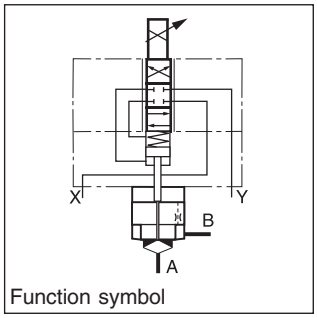
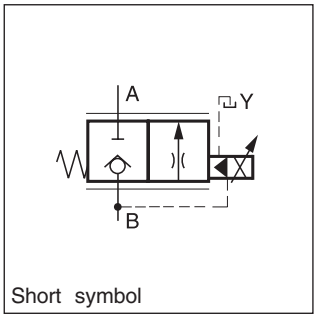
The 2-way proportional throttle valves of the TDA series are used to control large oil flows.

Features

- Cavity and mounting pattern according to DIN ISO 7368.
- Fail save function at power failure.
- Leak-free from port B —> A.
- Pressure difference up to 350 bar allowed.
- Flow A —> B optional.



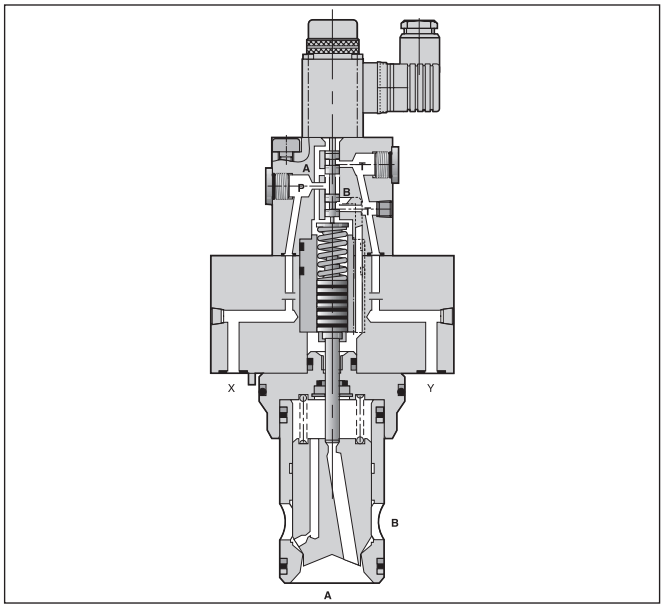
Function symbol



Short symbol

Function

Proportional flow valves are designed with three stages. The valve poppet is pilot-operated by a sequence spool with seat construction. A magnetic, infinitely variable, adjustable valve with force feedback controls the position of the sequence spool. Thus the position of the poppet cannot be affected by differential pressure. The differential pressure can be up to the maximum working pressure. The pilot volume requirement amounts to approx. 1 l/min. The minimum pressure for operation is 3 bar.
The pilot pressure must be larger than 25% of the system pressure in connection A. The adjusting accuracy of the flow is 0.5%. Due to the progressive characteristic flow line, this value is improved by 0.25% in the progressive zone at low flow rates. The adjusting time for null stroke is approx. 25 ms. The valve flow direction is from B to A. The valve is leak-free from B to A in the closed neutral position. In this neutral position, the pilot valve does not require any pilot oil. The tank connection Y must not be pressurised higher than 100 bar.



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Ordering code

	TDA			10		7	E			A	
Seals	Proportional throttle valve	Serial letter	Flow direction	Design series	Flow range	Proportional piloting	Slip-in valve	Nominal size	Solenoid		Plug

Code	Seals
omit	**NBR**
V	FPM

Code	Flow direction
omit	**B to A**
A	A to B

Code	Flow range
9	**Nominal flow for all sizes**
6*	Half nominal flow

* only for NG16 and NG25

Code	Plug
omit	**With connector plate, no plug**
F	With plug EN175301-803

Code	Solenoid
L	16V
M	**6V**

Code	Nominal size
16	NG16
25	**NG25**
32	**NG32**
40	**NG40**
50	**NG50**
63	NG63
80	NG80
100	NG100

