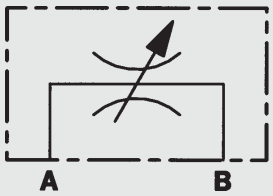
FLUTEC VALVES

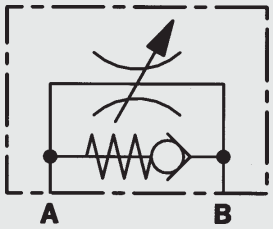
Manifold Mounted Flow Control and Speed Control Valves

DVP, DRVP

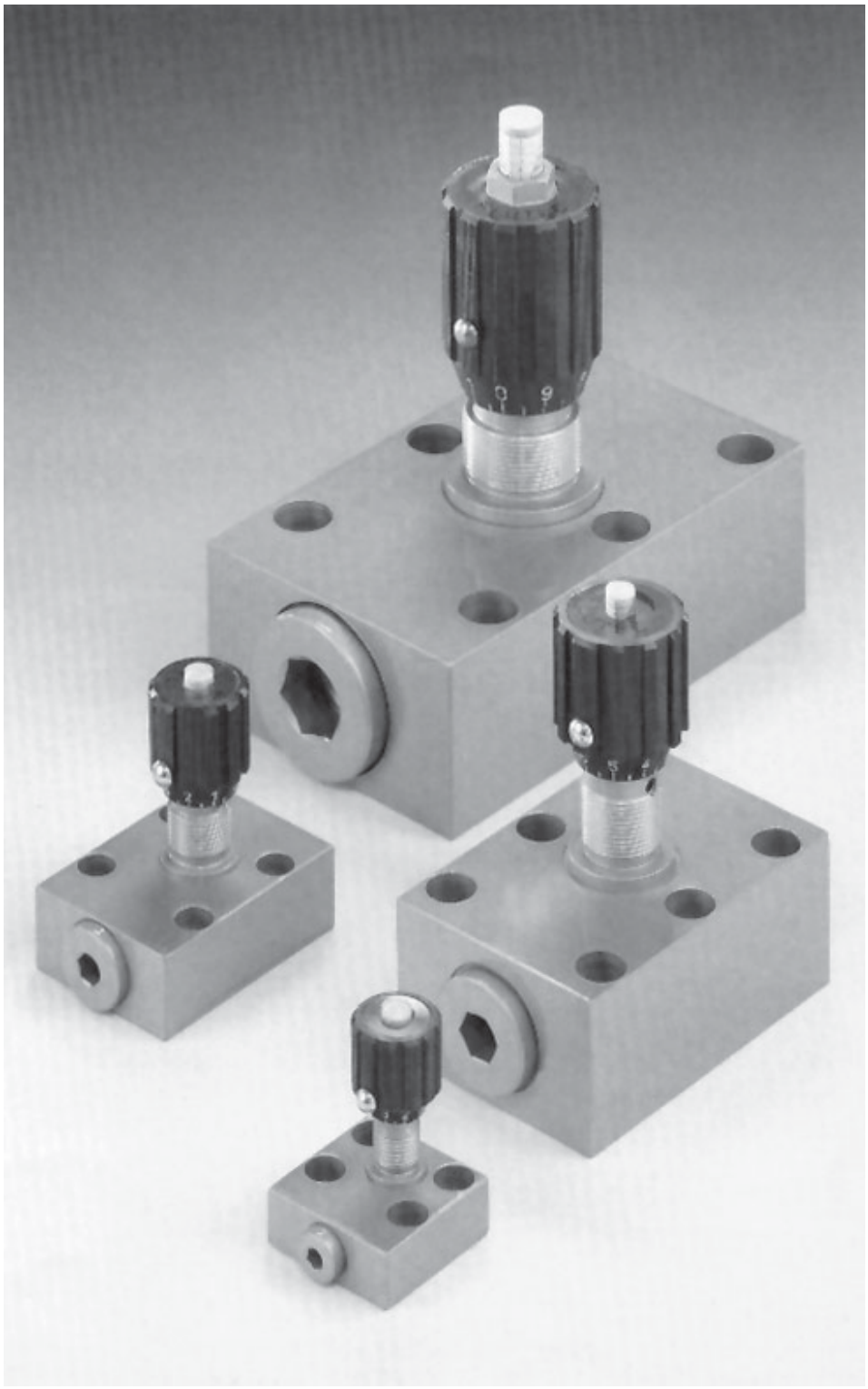
DVP



DRVP



up to 350 bar
up to 300 l/min



1. DESCRIPTION

1.1. GENERAL

FLUTEC flow control and speed control valves DVP/DRVP are, in accordance with DIN-ISO 1219, valves which are designed to control the flow rate in oil hydraulic systems by means of an adjustable constriction of the cross-section.

The flow rate is dependent on pressure differential and viscosity.

FLUTEC flow control valves DVP have a specially designed throttle mechanism to enable fine adjustment and shut-off of the flow. The flow control and shut-off function works in both directions.

FLUTEC speed control valves DRVP allow the same fine flow adjustment. The flow control and shut-off function, however, works in one direction only. Unrestricted flow in the reverse direction is via the built-in check valve.

Further advantages of these valves are:

–Compact construction as manifold mounted valve.

–For mounting onto control blocks or cylinders.

–A high level of safety is achieved through patented spindle safety mechanism.

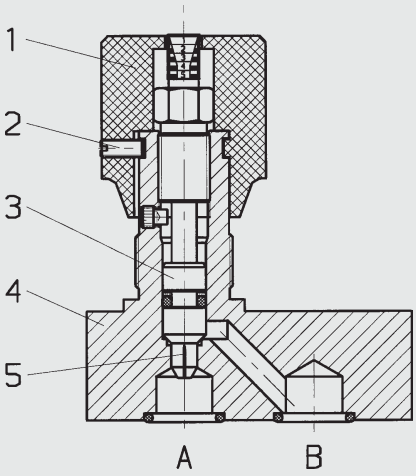
–A set-screw locks the setting.

