

Pressure relief valves  
**DBD**  
directly-operated

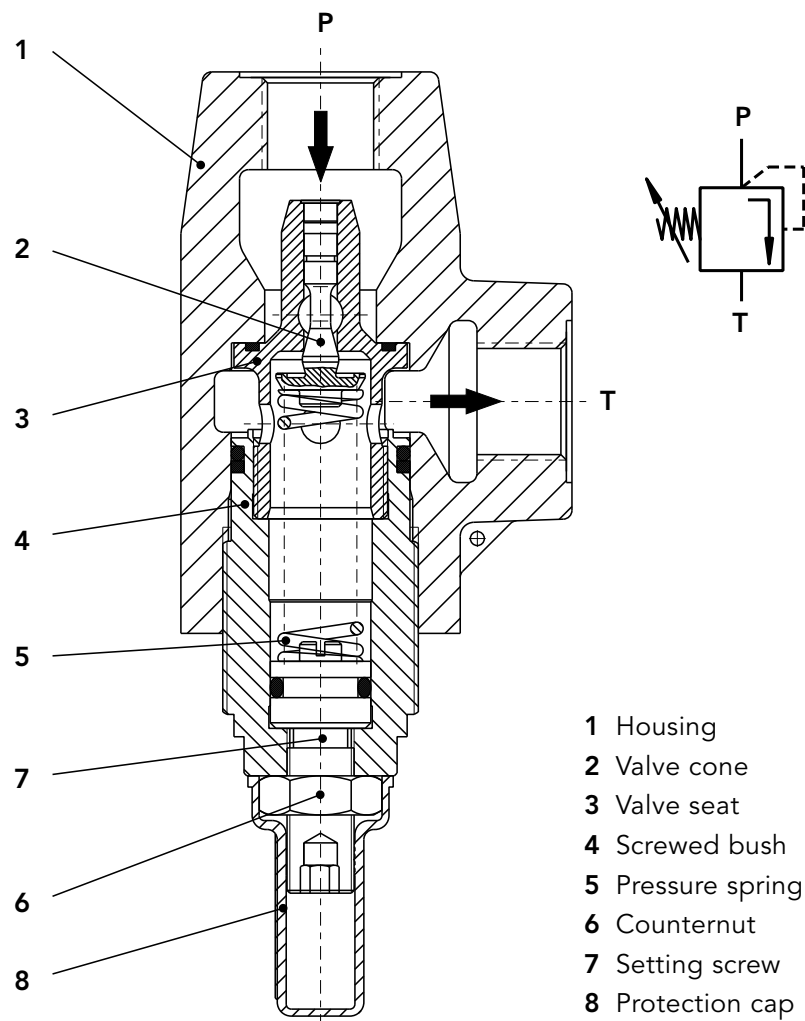


## Description

The pressure relief valve DBD is a directly-operated poppet valve for installation in the pipelines or as a clamp-in valve. The valve is used to safeguard the pressure of hydraulic systems up to  $p_{max} = 400$  bar.

For line installation, the housing has two connections with Whitworth pipe threads. Without housing, the valve cartridge can alternatively be screwed into the specified bore contour in any body desired.

## Construction



- 1 Housing
- 2 Valve cone
- 3 Valve seat
- 4 Screwed bush
- 5 Pressure spring
- 6 Counternut
- 7 Setting screw
- 8 Protection cap

Valve cone **2** is pressed by compressed spring **5** into valve seat **3**, thus blocking pump connection **P** from Tank connection **T**. When opening pressure  $p$  is reached, valve cone **2** opens and the operating fluid flows from **P** to **T**.

The opening pressure is set via Setscrew **7**. To accomplish that, Counternut **6** must be opened and, after adjustment, retightened.

## Characteristics acc. to VDI 3276

Nominal size		06	08	10	20
Flow rate (l/min)	max.	40	40	80	200
Working pressure (bar)	max.	400	400	400	315