Bold letters =
Short-term availability

TDA.PM6.5 RH

Parker Hannifin GmbH
Hydraulic Controls Division
Kaarst, Germany

General									
Nominal size		16	25	32	40	50	63	80	100
Design		2-way slip-in valve, according to DIN ISO 7368							
Mounting position		optional							
Environmental temperature	[°C]	-20...+80							
Weight	[kg]	3.1	4.3	5.8	9.2	15	33	63	87
Hydraulics									
Operating pressure	[bar]	Ports A, B and X up to 350, Y not pressurized							
Flow, Δp=10bar	[l/min]	220	500	950	1400	2300	4000	6000	9500
Pressure medium		Hydraulic oil according to DIN 51524 ... 525							
Oil temperature, recom.	[°C]	+30 ... +50							
max. admissible	[°C]	-20 ... +60							
Viscosity, recommended	[mm²/s]	30 ... 50							
max. admissible	[mm²/s]	20 ... 380							
Filtration		Permissible contamination class NAS 1638 class 9. to achive with filter β10 > 75							
Flow direction		See ordering code							
Min. operating pressure	[bar]	Port A —> B ca. 10; Port B —> A ca. 15							
Opening point		at. 30% of nominal current							
Pilot oil supply drain		depending on flow dirction A or B using X or external X external using Y, if possible pressureless, max. 100bar							
Pilot oil at p = 100bar	[l/min]	Port X —> Y <1.5							
Repeatabiltity	[%]	< 1							
Hysteresis	[%]	< 3							
Response time at px=50bar 6V solenoid, controlled by ET154 6V and 16V solenoid, controlled by PCD400	[ms]	20	25	30	35	45	55	65	80
Manufacturing tolerance	[%]	±5 of Q_{nom}							

Electrical (proportional solenoid)					
Duty cycle		100% ED			
Protection		IP54 according to DIN 40050 (pluged and mounted)			
Ambient temperature	[°C]	-20...+80			
Solenoid type		L		X	
at size		16-50	63-100	16-50	63-100
Solenoid voltage	[V]	6		16	
Nominal current (100% ED)	[A]	2.6		1.05	
Nominal resistance	[Ohm]	2.2	2.5	11.3	14
Electrical control		ET154 / PCD 00A-400		PCD 00A-400	
Connector		2pole + PE, Plug EN 175301-803, cableØ 8...10mm			

