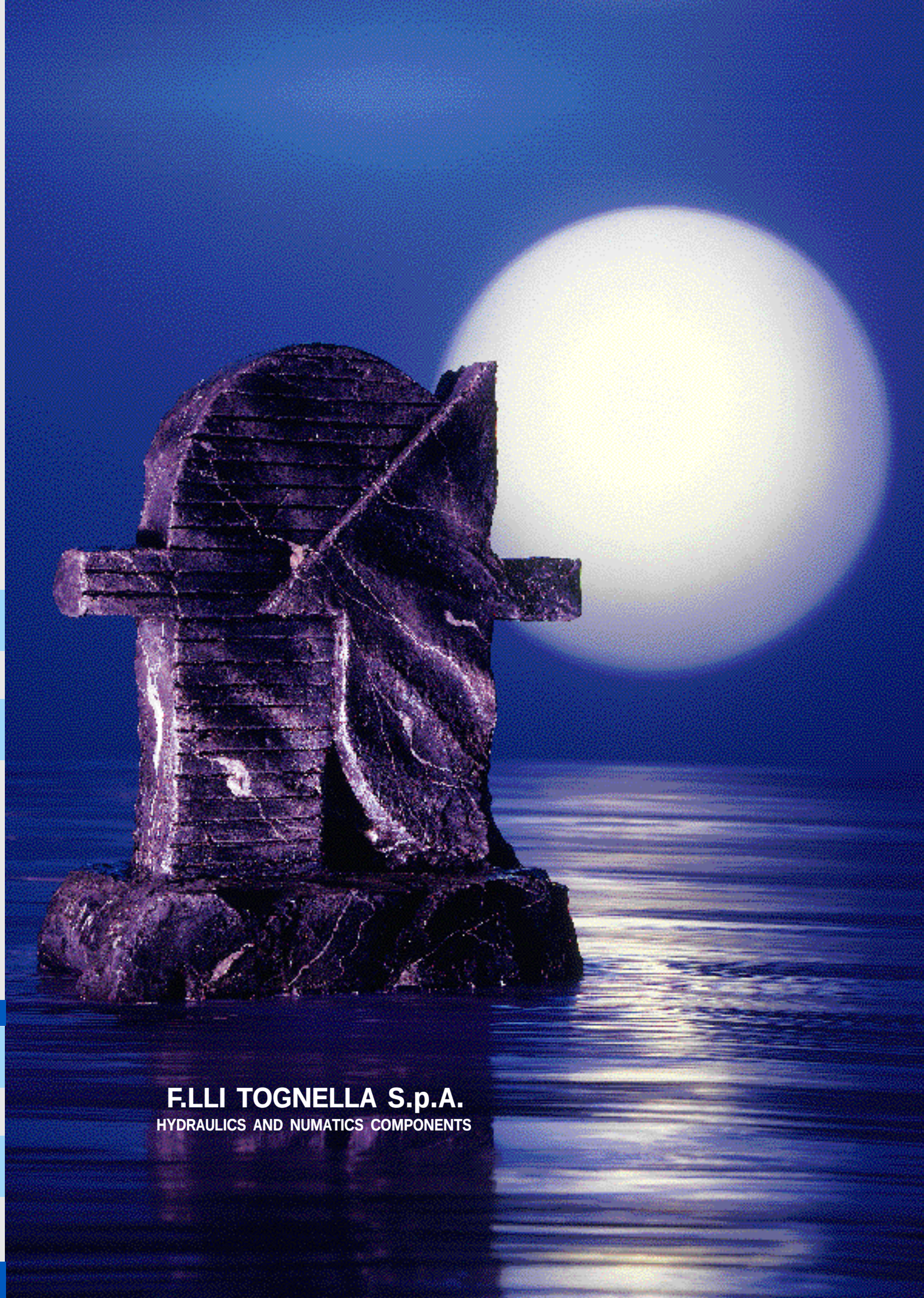


INTRODUCTION

VALVES INDEX

FIT IN WINDOW

LAST VIEW

PRINT

QUIT

F.LLI TOGNELLA S.p.A.

HYDRAULICS AND NUMATICS COMPONENTS

Drawings and text
TECNOVI
casorate sempione

Graphic design
GPI
somma lombardo

Photographic office
FRANCO GARBIN
gallarate

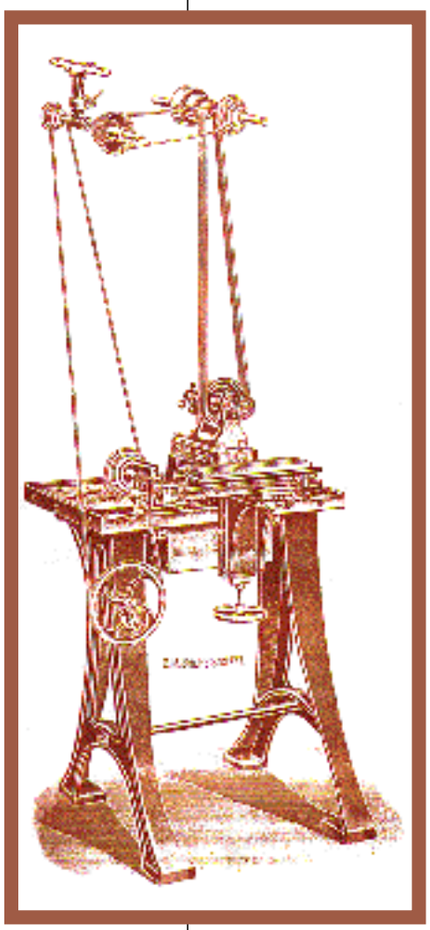
Coordinator
Gianfranco Cattoretti
casorate sempione

SO WE MAY BE BETTER KNOWN

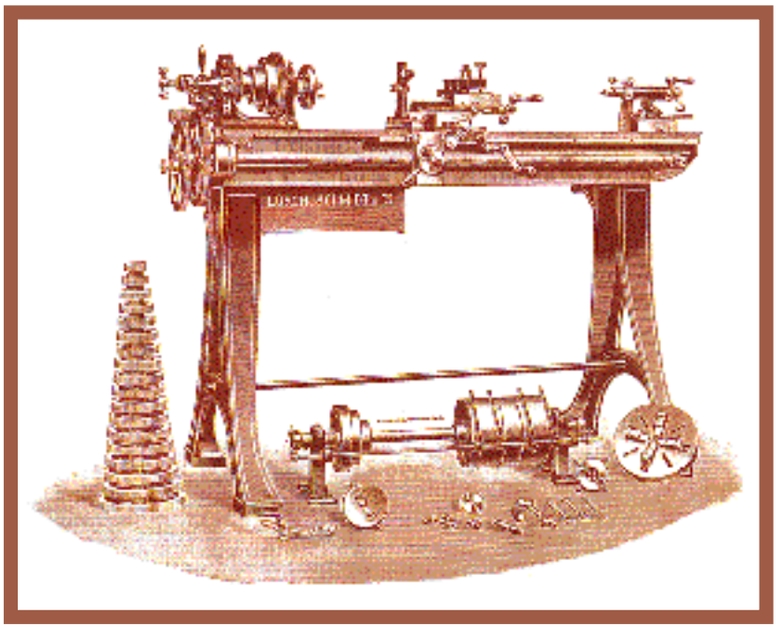
It was 1957 when Vittorino and Dorino Tognella decided to set up the “F.lli Tognella S.d.f.”, after years of experience acquired in a well-known local firm which operated in the aeronautics field. In creating this new company they invested their skills in the most sophisticated mechanical concepts, their knowledge of the variegated problematics of the economic and productive field, their entrepreneurial spirit, will power, determination, technique and a great technical experience. They started mainly as sub-suppliers to firms operating in the pneumatics field.

Then they gradually made a place for themselves in the hydraulic field which became, through a winning choice, the predominant sector of their activity.

“TECHNOLOGY IS FIRMLY ROOTED IN THE PAST, DOMINATES THE PRESENT AND IS PROJECTED TOWARDS THE FUTURE”



“To offer quality products at the right price”: it was not an easy-to win challenge, the one “F.lli Tognella” wanted to try. But even in the competition with international colossuses, their precision, firmness, well-balanced administration and a complete reinvestment of the returns rapidly transformed this firm into a protagonist of the market. Never much influenced by the rapid changes this sector has usually undergone, being always able instead to forward the requirements of its clientele, day after day the firm grew and in the Seventies it gained widespread consensus all over the world. The circulation of “F.lli Tognella” products has by now reached a worldwide scale, being present in over 35 countries and in various industrial, commercial and service-sectors: from the field of mechanics to that of machine tools, earthwork, agriculture, plastics, marble working, material handling, wood working and many else... The success achieved does not however represent for the company a final point, but it is rather considered as an element of endless evolution that leads to new ways and ideas, new products and projects in harmony with the most advanced technologies.



NOT JUST A CATALOGUE

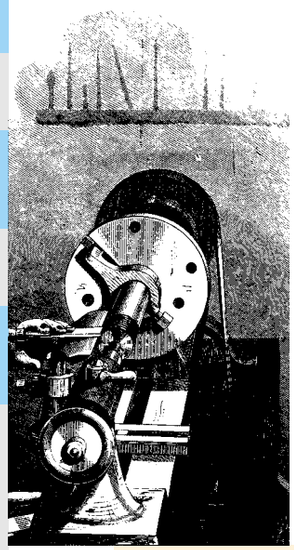
t is a modern-style publication which we consider more than a simple catalogue.
Therein are described, specific data of each product, as well as the technical data necessary for a correct choice of the various components depending on the different applications that they are intended for. It is composed of various chapters according to the different valve types and the initial index allows for rapid consultation. The intention was to provide the catalogue with a dual purpose: technical and advertising so as to be a valid means of consultation as much for the technical offices, as for the users and the distributors who will find satisfaction to their obviously different requirements. We would be sincerely grateful to all those who would kindly like to pass on to us any criticism, suggestions, advice or whatever else might be useful to the improvement of this publication with the aim of making it apt to find the appreciation of our clientele.

A STRUCTURE

The “F.lli Tognella”, attentive and sensitive to changes, to different demands and to an ever more arduous competition, convinced of the necessity of being able to offer its clientele a 360° structure capable of satisfying the fickle and ever more varied demands from its clientele, has recently created a parallel structure to the “F.lli Tognella” denominated “Special Service Seprio” which deals with the production of “special” components.
By “special” one means “made according to customer’s requirements”, or modifying a standard-built item or producing ex-novo, starting from none less than the drawing board.
The Special Service Seprio has the opportunity to work with these modalities for it holds a share partnership of our external technical office. A Technical Office conceived according to the most modern technologies provided with CAD CAM stations and disposing of highly-experienced professionals in the mechanical sector as well as in that of oleo-hydro-pneumatics. Therefore, the Special Service Seprio is able to offer projects, prototypes and finished products according to the requirements of the customer.

Forty years and over, but it doesn't show
Forty years of efficiency, of dynamic activity, flexibility and courtesy, at the service of our clientele.

For over forty years we have been making valves which have not gone unnoticed. That which has always characterised the "F.lli Tognella" has been its originality, essentiality, reliability: in other words, the quality of our products. The latter has always proceeded hand-in-hand with an intense productive activity always keeping market requirements well in mind, continuously trying out new directions, developing products able to satisfy customer demands and expectations.
Proof of all this is the additional contribution which the second generation of the entrepreneurial Tognella family has provided to the development of the firm. The new company site has in fact been recently built on an area of over 3.500 sq. m, with practically, total replacement of all machinery and with the introduction of automated systems and equipment (the most updated assembly and monitoring systems).
These are all factors which project the firm into the new millennium with all the requirements indispensable to achieve future business success and not to be carried along in the wake of events but to have the determination to direct them.



"Thousands and thousands of individuals produce and save despite all that we invest to molest, shackle and discourage them. They are driven by a natural vocation: not just by the desire for money. The pleasure, the pride in seeing one's own firm prospering, acquiring credit, inspiring trust in an ever increasing clientele, extending the plants, embellishing he head offices, all these constitute a propulsion to progress as powerful as financial gain. Were it not so, how could one explain the existence of entrepreneurs who put all their energy into their firm and invest all their capital only to have a return often far more modest than that which could undoubtedly be obtained much more easily if they were otherwise employed."

BY LUIGI EINAUDI

INDEX

CODING LOGIC

FT1251 / 2 - 02 - 18 - G-V-T-mp

VALVE CODE

FUNCTION CODE

2 = Double-acting needle control
5 = Single-acting needle control
6 = Check valves

CONNECTION CODE

01 = Female/Female
02 = Male/Female
04 = Connection to rigid pipes DIN 2353
05 = Connection to flexible pipes DIN 3861

TYPE CODE

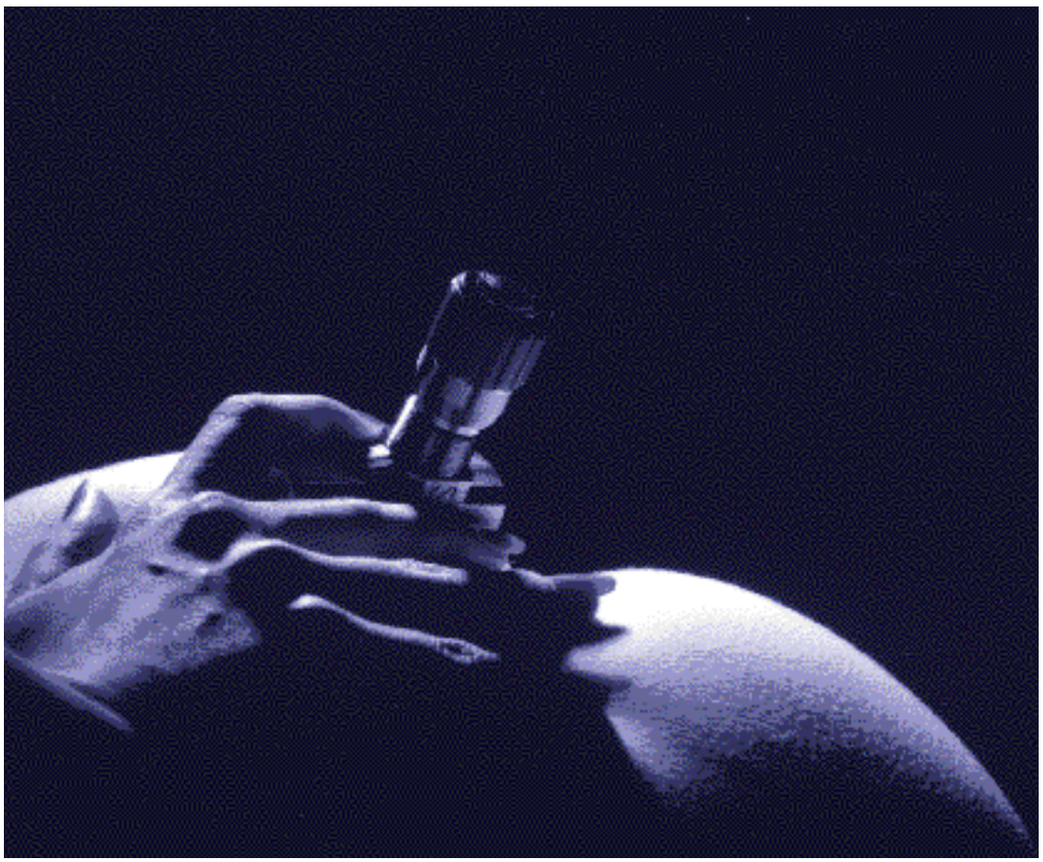
18 = 1/8" GAS (BSP)
14 = _" GAS (BSP)
38 = 3/8" GAS (BSP)
12 = _" GAS (BSP)
34 = _" GAS (BSP)
100 = 1" GAS (BSP)
114 = 1 _" GAS (BSP)
112 = 1 _" GAS (BSP)
200 = 2" GAS (BSP)

OPTIONAL FITTINGS CODE

G = Panel mounting kit
V = Viton seal
T = Plate
mp = Handwheel in ABS plastic

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

IN LINE NEEDLE VALVES
CHECK VALVES
IN CARBON STEEL



FT 257/2
FT 258/2
FT 257/5
FT 257/6
FT 260/6

FT 257/2

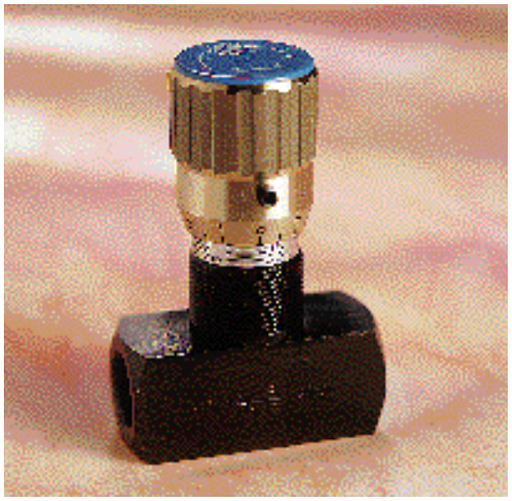
IN LINE NEEDLE VALVES CHECK VALVES IN CARBON STEEL

In line double-acting flow control and shut-off control needle valves

They allow flow control in both directions. Needle adjustments give:
- full shut off (via metal seat);
- accurate control for a wide range of flowrates.

The valve has a graduated adjustement scale below the handle to indicate accurately the valve position.
There is a locking screw in the handle to allow the handle to be fixed. (Preventing accidental adjustement or movement due to vibration).
A panel mounting nut (G) can be supplied on request.