–Choice of nine sizes ensures best possible adaptability to the system.

–Mounting position is optional.

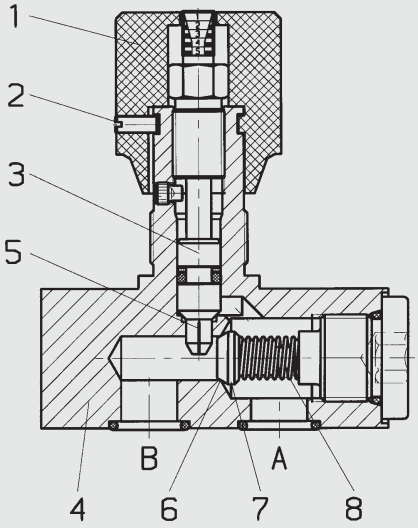
–For size 20 and above, valve can be set using a spanner.

DVP



1	Control knob
2	Set-screw
3	Control spindle
4	Housing
5	Throttle opening

DRVP



1	Control knob
2	Set-screw
3	Control spindle
4	Housing
5	Throttle opening
6	Valve seat
7	Closing cone
8	Spring

1.2. FUNCTION

1.2.1 **DVP**

FLUTEC flow control valves consist essentially of a housing, a special control spindle and the control knob.

Starting with the control spindle in the fully closed position when the flow is shut off, the flow rate increases according to the relevant graph (see point 2.2.9) as the number of turns of the control knob is increased.

The control knob with its coloured scale and scale rings permits accurate repetition of the settings. The size of the coloured triangle on the rings indicates the size of the flow area. An increase in the size of the coloured triangle corresponds to an increase in flow area. A set-screw locks the setting. The flow is controlled in both directions.

1.2.2 **DRVP**

FLUTEC speed control valves consist essentially of a housing with built-in valve seat, a hardened and polished closing cone, a spring, the control spindle and the control knob.

