

Single-circuit power brake valve

LT 05

RE 66143

Edition: 09.2013

Replaces: 08.2004



- ▶ Series 3X
- ▶ Service brake pressure 40, 60, 80, 100 and 125 bar

Features

- ▶ Small installation dimensions
- ▶ Integrated maximum pressure limitation of the brake circuit
- ▶ Brake pressure proportional to actuation force
- ▶ Ergonomic adaption of the pedal blade angle possible
- ▶ All pedal variations with slip resistant, removable rubber plates

Fields of application

- ▶ Construction equipment
- ▶ Material handling vehicles
- ▶ Forestry and agricultural machines
- ▶ Municipal vehicles
- ▶ Special vehicles

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Functional description

The single-circuit powered brake valve LT 05 is a directly operated pressure reducing valve in three-way design with stepless mechanical operation.

It has a maximum pressure relief of secondary circuit and infinitely adjustable pressure which is in proportion to the travel of the operating element (5) or to the actuation travel angle of the pedal. The actuation force is also proportional to the travel of the actuator.

The single-circuit power brake valve consists mainly of the housing (1) and control spool (2), main compression springs (3), operating element (5) and the return spring (4). The valve is operated via the operating element (5). This pushes the main compression spring (3) against the control spool (2). Firstly the control edges closes at channel T, afterwards the flow from P to A is released in the braking circuit.

The pressure building up in the brake line pushes simultaneously via the brake pressure return behind the control spool against the main compression spring (3) so that the brake pressure (secondary pressure) rises in proportion to the deflection of the operating element (5). With the deflection of the operating element (5) kept constant, the control spool (2) moves into the control position and holds the defined pressure constant.

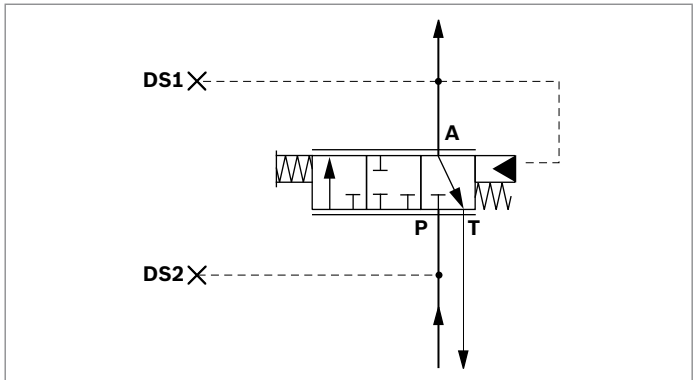
When the main compression spring (3) is unloaded, the return spring (4) move the control spool (2) back to initial position. The control edges close from P to A and open A towards T. Thus closes the secondary circuit (braking circuit).

Line connections

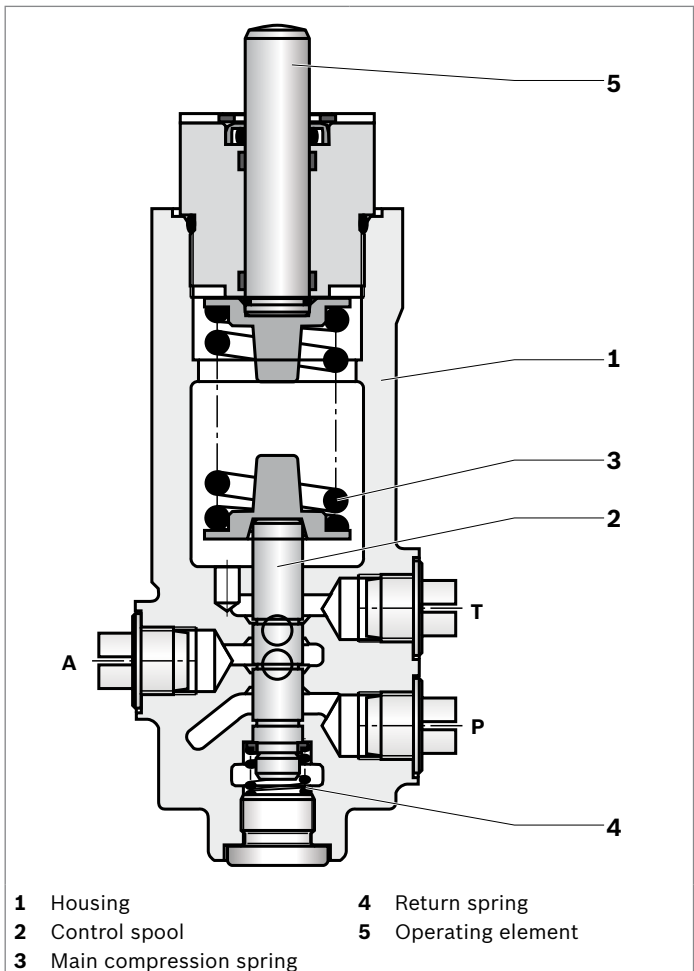
The valve must be connected as shown in the circuit diagram. Port T is to be connected to a drain line (the pressure of the drain line acts on the brakes → max. 0.5 bar).

