

APPLICATION

Power pack is intended to supply hydraulic system with hydraulic fluid (oil) according to the required parameters (pressure and displacement).

DESCRIPTION

Power pack in standard consists of the oil tank and the key accessories such as:

- filler breather filter;
- oil level indicator (optical) with possibility of electric indication on minimum level;
- thermometer;
- revision seals;
- oil drain plug;
- magnetic filter (or plug)

and of pumping unit (electric motor - gear pump), oil filter (low pressure filter), and also measuring block with pressure gauge switch, pressure gauge and output connections.

Standard version of the power pack can be extended (upon customer request) with:

- hydraulic control system – according to individual scheme;
- temperature regulation system (air cooler or water cooler, heater, heat sensor, temperature regulator);
- other equipment and hydraulic machines, which are not included in the data card, after prior consultation with the manufacturer
- electric control system

The extension of hydraulic system can be made:

- on the blocks for column mounting (**WK560 520** or **WK 560 521**) – standard version
- on multi-station manifold blocks type **ULRA 6...** (**WK 450 499**) or **ULRA 10...** (**WK 450 500**)
- in board system (using individual subplates type **G...**)

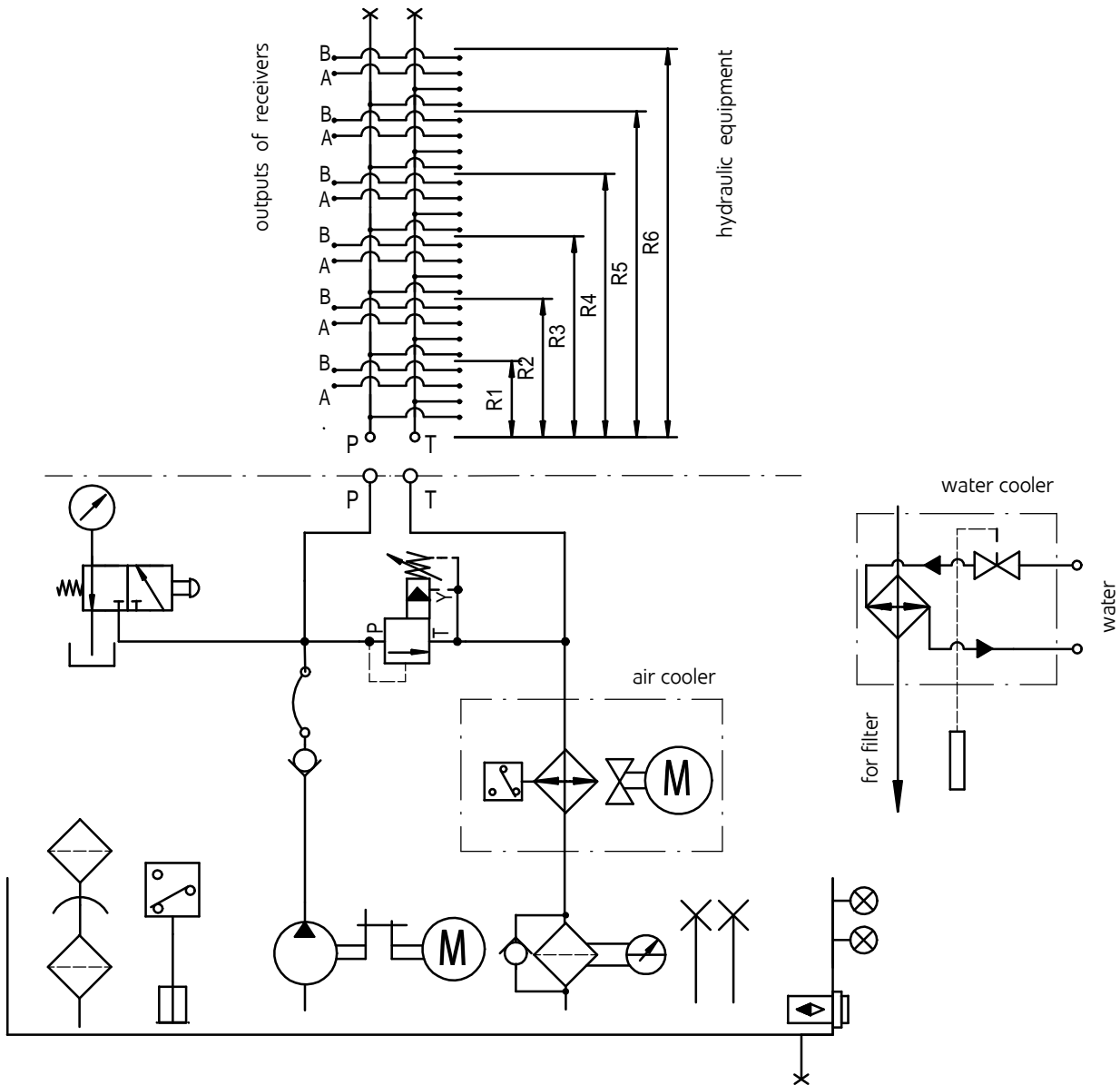
TECHNICAL DATA (table1)