## General Characteristics

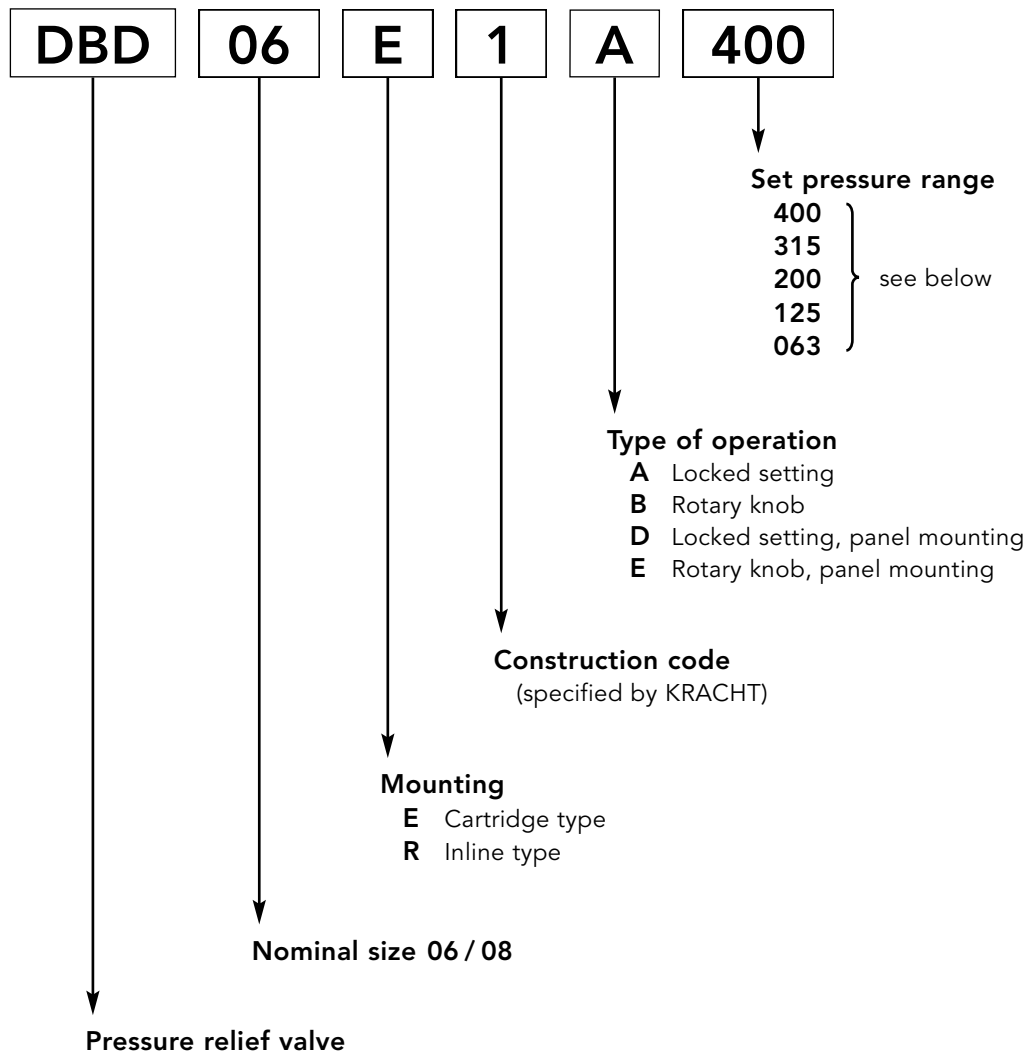
Construction	Poppet valve, directly-operated			
Mounting	Cartridge type Inline type Connection KP 1 (DBD 10)			
Connection	<b>NG 06</b> G ¼	<b>NG 08</b> G ⅜	<b>NG 10</b> G ½	<b>NG 20</b> G 1
Dimensions	Page 8 – 10			
Weight	Page 8 – 10			
Mounting position	optional			
Ambient Temperature	$\vartheta_{u \max}$	= 60 °C		

## Hydraulic Characteristics

		NG 06	NG 08	NG 10	NG 20
Set pressure range	$p_{v \min}$	10	10	5	10
	$p_{v \max}$	400	400	400	315
Inlet pressure (Connection P)	$p_{e \min}$	20	20	15	20
	$p_{e \max}$	410	410	410	325
Outlet pressure (Connection T)	$p_{R \max}$	210	210	210	210
Fluid temperature	NBR $\vartheta$ = – 20 °C ... 80 °C FKM $\vartheta$ = – 15 °C ... 80 °C				
Viscosity	$v_{\min}$	= 10 mm <sup>2</sup> /s			
	$v_{\max}$	= 600 mm <sup>2</sup> /s			
$p_v$ -Q-curve	Page 7				
Shock absorption	Poppet with damping				
Hydraulic fluids	Hydraulic oils to DIN 51524/25 (other fluids on request)				
Filtration	$\mu_m$	≤ 20			

