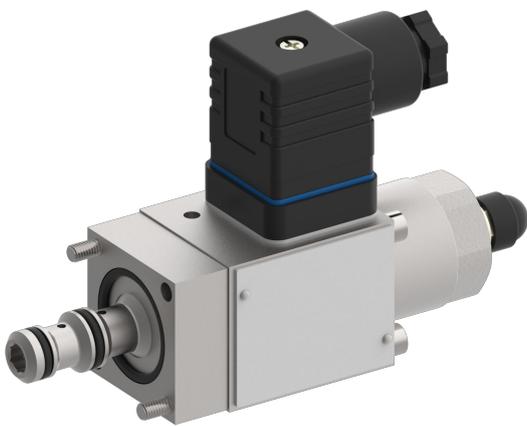


Pressure valve Reducing function

$Q_{\max} = 3 \text{ gpm}$, $p_{\max} = 1400 \text{ psi}$

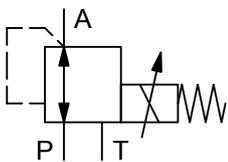
Direct acting, spool type, proportional solenoid

Type series: DRDRA-7GG-4-...



- Slip-in cartridge valve for cavity AG
- All external parts with zinc-nickel plating according to DIN EN ISO 19598
- Installation in threaded port body type GAAA
- Nominal pressure when solenoid de-energized (fail-safe function)
- Excellent stability over the whole pressure and flow range
- High pressure wet-armature solenoids
- Various plug-connector systems and voltages are available

Symbol



Description

The proportional pressure-reducing valves, series DRDRA-7GG... , are size 2...4, flangable pilot-operated, high performance slip-in cartridge valve. They are designed on the proven sliding-spool principle. These cartridges reduce the output pressure in proportion to the control flow, regardless of the input pressure. The required secondary pressure is controlled to the value set independently of the inlet pressure. If the specified pressure is exceeded, connection opens to restore the balance. To obtain a reliable pressure setting over the

entire pressure range, the overall pressure range is divided into different pressure levels. These valves are mainly used in certain mobile and industrial applications to reduce the system pressure. The pressure is set by means of an adjusting spindle. All external parts of the screw-in valves are zinc-nickel plated and are thus suitable for use in the harshest operating environments. For installation and further information, please refer to the section related data sheets.

Technical data

General characteristics	Description, value, unit
Function group	pressure valve
Function	reducing function
Design	slip-in cartridge valve
Controls	proportional solenoid
Characteristic	direct acting, spool type
MTTFd value	150 years
Construction size	NG 4
Mounting attitude	unrestricted (preferably vertical, coil down)
Weight	1.43 lb
Cavity acc. factory standard	AG
Tightening torque steel	3.3 ft·lb
Tightening torque aluminium	3.3 ft·lb
Tightening torque tolerance	± 10 %
Minimum ambient temperature	- 22 °F
Maximum ambient temperature	+ 122 °F
Surface protection	all external parts with zinc-nickel plating according to DIN EN ISO 19598
Seal kit order number	NBR: DS-453-N / FKM: DS-453-V

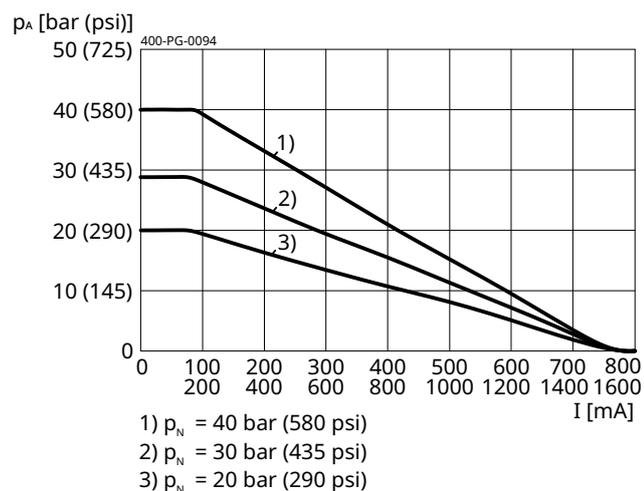
Hydraulic characteristics	Description, value, unit
Maximum operating pressure	1400 psi
Restriction of the operating pressure	435...725 psi
Maximum flow rate	3 gpm
Flow direction	see symbol
Hydraulic fluid	mineral-based or synthetics with lubricating properties. HL and HLP mineral oil according to DIN 51 524; other fluids on request!
Minimum fluid temperature	- 22 °F
Maximum fluid temperature	+ 158 °F
Viscosity range	15 ... 380 mm ² /s (cSt)
Recommended viscosity range	20 ... 130 mm ² /s (cSt)
Minimum fluid cleanliness (cleanliness class according to ISO 4406:1999)	class 18/16/13
Nominal pressure range	Pressure range 04 = ...580 psi Pressure range 03 = ...435 psi Pressure range 02 = ...290 psi