Nominal oil tank capacity	63 dm ³	100 dm ³	160 dm ³
Oil capacity difference corresponding to oil level difference max - min	up to 13,9 dm ³	up to 21 dm ³	up to 36 dm ³
Hydraulic fluid	mineral oil		
Operating temperature range	- 10 up to + 70 °C		
Standard filtration	16µm		
Viscosity	10 ÷ 380 mm ² /s		
Motor supply voltage	230/400V 50Hz (other, if agreed)		
Type of pump	WPTO-2-10	WPTO-2-16	WPTO-2-25
Operating pressure	up to 32 MPa	up to 32 MPa	up to 32 MPa
Displacement	10 dm ³ /min	16 dm ³ /min	25 dm ³ /min

HYDRAULIC SCHEME

Connections (table 2)

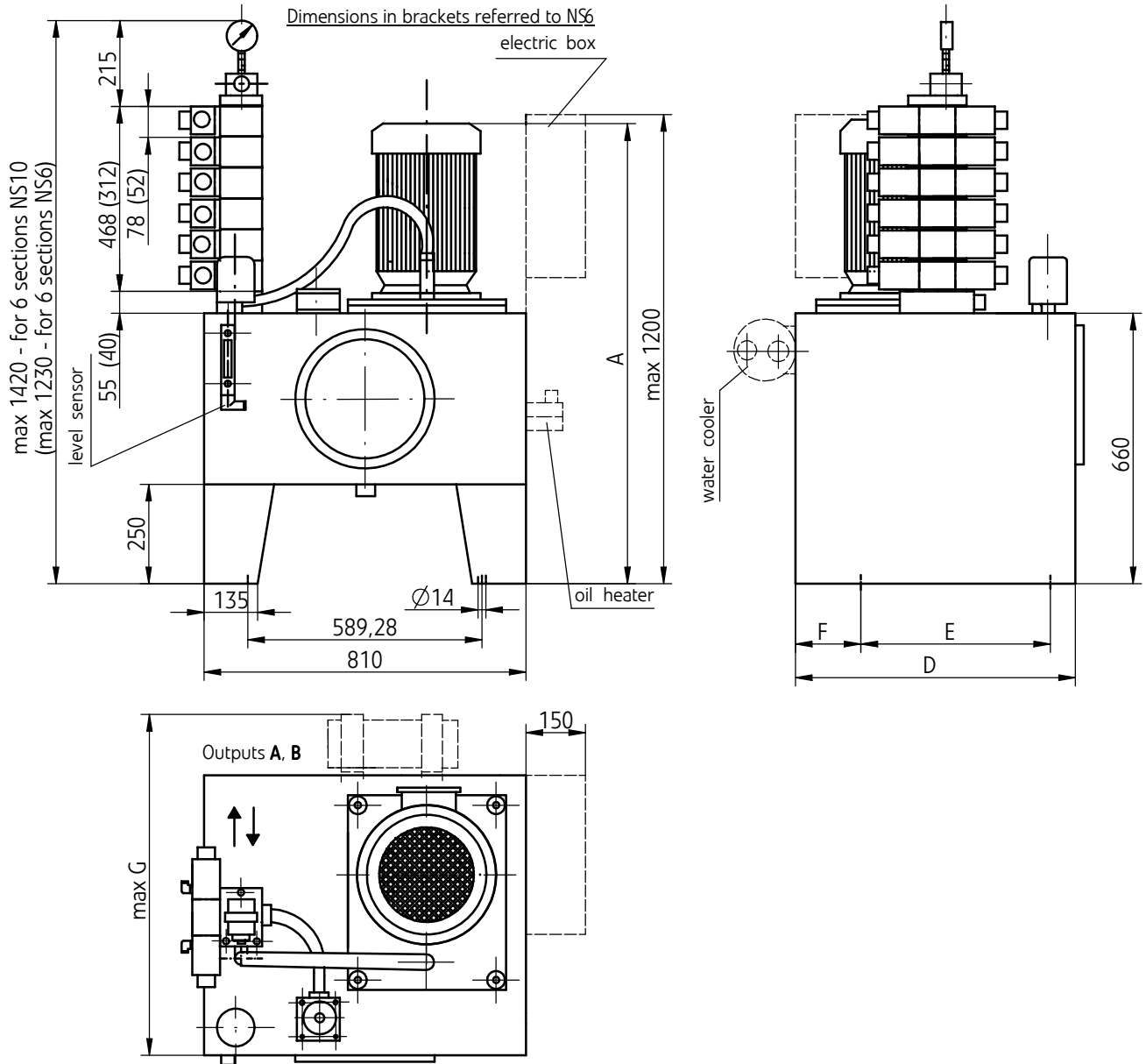
Port		P	T	A	B
Connections	for NS6	G1/2"	G1/2"	G1/2"	G1/2"
	for NS10	G1"	G1"	G3/4"	G3/4"



