aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Offshore Oil and Gas

For Industrial and Mobile Applications

Parker

ENGINEERING YOUR SUCCESS.

The Offshore Oil and Gas Market

Parker offers a wide variety of industry leading products for the toughest offshore oil and gas applications.

Parker is committed to supplying products that meet the ever increasing demands of offshore energy recovery.

Today's offshore oil & gas industry is faced with higher pressures, larger temperature variations, and tougher environmental regulations. Customers can rely on Parker to provide solutions to improve rig and subsea equipment productivity by:

- Automation of drill floor functions
- Improved performance and extended life of subsea components.
- Provide products compatible with "Eco safe" fluids.

Lo-Torq Valves

Parker's Lo-Torq valves are well suited for high pressure applications where manually directional control valves are used, such as backup systems in oil and gas applications. Providing industry-leading performance with less than one drop per minute internal leakage, they are often used in BOP pressure control circuits. Parker's Lo-Torq valves can handle flows up to 200 GPM and operating pressures of 6000 PSI.

Series 8100

In-Line Products

Parker offers a wide variety of In-line Valves ranging from Checks, Flow Controls, Pressure Compensated Flow Controls, Ball Valves and Pressure Controls.

- 316 Stainless steel
- Pressures up to 10,000 PSI
- Sizes from ¼" up to 2"
- Zero leak option on some models

4 Function Manifold

Custom Manifolds

Custom manifold solutions can be designed around specific customer requirements. Components are combined in an efficient package for use in areas such as:

- Jack up rig control
- Material handling
- Power tong systems
- Topdrive controls

D1FW Proportional Valve

Parker Explosion Proof products provide precise control for functions operating in hazardous conditions.

NFPA mount style directional control valves are available with on/off and proportional controls. On/off valves are available in D03 to D10 sizes. D03 Proportional valves are available now with larger sizes coming soon. These valves are available with a dual rated ATEX / CSA certification.

Servovalves are available which meet ATEX, CSA, and Factory Mutual certifications. Flow rates up to 40 GPM are available.

BD15 Servovalve

Lokomec Valves

Parker now offers the Lokomec line of valves. The series WMH is a 4-way directional control valve. This product is designed to operate in the toughest marine environment. Applications such as winches and cranes can benefit from this technology. Features include:

- Hydraulic and manual control
- Flange or manifold mounted designs
- Sizes up to 2", nominal flows up to 320 GPM
- 4 spool options available
- High reliability
- Corrosion resistant

WMH Manual Valve

PCL Hydraulic Controller

PCL Hydraulic Proportional Remote Control Valve provides the customer with precise control of directional valves. The rugged design is well suited to tough environments where hazardous conditions dictate nonelectrical control.

Both hand and foot operated options are available, as well as a hand operated joystick model.

The robust and simple construction provides reliable and repeatable performance. This hydraulic control unit can control up to 4 GPM at pressures up to 1450 PSI.

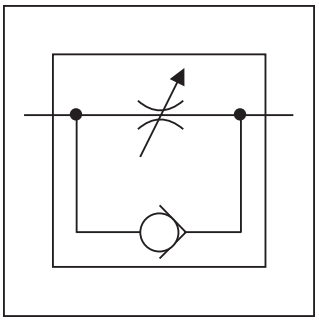
Parker

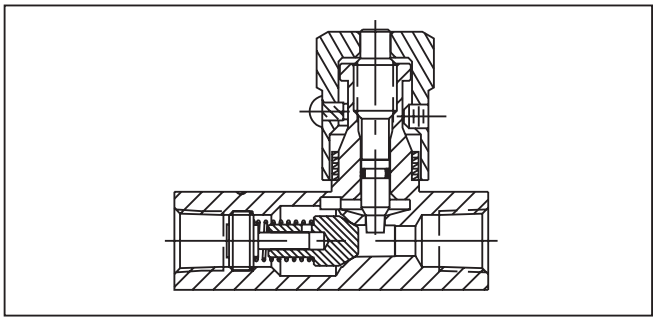
General Description

Series F flow control valves provide precise control of flow and shut-off in one direction, and automatically permit full flow in the opposite direction.

Operation

A two-step needle allows fine adjustment at low flow by using the first three turns of the adjusting knob. The next three turns open the valve to full flow, and also provide standard throttling adjustments.