On request
- Versions in AISI 316 stainless steel code FT 2257/2
- Viton seals (V)
- NPT threads
- Complete with panel mounting nut (G)
- Handwheel in ABS (mp) - plastic

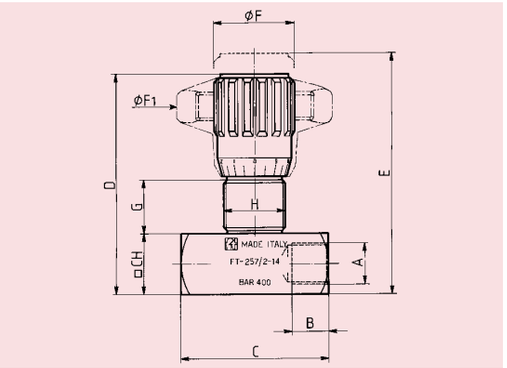


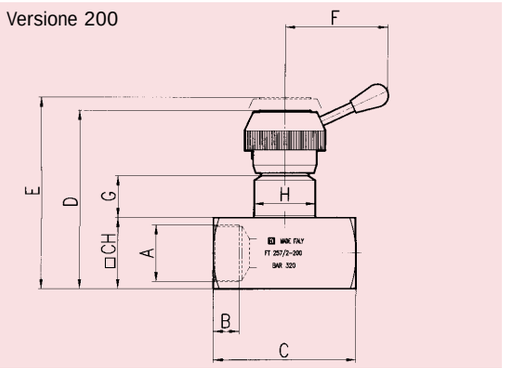
MATERIALS

Body	9 s Mn Pb 23 - UNI 5105
Needle	1 C 40 - UNI 8373
Or	Nitrile
Antiextrusion ring	PTFE
Handwheel	GD - Al Si 12 - UNI 5706 aluminium
Handwheel (mp)	ABS - plastic

EXAMPLE FOR ORDERING

			Accessories on request		
	Code	**Type**	**Panel ring**	**Viton seal**	**Handwheel in plastic**
Steel	**FT 257/2**	**18**	**G**	**V**	**mp**
Stainl. steel	**FT 2257/2**	**38**	**G**	**–**	**mp**





CODE FT 257/2

Type	A UNI 338	B	C	D	E	F	F1	G	H	CH	Weight kg
18	1/8"G	8.5	38	59	64	22	40	13.5	M17x1	16	0.110
14	1/4"G	12.5	49	71	78	27	50	17	M20x1	20	0.200
38	3/8"G	12.5	59	84	93	33	70	19.5	M25x1.5	25	0.375
12	1/2"G	15.5	68	97	107	38	80	21	M30x1.5	30	0.600
34	3/4"G	17	86	120.5	132.5	47	100	26.5	M40x1.5	40	1.250
100	1"G	20	105	151.5	167.5	58	120	35	M50x1.5	50	2.550
114	1 1/4"G	22	120	156.5	172.5	58	120	35	M50x1.5	55	3.000
112	1 1/2"G	24	134	167	181	58	120	35	M55x2	65	4.217
200	2"G	27	150	188	202	85	/	44	M65x2	75	7.300

Note: Instructions for panel mounting on page 17

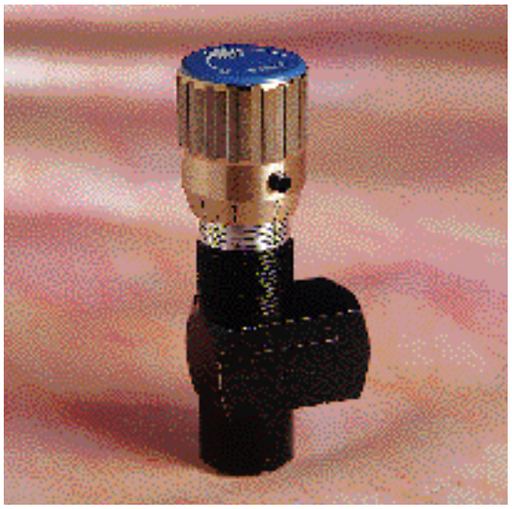
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

90° angle double-acting shut-off control valves

They allow flow control in both directions. Needle adjustments give:
- full shut off (via metal seat)
- accurate control for a wide range of flowrates.

The valve has a graduated adjustement scale below the handle to indicate accurately the valve position.
There is a locking screw in the handle to allow the handle to be fixed. (Preventing accidental adjustement or movement due to vibration).
A panel mounting nut (G) can be supplied on request.

On request
- Versions in AISI 316 stainless steel code FT 2258/2
- Viton seals (V)
- NPT threads
- Complete with panel mounting nut (G)
- Handwheel in ABS (mp) - plastic

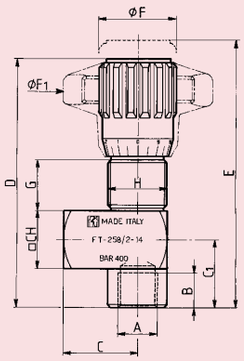


IN LINE NEEDLE VALVES CHECK VALVES IN CARBON STEEL

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

EXAMPLE FOR ORDERING

			Accessories on request		
	Code	**Type**	**Panel ring**	**Viton seal**	**Handwheel in plastic**
Steel	**FT 258/2**		**G**	**V**	**mp**
Stainl. steel	**FT 2258/2**	**12**	**G**	**–**	**mp**



MATERIALS

Body	9 s Mn Pb 23 - UNI 5105
Needle	1 C 40 - UNI 8373
Or	Nitrile
Antiextrusion ring	PTFE
Handwheel	GD - Al Si 12 UNI 5706 aluminium
Handwheel (mp)	ABS - plastic

CODE FT 258/2

Type	A UNI 338	B	C	C1	D	E	F	F1	G	H	CH	Weight kg
18	1/8"G	8.5	19	20	71	76	22	40	14.5	M17x1	16	0.108
14	1/4"G	13.5	25	27	86.5	93.5	27	50	17	M20x1	20	0.200
38	3/8"G	12.5	29.5	31.5	101.5	110.5	33	70	19.5	M25x1.5	25	0.360
12	1/2"G	15.5	35	37	117	127	38	80	21	M30x1.5	30	0.580
34	3/4"G	17	42	46	142.5	154.5	47	100	26.5	M40x1.5	40	1.265
100	1"G	20	53	56	182.8	198.8	58	120	35	M50x1.5	50	2.500

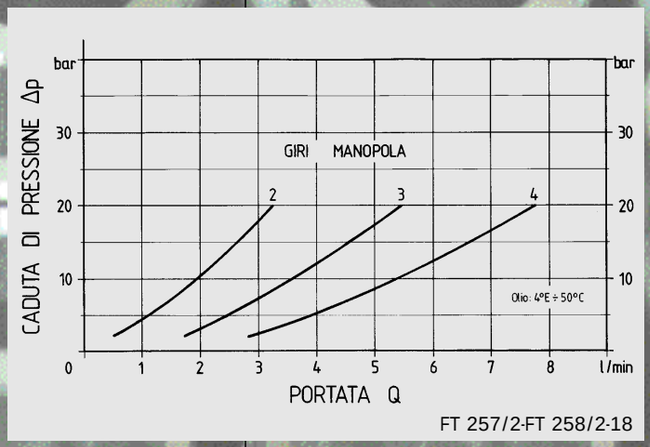
Note: Instructions for panel mounting on page 17

FT 257/2 - 258/2

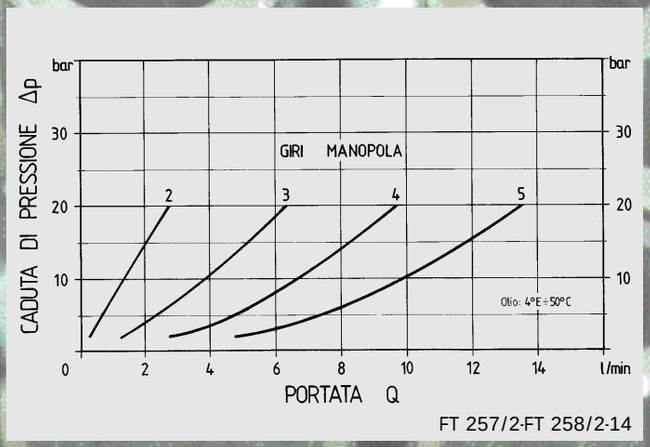
TECHNICAL DATA

Type	Port section sq. cm	Working pressure bar	Min. burst. pressure bar	Working temp. °C	Filtration grade µm
18	0.12	400	1600	-20°/+100°	25
14	0.19	400	1600	-20°/+100°	25
38	0.39	400	1600	-20°/+100°	25
12	0.68	400	1600	-20°/+100°	25
34	1.13	400	1600	-20°/+100°	25
100	2.09	320	1300	-20°/+100°	25
114	2.09	320	1300	-20°/+100°	25
112	3.14	320	1300	-20°/+100°	25
200	4.91	320	1300	-20°/+100°	25

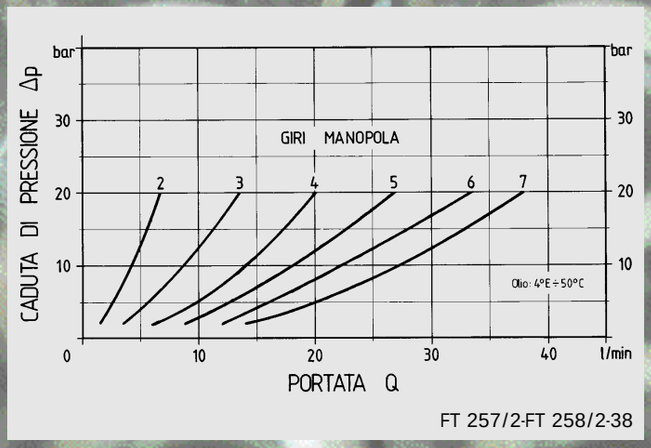
FLOWRATE CURVES



FT 257/2-FT 258/2-18



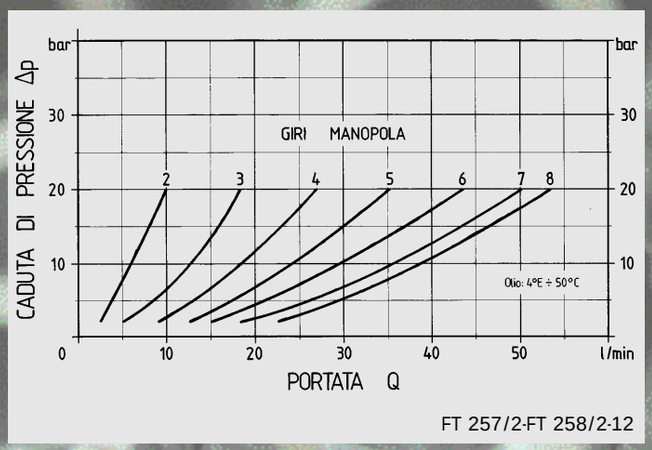
FT 257/2-FT 258/2-14



FT 257/2-FT 258/2-38

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 257/2 - 258/2



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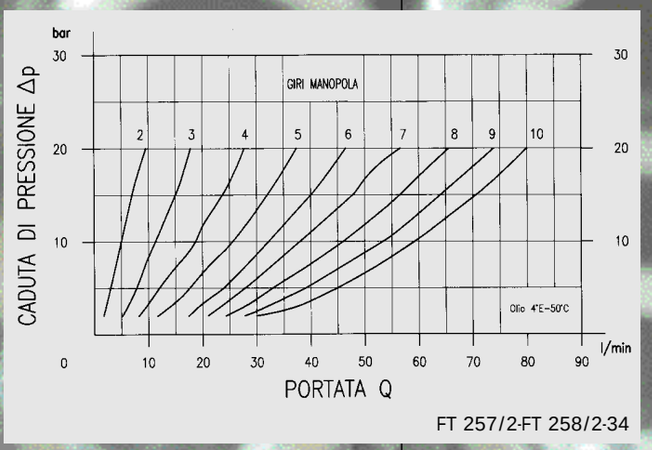

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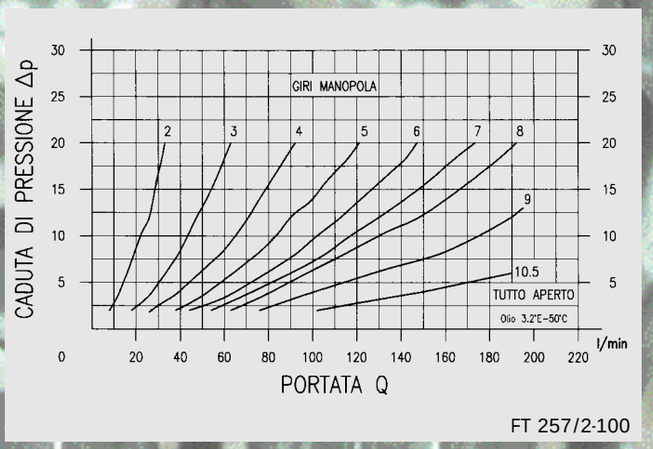
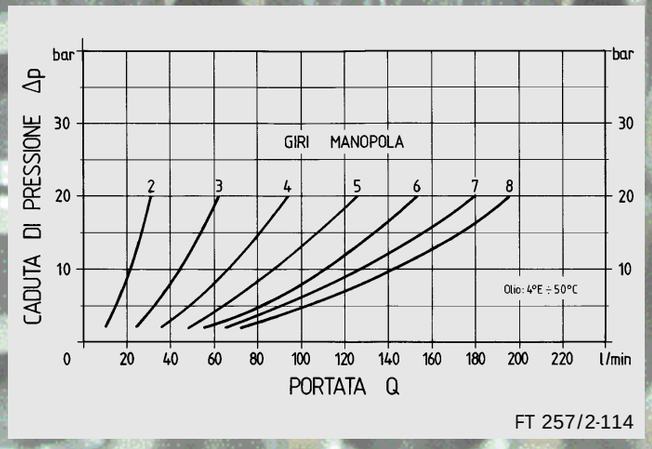
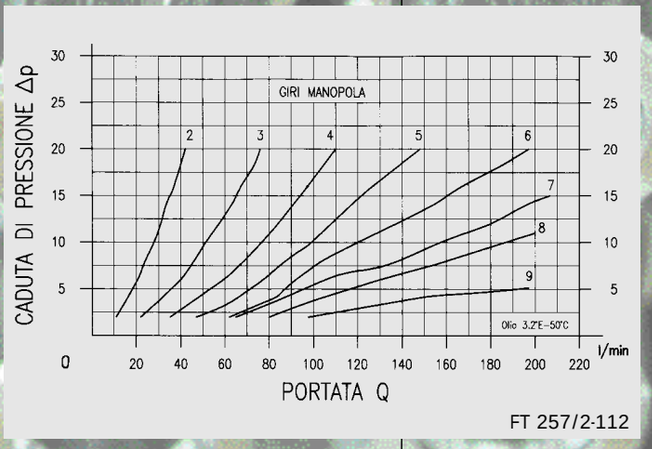


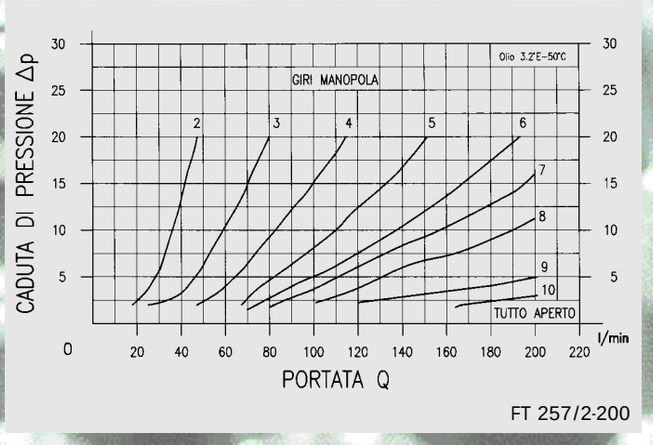
FT 257/2-100



FT 257/2-114



FT 257/2-112



FT 257/2-200

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 257/5

IN LINE NEEDLE VALVES CHECK VALVES IN CARBON STEEL

Single-acting control needle valves in line

Their function is to control and eventually shut-off the flow in one direction, allowing a free return flow in the opposite direction.
The check valve spring is housed in such a way that it does not close as a pack during opening of the scheck valve poppet.
Needle adjustments give:
- full shut off (via metal seat);
- accurate control for a wide range of flowrates.

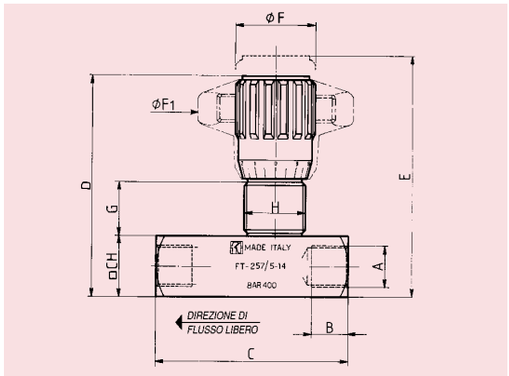
The valve has a graduated adjustement scale below the handle to indicate accurately the valve position.
There is a locking screw in the handle to allow the handle to be fixed. (Preventing accidental adjustement or movement due to vibration).

A panel mounting nut (G) can be supplied on request.
Opening pressure is 0.35 bar.

