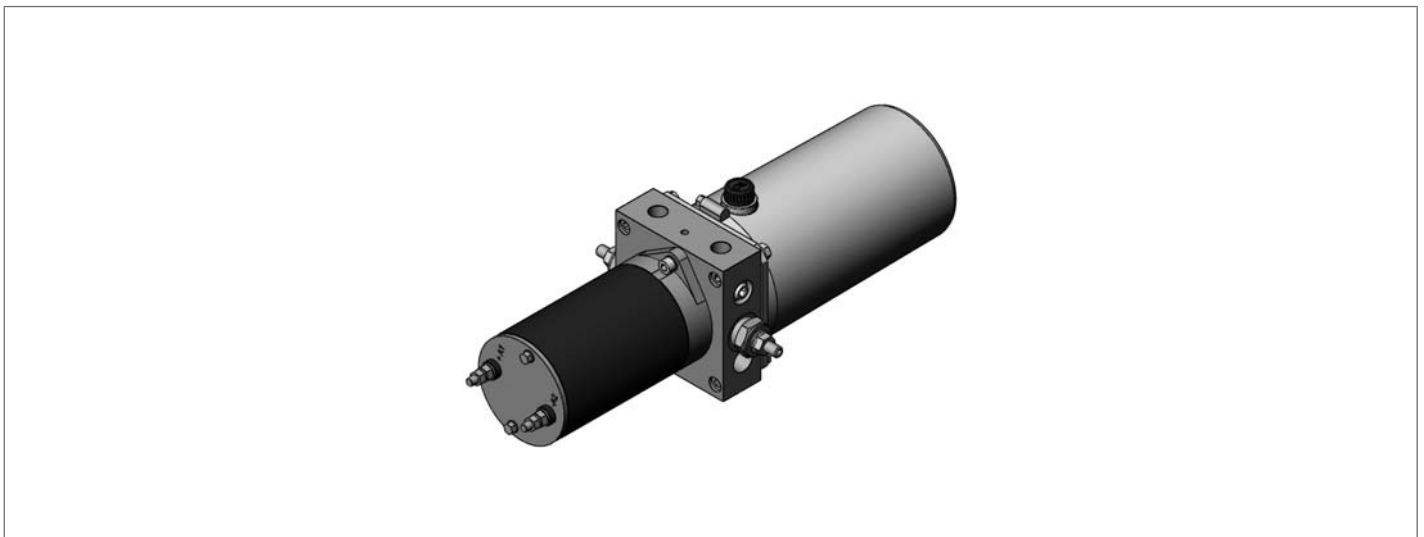
#### Smallest overall dimensions.

DC motors up to 800 W (1,1 hp).

AC motors up to 370 W (0,5 hp).

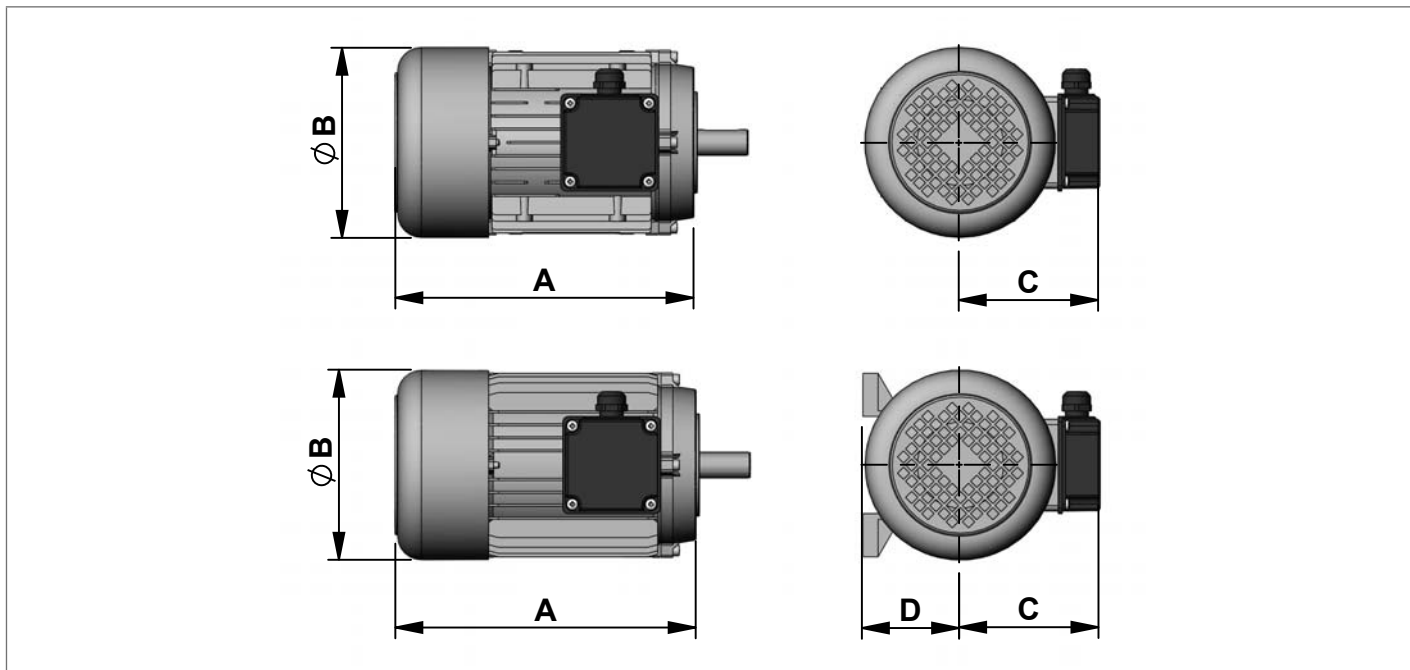
Pump displacement up to 1,5 cm<sup>3</sup> (0,09 inch<sup>3</sup>).

Pressure up to 190 bar (2756 psi).



**A.C. Electric Motor Standard Flange**

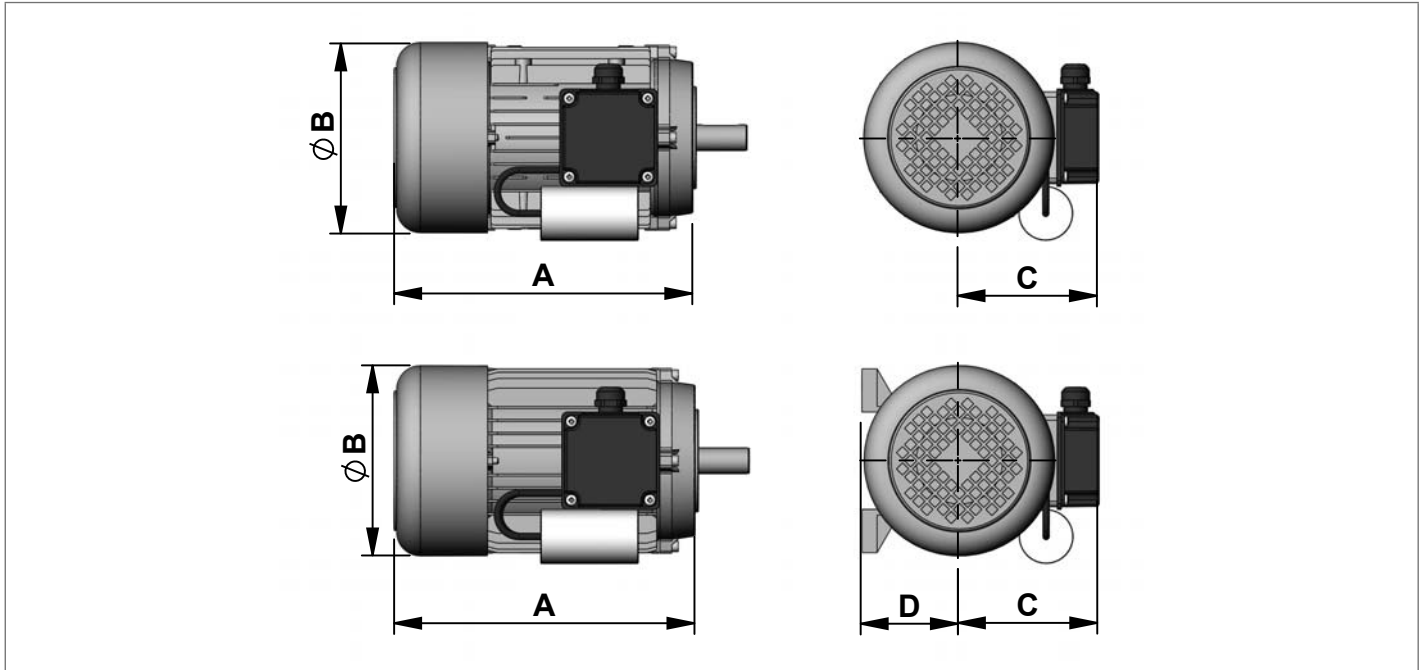
Standard A.C. Motors in B14 form.

**4 Poles Three Phase**

Current Motors 230/400V 50Hz 278-/480V 60Hz Form B14 Protection IP54 (1450 rpm at 50Hz)

Code	Type	Material Number	Power [kW]	Power [hp]	Size IEC	Duty Cycle	A mm (inch)	ØB mm (inch)	C mm (inch)	D mm (inch)	Efficiency Classe
400	C1622S1107	R932000308	0,09	0,12	56	S1	169 (6,65)	110 (4,33)	95 (3,74)	56 (2,20)	-
401	C162266000	R932000490	0,18	0,25	63	S1	189 (7,44)	124 (4,88)	104 (4,09)	63 (2,48)	-
402	C1622670DR	R932008027	0,25	0,35	71	S1	218 (8,58)	140 (5,51)	109 (4,29)	71 (2,79)	-
403	C1622680DR	R932006105	0,37	0,5	71	S1	212 (8,35)	140 (5,51)	113 (4,45)	71 (2,79)	-
404	C1622150DR	R932006106	0,55	0,75	80	S1	250 (9,84)	156 (6,14)	125 (4,92)	80 (3,15)	-
405	C1622160DR	R932006107	0,75	1	80	S2 60MIN.	250 (9,84)	156 (6,14)	125 (4,92)	80 (3,15)	IE1

Standard A.C. Motors in B14 form.



On request motors in B34 form are available. In this cases, please put “B34” after the code of the motor when filling in the description. Example “408MB34”.

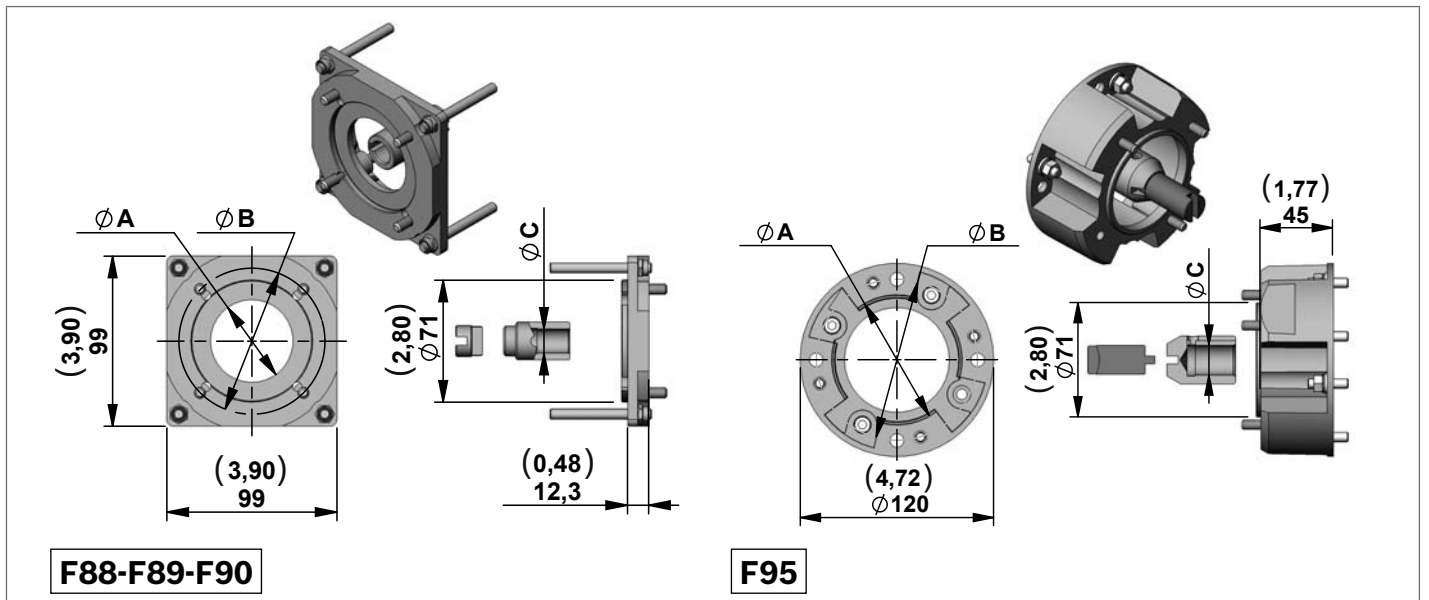
#### 4 Poles Single Phase

Current Motors 230V 50Hz Form B14 Protection IP54 (1450 rpm at 50Hz)

Code	Type	Material Number	Power [kW]	Power [hp]	Size IEC	Duty Cycle	A mm (inch)	ØB mm (inch)	C mm (inch)	D mm (inch)
<b>401M</b>	C162270000	R932000495	0,18	0,25	63	S1	189 (7,44)	124 (4,88)	104 (4,09)	63 (2,48)
<b>402M</b>	C162271000	R932000496	0,25	0,35	71	S1	218 (8,58)	140 (5,51)	109 (4,29)	71 (2,80)
<b>403M</b>	C162272000	R932000497	0,37	0,5	71	S1	212 (8,35)	140 (5,51)	113 (4,45)	71 (2,80)
<b>404M</b>	C162239000	R932000471	0,55	0,75	80	S1	250 (9,84)	156 (6,14)	125 (4,92)	80 (3,15)
<b>405M</b>	C162240000	R932000472	0,75	1	80	S1	250 (9,84)	156 (6,14)	125 (4,92)	80 (3,15)

#### Note

The electric motors with standard flange shown in this pages are delivered by different certified suppliers. This means the indicated dimensions could change a little, depending on which manufacturer will be assembled. On the CPM the choice of the manufacturer is based on our stock availability.

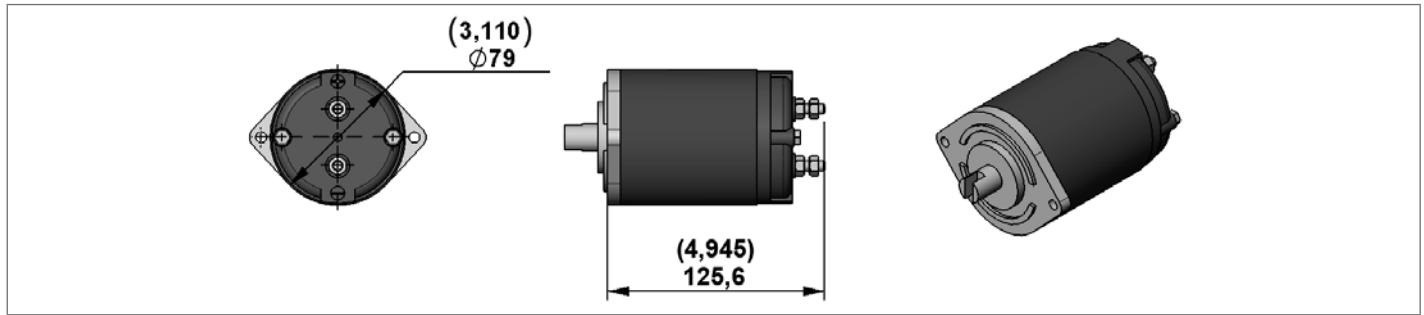
**Junction Elements for A.C. Electric Motor Standard Flange****Junction Elements for manifolds ME - MR series (STD COUPLINGS)**

Code	Motor Codes	Size IEC	A mm (inch)	B mm (inch)	C mm (inch)	H mm (inch)	Type	Material Number
<b>F88</b>	400	56	50 (1,97)	65 (2,56)	9 (0,35)	12,5 (0,49)	K01X3970TR097	R932002068
<b>F89</b>	401-401M	63	60 (2,36)	75 (2,95)	11 (0,43)	12,5 (0,49)	K01X3970TR098	R932002069
<b>F90</b>	402-403-402M-403M	71	70 (2,76)	85 (3,35)	14 (0,55)	12,5 (0,49)	K01X3970TR099	R932002070
<b>F95</b>	404-405 404M-405M	80	80 (3,15)	100 (3,94)	19 (0,75)	-	K01X3970TR100	R932002071

**Note**

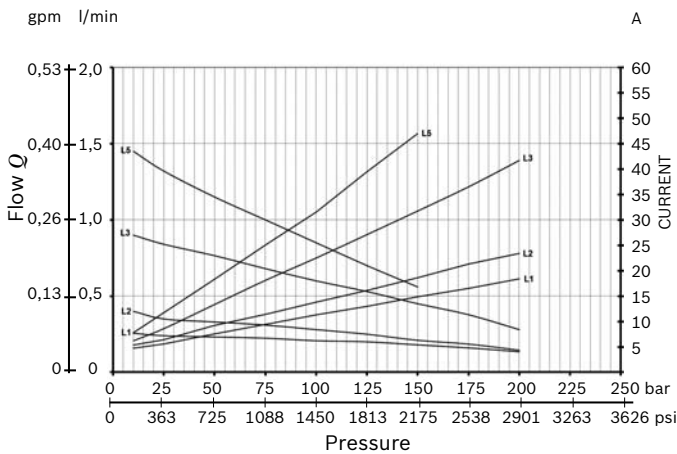
The junction element F95 is not usable with manifold MR serie.

### D.C. Electric Motors Standard Performance

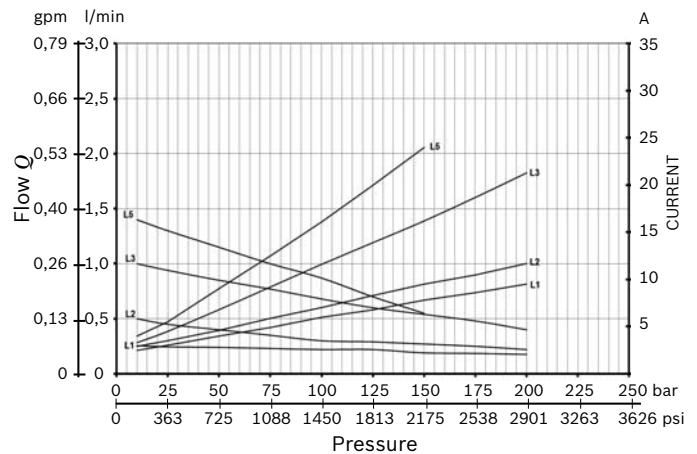


Code	Voltage [V]	Power [W]	Duty Cycle S3% S2 min.	Thermal Switch	UL Certified	Protection index	Direction of rotation	Type	Material Number
<b>C177</b>	12	150	10% 2,5min	NO	YES	IP 54	<->	C1620S1077M	R930056881
<b>C178</b>	24	150	10% 2,5min	NO	YES	IP 54	<->	C1620S1078M	R930056882

#### Electric Motor C177 (12V – 150W) Diagrams



#### Electric Motor C178 (24V – 150W) Diagrams



#### S2 - S3 performance

Amps	S2 (min.)	S3(%) (10 min.)
<b>20</b>	8	20%
<b>30</b>	4	8%
<b>50</b>	1,5	3%

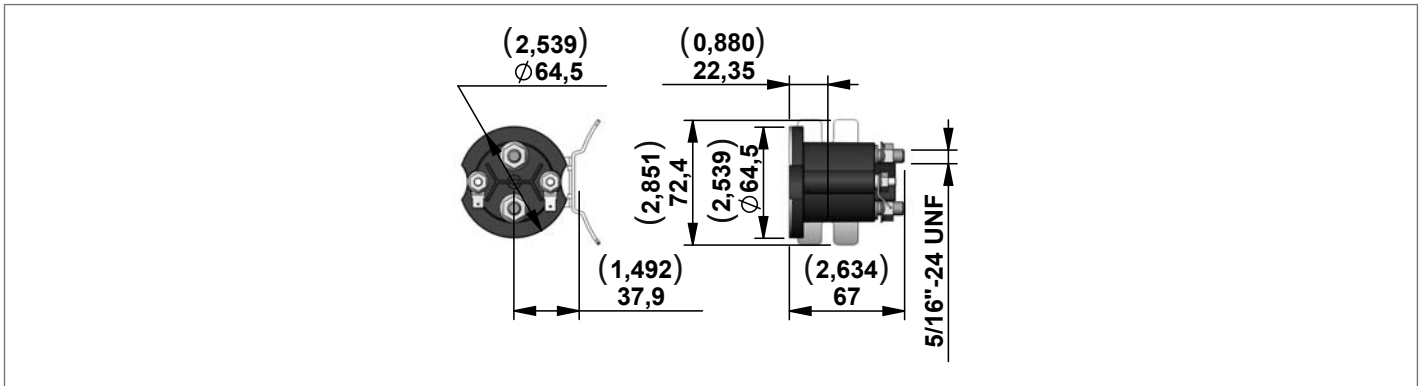
#### S2 - S3 performance

Amps	S2 (min.)	S3(%) (10 min.)
<b>10</b>	4	10%
<b>20</b>	1,5	3%

#### Note

The values of the curves may change slightly depending on the brand / model of pump that is mounted.

### Relay



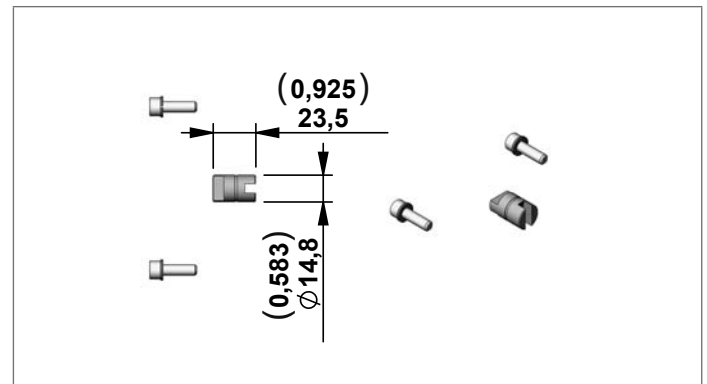
#### Starting Relay **Standard Performance**

Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
A	Without Relay						
G	12	150	350	IP66	NO	C165534000	R932000692
H	24	150	350	IP66	NO	C165535000	R932000693
L	24	150	350	IP66	YES	C165540000	R932008749

### Kit Motor + Relay



### Junction Elements for D.C. Electric Motor

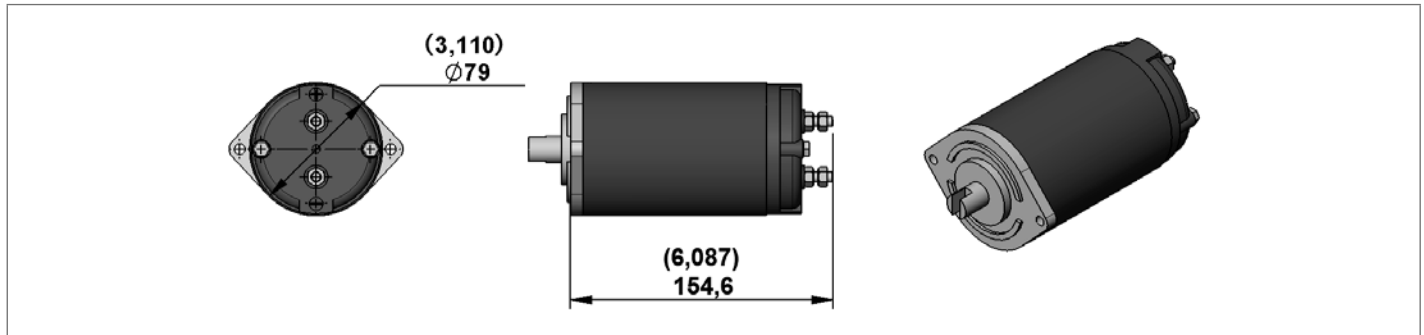


#### Junction Elements for manifolds **ME - MR series**

Motor + Relay	Type	Material Number
<b>C177+relay 12V STANDARD performance</b>	K396812177MPSF	R930060797
<b>C178+relay 24V STANDARD performance</b>	K396824178MPSF	R930061384
<b>C178+relay 24V STANDARD performance UL certified</b>	K396824178MPSUL	R930061385

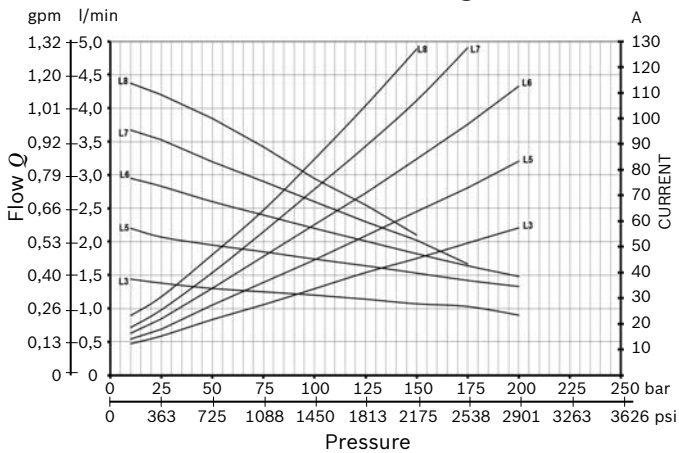
Code	Type	Material Number
<b>E67</b>	K01X3970TR095	R932002066

### D.C. Electric Motors Standard Performance

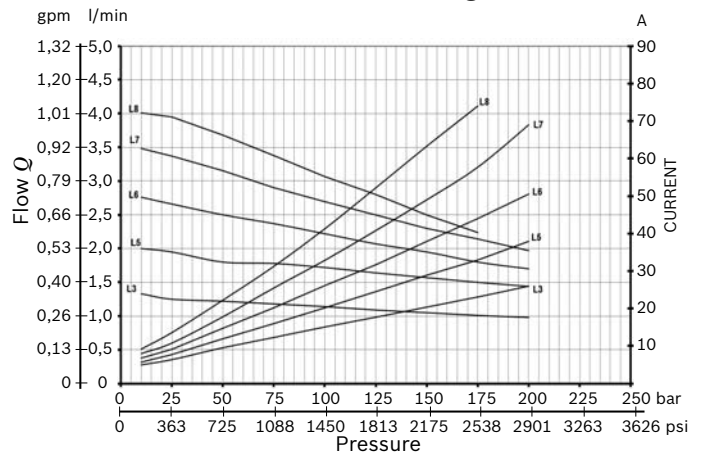


Code	Voltage [V]	Power [W]	Duty Cycle S3% S2 min.	Thermal Switch	UL Certified	Protection index	Direction of rotation	Type	Material Number
<b>C179</b>	12	500	10% 2,5min	NO	YES	IP 54	<->	C1620S1079M	R930056883
<b>C180</b>	24	500	10% 2,5min	NO	YES	IP 54	<->	C1620S1080M	R930056884

**Electric Motor C179 (12V – 500W) Diagrams**



**Electric Motor C180 (24V – 500W) Diagrams**



**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>50</b>	10	25 %
<b>75</b>	5	10 %
<b>100</b>	2	3 %

**S2 - S3 performance**

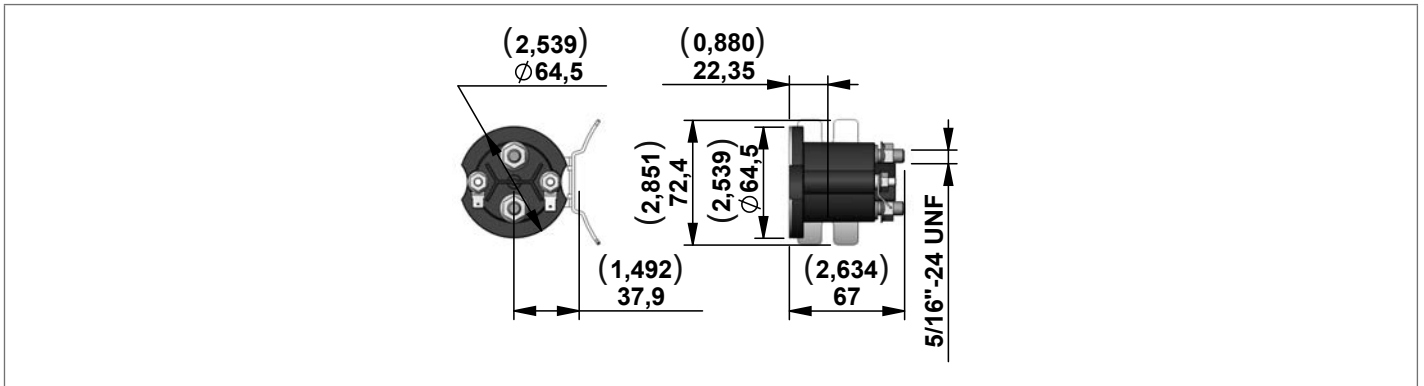
Amps	S2 (min.)	S3(%) (10 min.)
<b>20</b>	10	25 %
<b>40</b>	5	10 %
<b>60</b>	2	2 %

**Note**

The values of the curves may change slightly depending on the brand / model of pump that is mounted.



### Relay



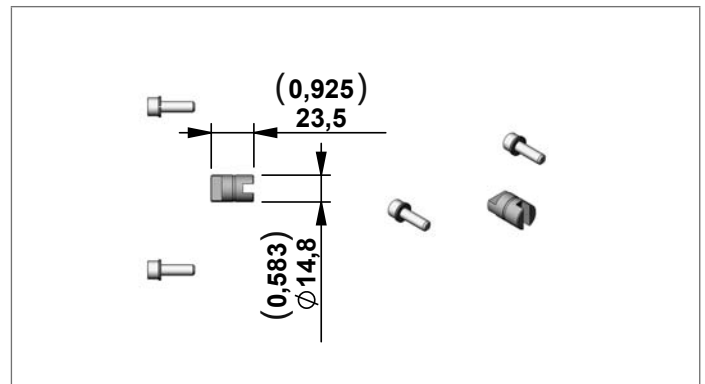
#### Starting Relay **Standard Performance**

Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
A	Without Relay						
G	12	150	350	IP66	NO	C165534000	R932000692
H	24	150	350	IP66	NO	C165535000	R932000693
L	24	150	350	IP66	YES	C165540000	R932008749

### Kit Motor + Relay



### Junction Elements for D.C. Electric Motor

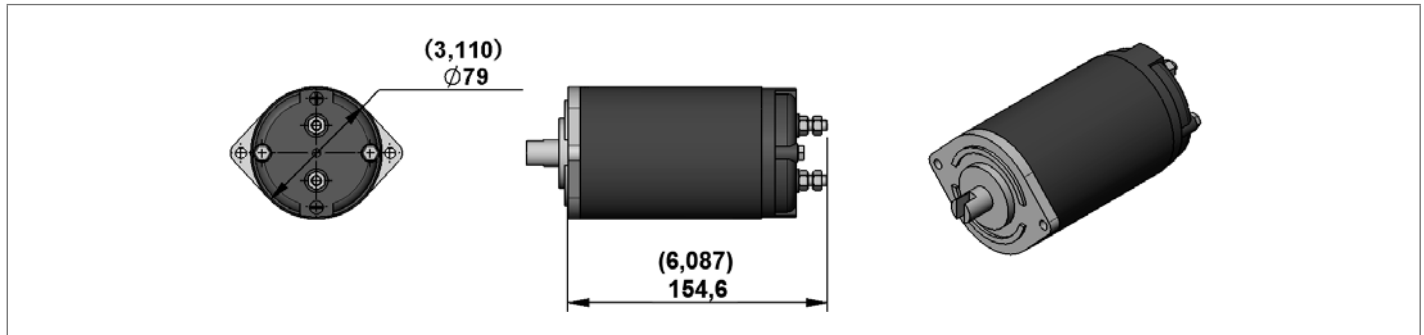


#### Junction Elements for manifolds **ME - MR series**

Motor + Relay	Type	Material Number
<b>C179+relay 12V STANDARD performance</b>	K396812179MPSF	R930061386
<b>C180+relay 24V STANDARD performance</b>	K396824180MPSF	R930061387
<b>C180+relay 24V STANDARD performance UL certified</b>	K396824180MPSUL	R930061388

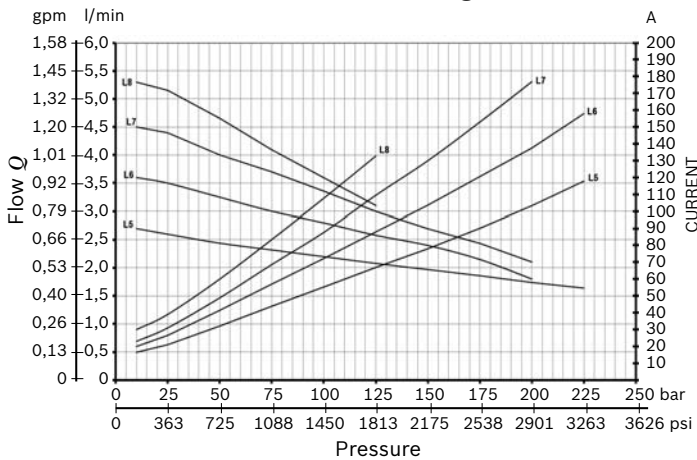
Code	Type	Material Number
<b>E67</b>	K01X3970TR095	R932002066

### D.C. Electric Motors Standard Performance

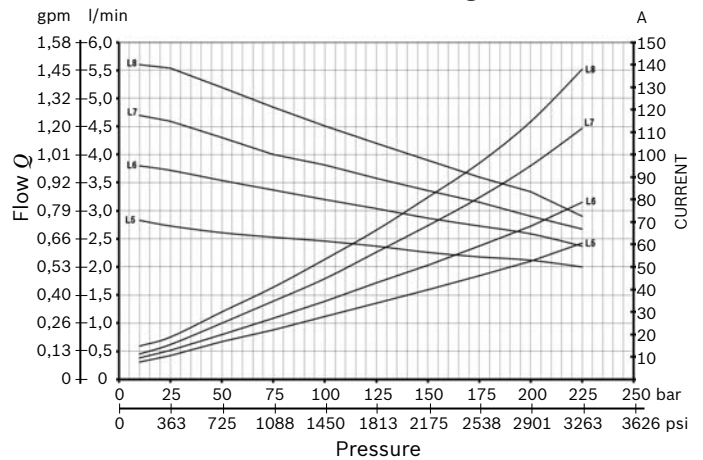


Code	Voltage [V]	Power [W]	Duty Cycle S3% S2 min.	Thermal Switch	UL Certified	Protection index	Direction of rotation	Type	Material Number
<b>C181</b>	12	800	10% 2,5min	NO	YES	IP 54	<->	C1620S1081M	R930056885
<b>C182</b>	24	800	10% 2,5min	NO	YES	IP 54	<->	C1620S1082M	R930056886

**Electric Motor C181 (12V – 800W) Diagrams**



**Electric Motor C182 (24V – 800W) Diagrams**



**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>50</b>	10	25 %
<b>100</b>	5	10 %
<b>150</b>	1,5	3 %

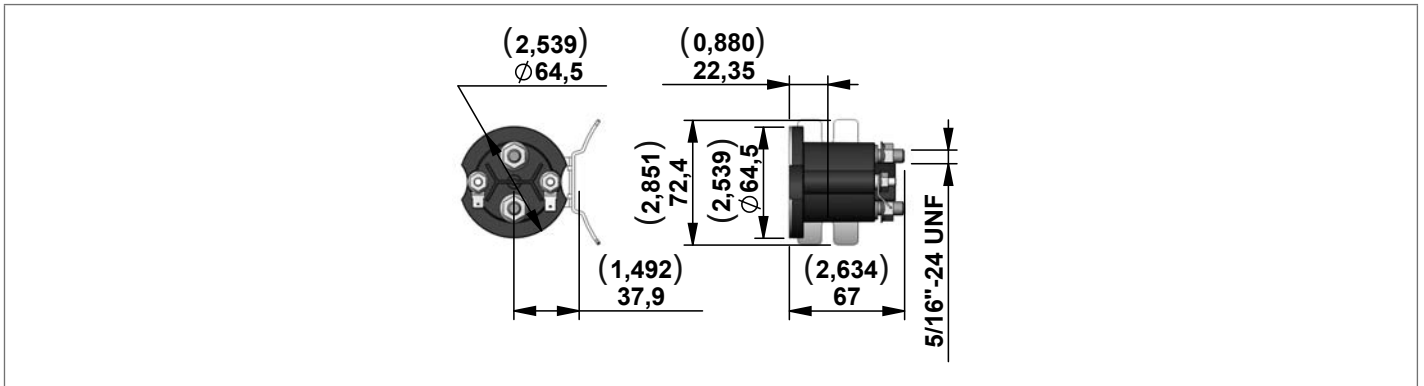
**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>25</b>	10	25 %
<b>50</b>	5	10 %
<b>75</b>	1,5	3 %

**Note**

The values of the curves may change slightly depending on the brand / model of pump that is mounted.