Operating pressure range depending on the motor power and type of pump (table 3)

Motor type	Power [kW]	WPTO - 2-10	WPTO - 2-16	WPTO - 2-25
		pressure [MPa]	pressure [Mpa]	pressure [MPa]
SKg 112 M4	4	20	-	-
SKg 112 M4PC	5,5	25	-	-
SKg 132 M4	7,5	32	23,5	-
SKg 132 M4 -PC	11	-	32	20
SKg 160 L4	15	-	-	30

OVERALL AND CONNECTION DIMENSIONS



Overall dimensions depending on the motor power and type of pump (table 4)

Motor type	Dimension	WPTO -2-10	WPTO -2-16	WPTO -2-25
SKg 112 M4 4 [kW]	A	1065	-	-
SKg 112 M4 -PC 5,5 [kW]	A	1100	-	-
SKg 132 M4 7,5 [kW]	A	1200	1200	-
SKg 132 M4 -PC 11 [kW]	A	-	1210	1210
SKg 160 L4 15 [kW]	A	-	-	1260

Overall dimensions depending on type of power pack (table 5)

Type of power pack	Dimension					
	B	C	D	E	F	G
UHPT 63	508	308	375	285	45	460
UHPT 100	633	393	474	360	57	584
UHPT 160	810	570	604	490	57	778

ADDITIONAL

When selecting power pack to the machine it is necessary to consider its total heat balance by specifying oil temperature in the tank – it should not exceed 55°C (328 K).

If necessary, oil cooler must be used for the hydraulic system. Thermal power output of the power pack tank to the environment can be estimated using below formula or diagram.

