



CTR*

HYDRAULIC POWER UNITS

TANK CAPACITY

from 8 lt to 150 lt

PUMP FLOW RATE

from 1,6 lt to 41lt

DESCRIPTION

The CTR* power units, are realised with a soaked gear pump and a vertically mounted electric motor.

The tank cover can be rotated of 180° without disassembling the installed components.

The standard components are intake filter, gear pump, motor - pump connection group, arrangement for the electric motor, pressure relief valve, a position for one electro-valve (not included in the supplying), manometer with the shut-off cock, oil charge cover and oil visual indicator.

The electric motor supplied is a eurotension 4-poles three-phase asynchronous motor with shape B5 according to UNEL-MEC standards.

The available paintings are dull black RAL 9005 (**standard**), Grey RAL 7037 and Green RAL 6011.

The power units works with mineral oil (not included in the supplying).

To work with other hydraulic fluids, please consult our Technical Department.

OPTIONALS

The standard power unit can be equipped with the following components:

CTR 0 - 1 - 2

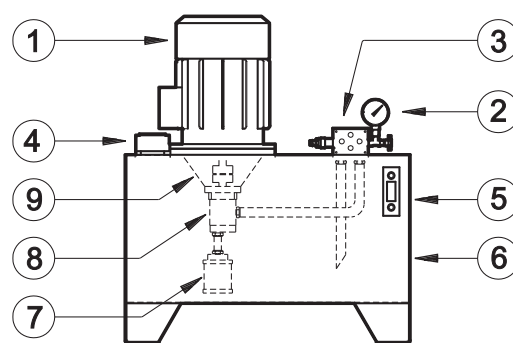
- other settings for electro-valves ISO 4401-03 (CETOP 03) with P2D modular subplates
- thermostat
- level gauge
- return filter for line mounting
- other colour paintings under request

CTR 3 - 4

- high pressure pumps H version
- other settings for electro-valves ISO 4401-03 (CETOP 03) with P2D modular subplates.
- thermostat
- level gauge
- a return filter for line mounting
- an heat exchanger air/oil or water/oil
- other colour paintings under request

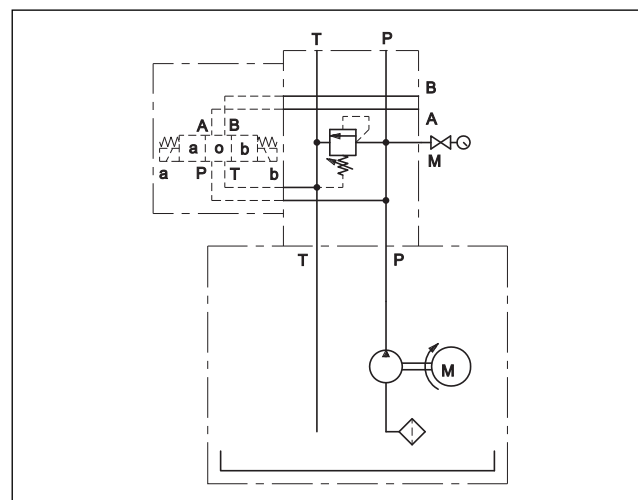
The standard power unit is delivered without the functional diagram.

STANDARD COMPONENTS



- 1) Electric motor
- 2) Manometer with shut-off selector
- 3) Pressure relief valve
- 4) Charge cover
- 5) Level gauge
- 6) Oil reservoir
- 7) intake filter
- 8) Gear pumps
- 9) Motor - pump connection group

HYDRAULIC SYMBOL





1 - CTR0 power unit

1.1 - Identification code

C	T	R	0	-	008	/				/	1P	-	/					/	40
----------	----------	----------	----------	----------	------------	----------	--	--	--	----------	-----------	----------	----------	--	--	--	--	----------	-----------

power unit with soaked pump

Cover size _____

Tank capacity 8 dm³ _____

Electric motor shape B5
P = arrangement for motor mounting
M = electric motor already mounted

4-poles electric motor power:
0.25 = 0.25 kW
0.37 = 0.37 kW

Electric motor voltage
(omit for P version)
A = 230-400V / 50-60 Hz

Pump type **1P** _____
(see cat. 11 110 for the pump technical characteristics)

Pump flow rate(l/min) at 1500 rpm
(see flow rate / pressure table)

Series No. (from 40 to 49 sizes and mounting dimensions remain unchanged)

N = Dull black RAL 9005 (**standard**)
G = Grey RAL 7037
V = Green RAL 6011

0 = without thermostat
1 = with thermostat

0 = without level gauge
1 = with level gauge

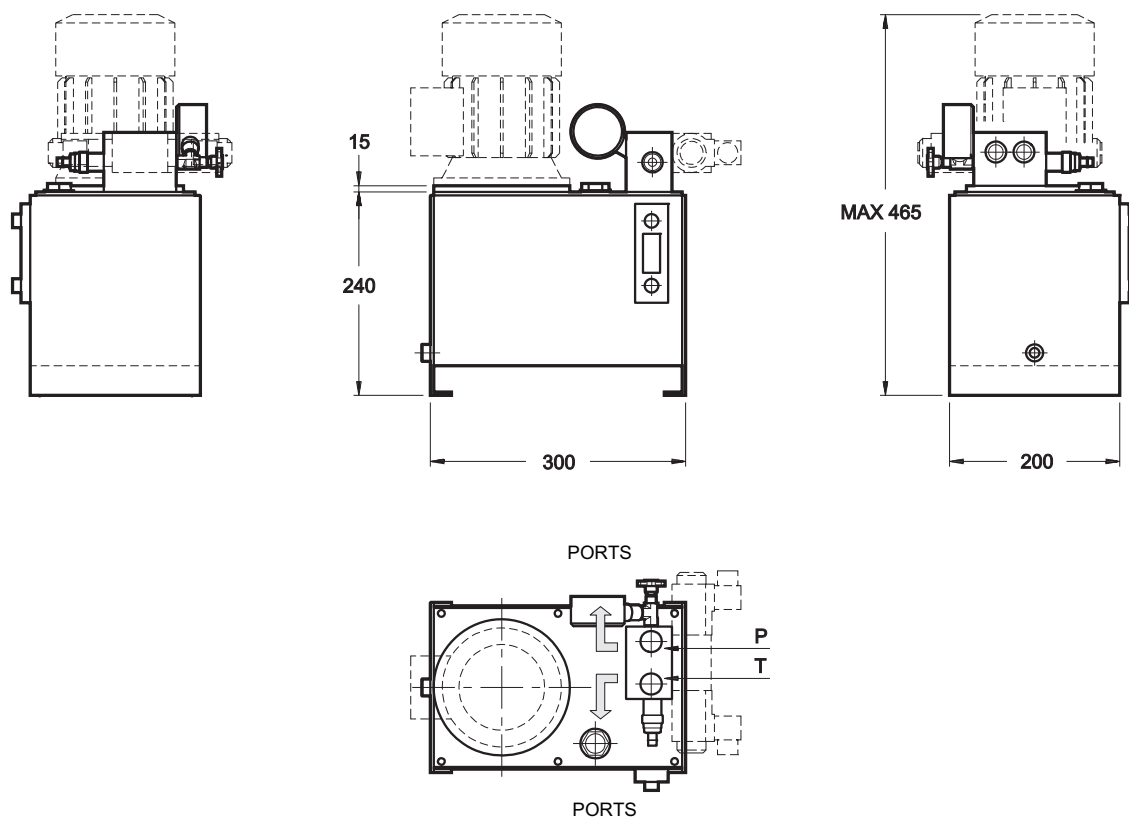
Standard panel with 3/8" rear ports
A = P2D-M* with 1 pos. ISO 4401-03 (CETOP 03)
B = P2T -M* with 2 pos. ISO 4401-03 (CETOP 03)