### Relay



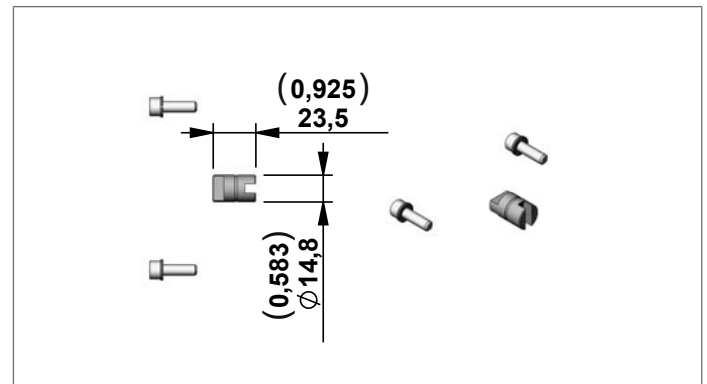
#### Starting Relay **Standard Performance**

Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
A	Without Relay						
G	12	150	350	IP66	NO	C165534000	R932000692
H	24	150	350	IP66	NO	C165535000	R932000693
L	24	150	350	IP66	YES	C165540000	R932008749

### Kit Motor + Relay



### Junction Elements for D.C. Electric Motor

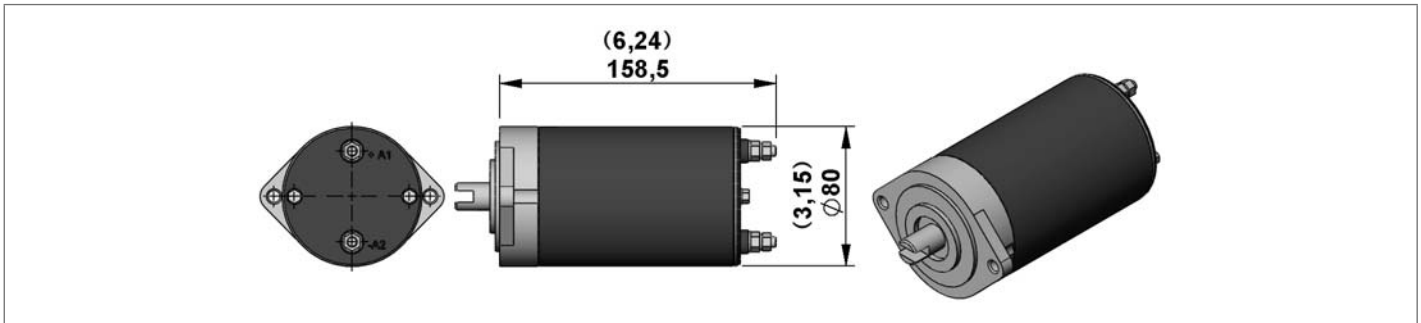


#### Junction Elements for manifolds **ME - MR series**

Motor + Relay	Type	Material Number
<b>C181+relay 12V</b> STANDARD performance	K396812181MPSF	R930061389
<b>C182+relay 24V</b> STANDARD performance	K396824182MPSF	R930061390
<b>C182+relay 24V</b> STANDARD performance UL certified	K396824182MPSUL	R930061391

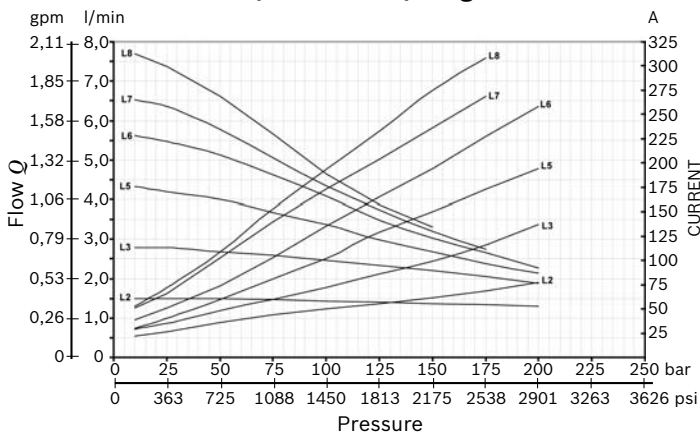
Code	Type	Material Number
<b>E67</b>	K01X3970TR095	R932002066

### D.C. Electric Motors Standard Performance

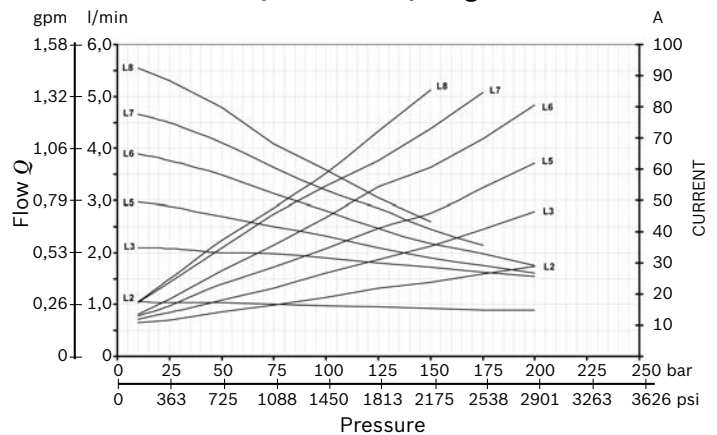


Code	Voltage [V]	Power [W]	Duty Cycle S3% S2 min.	Thermal Switch	UL Certified	Protection index	Direction of rotation	Type	Material Number
<b>C123</b>	12	800	9% 4min	YES	NO	IP 54	Clockwise	C1620S1023	R932000220
<b>C122</b>	24	800	10% 4min	YES	NO	IP 54	Clockwise	C1620S1022	R932000219

**Electric Motor C123 (12V – 800W) Diagrams**



**Electric Motor C122 (24V – 800W) Diagrams**



**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>50</b>	14	35 %
<b>100</b>	6	12 %
<b>150</b>	2	3 %

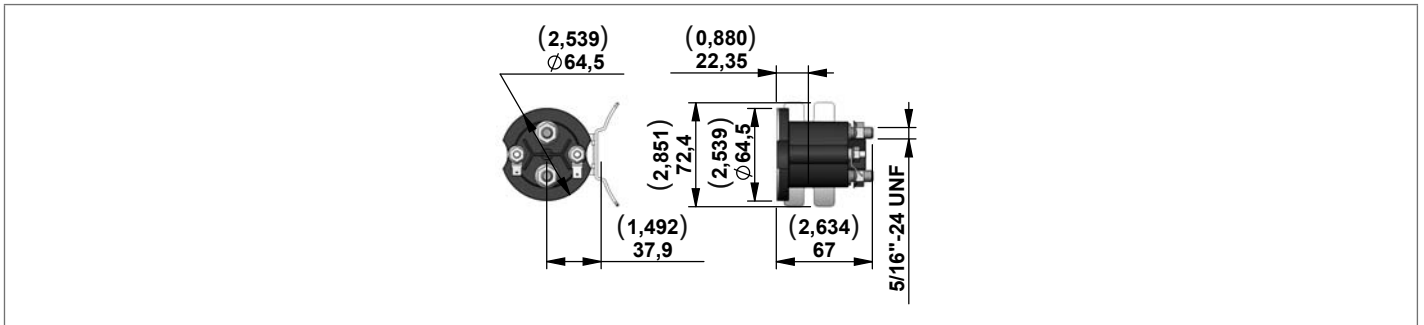
**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>25</b>	16	35 %
<b>50</b>	7	15 %
<b>75</b>	2	3 %

**Note**

The values of the curves may change slightly depending on the brand / model of pump that is mounted.

### Relay



#### Starting Relay **Standard Performance**

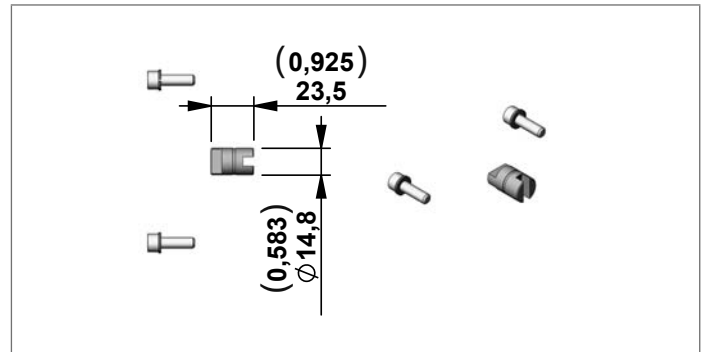
Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
<b>A</b>	Without Relay						
<b>G</b>	12	150	350	IP66	NO	C165534000	R932000692
<b>H</b>	24	150	350	IP66	NO	C165535000	R932000693

### Kit Motor + Relay



Motor + Relay	Type	Material Number
<b>C123+relay 12V STANDARD performance</b>	K396812123PSF	R930051984
<b>C122+relay 24V STANDARD performance</b>	K396824122PSF	R930051967

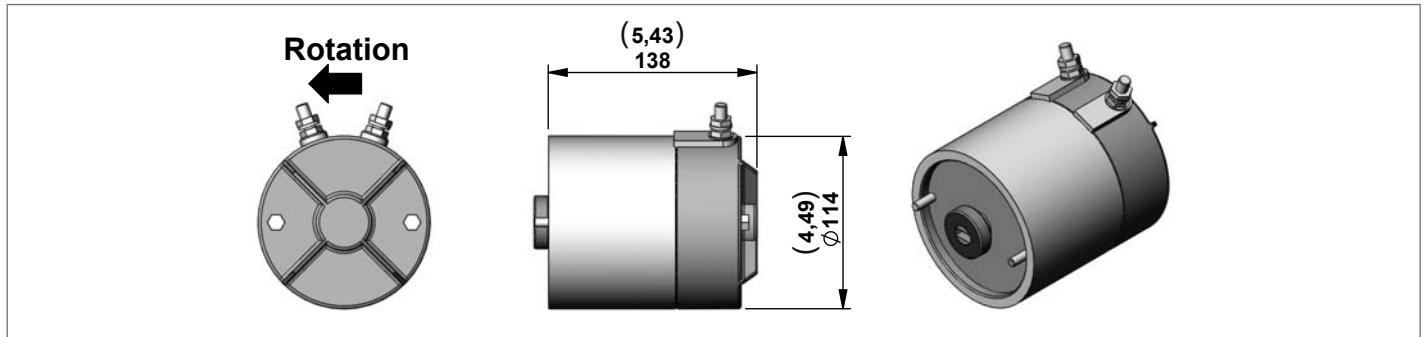
### Junction Elements for D.C. Electric Motor



#### Junction Elements for manifolds **ME - MR series**

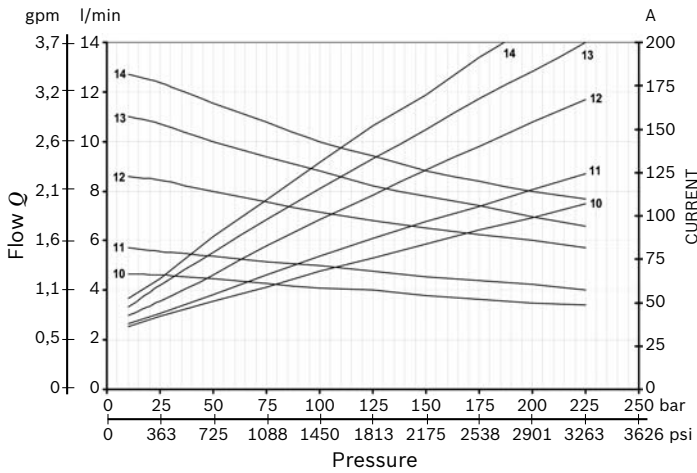
Code	Type	Material Number
<b>E67</b>	K01X3970TR095	R932002066

**D.C. Electric Motors Standard Performance**



Code	Voltage (V)	Power (W)	Duty Cycle S3% S2 min.	Thermal Switch	UL Certified	Protection index	Type	Material Number
<b>C200</b>	24	1200	4,5% 1,2 min	no	yes	IP 54	C1620S1200	R930059616

**Electric Motor C200 (24V – 1300W) Diagrams**

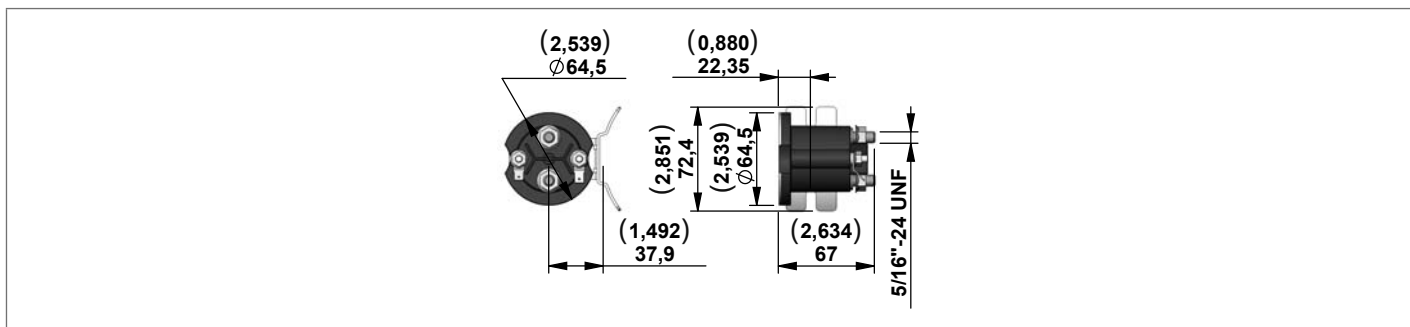


**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>75</b>	6	17%
<b>100</b>	4	11%
<b>125</b>	2,4	7,5%
<b>150</b>	1,5	5%
<b>175</b>	1	3,5%

**Note**  
The values of the curves may change slightly depending on the brand / model of pump that is mounted.

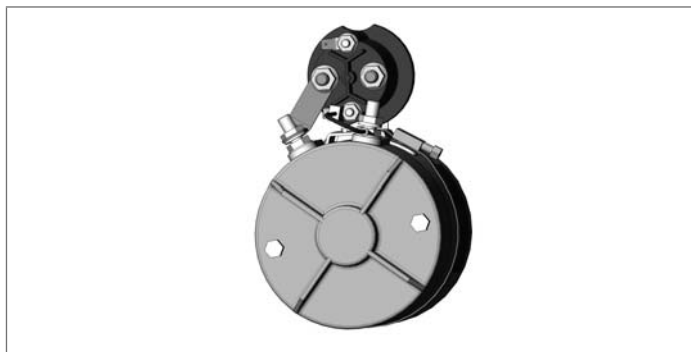
### Relay



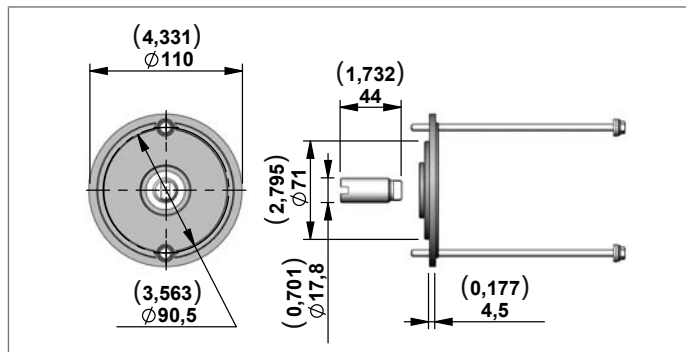
#### Starting Relay **Standard Performance**

Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
<b>A</b>	Without Relay						
<b>H</b>	24	150	350	IP66	NO	C165535000	R932000693
<b>L</b>	24	150	350	IP66	YES	C165540000	R932008749

### Kit Motor + Relay



### Junction Elements for D.C. Electric Motor



#### Junction Elements for manifolds **ME**

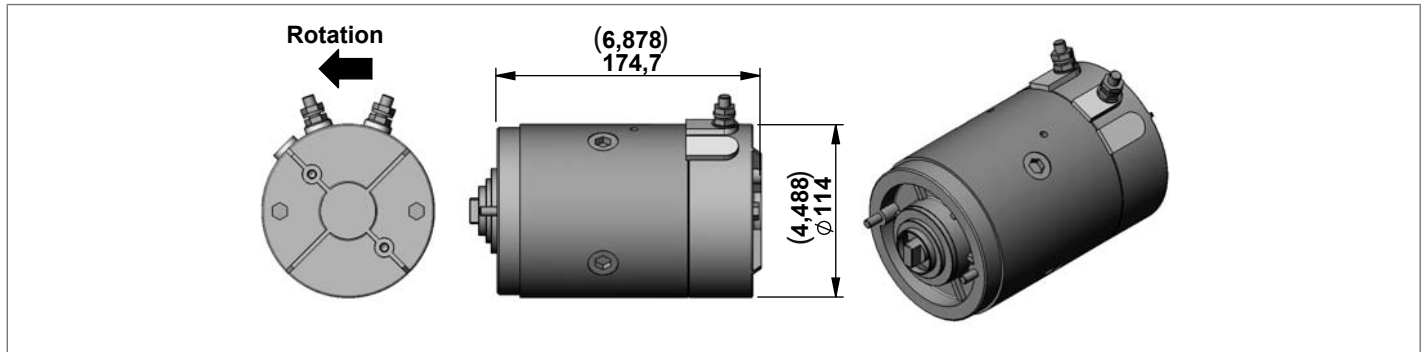
Motor + Relay	Type	Material Number
<b>C200+relay 24V STANDARD performance</b>	K396824200PSF	R930071143
<b>C200+relay 24V STANDARD performance UL certified</b>	K396824200PSFUL	R930071144

Code	Type	Material Number
<b>E71</b>	K01X3970TR109	R932009727

#### Note

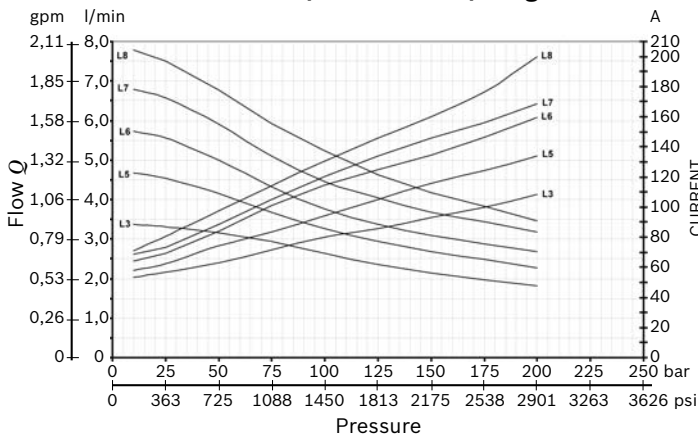
Change the standard screws supplied with the motor with the screws of the junction element E71.

**D.C. Electric Motors Standard Performance**

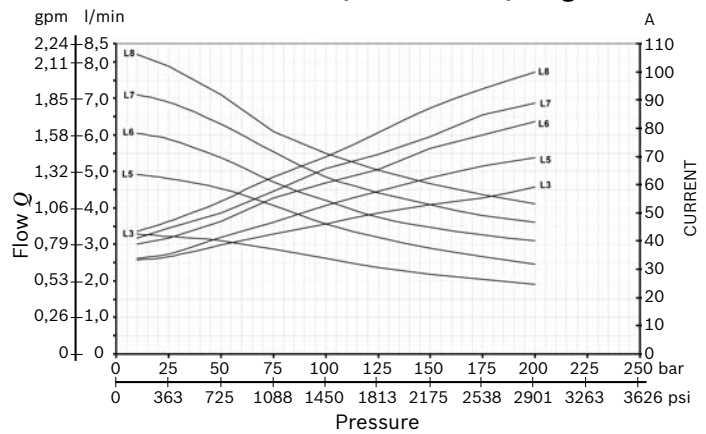


Code	Voltage [V]	Power [W]	Duty Cycle S3% S2 min.	Thermal Switch	UL Certified	Protection index	Type	Material Number
<b>C190</b>	12	1600	5% 2 min	no	yes	IP 54	C1620S1090	R930056392
<b>C191</b>	12	1600	5% 2 min	yes	yes	IP 54	C1620S1091	R930056391
<b>C192</b>	24	2200	5% 2 min	no	yes	IP 54	C1620S1092	R930056390
<b>C193</b>	24	2200	5% 2 min	yes	yes	IP 54	C1620S1093	R930056389

**Electric Motor C190-191 (12V - 1600W) Diagrams**



**Electric Motor C192 - C193 (24V - 2200W) Diagrams**



**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>150</b>	5,5	12%
<b>200</b>	3,5	8%
<b>250</b>	2	6%
<b>300</b>	1,5	4%
<b>350</b>	1	3%

**S2 - S3 performance**

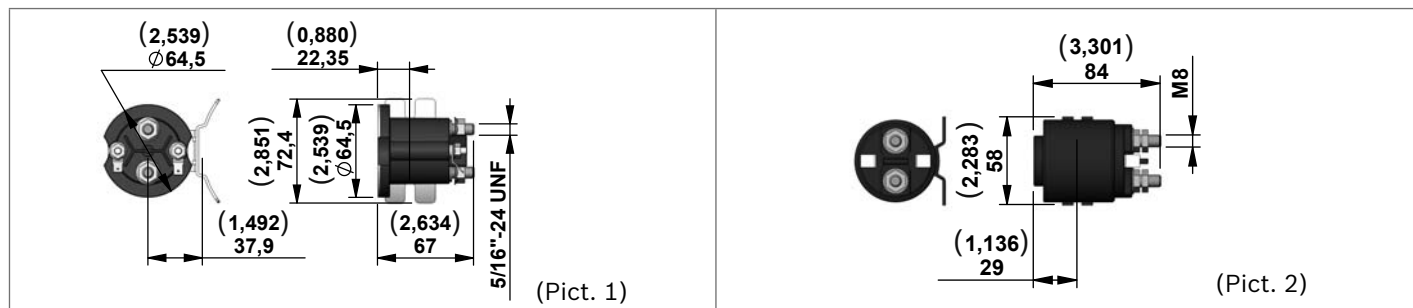
Amps	S2 (min.)	S3(%) (10 min.)
<b>75</b>	5	12%
<b>100</b>	3	7%
<b>125</b>	1,8	5%
<b>150</b>	1	4%
<b>175</b>	0,7	2,5%

**Note**

The values of the curves may change slightly depending on the brand / model of pump that is mounted.



### Relay



Starting Relay **Standard Performance** (Pict. 1)

Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
A	Without Relay						
G	12	150	350	IP66	NO	C165534000	R932000692
H	24	150	350	IP66	NO	C165535000	R932000693
L	24	150	350	IP66	YES	C165540000	R932008749

Starting Relay **High Performance** (silver plate contact) (Pict. 2)

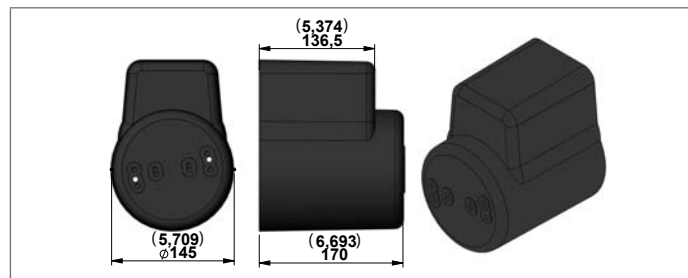
Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
A	Without Relay						
C	12	150	350	IP54	NO	C165524000	R932000690
E	24	150	350	IP54	NO	C165525000	R932000691

### Kit Motor + Relay



Motor + Relay	Type	Material Number
<b>C190+relay 12V STANDARD performance</b>	K396812190PSCUF	R930034093
<b>C190+relay 12V HIGH performance</b>	K396812190C	R930034094
<b>C191+relay 12V STANDARD performance</b>	K396812191PSCUF	R930034095
<b>C191+relay 12V HIGH performance</b>	K396812191C	R930034097
<b>C192+relay 24V STANDARD performance</b>	K396824192PSCUF	R930035261
<b>C192+relay 24V STANDARD performance UL certified</b>	K396824192PSUL	R930034098
<b>C192+relay 24V HIGH performance</b>	K396824192E	R930034101
<b>C193+relay 24V STANDARD performance</b>	K396824193PSCUF	R930034102
<b>C193+relay 24V STANDARD performance UL certified</b>	K396824193PSUL	R930035112
<b>C193+relay 24V HIGH performance</b>	K396824193E	R930035252

### Plastic Protection

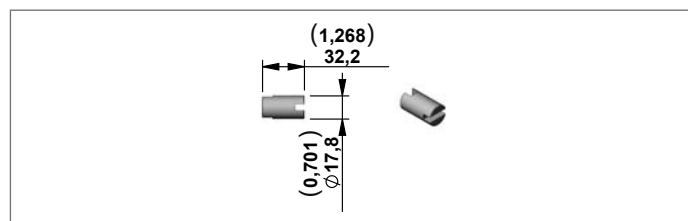


Code	Type	Material Number
0	Without Protection -	-
1	With Protection	K229701000 R932002246

Kit for assembly plastic protection

Type	Material Number
K01K211565000	R930059147

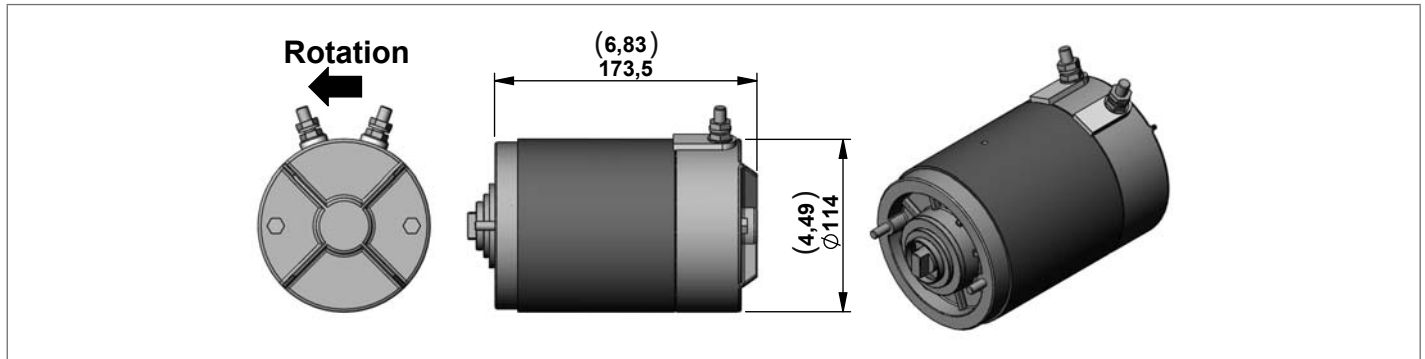
### Junction Elements for D.C. Electric Motor



Junction Elements for manifolds **ME** series

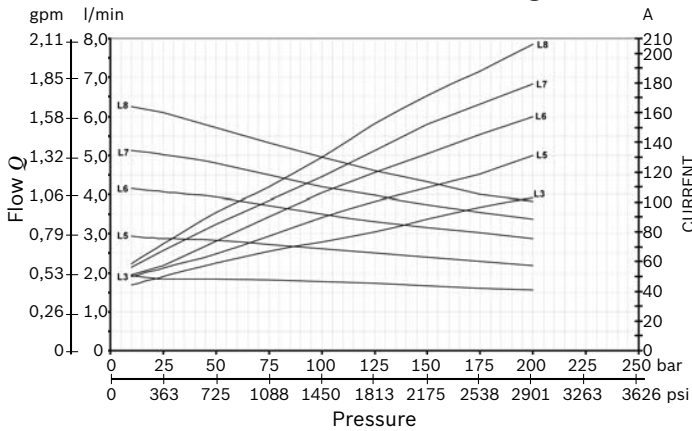
Code	Type	Material Number
<b>E31</b>	K01K3970TR008	R932001907

### D.C. Electric Motors High Performance

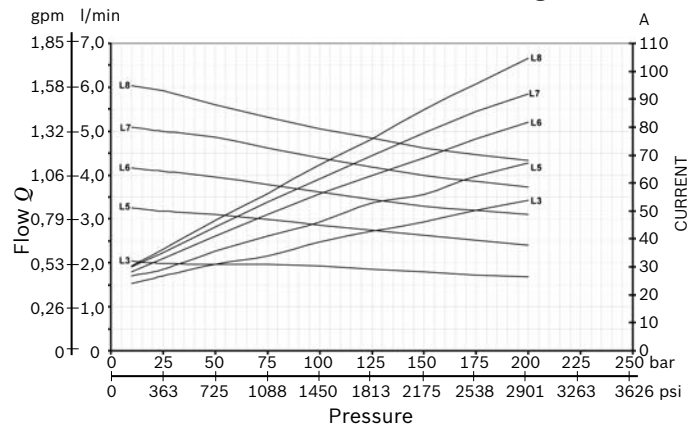


Code	Voltage [V]	Power [W]	Duty Cycle S3% S2 min.	Thermal Switch	UL Certified	Protection index	Type	Material Number
<b>C91</b>	12	1600	7,5% 3 min	NO	NO	IP 54	C162090000	R932000272
<b>C102</b>	12	1600	7,5% 3 min	YES	NO	IP 54	C1620S1002	R932000201
<b>C92</b>	24	2200	4,5% 1,2 min	NO	NO	IP 54	C162091000	R932000273
<b>C103</b>	24	2200	4,5% 1,2 min	YES	NO	IP 54	C1620S1003	R932000202

**Electric Motor C91-C102 (12V - 1600W) Diagrams**



**Electric Motor C92-C103 (24V - 2200W) Diagrams**



**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>150</b>	5,5	12%
<b>200</b>	3,5	8%
<b>250</b>	2	6%
<b>300</b>	1,5	4%
<b>350</b>	1	3%

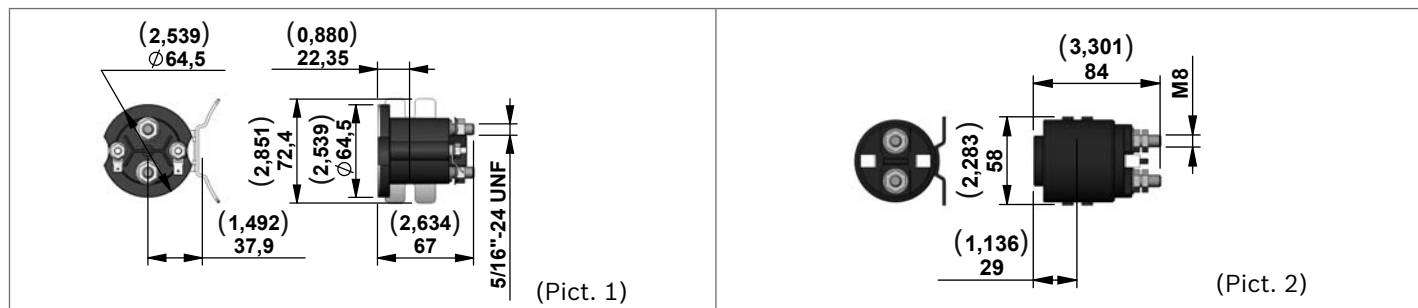
**S2 - S3 performance**

Amps	S2 (min.)	S3(%) (10 min.)
<b>75</b>	5	12%
<b>100</b>	3	7%
<b>125</b>	1,8	5%
<b>150</b>	1	4%
<b>175</b>	0,7	2,5%

**Note**

The values of the curves may change slightly depending on the brand / model of pump that is mounted.