## Type Key DBD 06/08

### Ordering example



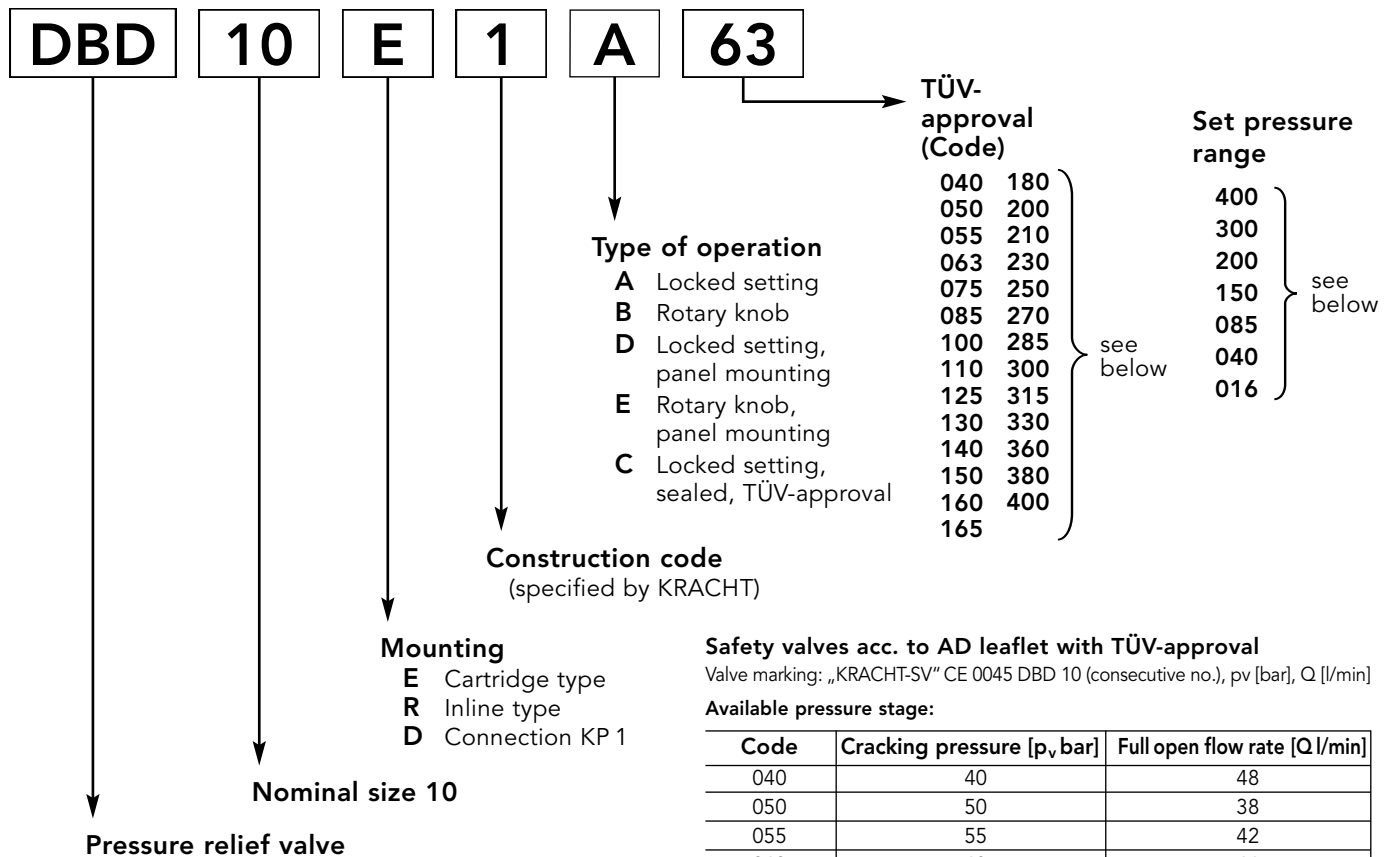
### Set pressure range

	Pressure range in bar		Flow in l/min	
	from $p_v 1$	up to $p_v 2$	$Q_{max} 1$ at $p_v 1$	$Q_{max} 2$ at $p_v 2$
<b>400</b>	80	400	15	40
<b>315</b>	60	315	10	30
<b>200</b>	35	200	8	25
<b>125</b>	20	125	5	15
<b>063</b>	10	63	5	10

$p_v 1$  = minimum pressure of the set pressure range  
 $p_v 2$  = maximum pressure of the set pressure range

## Type Key DBD 10

### Ordering example



### Safety valves acc. to AD leaflet with TÜV-approval

Valve marking: „KRACHT-SV“ CE 0045 DBD 10 (consecutive no.), p<sub>v</sub> [bar], Q [l/min]

#### Available pressure stage:

Code	Cracking pressure [p <sub>v</sub> bar]	Full open flow rate [Q l/min]
040	40	48
050	50	38
055	55	42
063	63	46
075	75	58
085	85	60
100	100	31
110	110	39
125	125	64
130	130	73
140	140	79
150	150	82
160	160	92
165	165	100
180	180	100
200	200	20*
210	210	20*
230	230	20*
250	250	20*
270	270	20*
285	285	20*
300	300	20*
315	315	20*
330	330	20*
360	360	20*
380	380	20*
400	400	20*

### Set pressure range

	Pressure range in bar		Flow in l/min	
	from p <sub>v</sub> 1	up to p <sub>v</sub> 2	Q <sub>max</sub> 1 at p <sub>v</sub> 1	Q <sub>max</sub> 2 at p <sub>v</sub> 2
400	60	400	55	80
300	10	300	15	75
200	10	200	15	70
150	10	150	10	55
085	10	85	10	45
040	10	40	10	30
016	5	16	5	20