Electric characteristics	Description, value, unit
Actuator type	solenoid coil
Supply voltage DC	12/24 V DC
Control current	12 V = 0...1400 mA / 24 V = 0...800 mA
Nominal power consumption	Max. 19 W W
Relative duty cycle	100 %
Coil resistance R	cold value at 68°F
	12 V = 6.4 Ω
	24 V = 17.2 Ω
	cold value at -13°F
	12 V = 5.2 Ω
	24 V = 14.1 Ω
Coil resistance R	max. warm value
	12 V = 10.0 Ω
Coil resistance R	24 V = 27.0 Ω
Recommended PWM frequency	200 Hz
Response sensitivity with PWM	< 1 % I _N
Reproducibility with PWM	< 2 % p _N
Hysteresis with PWM	2...4 % I _N
Reversal error with PWM	2...4 % I _N
Electrical connection coil	DIN EN 175301-803, 3-pole 2 P+E (IP 65)
Protection class solenoid coil to ISO 20 653 / EN 60 529	IP 65 / IP 67 / IP 69K, see "Ordering code" (with appropriate mating connector and proper fitting and sealing)

Performance graphs

measured with oil viscosity 33.0 mm²/s (cSt)

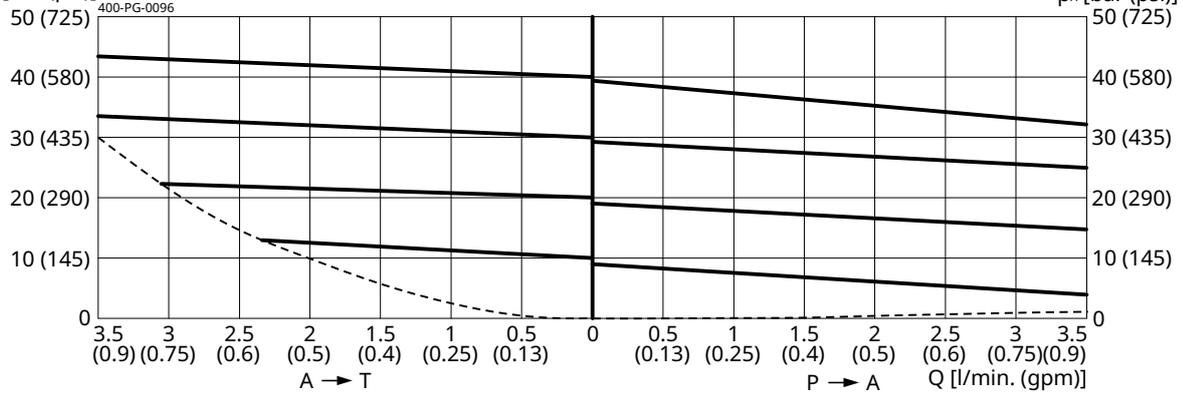
p = f (I) Pressure adjustment



$p = f(Q)$ Pressure-flow rate

NG04

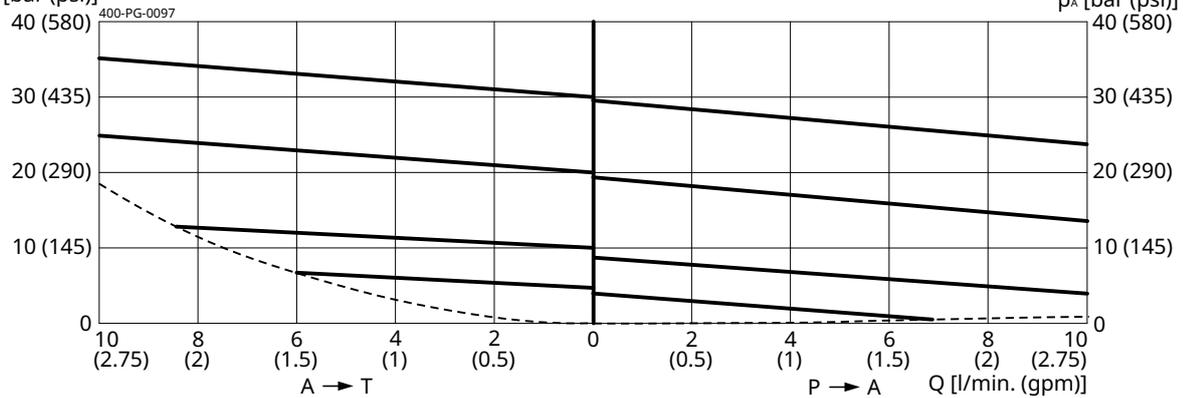
Δp [bar (psi)]