### Relay



Starting Relay **Standard Performance** (Pict. 1)

Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
A	Without Relay						
G	12	150	350	IP66	NO	C165534000	R932000692
H	24	150	350	IP66	NO	C165535000	R932000693

Starting Relay **High Performance** (silver plate contact) (Pict. 2)

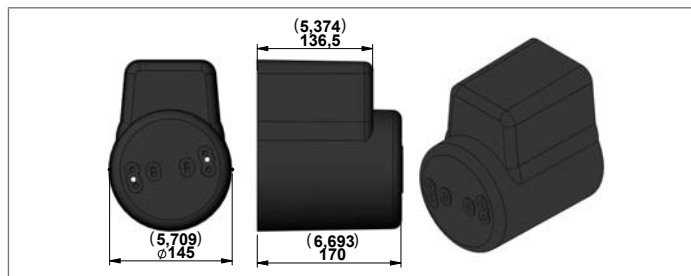
Code	Voltage [V]	Nominal Current [A]	Short time Current [A]	Protection INDEX	UL Certified	Type	Material Number
A	Without Relay						
C	12	150	350	IP54	NO	C165524000	R932000690
E	24	150	350	IP54	NO	C165525000	R932000691

### Kit Motor + Relay



Motor + Relay	Type	Material Number
<b>C91+relay 12V</b> <b>STANDARD performance</b>	K39681291PSCUF	R932007960
<b>C91+relay 12V</b> <b>HIGH performance</b>	K39681291CF	R932002749
<b>C102+relay 12V</b> <b>STANDARD performance</b>	K396812102PSCUF	R932007969
<b>C102+relay 12V</b> <b>HIGH performance</b>	K396812102CF	R932002715
<b>C92+relay 24V</b> <b>STANDARD performance</b>	K39682492PSCUF	R932007961
<b>C92+relay 24V</b> <b>HIGH performance</b>	K39682492EF	R932002818
<b>C103+relay 24V</b> <b>STANDARD performance</b>	K396824103PSCUF	R932007968
<b>C103+relay 24V</b> <b>HIGH performance</b>	K396824103EF	R932002771

### Plastic Protection

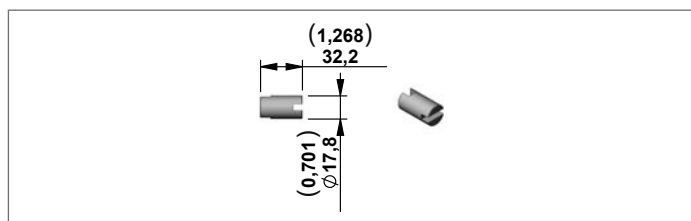


Code	Type	Material Number
0	Without Protection -	-
1	With Protection	K229701000 R932002246

Kit for assembly plastic protection

Type	Material Number
K01K211518000	R932009439

### Junction Elements for D.C. Electric Motor

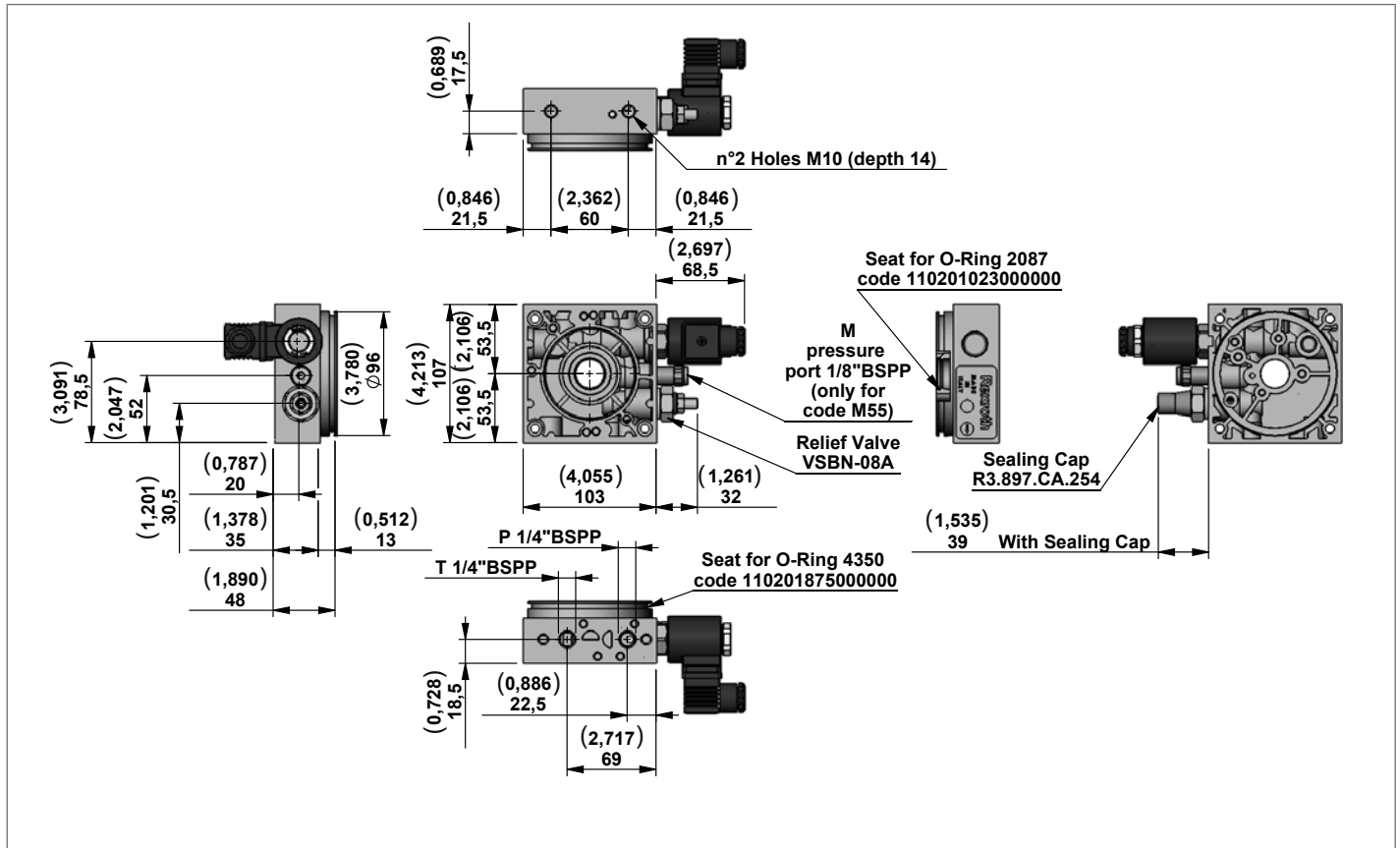


Junction Elements for manifolds **ME** series

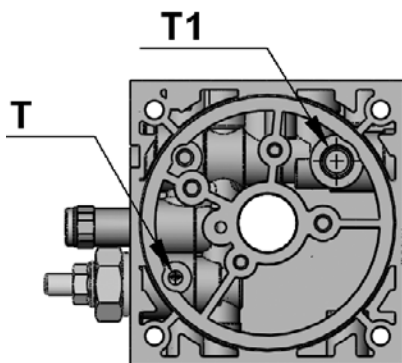
Code	Type	Material Number
<b>E31</b>	K01K3970TR008	R932001907

## Central Manifold ME

### M52 - M55

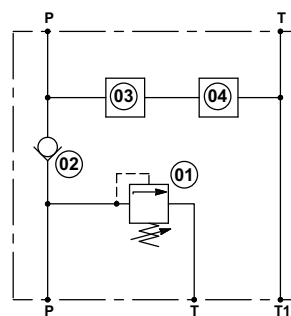


### View Manifold Tank side

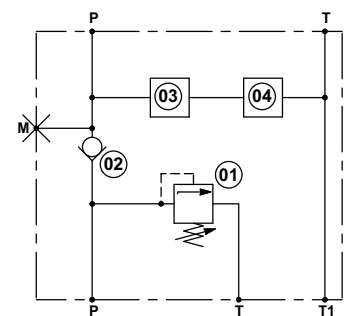


### Manifold Hydraulic Diagram

#### M52



#### M55

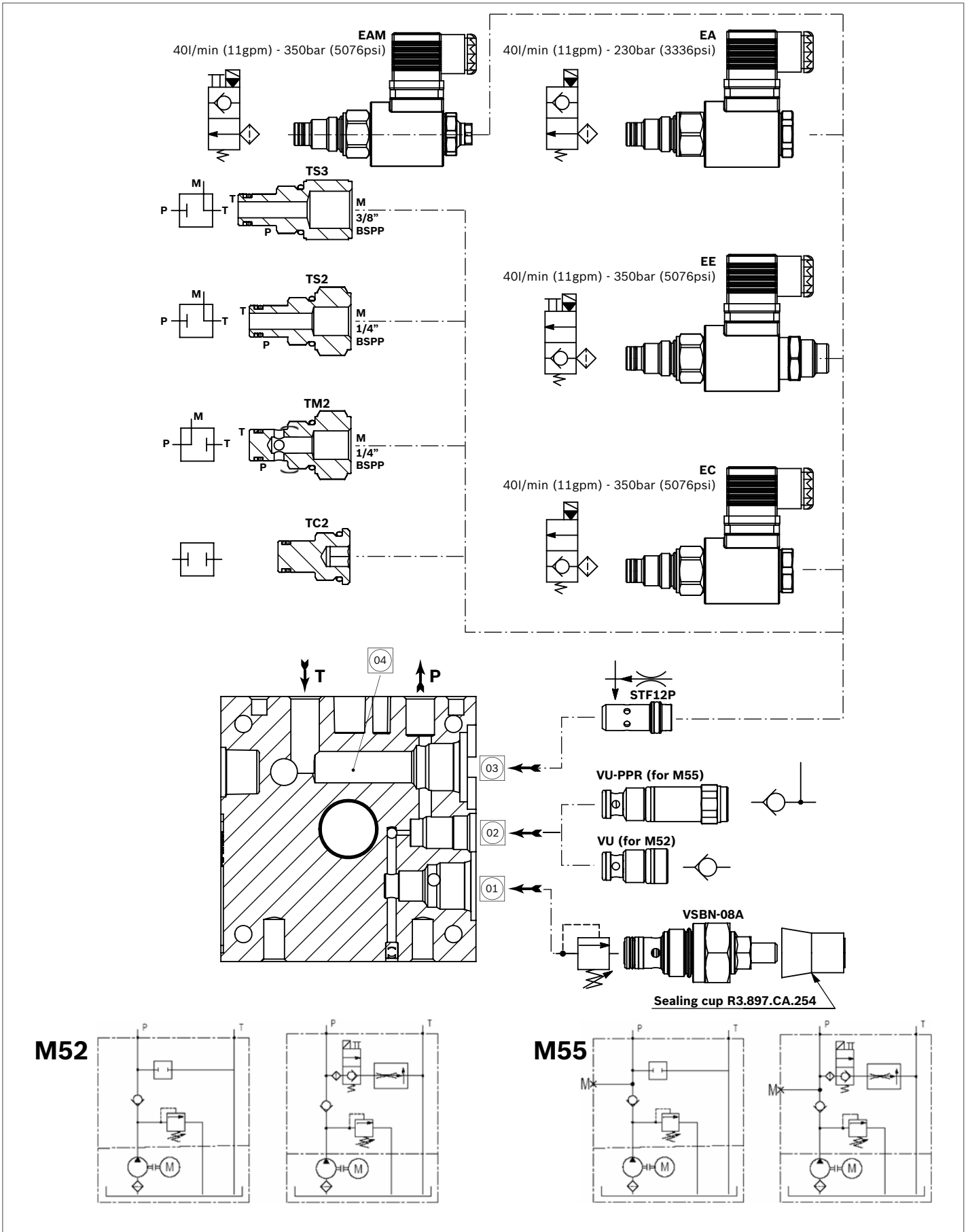


### M52

Manifold Code with Relief Valve Pressure Range	Pressure Range bar (psi)	Type	Material Number
M52/05	10-70 (145-1015)	452A000	R932008635
M52/10	35-140 (508-2030)	452B000	R932008636
M52/20	105-210 (1523-3046)	452C000	R932008637
M52/35	175-350 (2538-5076)	452D000	R932008638

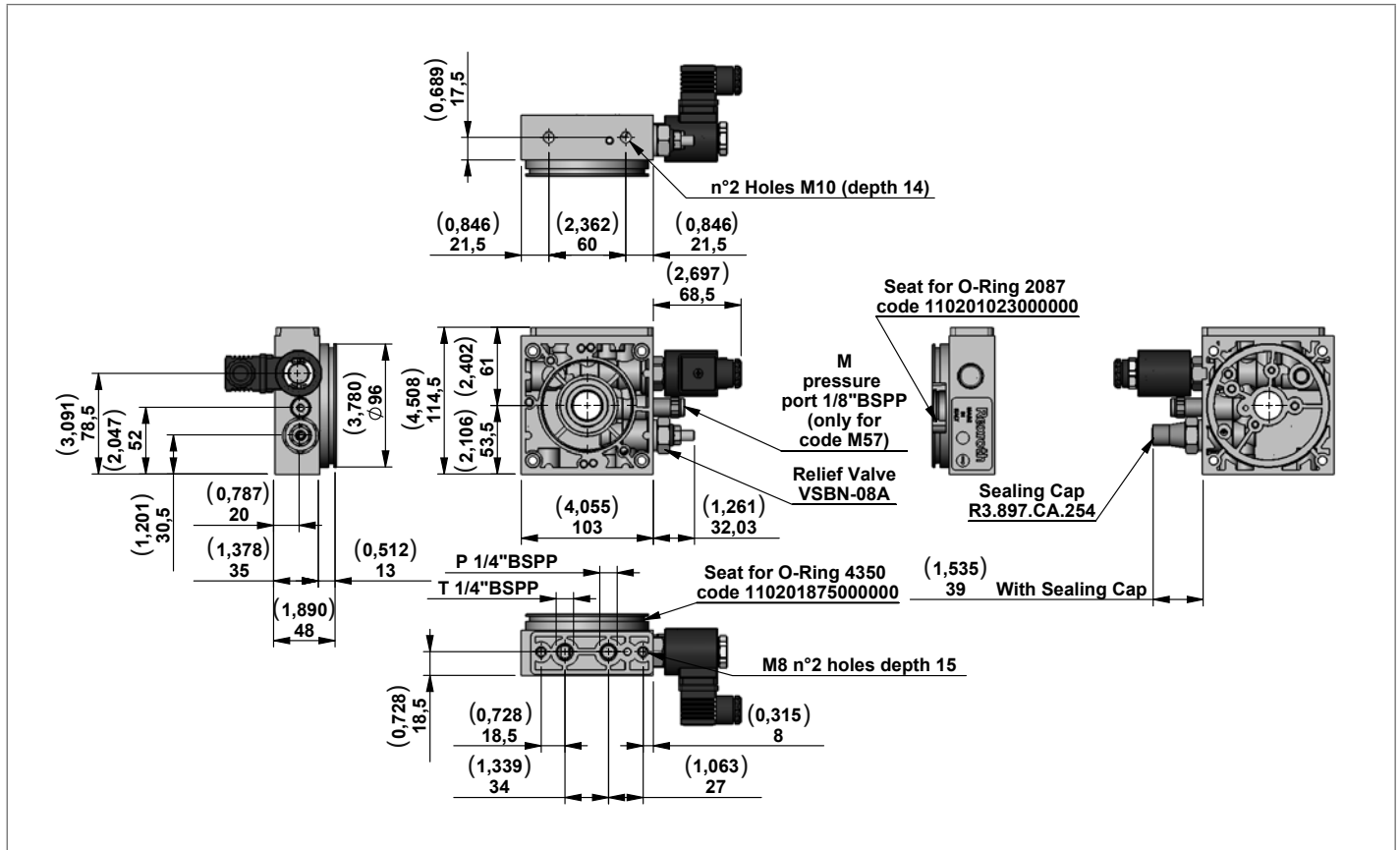
### M55

Manifold Code with Relief Valve Pressure Range	Pressure Range bar (psi)	Type	Material Number
M55/05	10-70 (145-1015)	455A000	R932008639
M55/10	35-140 (508-2030)	455B000	R932008640
M55/20	105-210 (1523-3046)	455C000	R932008641
M55/35	175-350 (2538-5076)	455D000	R932008642

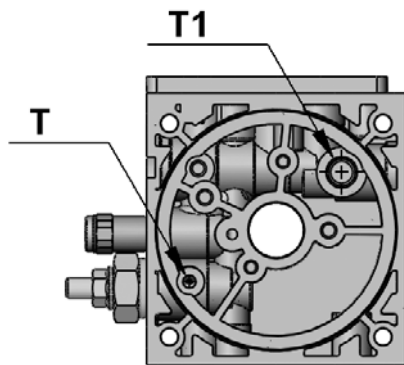


## Central Manifold ME

### M53 - M57



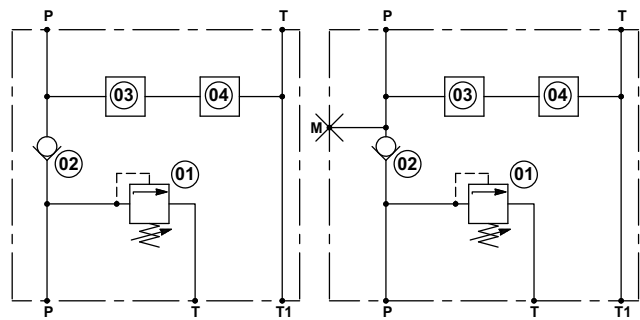
#### View Manifold Tank side



#### Manifold Hydraulic Diagram

##### M53

##### M57

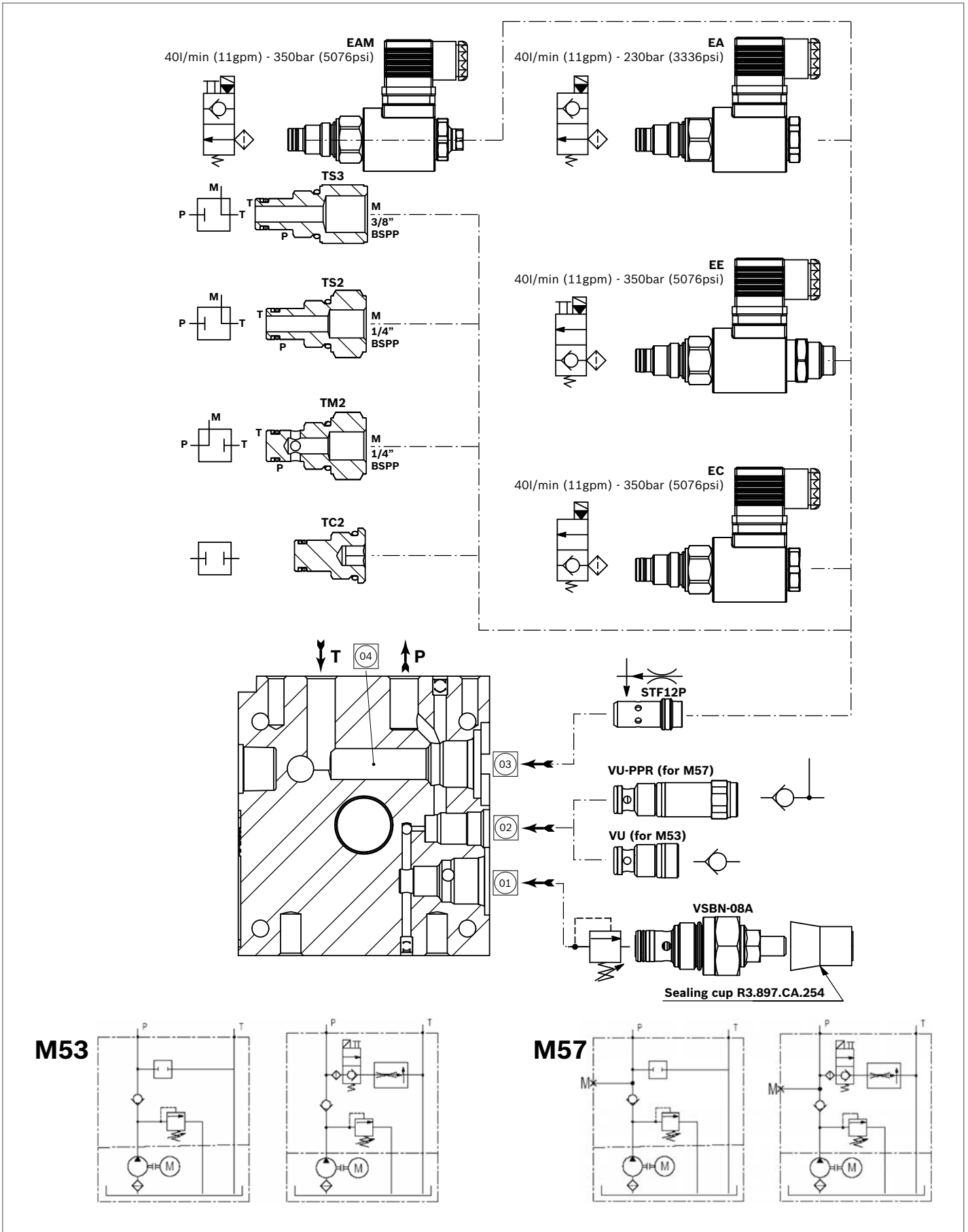


#### M53

Manifold Code with Relief Valve Pressure Range	Pressure Range bar (psi)	Type	Material Number
<b>M53/05</b>	10-70 (145-1015)	453A000	R932008627
<b>M53/10</b>	35-140 (508-2030)	453B000	R932008628
<b>M53/20</b>	105-210 (1523-3046)	453C000	R932008629
<b>M53/35</b>	175-350 (2538-5076)	453D000	R932008630

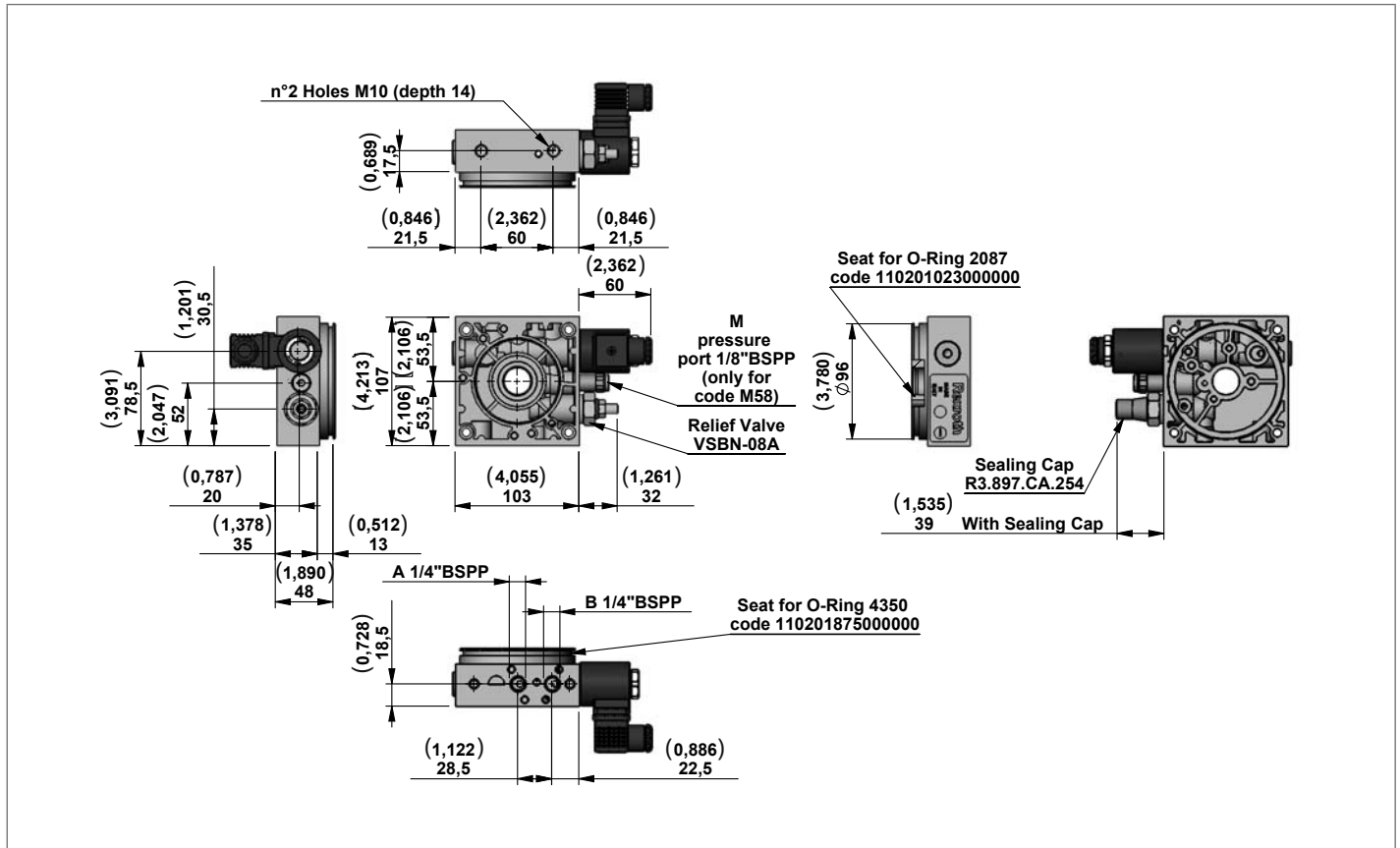
#### M57

Manifold Code with Relief Valve Pressure Range	Pressure Range bar (psi)	Type	Material Number
<b>M57/05</b>	10-70 (145-1015)	457A000	R932008631
<b>M57/10</b>	35-140 (508-2030)	457B000	R932008632
<b>M57/20</b>	105-210 (1523-3046)	457C000	R932008633
<b>M57/35</b>	175-350 (2538-5076)	457D000	R932008634

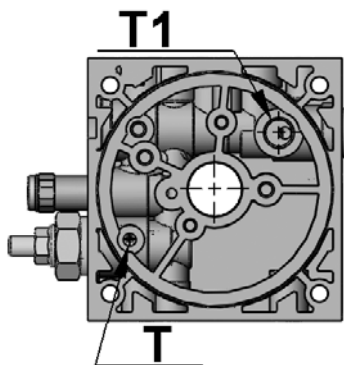


## Central Manifold ME

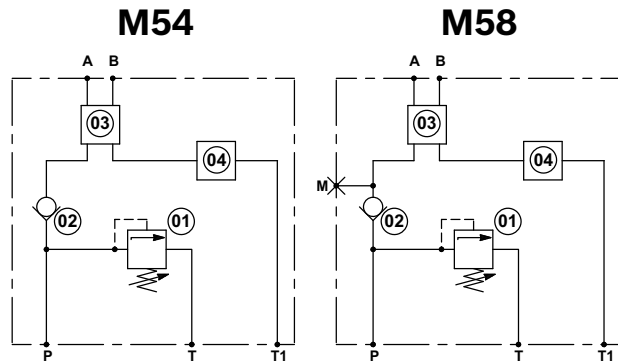
### M54 - M58



View Manifold Tank side



Manifold Hydraulic Diagram



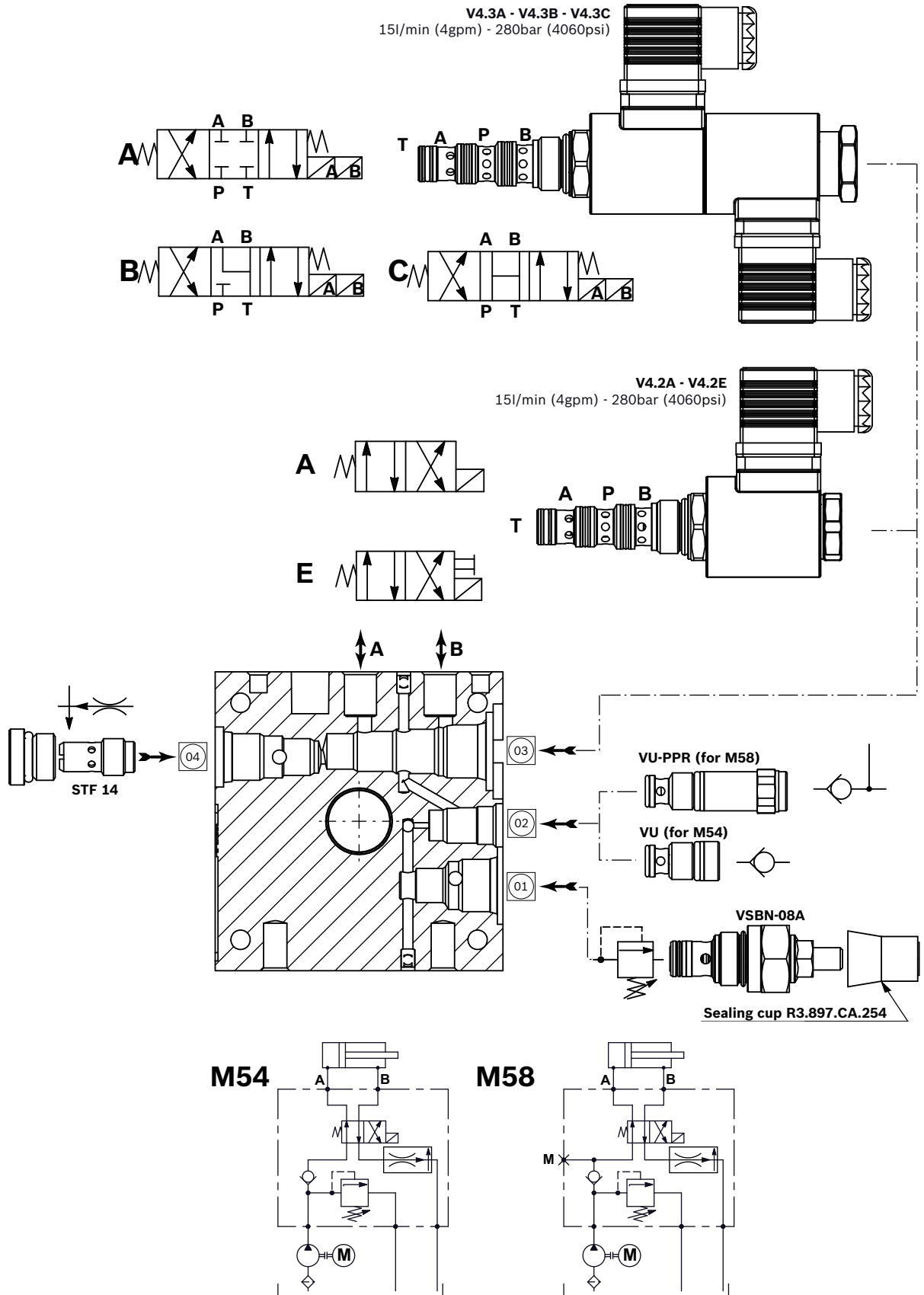
#### M54

Manifold Code with Relief Valve Pressure Range	Pressure Range bar (psi)	Type	Material Number
M54/05	10-70 (145-1015)	454A000	R932008619
M54/10	35-140 (508-2030)	454B000	R932008620
M54/20	105-210 (1523-3046)	454C000	R932008621
M54/35	175-350 (2538-5076)	454D000	R932008622

#### M58

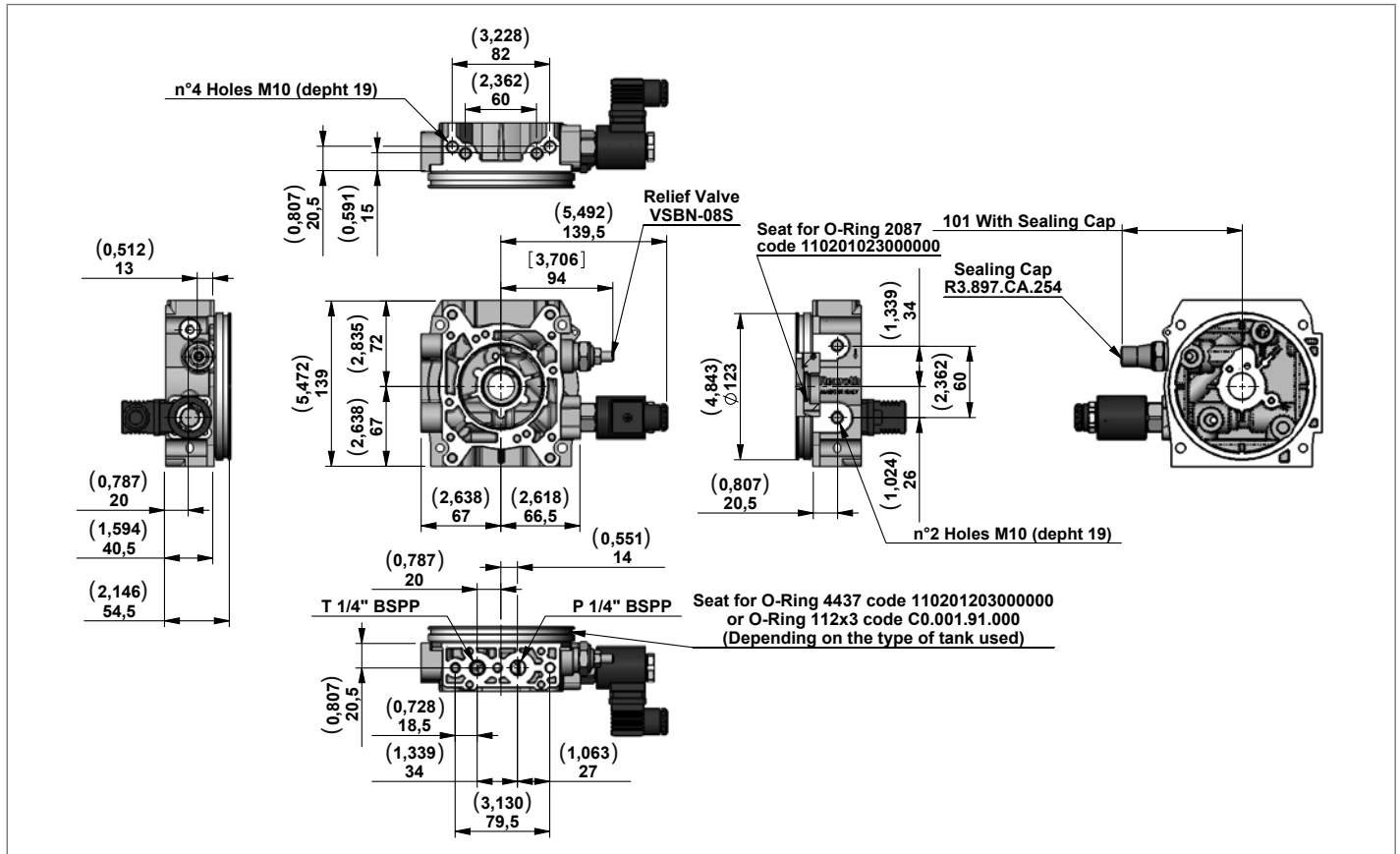
Manifold Code with Relief Valve Pressure Range	Pressure Range bar (psi)	Type	Material Number
M58/05	10-70 (145-1015)	458A000	R932008623
M58/10	35-140 (508-2030)	458B000	R932008624
M58/20	105-210 (1523-3046)	458C000	R932008625
M58/35	175-350 (2538-5076)	458D000	R932008626



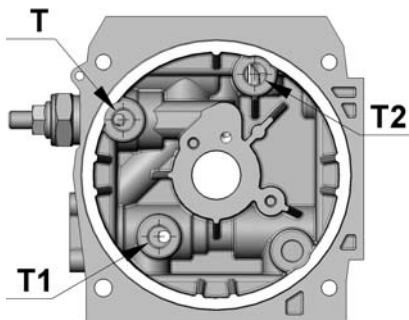


## Central Manifold ME

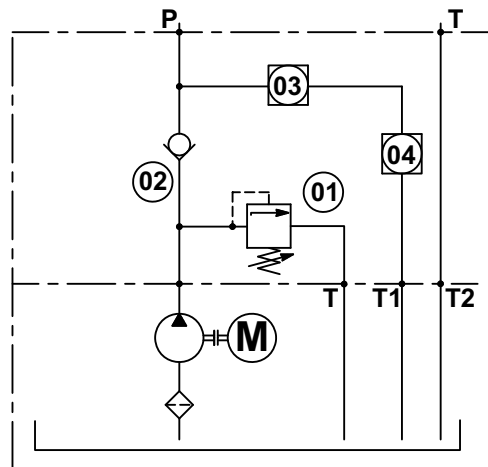
### A16



### View Manifold Tank side

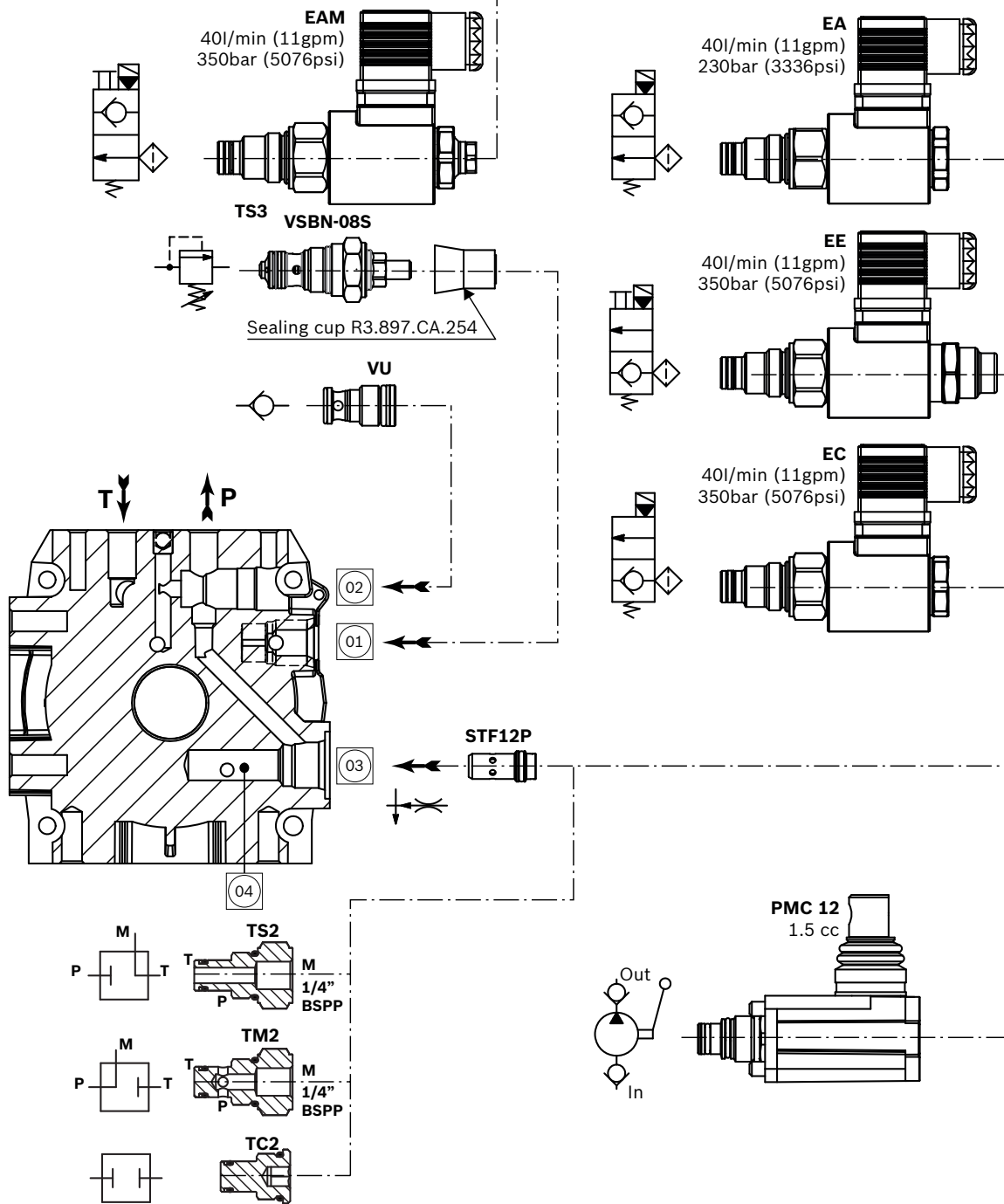


### Manifold Hydraulic Diagram



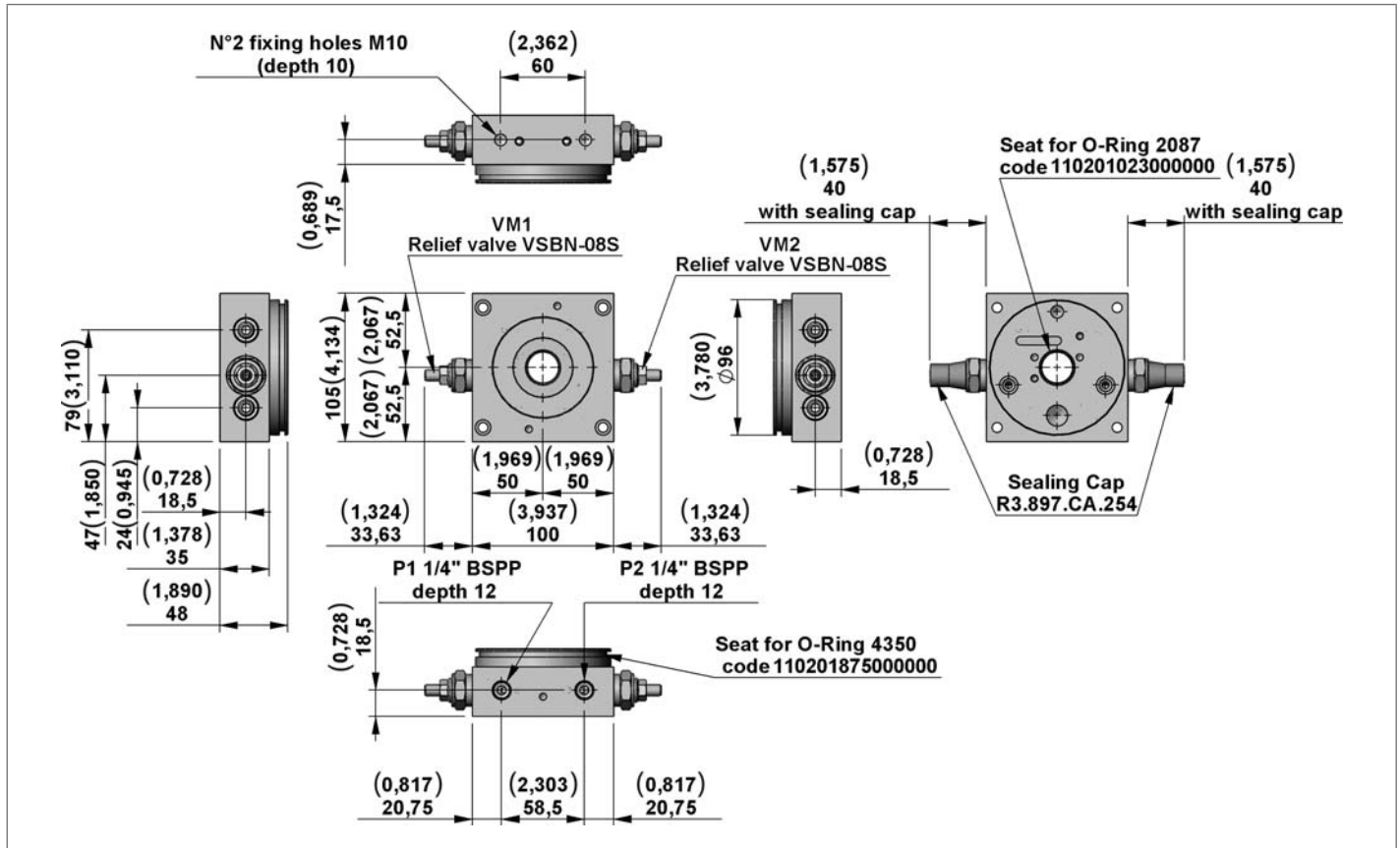
### A16

Manifold Code with Relief Valve Pressure Range	Pressure Range bar (psi)	Type	Material Number
A16/05	10-55 (145-798)	116A000A	R930052174
A16/10	35-100 (508-1450)	116B000A	R930052184
A16/20	90-250 (1305-3626)	116C000	R932008693