On request
- Versions in AISI 316 stainless steel code FT 2257/5
- Viton seals (V)
- NPT threads
- Complete with panel mounting nut (G)
- Handwheel in ABS (mp) - plastic

MATERIALS

Body	9 s Mn Pb 23 - UNI 5105
Needle	1 C 40 - UNI 8373
Or	Nitrile
Antiextrusion ring	PTFE
Check Valve	38 Ni Cr Mo 4 - UNI - EN 10083
Spring	C 72 UNI 3545
Threaded end-plate	35 S Mn Pb 10 - UNI 5105
Handwheel	GD - Al Si 12 - UNI 5706 aluminium
Handwheel (mp)	ABS - plastic



EXAMPLE FOR ORDERING

Accessories on request

	Code	Type	Panel ring	Viton seal	Handwheel in plastic
Steel	**FT 257/5**	**18**	**G**	**V**	**mp**
Stainl. steel	**FT 2257/5**	**34**	**G**	**V**	**mp**

CODE FT 257/5

Type	A UNI 338	B	C	D	E	F	F1	G	H	CH	Weight kg
18	1/8"G	8.5	50	59	64	22	40	13.5	M17x1	16	0.130
14	1/4"G	12.5	66	71	78	27	50	17	M20x1	20	0.250
38	3/8"G	12.5	79	84	93	33	70	19.5	M25x1.5	25	0.500
12	1/2"G	15.5	94.5	97	107	38	80	21	M30x1.5	30	0.750
34	3/4"G	17	115	120.5	132.5	47	100	26.5	M40x1.5	40	1.600
100	1"G	20	138.5	151.5	167.5	58	120	35	M50x1.5	50	3.050
114	1 1/4"G	22	157	156.5	172.5	58	120	35	M50x1.5	55	3.750
112	1 1/2"G	24	190	167	181	58	120	35	M55x2	65	5.760
200	2"G	27	228	188	202	85	–	44	M65x2	75	10.000

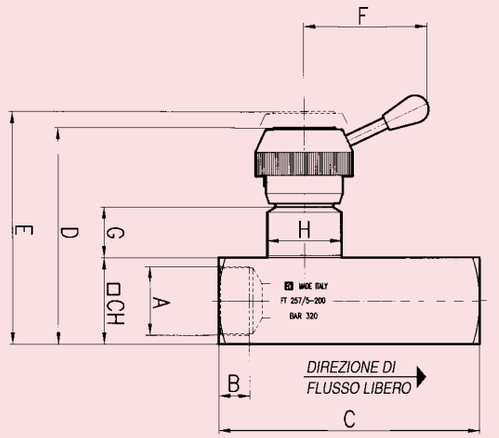
Note: Instructions for panel mounting on page 17

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

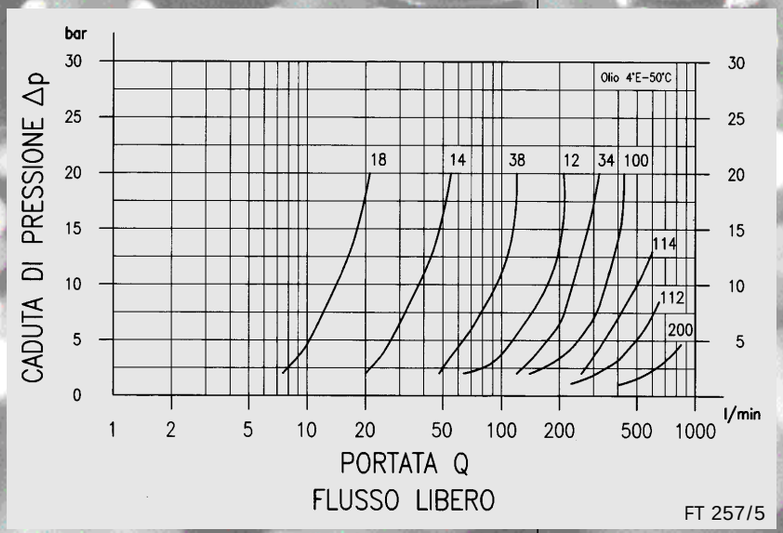
TECHNICAL DATA

Type	Port section sq. cm	Working pressure bar	Min. Burst. pressure bar	Working temperature °C	Filtration grade µm
18	0.12	400	1600	-20°/+100°	25
14	0.19	400	1600	-20°/+100°	25
38	0.39	400	1600	-20°/+100°	25
12	0.68	400	1600	-20°/+100°	25
34	1.13	400	1600	-20°/+100°	25
100	2.09	320	1300	-20°/+100°	25
114	2.09	320	1300	-20°/+100°	25
112	3.14	320	1300	-20°/+100°	25
200	4.91	320	1300	-20°/+100°	25

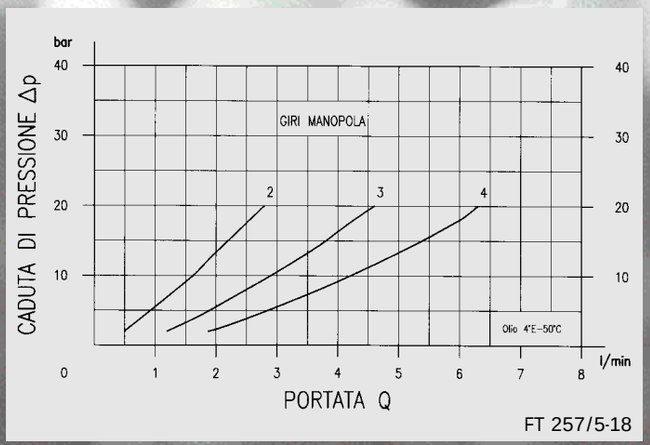
Versione 200



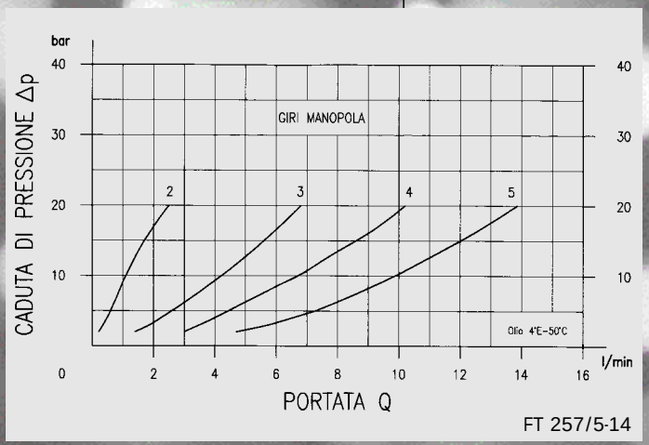
FLOWRATE CURVES



FT 257/5



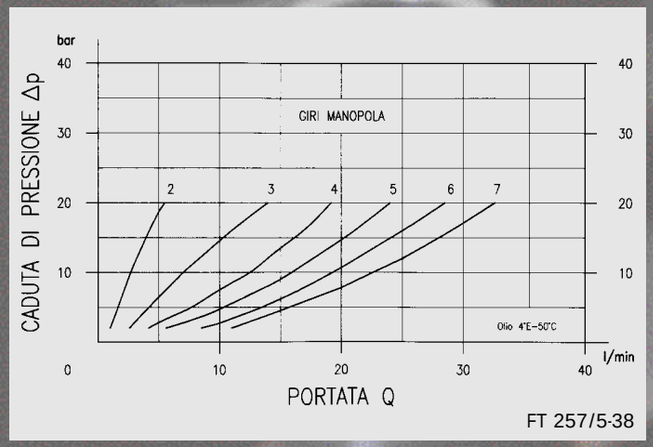
FT 257/5-18



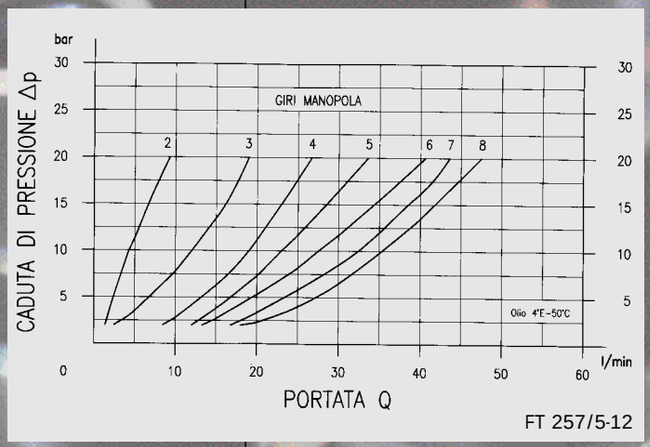
FT 257/5-14

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

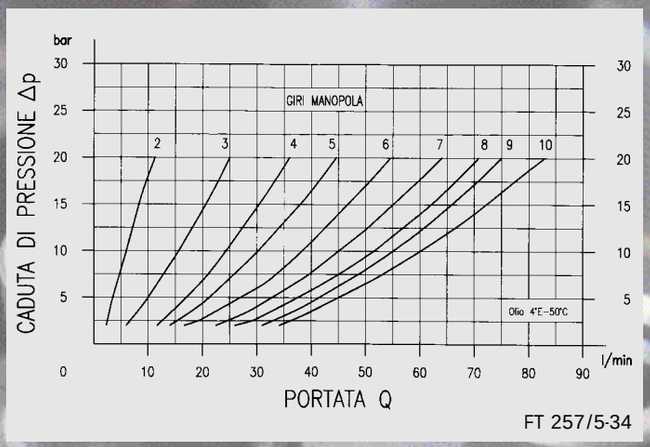
FT 257/5



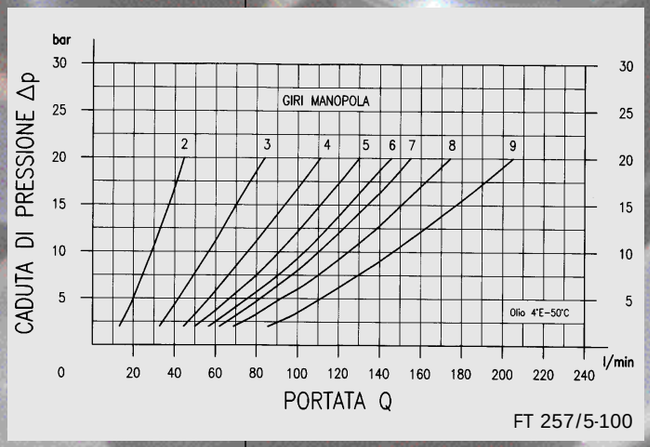
FT 257/5-38



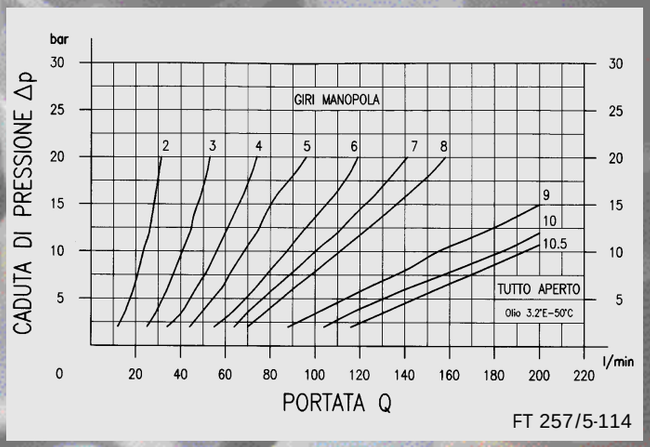
FT 257/5-12



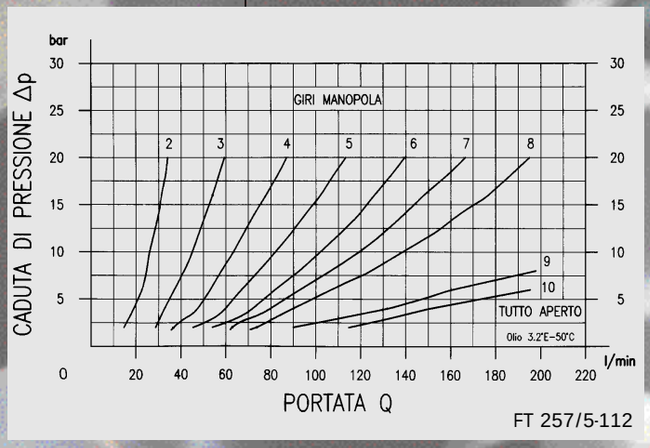
FT 257/5-34



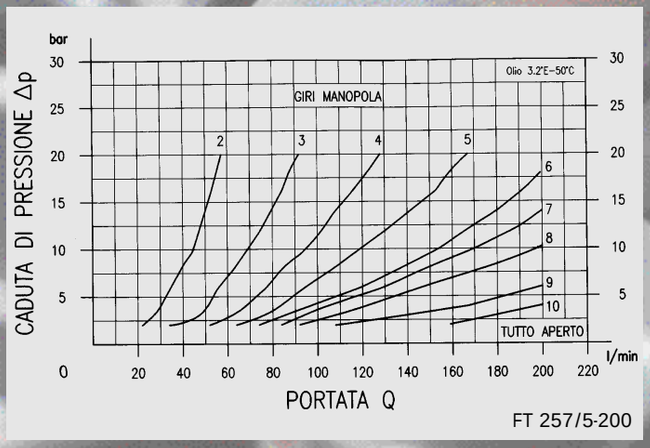
FT 257/5-100



FT 257/5-114



FT 257/5-112

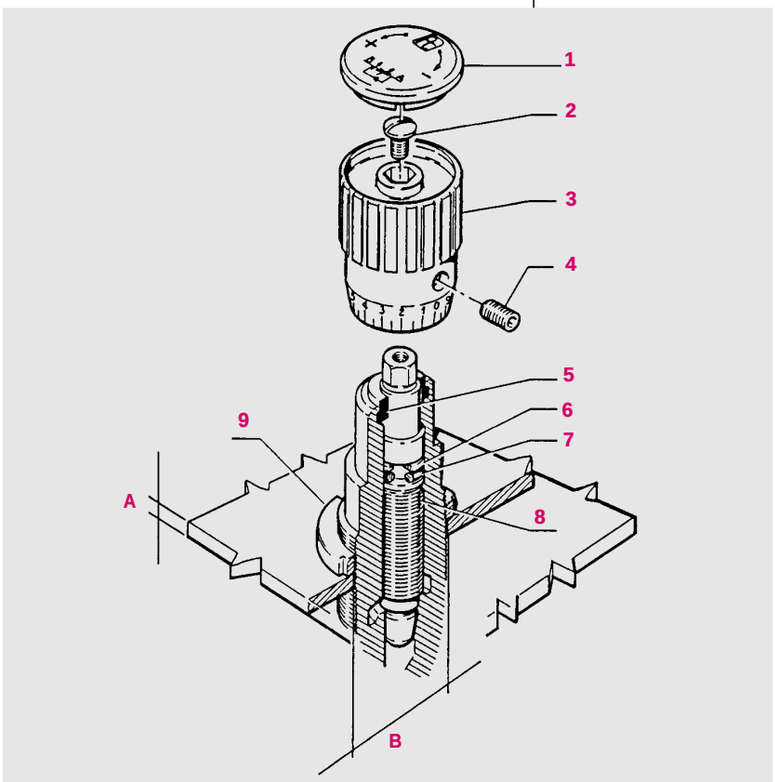


FT 257/5-200

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

DISASSEMBLY INSTRUCTIONS TO FIT PANEL MOUNT NUT

Montaggio a pannello	
1°	Allentare il grano di pressione (**4**)
2°	Togliere il tappo (**1**)
3°	Svitare la vite (**2**)
4°	Estrarre con forza la manopola (**3**)
5°	Introdurre la ghiera KM (**9**) indicata nella tabella (a richiesta viene fornita con la valvola)



Seal and lock nut spare parts

Type	18	14	38	12	34	100	114	112	200
(7) OR	2018	2021	108	2043	115	123	123	128	3106
(6) Antiextrusion ring	2018	2021	108	2043	115	123	123	128	3106
(9) Lock nut KM	KM 3 (FT 202/3)	KM 4 (FT 202/4)	KM 5 (FT 202/5)	KM 6 (FT 202/6)	KM 8 (FT 202/8)	KM 10 (FT 202/10)	KM 10 (FT 202/10)	KM 11	KM 13
A max thickness	6	8	10	10	10	10	10	12	12
B bore for panel mount.	18	21	26	31	41	51	51	56	66

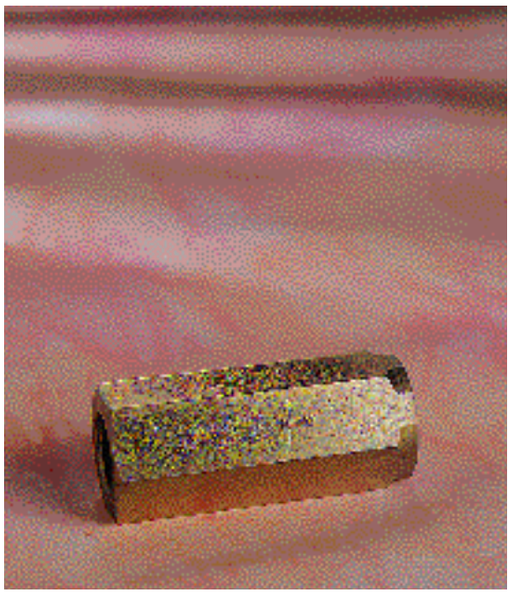
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

IN LINE NEEDLE VALVES CHECK VALVES IN CARBON STEEL

Check valve with machined cone poppet

The valve has a metal to metal seat incorporating a high quality machined cone/spool with hardened tip.
They may be supplied with various springs (0.35 standard, optional 2-4-6-8-10 bar).