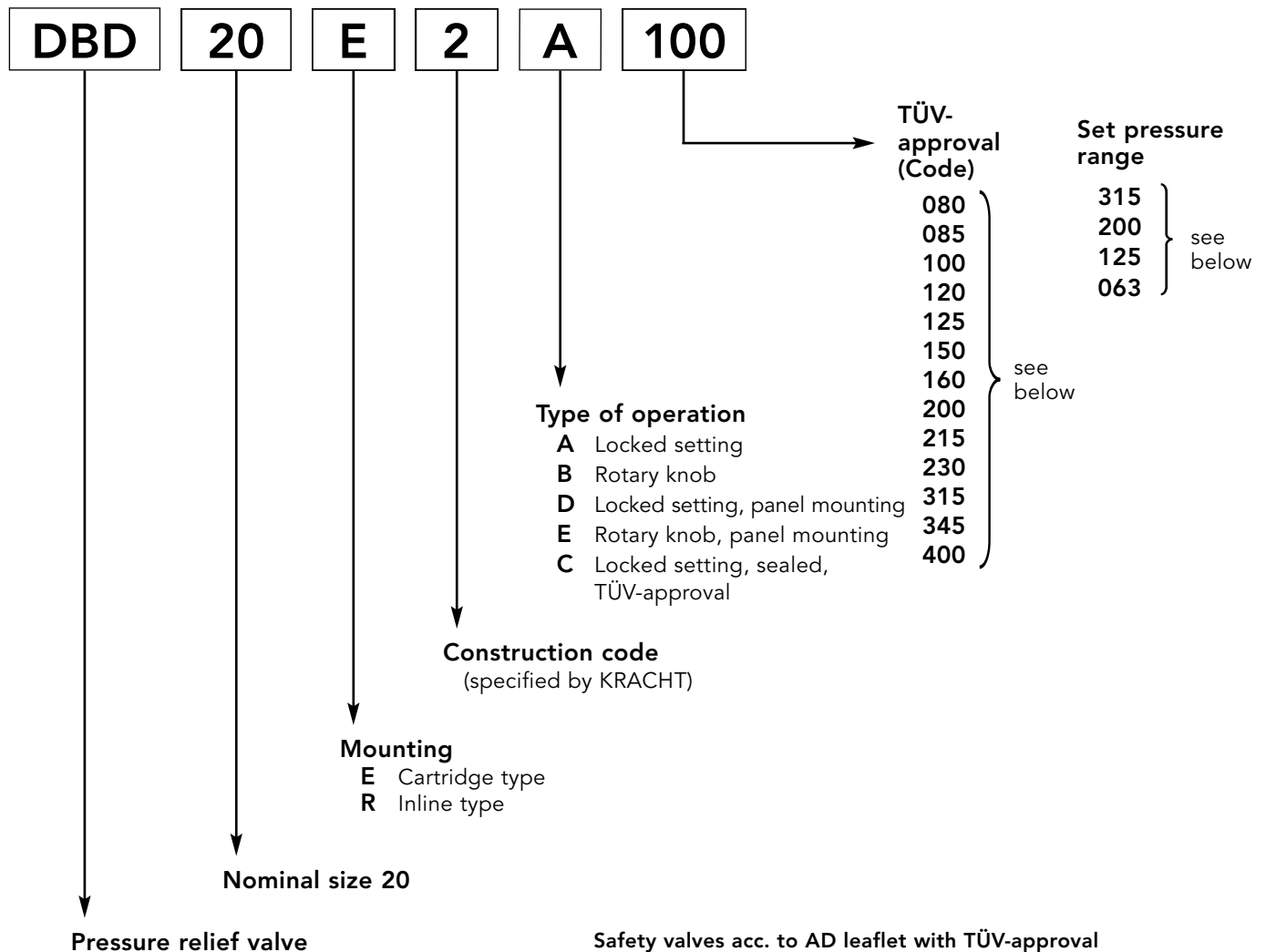
p<sub>v</sub>1 = minimum pressure of the set pressure range  
p<sub>v</sub>2 = maximum pressure of the set pressure range

**Note:** Each of the valves with TÜV-approval registered mark is single tested and sealed by TÜV.

\* higher full open flow rate on request

## Type Key DBD 20

### Ordering example



### Set pressure range

	Pressure range in bar		Flow in l/min	
	from $p_{v1}$	up to $p_{v2}$	$Q_{max}$ 1 at $p_{v1}$	$Q_{max}$ 2 at $p_{v2}$
<b>315</b>	70	315	60	200
<b>200</b>	50	200	50	170
<b>125</b>	30	125	40	130
<b>063</b>	10	63	40	90

$p_{v1}$  = minimum pressure of the set pressure range  
 $p_{v2}$  = maximum pressure of the set pressure range

### Safety valves acc. to AD leaflet with TÜV-approval

Valve marking: „KRACHT-SV“ CE 0045 DBD 220 (consecutive no.),  $p_v$  [bar], Q [l/min]