1.2 - Flowrate / pressure table

Electric motor flange size			Ø = 160	
CTR0	Pump type	Flow rate at 1500 rpm [lt/min]	Electric motor power [kW]	
			0,25	0,37
			Max pressure [bar]	
008	1P 1,6 R	1,6 *	80	115
	2 R	2,0	65	95
	2,5 R	2,4 *	55	80
	3,3 R	3,2	40	60
	4,2 R	3,9 *	30	50
	5 R	4,8	25	40
	5,8 R	5,5 *	20	35
	6,7 R	6,3	15	30
	7,5 R	7,1	10	25

* pumps for preferential choice

1.3 - Overall and mounting dimensions for CTR0





2 - POWER UNITS CTR1

2.1 - Identification code

C	T	R	1	-		/				/	1P	-			/					/	40
----------	----------	----------	----------	---	--	---	--	--	--	---	-----------	---	--	--	---	--	--	--	--	---	-----------

power unit with soaked pump

Cover size _____

Tank capacity _____
013 = 13 dm³
020 = 20 dm³

Electric motor B5 shape _____
P = Predisposition for motor assembly
M = Mounted electric motor

4-poles power electric motor: _____
0.55 = 0.55 kW
0.75 = 0.75 kW
1.1 = 1.1 kW
1.5 = 1.5 kW

Electric motor voltage _____
(omit for P version)
A = 230-400V / 50-60 Hz

Pump type **1P** _____
(see cat. 11 110 for the pump technical characteristics)

Flowrate pump (l/min) at 1500 rpm _____
(see flowrate / pressure table)

Series No. (from 40 to 49 sizes and mounting dimensions remain unchanged)

N = Dull black RAL 9005 (**standard**)
G = Grey RAL 7037
V = Green RAL 6011

Return filter:
0 = without filter
1 = filter with visual indicator
2 = filter with electric indicator

0 = without thermostat
1 = with thermostat

0 = without level gauge
1 = with level gauge

Standard panel with rear ports G 3/8"

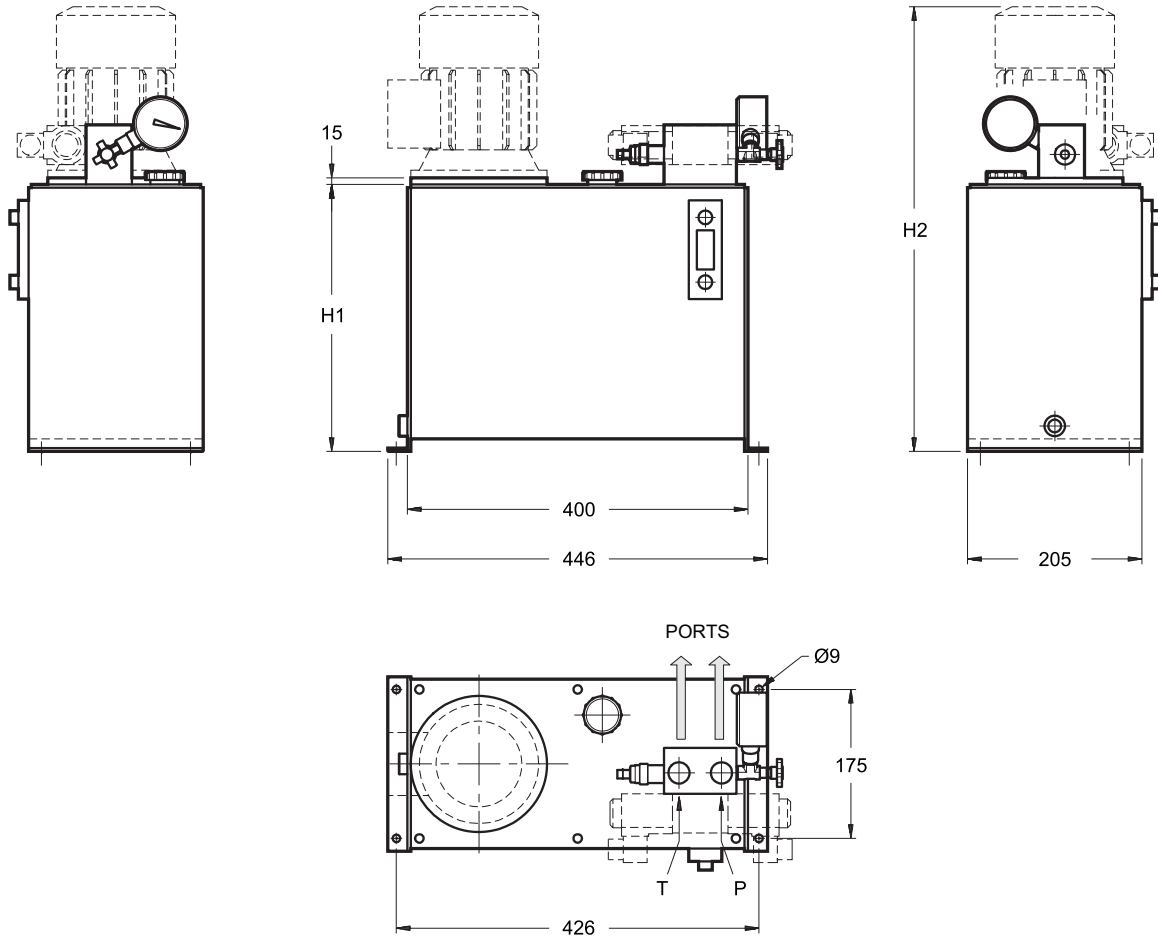
A = P2D-M* with 1 pos. ISO 4401-03 (CETOP 03)
B = P2T-M* with 2 pos. ISO 4401-03 (CETOP 03)

2.2 - Flowrate / pressure table

Electric motor flange size				Ø = 200			
CTR1		Pump type	Flow a 1500 giri/min [lt/min]	Electric motor power [kW]			
				0,55	0,75	1	1,5
				max pressure [bar]			
020	013	1P 1,6 R	1,6 *	180	-	-	-
		2 R	2,0	145	195	-	-
		2,5 R	2,4 *	120	160	-	-
		3,3 R	3,2	90	120	160	-
		4,2 R	3,9 *	75	100	130	200
		5 R	4,8	60	80	110	160
		5,8 R	5,5 *	50	70	95	140
		6,7 R	6,3	45	60	80	120
		7,5 R	7,1	40	55	70	110
		9,2 R	8,7 *	35	45	60	90
		11,5 R	11,9	25	30	45	65