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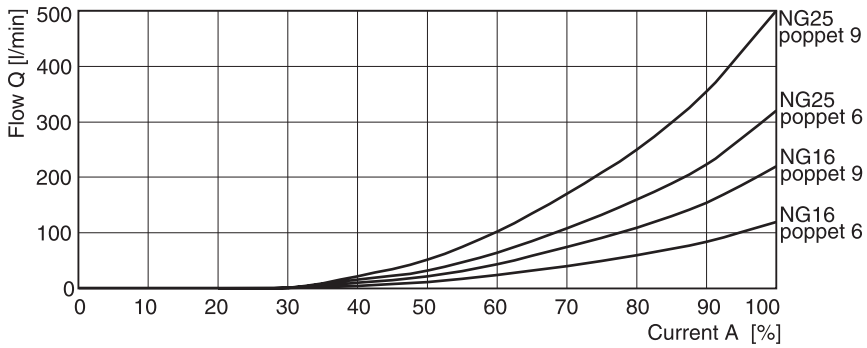
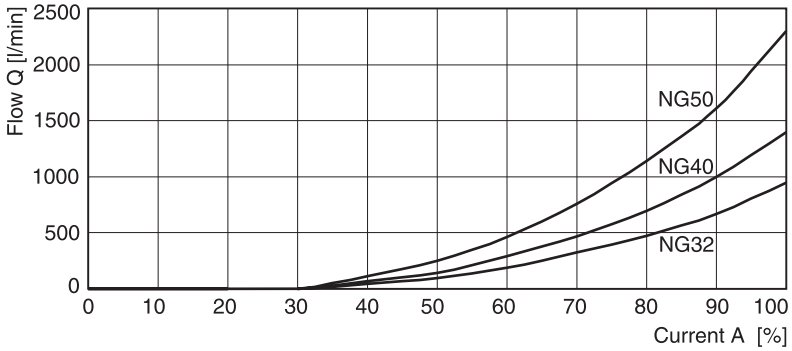
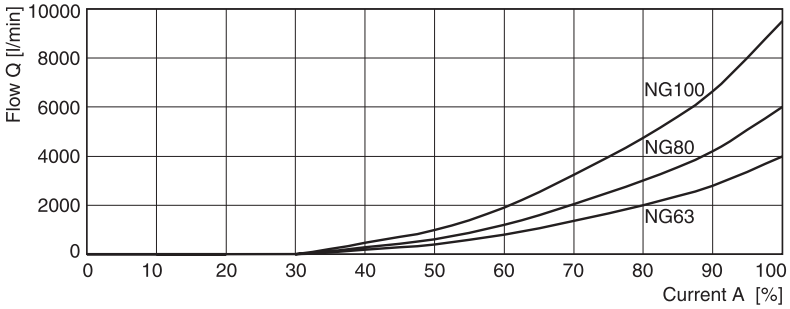
Solenoid current / flow curve NG16-25 (Δp=10bar)



Solenoid current / flow curve NG32-50 (Δp=10bar)



Solenoid current / flow curve NG63-100 (Δp=10bar)



$$\Delta p_{actual} = \left(\frac{Q_{actual}}{Q_{nominal}}\right)^2 \times \Delta p_{nominal}$$