$p = f(Q)$ Pressure-flow rate

NG03

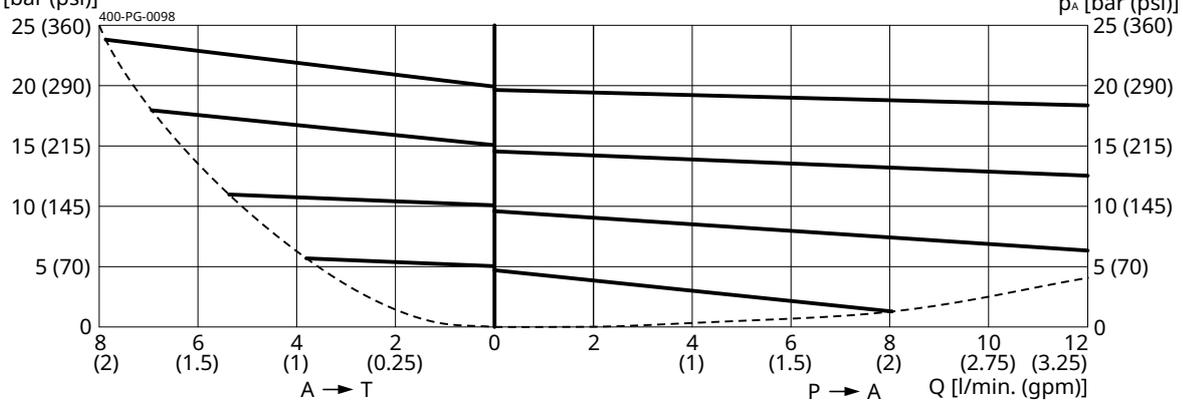
Δp [bar (psi)]



$p = f(Q)$ Pressure-flow rate

NG02

Δp [bar (psi)]