* pumps for preferential choice

2.3 - Overall and mounting dimensions for CTR1



	013	020
H1	235	315
H2 (max)	535	615

3 - POWER UNITS CTR2

3.1- Identification code

C	T	R	2	-	025	/				/	1P	-	/					/	40
----------	----------	----------	----------	---	------------	---	--	--	--	---	-----------	---	---	--	--	--	--	---	-----------

power unit with soaked pump

Cover size _____

Tank capacity _____
025 = 25 dm³

Electric motor B5 shape _____
P = Predisposition for motor assembly
M = Mounted electric motor

4-poles power electric motor: _____
0.55 = 0.55 kW
0.75 = 0.75 kW
1.1 = 1.1 kW
1.5 = 1.5 kW

Electric motor voltage _____
(omit for P version)
A = 230-400V / 50-60 Hz

Pump type **1P** _____
(see cat. 11 110 for the pump technical characteristics)

Flowrate pump (l/min) at 1500 rpm _____
(see flowrate / pressure table)

Series No. (from 40 to 49 sizes and mounting dimensions remain unchanged)

N = Dull black RAL 9005 (**standard**)
G = Grey RAL 7037
V = Green RAL 6011

Return filter:
0 = without filter
1 = filter with visual indicator
2 = filter with electric indicator

0 = without thermostat
1 = with thermostat

0 = without level gauge
1 = with level gauge

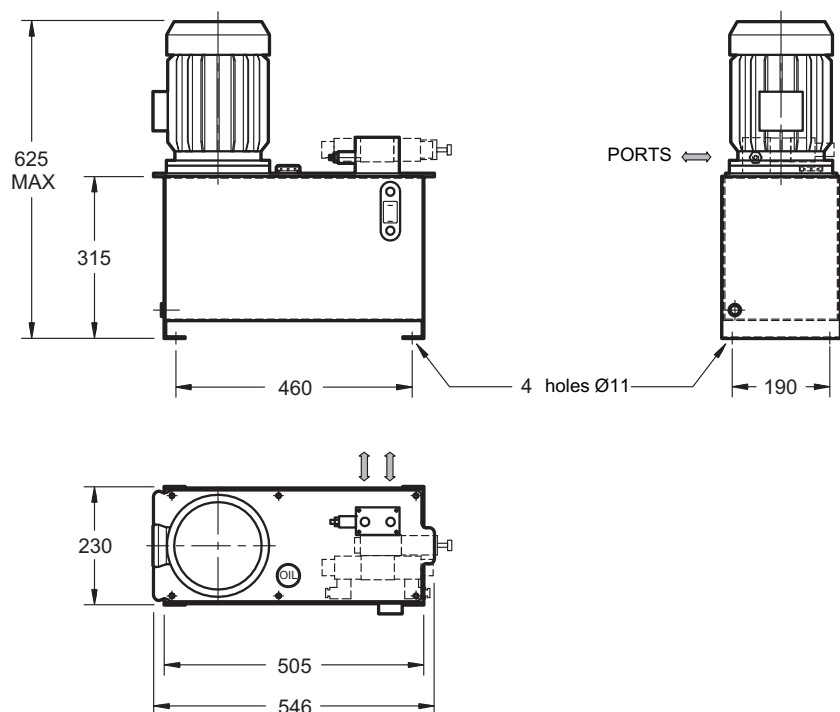
Standard panel with rear ports G 3/8"
A = P2D-M* with 1 pos. ISO 4401-03 (CETOP 03)
B = P2T-M* with 2 pos. ISO 4401-03 (CETOP 03)

3.2 - Flowrate / pressure table

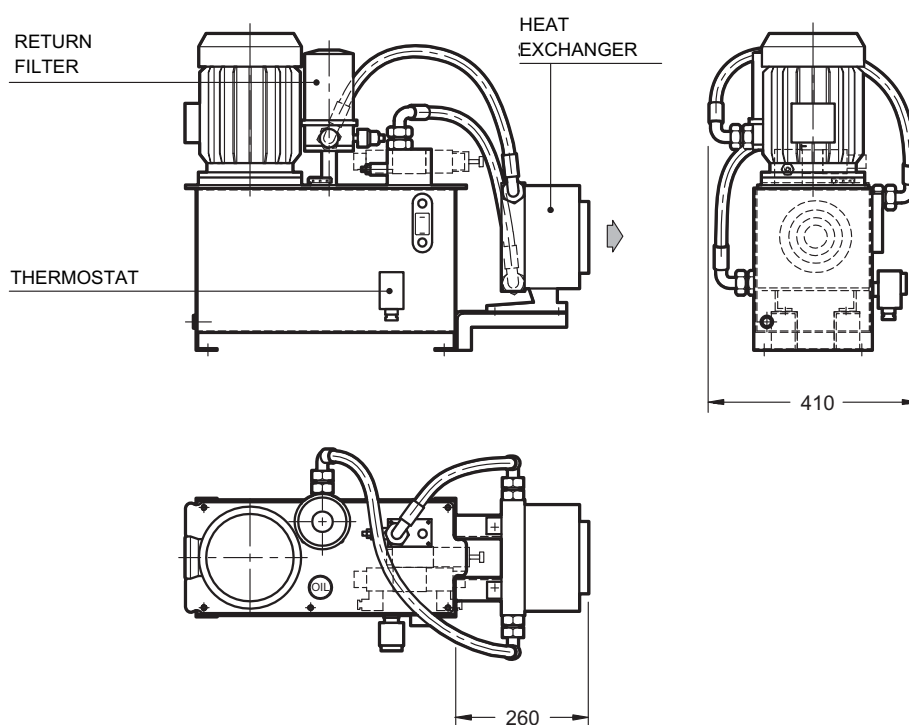
Electric motor flange size			Ø = 200			
CTR2	Pump type	Flowrate at 1500 rpm [l/min]	Electric motor power [kW]			
			0,55	0,75	1	1,5
			max pressure [bar]			
025	1P 1,6 R	1,6 *	180	-	-	-
	2 R	2,0	145	195	-	-
	2,5 R	2,4 *	120	160	-	-
	3,3 R	3,2	90	120	160	-
	4,2 R	3,9 *	75	100	130	200
	5 R	4,8	60	80	110	160
	5,8 R	5,5 *	50	70	95	140
	6,7 R	6,3	45	60	80	120
	7,5 R	7,1	40	55	70	110
	9,2 R	8,7 *	35	45	60	90
	11,5 R	11,9	25	30	45	65
	GP1-0013	2,0 *	140	190	250	-
	0020	3,0 *	95	130	170	250

* pumps for preferential choice

3.3 - Overall and mounting dimensions for basic CTR2



3.4 - CTR2 with optionals



4 - POWER UNITS CTR3

4.1 - Identification code

C	T	R	3	-		/			/			-	/				/	40
----------	----------	----------	----------	----------	--	----------	--	--	----------	--	--	----------	----------	--	--	--	----------	-----------

power unit with soaked pump

Cover size

Tank capacity
035 = 35 dm³
050 = 50 dm³
075 = 75 dm³

Electric motor B5 shape
P = Predisposition for motor assembly
M = Mounted electric motor