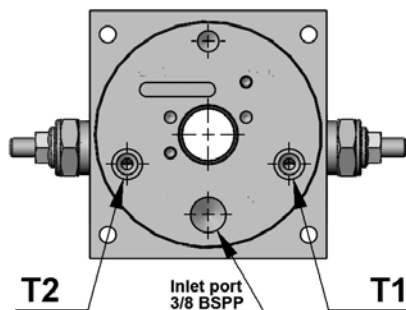


### Central Manifold MR

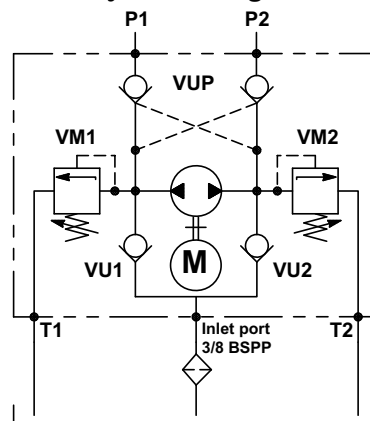
10



#### View Manifold Tank side



#### Manifold Hydraulic Diagram



10

Manifold Code with Relief Valve Pressure Range	Pressure Range bar (psi)	Type	Material Number
A10/05	10-55 (145-798)	810A000A	R930053852
A10/10	35-100 (508-1450)	810B000A	R930053853
A10/20	90-250 (1305-3626)	810C000	R932009780

#### Note

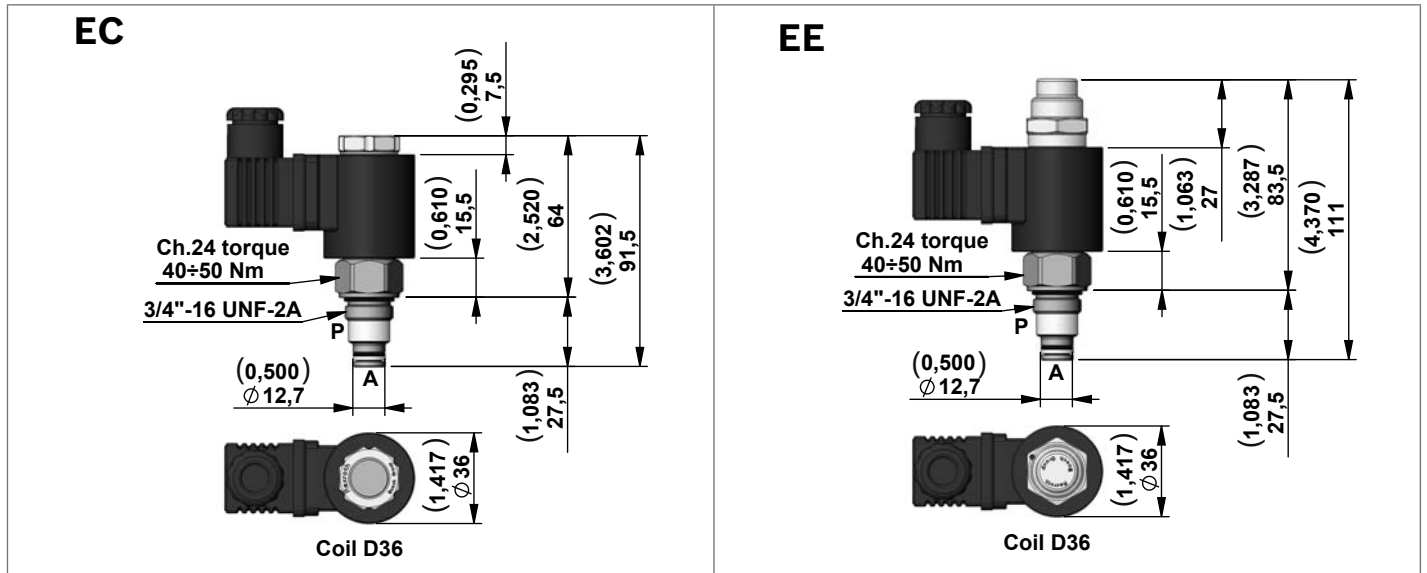
In this central manifold use only reversible pump "R" series.

#### Note

In the central manifold MR series is possible connect only the following motors:  
DC motor code: C177 - C178 - C179 - C180 - C181 - C182  
AC motor from size IEC56 to size IEC71.

### Built-in Valve

#### EC-EE Series



#### 2 Way Pilot Operated Solenoid Valves, Normally Closed for D.C. current

Code	Type	Material Number
EC	OD150718A000000	R930058338
EE	OD150718DP00000	R930058529

#### Description

This is a standard 2 way pilot operated valves poppet style.

- **Only for D.C. current.**
- Internal leakage: see technical data.
- Minimum operating voltage: 90% of nominal.
- Screen on P 300 Micron.
- Screw Type Emergency on EE.

#### Valve symbol

Code	Symbol	Operating features with solenoid	
		De-energized	Energized
EC		P ◊ A	P <-> A
EE		P ◊ A	P <-> A

#### Technical Data

General		
Operating time	ms	Opening 50 Closing 100
Max. working pressure	bar (psi)	350 (5076)
Max. flow	l/min (gpm)	40 (11)

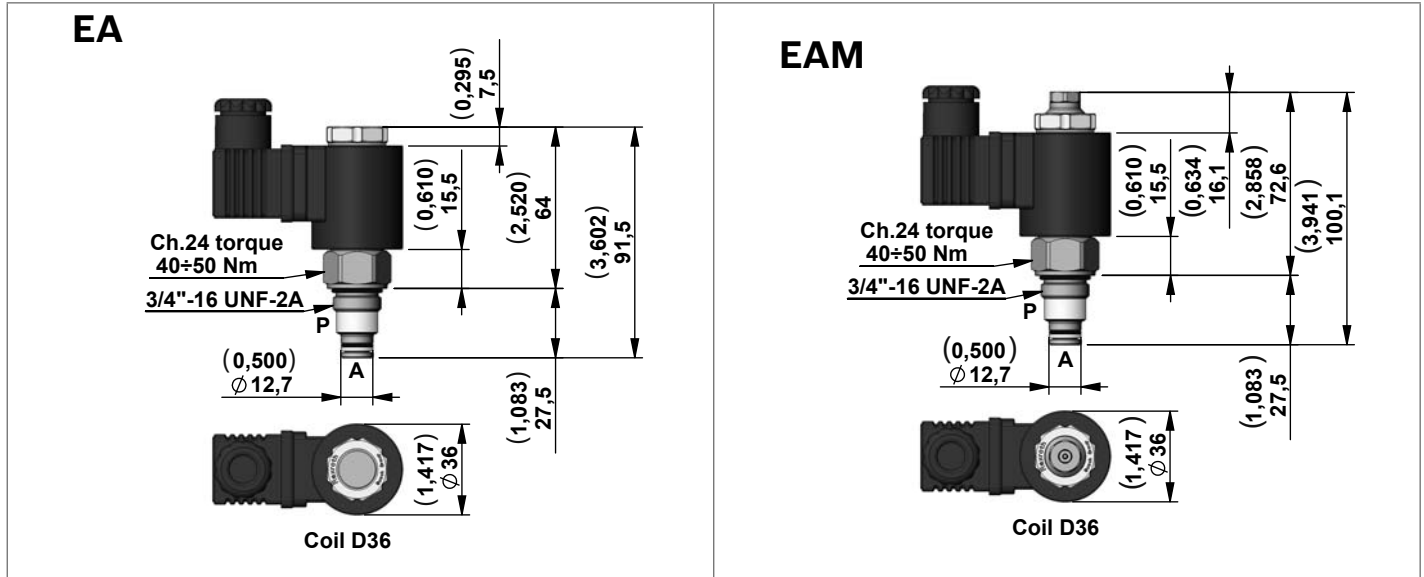
#### D36 Coil Voltage Available

Voltage
12 Volts D.C.
24 Volts D.C.
48 Volts D.C.
96 Volts D.C.
205 Volts D.C.

#### Note

For more info see Data Sheet RE18323-25

EA-EAM Series



2 Way Pilot Operated Solenoid Valves, Normally Open

Code	Type	Material Number
EA	OD150818A000000	R930058337
EAM	OD150818B000000	R930058340

Technical Data

General		
Max. working pressure	bar (psi)	350 (5000)
Max. flow	l/min (gpm)	40 (11)

Description

This is a standard 2 way pilot operated valves poppet style.

- Only for D.C. current.
- Internal leakage: see technical data.
- Minimum operating voltage: 90% of nominal.
- Screen on P 300 Micron.
- Push Type Emergency on EAM.

Valve symbol

Code	Symbol	Operating features with solenoid	
		De-energized	Energized
EA		P -> A	P ◊ A
EAM		P -> A	P ◊ A

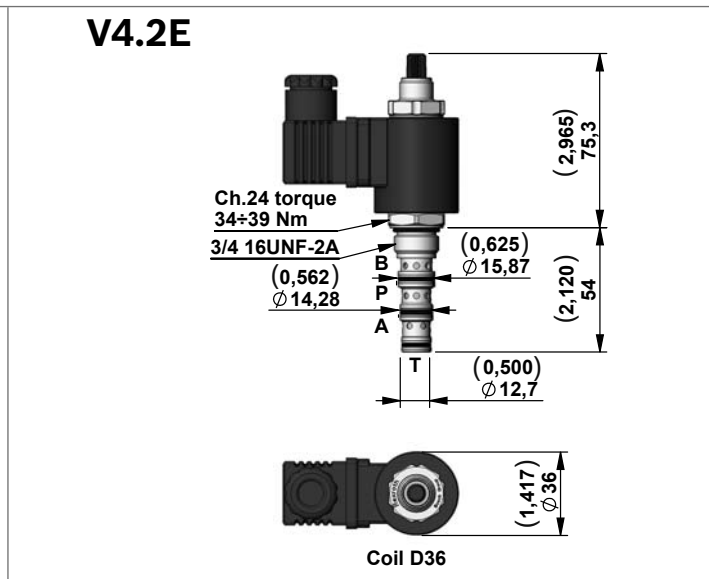
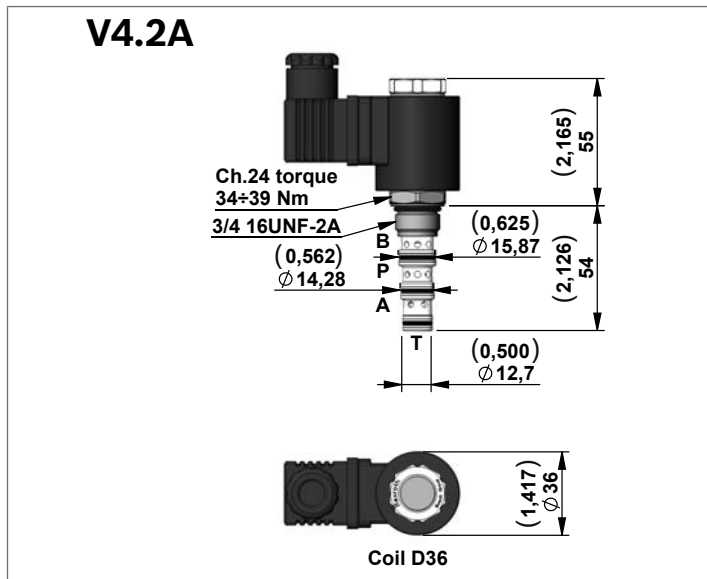
D36 Coil Voltage Available

Voltage
12 Volts D.C.
24 Volts D.C.
48 Volts D.C.
96 Volts D.C.
205 Volts D.C.

Note

For more info see Data Sheet RE18323-26

**V4.2 Series**



**4 Way 2 Position Solenoid Valves Spool Type**

Code	Type	Material Number
V4.2A	OD144058A000000	R930058339
V4.2E	OD144058D000000	R930058713

**Technical Data**

General		
Max. working pressure	bar (psi)	280 (4060)
Max. flow	l/min (gpm)	20 (5)

**Description**

4 Way 2 Position Solenoid Valves Spool Type

- **Only for D.C. current.**
- Minimum operating voltage: 90% of nominal.
- Screw Type Emergency on V4.2E.

**Valve symbol**

Code	Symbol	Operating features with solenoid	
		De-energized	Energized
V4.2A		P <-> A B <-> T	P <-> B A <-> T
V4.2E		P <-> A B <-> T	P <-> B A <-> T

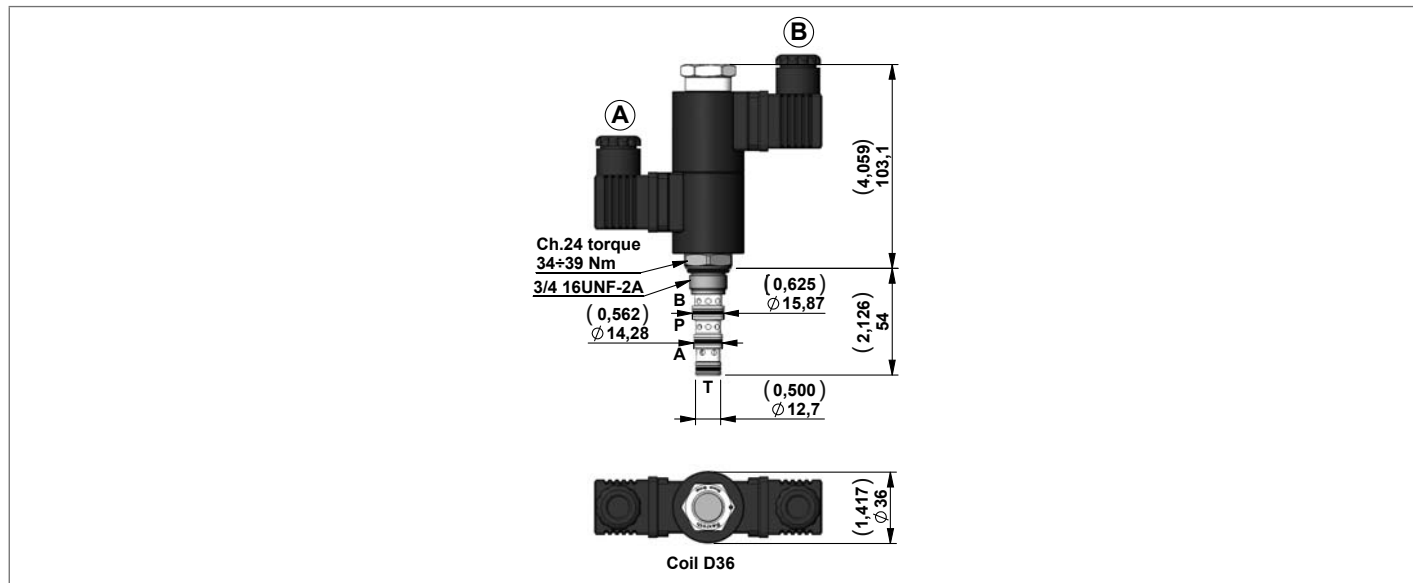
**D36 Coil Voltage Available**

Voltage
12 Volts D.C.
24 Volts D.C.
48 Volts D.C.
96 Volts DC
205 Volts DC

**Note**

For more info see Data Sheet RE18324-09

**V4.3 Series**



**4 Way 3 Position Solenoid Valves Spool Type**

Code	Type	Material Number
V4.3A	OD143158A000000	R930063202
V4.3B	OD143258A000000	R930063203
V4.3C	OD143458A000000	R930063205

**Technical Data**

General		
Max. working pressure	bar (psi)	280 (4060)
Max. flow	l/min (gpm)	15 (4)

**Description**

4 Way 3 Position Solenoid Valves Spool Type

- **Only for D.C. current.**

- Minimum operating voltage: 90% of nominal.

**Valve symbol**

Code	Symbol	Operating features with solenoid		
		Energized A	De-energized	Energized B
V4.3A		P -> B A -> T	P P A ∅ ∅ A B B T T	P -> A B -> T
V4.3B		P -> B A -> T	A -> T B -> T P ∅	P -> A B -> T
V4.3C		P -> B A -> T	P P A <-> A B B T T	P -> A B -> T

**D36 Coil Voltage Available**

Voltage
12 Volts D.C.
24 Volts D.C.
48 Volts D.C.
96 Volts DC
205 Volts DC

**Note**

For more info see Data Sheet RE18324-10



**Coils - Connectors****Coil D36 - CLASS H - 20 W****Technical Data**

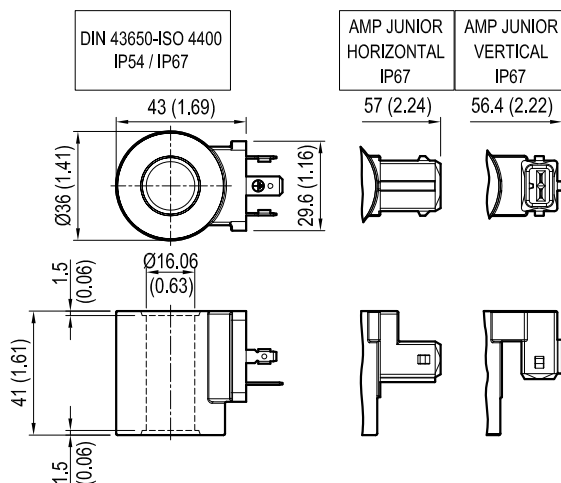
Weight: 0.18 kg (0.40 lbs)

Power: 20 W

Heat insulation Class H: 180°C (356°F)

Ambient temperature range: -30/+90°C (-22/+194°F)

Further performance limits in terms of temperature and voltage fluctuations: please refer to data sheet of the solenoid valve where D36 coil is mounted.

**Coils D36 DIN 43650**

CODE	VOLTAGE	HEAT INSULATION CLASS	TYPE	MATERIAL NUMBER
<b>OB</b>	12 Volts D.C.	H (180 °C) (356 °F)	OD02360130OB00	R901393412
<b>OC</b>	24 Volts D.C.	H (180 °C) (356 °F)	OD02360130OC00	R901393577
<b>OD</b>	48 Volts D.C.	H (180 °C) (356 °F)	OD02360130OD00	R901394117
<b>OU*</b>	96 Volts D.C.	H (180 °C) (356 °F)	OD02360130OU00	R901394229
<b>AH*</b>	205 Volts D.C.	H (180 °C) (356 °F)	OD02360130AH00	R901394231

**Note**

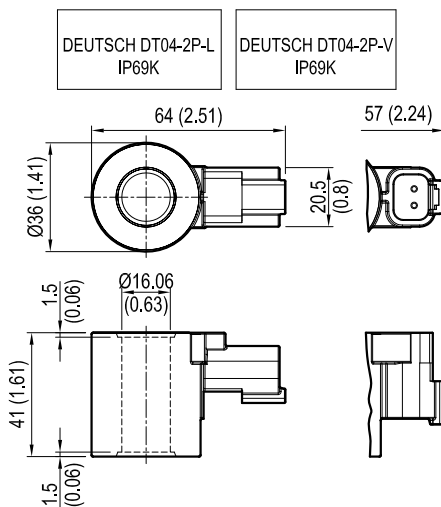
\* OU and AH versions especially designed in cases of AC supply voltage (respectively for 110AC and 220 AC) to be used in conjunction with connector with circuit including wave rectifier. Ambient temperature range for OU and AH versions: -30°C / + 75°C

**Coils D36 AMP H**

CODE	VOLTAGE	HEAT INSULATION CLASS	TYPE	MATERIAL NUMBER
<b>OBA</b>	12 Volts D.C.	H (180 °C) (356 °F)	OD02360730OB00	R901435508
<b>OCA</b>	24 Volts D.C.	H (180 °C) (356 °F)	OD02360730OC00	R901435506

**Coils D36 AMP V**

CODE	VOLTAGE	HEAT INSULATION CLASS	TYPE	MATERIAL NUMBER
<b>OBAV</b>	12 Volts D.C.	H (180 °C) (356 °F)	OD0236073POB00	R901394950
<b>OCAV</b>	24 Volts D.C.	H (180 °C) (356 °F)	OD0236073POC00	R901394955

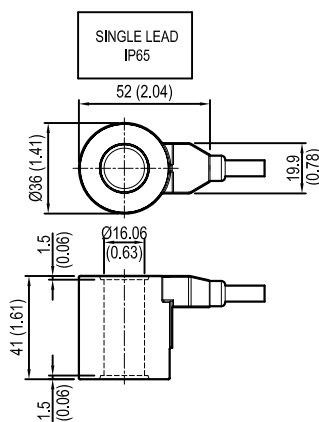


**Coils D36 Deutsch L**

CODE	VOLTAGE	HEAT INSULATION CLASS	TYPE	MATERIAL NUMBER
<b>OBDL</b>	12 Volts D.C.	H (180 °C) (356 °F)	OD02362030OB00	R901435524
<b>OCDL</b>	24 Volts D.C.	H (180 °C) (356 °F)	OD02362030OC00	R901435526

**Coils D36 Deutsch V**

CODE	VOLTAGE	HEAT INSULATION CLASS	TYPE	MATERIAL NUMBER
<b>OBD</b>	12 Volts D.C.	H (180 °C) (356 °F)	OD0236203POB00	R901394391
<b>OCD</b>	24 Volts D.C.	H (180 °C) (356 °F)	OD0236203POC00	R901394393



**Coils D36 Single Lead**

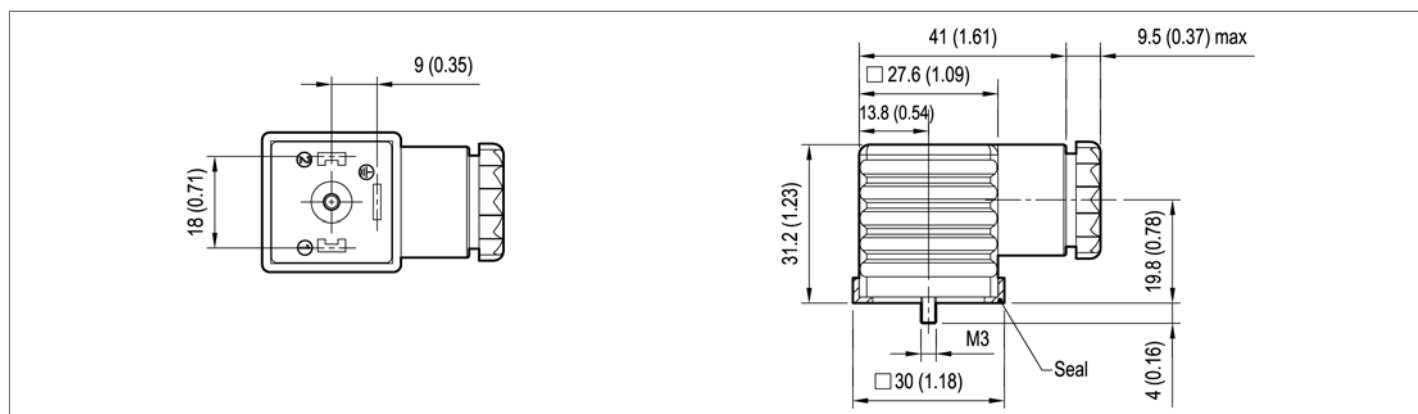
CODE	VOLTAGE	HEAT INSULATION CLASS	TYPE	MATERIAL NUMBER
<b>OBL</b>	12 Volts D.C.	H (180 °C) (356 °F)	OD02360G03OB00	R901435529
<b>OCL</b>	24 Volts D.C.	H (180 °C) (356 °F)	OD02360G03OC00	R901435533

**Note**

For more info see Data Sheet RE18325-90

**CONNECTOR IP67 - EN175000 (DIN 4350-A) / ISO 4400**

Ambient temperature - Standard	°C (°F)	- 20 to + 60 (-4 to +140°F)
Type of protection according to DIN 40050		IP67 with cable socket mounted and locked
Operating voltage	V	Choose the proper ordering code according to the circuit
Maximum operating current	Standard	A 16
	With rectifier	A 1
Number of pins		2 + PE
Clamping range for cables having an outer diameter of	mm (inch)	5, up to 10 (0,2 up to 0,4)
Cable entry		Pg9 / Pg11 (unified)
Maximum cable cross-section	mm <sup>2</sup> (inch <sup>2</sup> )	1.5 (0,002)



**Standard Circuit**

Code	Colour	Cable entry	Type	Material Number
<b>WC</b>	Without Connector			
<b>CS</b>	black	Pg9 / Pg11	OD01690100000	R934004344
	grey	Pg9 / Pg11	OD01690100003	R934004346

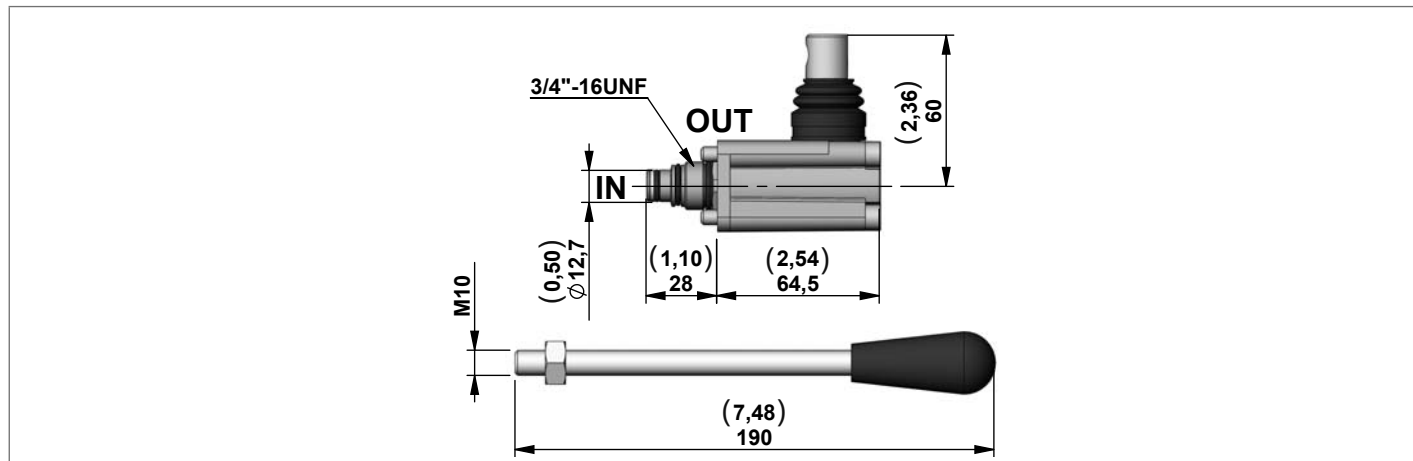
**Circuit with VDR + Wave Rectifier**

Code	Voltage V		Diode Capacity I max	Colour	Cable entry	Type	Material Number
	AC	DC					
<b>CR</b>	230	/	1A	black	Pg9 / Pg11	OD01690201OZ00	R934004353

**Note**

Diode with capacity max 1 Amp.

**PMC12 Order Code for Lever (only for manifold code A16)**



Type	Material Number
K250113000	R932002448

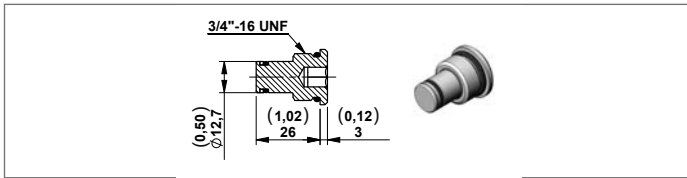
**Technical Data**

General		
Max. working pressure	bar (psi)	300 (4500)
Displacement	cc	1,5

**Hand pump (1.5cc)**

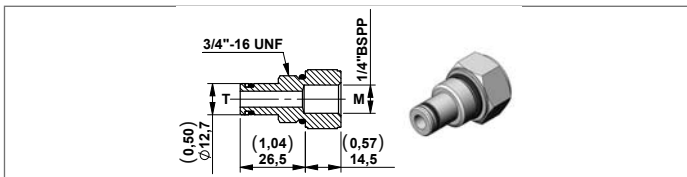
Code	Diagram	Type with lever	Material Number with lever
PMC12		K01V388540LV190	R932009298

**Plug for Cavity**



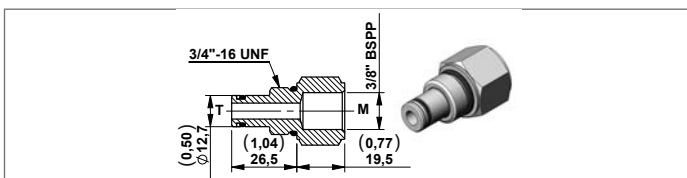
Code	Diagram	Type	Material Number
TC2		R3897TA001	R932003193

**1/4" Auxiliary Return Port**



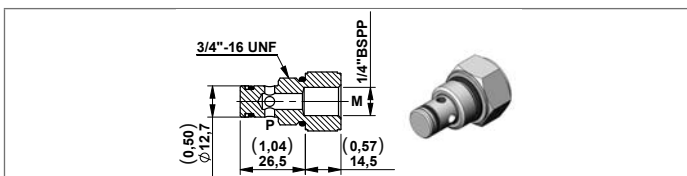
Code	Diagram	Type	Material Number
TS2	"/>	R3897TA304	R932003214

**3/8" Auxiliary Return Port**



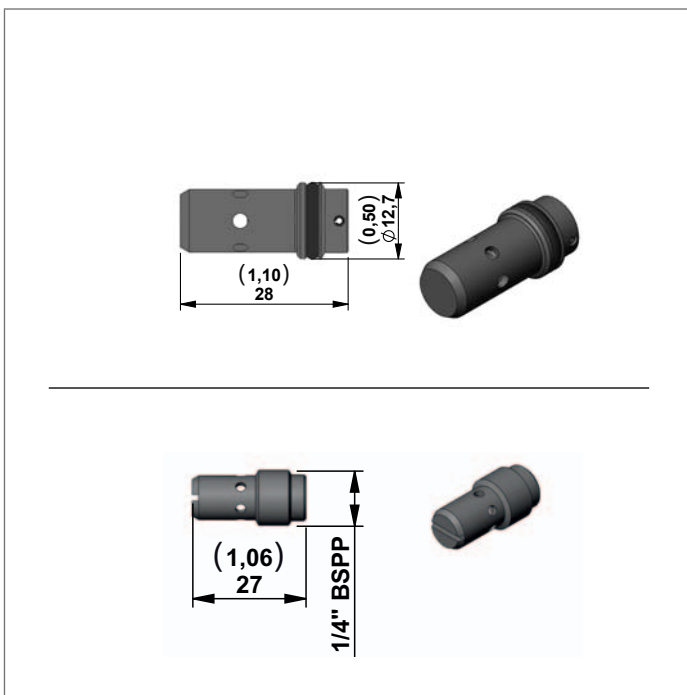
Code	Diagram	Type	Material Number
TS3	"/>	R3897TA147	R932003195

**1/4" Auxiliary Pressure Port**



Code	Diagram	Type	Material Number
TM2	"/>	R3897TA305	R932003215

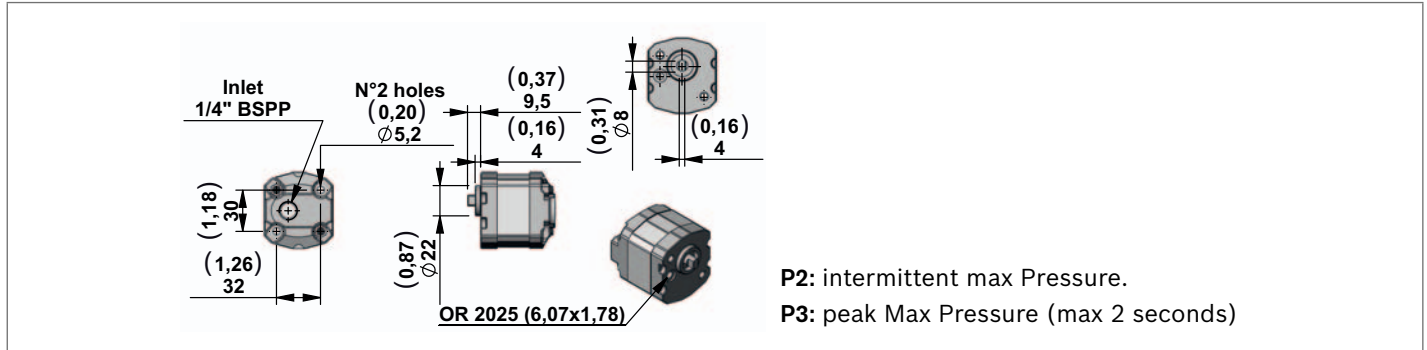
**Flow Control Valves Pressure Compensated**



Code		l/min (gpm)	Diagram	Type	Material Number
<b>STF12P</b>	A	1 (0,3)		V38953600A	R932003940
	B	2 (0,5)		V38953600B	R932003941
	C	3 (0,8)		V38953600C	R932003942
	D	4 (1,1)		V38953600D	R932003943
	E	5 (1,3)		V38953600E	R932003944
	F	6 (1,6)		V38953600F	R932003945
	G	7 (1,9)		V38953600G	R932003946
	H	8 (2,1)		V38953600H	R932003947
	I	9 (2,4)		V38953600I	R932003948
	L	10 (2,6)		V38953600L	R932003949
<b>STF14</b>	A	1 (0,3)		V38950100A	R932003836
	B	2 (0,5)		V38950100B	R932003837
	C	3 (0,8)		V38950100C	R932003838
	D	4 (1,1)		V38950100D	R932003839
	E	5 (1,3)		V38950100E	R932003840
	F	6 (1,6)		V38950100F	R932003841
	G	7 (1,9)		V38950100G	R932003842
	H	8 (2,1)		V38950100H	R932003843
	I	9 (2,4)		V38950100I	R932003844
	L	10 (2,6)		V38950100L	R932003846

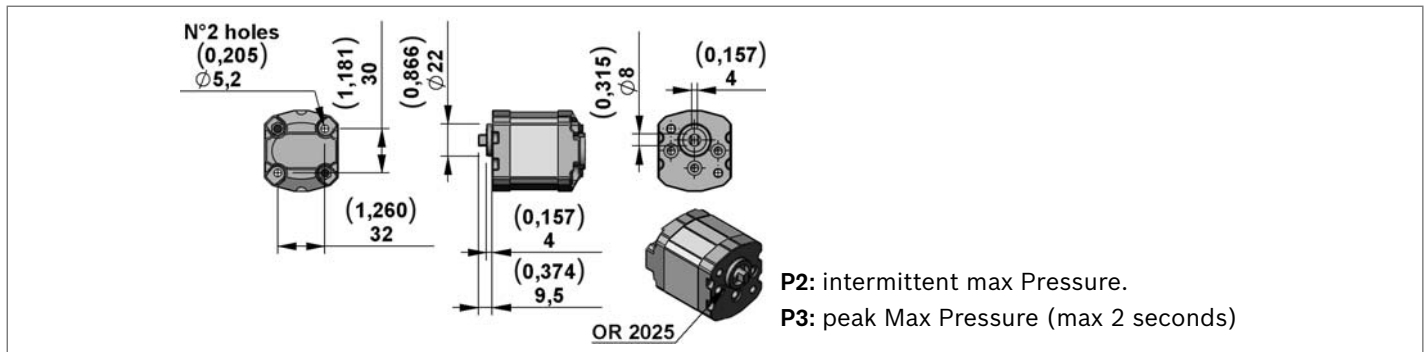
## Gear Pumps

### Gear Pumps Group 0.5 for ME



Code	Displacement cc/rev	Flow at 1500 rpm l/min (gpm)	P2 bar (psi)	P3 bar (psi)	Type	Material Number
L1	0,18	0,27 (0,07)	190 (2756)	230(3336)	K01CV641L1000	R932007490
L2	0,25	0,37 (0,10)	190 (2756)	230(3336)	K01CV641L200C	R932007491
L3	0,50	0,75 (0,20)	190 (2756)	230(3336)	K01CV641L300C	R932007492
L5	0,75	1,12 (0,30)	190 (2756)	230(3336)	K01CV641L500C	R932007494
L6	1,00	1,50 (0,40)	190 (2756)	230(3336)	K01CV641L600C	R932007495
L7	1,25	1,87 (0,50)	190 (2756)	230(3336)	K01CV641L700C	R932007496
L8	1,50	2,25 (0,60)	190 (2756)	230(3336)	K01CV641L800C	R932007497

### Reversible Gear Pumps Group 0.5 for MR



Code	Displacement cc/rev	Flow at 1500 rpm l/min (gpm)	P2 bar (psi)	P3 bar (psi)	Type	Material Number
R1	0,24	0,36 (0,09)	170 (2465)	190 (2756)	C1641R100M	R932000678
R2	0,48	0,72 (0,19)	170 (2465)	190 (2756)	C1641R200M	R932000681
R3	0,61	0,92 (0,24)	170 (2465)	190 (2756)	C1641R300M	R932000682
R4	0,84	1,26 (0,33)	170 (2465)	190 (2756)	C1641R400M	R932000683
R5	0,97	1,50 (0,40)	170 (2465)	190 (2756)	C1641R500M	R932000684
R6	1,22	1,83 (0,48)	170 (2465)	190 (2756)	C1641R6000	R932008245
R7	1,50	2,25 (0,59)	170 (2465)	190 (2756)	C1641R700M	R932000685

#### Note

All pumps have anti-clockwise rotation.