Ports	
A	Service brake
P	Supply service brake
T	Tank
DS1	Pressure switch (brake light)
DS2	Pressure switch (accumulator pressure)

▼ Symbol LT 05



▼ Section LT 05



Technical data

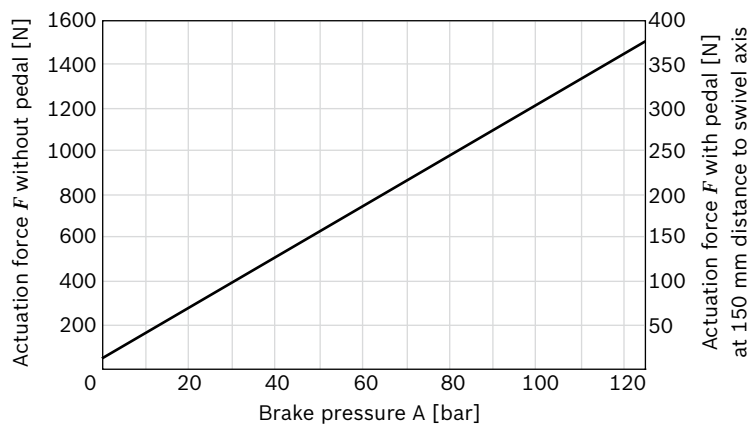
General				
Weight	Without pedal		kg	2.7
Installation position				Upright preferred
Type of connection				Metric threats according to DIN 3852-1
Ambient temperature range		θ	°C	-25 to +80
Priming				Single-layer coating RAL 5010
Hydraulic				
Maximum service brake pressure at port	A	p	bar	125
Maximum inlet pressure at port	P	p	bar	200
Maximum tank pressure at port	T	p	bar	0.5 (Tank pressure must not exceed the pressure being applied by the brake.)
Hydraulic fluid				Mineral oil (HL, HLP) according to DIN 51524, other hydraulic fluids, such as HEES (synthetic esters) according to VDMA 24568 as well as hydraulic fluids as specified in the data sheet 90221, on inquiry.
Hydraulic fluid temperature range		θ	°C	-20 to +80
Viscosity range		ν	mm ² /s	2.8 to 380
Maximum permitted degree of contamination of the hydraulic fluid, cleanliness class according to ISO 4406 (c)				Class 20/18/15, for this we recommend a filter with a minimum retention rate of $\beta_{10} \geq 75$

Note

For applications outside these parameters, please consult us!

Characteristic curve

▼ Actuation force without and with pedal according to braking pressure



4 **LT 05** | Power brake valve
Ordering code

Ordering code

01	02	03	04	05	06	07	08	
LT 05	MKA	-	3X	/	/	02	M	*

Model code

01	Single-circuit power brake valve LT 05	LT 05
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Type of actuation

02	Mechanical	MKA
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Series

03	30 to 39 (unchanged installation and connection dimensions)	3X
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Service brake pressure

04	40 bar	040
	60 bar	060
	80 bar	080
	100 bar	100
	125 bar	125

Line connections

05	Metric threads according to DIN 3852-1 (see table on page 5)	02
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Seal material

06	NBR seals, suitable for mineral oil (HL, HLP) according to DIN 51524	M
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Accessories (optional)