#### Available pressure stage:

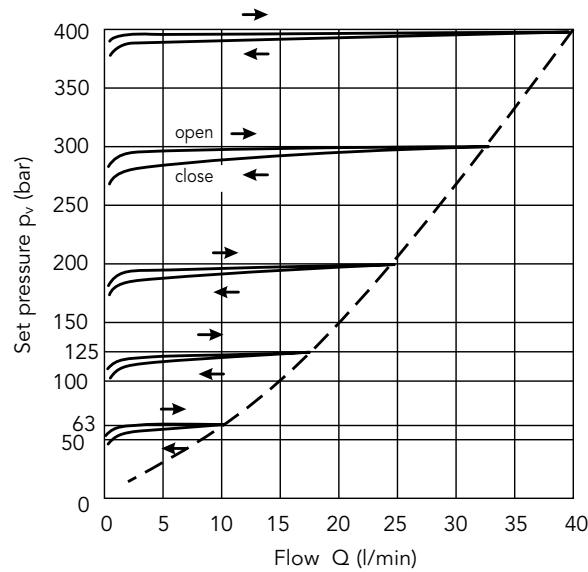
Code	Cracking pressure [ $p_v$ bar]	Abblasemenge [Q l/min]
080	80	120
085	85	120
100	100	165
120	120	185
125	125	95
150	150	125
160	160	140
200	200	200
215	215	20*
230	230	20*
315	315	20*
345	345	20*
400	400	20*

**Note:** Each of the valves with TÜV-approval registered mark is single tested and sealed by TÜV.

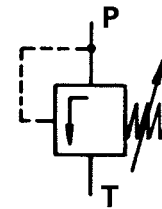
\* higher full open flow rate on request.