$$N_{\text{output}} = k \times A \times \Delta T$$

N_{output} [W] - thermal power output of the tank

A [m²] - active surface area of the tank for the power pack tank

•UHPT 63 $A = 1,02 \text{ m}^2$

•UHPT 100 $A = 1,40 \text{ m}^2$

•UHPT 160 $A = 2,08 \text{ m}^2$

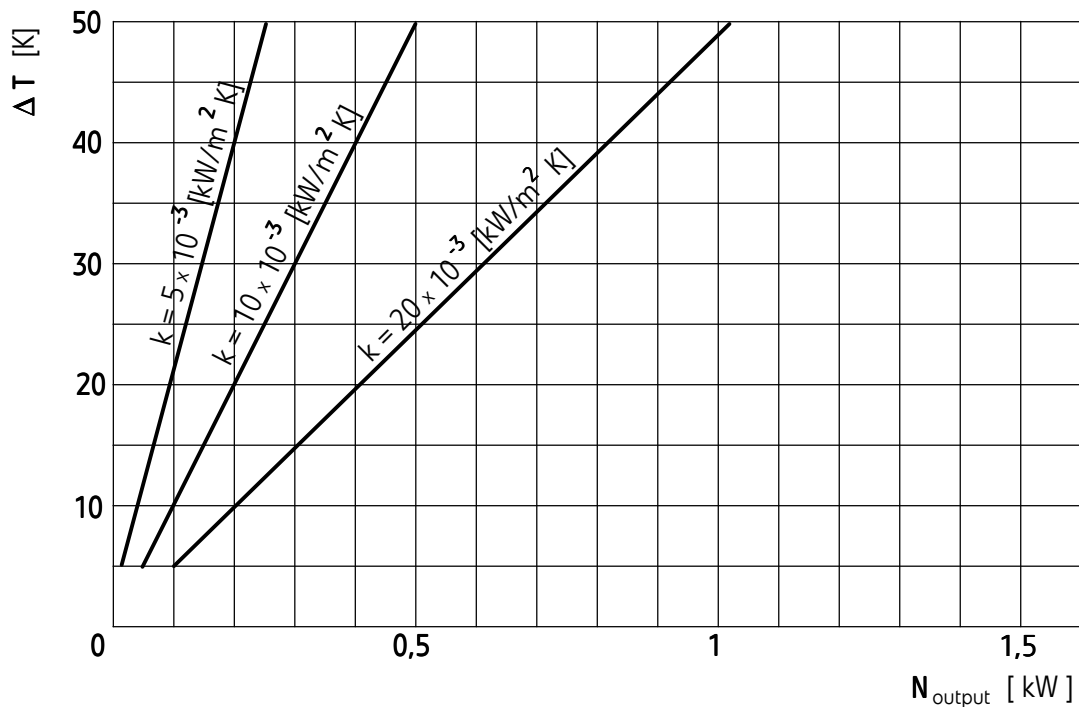
k [W/m² x K] - heat exchange factor

• $k = 5 \text{ W/m}^2 \times \text{K}$ - when poor air circulation, unfavourable location,

• $k = 10 \text{ W/m}^2 \times \text{K}$ - normal air circulation from all directions,