07	Fitted with a standard brake pedal LT 19	12
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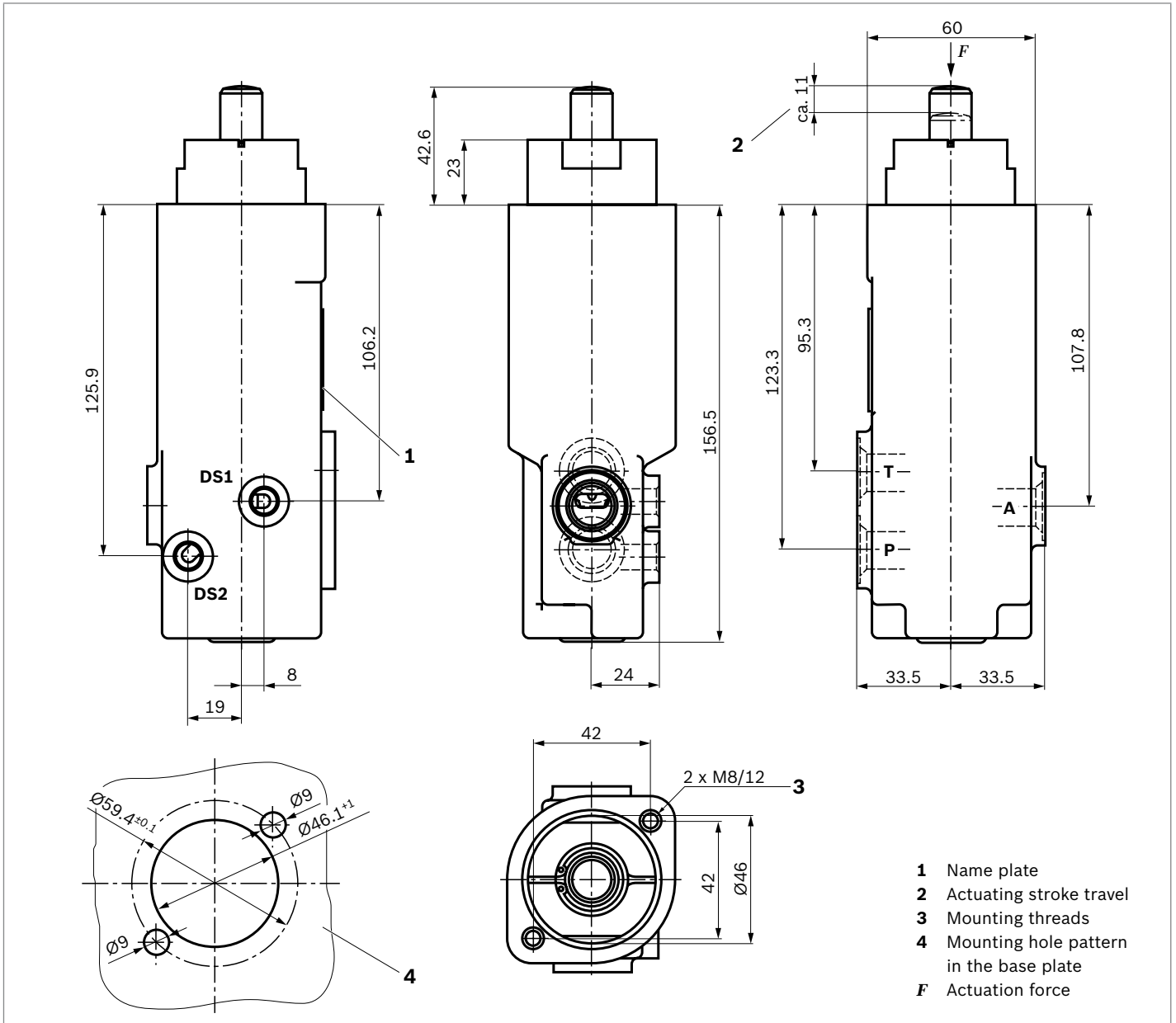
08	Further details in clear text	*
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Preferred standard types

Pressure stage [bar]	LT 05 without pedal Part no.	LT 05 with fitted standard pedal Part no.
040	R901002822	R901026424
060	R900960193	R900776990
080	R900960195	R900776991
100	R900960196	R900776992
125	R900960199	R900776993