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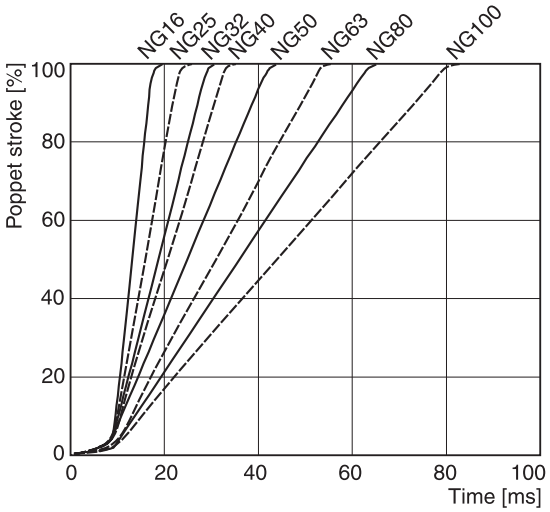
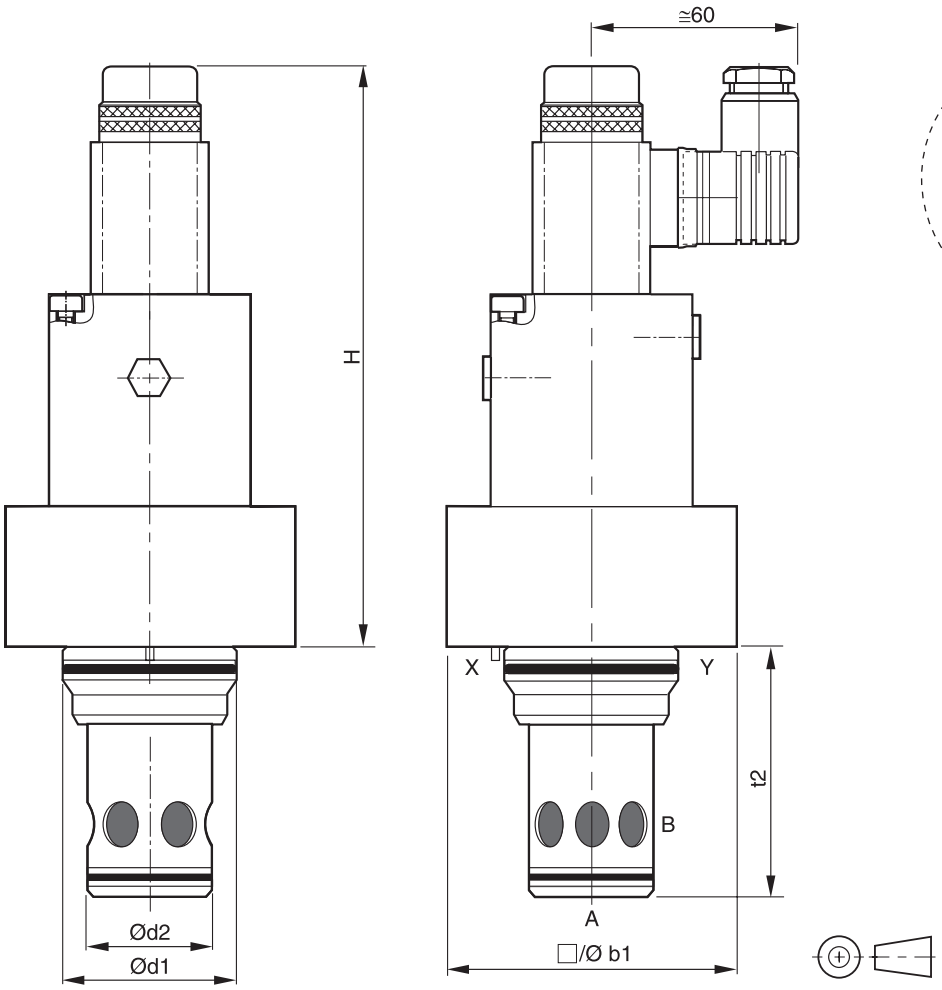
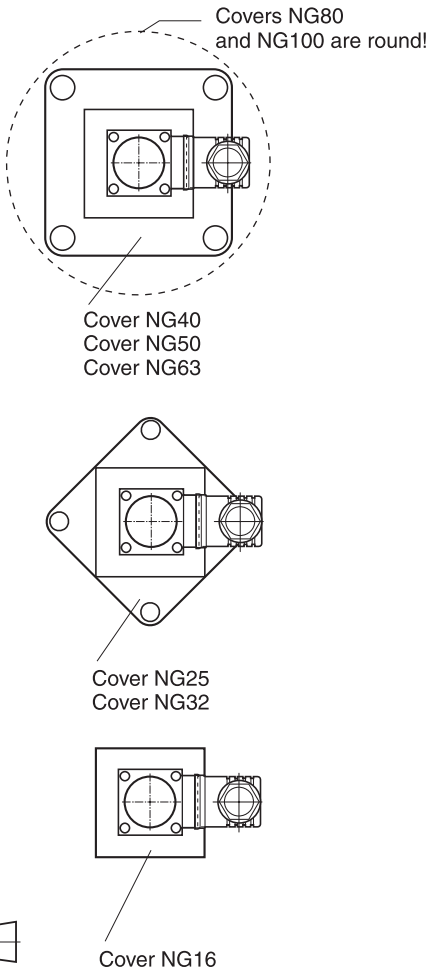
Poppet stroke / time curve



Valve dimensions



Valve covers



Size	16	25	32	40	50	63	80	100
H	168	173	178	262	198	287	327	342
b1	65	85	102	125	140	180	Ø250	Ø300
$d1^{H7}$	32	45	60	75	90	120	145	180
$d2^{H7}$	25	34	45	55	68	90	110	135
$t2^{+0.1}$	56	72	85	105	122	155	205	245