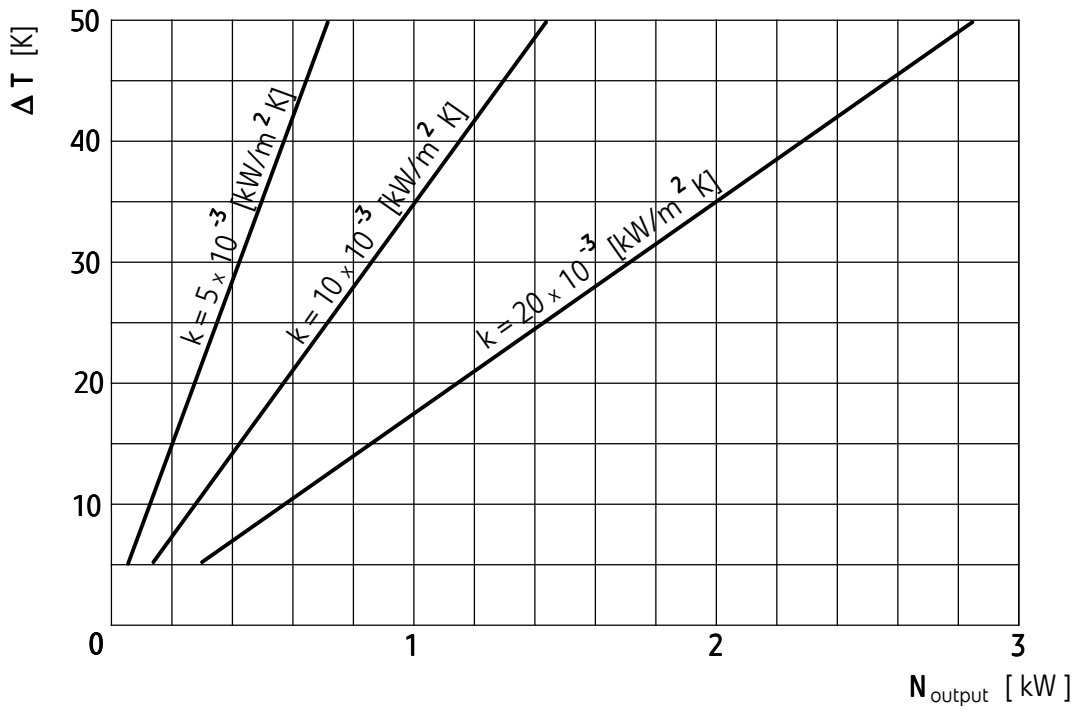
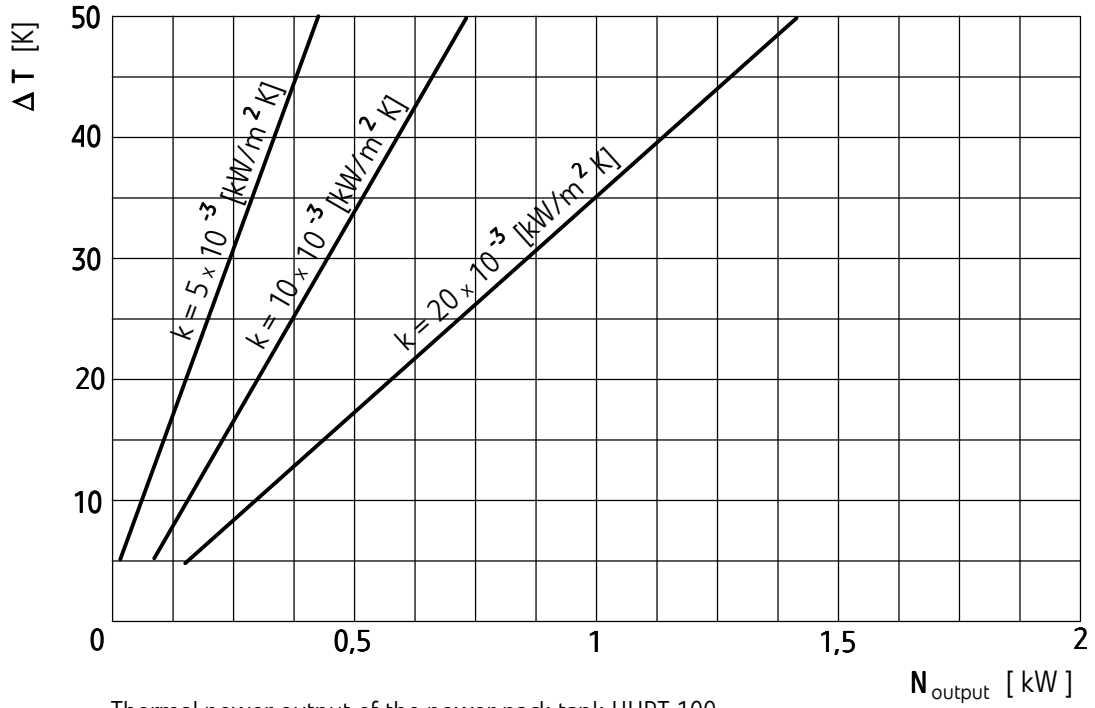
• $k = 20 \text{ W/m}^2 \times \text{K}$ - when intensive air circulation (unnaturally forced),

ΔT [K] - temperature difference between the tank (oil) and the environment



Thermal power output of the power pack tank UHPT 63

ADDITIONAL



HOW TO ORDER

Any order should be addressed to the manufacturer according to the below coding.