The closing cone is pressed onto the valve seat by the spring, thereby shutting off port A from port B. Starting with the control spindle in the fully closed position when the flow is shut off, the flow rate in flow direction A → B increases according to the relevant graph (see point 2.2.9) as the number of turns of the control knob is increased.

The control knob with its coloured scale and scale rings permits accurate repetition of the settings. The size of the coloured triangle on the rings indicates the size of the flow area. An increase in the size of the coloured triangle corresponds to an increase in flow area. A set-screw locks the setting.

The closing cone opens when the pressure across port B is higher than the pressure across port A including the opening pressure produced by the spring force.

1.3. APPLICATIONS

FLUTEC flow control and speed control valves DVP/DRVP are used:

–for regulating the speed of loads

–for system-related damping in hydraulic circuits

–for pressure-dependent control of flow rates in general

–to release pressure from accumulator systems

–as an emergency drain for lowering a load

Areas of application include, for example:

–Hydraulic units

–Elevating platforms

–Mobile hydraulics

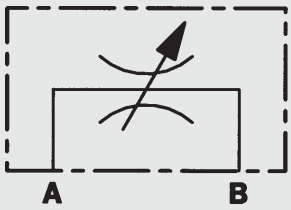
1.4. NOTE

On speed control valves the opening pressure of the closing cone increases by the pressure across port A (when control spindle is closed).

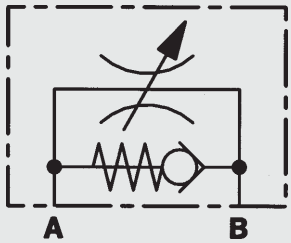
2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

2.1.1 **Designation and symbol**
Flow control valve DVP



Speed control valveDRVP



2.1.2 **Model code**
(also order example)

DVP - 10 - 01 . X

Designation
DVP = flow control valve for manifold mounting
DRVP = speed control valve for manifold mounting

Size
06
08
10
12
16
20
25
30
40

Type
01 = technical specifications as per this brochure
12 = nickel-plated housing, steel spindle with 0.3 mm throttle gap, protective dome nut, adjustment with tool available for DRVP valves size 10, 12, 16

Series
(determined by manufacturer)

Standard models

Model code	Model code
DVP-06-01.X	DRVP-06-01.X
DVP-08-01.X	DRVP-08-01.X
DVP-10-01.X	DRVP-10-01.X
DVP-12-01.X	DRVP-12-01.X
DVP-16-01.X	DRVP-16-01.X
DVP-20-01.X	DRVP-20-01.X
DVP-25-01.X	DRVP-25-01.X
DVP-30-01.X	DRVP-30-01.X
DVP-40-01.X	DRVP-40-01.X

Please quote model no. when ordering.
Delivery for non-standard models is longer and the price is higher.

2.1.3 **Type of construction**
DVP: slot type flow control valve with shut-off function
DRVP: slot type flow control valve with shut-off function and built-in check valve

2.1.4 **Type of mounting**
Manifold connection
(for dimensions, see point 3)
Mounting screws are not supplied with the valve

2.1.5 **Mounting position**
optional

2.1.6 **Weight**
See point 3

2.1.7 **Direction of flow**
DVP: optional
DRVP: from A to B - controlled flow
from B to A - free flow via check valve

2.1.8 **Ambient temperature range**
min. - 20 °C
max.+80 °C

2.1.9 **Materials**
Housing:
free-cutting steel, phosphate-plated
Control spindle:
free-cutting steel, phosphate-plated
Control knob:
polyamide
Seals:
FPM and PTFE

2.1.10 **Nominal size**
NG06
NG08
NG10
NG12
NG16
NG20
NG25
NG30
NG40

2.2. HYDRAULIC DETAILS

2.2.1 Nominal pressure
p_N = 350 bar
across all ports

2.2.2 Operating fluid
Mineral oil to DIN 51524 Part 1 and Part 2

2.2.3 Fluid temperature range
min. - 20 °C
max. +80 °C

2.2.4 Viscosity range
min. 2.8 mm²/s
max. 800 mm²/s

2.2.5 Filtration
Max. permissible contamination level of the operating fluid to ISO 4406 Class 21/19/16 (NAS 1638 Class 10). We therefore recommend a filter with a minimum retention rate of $\beta_{20} \geq 100$.
The fitting of filters and regular replacement of elements guarantees correct functioning, reduces wear and tear and increases the service life.