**$p_v$ -Q-Curves** Viscosity = 34 mm<sup>2</sup>/s

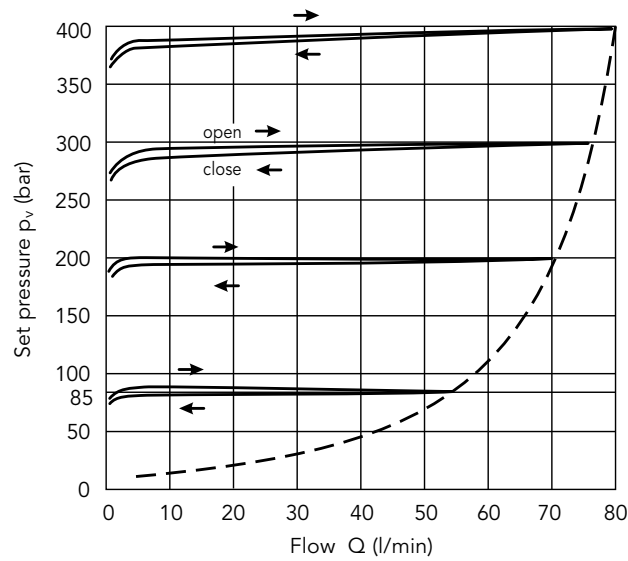
**Nominal size 06/08**



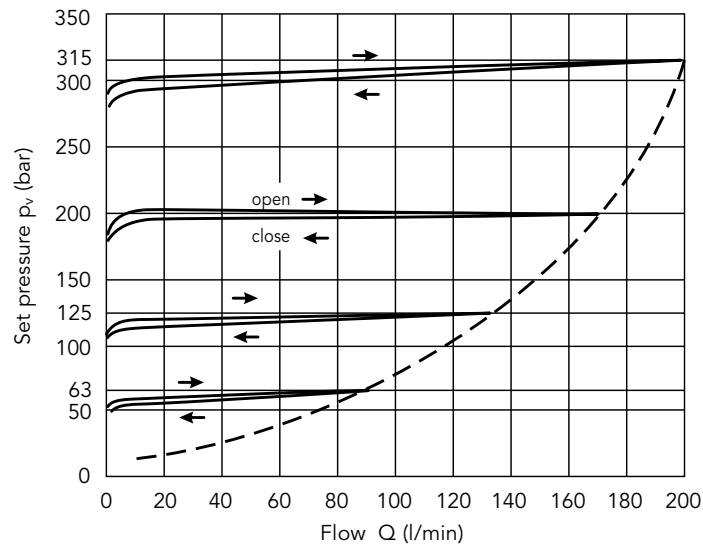
Symbol



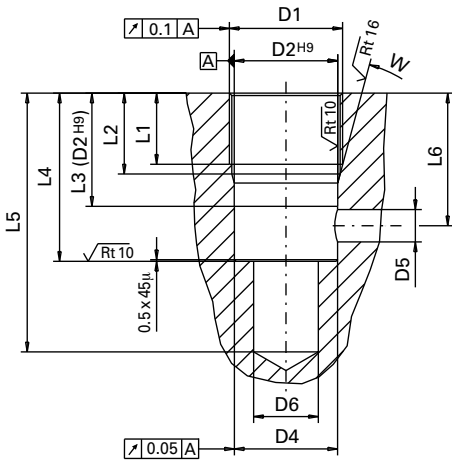
**Nominal size 10**



**Nominal size 20**



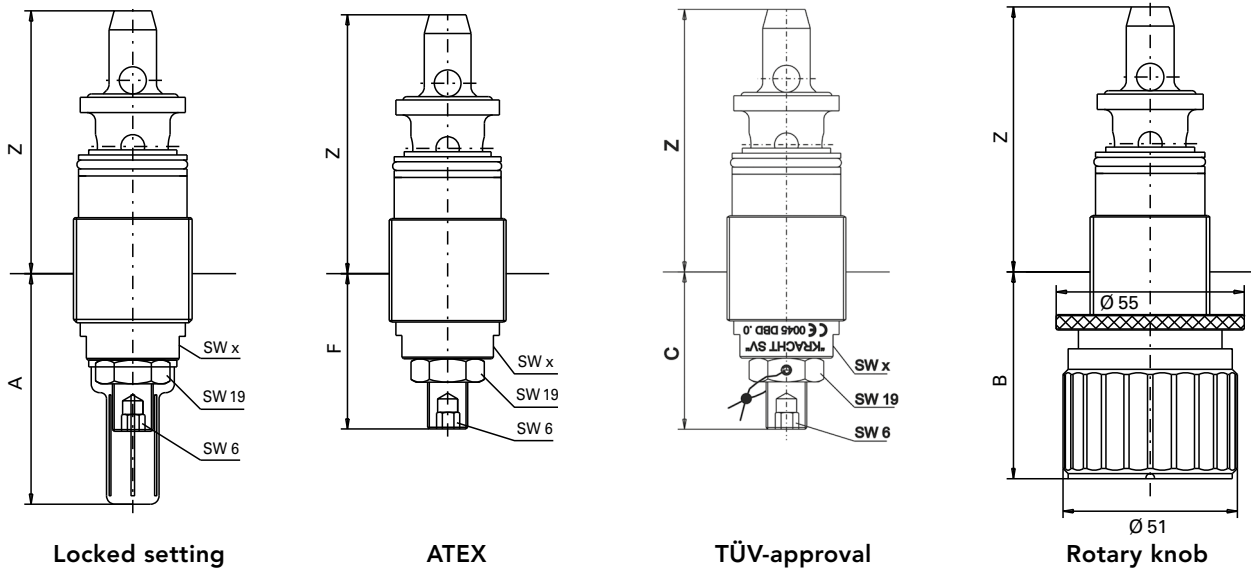
## Dimensions – Cartridge Type



	D1	D2 <sup>H9</sup>	D4	D6	D5 max	L1	L2 max	L3	L4	L5	L6	W
<b>DBD 06</b>	M 28x1,5	25	24,9	15	8	15	19	31	45	65	35	15°
<b>DBD 10</b>	M 35x1,5	32	31,9	20	12	22	25	35	52	80	41	15°
<b>DBD 20</b>	M 45x1,5	40	39,9	24	16	21	27	45	70	110	53	20°

Dimensions DBD 08 like DBD 06

## Dimensions – Cartridge



	A	B max	C max	F max	Adjustable stroke	SW x	Z	Weight Version A
<b>DBD 06 E 1</b>	68	65,5	–	44,5	11	22	64	0,3 kg
<b>DBD 10 E 1</b>	69	66,5	46,5	46,5	9	27	77,5	0,5 kg
<b>DBD 20 E 2</b>	81	98	78	78	15	36	108	1,0 kg