UHPT	+	+	+	+	+	+	+	+	+	★
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Tank capacity

63 dm ³	= 63
100 dm ³	= 100
160 dm ³	= 160

Type of pump

WPTO -2-10	= 10
WPTO -2-16	= 16
WPTO -2-25	= 25

Motor power (according to the table 3)

4,0 kW	= 4,0
5,5 kW	= 5,5
7,5 kW	= 7,5
11,0 kW	= 11
15,0 kW	= 15

Nominal size of hydraulic elements mounted

(referred to connections of directional valves)

NS6	= 6
NS10	= 10

Designed version

- standard version (without connection for directional valve) = no designation
- with the connection for one directional valve = R1
- with the connection for two directional valves (parallel connection of apparatus) = R2
- with the connection for three directional valves (parallel connection of apparatus) = R3
- with the connection for four directional valves (parallel connection of apparatus) = R4
- with the connection for five directional valves (parallel connection of apparatus) = R5
- with the connection for six directional valves (parallel connection of apparatus) = R6

Oil level indicator

without oil level indicator	= no designation
with oil level indicator of minimum level (electric)	= N1

Cooler

without cooler	= no designation
air cooler (according to the table 6)	= P1 or P2
water cooler (according to the table 7)	= W1 or W2

Successive number of power pack version

(given by the manufacturer of the power pack when order confirmed) = XXXX

Further requirements in clear text

(to be agreed with the manufacturer)

Coding example: UHPT 160 - 10 - 5,5 -10 - R4 - N1- P1- XXXX

NOTE:

Type, quantity and placing hydraulic equipment (directional valves, valves and other), must be specified in the hydraulic scheme or in another clear way.

BASIC TECHNICAL PARAMETERS OF THE ACCESSORIES

Air cooler (table 6)

Type	Designation	Motor power	Voltage	Rate of revolution	Power output for $\Delta t = 20\text{ }^{\circ}\text{C}$
MG AIR 2024K	P1	0,12 kW	230/400V 50Hz	~ 2670 revolutions/min	up to 4 kW
MG AIR 2030K	P2	0,195 kW	230/400V 50Hz	~ 2610 revolutions/min	up to 8 kW

Water cooler (table 7)

Type	Designation	Connection thread for water	Thermostat type	Power output for $\Delta t = 35\text{ }^{\circ}\text{C}$
MGE 80-120 -1	W1	G1/2	AVTA 15	3 ÷ 7 kW
MGE 81-310- 4	W2	G1/2	AVTA 15	7,5 ÷ 12 kW

Oil level indicator with electric indicator (table 8)

Type	Supply voltage	Current	Contact load capacity	Contact state
SNK 127V/0/0/12R	50V AC/DC	0,2A	2,5 W	Open at minimum

Below hydraulic equipment manufactured by "PONAR-WADOWICE" S.A.
that can be used for control systems (table 9)

Directional spool valve, electrically operated	WE 6	according to WK 499 502
Directional spool valve, hydraulically operated	WH 6	according to WK 420 170
Directional spool valve, hand lever operated	WMM 6	according to WK 420 170
Directional spool valve, rotary knob operated	WMD 6	according to WK 420 170
Pressure reducing valves, sandwich plate	UZRC 6	according to WK 493 061
Pressure sequence valves, sandwich plate	UZKC 6	according to WK 393 060
Check valves, sandwich plate	WZZC 6	according to WK 450 355
Double check valves, pilot operated	Z2S 6	according to WK 450 360
Double check valves, sandwich plate	Z2FS 6	according to WK 450 232
Pressure switches (with subplate UłBC 6)	USPH 4	according to WK 450 398
Pressure relief valves	UZPR 6	according to WK 494 060

Directional spool valve, electrically operated	WE 10	according to WK 499 495
Directional spool valve, hydraulically operated	WH 10	according to WK 420 180
Directional spool valve, hand lever operated	WMM 10	according to WK 420 180
Directional spool valve, rotary knob operated	WMD 10	according to WK 420 180
Pressure reducing valves, sandwich plate	UZRC 10	according to WK 494 721
Pressure sequence valves, sandwich plate	UZKC 10	according to WK 493 720
Check valves, sandwich plate	WZZC 10	according to WK 450 367
Double check valves, pilot operated	Z2S 10	according to WK 450 309
Double check valves, sandwich plate	Z2FS 10	according to WK 450 233
Pressure switches (with subplate UłBC 10)	USPH 4	according to WK 450 398

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