Dimensions

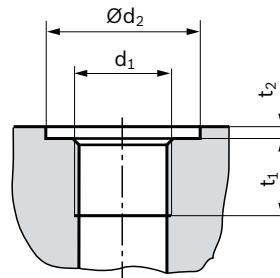
Without pedal



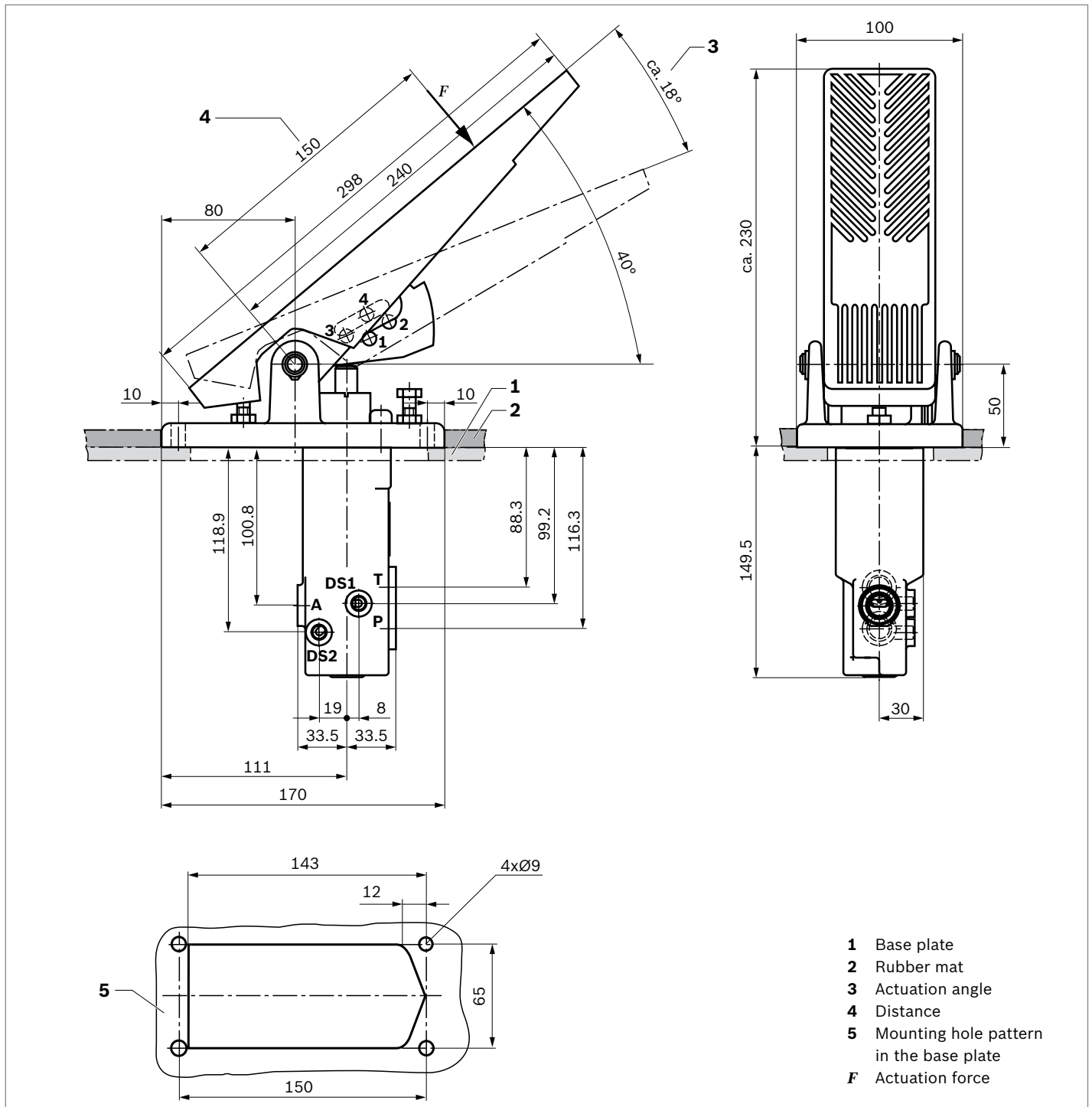
Ports according to DIN 3852-1

Port	d_1	$\varnothing d_2^{+0.1}$	t_1	t_2
A	M16 x 1.5	23	13	1
P	M16 x 1.5	23	13	1
T	M16 x 1.5	23	13	1
DS1, DS2	M10 x 1	16	9	-

Ports **DS1** and **DS2** plugged by default.