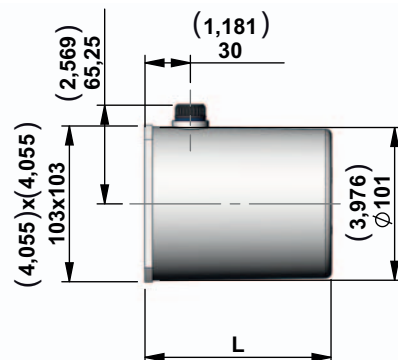
### Oil Tanks

#### Technical Data for Plastic Tanks

Temperature range	°C (°F)	-15....+70 (5....158)
Materials	PE=Polyethylene - PP=Polypropilene	
Seal	For all the plastic Tanks use O-ring 4350 (Ø88,5x3,53) Code: 110201875000000 Material-Number: R932000191	

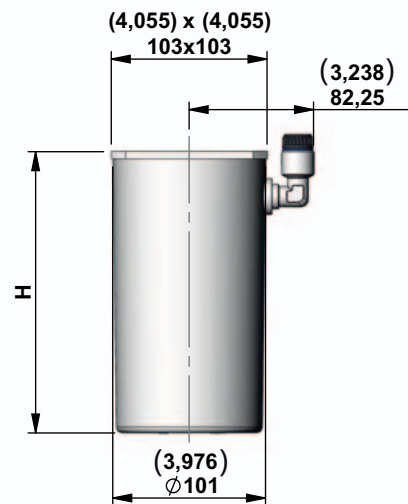
Code	Tank capacity l (USgal)	Useable capacity l (USgal)	L mm (inch)	Material	Type	Material Number
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<b>S284</b>	0,5 (0,13)	0,4 (0,11)	123 (4,84)	PP	K01M3976SE318	R932002054
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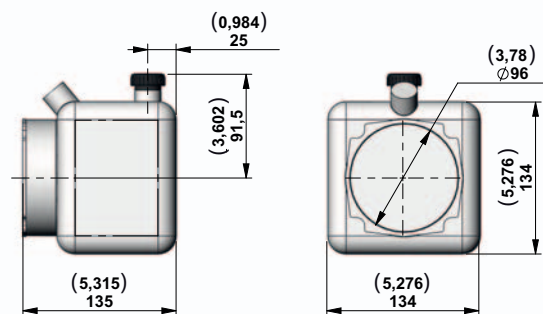
<b>S286</b>	1 (0,26)	0,7 (0,18)	186 (7,32)	PP	K01M3976SE320	R932002056
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<b>S285</b>	0,5 (0,13)	0,4 (0,11)	123 (4,84)	PP	K01M3976SE319	R932002055
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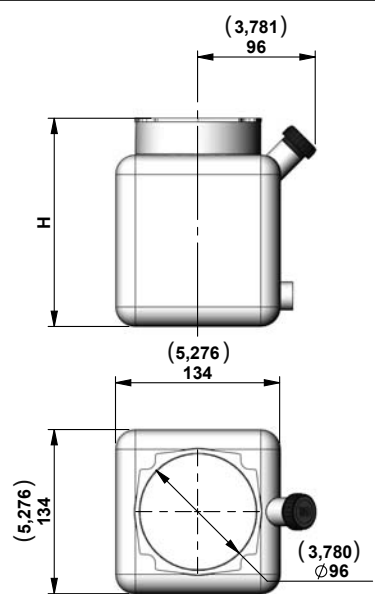
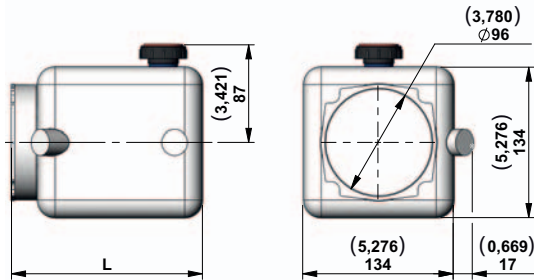
<b>S287</b>	1 (0,26)	0,7 (0,18)	186 (7,32)	PP	K01M3976SE321	R932002057
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<b>S270</b>	1 (0,26)	0,9 (0,24)	-	PE	K01X3976SE303	R932002077
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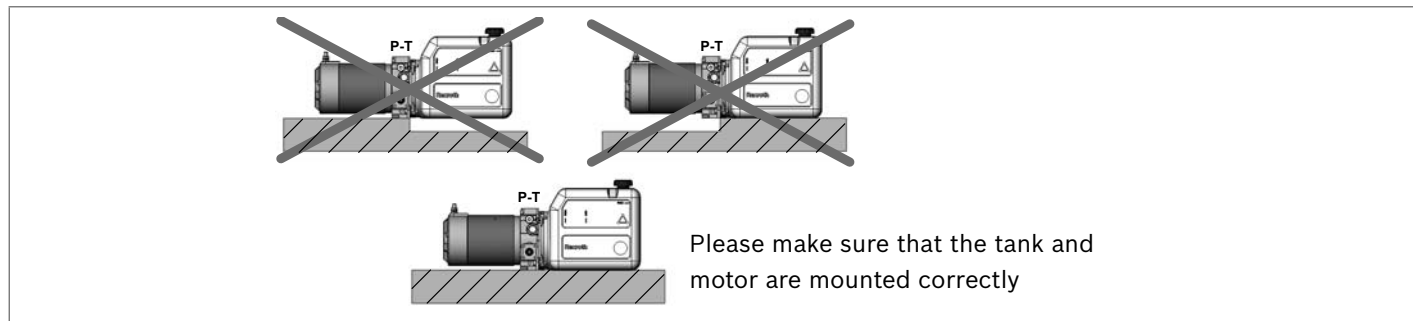


**Plastic Tanks**

Code	Tank capacity l (USgal)	Useable capacity l (USgal)	L mm (inch)	Material	Type	Material Number
<b>S271</b>	1,8 (0,48)	1,6 (0,42)	170 (6,71)	PE	K01X3976SE304	R932002078
<b>S272</b>	2,5 (0,66)	2,2 (0,58)	240 (9,45)	PE	K01X3976SE305	R932002079
<b>S273</b>	1 (0,26)	0,9 (0,24)	135 (5,31)	PE	K01X3976SE306	R932002080
<b>S274</b>	1,8 (0,48)	1,6 (0,42)	170 (6,71)	PE	K01X3976SE307	R932002081
<b>S275</b>	2,5 (0,66)	2,2 (0,58)	240 (9,45)	PE	K01X3976SE308	R932002082



**Assembly Kit for Plastic Tank - ME**



Code	Type	Material Number
<b>S270 - S271 - S272 - S273 - S274 - S275</b>	K2501VT005	R932002435
<b>S284 - S285 - S286 - S287</b>	K2501VT009	R932002438



**Technical Data for Steel Tanks**

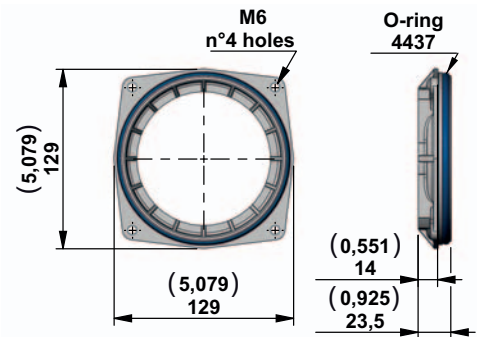
Temperature range	°C (°F)	-15....+80 (5....176)
Materials		Steel
Colors		Black paint finish
Seal		For all the steel tanks with Ø99 is necessary to use O-Ring 4350 (Ø88,5x3,53) on the central manifold. Code:110201875000000 - Material-Number:R932000191. If is necessary to use a tank designed for KE-K (Ø123mm) must use the O-ring 4350 on the manifold and add the flange S81.

**Collar for Tanks**

Code	Description	Type	Material Number
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**S81** This adaptor allows you to use steel tanks designed for KE-K (Ø123 mm) with ME manifolds (Ø96 mm)

K01X3976SM091 R932002053



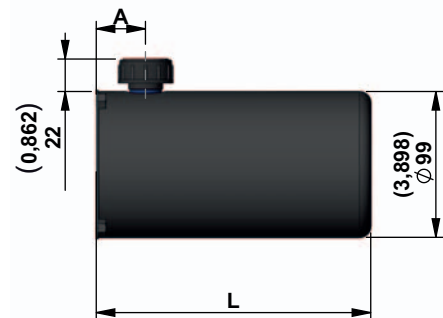
**Steel Tanks**

Code	Tank capacity l (USgal)	Useable capacity l (USgal)	L mm (inch)	A mm (inch)	Type	Material Number
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**S266** 0,5 (0,13) 0,4 (0,11) 120 (4,72) 32 (1,26) K01X3976SE299 R932002073

**S267** 1 (0,26) 0,7 (0,18) 184 (7,24) 32 (1,26) K01X3976SE300 R932002074

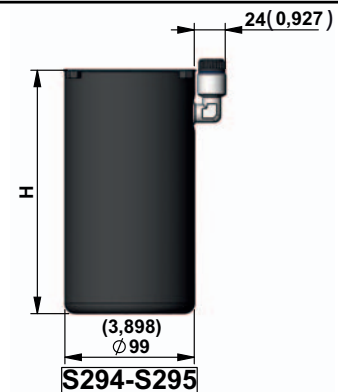
**S183** 1 (0,26) 0,7 (0,18) 184 (7,24) 154 (6,06) K01X3976SE213 R932002072



Code	Tank capacity l (USgal)	Useable capacity l (USgal)	H mm (inch)	Type	Material Number
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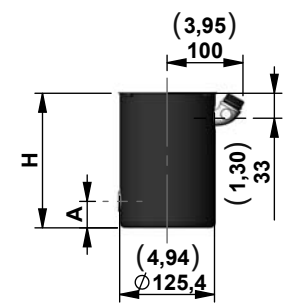
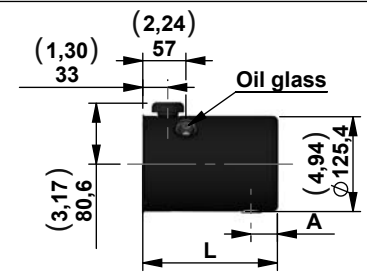
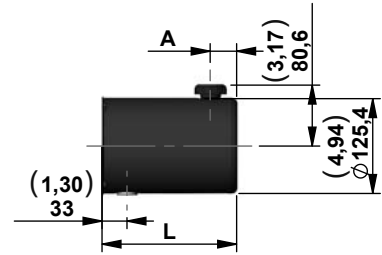
**S294** 0,5 (0,13) 0,4 (0,11) 120 (4,72) K01X3976SE328 R932002083

**S295** 1 (0,26) 0,7 (0,18) 184 (7,24) K01X3976SE329 R932002084



**Steel Tanks**

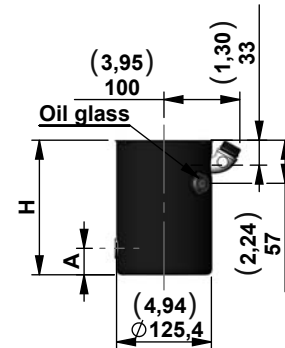
Code	Tank capacity l (USgal)	Useable capacity l (USgal)	L mm (inch)	A mm (inch)	Type	Material Number
<b>S01</b>	1 (0,26)	0,7 (0,18)	133 (5,24)	35 (1,38)	K01K3976SE001	R932001937
<b>S20</b>	1,8 (0,48)	1,2 (0,32)	178 (7,01)	35 (1,38)	K01K3976SE026	R932001953
<b>S02</b>	2,5 (0,66)	1,7 (0,45)	238 (9,37)	60 (2,36)	K01K3976SE003	R932001939
<b>S161</b>	3 (0,79)	2,3 (0,61)	280 (11,02)	60 (2,36)	K01K3976SE186	R932001987
<b>S107</b>	4 (1,06)	3,2 (0,84)	409 (16,10)	60 (2,36)	K01K3976SE119	R932001970
<b>S144</b>	1,8 (0,48)	1,2 (0,32)	178 (7,01)	35 (1,38)	K01K3976SE168	R932001983
<b>S142</b>	2,5 (0,66)	1,7 (0,45)	238 (9,37)	60 (2,36)	K01K3976SE166	R932001981
Code	Tank capacity l (USgal)	Useable capacity l (USgal)	H mm (inch)	A mm (inch)	Type	Material Number
<b>S216</b>	1 (0,26)	0,6 (0,16)	133 (5,24)	35 (1,38)	K01K3976SE246	R932002011
<b>S217</b>	1,8 (0,48)	1,1 (0,29)	178 (7,01)	35 (1,38)	K01K3976SE247	R932002012
<b>S218</b>	2,5 (0,66)	1,7 (0,45)	238 (9,37)	60 (2,36)	K01K3976SE248	R932009269
<b>S239</b>	3 (0,79)	2,3 (0,61)	280 (11,02)	60 (2,36)	K01K3976SE269	R932002015
<b>S107V</b>	4 (1,06)	3,2 (0,84)	409 (16,10)	60 (2,36)	K01K3976SE161	R932001976



**Steel Tanks**

Code	Tank capacity l (USgal)	Useable capacity l (USgal)	H mm (inch)	A mm (inch)	Type	Material Number
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<b>S20V</b>	1,8 (0,48)	1,1 (0,29)	178 (7,01)	35 (1,38)	K01K3976SE027	R932001954
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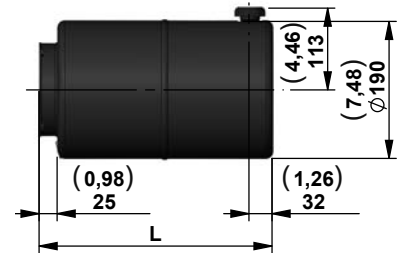
<b>S02V</b>	2,5 (0,66)	1,7 (0,45)	238 (9,37)	60 (2,36)	K01K3976SE004	R932001940
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Code	Tank capacity l (USgal)	Useable capacity l (USgal)	L mm (inch)	Type	Material Number
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<b>S03</b>	5 (1,32)	4 (1,06)	219 (8,62)	K01K3976SE005	R932001941
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<b>S34</b>	7 (1,85)	5,4 (1,43)	271 (10,67)	K01K3976SE041	R932001956
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<b>S04</b>	8 (2,11)	6,6 (1,74)	323 (12,72)	K01K3976SE007	R932001943
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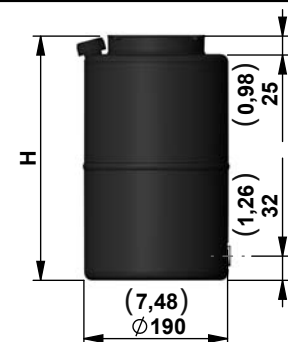


Code	Tank capacity l (USgal)	Useable capacity l (USgal)	H mm (inch)	Type	Material Number
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<b>S03V</b>	5 (1,32)	3 (7,9)	219 (8,62)	K01K3976SE006	R932001942
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<b>S34V</b>	7 (1,85)	4,4 (1,16)	271 (10,67)	K01K3976SE042	R932001957
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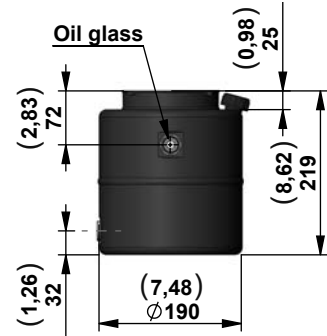
<b>S04V</b>	8 (2,11)	5,8 (1,53)	323 (12,72)	K01K3976SE008	R932001944
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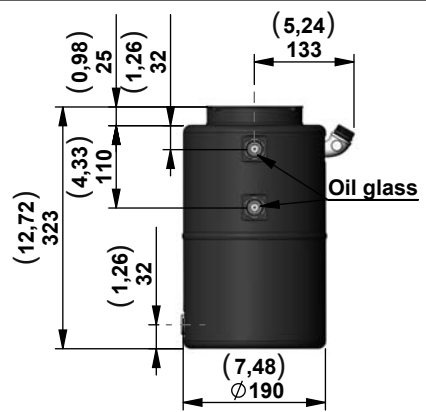
**Steel Tanks**

Code	Tank capacity I (USgal)	Useable capacity I (USgal)	Type	Material Number
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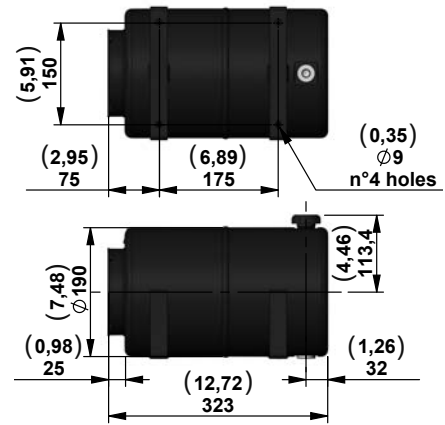
**S106** 5 (1,32) 3 (7,9) K01K3976SE215 R932001997



**S108** 8 (2,11) 5,8 (1,53) K01K3976SE120 R932001971



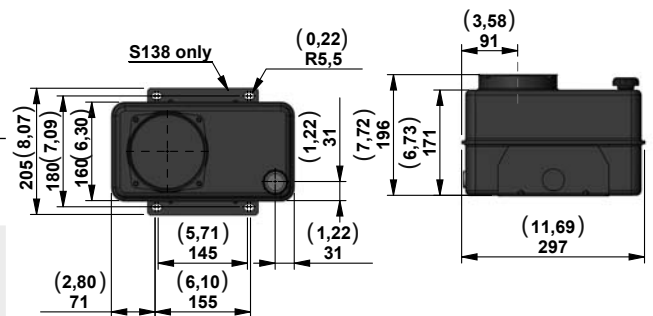
**S94** 8 (2,11) 6,6 (1,74) K01K3976SE106 R932001965



Code	Tank capacity I (USgal)	Useable capacity I (USgal)	Brackets	Type	Material Number
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**S07** 6 (1,58) 4 (1,06) No K01K3976SE013 R932001945

**S138\*** 6 (1,58) 4 (1,06) Yes K01K3976SE162 R932001977



**\*Note** In order to avoid to support the weight of motor by the collar of the tank when the tanks with fixing brackets are used, it is strongly suggested to support also the central manifold.

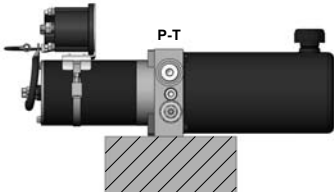
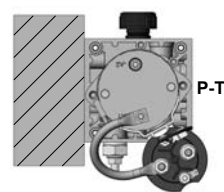
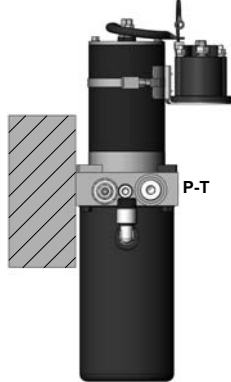
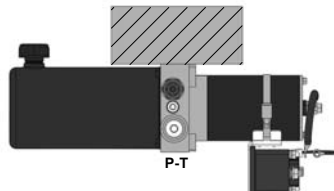
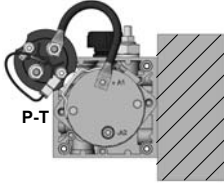
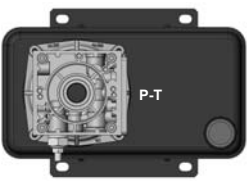
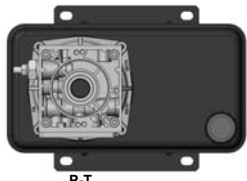
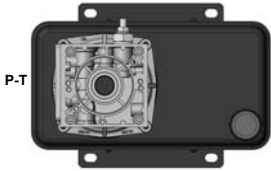
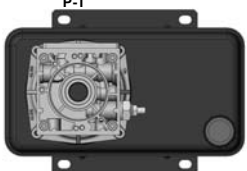
**Steel Tanks**

Code	Tank capacity l (USgal)	Useable capacity l (USgal)	Brackets	Type	Material Number
<b>S48</b>	6 (1,58)	4 (1,06)	No	K01K3976SE056	R932001959
<b>S139*</b>	6 (1,58)	4 (1,06)	Yes	K01K3976SE163	R932001978

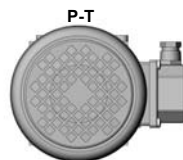

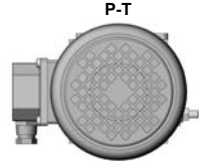

Code	Tank capacity l (USgal)	Useable capacity l (USgal)	A mm (inch)	B mm (inch)	Type	Material Number
<b>S223*</b>	8 (2,11)	6 (1,58)	156 (6,14)	131 (5,16)	K01K3976SE253	R932002013
<b>S54</b>	12 (3,17)	9,5 (2,51)	210 (8,27)	186 (7,32)	K01K3976SE063	R932001960
<b>S140*</b>	12 (3,17)	9,5 (2,51)	210 (8,27)	186 (7,32)	K01K3976SE164	R932001979

**\*Note** In order to avoid to support the weight of motor by the collar of the tank when the tanks with fixing brackets are used, it is strongly suggested to support also the central manifold.

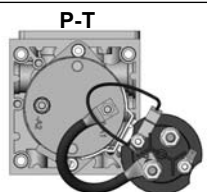
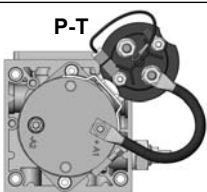
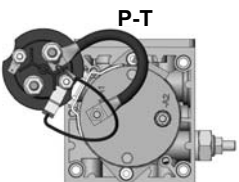
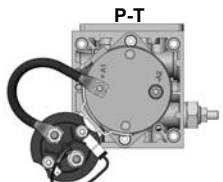
## Mounting position

Code	Code	Code
O1	O3	V1
		
O2	O4	
		
-	O6	
		
O7	O8	
		



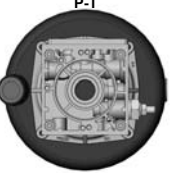

## Terminal Box Position for A.C. Motors

-	M2
	
M3	M4
	

## Relay Position for D.C. Motors

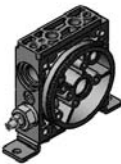
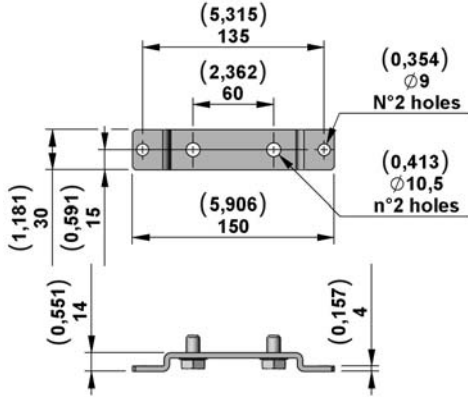
-	R2
	
R3	R4
	

**Oil Cap Position for V1 only**


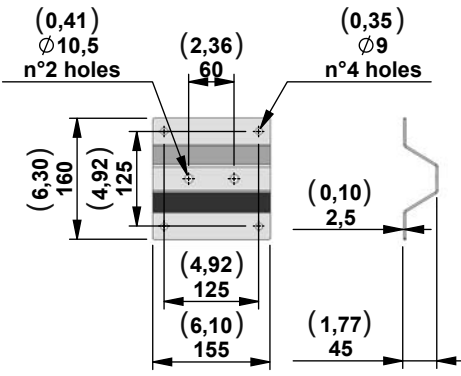

Code		Code	
-		LU	
LO		LP	

**Mounting Brackets**

**Support for Manifold ME - MR Series**

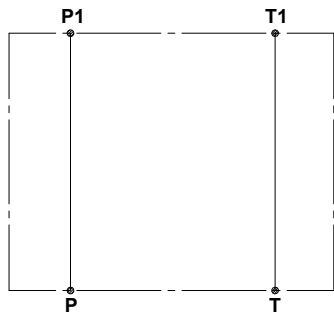
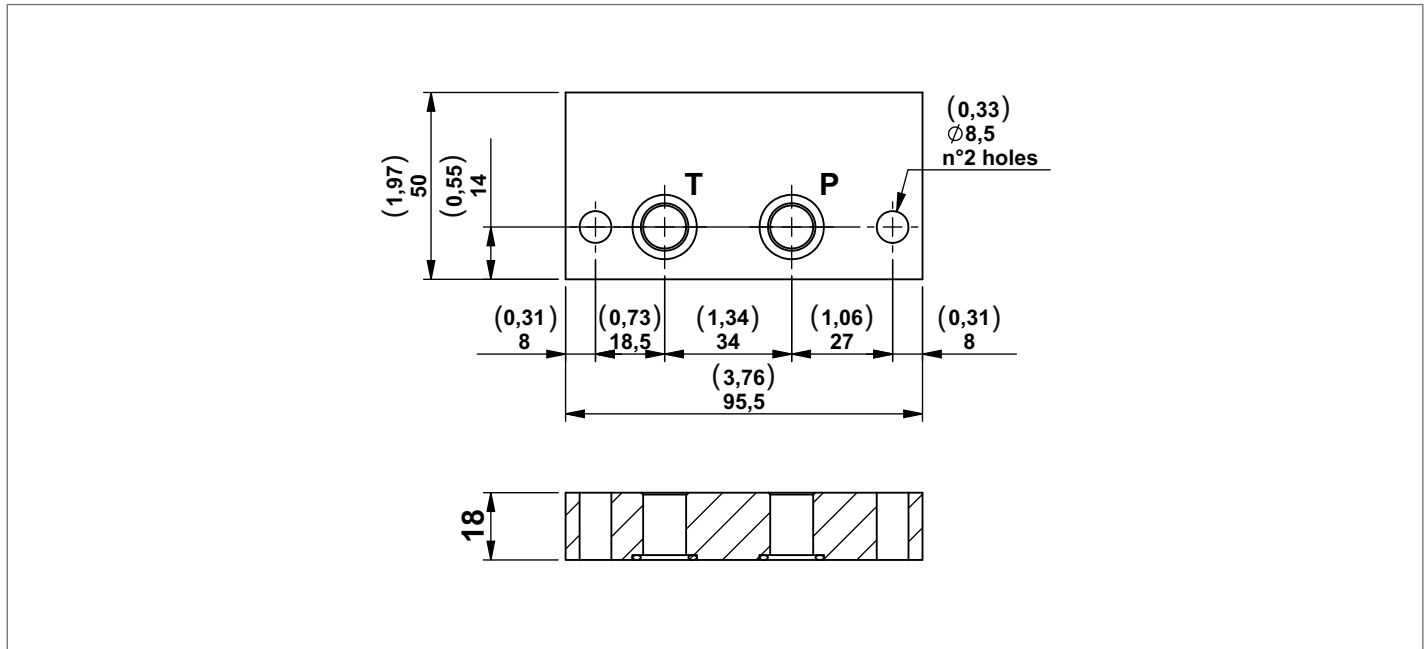
Code	Central manifold	Type	Material number		
G06	ME	K01X331518000	R932009734		

**Support for Manifold Code A16**

Code	Central manifold	Type	Material number		
G07	K	K01K331507000	R932009393		
G07L	K	K01K331507000	R932009393		

## Modular Stackable Elements

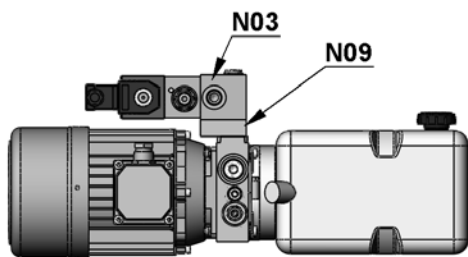
### Space Modular Block



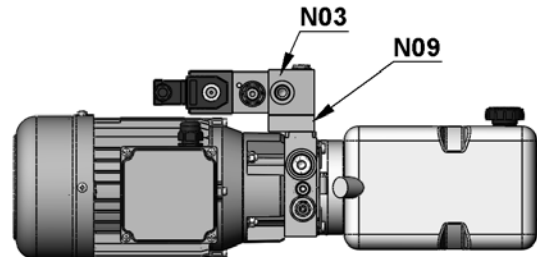
These modular blocks have been designed to have the ability to be assembled as a stack to allow clearance between flanges and motors of different sizes and types. Each block includes 2 OR 3056 gaskets.

Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
N09	Space modular block	300 (4351)	40 (10,57)	G386010000	R932001058

### Motor IEC71 frame Coupling F90

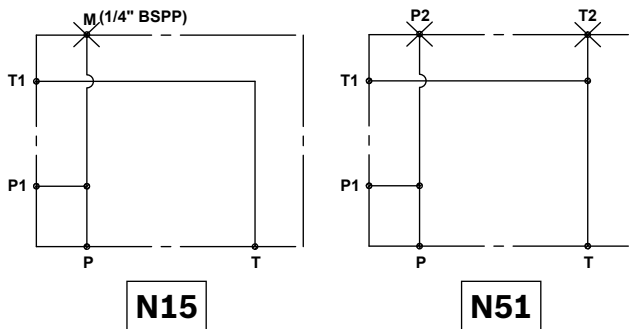
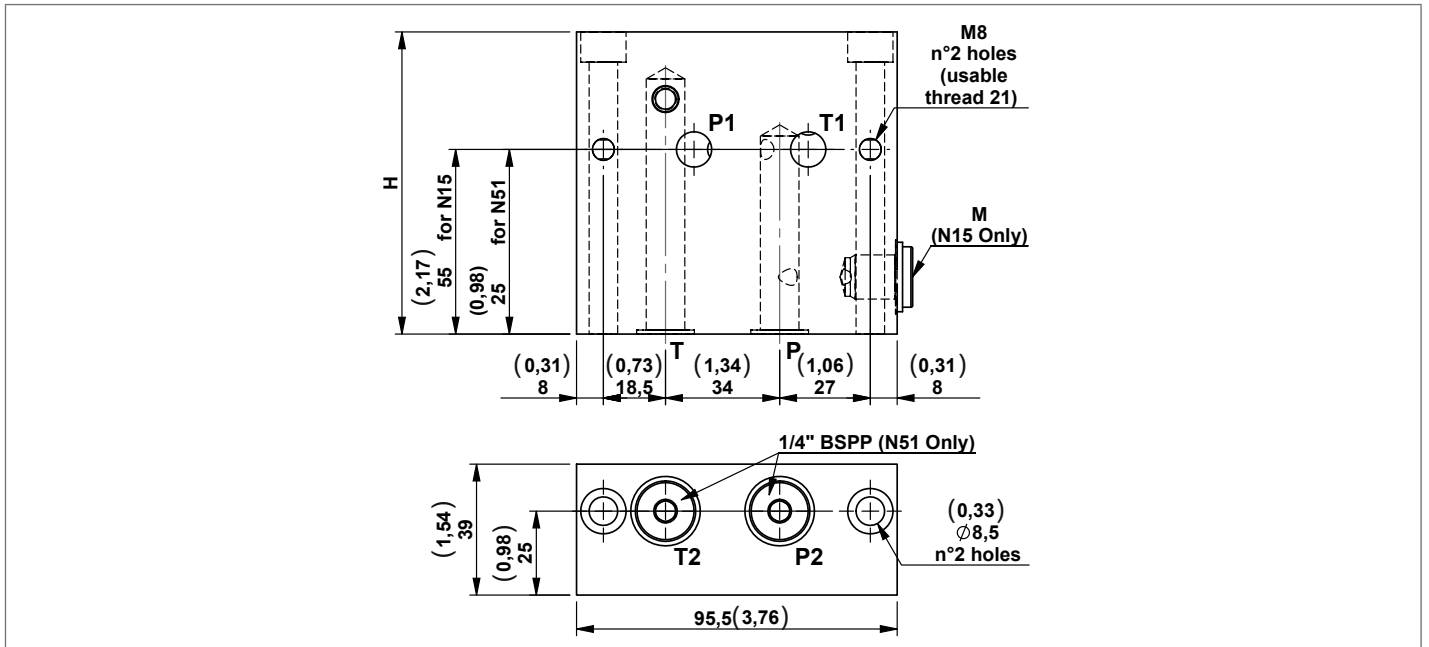


### Motor IEC80 frame Coupling F95





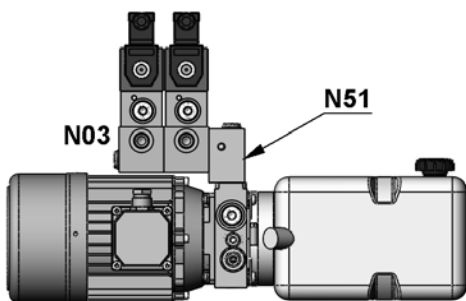
**90° modular block allowing horizontal mounting (motor side)**



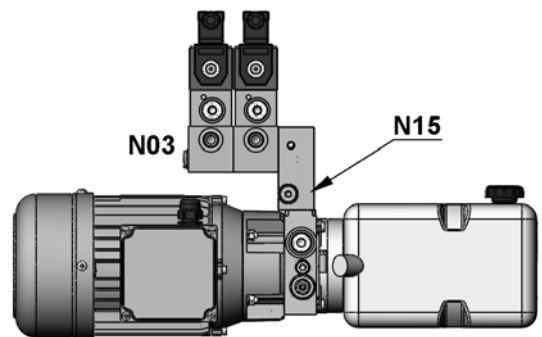
A modular block that is able to turn the standard assembling of 90°, in order to place other manifold blocks over the motor.  
The “N15” block has a 1/4” BSPP port for Pressure Gauge.  
Each block includes 2 OR 2056 gaskets.

Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N15</b>	90° modular block allowing horizontal mounting (motor side) <b>H=90</b>	300 (4351)	35 (9,25)	G386014000	R932001087
<b>N51</b>	90° modular block allowing horizontal mounting (motor side) <b>H=60</b>	300 (4351)	35 (9,25)	G386050000	R932001146

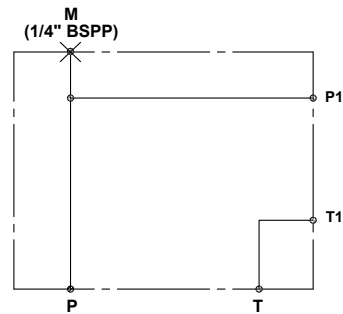
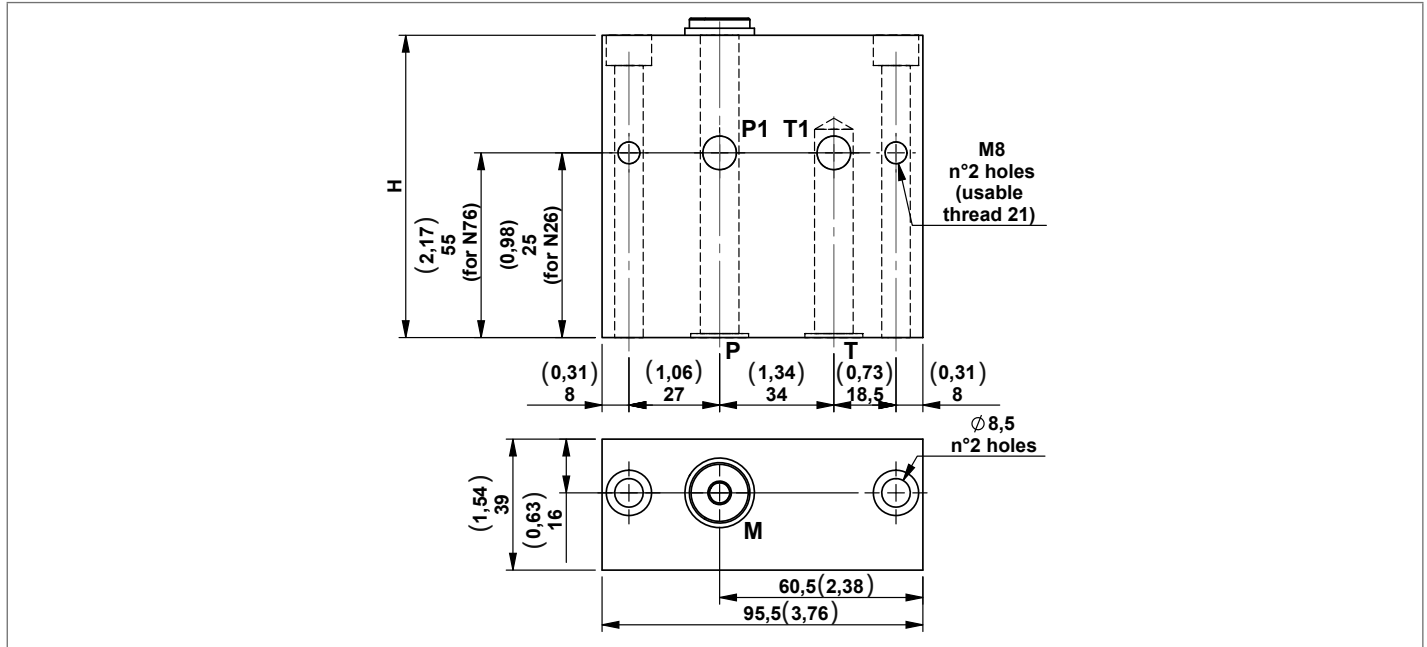
**Motor IEC71 frame Coupling F90**



**Motor IEC80 frame Coupling F95**



**90° modular block allowing horizontal mounting (tank side)**

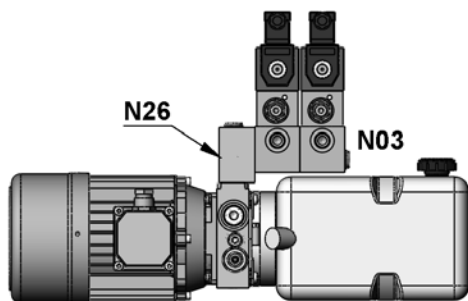


A modular block that is able to turn the standard assembling of 90°, in order to place other blocks over the tank.

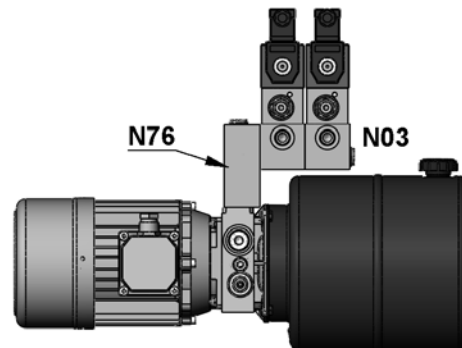
The blocks have a 1/4" BSPP port for Pressure Gauge. Each block includes 2 OR 2056 gaskets.

Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
N76	90° modular block allowing horizontal mounting (tank side) <b>H=90</b>	300 (4351)	35 (9,25)	G386075000	R932001153
N26	90° modular block allowing horizontal mounting (tank side) <b>H=60</b>	300 (4351)	35 (9,25)	G386025000	R932001100

**Tank H=134**



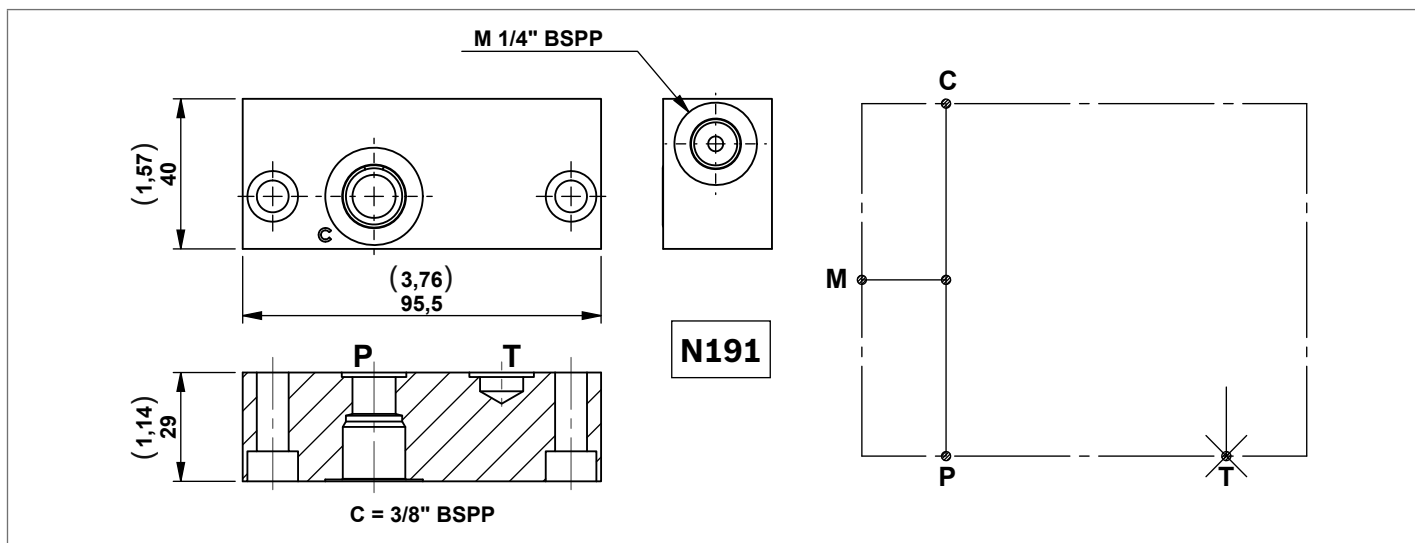
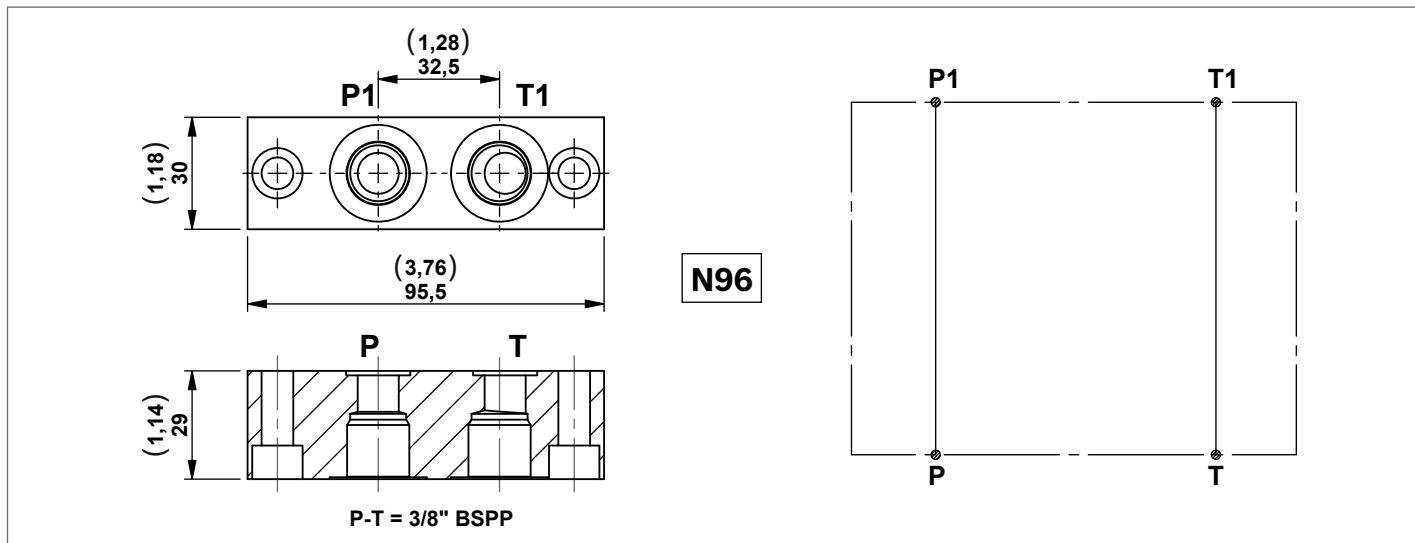
**Tank Diameter Ø190**



**Modular blocks with threaded ports**

Modular blocks with exit 3/8" BSPP.

Each block includes 2 OR 2056 gaskets.

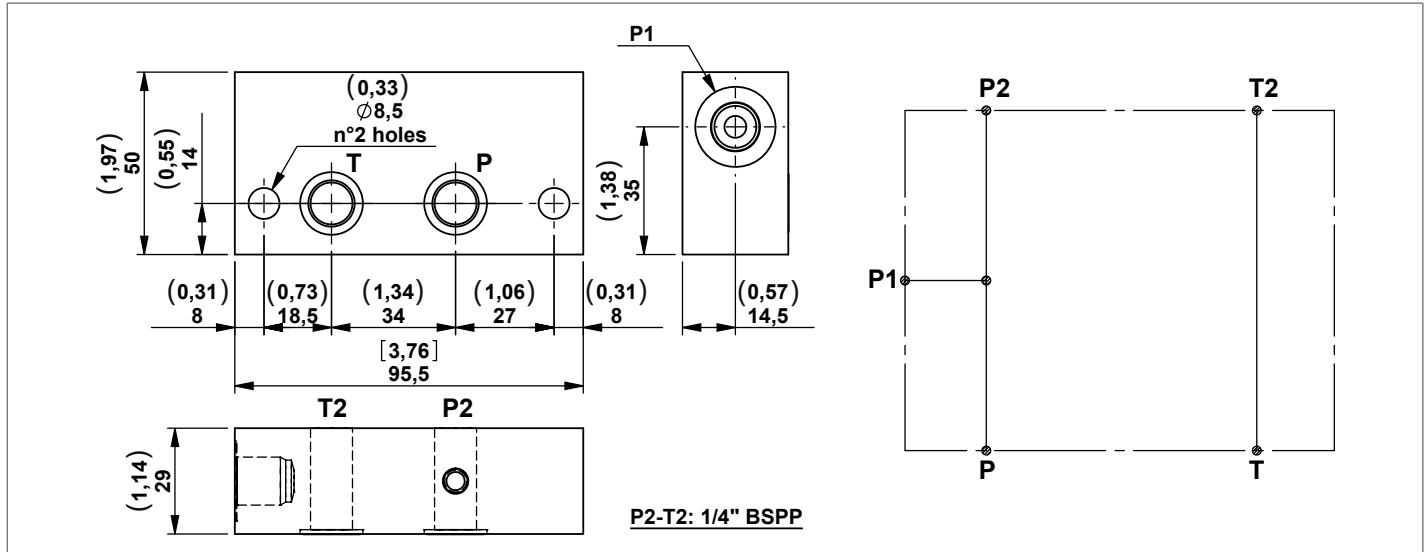


Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N96</b>	Modular block with threaded ports	300 (4351)	35 (9,25)	G386095000	R932001173
<b>N191</b>	Modular block with threaded ports	300 (4351)	35 (9,25)	G386191000	R932001284

**Modular spacer block with extra "P1" port**

A modular block with an extra port.

Each block includes 2 OR 2056 gaskets.

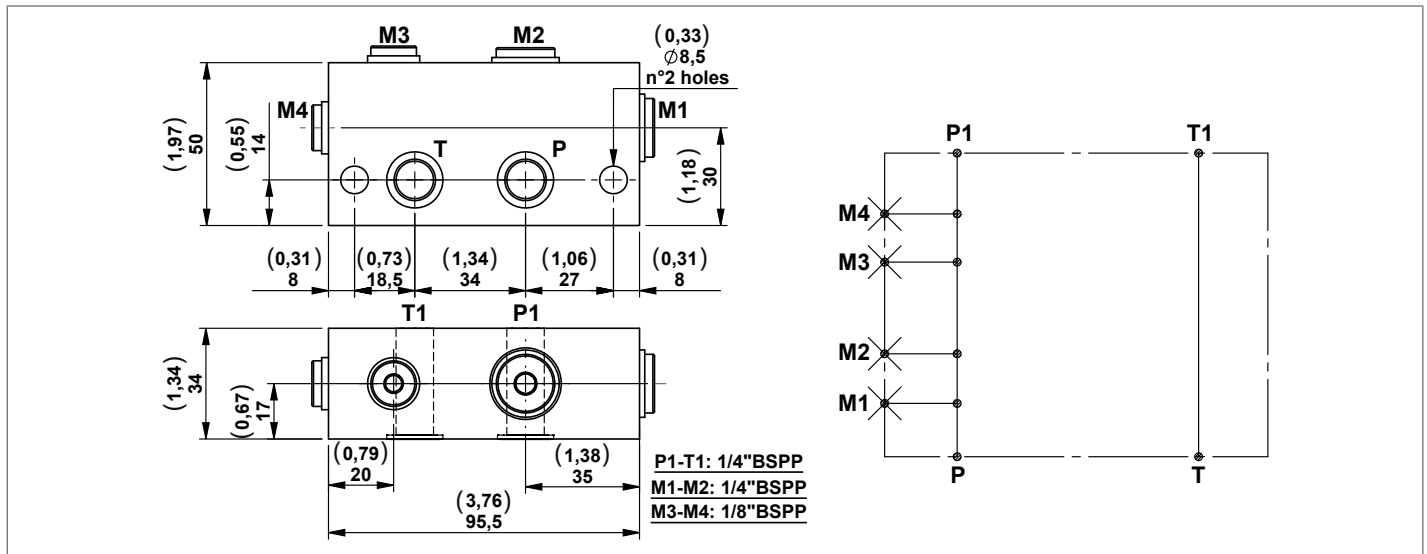


Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N46-14</b>	Modular spacer block with extra "P1" port 1/4" BSPP	300 (4351)	20 (5,28)	G386045000	R932001142
<b>N46-38</b>	Modular spacer block with extra "P1" port 3/8" BSPP	300 (4351)	20 (5,28)	1386000053	R932009506

**Modular spacer block with two 1/8" BSPP and two 1/4" BSPP ports**

A modular block with 4 extra ports.

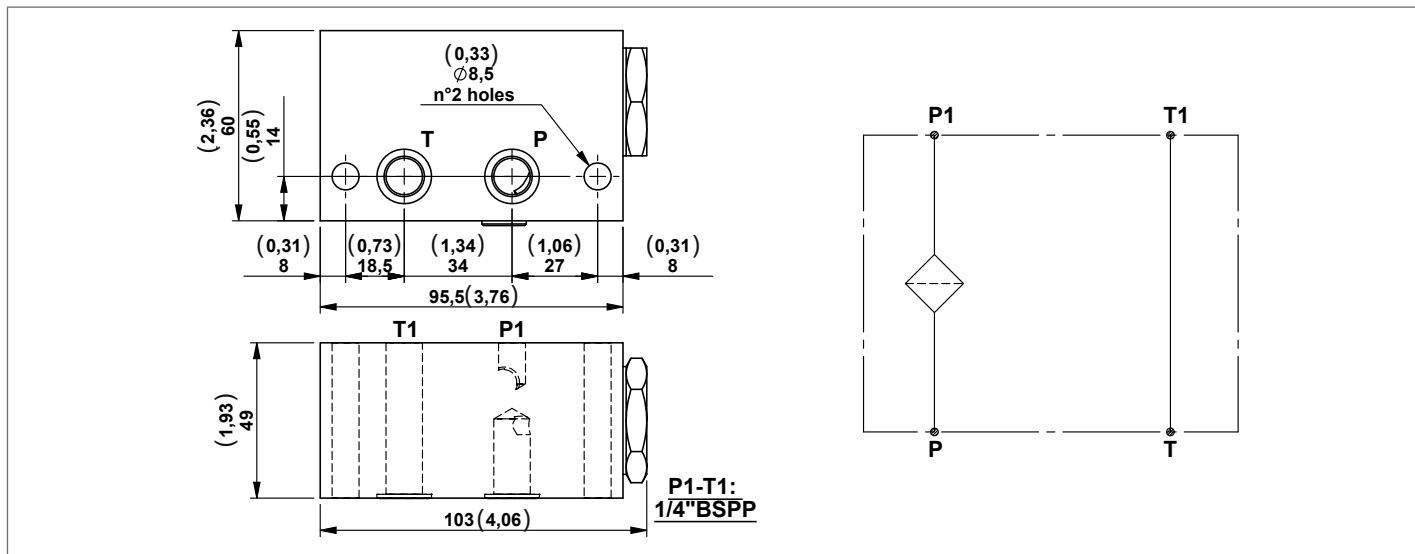
Each block includes 2 OR 2056 gaskets.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N128</b>	Modular spacer block with two 1/8" BSPP ports and two 1/4" BSPP ports	300 (4351)	35 (9,25)	G386128000	R932001241

**Modular block with filter on pressure line**

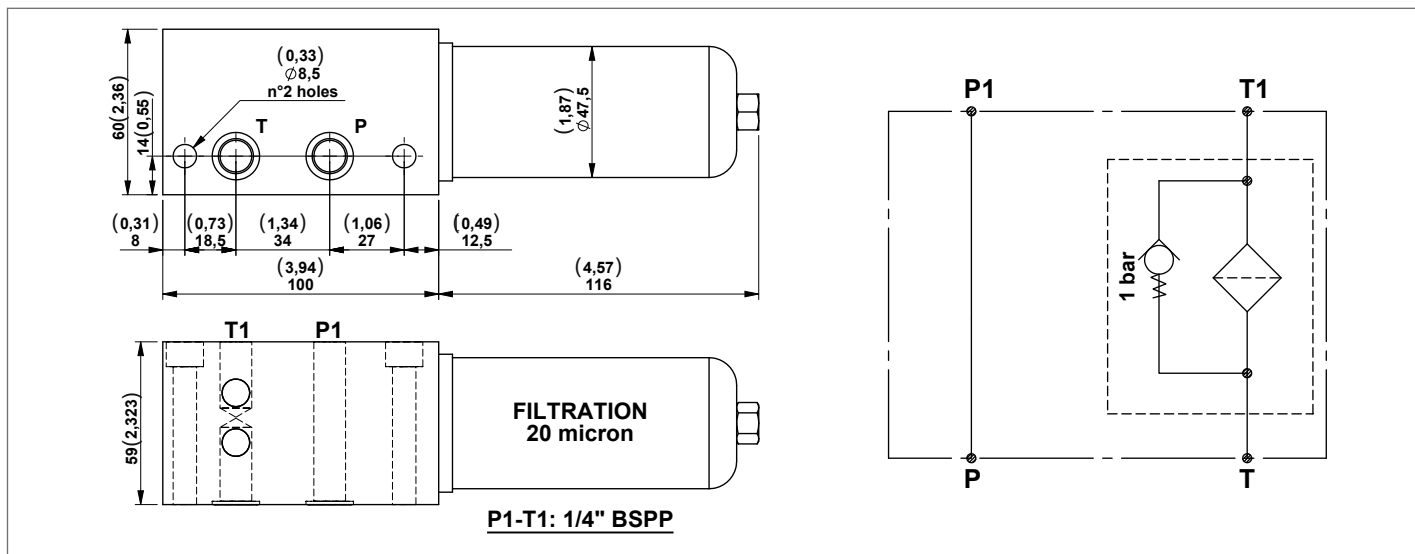
A modular block with a filter on the pressure line. This is recommended for applications where valve may be subjected to contamination. Each block includes 2 OR 2056 gaskets.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N39-25</b>	Modular block with filter ( <b>25 micron</b> ) on pressure line	230 (3336)	10 (2,64)	G386038010	R932001123
<b>N39-60</b>	Modular block with filter ( <b>60 micron</b> ) on pressure line	230 (3336)	10 (2,64)	G386038020	R932001124

**Modular block with filter on the return line**

A modular block with filter on return line. This is recommended for applications where valves may be subjected to contamination. Each block includes 2 OR 2056 gaskets. By-pass valve set at a pressure of 1 bar.

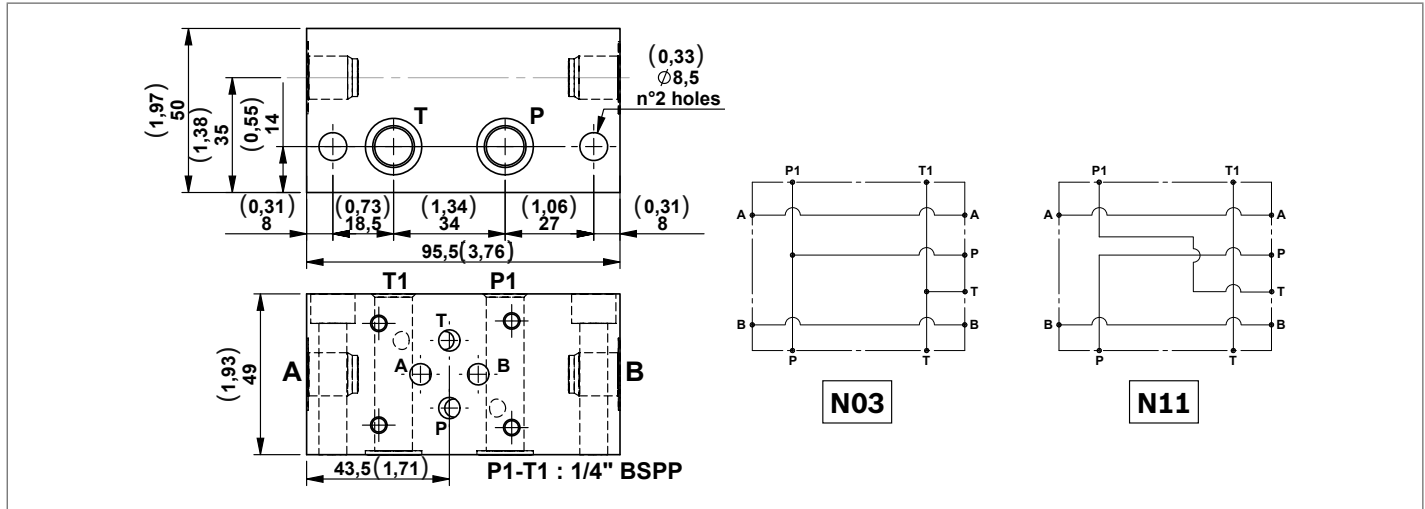


Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N116</b>	Modular block with filter on the return line (20 micron)	6 (87)	20 (5,28)	G386116010	R932001214

**Modular block for CETOP 3 (2143) configuration valves**

Modular blocks for CETOP 3 (2143) electrovalves for parallel or series circuits.

Each block includes 2 OR 2056 gaskets.

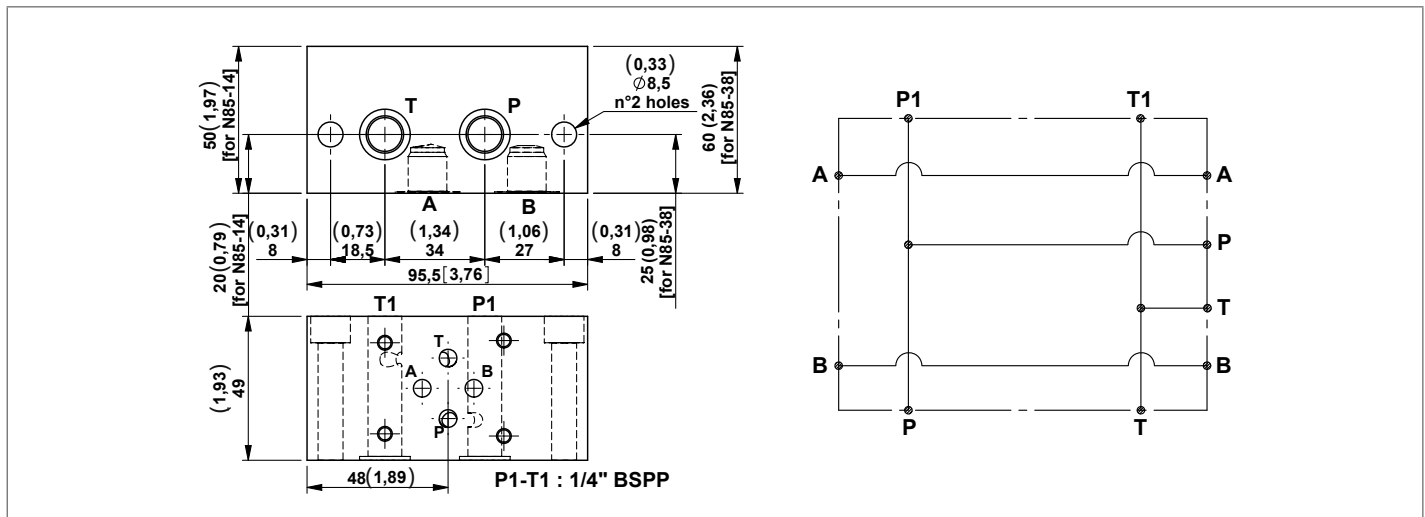


Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N03-14</b>	Modular block for CETOP3 (2143) configuration valves with A-B <b>1/4"</b> BSPP ( <b>parallel circuit</b> )	300 (4351)	40 (10,57)	G386002010	R932001010
<b>N03-38</b>	Modular block for CETOP3 (2143) configuration valves with A-B <b>3/8"</b> BSPP ( <b>parallel circuit</b> )	300 (4351)	40 (10,57)	G386002020	R932001011
<b>N11-14</b>	Modular block for CETOP3 (2143) configuration valves with A-B <b>1/4"</b> BSPP ( <b>series circuit</b> )	300 (4351)	40 (10,57)	G386009010	R932001054
<b>N11-38</b>	Modular block for CETOP3 (2143) configuration valves with A-B <b>3/8"</b> BSPP ( <b>series circuit</b> )	300 (4351)	40 (10,57)	G386009020	R932001056

**Modular block for CETOP 3 (2143) configuration valves**

A modular block that is for CETOP 3 (2143) electrovalves for a parallel circuit with ports on the oppsite side of the valve.

Each block includes 2 OR 2056 gaskets.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N85-14</b>	Modular block for CETOP3 (2143) configuration valves with A-B <b>1/4"</b> BSPP (parallel circuit)	300 (4351)	40 (10,57)	G386084010	R932001158
<b>N85-38</b>	Modular block for CETOP3 (2143) configuration valves with A-B <b>3/8"</b> BSPP (parallel circuit)	300 (4351)	40 (10,57)	G386084020	R932001159

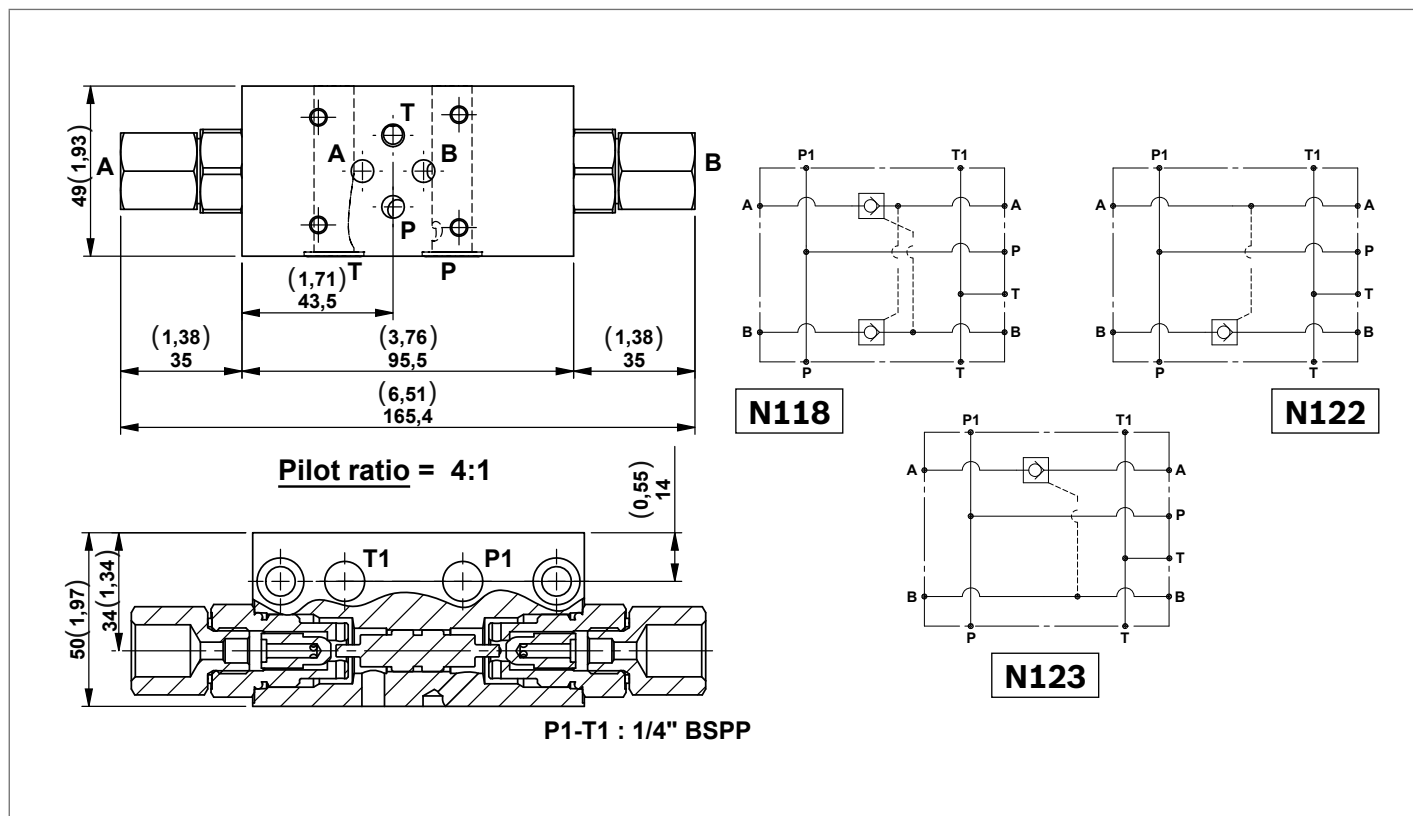


**Modular block with poppet type P.O. check valves for CETOP 3 (2143) configuration valves (parallel circuit)**

A selection of modular block with P.O. check valves for block CETOP 3 (2143) electrovalves.

Each block includes 2 OR 2056 gaskets.

Possibility to have an OR gasket on the piloting piston for application with low flow.

