

06/2005



**HYDRAULIC POWER PACKS D-TYPE  
FOR DUMPER APPLICATIONS**

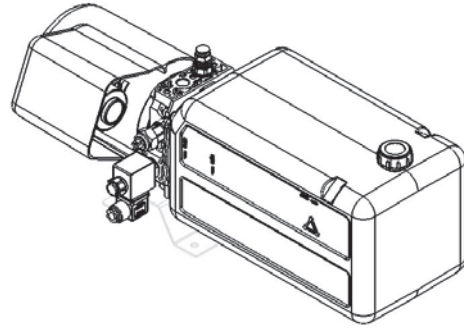
Rev.1



## Introduction

Oil Sistem is a leader in power packs production and offers a wide range of solutions suitable for every type of application. Oil Sistem developed in years of experience a high evolved modular system that became powerful, flexible and economically competitive. This catalogue is intended to be an almost complete reference for the available power pack D type for dumper applications.

In its easier configuration a *power pack* is an assembly of electric motor, pump, central manifold with valves, oil tank and few other connection elements.



## Typical applications

### General characteristics

Max working pressure	From 250 to 350 bar, according to pump model.
Pump type	External gear pump.
Pump displacement	From 0,82 cm <sup>3</sup> /rev to 4,2 cm <sup>3</sup> /rev.
Electric motors	D.C. from 1800 to 2000 W.
Oil tank capacity	From 2,5 to 23 litres.

## Direction for use

### Installation

There are no limits in mounting positions, just avoid any installation that could compromise pump's suction.

When power pack is to be fitted on structures liable to vibrations, it is better to place vibration-clamping blocks in fixing points.

### Oil tank and temperature

Tank size should always be enough to assure proper pump's suction and advised maximum working temperature of 60°C. The gaskets of these power packs allow a correct working between -15°C and 80°C. After the first setting in motion it is necessary to rest the oil level. You must use oil for hydraulic units having viscosity in 15 ÷ 68 cSt (1 cSt = 1 mm<sup>2</sup>/s), suggested between 25 and 40 cSt (3.5°E ÷ 5.5°E). Different oil grades must be chosen according to ambient temperature and to which temperature would be reached during the unit activity.

### Cleaning and maintenance

The set must be cleaned in each part because the group has only one suction filter. In case of defective work, you should check:

- oil level and conditions;
- pump efficiency;
- valves calibrations;
- battery and electric equipment efficiency.

You have to substitute the oil after 100 hours of duty the first time, and then every 3000 hours of duty (in any case at least once a year).