Features

- The exclusive “Colorflow” color-band reference scale on the valve stem is a great convenience and time-saver in setting the valve originally and in returning it to any previous setting.
- A simple set screw locks the valve on any desired setting.
- A tamperproof option (T) feature is also available to prevent accidental or intentional adjustment of flow setting.

Specifications

Maximum Operating Pressure	Brass:	140 Bar (2000 PSI); except for F1600 brass which is 35 Bar (500 PSI)
	Steel & Stainless Steel:	345 Bar (5000 PSI) for 200 thru 1220; 207 Bar (3000 PSI) for all other sizes
Material	Body	See ordering code
	Knob	Steel - Zinc plated
	Spring	316 Stainless Steel
	Needle	416 Stainless Steel
	Poppet	416 Stainless Steel
	Retainer	416 Stainless Steel
	Stainless Steel Bodies	303 Stainless Steel

Poppets	Soft seal poppet in brass 200 - 820 sizes Solid metal 416 stainless steel poppet on all other sizes and styles
Nominal Cracking Pressure	0.4 Bar (5 PSI) standard
Temperature Range of Seal Compound	-40°C to +121°C (-40°F to +250°F) Nitrile (standard) -26°C to +205°C (-15°F to +400°F) Fluorocarbon

Cat3300_02.indd, ddp, 04/19

□ Options — F Series — □ Size — □ Material — □ Needle Options — □ Other Options — □ Seal Compound — Design Series

NOTE: Not required when ordering.

Code	Description
Omit	NPTF/SAE
★8	BSPT
★★9	BSPP

★ Code 8 can be used with sizes 200, 400, 600, 800, 1200 Steel only

★★ Code 9 can be used with sizes 200, 400, 600, 800, 1200, 1600, 2000, 2400.

Code	Size	Code	Size	Code	Size
200 *	1/8"	820 *†	#8 SAE	2000	1 1/4"
400 *†	1/4"	1020	#10 SAE	2020	#20 SAE
420	#4 SAE	1200 *	3/4"	2400	1 1/2"
600 *†	3/8"	1220	#12 SAE	2420	#24 SAE
620	#6 SAE	1600 *	1"	3200	2"
800 *†	1/2"	1620	#16 SAE	3220	#32 SAE

* Sizes available in Brass.

† Sizes available in Stainless Steel.

Code	Description
B	Brass
S	Steel
SS*	Stainless Steel

Series F Brass and Stainless Steel Valves can be used for both air and oil service.

* Available in 400, 600 800, and 820 sizes only.

Code	Description
Omit	Standard
4	Fine Metering (200, 400, 420, 600, 620, 820 sizes)

Code	Description
Omit	Standard Knob
T *	Tamperproof
F	Finger Screw

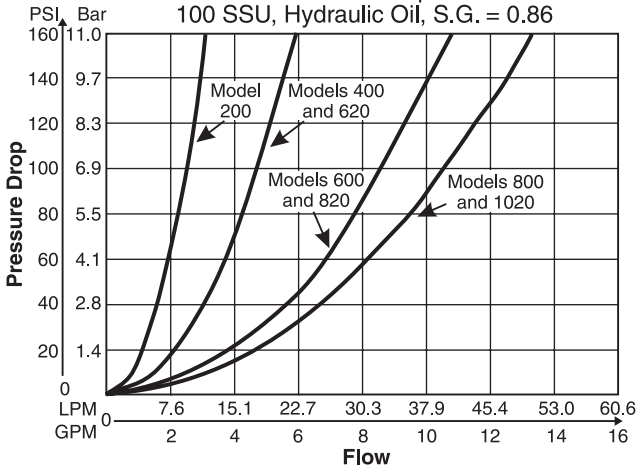
* Not available above 1200 size.