TDA.PM6.5 RH

Sealing kits

Size	NBR	FPM
16	SK-TDA-016N10	SK-TDA-016V10
25	SK-TDA-025N10	SK-TDA-025V10
32	SK-TDA-032N10	SK-TDA-032V10
40	SK-TDA-040N10	SK-TDA-040V10
50	SK-TDA-050N10	SK-TDA-050V10
63	SK-TDA-063N10	SK-TDA-063V10
80	SK-TDA-080N10	SK-TDA-080V10
100	SK-TDA-0100N10	SK-TDA-0100V10

Bolt kits

Size	Bolt dimension	Tightening torque [Nm]	Type	Ordering code
16	4 x M8 x 40	33		BK 414
25	4 x M12 x 50	115		BK 391
32	4 x M16 x 55	281		BK 415
40	4 x M20 x 70	553	as per	BK 416
50	4 x M20 x 75	553	DIN 912	BK 417
63	4 x M30 x 100	1910	12.9	BK 418
80	8 x M24 x 120	935		BK 419
100	8 x M30 x 140	1910		BK 420

Ordering Codes for extracting tools

Size	Ordering number							
	NG16	NG25	NG32	NG40	NG50	NG63	NG80	NG100
	09046009779	09046009780	09046009781	09046009782	09046009783	09046009784	090460010628	090460010629
Complete set	090 4600 09785 (for nominal sizes 16 to 63)						———	

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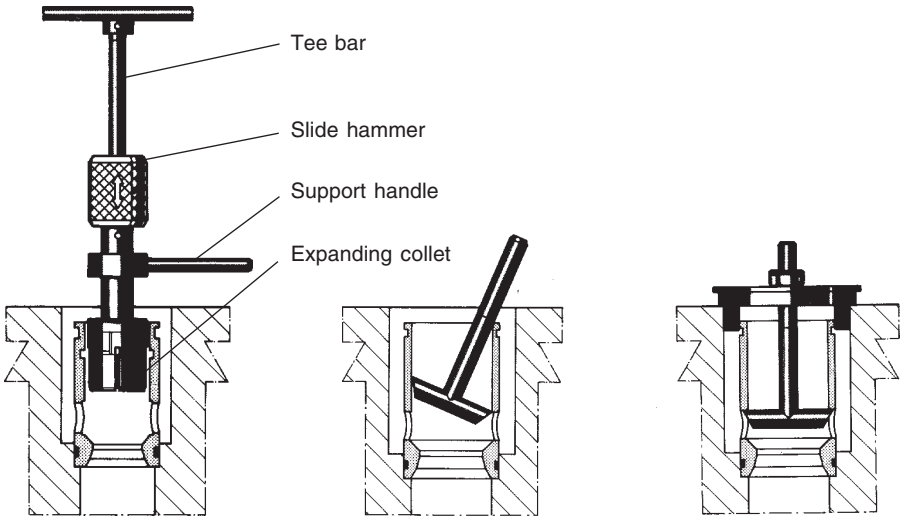
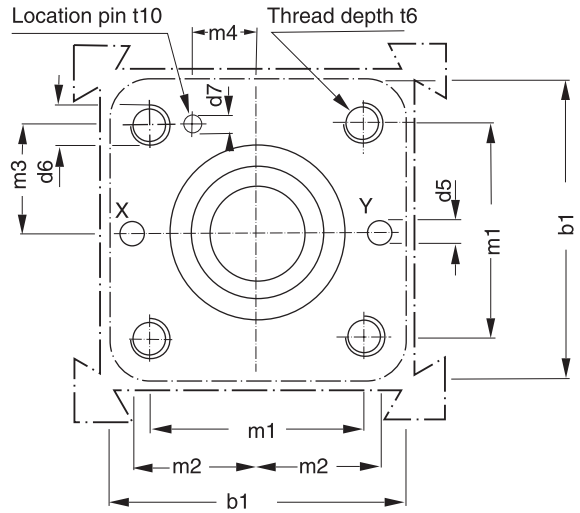
Extracting instruction