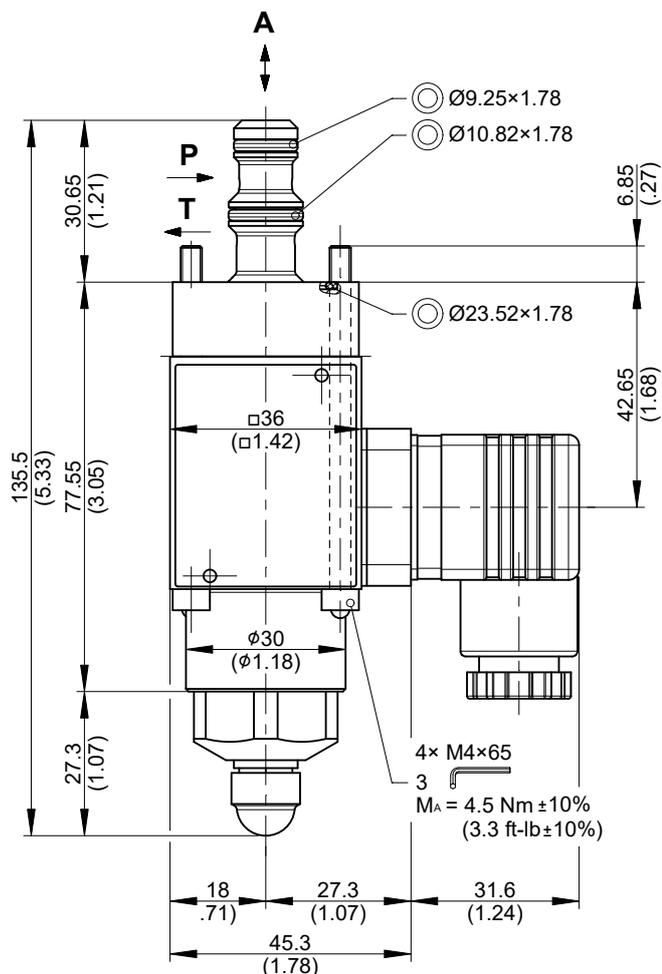


Installation

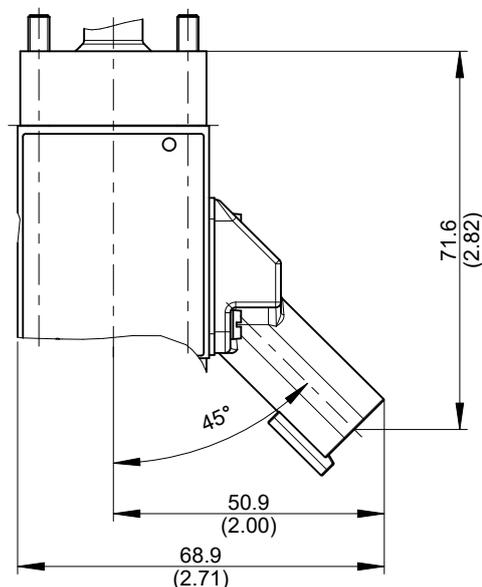
**Beispiel für die Masseinheit:
Exampel for the dimensional units:**

0.79 = 0.79 mm millimeter
(.031) = 0.031" inch

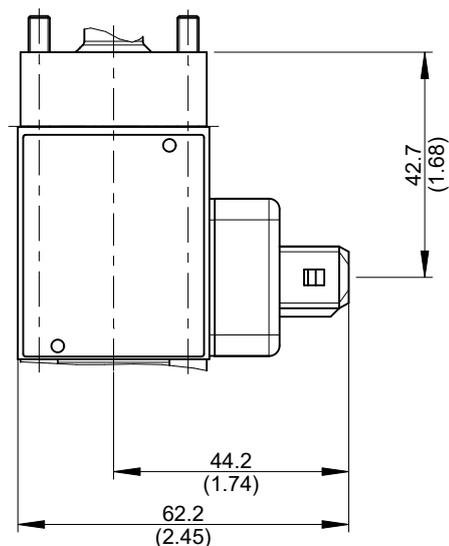
DIN EN 175201-803



Deutsch DT04-2P



Junior-Timer



NOTE!

When fitting the cartridges, note the mounting attitude (preferably vertical, with coil down → automatic air bleed) and use the specified tightening torque. No adjustments are necessary, since the cartridges are set in the factory.



NOTE!

The seals are not available individually. The seal kit order number can be found in the chapter "Technical data".



ATTENTION!

Only qualified personnel with mechanical skills may carry out any maintenance work. Generally, the only work that should ever be undertaken is to check, and possibly replace, the seals. When changing seals, oil or grease the new seals thoroughly before fitting them.

Ordering code

Ex. DR D R A - 7 G G - 02 - 4 - - - 2 - 24 D -

DR	=	pressure reducing cartridge
D	=	direct acting
R	=	electrically operated, 36mm, prop. solenoid
A ... Q	=	standard model according to valid data sheet
Z ... R	=	special model (on request)
7	=	pressure-reducing with full-flow pressure relief
G	=	cavity type AG
G	=	proportional solenoid, inverse type (pulling)
04	=	pressure range ...40 bar / ...580 psi
03	=	pressure range ...30 bar / ...435 psi
02	=	pressure range ...20 bar / ...290 psi
2	=	nominal size 2 (pressure range 04)
3	=	nominal size 3 (pressure range 03)
4	=	nominal size 4 (pressure range 02)
(blank)	=	NBR (nitril-butadien-rubber / BUNA) seals (standard)
V	=	FKM (fluorocarbon rubber / VITON) seals (special seals on request)
(blank)	=	armature without orifice (standard)
H	=	armature with orifice (for higher inlet pressure, pmax 100 bar)
1 ... 9	=	technical design no. (omit by ordering)
...	=	voltage e.g. 24 (24 V)
D	=	current DC
(blank)	=	DIN EN 175301-803 connection 3-pole 2 P+E (standard) (IP 65)
M100	=	DIN EN 175301-803 connection 3-pole 2 P+E (IP 65)
D	=	Deutsch plug connection DT04-2P 2-pole 45° (IP 67/69K)
J	=	Junior Timer plug connection 2-pole radial (IP 65)

other plug-variants, please consult BUCHER. } mating plug not supplied

i IMPORTANT!
Not every combination of voltage values and plug connections available.

Related data sheets

Reference	Description
400-P-040011	form tools
400-P-040141	cavity AG
400-P-712101	threaded port body GAAA
400-P-010101	MTTFd Values for Hydraulic Valves

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