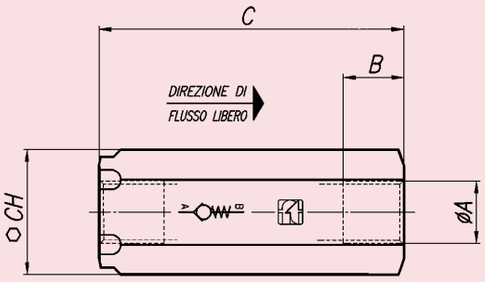
On request
- Version AISI 316 stainless steel code FT 2257/6
- NPT threads



MATERIALS

Body	9 S Mn Pb 23 - UNI 5105
Check valve	38 Ni Cr Mo 4 UNI - EN 10083
Spring	C 72 UNI 3545
Threaded end-plate	35 S Mn Pb 10 - UNI 5105

EXAMPLE FOR ORDERING



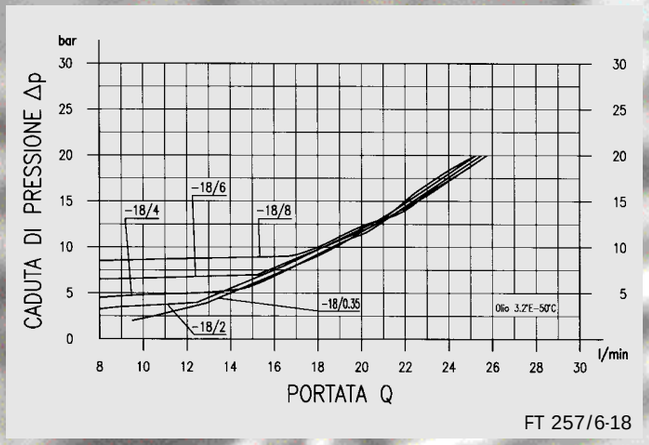
	Code	Type	Calibration
Steel	**FT 257/6**	**14**	**–**
Stainl. steel	**FT 2257/6**	**12**	**–**
Steel	**FT 257/6/8**	**34**	**8**

CODE FT 257/6

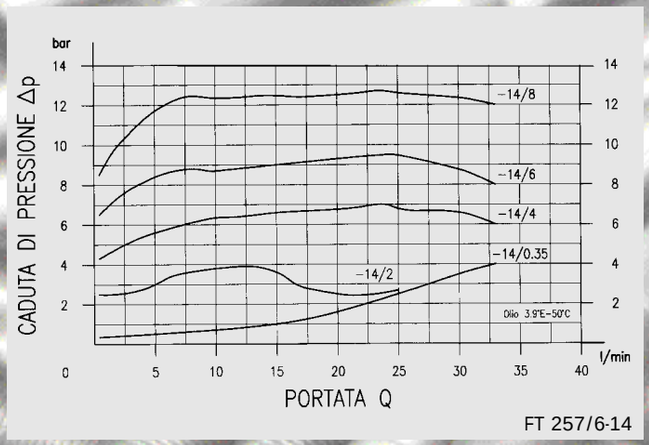
Type	A UNI 338	B	C	CH	Working pressure bar	Weight kg
18	1/8"G	8.5	46	17	400	0.075
14	1/4"G	12.5	63	22	400	0.165
38	3/8"G	12.5	69	27	400	0.260
12	1/2"G	15.5	80.5	32	400	0.415
34	3/4"G	17	99.5	36	400	0.605
100	1"G	20	117	46	320	1.170
114	1 1/4"G	22	134.5	55	320	1.850
112	1 1/2"G	24	159	65	320	3.130
200	2"G	27	198	75	320	4.900

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

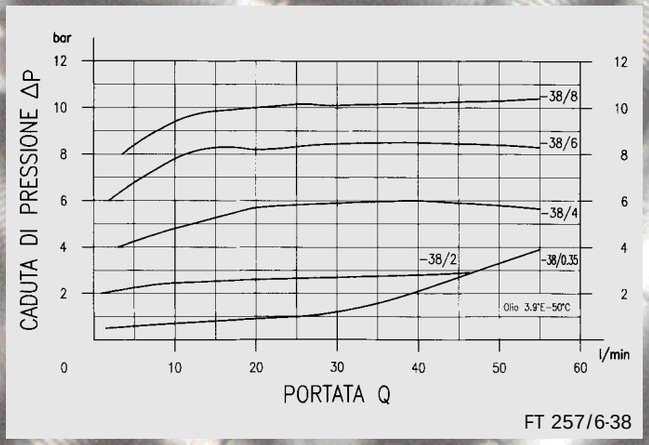
FLOWRATE CURVES



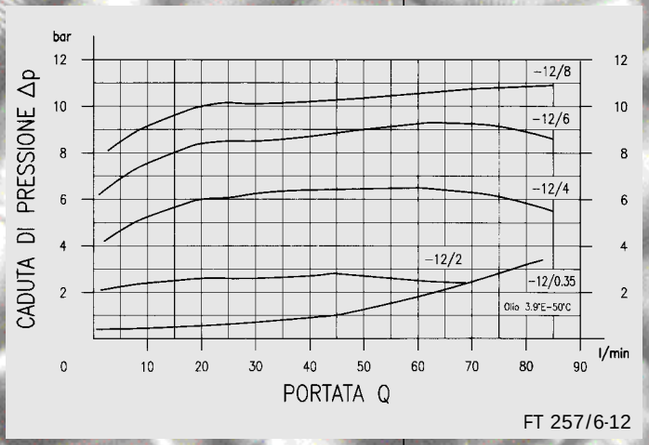
FT 257/6-18



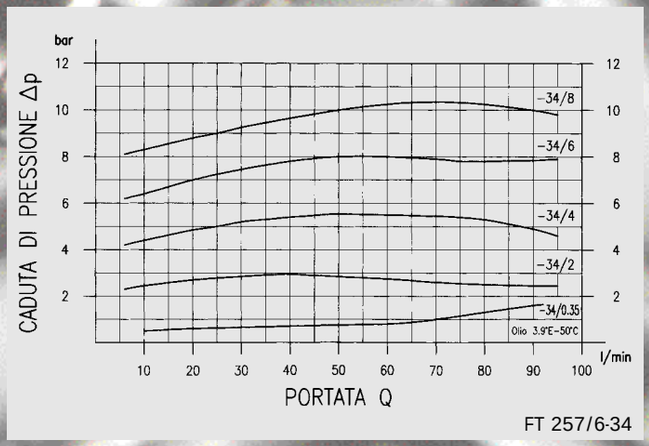
FT 257/6-14



FT 257/6-38



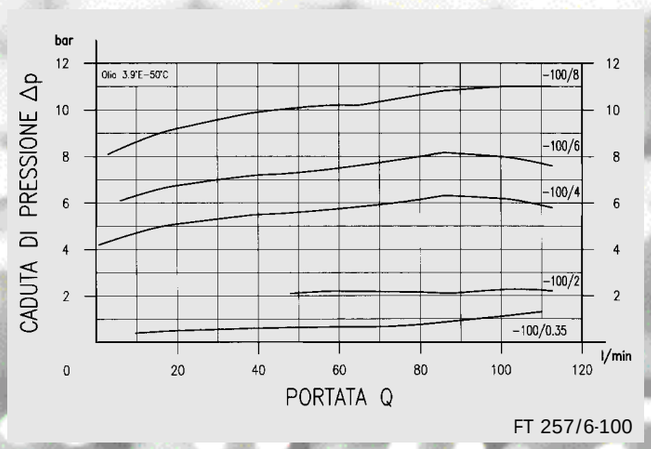
FT 257/6-12



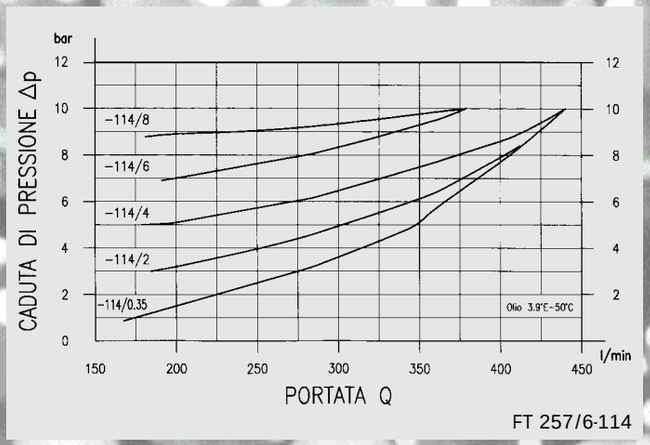
FT 257/6-34

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

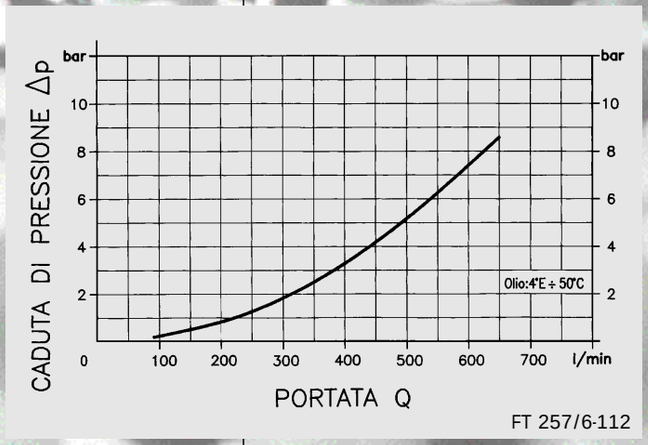
FLOWRATE CURVES



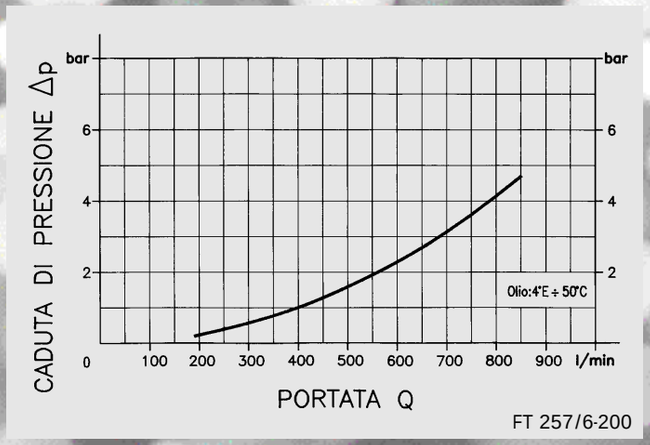
FT 257/6-100



FT 257/6-114



FT 257/6-112



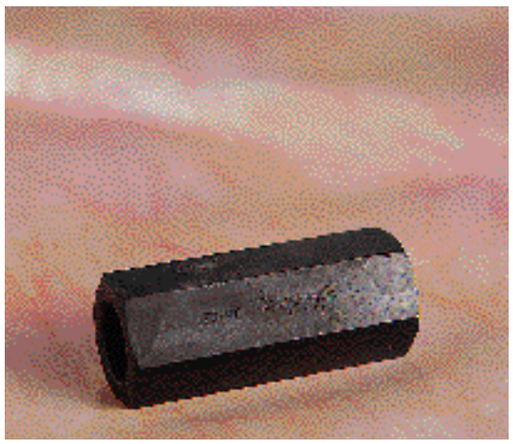
FT 257/6-200

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

Ball type check valves

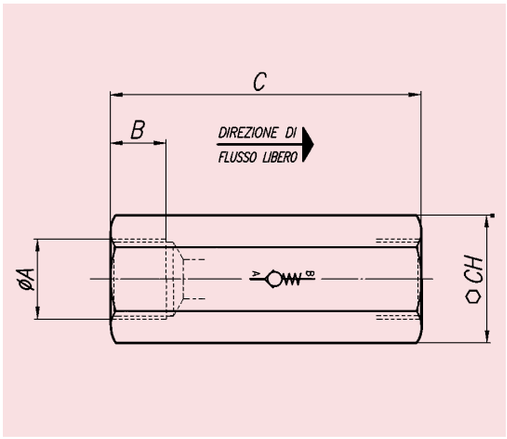
These check valves have a guided ball giving a metal to metal seat.
They may be supplied with two springs (0.35 standard and 4.5 bar).
They are used for working pressures up to 350 bar.

On request
- Version AISI 316 stainless steel code FT 2260/6



MATERIALS

Body	9 S Mn Pb 23 - UNI 5105
Spring	AISI 302
Ball	UNI 100 C 6
Ball guide	Nylon 66 + carbon fibre



EXAMPLE FOR ORDERING

	Code	Type
Steel	**FT 260/6**	**14**
Stainl. steel	**FT 2260/6**	**12**

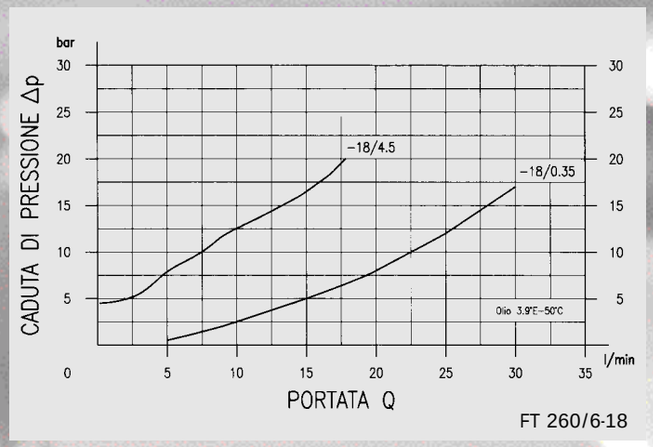
CODE FT 260/6

Type	A UNI 338	B	C	CH	Working pressure bar	Weight kg
18	1/8"G	8.5	41	16	350	0.054
14	1/4"G	12.5	54	19	350	0.089
38	3/8"G	13	65	24	350	0.175
12	1/2"G	16	77	30	350	0.310
34	3/4"G	20	88	36	350	0.450
100	1"G	23	108.5	46	320	0.965

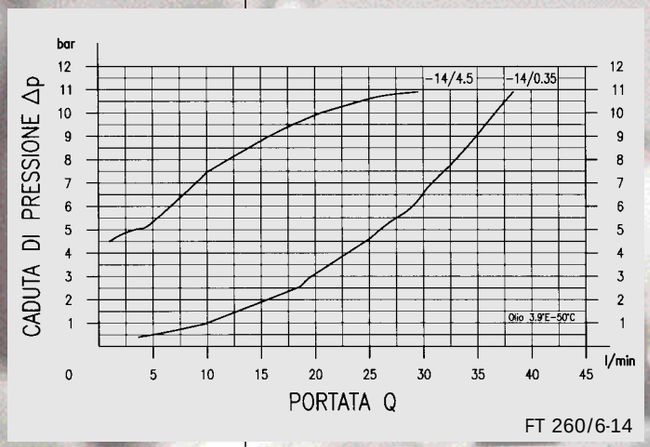
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 260/6

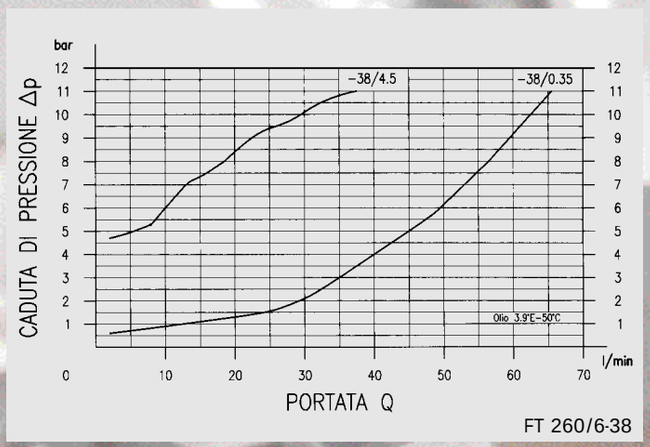
FLOWRATE CURVES



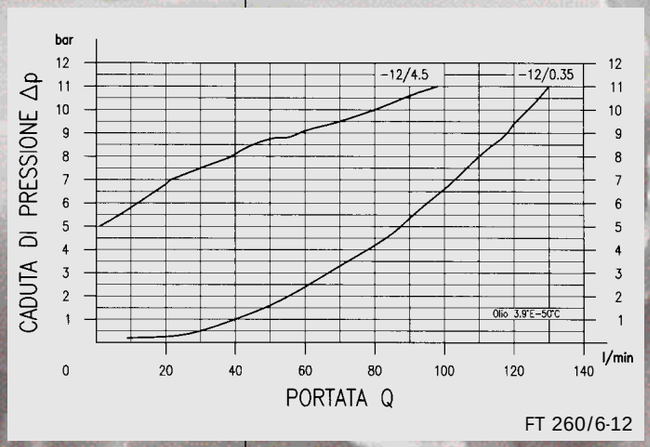
FT 260/6-18



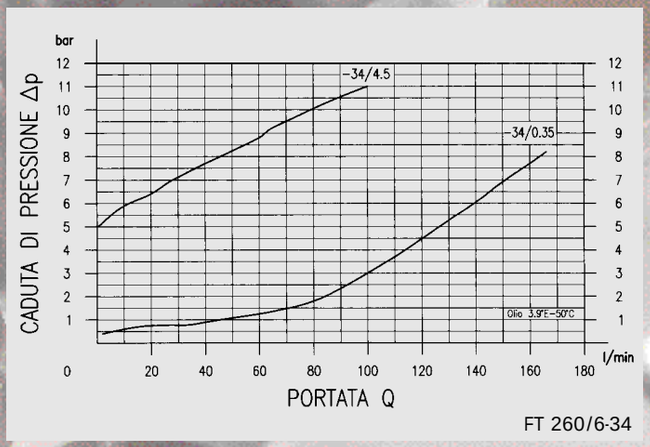
FT 260/6-14



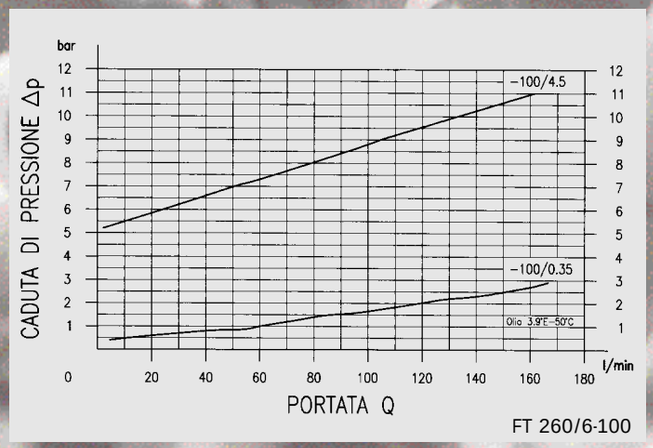
FT 260/6-38



FT 260/6-12



FT 260/6-34



FT 260/6-100

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

CARTRIDGE MOUNTED SHUT-OFF AND CONTROL NEEDLE VALVES

FT 247/2
FT 267/2
FT 267/5
FT 267/6

FT 247/2
FT 267/2
FT 267/5
FT 267/6

They are manufactured in the four versions:

FT 247/2 for fine control
FT 267/2 double-acting control valves
FT 267/5 single-acting control valves
FT 267/6 check valves

Sealing between valves and connections surface is obtained either with the normal toroidal 'O' ring or with a Bonded Dowty seal.
On pages 32, 33, 34, 35 are indicated the machining schemes for the realtive embedding seat.
The exclusive system designed for the realization of type FT 267/5, which includes the non-return device in the cartridge itself, avoids to the user costly machinings for the realization of specific seats suitable to receive separately the cut-off valve.
The accurate surface finishe of the moving and sealing organs, the high quality standard and the efficient protective treatments bring about an almost unlimited service-life, even in the most severe working conditions.

Moreover they kept the essential prerogatives of series FT 257 i.e.:
- **semplicity to set-up and reset the flow values;**
- **efficient metallic sealing;**
- **absolute safety against needle withdrawal;**
- **stability of positioning.**

Fine control double-acting valves for cartridge mounting

This version is similar to the series FT 257, the following characteristics are maintained:

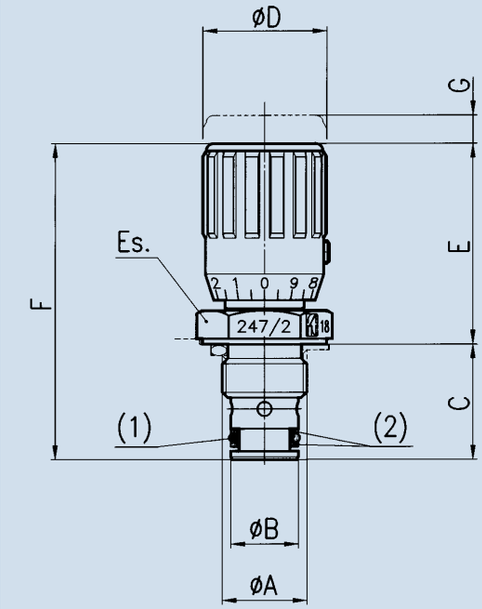
- metallic sealing;
- safety against needle withdrawal.