4-poles power electric motor:
0.55 = 0.55 kW **2.2** = 2.2 kW
0.75 = 0.75 kW **3** = 3 kW
1.1 = 1.1 kW **4** = 4 kW
1.5 = 1.5 kW

Electric motor voltage
(omit for P version)
A = 380-420V / 50Hz-440-480V/60Hz for motors from 2.2 kW to 7.5 kW
B = 230-400V/50-60 Hz for motors from 0.55 kW to 1.5 kW

Pump type :
GP1 **GP2**
(see cat. 11 100 for the pumps technical characteristics)

Flowrate pump (l/min) at 1500 rpm
(see flowrate / pressure table)

Series No. (from 40 to 49 sizes and mounting dimensions does not change)
N = Dull black RAL 9005 **standard**
G = Grey RAL 7037
V = Green RAL 6011

Heat exchanger:
0 = without exchanger
1 = oil/water exchanger 2010K
2 = oil/water exchanger 2020K

Return filter:
0 = without filter
1 = filter with visual indicator
2 = filter with electric indicator

0 = without thermostat
1 = with thermostat

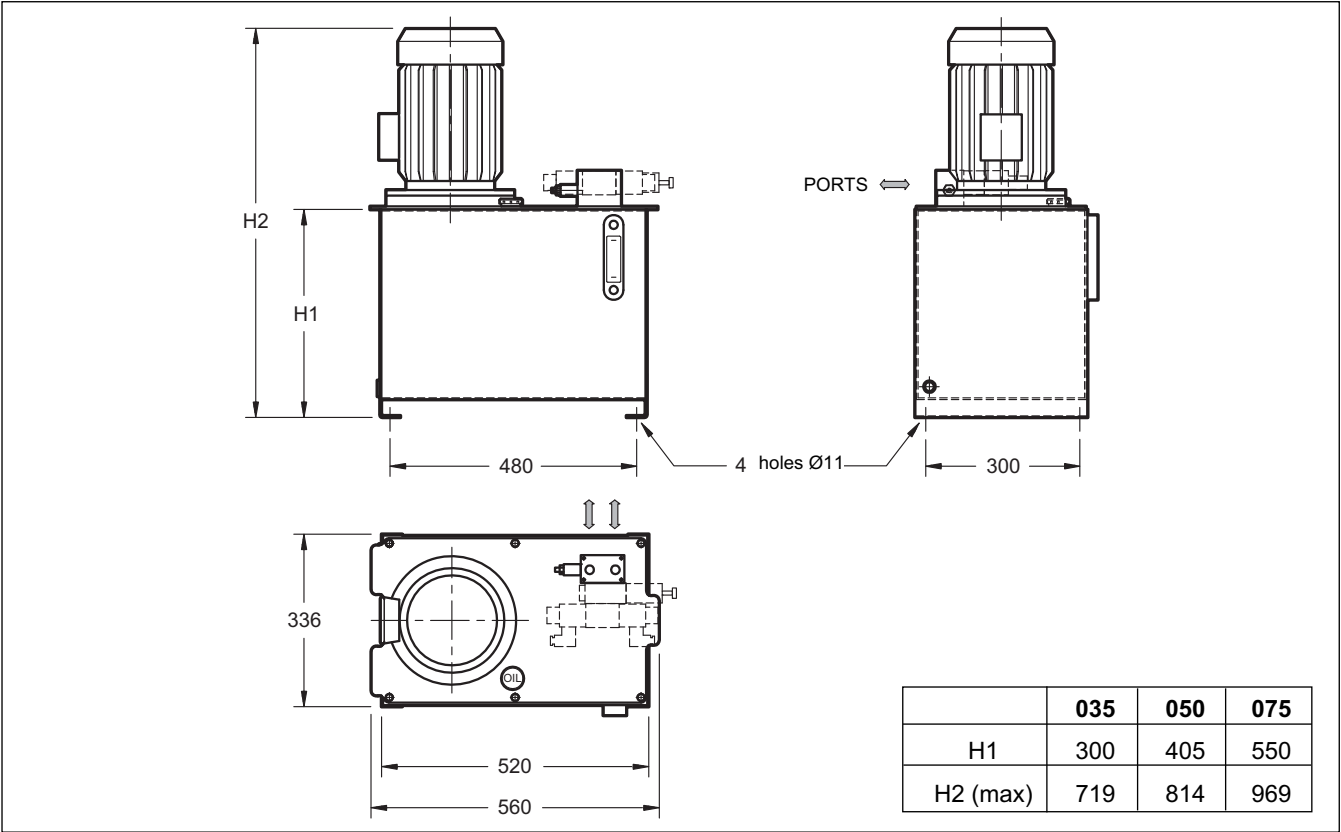
0 = without level gauge
1 = with level gauge

Standard panel with rear ports G 3/8"
A = P2D-M* with 1 pos. ISO 4401-03 (CETOP 03)
B = P2T-M* with 2 pos. ISO 4401-03 (CETOP 03)