2.2.6 Type of adjustment
Manually using control knob or on model 12, using Allen key.

2.2.7 Opening pressure of DRVP
p_O = 0.5 bar

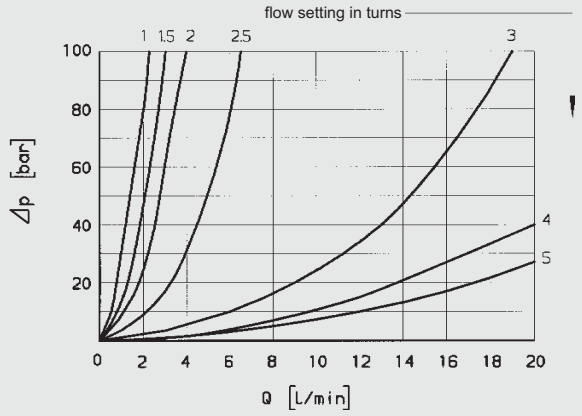
2.2.8 Flow rate
DVP/DRVP-06...Q = 20 l/min
DVP/DRVP-08...Q = 50 l/min
DVP/DRVP-10...Q = 60 l/min
DVP/DRVP-12...Q = 90 l/min
DVP/DRVP-16...Q = 180 l/min
DVP/DRVP-20...Q = 300 l/min
DVP/DRVP-25...Q = 300 l/min
DVP/DRVP-30...Q = 300 l/min
DVP/DRVP-40...Q = 300 l/min

2.2.9 Pressure drops, dependent on flow rate
DVP
Flow direction from A to B and from B to A

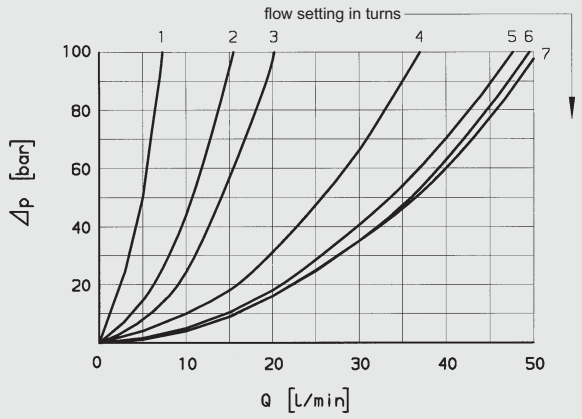
DRVP
Flow direction from A to B

Pressure differential Δp depending on flow rate Q at constant flow setting measured at
v = 54 mm²/s and t_{oil} = 36 °C.