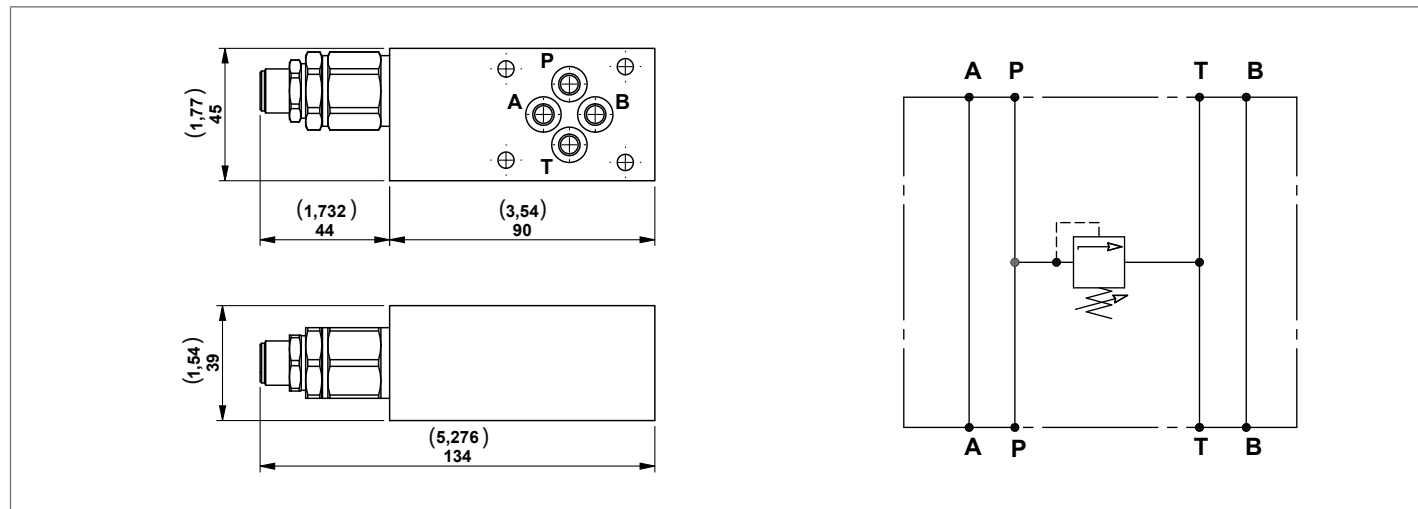


Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N118-38</b>	Modular block with poppet type P.O. check valves on A-B for CETOP 3 (2143) configuration valves <b>(without O-ring on pilot piston and A-B 3/8" BSPP)</b>	300 (4351)	20 (5,28)	G386118A02	R932001217
<b>N118G-38</b>	Modular block with poppet type P.O. check valves on A-B for CETOP 3 (2143) configuration valves <b>(with O-ring on pilot piston and A-B 3/8" BSPP)</b>	300 (4351)	20 (5,28)	G386118B02	R932001222
<b>N118-14</b>	Modular block with poppet type P.O. check valves on A-B for CETOP 3 (2143) configuration valves <b>(without O-ring on pilot piston and A-B 1/4" BSPP)</b>	300 (4351)	20 (5,28)	G386118A03	R932001218
<b>N118G-14</b>	Modular block with poppet type P.O. check valves on A-B for CETOP 3 (2143) configuration valves <b>(with O-ring on pilot piston and A-B 1/4" BSPP)</b>	300 (4351)	20 (5,28)	G386118B03	R932001223
<b>N122-38</b>	Modular block with poppet type P.O. check valve on B for CETOP 3 (2143) configuration valves <b>(without O-ring on pilot piston and A-B 3/8" BSPP)</b>	300 (4351)	20 (5,28)	G386122A02	R932001233
<b>N122-14</b>	Modular block with poppet type P.O. check valve on B for CETOP 3 (2143) configuration valves <b>(without O-ring on pilot piston and A-B 1/4" BSPP)</b>	300 (4351)	20 (5,28)	G386122A01	R932001232
<b>N123-38</b>	Modular block with poppet type P.O. check valves on A for CETOP 3 (2143) configuration valves <b>(without O-ring on pilot piston and A-B 3/8" BSPP)</b>	300 (4351)	20 (5,28)	G386123A02	R932001237
<b>N123-14</b>	Modular block with poppet type P.O. check valves on A for CETOP 3 (2143) configuration valves <b>(without O-ring on pilot piston and A-B 1/4" BSPP)</b>	300 (4351)	20 (5,28)	G386123A01	R932001236



**Sandwich blocks with poppet type "VMD1" relief valves for CETOP 3 (2143) configuration valves**

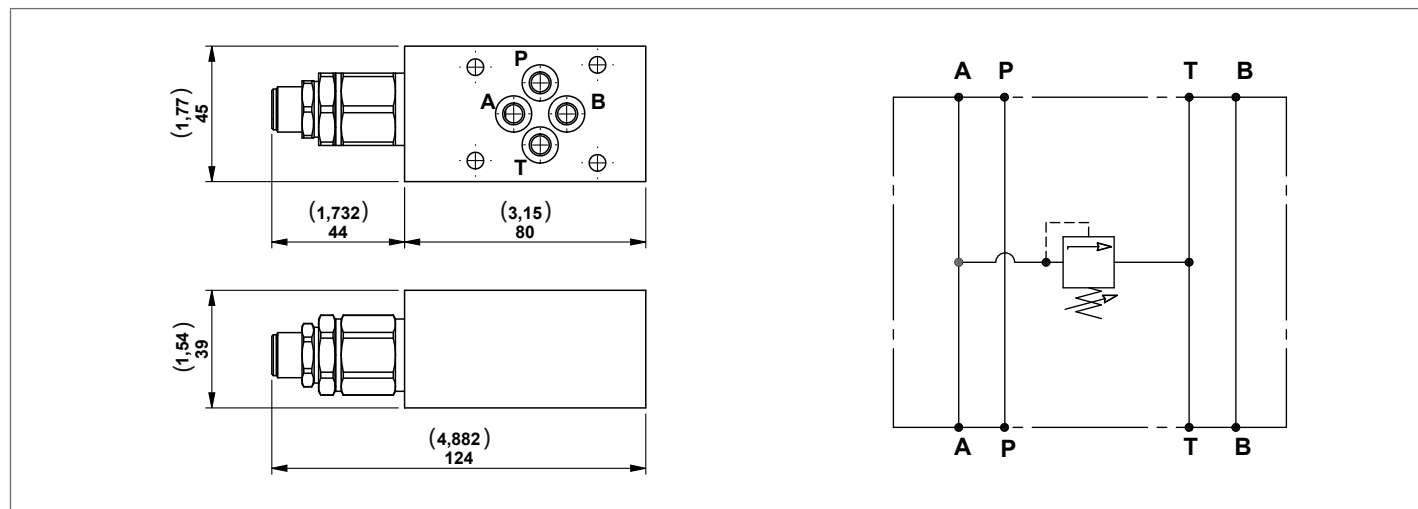
Each block includes 4 OR 108 gaskets.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N99-10</b>	Sandwich block with poppet type "VMD1" relief valve P in T (25-120 bar) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386098A81A	R930071372
<b>N99-20</b>	Sandwich block with poppet type "VMD1" relief valve P in T (40-200 bar) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386098A82A	R930071373
<b>N99-35</b>	Sandwich block with poppet type "VMD1" relief valve P in T (200-350 bar) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386098A83A	R930071376

**Sandwich blocks with poppet type "VMD1" relief valves for CETOP 3 (2143) configuration valves**

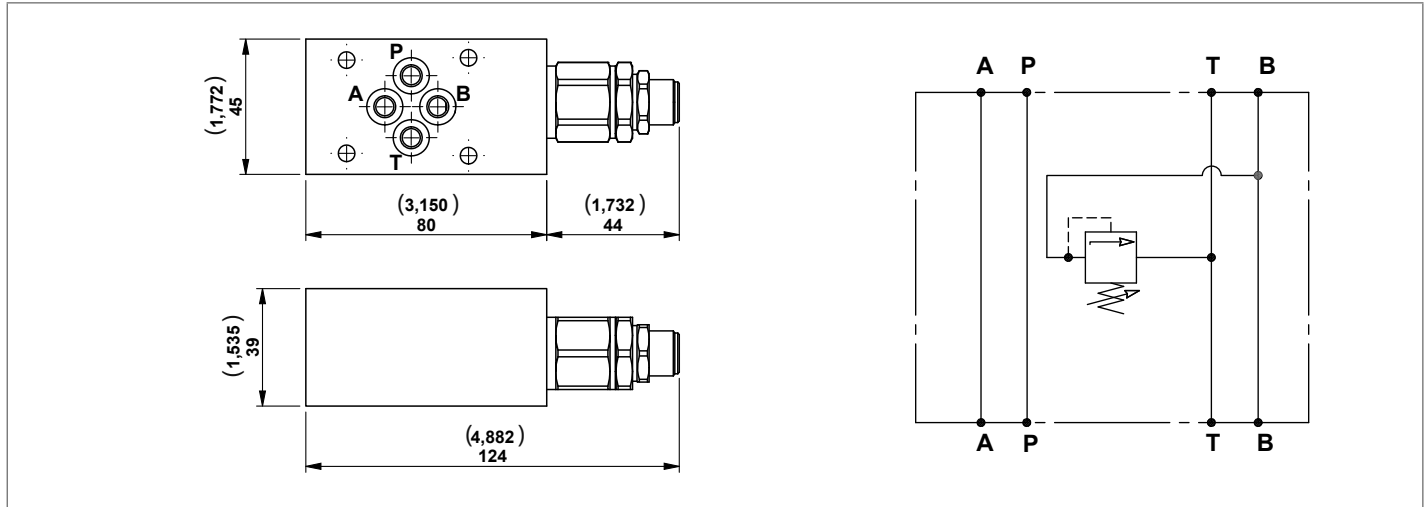
Each block includes 4 OR 108 gaskets.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N100-10</b>	Sandwich block with poppet type "VMD1" relief valve A in T (25-120 bar) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386099A81A	R930071377
<b>N100-20</b>	Sandwich block with poppet type "VMD1" relief valve A in T (40-200 bar) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386099A82A	R930071378
<b>N100-35</b>	Sandwich block with poppet type "VMD1" relief valve A in T (200-350 bar) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386099A83A	R930071379

**Sandwich blocks with poppet type "VMD1" relief valves for CETOP 3 (2143) configuration valves**

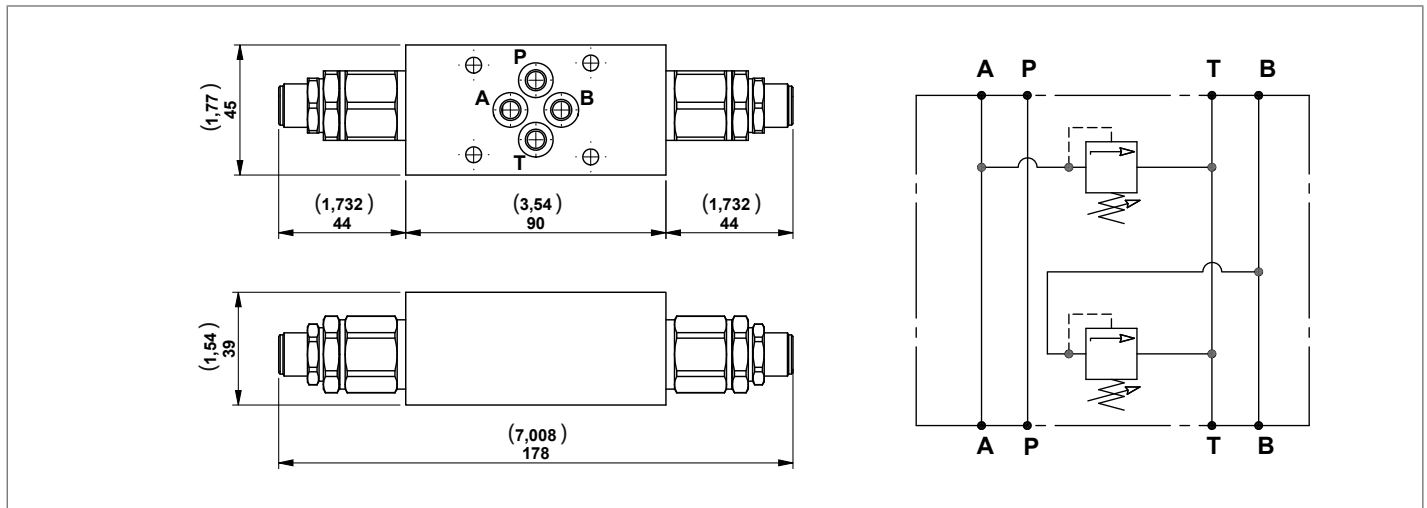
Each block includes 4 OR 108 gaskets.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N101-10</b>	Sandwich block with poppet type "VMD1" relief valve B in T ( <b>25-120 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386101A81A	R930071380
<b>N101-20</b>	Sandwich block with poppet type "VMD1" relief valve B in T ( <b>40-200 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386101A82A	R930071381
<b>N101-35</b>	Sandwich block with poppet type "VMD1" relief valve B in T ( <b>200-350 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386101A83A	R930071382

**Sandwich blocks with poppet type "VMD1" relief valves for CETOP 3 (2143) configuration valves**

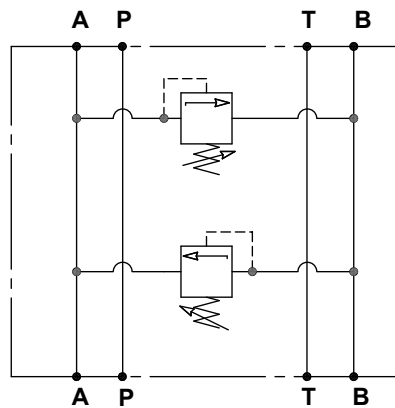
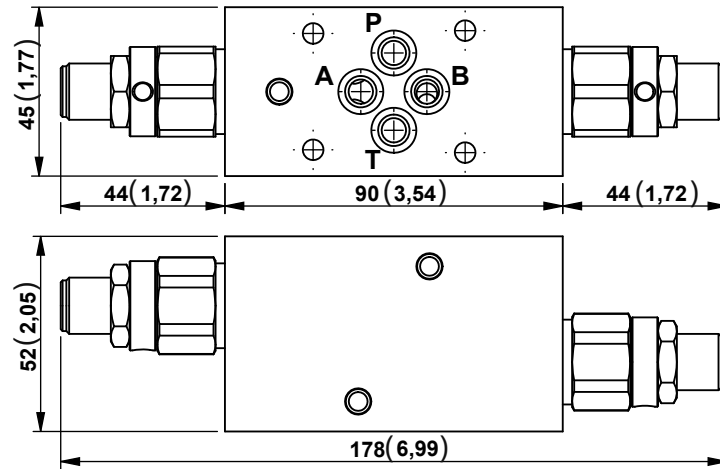
Each block includes 4 OR 108 gaskets.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N102-10</b>	Sandwich block with poppet type "VMD1" relief valves A-B in T ( <b>25-120 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386102A81A	R930071383
<b>N102-20</b>	Sandwich block with poppet type "VMD1" relief valves A-B in T ( <b>40-200 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386102A82A	R930071384
<b>N102-35</b>	Sandwich block with poppet type "VMD1" relief valves A-B in T ( <b>200-350 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386102A83A	R930071385

**Sandwich blocks with poppet type “VM25” relief valves for CETOP 3 (2143) configuration valves**

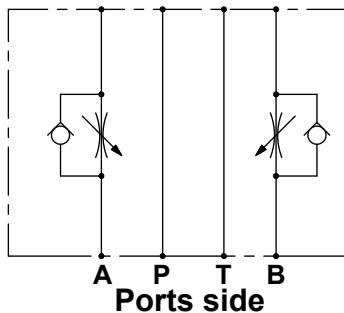
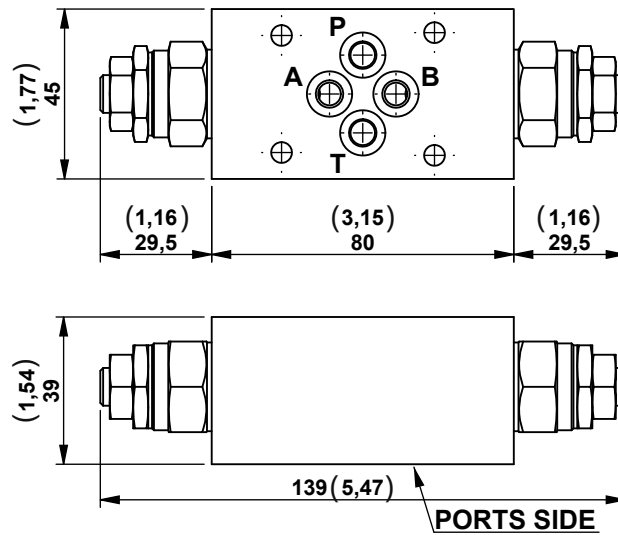
Each block includes 4 OR 108 gaskets.



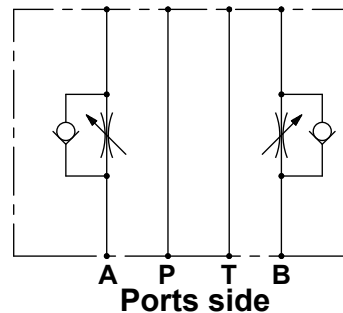
Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N103-10</b>	Sandwich block with poppet type "VM25" relief valves A in B and B in A ( <b>10-100 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386103A81	R932001202
<b>N103-20</b>	Sandwich block with poppet type "VM25" relief valves A in B and B in A ( <b>40-200 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386103A82	R932001203
<b>N103-35</b>	Sandwich block with poppet type "VM25" relief valves A in B and B in A ( <b>70-350 bar</b> ) for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386103A83	R932001204

**Sandwich blocks with “ST-CU-06” adjustable flow control valves for CETOP 3 (2143) configuration valves**

Each block includes 4 OR 108 gaskets.



**N78**

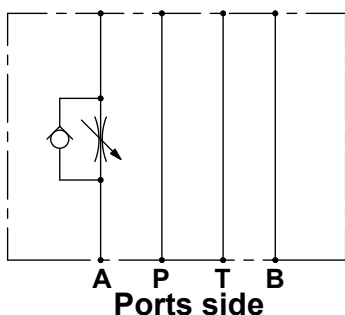
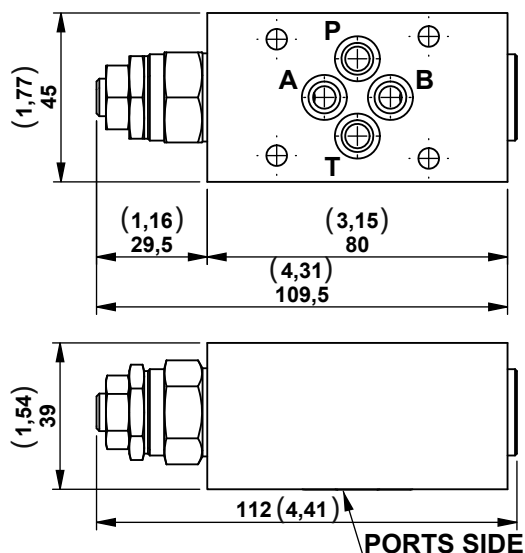


**N104**

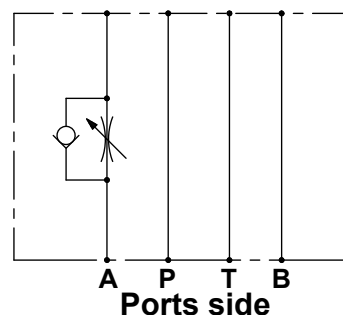
Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N78</b>	Sandwich blocks with ST-CU-06 adjustable flow control valves (that <b>working on the return to the tank</b> of the A and B line) for CETOP 3 (2143) configuration valves	300 (4351)	25 (6,60)	G386077A81	R932001156
<b>N104</b>	Sandwich blocks with ST-CU-06 adjustable flow control valves (that <b>working on the delivery</b> of the A and B line) for CETOP 3 (2143) configuration valves	300 (4351)	25 (6,60)	G386104A80	R932001205

**Sandwich blocks with “ST-CU-06” adjustable flow control valves for CETOP 3 (2143) configuration valves**

Each block includes 4 OR 108 gaskets.



**N105**

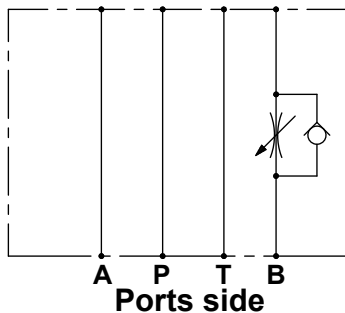
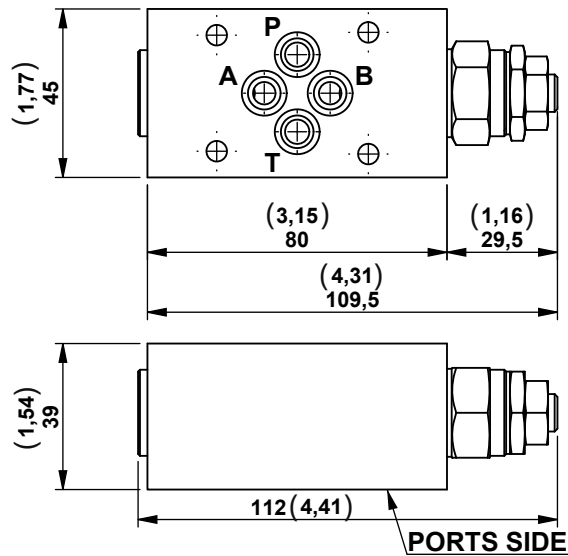


**N107**

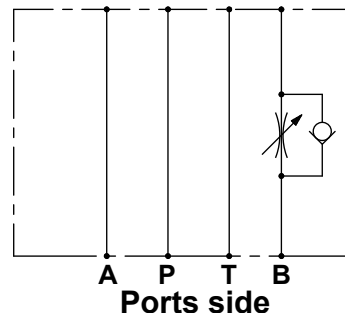
Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N105</b>	Sandwich blocks with ST-CU-06 adjustable flow control valves (that <b>working on the return to the tank</b> of the A line) for CETOP 3 (2143) configuration valves	300 (4351)	25 (6,60)	G386105A81	R932000183
<b>N107</b>	Sandwich blocks with ST-CU-06 adjustable flow control valves (that <b>working on the delivery</b> of the A line) for CETOP 3 (2143) configuration valves	300 (4351)	25 (6,60)	G386107A80	R932001211

**Sandwich blocks with “ST-CU-06” adjustable flow control valves for CETOP 3 (2143) configuration valves**

Each block includes 4 OR 108 gaskets.



**N106**

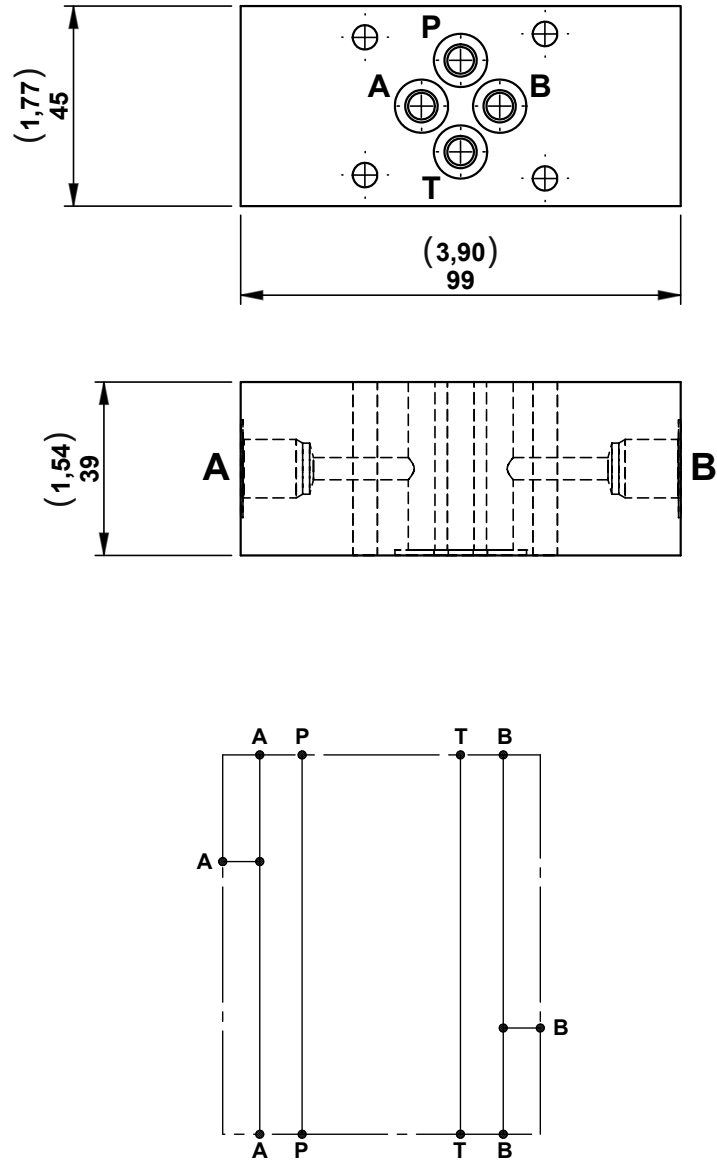


**N108**

Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N106</b>	Sandwich blocks with ST-CU-06 adjustable flow control valves (that <b>working on the return to the tank</b> of the B line) for CETOP 3 (2143) configuration valves	300 (4351)	25 (6,60)	G386106A81	R932000184
<b>N108</b>	Sandwich blocks with ST-CU-06 adjustable flow control valves (that <b>working on the delivery</b> of the B line) for CETOP 3 (2143) configuration valves	300 (4351)	25 (6,60)	G386108A80	R932001212

**Sandwich block with ports on “A” and “B” line for CETOP 3 (2143) configuration valves**

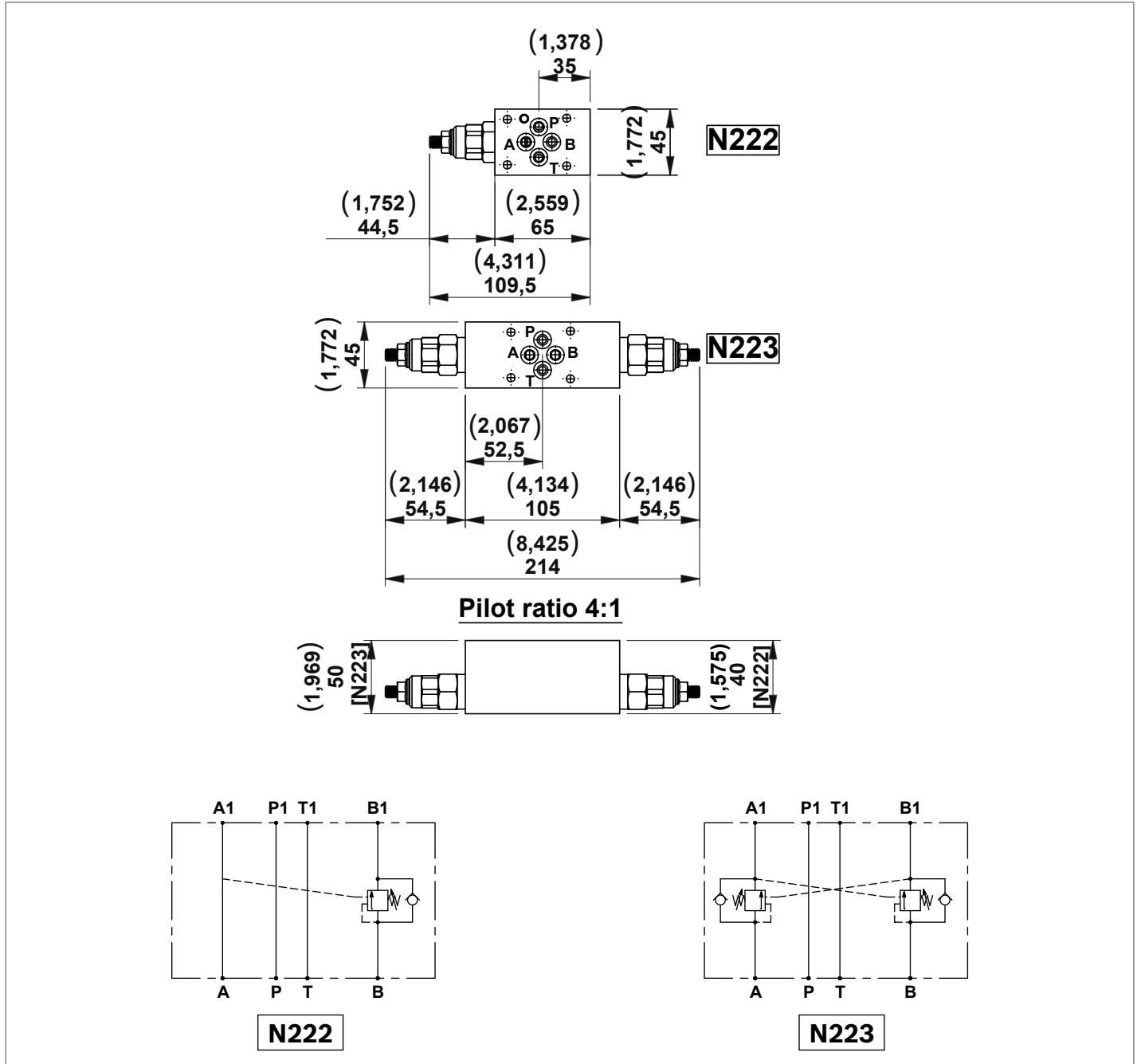
Each block includes 2 OR 2056 gaskets.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N19-14</b>	Sandwich block with <b>1/4"</b> BSPP ports on A and B line for CETOP3 (2143) configuration valves	300 (4351)	25 (6,60)	G386018010	R932001091

**Sandwich blocks with overcenter valves for CETOP 3 (2143) configuration valves**

Each block includes 4 OR 108 gaskets.

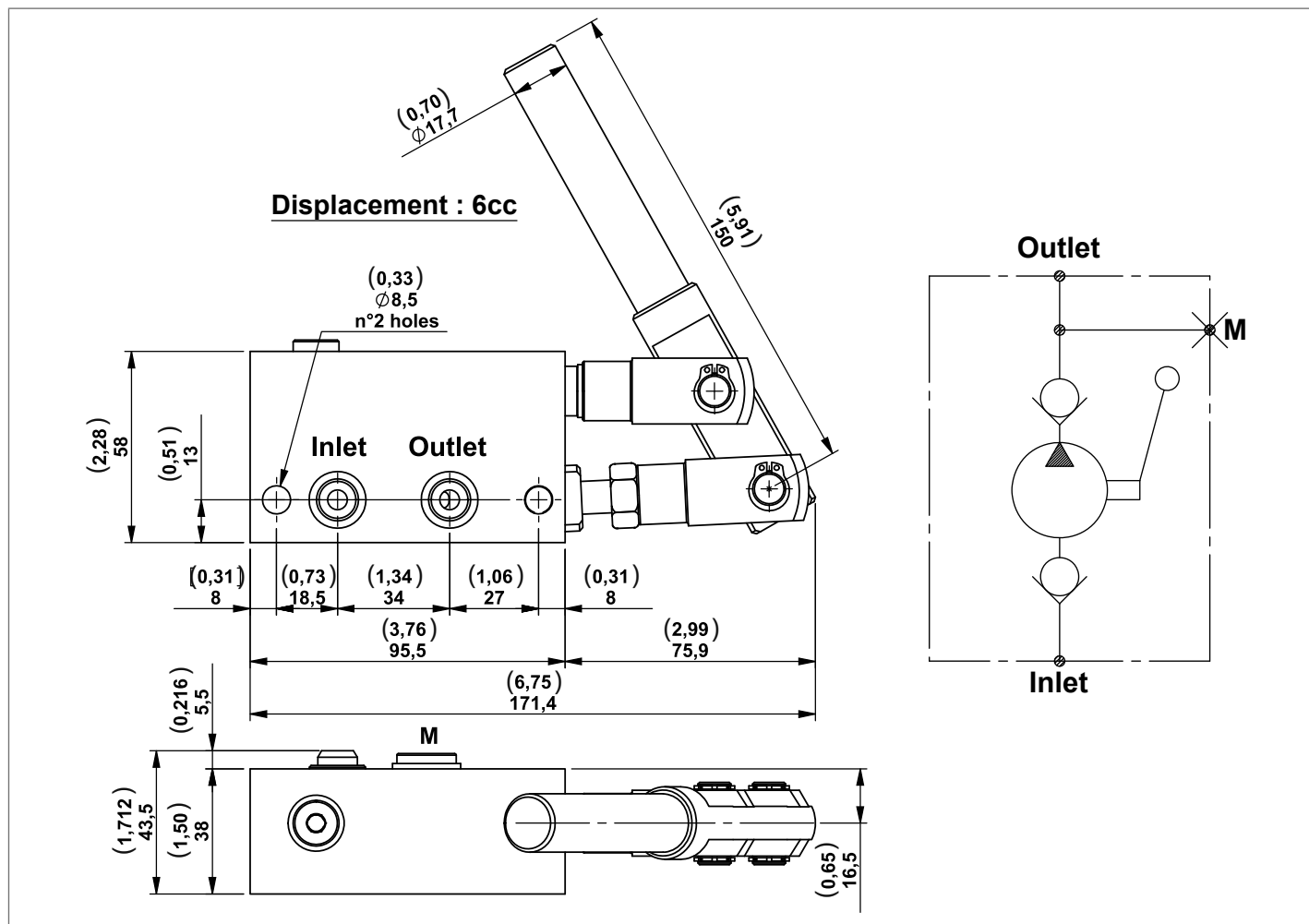


Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>N222.20</b>	Sandwich block with Overcentre valve VBSN-08AA (100-210 bar) on B line for CETOP3	300 (4351)	30 (7,93)	G386222002	R932001326
<b>N222.35</b>	Sandwich block with Overcentre valve VBSN-08AA (200-350 bar) on B line for CETOP3	300 (4351)	30 (7,93)	G386222003	R932001327
<b>N223.20</b>	Sandwich block with Overcentre valves VBSN-08AA (100-210 bar) on A and B line for CETOP3	300 (4351)	30 (7,93)	G386223002	R932001329
<b>N223.35</b>	Sandwich block with Overcentre valves VBSN-08AA (200-350 bar) on A and B line for CETOP3	300 (4351)	30 (7,93)	G386223003	R932001330



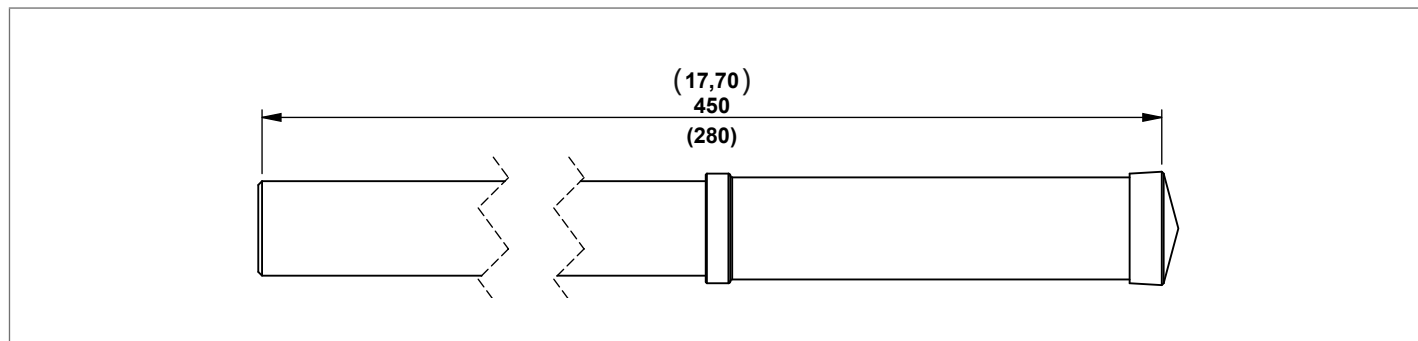
**Modular hand pump manifold block**

A single acting hand pump usually used for emergency.  
Each block includes 5 OR 2050 gaskets.