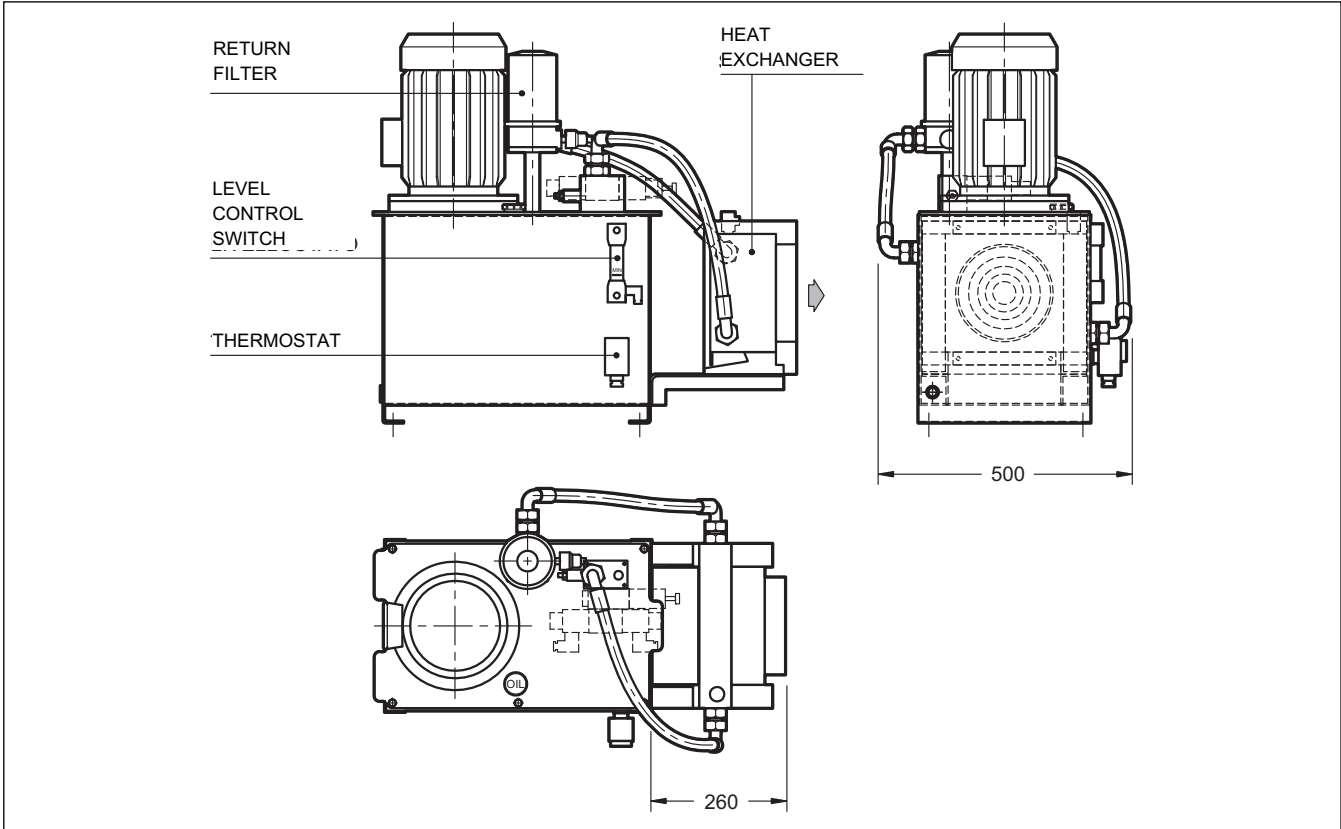
4.2 - Flowrate / pressure table

Electric motor flange size					Ø = 200				Ø = 250		
CTR3			Pump type	Flow rate at 1500 rpm [lt/min]	Electric motor power [kW]						
					0,55	0,75	1,1	1,5	2,2	3	4
					max pressure [bar]						
075	050	035	GP1-0013	2,0	145	195	-	-	-	-	-
			0020	3,0	90	120	160	-	-	-	-
			0027	4,0	75	100	130	200	-	-	-
			0034	5,1	60	80	110	160	-	-	-
			0041	6,1 *	45	60	80	120	185	-	-
			0051	7,6 *	35	50	65	105	150	200	-
			0061	9,1	30	40	55	85	125	170	-
			0074	11,1 *	25	30	45	65	100	140	180
			0091	13,6	20	25	40	55	85	115	150
			0108	15,7	15	20	35	50	70	95	130
			GP2-0113	16,9 *	10	15	30	45	65	90	120
			0140	21,0 *	-	10	25	35	55	75	100
			0158	23,7	-	-	20	30	45	65	85
			0178	26,7 *	-	-	15	25	40	55	75
			0208	31,2	-	-	10	20	35	50	65
			0234	35,1 *	-	-	-	15	30	45	60
			0279	41,8	-	-	-	10	25	35	50

4.3 - Overall and mounting dimensions for basic CTR3



4.4 - CTR3 with optionals



5 - POWER UNITS CTR4

5.1 - Identification code

C T R 4 - / / - / / / / / / / 40

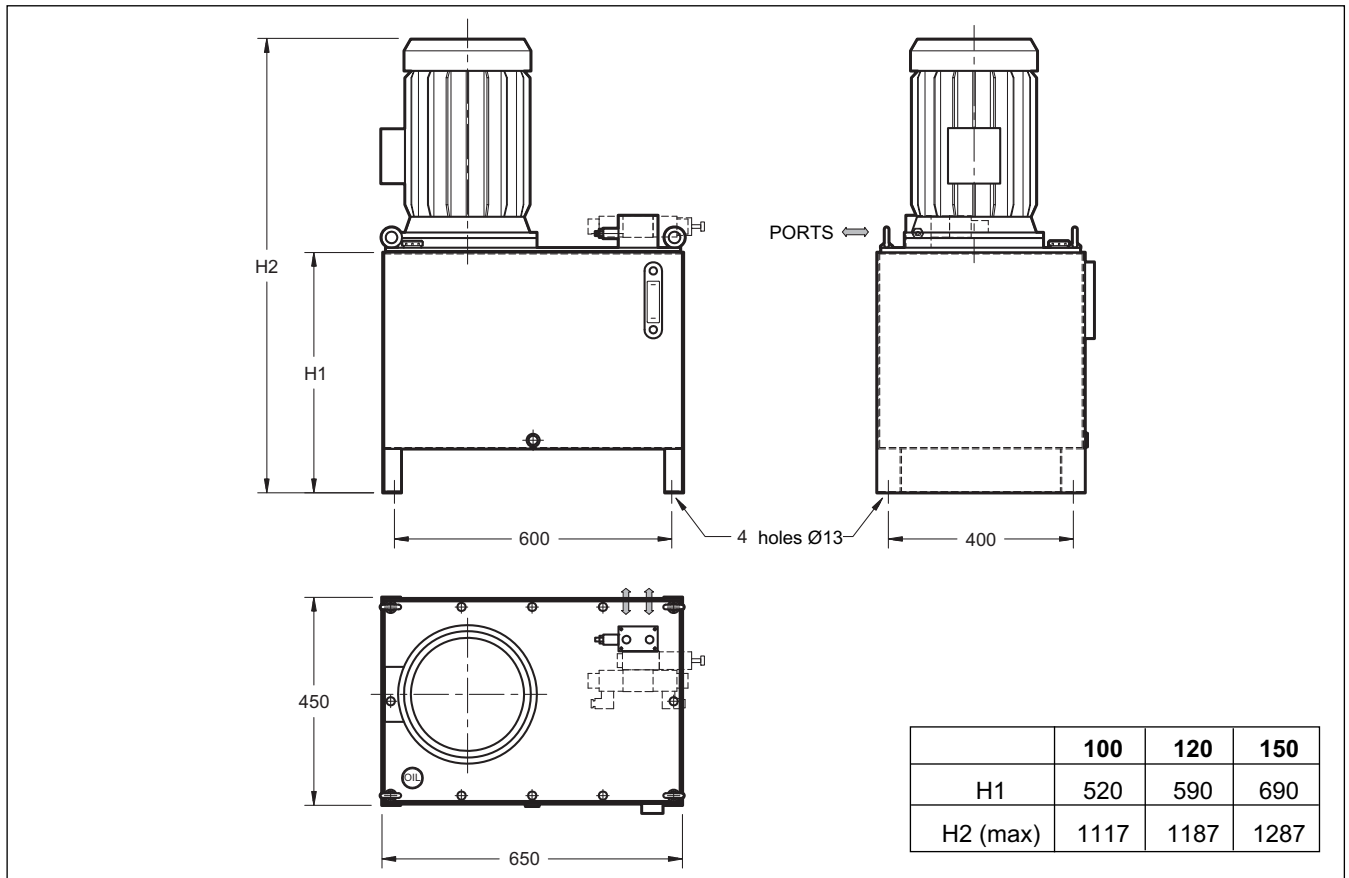
- CTR4**: power unit with soaked pump
- : Cover size
- /**: Tank capacity
100 = 100 dm³
120 = 120 dm³
150 = 150 dm³
- /**: Electric motor B5 shape
P = Predisposition for motor assembly
M = Mounted electric motor
- : 4-poles power electric motor:
2.2 = 2.2 kW **5.5** = 5.5 kW
3 = 3 kW **7.5** = 7.5 kW
4 = 4 kW **9** = 9 kW
- /**: Electric motor voltage (omit for P version)
A = 230/400V / 50/60 Hz
- /**: Pump type :
GP1 **GP2**
 (see cat. 11 100 for the pumps technical characteristics)
- /**: Flowrate pump (l/min) at 1500 rpm (see flowrate / pressure table)
- /**: Series No. (from 40 to 49 sizes and mounting dimensions does not change)
N = Dull black RAL 9005 (**standard**)
G = Grey RAL 7037
V = Green RAL 6011
- /**: Heat exchanger:
0 = without exchanger
1 = oil/water exchanger 2010K
2 = oil/water exchanger 2020K
- /**: Return filter:
0 = without filter
1 = filter with visual indicator
2 = filter with electric indicator
- /**: **0** = without thermostat
1 = with thermostat
- /**: **0** = without level gauge
1 = with level gauge
- /**: Standard panel with rear ports G 3/8"
A = P2D-M* with 1 pos. ISO 4401-03 (CETOP 03)
B = P2T-M* with 2 pos. ISO 4401-03 (CETOP 03)
- /**: P2X*M multi-station manifold ISO 4401-03 (CETOP 03) to use with GP2 pumps (rear ports G 1/2")
C2 = 2 positions **C4** = 4 positions **C6** = 6 positions
- /**: **40**