Dimensions DBD 08 like DBD 06

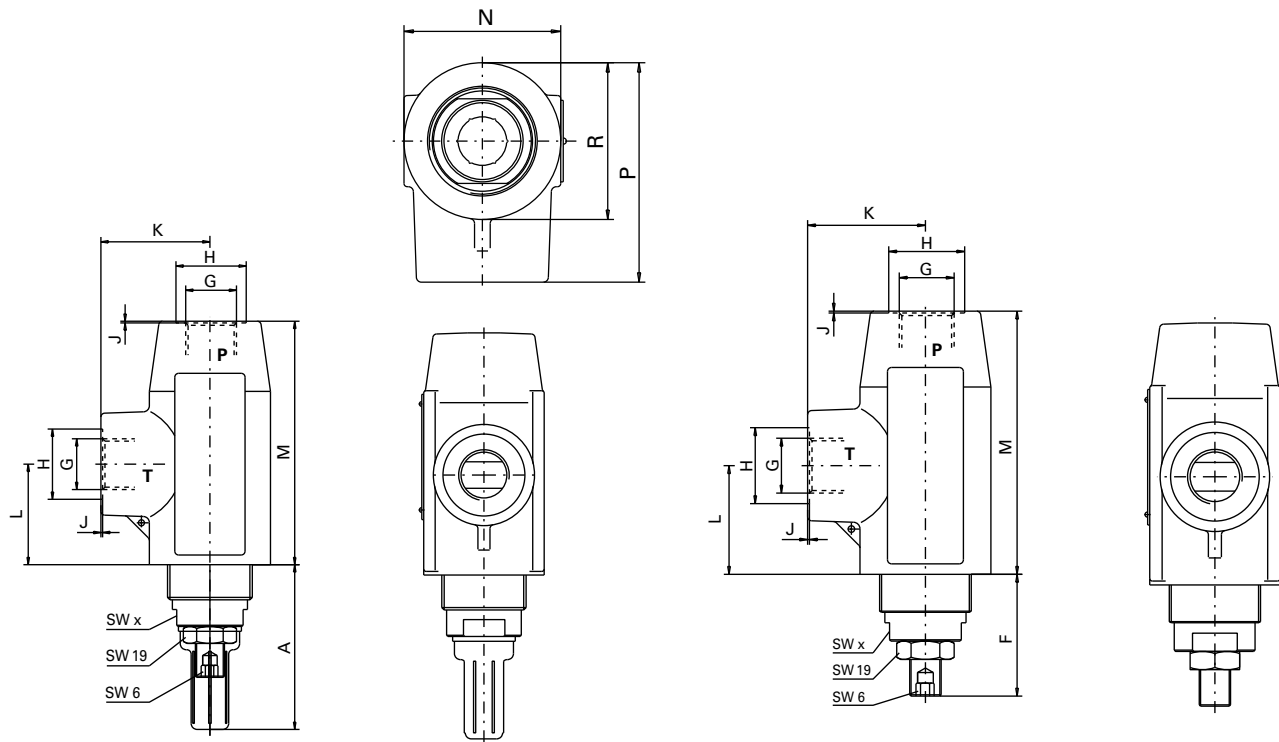
## Type selection – Cartridge

	A	B	C	A ATEX	B ATEX
<b>DBD 06 E 1</b>	X	X	–	X	(X)
<b>DBD 08 E 1</b>	X	X	–	X	(X)
<b>DBD 10 E 1</b>	X	X	X	X	X
<b>DBD 20 E 2</b>	X	X	X	X	(X)

X = Type available  
(X) = Type possible  
– = Type not available

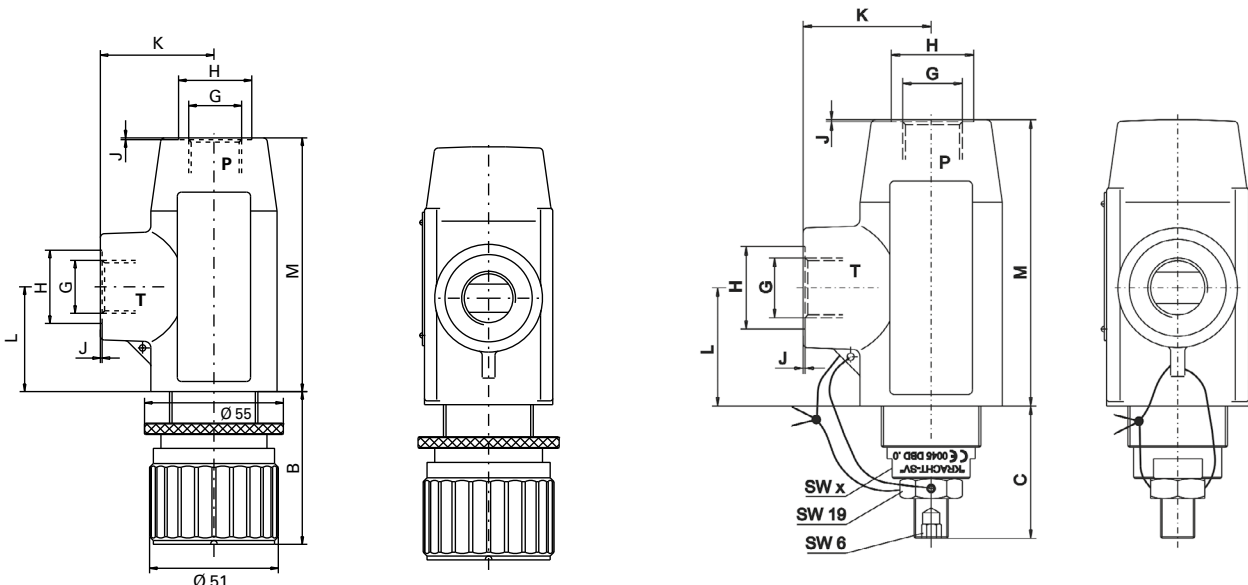


## Dimensions – Inline Type



Locked setting

ATEX



Rotary knob

TÜV-approval

	A	B	C	F	G	H Ø	J	K	L	M	N	P	R	SW x	Weight Vers. A
<b>DBD 06 R 1</b>	68	65,5	–	44,5	G1/4*1	21	0,7	33	35	82	43	57,5	Ø49	22	0,8 kg
<b>DBD 10 R 3</b>	69	66,5	46,5	46,5	G1/2*2	29	0,7	45	41,5	100,5	50	70	Ø50	27	1,4 kg
<b>DBD 20 R 2</b>	81	98	78	78	G1	42	1,0	49	53	130	65	81,5	Ø65	36	2,9 kg