### Wiring and starting

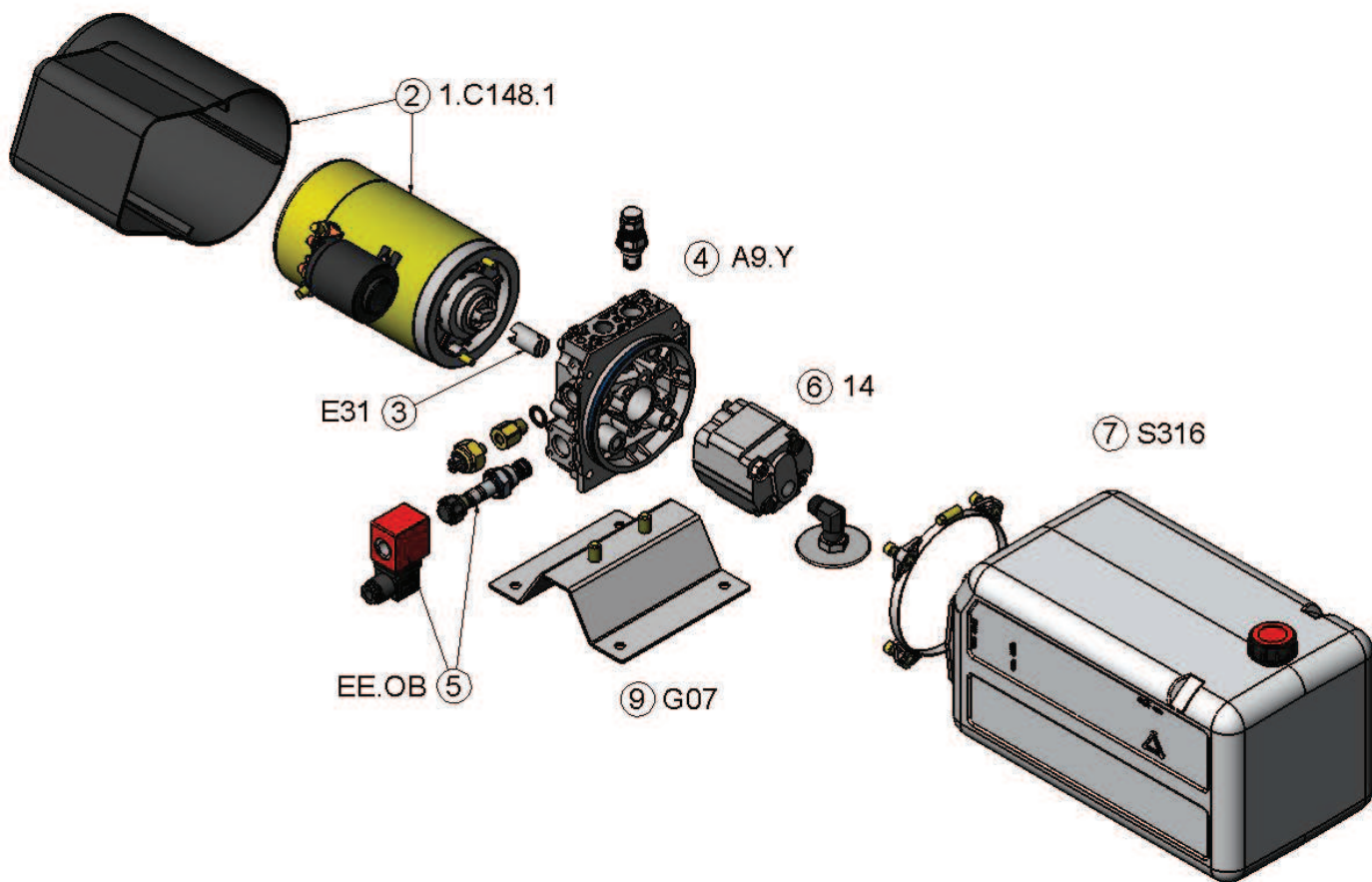
The wiring between batteries and electric control panel must be chosen according to the electrical inputs indicated in diagrams. THE STARTING MUST ASSURE PROPER PUMP DIRECTION OF ROTATION. IT IS STRICTLY FORBIDDEN TO INVERT THE DIRECTION OF ROTATION.

## How to order

Example code:

D	1 . C148 . 1	E31	A9.Y	EE.OB	14	S316	O1	G07
1	2	3	4	5	6	7	8	9

1. Power Pack type
2. Electric D.C. motor and plastic protection
3. Junction elements
4. Central manifold and relief valve setting
5. Built-in valves
6. Pump
7. Oil tank
8. Mounting position
9. Mounting brackets



## Table of contents

Nr.	Description	Code explanation and example	Reference
1	Power pack type	<b>D</b>	
2	Electric motor	<b>1 . X X X X . Y</b> <b>XXXX</b> : motor's code. <b>Y</b> : plastic protection Example: <b>1 . C 1 4 8 . 1</b>	p. 5
3	Junction elements	<b>E 3 1</b>	p. 5
4	Central manifold and relief valves setting	<b>A 9 . A</b> <b>A</b> : relief valve setting Example: <b>A 9 . Y</b>	p. 6
5	Built-in valves	<b>A A . B B</b> <b>AA</b> : Valve type <b>BB</b> : Electric control Example: <b>E E . O B</b>	p. 7
6	Pump	Example: <b>1 3</b>	p. 8
7	Oil tank	Example: <b>S 9 0</b>	p. 9
8	Mounting position	Leave blank for standard position. Example: <b>O 1</b>	p. 11
9	Mounting brackets	Leave blank for no mounting brackets. Example: <b>G 0 7</b>	p. 11