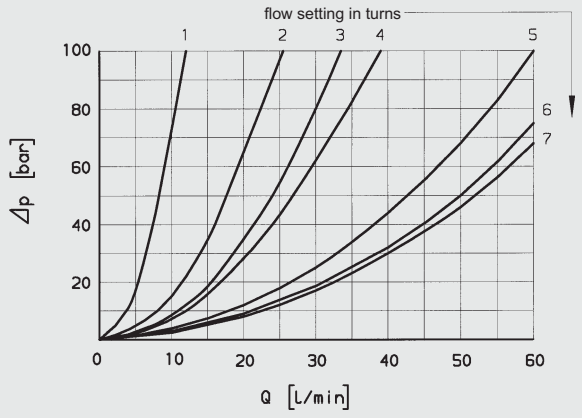
DVP/DRVP-06-01.X



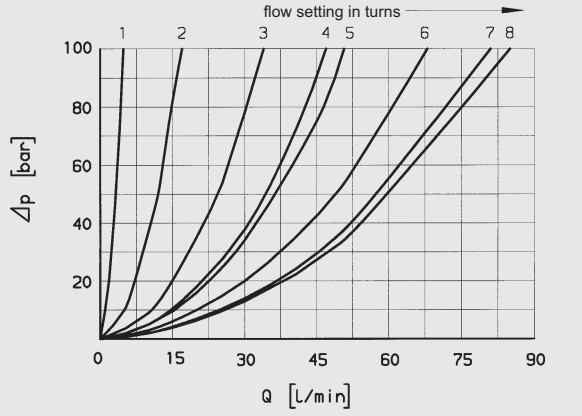
DVP-DRVP-08-01.X



DVP/DRVP-10-01.X

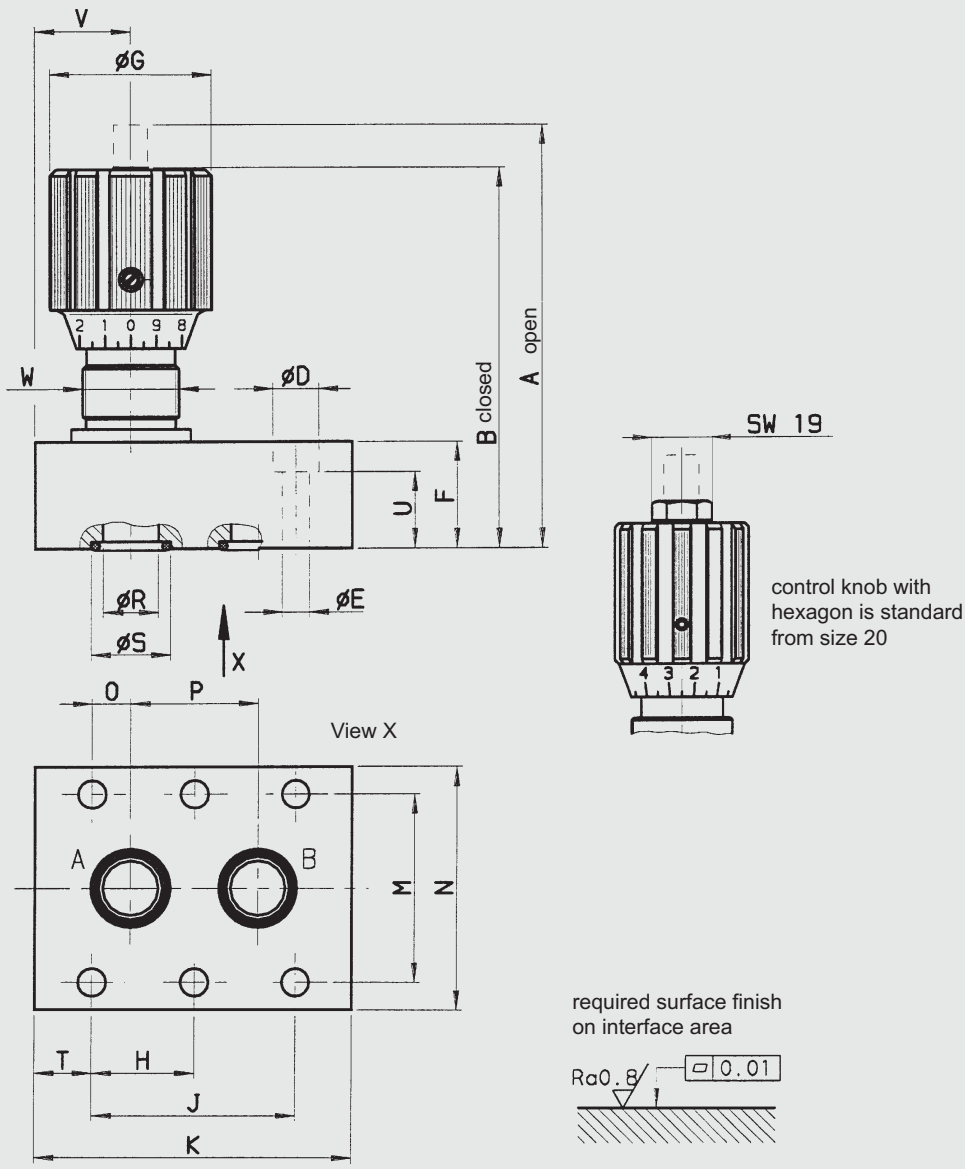


DVP/DRVP-12-01.X



3. DIMENSIONS

DVP

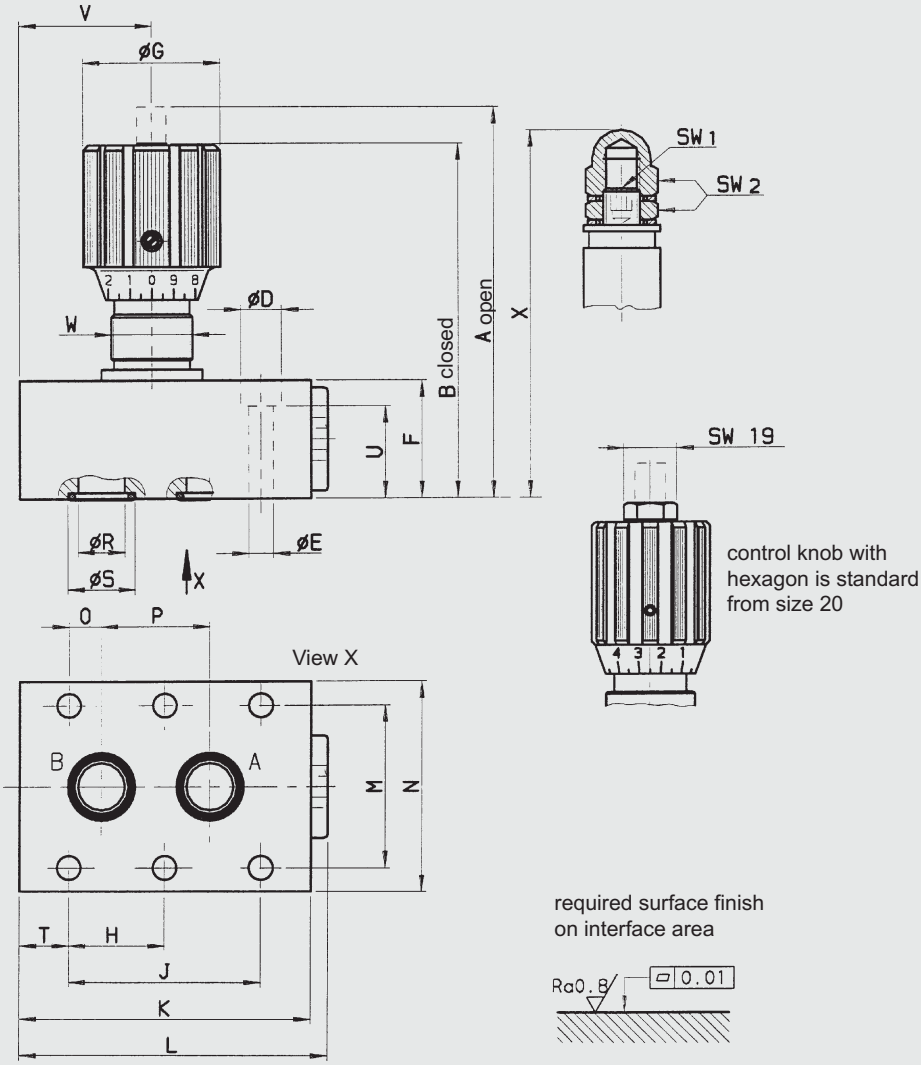


Size	A	B	D	E	F	G	H	J	K	M
06	63	58	11	6.6	16	24	–	19.0	35.0	28.5
08	79	72	11	6.6	20	29	–	35.0	47.5	33.5
10	84	77	11	6.6	25	29	–	33.5	51.0	38.0
12	99	89	11	6.6	25	38	–	38.0	75.0	44.5
16	113	103	14	9.0	30	38	38.0	76.0	93.5	54.0
20	165	148	14	9.0	45	49	47.5	95.0	111.0	60.0
25	165	148	18	11.5	45	49	60.0	120.5	143.0	76.0
30	170	153	20	14.0	50	49	71.5	143.0	171.0	92.0
40	170	153	20	14.0	50	49	67.0	133.5	192.0	111.0

Size	N	O	P	R	S	T	U	V	W	Weight [kg]
06	41.5	1.5	16.0	5.0	9.7	8.0	9	9.5	PG 7	0.20