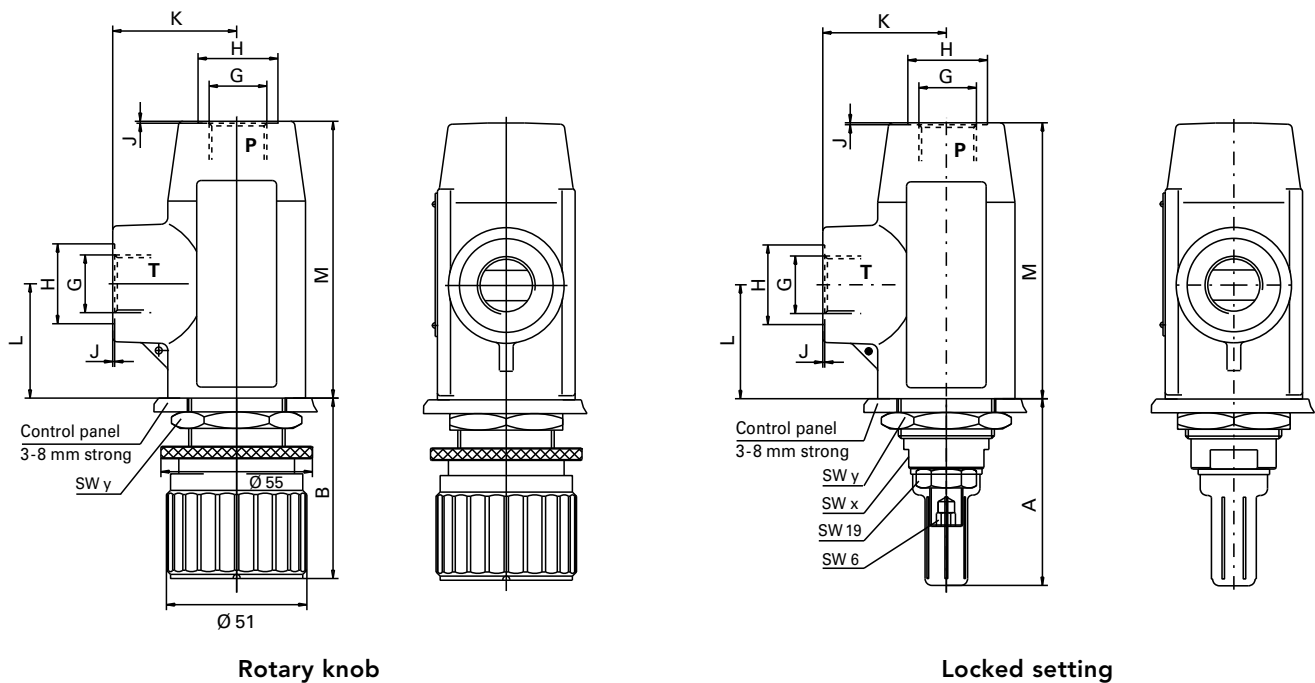
Dimensions DBD 08 like DBD 06  
 \* 1 optional connection type G3/8 possible, Type: DBD 08 R 1 ... \* 2 optional connection type G3/4 possible, Type: DBD 10 R 5 ...

## Type Selection – Inline Type

	A	B	C	D	E	A ATEX	B ATEX	D ATEX	E ATEX
<b>DBD 06 R 1</b>	X	X	–	X	X	X	(X)	(X)	(X)
<b>DBD 08 R 1</b>	X	X	–	X	X	X	(X)	(X)	(X)
<b>DBD 10 R 3</b>	X	X	X	X	X	X	X	(X)	X
<b>DBD 20 R 2</b>	X	X	X	X	X	X	(X)	(X)	(X)

X = Type available  
(X) = Type possible  
– = Type not available

## Dimensions – Panel Mounting



	A	B	G	H Ø	J	K	L	M	P	SW x	SW y
<b>DBD 06</b>	68	65.5	G 1/4*1	21	0.7	33	35	82	57.5	22	36
<b>DBD 10</b>	69	66.5	G 1/2*2	29	1.0	45	41.5	100,5	70	27	41
<b>DBD 20</b>	81	98	G 1	42	1.0	49	53	130	81.5	36	55

Dimensions DBD 08 like DBD 06

\*1 optional connection type G 3/8 possible, Type: **DBD 08 R 1 ...**

\*2 optional connection type G 3/4 possible, Type: **DBD 10 R 5 ...**

## Notes

---

**KRACHT**<sup>®</sup>

KRACHT GmbH · Gewerbestrasse 20 · 58791 Werdohl, Germany  
Phone +49 2392 935 0 · E-Mail [info@kracht.eu](mailto:info@kracht.eu) · Web [www.kracht.eu](http://www.kracht.eu)