5.2 - Flowrate / pressure table

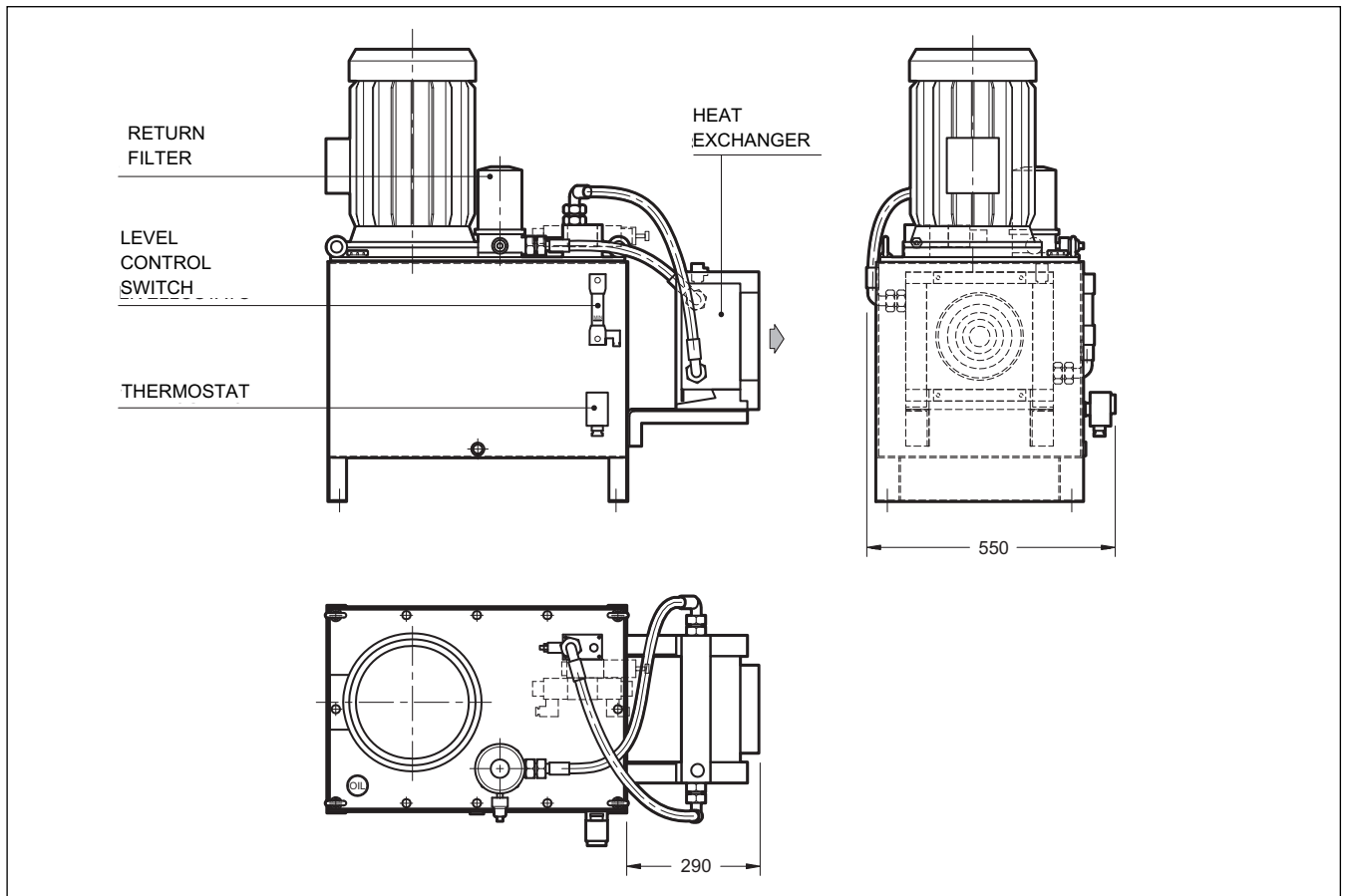
Electric motor flange size					Ø = 250			Ø = 300		
CTR4			Pump type	Flow rate at 1500 rpm [lt/min]	Electric motor power [kW]					
					2,2	3	4	5,5	7,5	9
					max pressure [bar]					
150	120	100	GP1-0041	6,1	185	-	-	-	-	-
			0051	7,6	150	200	-	-	-	-
			0061	9,1	125	170	-	-	-	-
			0074	11,1	100	140	180	-	-	-
			0091	13,6	85	115	150	-	-	-
			GP2-095	14,2 *	80	110	145	200	-	-
			0113	16,9 *	65	90	120	170	-	-
			0140	21 *	55	75	100	135	185	-
			0158	23,7 *	45	65	85	120	165	-
			0178	26,7 *	40	55	75	105	145	-
			0208	31,2 *	35	50	65	90	125	150
			0234	35,1 *	30	45	60	80	110	130
			0279	41,8	25	35	50	70	95	110

* pumps for preferential choice

5.3 - Overall and mounting dimensions for CTR4-P2



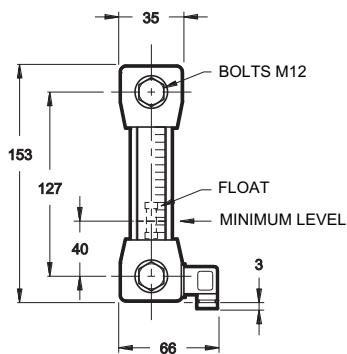
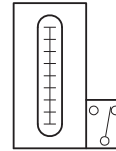
5.4 - Overall and mounting dimensions for CTR4-P2X*M