Code	Description
Omit	Nitrile (Standard)
V	Fluorocarbon (Standard on Stainless Steel)

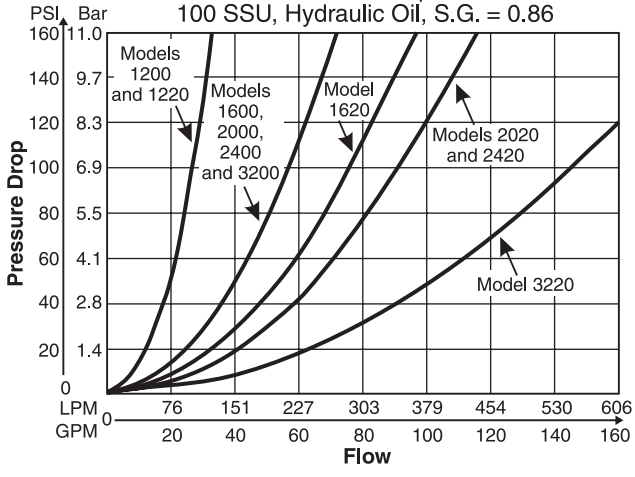
Model Number	Free Flow Rate, Max. LPM (GPM)	Free Flow Orifice Area $in.^2$	Free Flow C_v	Effective Orifice Area, Control Flow $in.^2$	Effective Control Flow C_v
F200	11 (3)	0.023	0.53	0.0102	0.230
F420	11 (3)	0.023	0.53	0.0102	0.230
F400	19 (5)	0.068	1.56	0.0194	0.433
F620	19 (5)	0.068	1.56	0.0194	0.433
F600	30 (8)	0.099	2.27	0.0344	0.787
F820	30 (8)	0.099	2.27	0.0344	0.787
F800	57 (15)	0.224	5.11	0.0427	0.976
F1020	57 (15)	0.224	5.11	0.0427	0.976
F1200	95 (25)	0.348	7.95	0.1080	2.470
F1220	95 (25)	0.348	7.95	0.1080	2.470
F1600	151 (40)	0.453	10.35	0.2300	5.250
F1620	151 (40)	0.453	10.35	0.3070	7.000
F2000	265 (70)	0.855	19.52	0.2300	5.250
F2020	265 (70)	0.855	19.52	0.3710	8.470
F2400	379 (100)	0.955	21.82	0.2300	5.250
F2420	379 (100)	0.955	21.82	0.3710	8.470
F3200	568 (150)	1.046	23.90	0.2300	5.250
F3220	568 (150)	1.046	23.90	0.6010	13.410

Model Number	Effective Orifice Area Control Flow $in.^2$	Effective Control Flow C_v
F400-4	0.0044	0.0758
F600-4	0.0097	0.153
F620-4	0.0044	0.0758
F820-4	0.0097	0.153

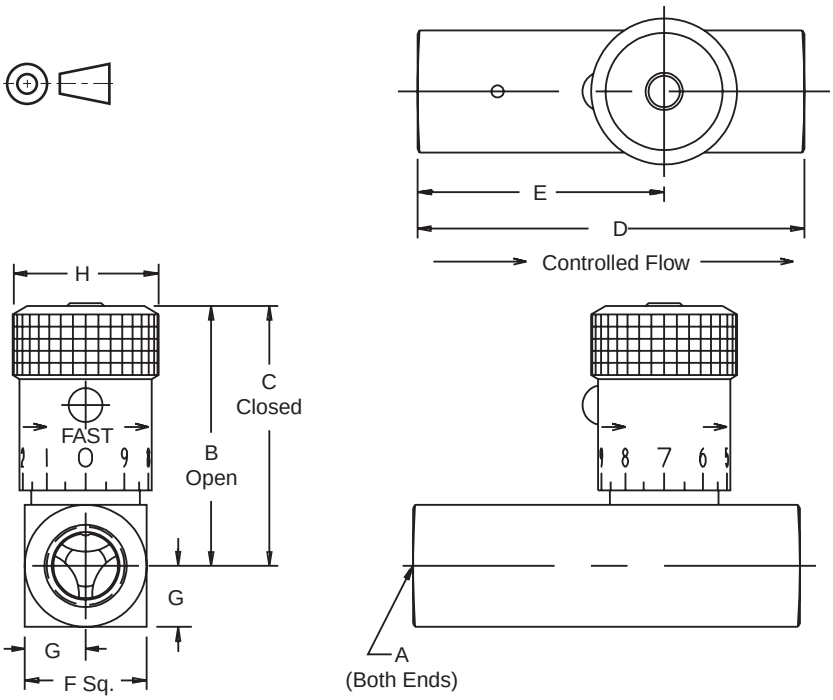
Controlled Flow vs. Pressure Drop
Needle Full Open
100 SSU, Hydraulic Oil, S.G. = 0.86