08	46.0	4.5	25.5	7.0	12.7	6.5	13	12.0	PG 11	0.40
10	51.0	4.2	25.5	10.0	15.6	8.5	18	14.0	PG 11	0.60
12	57.5	4.0	30.0	13.0	18.6	18.5	18	22.5	PG 16	1.00
16	70.0	11.0	54.0	17.0	24.5	8.5	21	19.5	PG 16	1.70
20	76.5	19.1	57.0	22.0	30.5	8.0	36	31.5	PG 29	3.60
25	100.0	20.8	79.5	28.5	37.4	11.0	34	46.0	PG 29	5.50
30	115.0	23.8	95.0	35.0	43.4	15.0	37	39.0	PG 29	7.50
40	140.0	25.5	89.0	47.5	57.5	16.0	37	58.0	PG 29	8.20

DRVP

Type : 01 12



Size	A	B	D	E	F	G	H	J	K	L	M	N
06	63	58	11	6.6	22	24	–	19.0	41.5	46.0	28.5	41.5
08	79	72	11	6.6	30	29	–	35.0	63.5	67.0	33.5	46.0
10	84	77	11	6.6	32	29	–	33.5	70.0	74.0	38.0	51.0
12	106	96	11	6.6	38	38	–	38.0	80.0	84.5	44.5	57.5
16	128	118	14	9.0	45	38	38.0	76.0	104.0	109.5	54.0	70.0
20	170	153	14	9.0	50	49	47.5	95.0	127.0	133.0	60.0	76.5