## 2

### Direct current electric motor

Code	Voltage (V)	Power (W)	Duty cycles S3% S2 min	Thermal switch	Protection Index	Code	Description
<b>C147</b>	12	1800	8% 2 min	no	IP54	<b>0</b>	Without protection
<b>C148</b>	24	2000	5% 2 min	no	IP54	<b>1</b>	With plastic protection

<p><b>Built-in relay</b>                      Nominal current: 200 A                      Peak current: 350 A</p>	<p>Dimensions: 189 (length), 114 (diameter), 136,5 (height), 145 (front diameter), 170 (width).</p>
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## 3

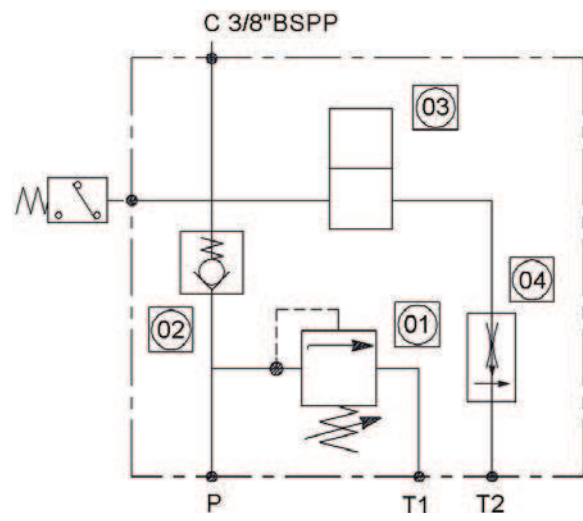
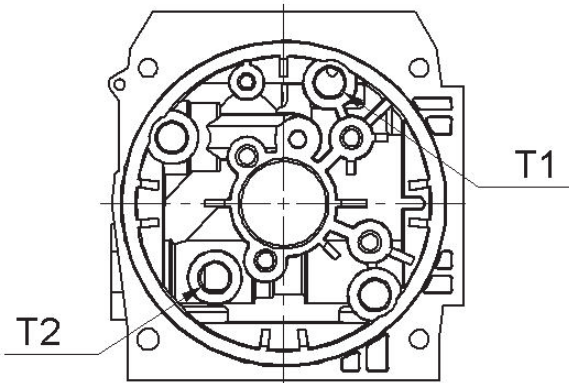
### Junction elements