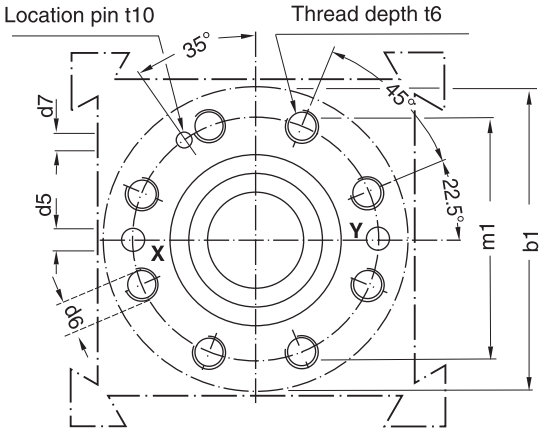


NG16 - 63 NG80 - 100

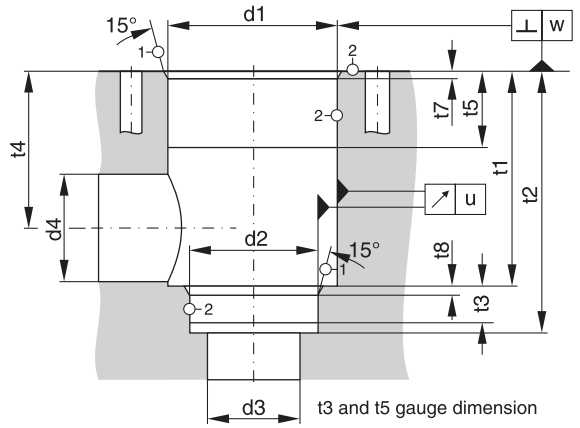
NG 16 to NG 63



NG 80 to NG 100



Hole and mounting pattern acording ISO 7368



t3 and t5 gauge dimension

Required minimum roughness:

① = $\sqrt{R_{max}16}$, ② = $\sqrt{R_{max}8}$

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Nom. size	b1	d1 H7	d2 H7	d3	d3 max	d4	d4max*	d5max	d6	d7 H13	m1±0.2	m2±0.2	m3±0,2
16	65	32	25	16	18	16	25	4	M 8	4	46	25	23
25	85	45	34	25	25.5	25	32	6	M 12	6	58	33	29
32	102	60	45	32	36	32	40	8	M 16	6	70	41	35
40	125	75	55	40	43	40	50	10	M 20	6	85	50	42.5
50	140	90	68	50	56	50	63	10	M 20	8	100	58	50
63	180	120	90	63	74	63	80	12	M 30	8	125	75	62.5
80	250	145	110	80	93	80	100	16	M 24	10	200	-	-
100	300	180	135	100	115	100	125	20	M 30	10	245	-	-

Nom. size	m4±0.2	t1+0.1	t2+0.1	t3	t4	t4max*	t15	t6	t7	t8	t10	U	W
16	10.5	43	56	11	34	29.5	20	20	2	2	10	0.03	0.05
25	16	58	72	12	44	40.5	30	25	2.5	2.5	10	0.03	0.05
32	17	70	85	13	52	48.0	30	35	2.5	2.5	10	0.03	0.1
40	23	87	105	15	64	59.0	30	45	3	3	10	0.05	0.1
50	30	100	122	17	72	65.5	35	45	4	3	10	0.05	0.1
63	38	130	155	20	95	86.5	40	65	4	4	10	0.05	0.2
80	-	175	205	25	130	120	40	50	5	5	10	0.05	0.2
100	-	210	245	29	155	142	50	53	5	5	10	0.05	0.2

* only together with $d4_{max}$ and $t4_{max}$