25	175	158	18	11.5	55	49	60.0	120.5	165.0	172.0	76.0	100.0
30	195	178	20	14.0	75	49	71.5	143.0	186.0	196.0	92.0	115.0
40	220	203	20	14.0	100	49	67.0	133.5	192.0	201.0	111.0	140.0

Size	O	P	R	S	T	U	V	W	SW1	SW2	X	Weight [kg]
06	1.6	16.0	5.0	9.7	6.4	9	13.5	PG 7	–	–	–	0.26
08	4.5	25.5	7.0	12.7	14.2	13	31.0	PG 11	–	–	–	0.50
10	4.0	25.5	10.0	15.6	18.0	18	29.5	PG 11	–	–		0.80
12	4.0	30.0	13.0	18.6	21.0	25	36.5	PG 16	–			1.10
16	11.0	54.0	17.0	24.5	14.0	36	49.0	PG 16	–			2.50
20	19.0	57.0	22.0	30.5	16.0	41	49.0	PG 29	–	–	–	3.90
25	20.6	79.5	28.5	37.4	15.0	44	77.0	PG 29	–	–	–	6.70
30	23.8	95.0	35.0	43.4	15.0	62	85.0	PG 29	–	–	–	11.00
40	25.5	89.0	47.5	57.5	16.0	87	64.0	PG 29	–	–	–	17.50

4. NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.