Code	Motor codes	
<b>E31</b>	C147-C148	<p><b>E31</b></p>

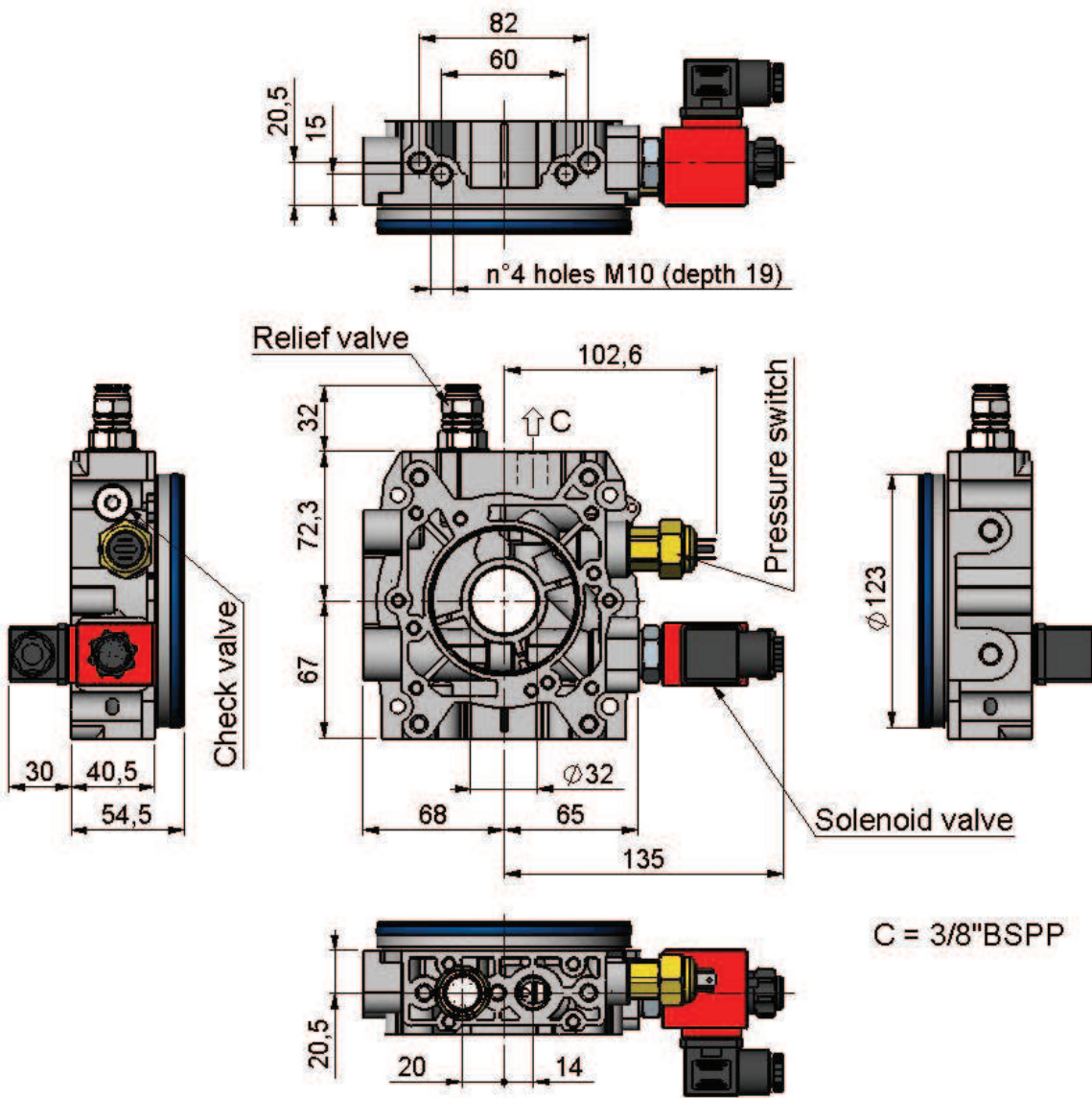


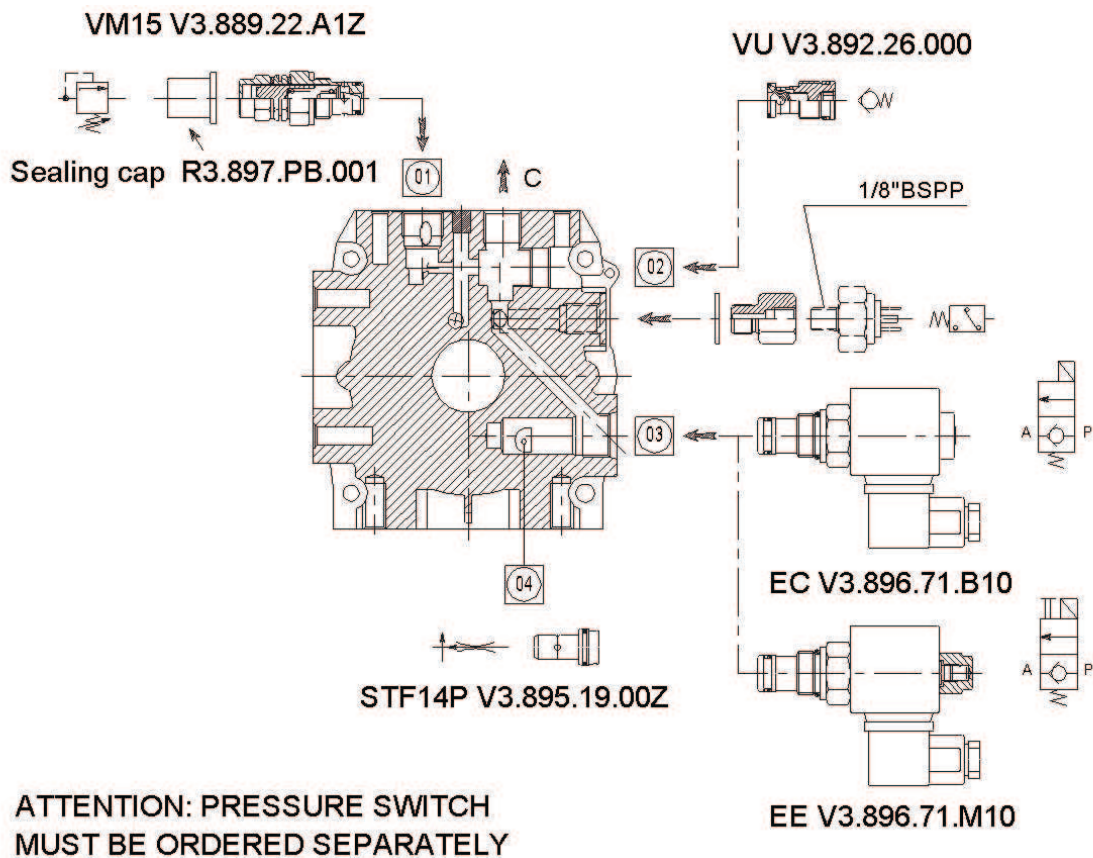
A9

Relief valve		Pressure range (bar)	Hydraulic diagram
VM15	Y	30 ÷ 120	
	Z	80 ÷ 250	



Optional: pressure switch (must be ordered separately).





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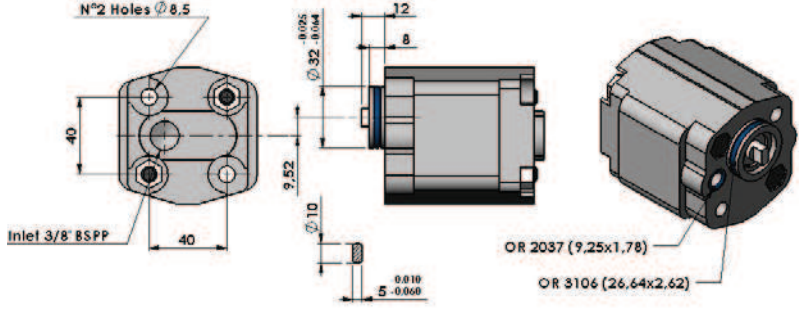
Built-in valves

CODE	Description	Diagram	Drawing	
EC	Solenoid valve VE3-NC			
	Max working pressure			350 bar
	Max flow rate			40 l/min
EE	Solenoid valve VE3-NC-EM			
	Max working pressure			350 bar
	Max flow rate			40 l/min

Electric controls for solenoid valves		STF14P setting	
CODE	Description	CODE	Volume flow rate (l/min)
OO	None	A	1
OB	D.C. 12V	B	2
OC	D.C. 24V	C	3
		D	4
<b>STF14P Flow control valve</b> 		E	5
		F	6
		G	7
		H	8
		I	9
		L	10