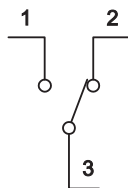
6 - ACCESSORIES

6.1 - Level gauge LV/E1-127-M12-SC cod. 0770764

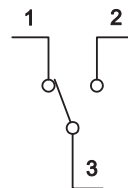
Maximum pressure	bar	1
Working temperature	°C	-20 / +70
Transparent tube material	/	Nylon + glass 35%
Seals material	/	NBR
Reed in exchange	/	1A, 20W, 20VA, 200V



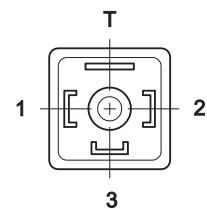
ELECTRIC DIAGRAM
(WITH FLUID)



ELECTRIC DIAGRAM
(WITHOUT FLUID)

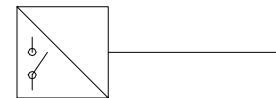


CONNECTOR CE DIN 40050
IP65 PG7

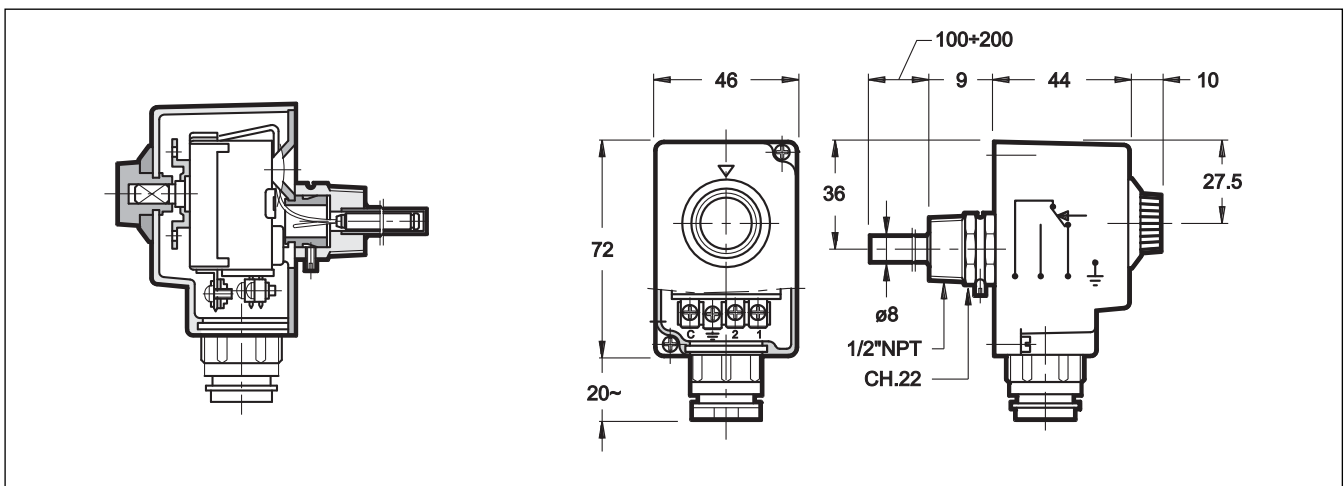


6.2 - Thermostat TC2 cod. 0630285

External sensor temperature range	°C	0/90
Degree of protection	/	IP40
Contacts	A	10
Max. voltage	V AC	250
Max. working temperature	°C	50
Cable guide	/	PG9
Housing material	/	Plastic
Contacts material	/	Silver
Capillary material	/	Copper
Pocket material	/	Brass
Mass	Kg	0.3



6.2.1 - Overall dimensions



6.3 - FRC return line filter for tank top or line mounting cod. 3951600004

6.3.1 - Technical data

Filter code	BSP port dimensions	Mass [Kg]	Rated flow (indicative) [l/min] P25L
FRC-TB034	3/4"	1,6	75

NOTE 1: The flow rate stated in the table correspond to a 0.5 bar pressure drop measured with mineral oil of viscosity 36 cSt at 50°C.
As for a different viscosity range, see the catalogue 95160.

Maximum pressure	bar	7
Collapsing differential pressure of the filter element	bar	3.0
Differential pressure for the opening of the by-pass valve ($\pm 10\%$)	bar	1,7
Ambient temperature range	°C	-25 / +50
Fluid temperature range	°C	-25 / +110
Fluid viscosity range	cSt	10 ÷ 400

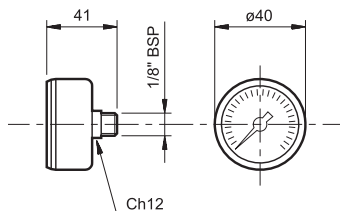
For further detailed informations and overall dimensions please consult the catalogue 95160..

6.3.2 - Clogging indicators

The filters are all designed to incorporate clogging indicators, which have to be ordered separately.

1 - VR/10 Visual indicator for return filters

Identification code: 3959000003



This indicator is a pressure gauge sensitive to the filter input pressure.

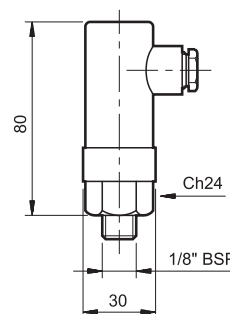
The indicator is supplied with a 0 ÷ 6 bar graduated scale and with a two-colour reading scale, which informs you about the clogging condition of the filter element:

GREEN: efficient filter element (0 ÷ 1.7 bar)

RED: the filter element has to be replaced (> 1.7 bar)

2 - ER/10 Electric indicator for return filters

Identification code: 3959000004



This indicator is a pressure switch sensitive to the filter input pressure, which switches an electric contact when the filter element has reached the clogging limit.

With an efficient filter, the contact is normally closed.

TECHNICAL DATA

Operating pressure	bar	1.5
Max operating voltage	V	220 50/60 Hz
Max load on the contacts:		
- resistive	A	0.5
- inductive		0.25
Max commutable power	VA	100
Protection class according to CEI EN 60529 (atmospheric agents)	IP65	

6.4 - Heat Exchanger oil/water with fixed blowing air flow .

6.4.1 - Technical data

		2010K	2020K
Code		0713268	0712078
Operating pressure	bar	20	
Test pressure	bar	35	
Maximum operating pressure	°C	120	
Air Flow	m³/h	190	645
Capacity	litre	0,3	0,7
Three-phase supply voltage	V	230 - 400	
Frequency	Hz	50 / 60	
Rpm	kW	0,045	0,068
Thermostat regulation field	°C	40 - 28	50 - 38
Oil threaded inlet / outlet connections	-	1/2" BSP	1" BSP
Mass	kg	6	8
IP protection degree		IP54	IP44