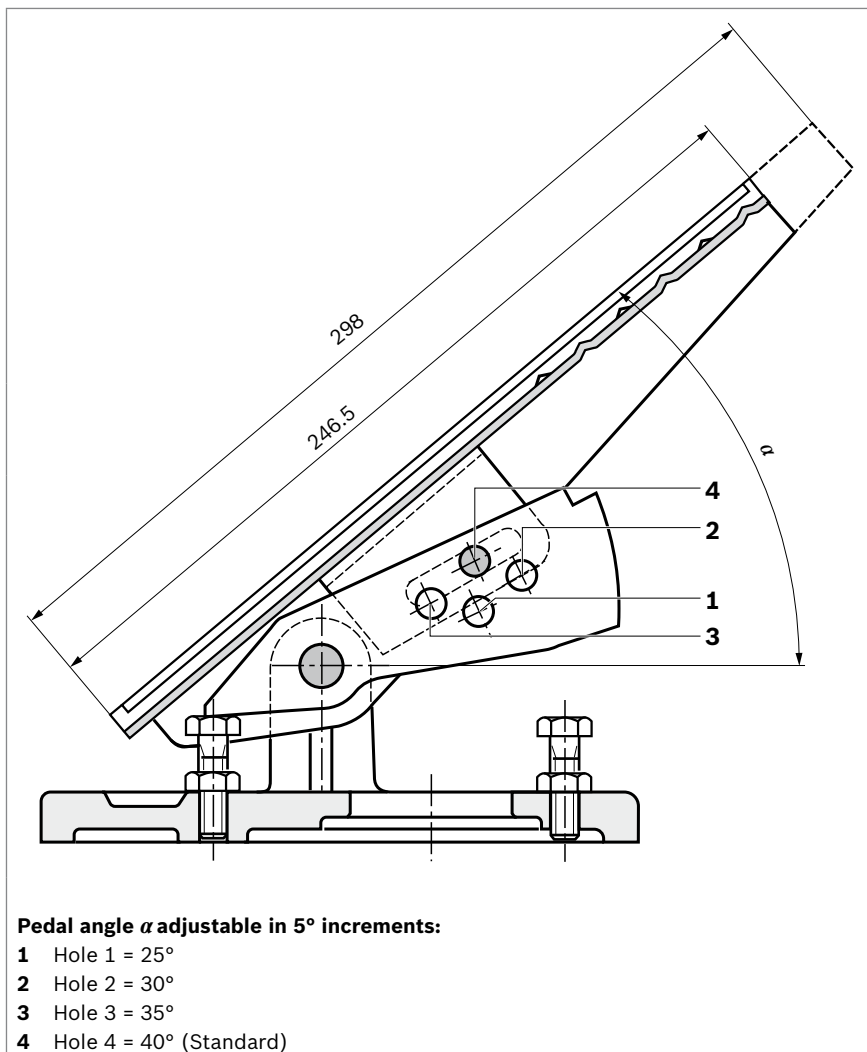
With fitted standard pedal LT 19



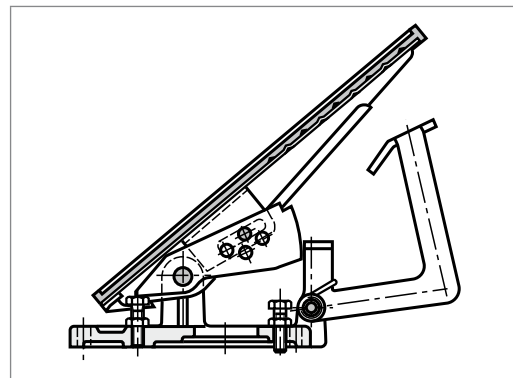
Brake pedal variations

The power brake valve LT 05 is optionally provided with or without pedal. The pedals LT 19 and LT 20 are available (Further variants on request).

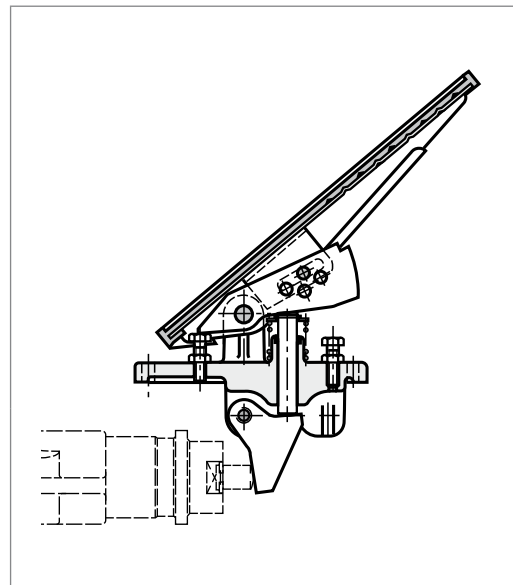
▼ Standard type LT 19 / Type LT 19 with shortened pedal plate



▼ Type LT 19 with detent



▼ Type LT 20 for horizontal fitted brake valves



Note

All pedal variations are fitted with a slip resistant, removable rubber plate by default.

Related documents

The power brake valves LT 05 are hydraulic components to be used in power brake systems in mobile machines. Also observe the instructions for the other system components. Do not commission the product until you are provided with the following documentation and have understood and observed it.

Title	Document number	Document type
Hydraulic power brake valves for mobile applications	66200-B	Operating instructions
System documentation from the machine manufacturer		Operating instructions

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