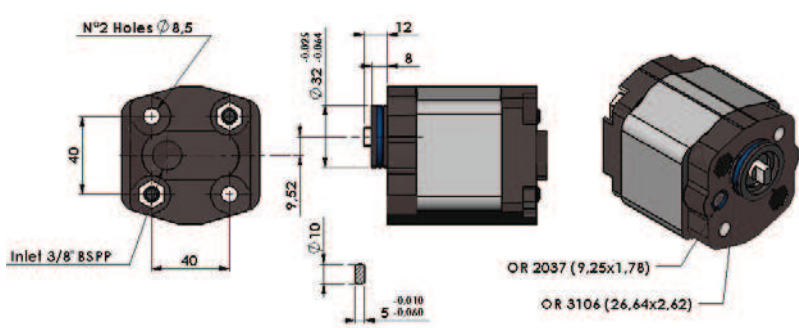
**6** **Gear pumps**

Gear pumps group 1 – standard version			
Code	Displacement (cc/rev)	P2 (bar)	P3 (bar)
10	0,82	230	270
11	1,1	230	270
12	1,6	230	270
13	2,1	230	270
14	2,7	230	270
15	3,2	210	250
16	3,7	210	250
17	4,2	210	250



*P2= Intermittent max. pressure    P3= Peak max. pressure (max. 2 seconds)*

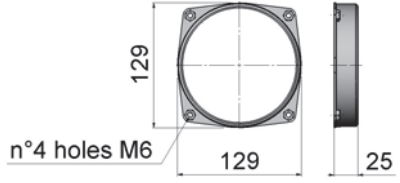
High pressure gear pumps group 1 – cast iron covers version for high pressure applications			
Code	Displacement (cc/rev)	P2 (bar)	P3 (bar)
11GH	1,1	300	350
12GH	1,6	300	350
13GH	2,1	300	350
14GH	2,6	300	350
15GH	3,2	280	330
16GH	3,7	250	300
17GH	4,2	230	280



*P2= Intermittent max. pressure    P3= Peak max. pressure (max. 2 seconds)*

**7** **Oil tank**

Steel collar for tank				
CODE				
S00				







<b>Steel tank</b>						
CODE	Tank capacity (l)	Useable capacity (l)	A (mm)	B (mm)	C (mm)	L (mm)
S90	12	10,5	60	170	105	315
S128	16	13	60	170	158	368
S105	19	15	52,5	290	158	420
S92	23	19	102,5	290	158	520

<b>7</b>	<b>Oil tank</b>
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<b>Plastic tank</b>				
<b>Temperature range:</b> -15 / +70 °C <b>Materials:</b> PE = Polyethylene, PP = Polypropilene <b>Color:</b> Neutral transparent				
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S248	2,5	2,2	240	PE
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S343	5	3,8	230	PP
S331	5	3,8	230	PP <u>Black</u>
S316	9	7,3	365	PP
S314	9	7,3	365	PP <u>Black</u>
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S337	2,5	1,7	240	PP
S338	3	2,3	285	PP
CODE	Tank capacity (l)	Useable capacity (l)	L (mm)	Material
S374	5	4	219	PP
S376	7	5,4	271	PP
S378	8	6,6	323	PP
S380	11	9,6	453	PP

<p>Please make sure that the tank and motor are mounted correctly</p>	Assembly kit for plastic tank	
	Oil tank	Assembly kit
	S248	K2.501.VT.002
	S337 - S338	K2.501.VT.001
S343 - S331 - S316 - S314 S374 - S376 - S378 - S380	K2.501.VT.013	