CLEANING AND MAINTENANCE

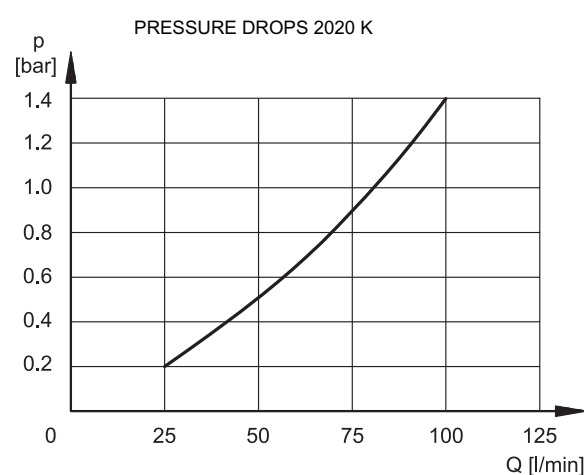
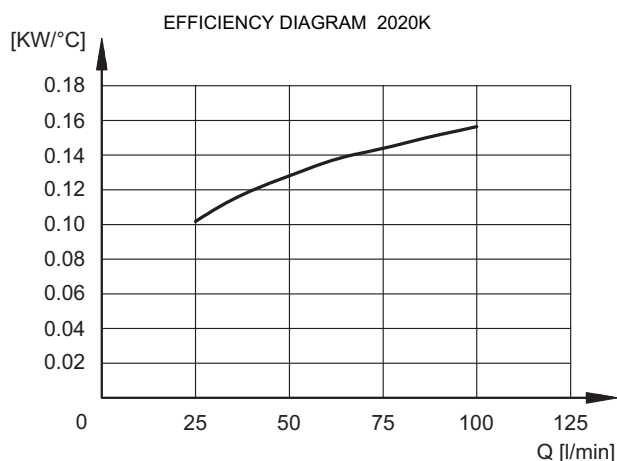
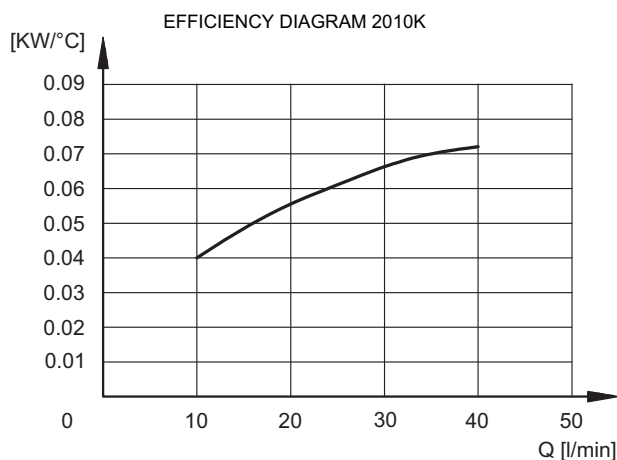
As a general rule verify that the voltage supply correspond to those shown on the plate.

Cleaning oil side: The exchanger must be dismounted. Dirt can be removed by a detergent product as perchloride, in the opposite direction to normal. At the end it must be washed out with hot water.

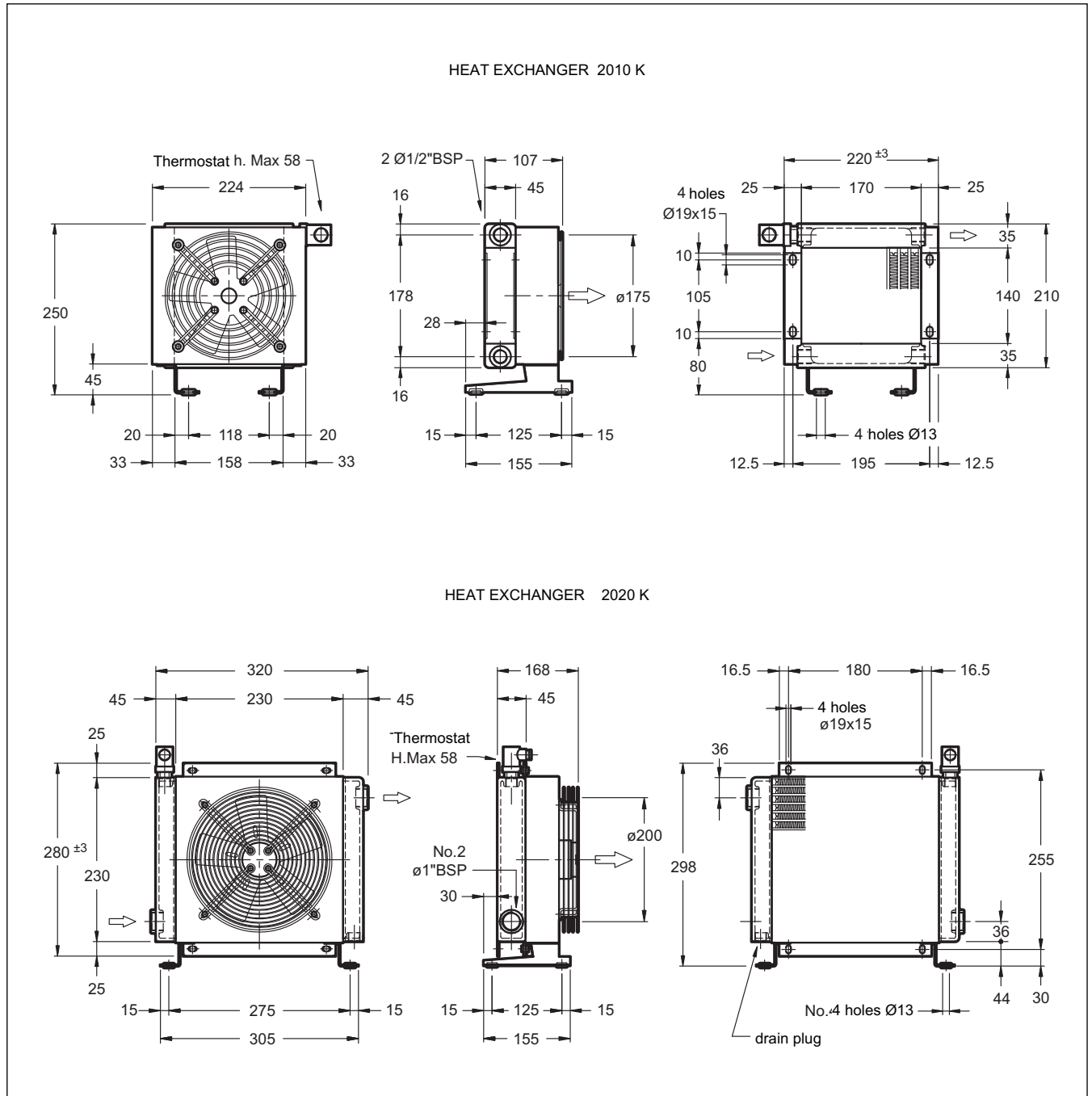
Cleaning air side: This can be done means of compressed air or water. The direction of the jet must be parallel to the fins, to avoid damaging them. If the dirt is oil or greasy it must be cleaned by a jet of steam or hot water.

The electric motor must be protected during the cleaning operation.

6.4.2 - Characteristics



6.4.3 - Overall dimensions





CTR*



DIPLOMATiC OLEODiNAMiCA S.p.A.

20015 PARABIAGO (MI) • Via M. Re Depaolini 24

Tel. +39 0331.895.111

Fax +39 0331.895.339

www.diplomatic.com • e-mail: sales.exp@diplomatic.com