On request

- They are provided with seals in viton (V)

Kit of seals on the seat		
Type	**(1) OR**	**(2) BK**
18	108	BK 18 (FT)

Kit of seals on the needle		
Type	**OR**	**BK**
18	2018	2018



MATERIALS

Body	95 Mn Pb 28 - UNI 5105
Needle	AISI 303
Or	Nitrile
Antiextrusion ring	PTFE
Handwheel	GD - Al Si 12 - UNI 5706 aluminium

EXAMPLE FOR ORDERING

		Accessories on request
Code	**Type**	**Viton seal**
FT 247/2	**18**	**V**

CODE FT 247/2

Type	A UNI 4534	n B	C	n D	E	F	G	Es.	Weight kg
18	M15x1	12	20.5	22	34.5	55	8	22	0.069

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

CARTRIDGE MOUNTED SHUT-OFF AND CONTROL NEEDLE VALVES

Double-acting needle control valves for cartridge mounting

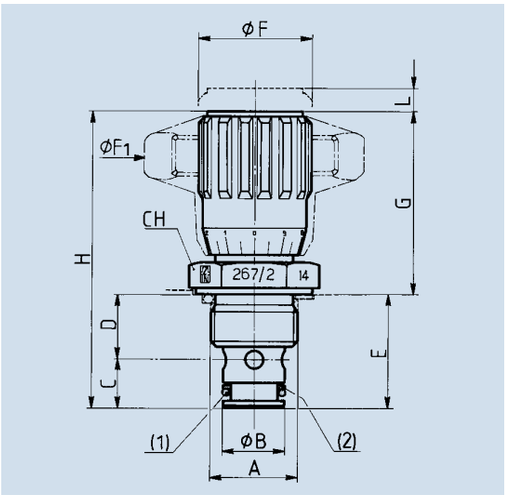
Flow control in both directions.

On request

- AISI version 316 stainless steel code FT 2267/2
- They are provided with seals in Viton (V)
- Handwheel in ABS-plastic

MATERIALS

Body	9 S Mn Pb 23 - UNI 5105
Needle	1 C 40 - UNI 8373
Or	Nitrile
Antiextrusion ring	PTFE
Handwheel	GD - Al Si 12 - UNI 5706 aluminium
Handwheel (mp)	ABS - plastic



Kit of seals for seat		
Type	**(1) OR**	**(2) BK**
18	108	108
14	2043	2043
38	2050	2050
12	2062	2062
34	130	130
100	3118	3118

Kit of seals for needle		
Type	**OR**	**BK**
18	2018	2018
14	2021	2021
38	108	108
12	2043	2043
34	115	115
100	123	123

EXAMPLE FOR ORDERING

			Accessories on request	
	Code	**Type**	**Viton seal**	**Plastic handwheel**
Steel	**FT 267/2**	**38**	**V**	**mp**
Stainl. Steel	**FT 2267/2**	**12**	**–**	**mp**

CODE FT 267/2

Type	A UNI 4534	B	C	D	E	F	F1	G	H	L	CH	Weight kg
18	M15x1	12	9.3	11.2	20.5	22	40	35	55.5	5	22	0.064
14	M20x1.5	14	11	15.5	26.5	27	50	42.5	68.5	7	27	0.125
38	M20x1.5	16	13	17.5	30.5	33	70	48.5	78.5	9	27	0.180
12	M27x2	19	15.5	24.5	40	38	80	56	96	10.5	32	0.305
34	M33x2	27	18	26	44	47	100	63.5	109	13	41	0.580
100	M42x2	35	21	31.5	52.5	58	120	82	134.5	20	50	1.185

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

Single-acting needle control valves for cartridge mounting

They control and eventually shut-off the flow in one direction, allowing a free return in the opposed direction. Non-return valve set at 0.35 bar.

On request

- AISI version 316 stainless steel code FT 2267/5
- They are provided with Viton seals (V)
- Handwheel in ABS plastic

Kit of seals for seat

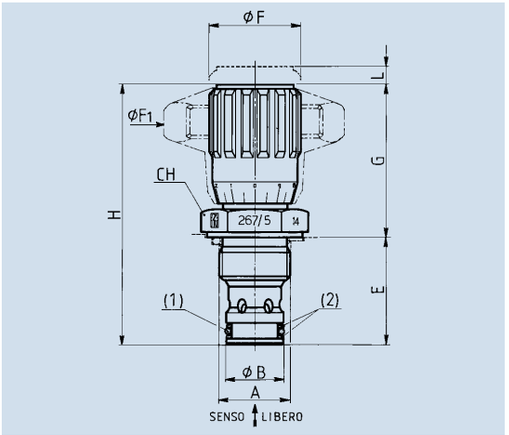
Type	(1) OR	(2) BK speciale
14	2050	BK 14 (FT)
38	2062	BK 38 (FT)
12	130	BK 12 (FT)
34	3118	BK 34 (FT)
100	3156	3156

Kit of seals for needle

Type	OR	Anello antiestrusione
14	2012	200-801
38	2018	2018
12	106	106
34	108	108
100	112	112

MATERIALS

Body	9 S Mn Pb 23 - UNI 5105
Needle	38 Ni Cr Mo 4 - UNI - EN 10083
Or	Nitrile
Antiextrusion ring	PTFE
Check valve	38 Ni Cr Mo 4 - UNI - EN 10083
Spring	C 72 - UNI 3545
Handwheel	GD - Al Si 12 - UNI 5706 aluminium
Handwheel (mp)	ABS - plastic



EXAMPLE FOR ORDERING

Accessories on request

	Code	Type	Viton seal	Handwheel in plastic
Steel	**FT 267/5**	**34**	**V**	**mp**
Stainl. Steel	**FT 2267/5**	**12**	**–**	**mp**

CODE FT 267/5

Type	A UNI 4534	B	E	F	F1	G	H	L	CH	Weight kg
14	M20x1.5	16	30.5	27	50	43	73.5	4	27	0.130
38	M27x2	19	40	33	49	70	89	6	32	0.250
12	M33x2	27	44.5	38	60	80	104.5	7	41	0.340
34	M42x2	35	52.5	47	70	100	112.5	8	50	0.620
100	M52x2	45	64.5	58	120	85	149.5	12	60	1.632

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

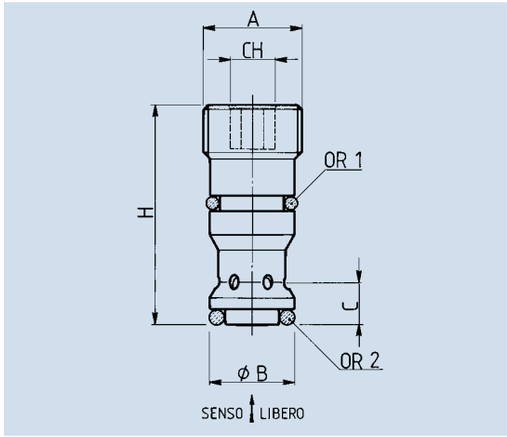
B A

CARTRIDGE MOUNTED SHUT-OFF AND CONTROL NEEDLE VALVES

Cartridge mounted check valves

Allow a free flow in one direction and block passage in the opposed direction.
Opening pressure is 0.35 bar,
on request 2, 4, 6, 8, 10 bar.

On request
- AISI version 316 stainless steel code FT 2267/6
- They are provided with Viton seals (V)



MATERIALS

Body	9 S Mn Pb 23 - UNI 5105
Check valve	38 Ni Cr Mo 4 UNI - EN 10083
Spring	C 72 - UNI 3545
Screw plug	9 S Mn Pb 23 - UNI 5105

EXAMPLE FOR ORDERING

			Accessorie on request
	Code	**Type**	**Viton seal**
Steel	**FT 267/6**	**14**	**V**
Stainl. steel	**FT 2267/6**	**12**	**–**

CODE FT 267/6

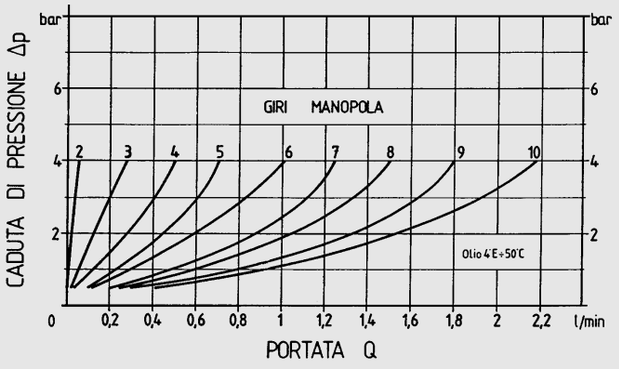
Type	A UNI 4534	B	C	H	CH	OR 1	OR 2	Weight kg
14	M22x1.5	19	9.5	49	8	3056	115	0.80
38	M27x2	24	10.5	56	10	3075	3068	0.140
12	M33x2	29	13	67	10	3093	3087	0.265
34	M42x2	38	17	80.5	12	4125	4112	0.545

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

TECHNICAL DATA

Type	Max. working pressure bar	Min. burst. pressure bar	Port section sq. cm	Working temp. °C	Filtration grade µm
18	320	1300	0.0314	-20°/+100°	25

FLOWRATE CURVES



FT 247/2-18

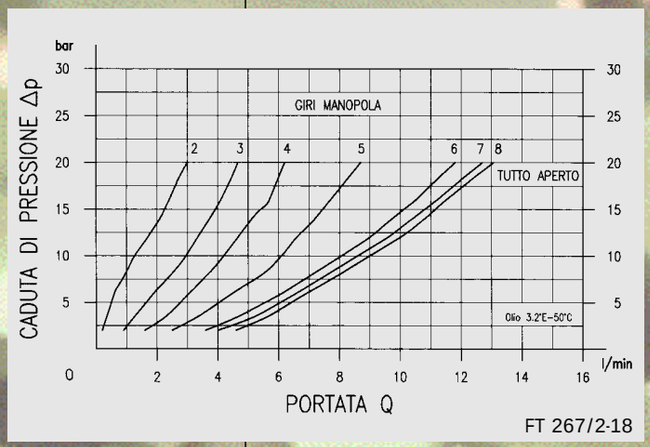
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 267/2

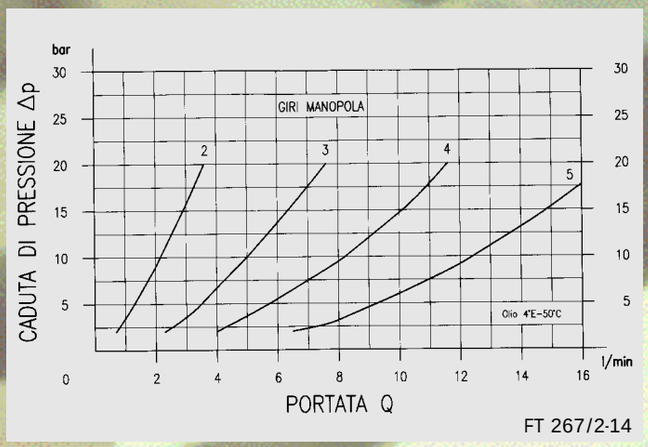
TECHNICAL DATA

Type	Port section sq. cm	Working pressure bar	Min. burst. pressure bar	Working temperature °C	Filtration grade µm
18	0.12	320	1300	-20°/+100°	25
14	0.19	320	1300	-20°/+100°	25
38	0.39	320	1300	-20°/+100°	25
12	0.68	320	1300	-20°/+100°	25
34	1.13	320	1300	-20°/+100°	25
100	2.09	320	1300	-20°/+100°	25

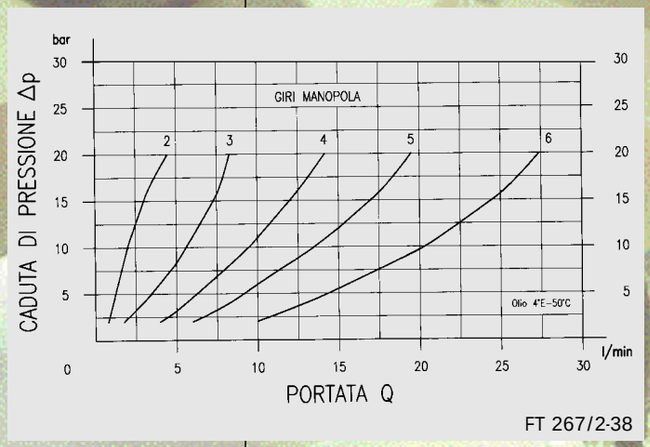
FLOWRATE CURVES



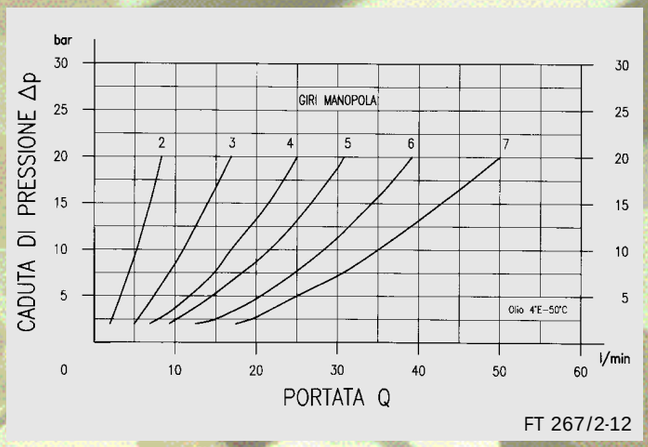
FT 267/2-18



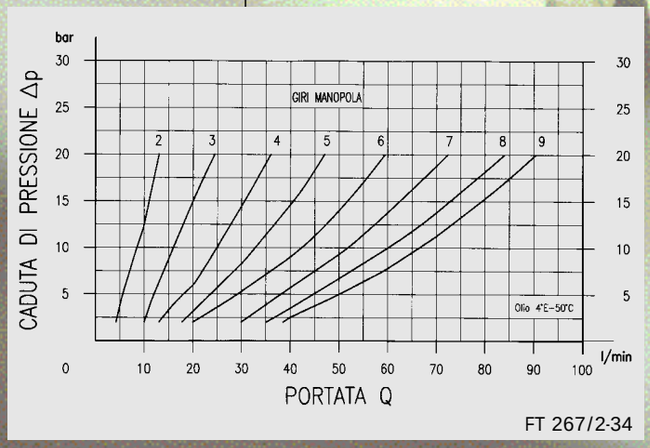
FT 267/2-14



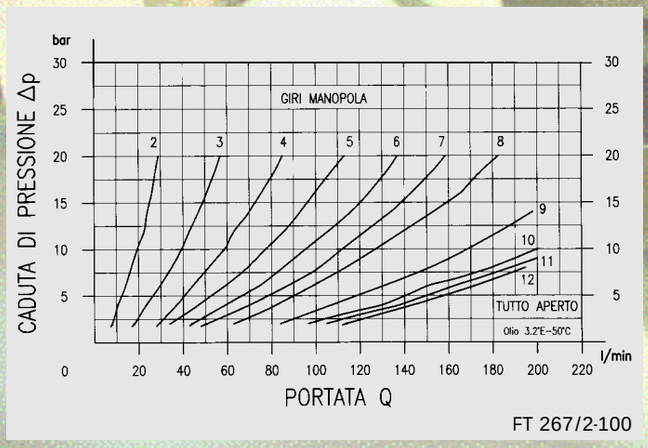
FT 267/2-38



FT 267/2-12



FT 267/2-34



FT 267/2-100

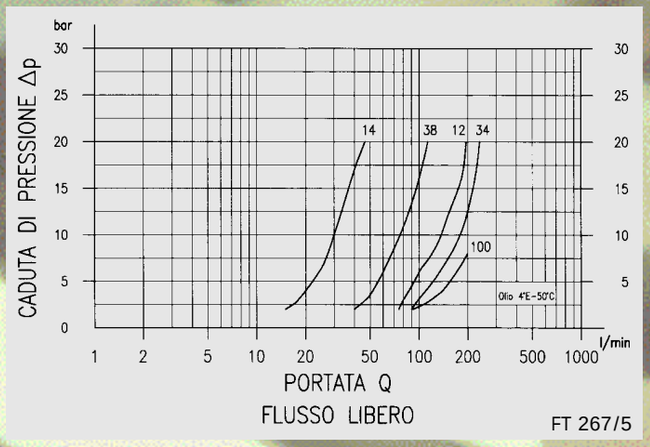
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 267/5

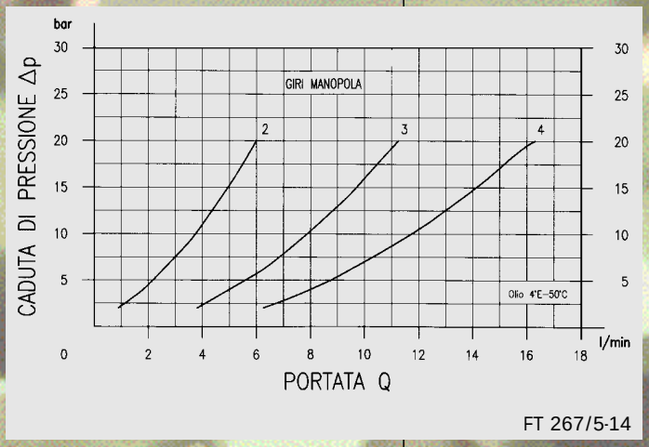
TECHNICAL DATA

Type	Port section sq. cm	Working pressure bar	Min. burst. pressure bar	Working temperature °C	Filtration grade µm
14	0.07	320	1300	-20°/+100°	25
38	0.15	320	1300	-20°/+100°	25
12	0.37	320	1300	-20°/+100°	25
34	1.56	320	1300	-20°/+100°	25
100	3.80	320	1300	-20°/+100°	25