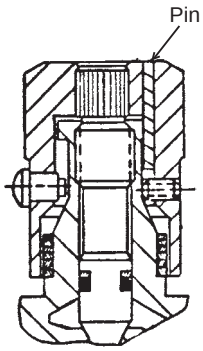
Controlled Flow vs. Pressure Drop
Needle Full Open
100 SSU, Hydraulic Oil, S.G. = 0.86



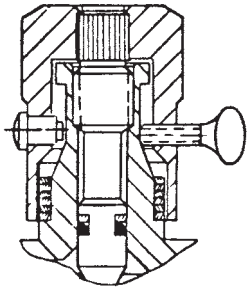
Inch equivalents for millimeter dimensions are shown in (**)



Knob Options



Tamperproof Option (Code “T”) permanently locks knob at desired flow setting by installing a pin in predrilled hole.

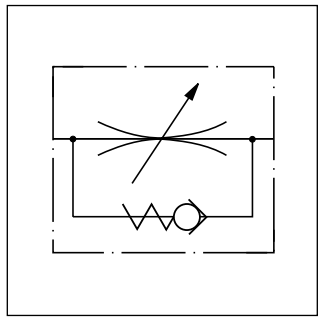


Finger screw Option (Code “F”) provides this thumb-screw in place of set screw.

Model Number	Weight kg (lbs)	A	B	C	D	E	F	G	H
F200	0.1 (0.3)	1/8–27 NPTF	39.1 (1.54)	35.3 (1.39)	50.8 (2.00)	32.5 (1.28)	16.0 (0.63)	7.9 (0.31)	19.1 (0.75)
F400	0.2 (0.5)	1/4–18 NPTF	45.5 (1.79)	40.4 (1.59)	66.8 (2.63)	42.2 (1.66)	20.6 (0.81)	10.4 (0.41)	20.6 (0.81)
F420	0.2 (0.5)	7/16–20 UNF #4 SAE	41.4 (1.63)	37.6 (1.48)	68.3 (2.69)	42.9 (1.69)	20.6 (0.81)	10.4 (0.41)	19.1 (0.75)
F600	0.3 (0.7)	3/8–18 NPTF	55.4 (2.18)	49.5 (1.95)	69.9 (2.75)	44.5 (1.75)	25.4 (1.00)	12.7 (0.50)	25.4 (1.00)
F620	0.3 (0.7)	9/16–18 UNF #6 SAE	47.7 (1.88)	42.7 (1.68)	79.2 (3.12)	48.8 (1.92)	25.4 (1.00)	12.7 (0.50)	20.6 (0.81)
F800	0.7 (1.5)	1/2–14 NPTF	68.6 (2.70)	61.5 (2.42)	87.4 (3.44)	56.6 (2.23)	31.8 (1.25)	16.0 (0.63)	30.2 (1.19)
F820	0.5 (1.1)	3/4–16 UNF #8 SAE	56.9 (2.24)	51.1 (2.01)	88.9 (3.50)	53.8 (2.12)	28.4 (1.12)	14.2 (0.56)	25.4 (1.00)
F1020	0.8 (1.8)	7/8–14 UNF #10 SAE	68.6 (2.70)	61.5 (2.42)	101.6 (4.00)	65.0 (2.56)	31.8 (1.25)	15.7 (0.62)	30.2 (1.19)
F1200	1.2 (2.6)	3/4–14 NPTF	85.9 (3.38)	71.4 (2.81)	98.6 (3.88)	65.5 (2.58)	38.1 (1.50)	19.1 (0.75)	35.1 (1.38)
F1220	1.2 (2.6)	1 1/6–12 UN #12 SAE	85.9 (3.38)	71.4 (2.81)	117.3 (4.62)	76.5 (3.01)	38.1 (1.50)	19.1 (0.75)	35.1 (1.38)
F1600	2.3 (5.1)	1–11 1/2 NPTF	123.7 (4.87)	106.9 (4.21)	127.0 (5.00)	81.8 (3.22)	44.5 (1.75)	22.4 (0.88)	47.8 (1.88) *
F1620	2.3 (5.1)	1 5/16–12 UN #16 SAE	130.8 (5.15)	114.0 (4.49)	142.7 (5.62)	88.9 (3.50)	57.2 (2.25)	28.4 (1.12)	47.8 (1.88) *
F2000	3.7 (8.2)	1 1/4–11 1/2 NPTF	130.0 (5.12)	113.3 (4.46)	143.0 (5.63)	98.6 (3.88)	57.2 (2.25)	28.7 (1.13)	47.8 (1.88) *
F2020	3.7 (8.2)	1 5/8–12 UN #20 SAE	140.2 (5.52)	123.4 (4.86)	165.1 (6.50)	108.0 (4.25)	69.9 (2.75)	35.1 (1.38)	47.8 (1.88) *
F2400	4.6 (10.2)	1 1/2–11 1/2 NPTF	136.4 (5.37)	119.6 (4.71)	143.0 (5.63)	113.5 (4.47)	69.9 (2.75)	35.1 (1.38)	47.8 (1.88) *
F2420	4.6 (10.2)	1 7/8–12 UN-2B #24 SAE	143.5 (5.65)	126.7 (4.99)	184.2 (7.25)	127.0 (5.00)	76.2 (3.00)	38.1 (1.50)	47.8 (1.88) *
F3200	7.9 (17.4)	2–11 1/2 NPTF	146.1 (5.75)	129.3 (5.09)	165.1 (6.50)	134.9 (5.31)	88.9 (3.50)	44.5 (1.75)	47.8 (1.88) *
F3220	7.9 (17.4)	2 1/2–12 UN #32 SAE	163.6 (6.44)	139.4 (5.49)	228.6 (9.00)	155.7 (6.13)	101.6 (4.00)	50.8 (2.00)	47.8 (1.88) *