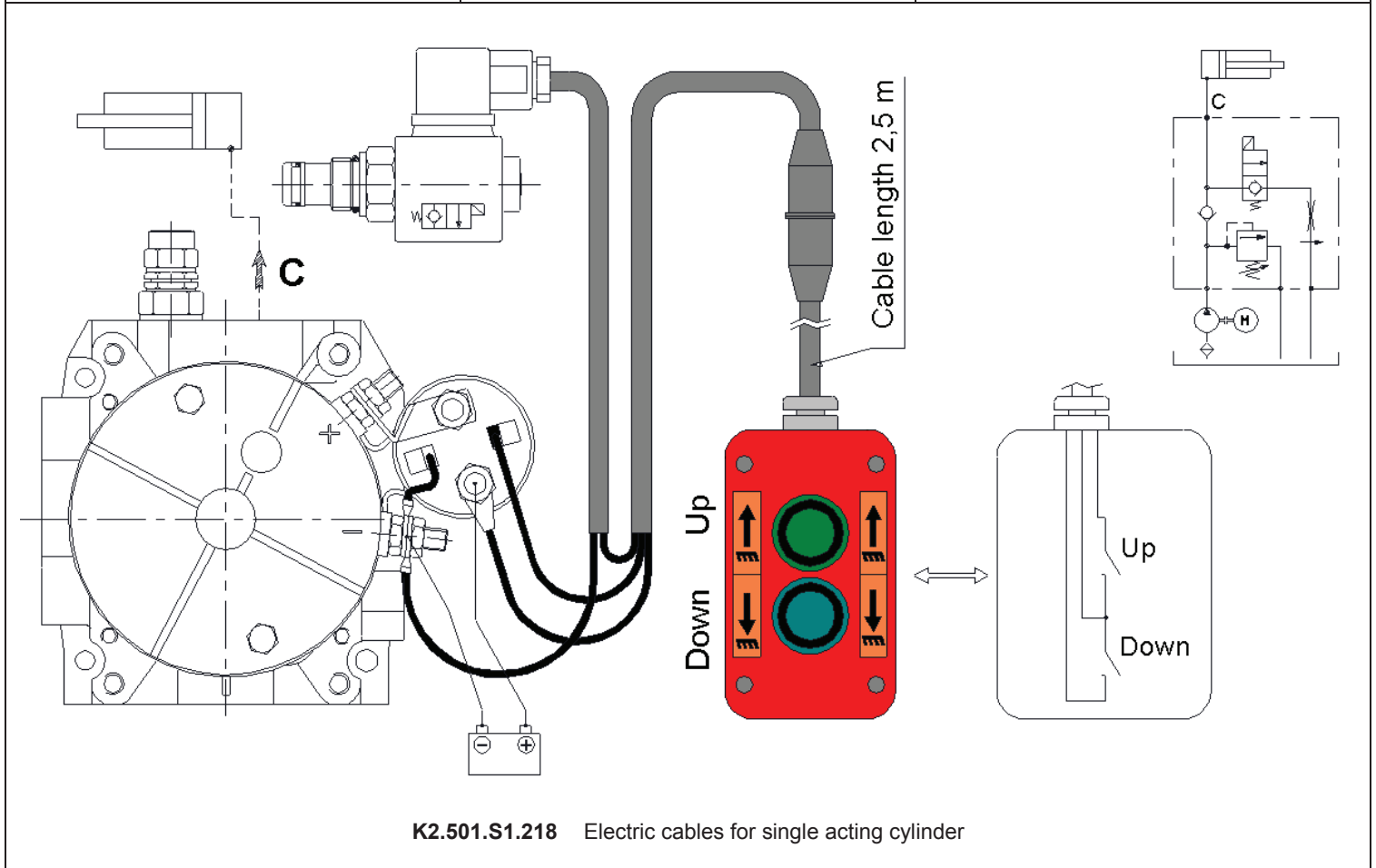
**8** **Mounting position**

CODE	Image			
O1	1			
O3	2			
O4	3			

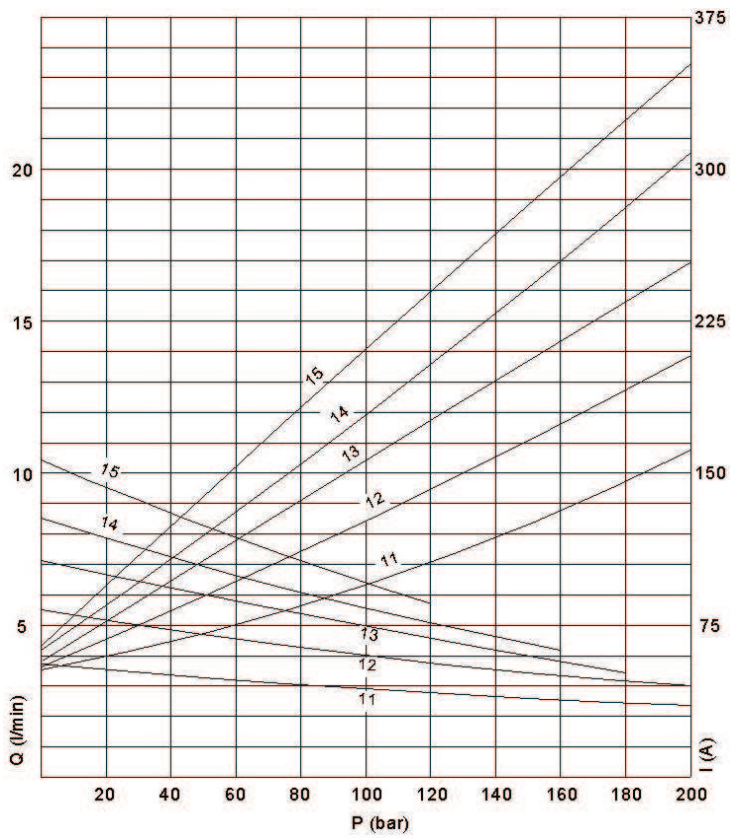
**9** **Mounting brackets**

CODE	Drawing	
G07		

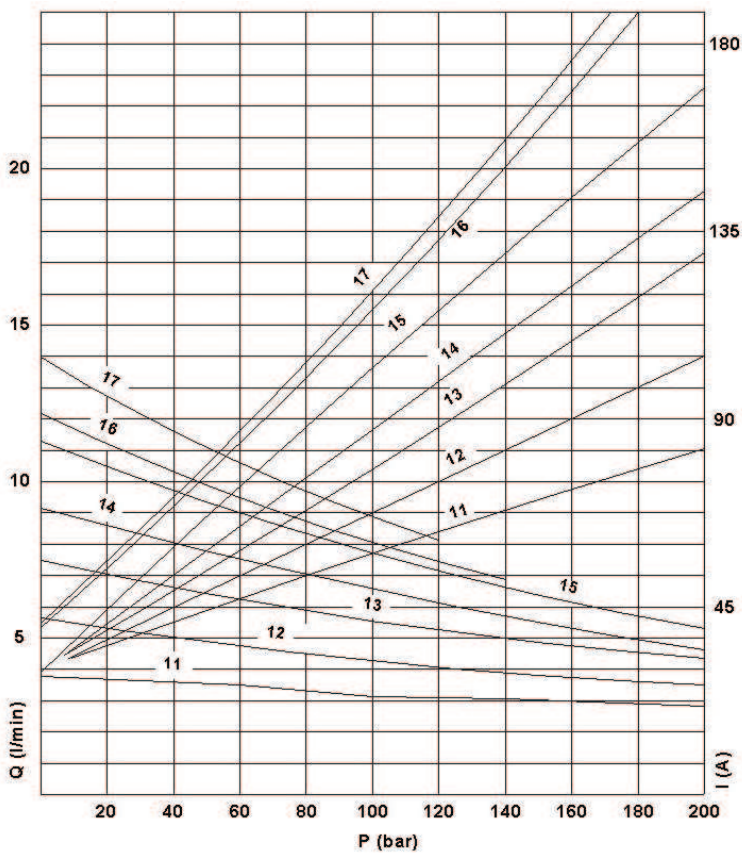
		
<p>End stroke limit switch  <b>R3.897.FC.082</b> push-type  <b>R3.897.FC.083</b> pull-type</p>	<p>Pressure-switch normally closed  <b>C1.647.02.000</b></p>	<p>Electric panel control  <b>R3.897.ST.007</b></p>







**Motor CODE** C147  
**Voltage** 12 V  
**Power** 1800 W  
**S3** 8%  
**S2** 2 min  
**Thermal switch** No  
**Protection Index** IP54



**Motor CODE** C148  
**Voltage** 24 V  
**Power** 2000 W  
**S3** 5%  
**S2** 2 min  
**Thermal switch** No  
**Protection Index** IP54

**Power pack installation with unloading solenoid valve**