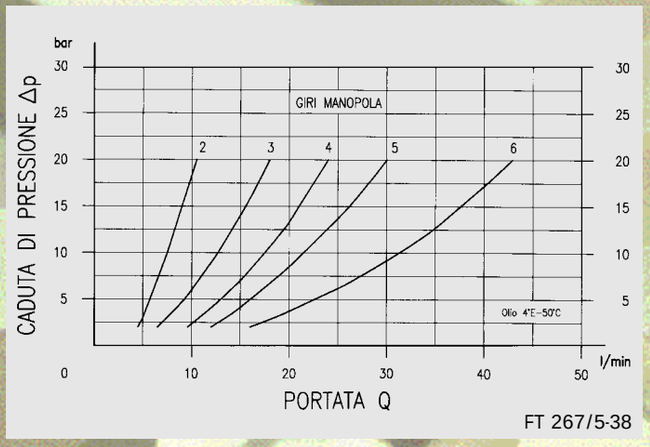
FLOWRATE CURVES



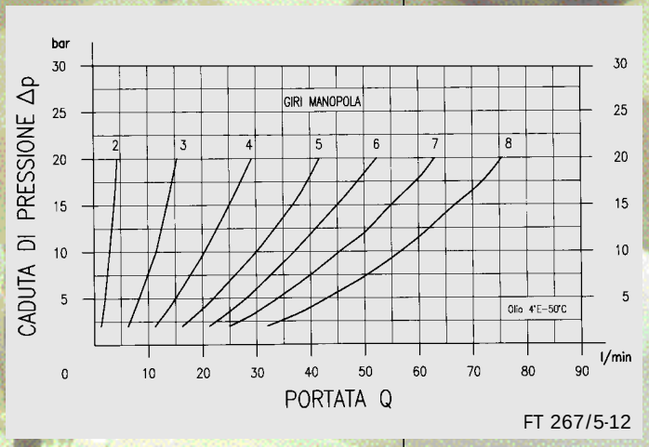
FT 267/5



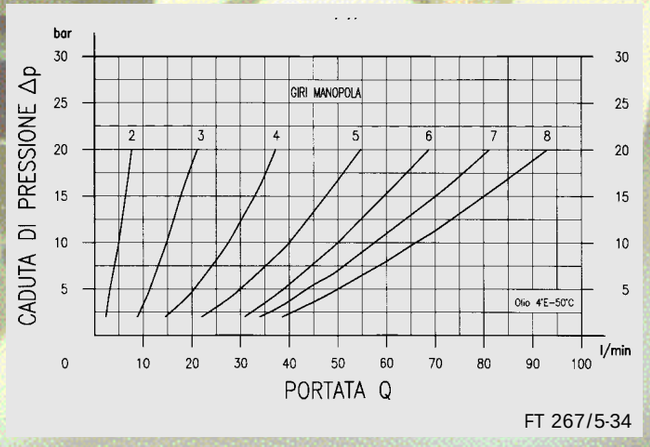
FT 267/5-14



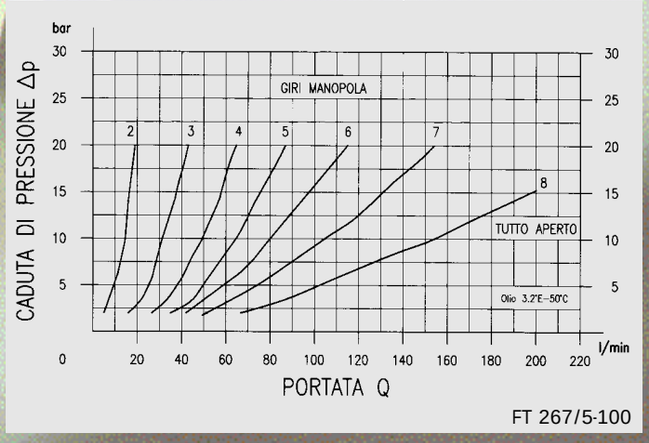
FT 267/5-38



FT 267/5-12



FT 267/5-34



FT 267/5-100

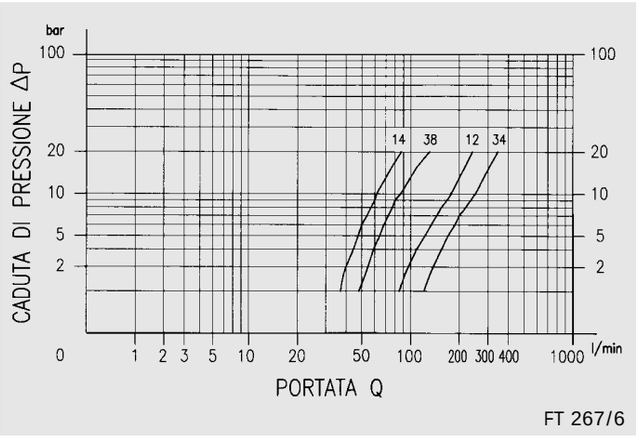
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 267/6

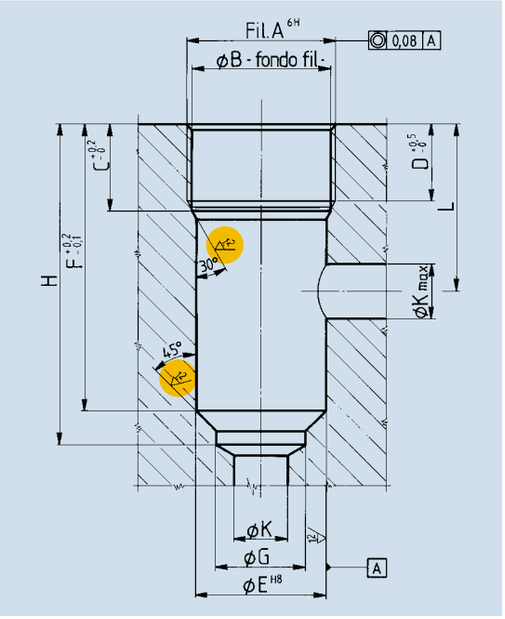
TECHNICAL DATA

Type	Working pressure bar	Min. burst. pressure bar	Working temperature °C	Filtration grade µm
14	320	1300	-20°/+100°	25
38	320	1300	-20°/+100°	25
12	320	1300	-20°/+100°	25
34	320	1300	-20°/+100°	25

FLOWRATE CURVES

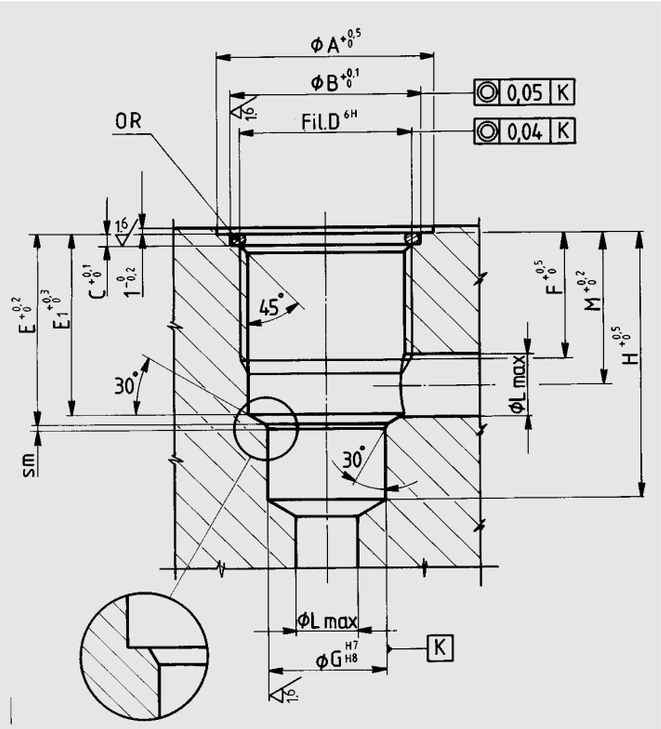


SCHEMES FOR CAVITY MACHINING FOR VALVE



DIMENSIONS TABLE FOR CAVITY

Type	A UNI 4534	B	C	D	E	F	G	H	K	L min.	L max.
14	M22x1.5	20.5	16.5	13.5	19	45.5	10	52	8	33.5	36
38	M27x2	25	18	16	24	52.5	15	59	10	36.5	40
12	M33x2	31	21	17	29	63.5	20	71	12	45	49
34	M42x2	40	25	20	38	76	26	85.5	15	52	59



Detail of machining which may be executed in alternative to the conical one, eliminating dimension E1

Sealing achieved by Or seals on flat seat

Flat seat for O-Ring seal FT 247/2 - 267/2

Type	A UNI 4534	n B	C	D	E	E1	F	n G	H	n L	M	Sm	OR
18	23	19	2	M15x1	14	13	11	12	21.5	4	11.5	0.5	3056
14	28	24	2	M20x1.5	17.5	16.5	13.5	14	28.5	5	14.5	1	3075
38	28	24	2	M20x1.5	21	20.5	13.5	16	33.5	8	16.2	1.2	3075
12	34	30	2	M27x2	30	28.5	20	19	43	10	24	1.2	3100
34	43	36	2	M33x2	32.5	32	20	27	47.5	13	25	1.2	3125
100	60	45	2	M42x2	38.5	37	23.5	35	57	16	30.5	1.5	3162

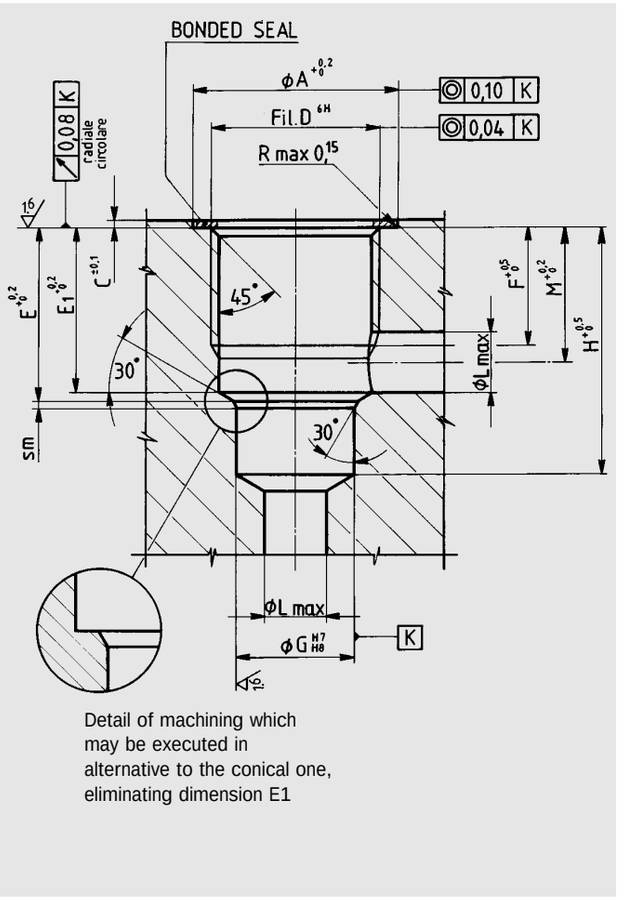
Flat seat for O-Ring seal FT 267/5

Type	A UNI 4534	n B	C	D	E	E1	F	n G	H	n L	M	Sm	OR
14	28	24	2	M20x1.5	21	20.5	13.5	16	33.5	8	16.2	1	3075
38	34	30	2	M27x2	30	28.5	20	19	43	10	24	1.2	3100
12	43	36	2	M33x2	32.5	32	20	27	47.5	12	25.5	1.2	3125
34	60	45	2	M42x2	38.5	37	23.5	35	57	16	30.5	1.5	3162
100	61	55	2.2	M52x2	46	45	27	45	67.5	20	34.5	1.5	3200

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

SCHEMES FOR CAVITY MACHINING FOR CARTRIDGE MOUNTED VALVES

Sealing achieved by Bonded seal



Detail of machining which may be executed in alternative to the conical one, eliminating dimension E1

Cavity Bonded seal – FT 247/2 - 267/2

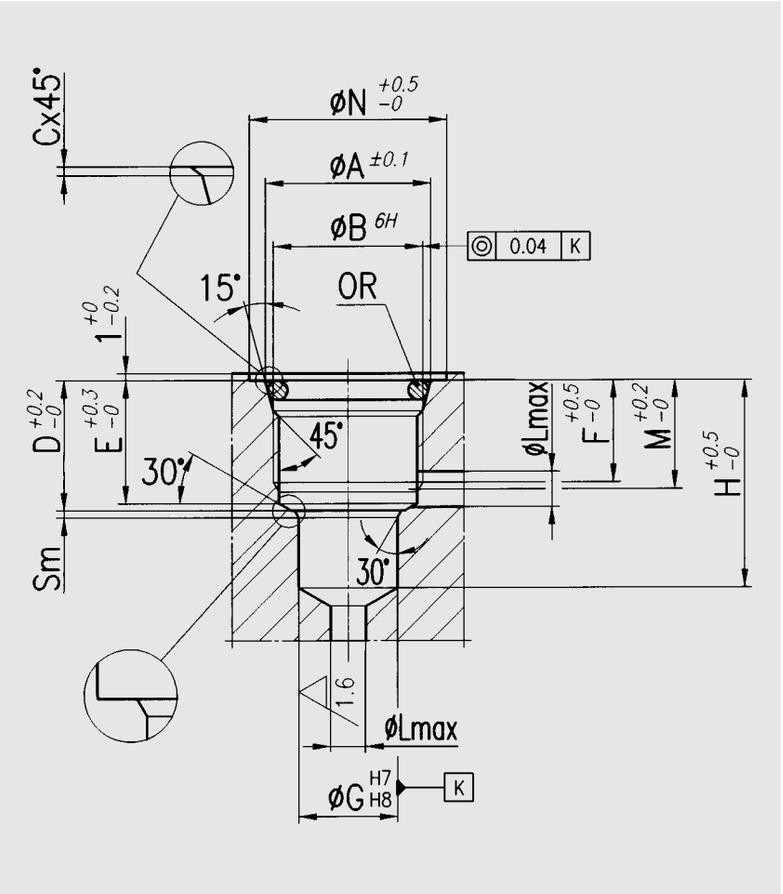
Type	A UNI 4534	C	D	E	E1	F	n G	H	n L	M	Sm	Bonded seal
18	23	1	M15x1	13	12	9	12	20	4	10.3	0.5	400-512
14	27	1	M20x1.5	16.5	15.5	12	14	27	5	13.3	1	400-513
38	27	1	M20x1.5	20	19.5	12	16	32	8	15.2	1.2	400-513
12	33	1.3	M27x2	28	26.5	18	19	41	10	22	1.2	400-520
34	40	1.3	M33x2	30.5	30	18	27	45.5	13	23	1.2	400-515
100	50	1.3	M42x2	36.5	35	21.5	35	55	16	28.5	1.5	400-516

Cavity Bonded seal – FT 267/5

Type	A UNI 4534	C	D	E	E1	F	n G	H	n L	M	Sm	Bonded seal
14	27	1	M20x1.5	20	19.5	12	16	32	8	15.2	1	400-513
38	33	1.3	M27x2	28	26.5	18	19	41	10	22	1.2	400-520
12	40	1.3	M33x2	30.5	30	18	27	45.5	12	23	1.2	400-515
34	50	1.3	M42x2	36.5	35	21.5	35	55	16	28.5	1.5	400-516

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 247/2-FT 267/2-FT 267/5



Sealing achieved by Or seals on conical cavity

Conical cavity for O-ring – FT 247/2 - FT 267/2

Type	A UNI 4534	n B	C	D	E	F	n G	H	ØL	M	n N	Sm	OR
18	16.5	M15x1	0.25	14	13	11	12	21.5	4	11.5	23	0.5	2050
14	22.3	M20x1.5	0.25	17.5	16.5	13.5	14	28.5	5	28	14.5	1	3068
38	22.3	M20x1.5	0.25	21	20.5	13.5	16	33.5	8	28	16.2	1.2	3068
12	29.1	M27x2	0.3	30	28.5	20	19	43	10	24	34	1.2	132
34	36	M33x2	0.3	32.5	32	20	27	47.5	13	25	43	1.2	4112
100	45	M42x2	0.3	38.5	37	23.5	35	57	16	30.5	60	1.5	4150

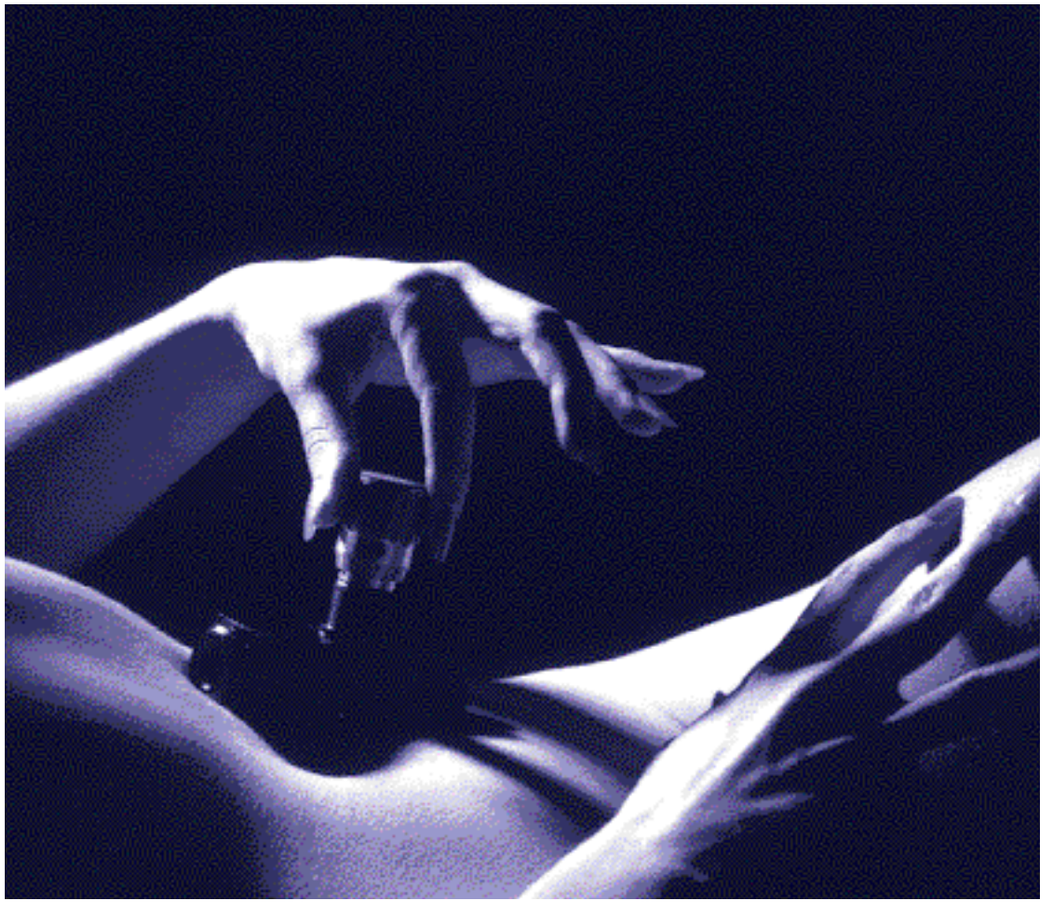
Conical cavity for O-ring – FT 267/5

Type	A UNI 4534	n B	C	D	E	F	n G	H	n L	M	n N	Sm	OR
14	22.3	M20x1.5	0.25	21	20.5	13.5	16	33.5	8	28	16.2	1.2	3068
38	29.1	M27x2	0.3	30	28.5	20	19	43	10	24	34	1.2	132
12	36	M33x2	0.3	32.5	32	20	27	47.5	13	25	43	1.2	4112
34	45	M42x2	0.3	38.5	37	23.5	35	57	16	30.5	60	1.5	4150
100	55	M52x2	0.3	46	45	27	45	67.5	20	34.5	61	1.5	4187

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

PRESSURE COMPENSATED FLOW CONTROL VALVES



FT 277/2
FT 277/5
FT 287/2
FT 297/2
FT 270/2
FT 270/5

PRESSURE COMPENSATED FLOW CONTROL VALVES

Two inlet flow control valves, pressure compensated and including high capacity single acting valve to allow the free flow in one direction.