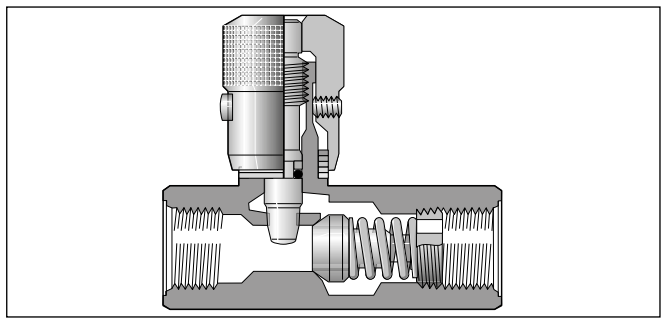
* = Hex

Manatrol throttle check valves of series F with fine adjustment of the flow rate for a defined flow direction. The built-in check valve allows free flow in the counter direction with low flow resistance. A 2-stage needle provides very exact setting of smaller flow rates with the first three rotations of the adjustment knob. After 3 more rotations, the valve is completely open. The valve setting can be locked with the locking screw.



$$\text{Flow rate } Q\ [l/min] = Kv \cdot \sqrt{\frac{\Delta p}{\gamma}}$$

Kv — from the table
Δp [bar]
γ [kg/dm³] = specific weight of the medium
(γ for mineral oil = 0.85 - 0.9)



Specifications

Return check poppet Nominal cracking pressure	0.4 bar
Operating temperature	-40 °C to +121 °C

Ordering code

Thread type	Throttle check valve	Thread size	Body	Needle	Clamping screw	Seal
☐	**F**	☐	☐	☐	☐	☐

Code	Thread
omit	NPTF
9 [1]	**BSPP**

Code	Size
200	**1/8**
400	**1/4**
600	**3/8**
800	**1/2**
1200	**3/4**
1600	**1**
2000	1¼
2400	1½
3200	2

Code	Seal
omit	**NBR**
V	FPM

Code	Clamping screw
omit	**Hexagon socket**
F	With knurled knob
T	Tamper-proof

Code	Needle
omit	**Standard 2-stage needle**
4 [3]	Micro-fine hollow needle with slot

Code	Body
S	**Steel**
B [2]	Brass

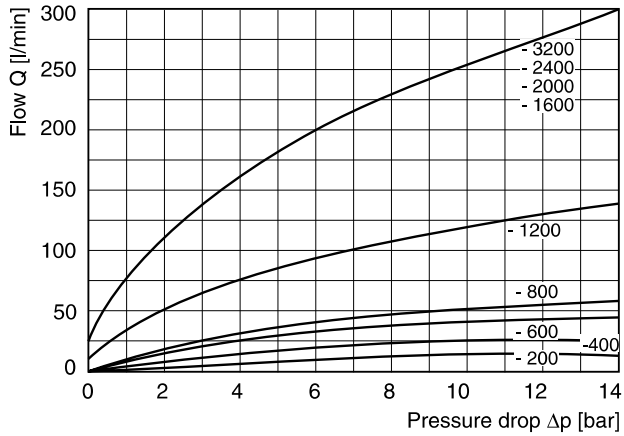
[1] Not for size 3200.
[2] Only for sizes 200 to 1600.
[3] Only for sizes 200 to 600.