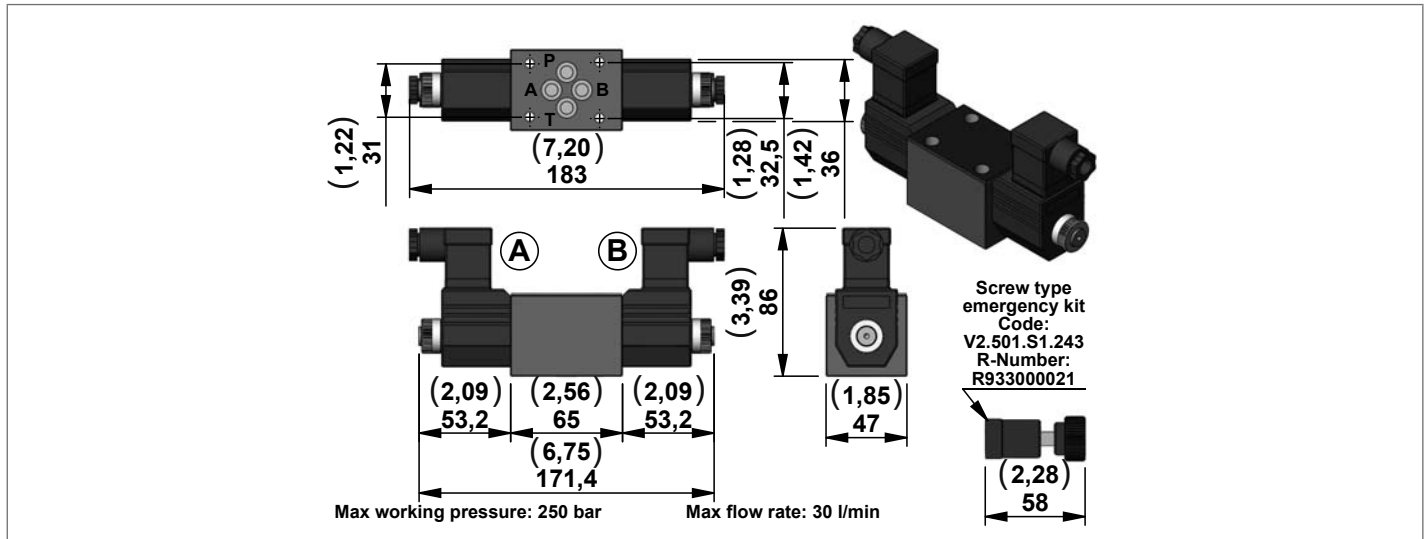
Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
N22	Modular hand pump manifold block	350 (5076)	-	G386021A10	R930067575

**Lever Kit**



Description	Type	Material number
Lever L= 450	K250133000	R932002452
Lever L= 280	K2501S1058	R932002407

**CETOP 2143 (Ø6mm (0,24inch) ) Solenoid Valves**



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Material number	Diagram
<b>E02Z-OB</b>	CETOP3 solenoid valve 12V D.C.	250 (3626)	30 (7,92)	R933004275	
<b>E02Z-OC</b>	CETOP3 solenoid valve 24V D.C.	250 (3626)	30 (7,92)	R933004277	
<b>E02Z-OV</b>	CETOP3 solenoid valve 24V RAC	250 (3626)	30 (7,92)	R933004279	
<b>E02Z-OZ</b>	CETOP3 solenoid valve 220V RAC	250 (3626)	30 (7,92)	R933004281	
<b>E06Z-OB</b>	CETOP3 solenoid valve 12V D.C.	250 (3626)	30 (7,92)	R933004096	
<b>E06Z-OC</b>	CETOP3 solenoid valve 24V D.C.	250 (3626)	30 (7,92)	R933004098	
<b>E06Z-OD</b>	CETOP3 solenoid valve 48V D.C.	250 (3626)	30 (7,92)	R933007830	
<b>E06Z-OV</b>	CETOP3 solenoid valve 24V RAC	250 (3626)	30 (7,92)	R933004102	
<b>E06Z-OW</b>	CETOP3 solenoid valve 110V RAC	250 (3626)	30 (7,92)	R933004103	
<b>E06Z-OZ</b>	CETOP3 solenoid valve 220V RAC	250 (3626)	30 (7,92)	R933004104	
<b>E07Z-OB</b>	CETOP3 solenoid valve 12V D.C.	250 (3626)	30 (7,92)	R933004131	
<b>E07Z-OC</b>	CETOP3 solenoid valve 24V D.C.	250 (3626)	30 (7,92)	R933004133	
<b>E07Z-OD</b>	CETOP3 solenoid valve 48V D.C.	250 (3626)	30 (7,92)	R933004135	
<b>E07Z-OV</b>	CETOP3 solenoid valve 24V RAC	250 (3626)	30 (7,92)	R933004136	
<b>E07Z-OW</b>	CETOP3 solenoid valve 110V RAC	250 (3626)	30 (7,92)	R933004137	
<b>E07Z-OZ</b>	CETOP3 solenoid valve 220V RAC	250 (3626)	30 (7,92)	R933004138	
<b>E08Z-OB</b>	CETOP3 solenoid valve 12V D.C.	250 (3626)	30 (7,92)	R933004191	
<b>E08Z-OC</b>	CETOP3 solenoid valve 24V D.C.	250 (3626)	30 (7,92)	R933004193	
<b>E08Z-OD</b>	CETOP3 solenoid valve 48V D.C.	250 (3626)	30 (7,92)	R933004197	
<b>E08Z-OV</b>	CETOP3 solenoid valve 24V RAC	250 (3626)	30 (7,92)	R933004198	
<b>E08Z-OW</b>	CETOP3 solenoid valve 110V RAC	250 (3626)	30 (7,92)	R933004199	
<b>E08Z-OZ</b>	CETOP3 solenoid valve 220V RAC	250 (3626)	30 (7,92)	R933004200	
<b>E10Z-OB</b>	CETOP3 solenoid valve 12V D.C.	250 (3626)	30 (7,92)	R933004057	
<b>E10Z-OC</b>	CETOP3 solenoid valve 24V D.C.	250 (3626)	30 (7,92)	R933004061	
<b>E10Z-OD</b>	CETOP3 solenoid valve 48V D.C.	250 (3626)	30 (7,92)	R933004063	
<b>E10Z-OV</b>	CETOP3 solenoid valve 24V RAC	250 (3626)	30 (7,92)	R933004065	
<b>E10Z-OW</b>	CETOP3 solenoid valve 110V RAC	250 (3626)	30 (7,92)	R933004067	
<b>E10Z-OZ</b>	CETOP3 solenoid valve 220V RAC	250 (3626)	30 (7,92)	R933004068	

**Modular blocks with two lowering solenoid valves, check valves, and compensated flow control throttle valves (available upon request)**

Modular blocks to operate a single acting cylinder in a parallel circuit or a double acting cylinder in regenerative.

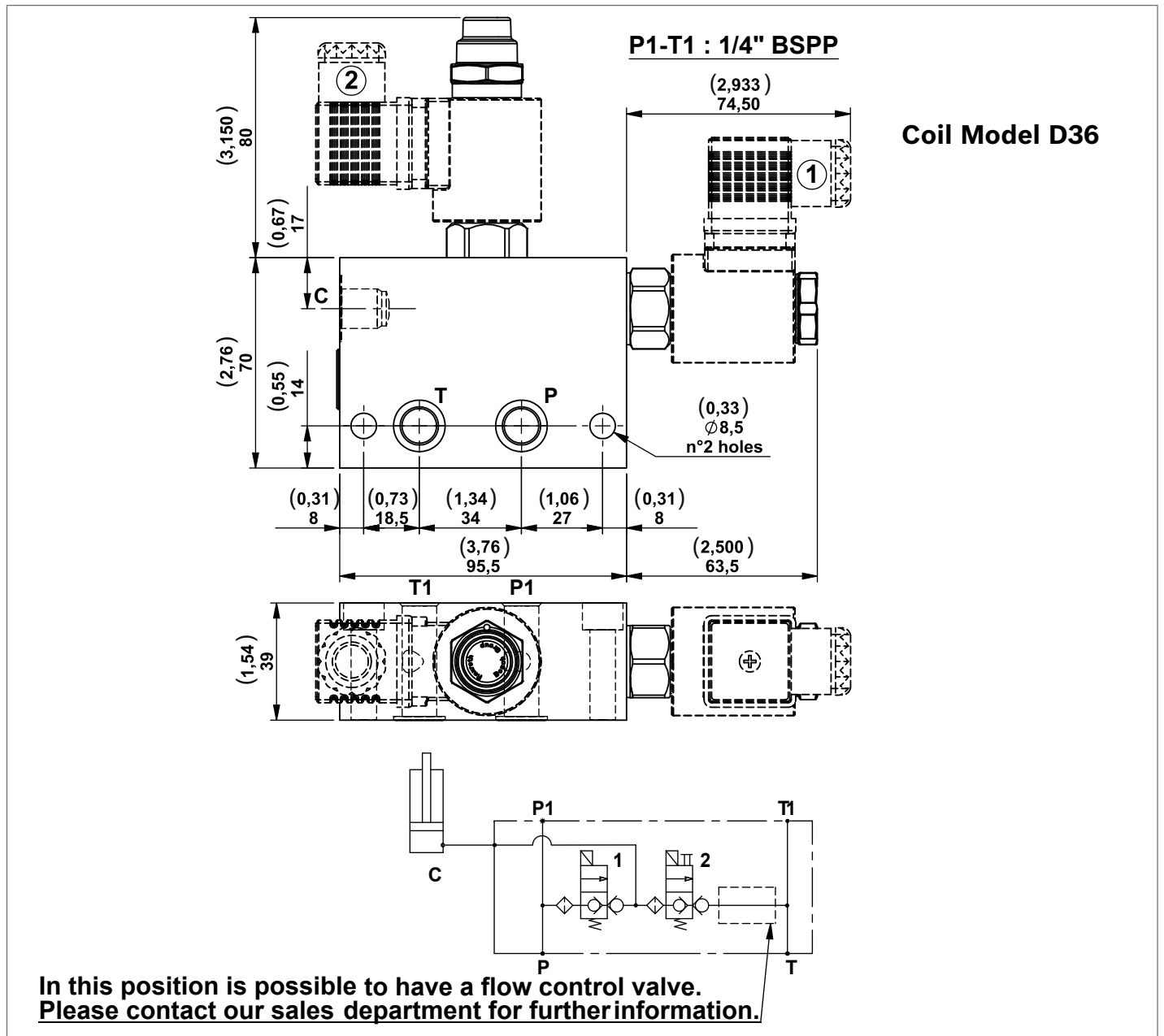
Each block includes 2 OR 2056 gaskets.

Minimum voltage required: 90% of nominal.

Coils not included, must be ordered separately.

For the selection of coil model and voltage please refer to page 41.

For the selection of connectors please refer to page 43.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
V07-14	Modular block with 2 VE with "C" port 1/4" BSPP	250 (3626)	25 (6,60)	G386507010A	R930062154
V07-38	Modular block with 2 VE with "C" port 3/8" BSPP	250 (3626)	25 (6,60)	G386507020A	R930064959

**Modular blocks with four way three position solenoid valve. Spool type**

A selection of modular blocks with 4/3 spool type solenoid valve for small double acting cylinders.

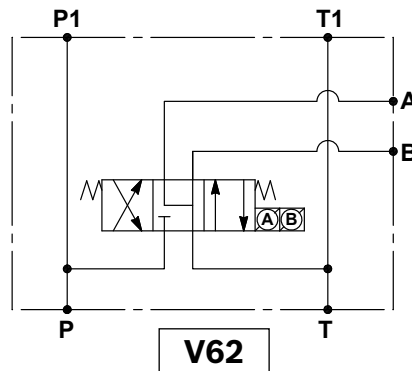
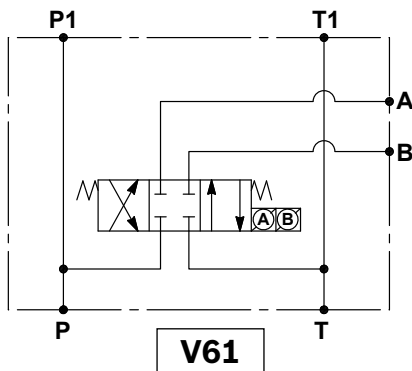
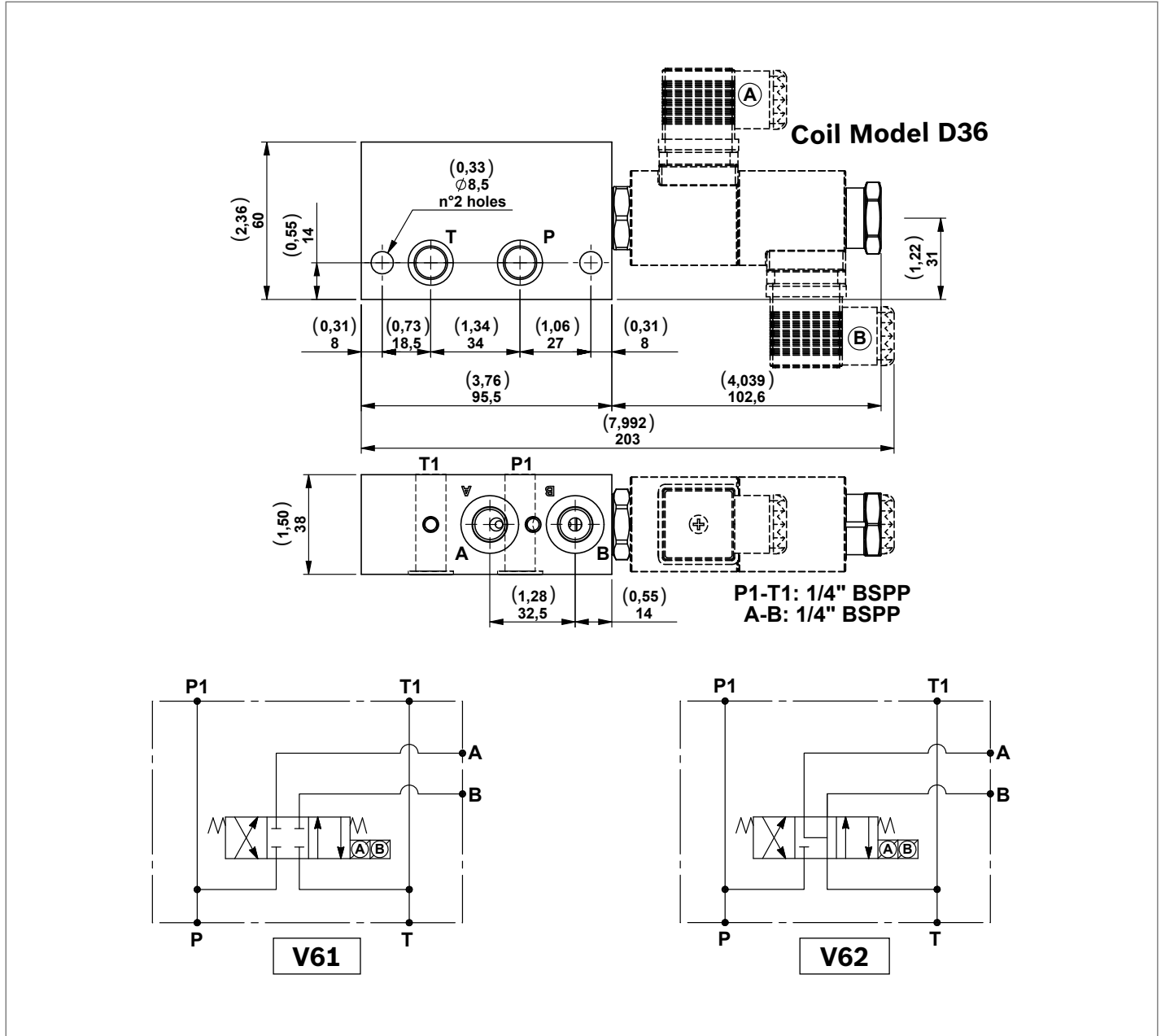
Each block includes 2 OR 2056 gaskets.

Minimum voltage required: 90% of nominal.

Coils not included, must be ordered separately.

For the selection of coil model and voltage please refer to page 41.

For the selection of connectors please refer to page 43.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
V61	Modular block with 4 way 3 position electric valve (V4.3A)	210 (3046)	10 (2,64)	G386562010A	R930063648
V62	Modular block with 4 way 3 position electric valve (V4.3B)	210 (3046)	10 (2,64)	G386563010A	R930067006

**Modular block with four way three position solenoid valve and P.O. check valves on “A” and “B” line**

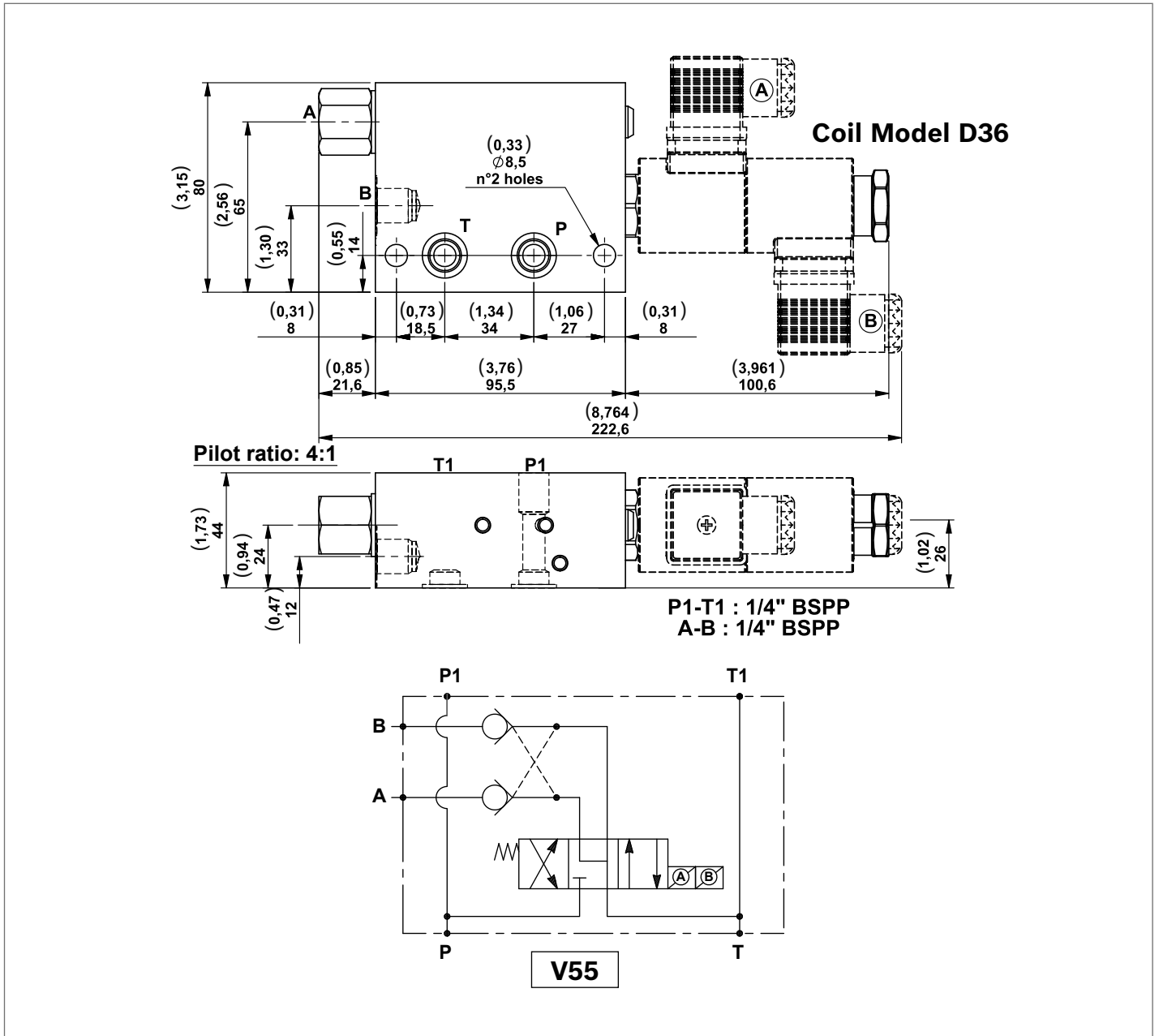
A modular block with 4/3 spool type solenoid valve and P.O. check valves on “A” and “B” line. For small double acting cylinders. Each block includes 2 OR 2056 gaskets.

Minimum voltage required: 90% of nominal.

Coils not included, must be ordered separately.

For the selection of coil model and voltage please refer to page 41.

For the selection of connectors please refer to page 43.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
V55	Modular block with 4 way 3 position electric valve and P.O. check valves on A and B <b>without O-Ring on pilot piston</b>	210 (3046)	10 (2,64)	G386591A10A	R930066516

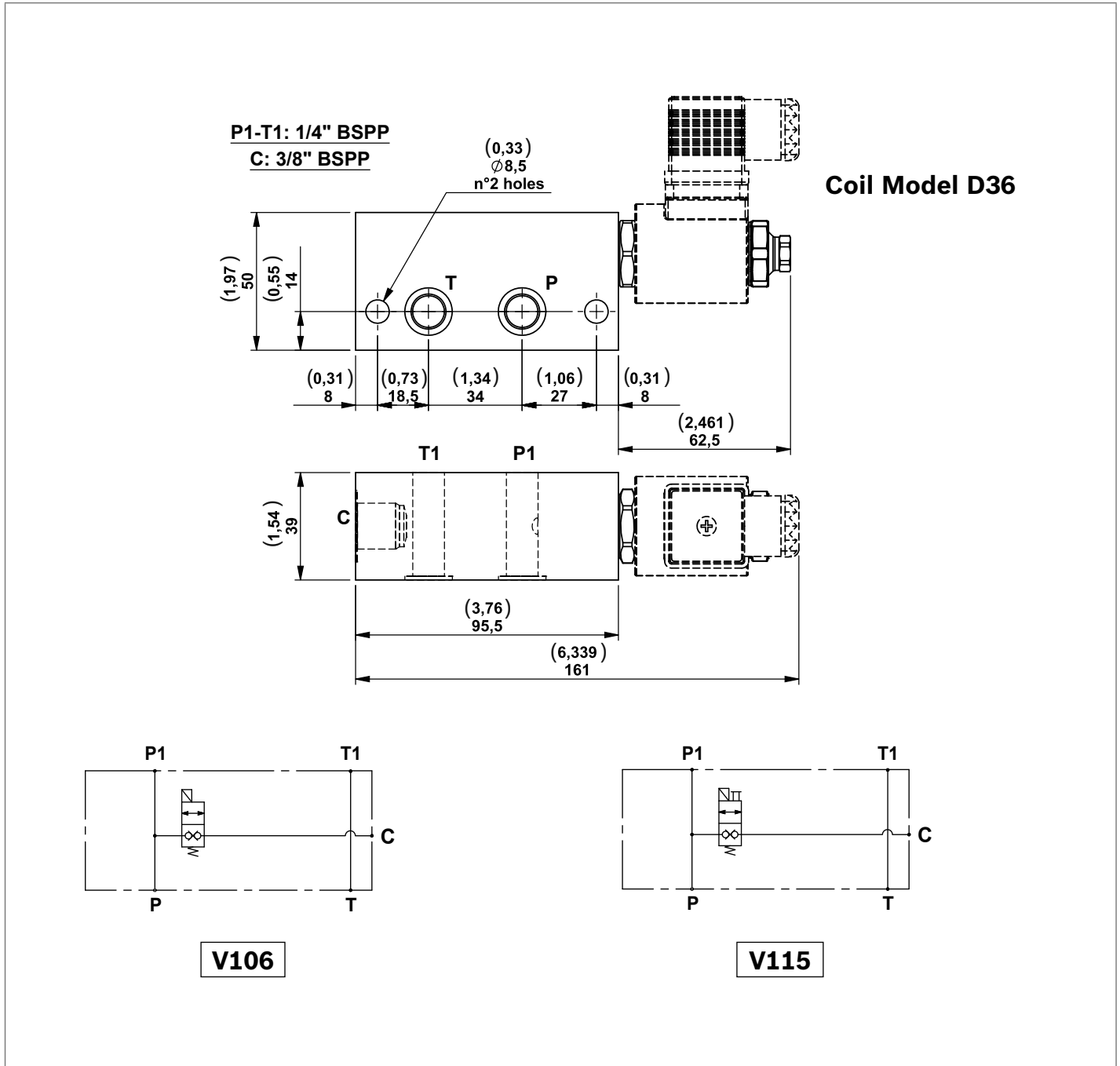
**Modular blocks with double locking solenoid valve**

Each block includes 2 OR 2056 gaskets.

Coils not included, must be ordered separately.

For the selection of coil model and voltage please refer to page 41.

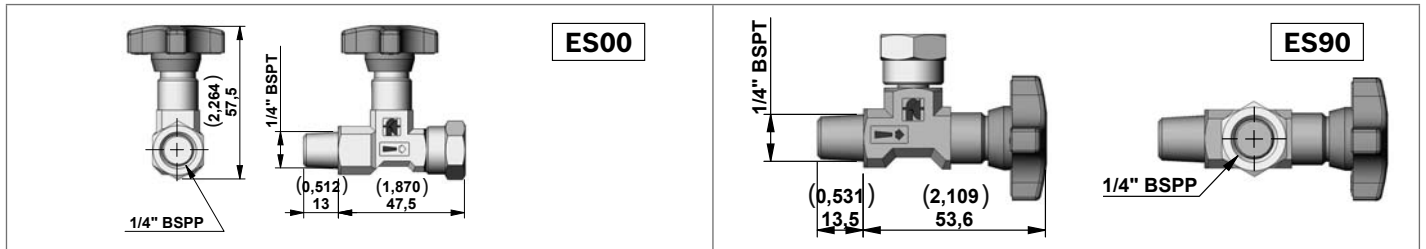
For the selection of connectors please refer to page 43.



Code	Description	Max working pressure bar (psi)	Max flow l/min (gpm)	Type	Material number
<b>V106</b>	Modular block with DT solenoid valve	250 (3626)	15 (3,96)	G386606020A	R930064757
<b>V115</b>	Modular block with DTE solenoid valve	250 (3626)	15 (3,96)	1586500023A	R930061374

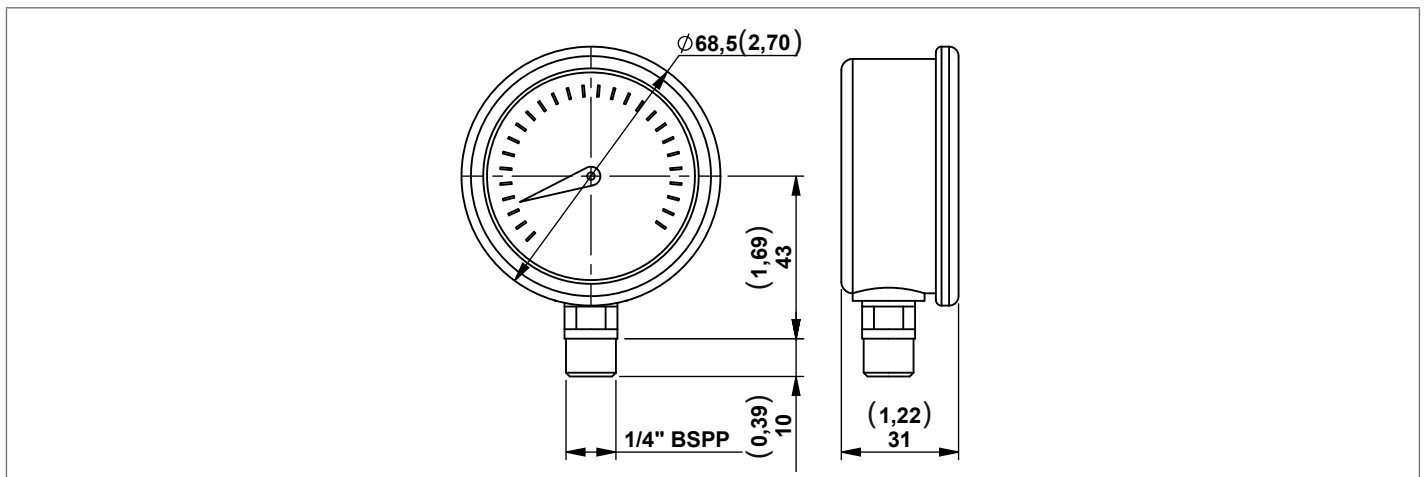
## Accessories

### Isolator



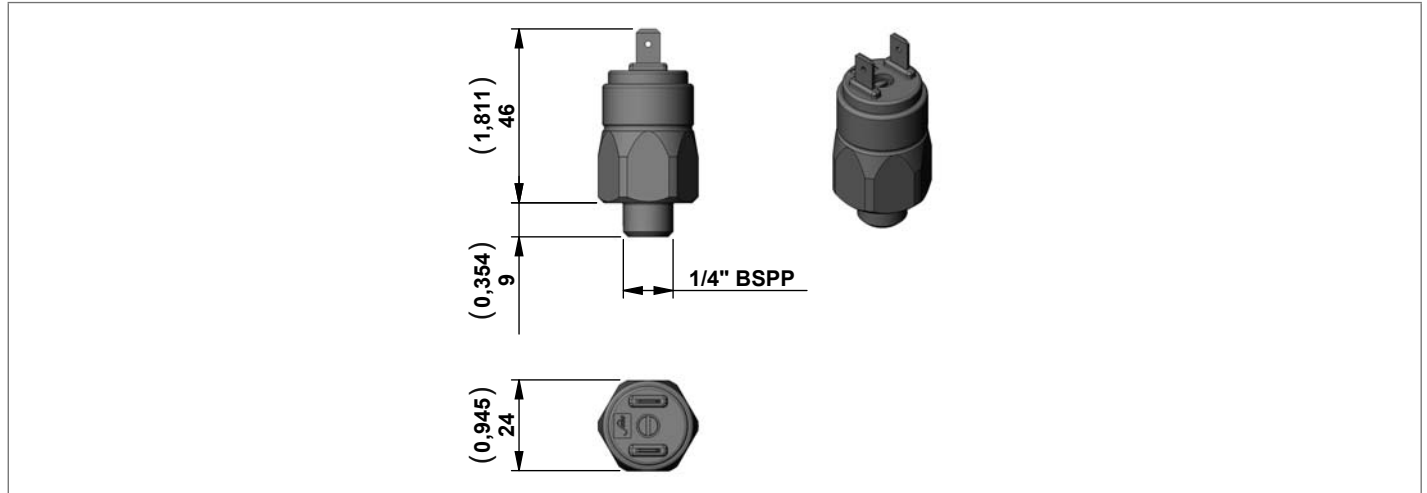
Code	Description	Type	Material Number
ES00	Straight isolator	EM14A	R930069418
ES90	90° isolator	EM14A-T	R930069419

### Manometer



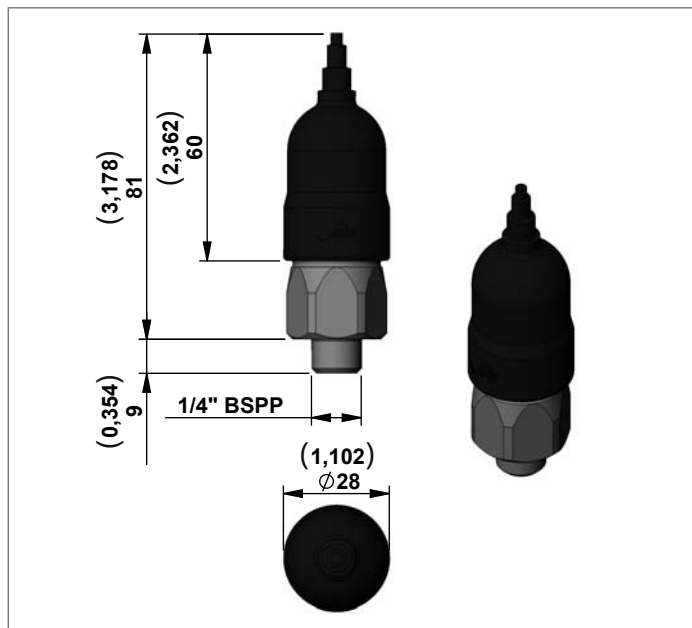
Code	Description	Pressure range bar (psi)	Type	Material Number
MN100	Pressure gauge	0-100 (0-1450)	C163017000	R932000582
MN160	Pressure gauge	0-160 (0-2320)	C163018000	R932000583
MN250	Pressure gauge	0-250 (0-3626)	C163019000	R932000584
MN315	Pressure gauge	0-315 (0-4568)	C163020000	R932000585

**Pressure Switches**



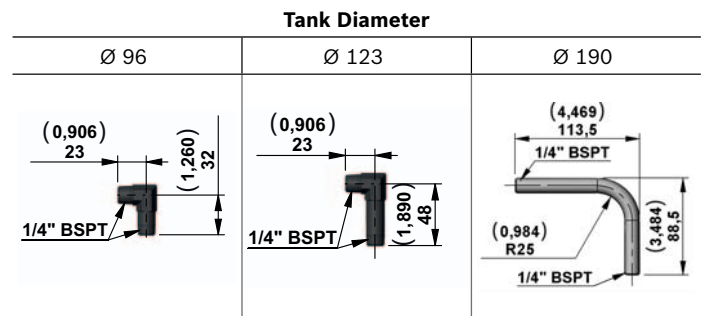
Code	Adjustment Range bar (psi)	Contact Type	Internal Features	Protection (with protective cap assembled)	Type	Material Number
<b>PRNO20</b>	10-20 (145-290)	N.O.	Diaphragm	IP65	C164761000	R932010002
<b>PRNC20</b>	10-20 (145-290)	N.C.	Diaphragm	IP65	C164766000	R932010001
<b>PRNO50</b>	20-50 (290-725)	N.O.	Diaphragm	IP65	C164767000	R932010003
<b>PRNC50</b>	20-50 (290-725)	N.C.	Diaphragm	IP65	C164768000	R932010004
<b>PRNO150</b>	50-150 (725-2175)	N.O.	Piston	IP65	C164769000	R932010005
<b>PRNC150</b>	50-150 (725-2175)	N.C.	Piston	IP65	C164770000	R932010006

**Protective Cap for Pressure Switches**



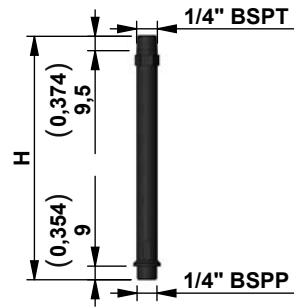
Code	Type	Material Number
<b>CAP</b>	F224013000	R932010000

**Horizontal Suction, Pipe**

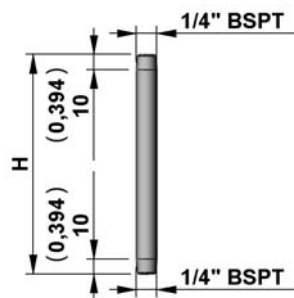


Central Manifold	Oil tank diameter mm (inch)	Type	Material Number
<b>ME</b>	90 (3,54)	K2340S2177	R932011066
	123 (4,84)	K2340S2175	R932011064
	190 (7,48)	M234048000	R932003086



**Vertical Suction, Plastic Pipe**

Central Manifold	Oil tank diameter mm (inch)	Type	Material Number
<b>ME</b>	33 (1,30)	K2340S2178	R932011067
	43 (1,70)	K2340S2179	R932011068
	49 (1,93)	K2340S2180	R932011069
	54 (2,13)	K2340S2181	R932011070
	61 (2,40)	K2340S2182	R932011071
	77 (3,03)	K2340S2183	R932011072
	87 (3,42)	K2340S2184	R932011073
	99 (3,90)	K2340S2185	R932011074
	114 (4,49)	K2340S2186	R932011075
	136 (5,35)	K2340S2187	R932011076
	161 (6,34)	K2340S2188	R932011077
	241 (9,49)	K2340S2189	R932011078
	321 (12,64)	K2340S2190	R932011079
	381 (15,00)	K2340S2191	R932011080

**Vertical Suction, Steel Pipe**

Central Manifold	H mm (inch)	Type	Material Number
<b>ME</b>	42 (1,65)	M234049000	R932003087
	52 (2,05)	K2340S2009	R932002254
	58 (2,28)	K234057000	R932002339
	63 (2,48)	M2340S2163	R932009736
	70 (2,76)	M234051000	R932003089
	86 (3,39)	M234052000	R932003090
	96 (3,78)	M234046000	R932003084
	108 (4,25)	M234050000	R932003088
	123 (4,84)	M234055000	R932003093
	145 (5,71)	M234054000	R932003092
	170 (6,69)	M234053000	R932003091
	250 (9,84)	M234095000	R932003095
	330 (12,99)	M234022000	R932003082

### Suction Filter

Compatibility	Filtering Degree (µm)	Max Flow l/min (gpm)	Type	Material Number	Drawing
ME	90	8 (2,11)	K225583000	R932010867	

### Horizontal Return, Steel Pipe

L mm (inch)	H mm (inch)	Type	Material Number	Drawing
120 (4,72)	45 (1,77)	K234716000	R932002375	
134 (5,28)	90 (3,54)	K234717000	R932002376	
170 (6,69)	90 (3,54)	K234727000	R932002383	

### Vertical Return, Plastic Pipe

H mm (inch)	Type	Material Number	Drawing ref.	Drawing
100 (3,94)	K234715000	R932002374	A	
110 (4,33)	K234780000	R932011081	B	
120 (4,72)	K234781000	R932011082	B	
150 (5,91)	K234714000	R932002373	A	
160 (6,30)	K234782000	R932011083	B	
200 (7,87)	K234713000	R932002372	A	
250 (9,84)	K234784000	R932011084	B	
300 (11,81)	K234785000	R932011085	B	
400 (15,75)	K234786000	R932011086	B	

### Vertical Return, Steel Pipe

H mm (inch)	Type	Material Number	Drawing
250 (9,84)	K234718000	R932002377	
300 (11,81)	K234719000	R932002378	
400 (15,75)	K234722000	R932002379	

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