They include two necks in series:
- the first one with port section definable by an external control;
- the second one with automatically variable section in relation with counterpressure variations on use.

The choice of the adjustable neck situated upstream is that which best ensures the precision of the valve towards variations of the fluid temperature.
Regarding the structure of the valve, the following points must be underlined
- the rigorous symmetry of the internal components such as to impede umforeseen perturbations of the static and dynamic balances;
- the optimization of the arrangement of internal spring controlling the intervention of the automatic throttling, with variable preload with throttling fixed setting, useful to improve the behaviour at medium-high flowrates;
- the geometry of the passage accross which the flow is automatically throttled, designed to minimize the effect of the flow hydromechanic forces on the total balance of the moving element;
- the accuracy of the machinings which enabled to cancel any hysteresis effect of mechanical origin;
- the original aesthetic feature, underlined by the particular form of control handwheel;
- the easiness to reset the flow value thanks to reference pointers.

Moreover we believe important to underline the choice of constructive solution fitting to the concept of “double valence”, according to which the central body, configurated as a threaded cartridge and insertable in the two different bodies at the base or directly in standard modular units, brings about the three marketed versions:
- FT 277/2 two-way
- FT 277/5 two-way with single-acting valve;
- FT 287/2 two-way with threaded cartridge.

The solution enables the user to request the single modular components to be assembled according to the application.

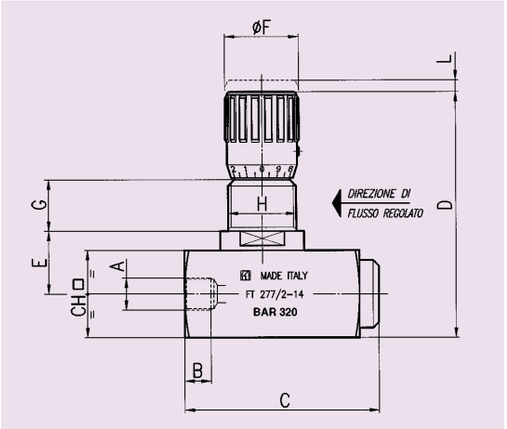
On request
- Complete with rings (G)
- Seals in Viton (V)

MATERIALS

Base	9 S Mn Pb 23 - UNI 5105
Cartridge body	35 S Mn Pb 10 - UNI 5105
Compensation unit	38 Ni Cr Mo 4 - UNI - EN 10083
Or	Nitrile
Antiextrusion ring	PTFE
Handweel	GD - Al Si 12 UNI 5706 aluminium

EXAMPLE FOR ORDERING

		Accessories on request	
Code	**Type**	**Panel ring**	**Viton seal**
FT 277/2	**34**	**G**	**V**



CODE FT 277/2

Type	A UNI 338	B	C	D	E	F	G	H	L	CH	Weight kg
14	1/4”G	12.5	81	104.5	28	33	17	M30x1.5	4.5	40	1.000
38	3/8”G	12.5	100	127	32	38	27	M35x1.5	6	45	1.600
12	1/2”G	15.5	119	147.5	38	47	28.5	M40x1.5	6.5	55	2.800
34	3/4”G	17	142	180	45	58	35	M50x1.5	7.5	65	4.750

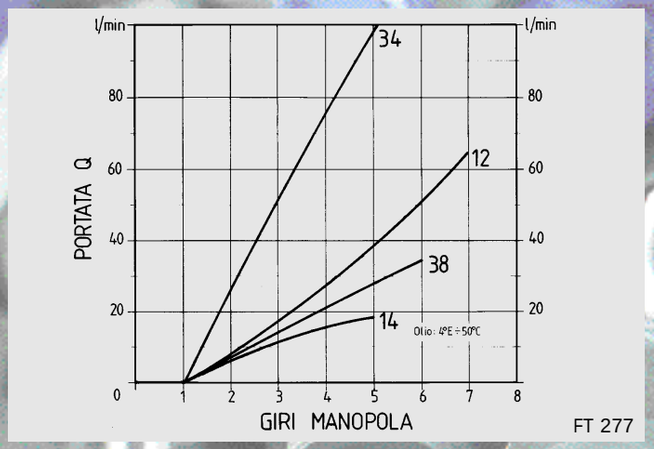
Note: Instructions for panel mounting on page 46

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

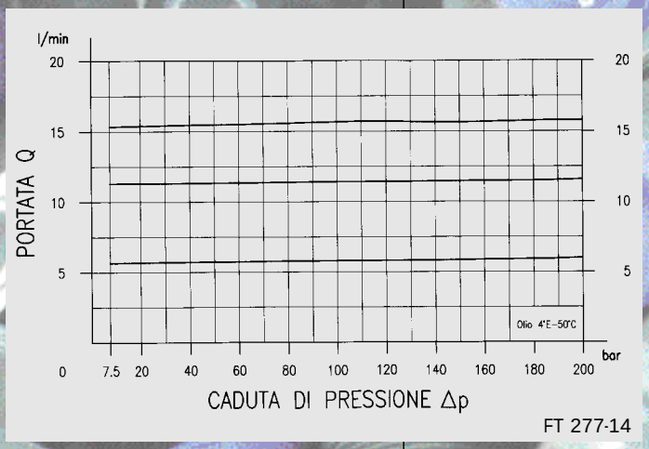
TECHNICAL DATA

Type	Max. working pressure bar	Min. working Δp bar	Working temperature °C	Filtration grade µm absolute
14	320	7.5	-20°/+70°	25
38	320	10	-20°/+70°	25
12	320	12	-20°/+70°	25
34	320	15	-20°/+70°	25

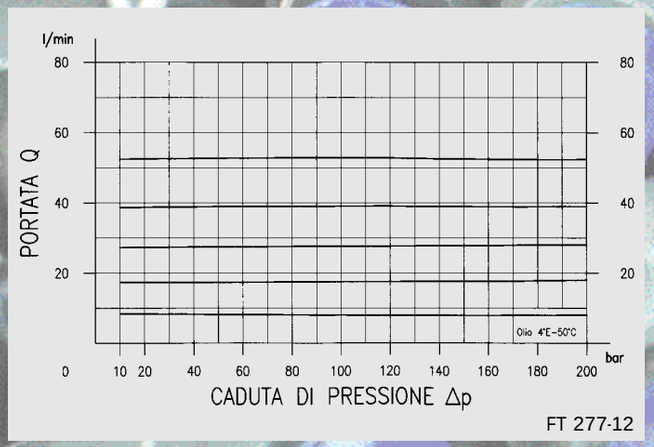
FLOWRATE CURVES



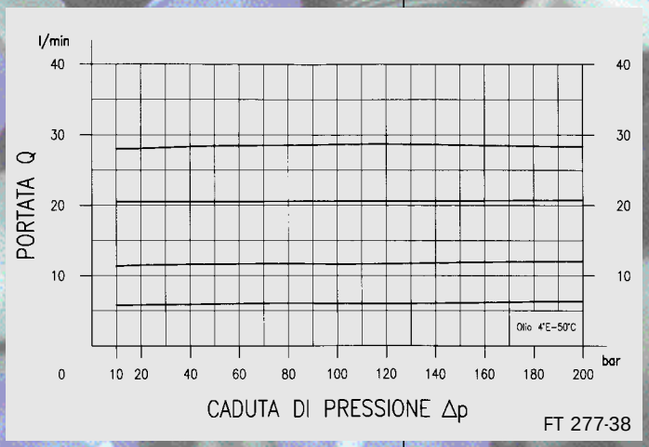
FT 277



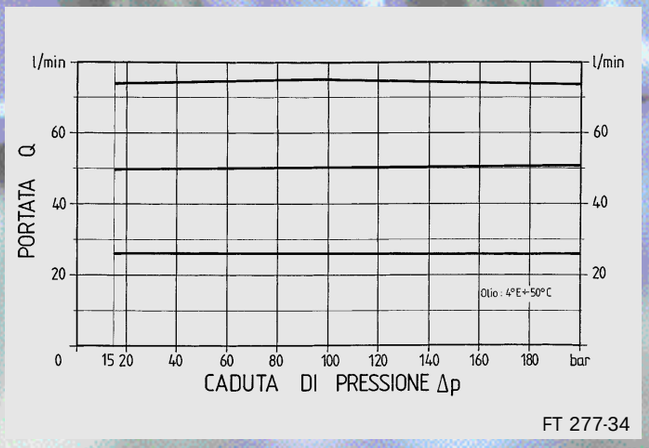
FT 277-14



FT 277-12

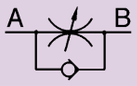


FT 277-38



FT 277-34

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT



PRESSURE COMPENSATED FLOW CONTROL VALVES

Single-acting pressure compensated flow control needle valves

Two inlet flow control valves, pressure compensated and including high capacity single acting valve to allow the free flow in one direction.
They include two necks in series:

- the first one with port section definable by an external control;
- the second one with automatically variable section in relation with counterpressure variations on use.

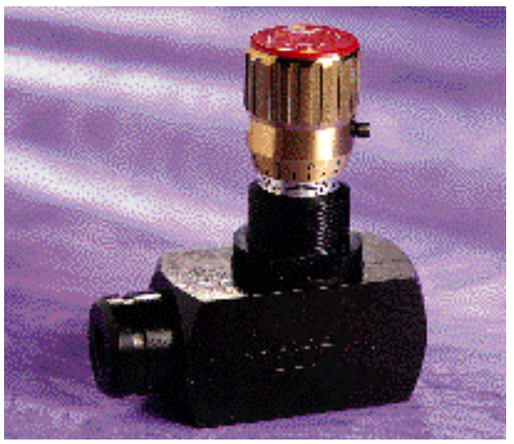
The choice of the adjustable neck situated upstream is that which best ensures the precision of the valve towards variations of the fluid temperature.
Regarding the structure of the valve, the following points must be underlined

- the rigorous symmetry of the internal components such as to impede umforeseen perturbations of the static and dynamic balances;
- the optimization of the arrangement of internal spring controlling the intervention of the automatic throttling, with variable preload with throttling fixed setting, useful to improve the behaviour at medium-high flowrates;
- the geometry of the passage accross which the flow is automatically throttled, designed to minimize the effect of the flow hydromechanic forces on the total balance of the moving element;
- the accuracy of the machinings which enabled to cancel any hysteresis effect of mechanical origin;
- the original aesthetic feature, underlined by the particular form of control handwheel;
- the easiness to reset the flow value thanks to reference pointers.

Moreover we believe important to underline the choice of constructive solution fitting to the concept of “double valence”, according to which the central body, configurated as a threaded cartridge and insertable in the two different bodies at the base or directly in standard modular units, brings about the three marketed versions:

- FT 277/2 two-way;
- FT 277/5 two-way with single-acting valve;
- FT 287/2 with cartridge mounted.

The solution enables the user to request the single modular components to be assembled according to the application.

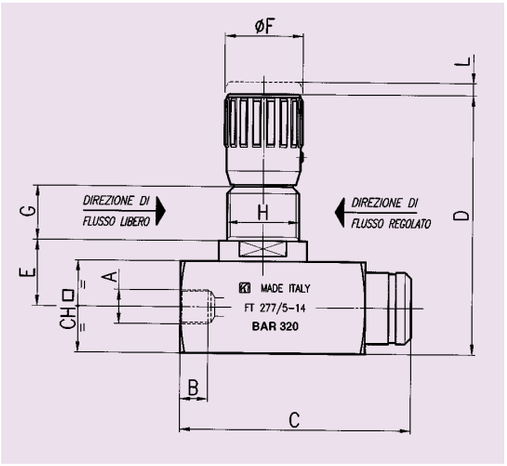


On request

- Complete with rings (G)
- Seals in Viton (V)

MATERIALS

Base	9 S Mn Pb 23 - UNI 5105
Cartridge body	35 S Mn Pb 10 - UNI 5105
Compensation unit	38 Ni Cr Mo 4 - UNI - EN 10083
Or	Nitrile
Antiextrusion ring	PTFE
Handweel	GD - Al Si 12 UNI 5706 aluminium



CODE FT 277/5

Type	A UNI 338	B	C	D	E	F	G	H	L	CH	Weight kg
14	1/4”G	12.5	93.5	104.5	28	33	17	M30x1.5	4.5	40	1.100
38	3/8”G	12.5	112.5	127	32	38	27	M35x1.5	6	45	1.700
12	1/2”G	15.5	136	147.5	38	47	28.5	M40x1.5	6.5	55	2.950
34	3/4”G	17	163	180	45	58	35	M50x1.5	7.5	65	5.050

Note: Instructions for panel mounting on page 46

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

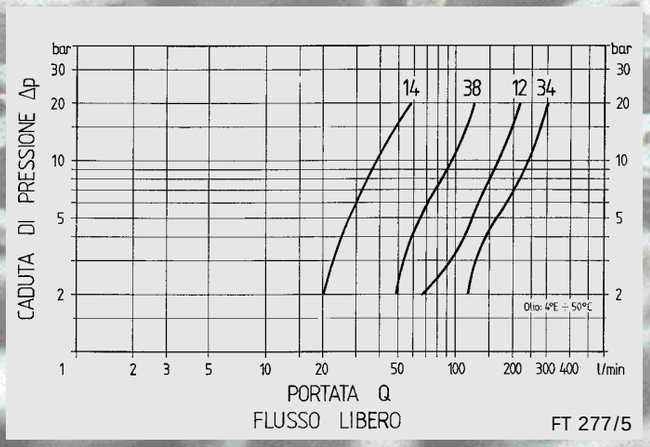
EXAMPLE FOR ORDERING

Accessories on request			
Code	**Type**	**Panel ring**	**Viton seal**
FT 277/5	**12**	**G**	**V**

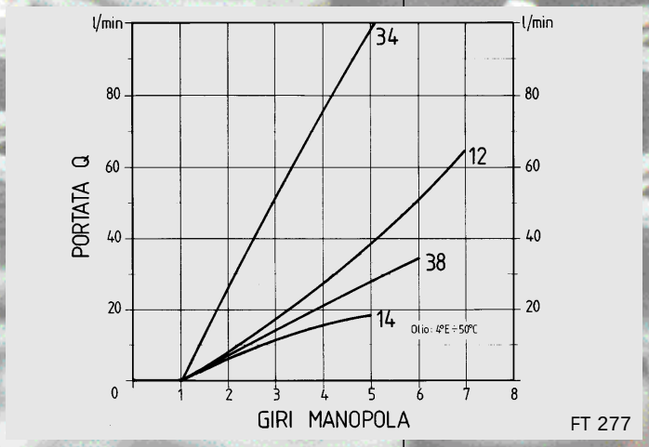
TECHNICAL DATA

Type	Max. working pressure bar	Min.working Δp bar	Working temperature °C	Filtration grade µm absolute
14	320	7.5	-20°/+70°	25
38	320	10	-20°/+70°	25
12	320	12	-20°/+70°	25
34	320	15	-20°/+70°	25

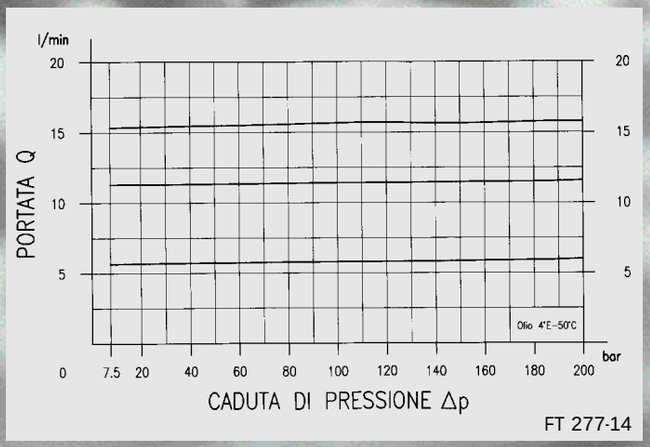
FLOWRATE CURVES



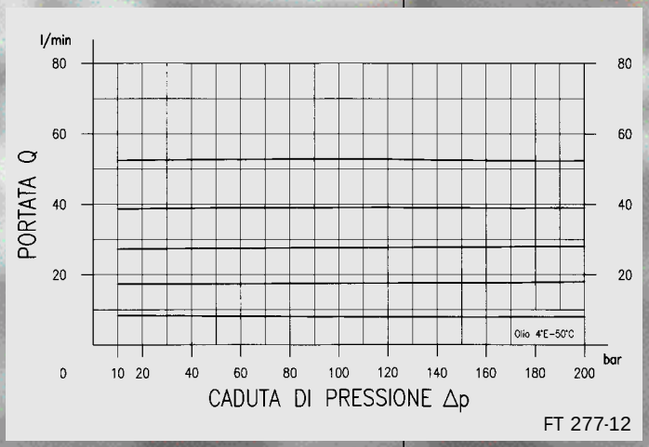
FT 277/5



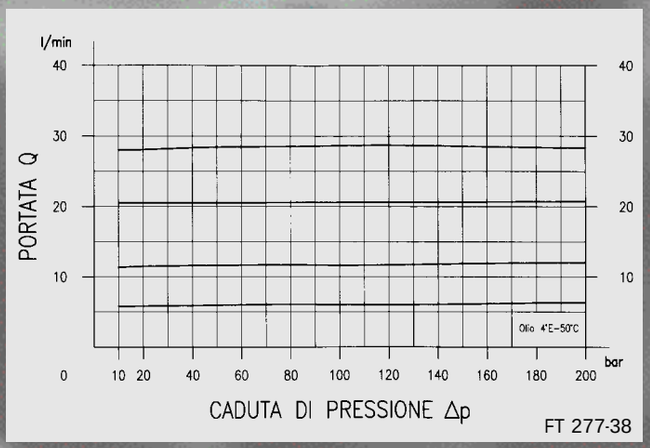
FT 277



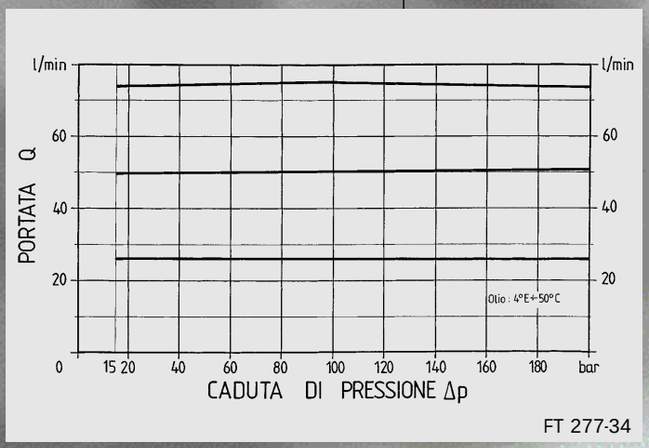
FT 277-14



FT 277-12



FT 277-38



FT 277-34

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

PRESSURE COMPENSATED FLOW CONTROL VALVES

Cartridge mounted pressure compensated flow control valves

They are essentially composed of the central body of valves series FT 277/2 which may be screwed in units preset by the user. The construction and functional characteristics reflect exactly those described for the two inlet valves.
It is recommended to keep them in their protective wrapping until the mounting, in order to avoid possible drawbacks caused by eventual entry of particles into the delicate and essential parts for a good working.
On page 46 is proposed a machining scheme for the embedding seat, which has to be observed to ensure the necessary accuracy of the valve. The constructive system allows the user, already provided with those versions, either to request the two inlet base bodies only, so as to allow their quick transformation, or to store the single standard components to assemble in the various types according to the need.