Bold letters =
Short-term availability

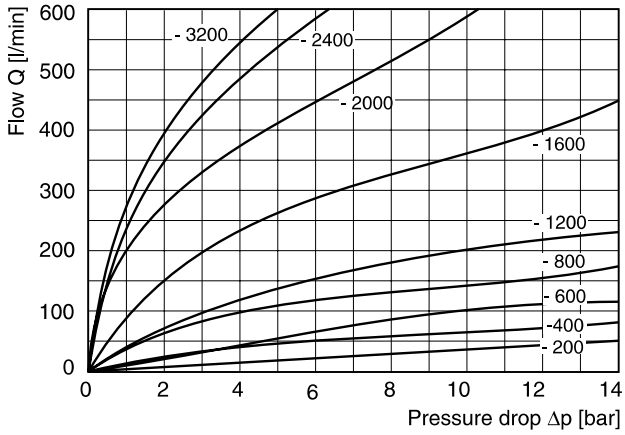
Technical data

Size	Pressure [bar]		Max. flow [l/min Δp10bar]	Throttle surface [cm²]	Throttle v. open Kv factor	Weight [kg]	
	Steel	Brass				Steel	Brass
200	350	140	11	0.066	3.3	0.13	0.13
400	350	140	25	0.13	6.3	0.23	0.23
600	350	140	40	0.22	11.2	0.31	0.31
800	350	140	50	0.28	14	0.67	0.68
1200	210	140	120	0.70	35.4	1.17	1.18
1600	210	35	250	1.48	75	2.31	2.32
2000	210	–	250	1.48	75	3.67	–
2400	210	–	250	1.48	75	4.62	–
3200	210	–	250	1.48	75	7.78	–

Controlled flow vs. pressure drop needle fully open

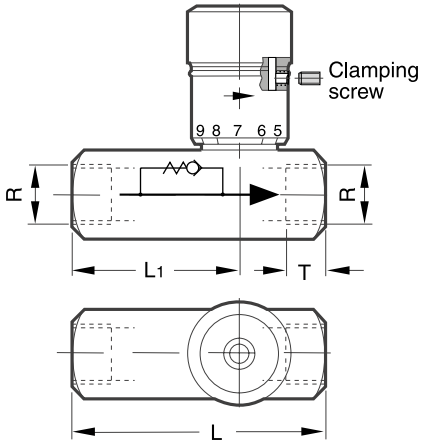


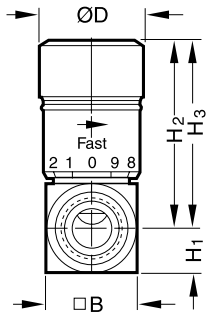
Free flow vs. pressure drop needle fully open



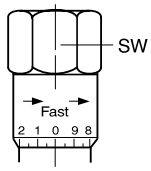
All characteristic curves measured with HLP46 at 50 °C.

Dimensions

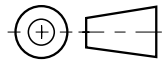




H_2 = closed
H_3 = open



Hexagon adjusting knob, standard for sizes 1600 to 3200



Size	R*	H3	H2	H1	B	L1	L	ØD	SW	T
200	⅛	39	35	8	16	36	51	19	-	9
400	¼	46	40	10.5	21	43	67	21	-	13
600	⅜	55	49	13	26	45	70	25	-	13
800	½	69	61	16	32	57	87	30	-	16
1200	¾	86	71	19	38	65	99	35	-	17
1600	1	124	107	22.5	45	83	127	-	47.8	20
2000	1 ¼	130	114	29	58	99	143	-	-	21.5
2400	1 ½	137	120	35	70	114	143	-	-	23.5
3200	2	146	130	44.5	89	134	165	-	-	25

* Pipe thread G or NPTF