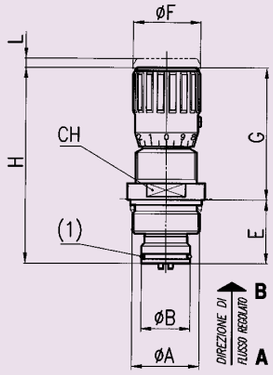
On request
- Seals in Viton (V)

MATERIALS

Cartridge body	9 S Mn Pb 23 - UNI 5105
Compensation unit	38 Ni Cr Mo 4 - UNI - EN 10083
Or	Nitrile
Antiextrusion ring	PTFE
Handwheel	GD - Al Si 12 UNI 5706 aluminium

EXAMPLE FOR ORDERING

		Accessori a richiesta
Code	**Type**	**Viton seal**
FT 287/2	**38**	**V**



CODE FT 287/2

Type	A UNI 4534	B	E	G	F	H	L	CH	OR 1	Weight kg
14	M33x1.5	24	31	64.5	33	95.5	4.5	32	2081	0.350
38	M39x1.5	30	34.5	82	38	116.5	6	38	2106	0.580
12	M48x2	35	42	92.5	47	134.5	6.5	45	3118	0.960
34	M55x2	40	49	115	58	164	7.5	55	3137	1.700

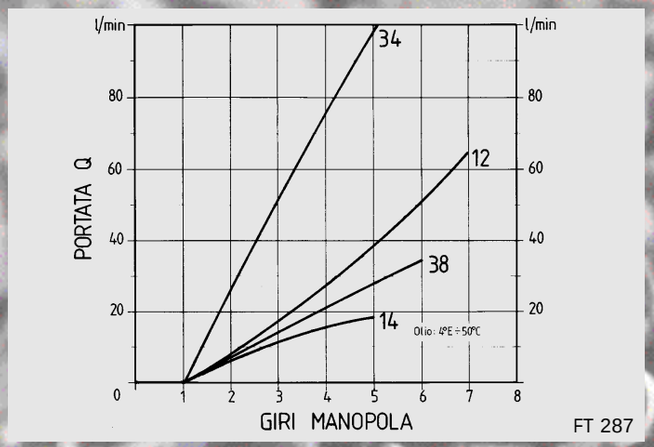
Note: Instructions for panel mounting on page 46

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

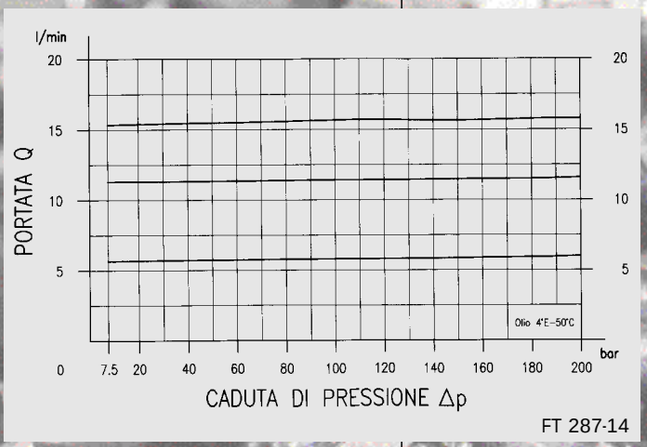
TECHNICAL DATA

Type	Max. working pressure bar	Min. working Δp bar	Working temperature °C	Filtration grade µm absolute
14	320	7.5	-20°/+70°	25
38	320	10	-20°/+70°	25
12	320	12	-20°/+70°	25
34	320	15	-20°/+70°	25

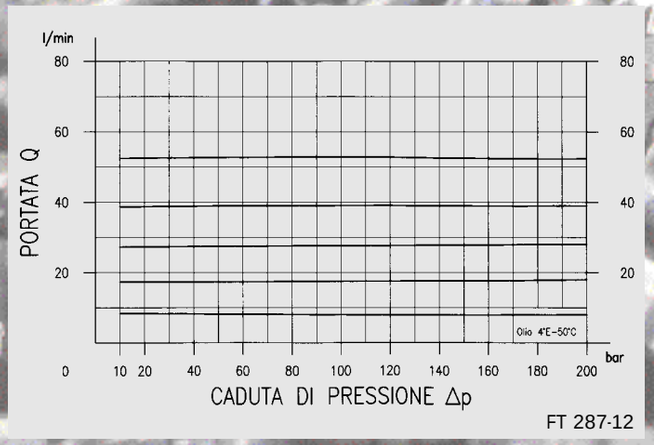
FLOWRATE CURVES



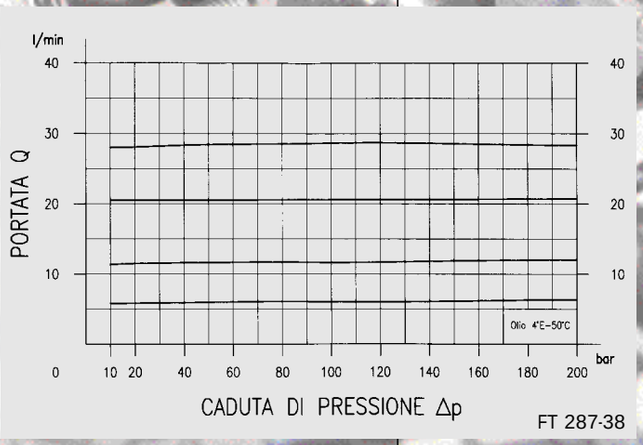
FT 287



FT 287-14



FT 287-12



FT 287-38

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

PRESSURE COMPENSATED FLOW CONTROL VALVES

Fine control cartridge mounted pressure compensated flow control valves

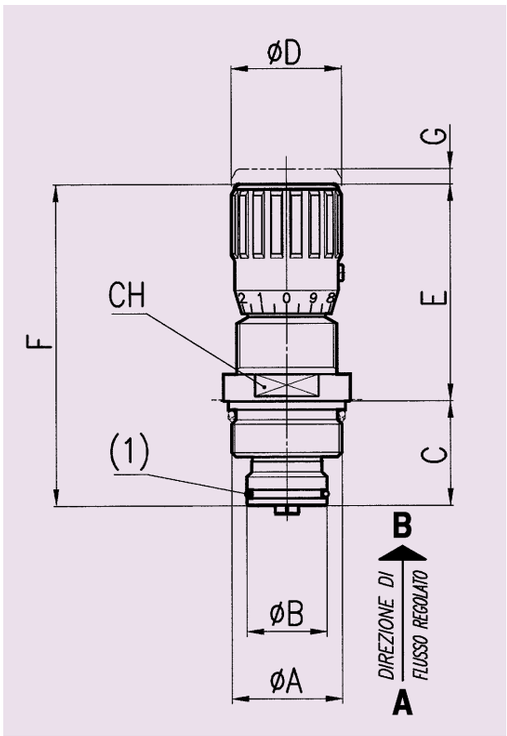
Pressure compensated flowrate regulators, to insert in current model modular units.
They are essentially composed of the central body of valves series FT 287/2 which may be screwed in units preset by the user. The construction and functionally characteristics reflect exactly those described for the two inlet valves.
It is recommended to keep them in their protective wrapping until the mounting, in order to avoid possible drawbacks caused by eventual entry of particles into the delicate and essential parts for a good working.
On page 46 is proposed a machining scheme for the embedding seat, which has to be observed to ensure the necessary accuracy of the valve.

On request
- Seals in Viton (V)

MATERIALS

Cartridge body	9 S Mn Pb 23 - UNI 5105
Compensation unit	38 Ni Cr Mo 4 - UNI - EN 10083
Or	Nitrile
Antiextrusion ring	PTFE
Handwheel	GD - Al Si 12 - UNI 5706 aluminium

EXAMPLE FOR ORDERING



Accessories on request		
Code	**Type**	**Viton seal**
FT 297/2	**14**	**V**

CODE FT 297/2

Type	A UNI 4534	B	E	G	F	H	L	CH	OR 1	Weight kg
14	M33x1.5	24	31	64.5	33	95.5	4.5	32	2081	0.350

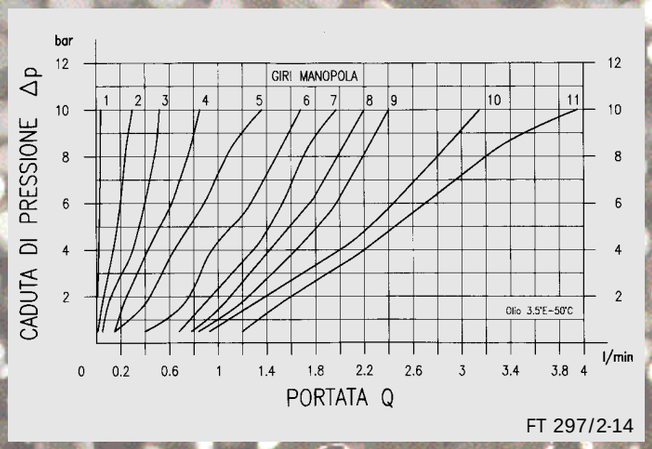
Note: Instructions for panel mounting on page 46

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

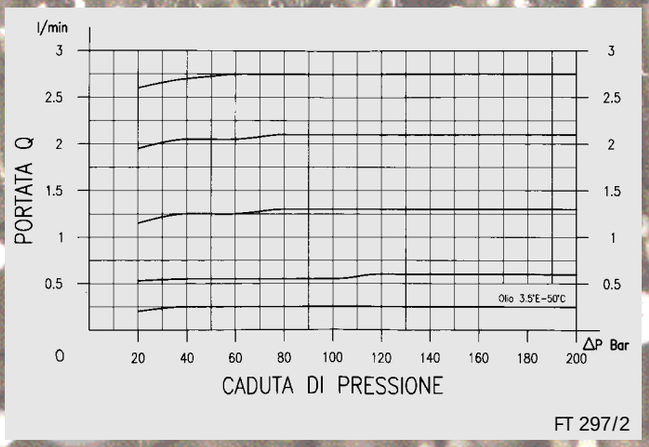
TECHNICAL DATA

Type	Max. working pressure bar	Min. working Δp bar	Working temperature °C	Filtration grade µm absolute
14	320	7.5	-20°/+70°	25

FLOWRATE CURVES



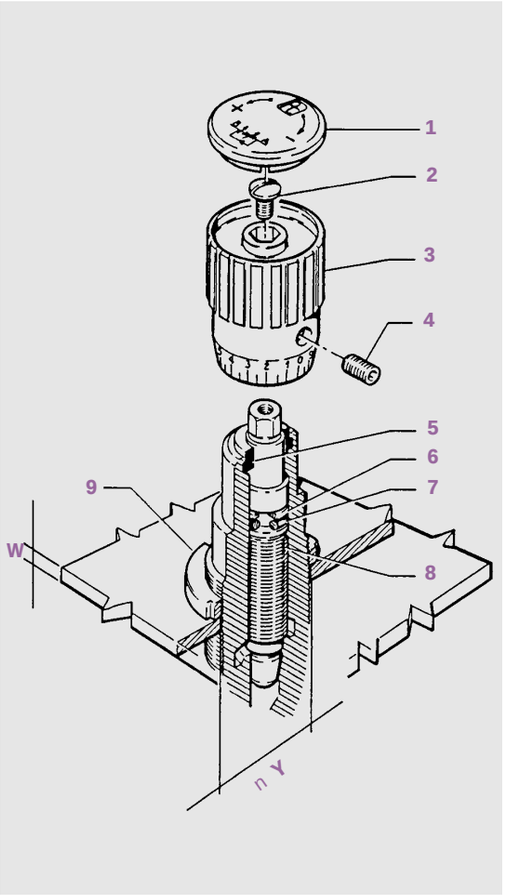
FT 297/2-14



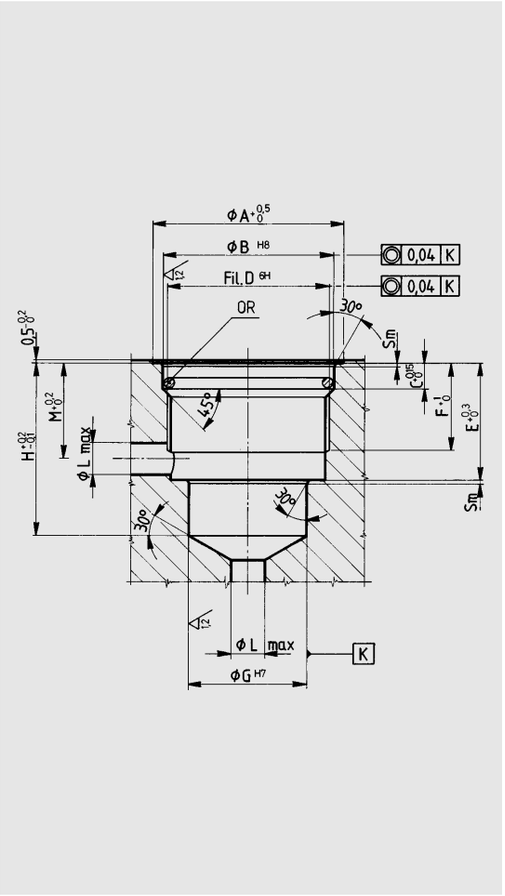
FT 297/2

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

DISASSEMBLY INSTRUCTIONS TO FIT PANEL MOUNT NUT



FT 277/2 - FT 277/5



FT 287/2 - FT 297/2 - Machining schemes for seats

Panel mounting FT 277/2 - FT 277/5	
1°	Unscrew handle lock screw - item (**4**)
2°	Remove cover plate - item (**1**)
3°	Remove screw - item (**2**)
4°	Pull off handle - item (**3**)
5°	Insert ring KM - item (**9**) - indicated in table (on request it is supplied with the valve)

Ring KM for panel mounting				
Type	**14**	**38**	**12**	**34**
Ring KM	KM 6	KM 7	KM 8	KM 10
Code FT	FT 202/6	FT 202/7	FT 202/8	FT 202/10

Type		**14**	**38**	**12**	**34**
Thickness	**W** max	10	10	10	10
Bore for panel mount. n	**Y**	31	36	41	51

Type	**A** UNI 4535	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**L**	**M**	**OR** (**7**)	**Sm**
14	39	35	5.2	M33x1.5	24	18	24	35.2	6.5	20	3118	0.8
38	44	40.5	5.2	M39x1.5	27.5	19	30	40	9	22.5	3143	0.8
12	53	49	6.5	M48x2	33.5	23.5	35	49	11	27.5	3175	0.8
34	63	58	7	M55x2	40	27	40	57	13.5	155	32.5	1

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

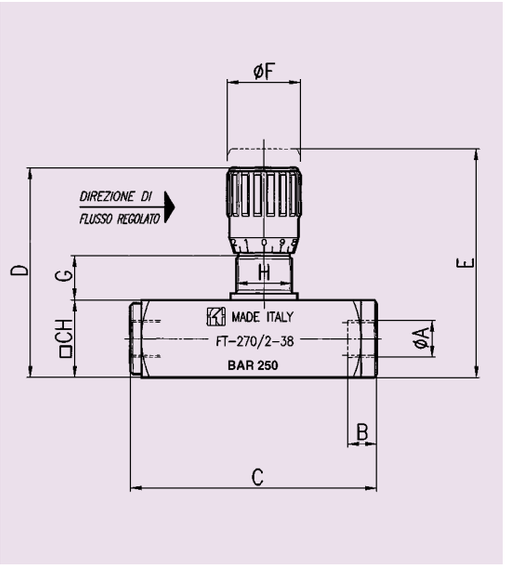
Pressure compensated flow control needle valves

The accuracy of the working of the internal components ensures a very low hysterisis.
The careful controls performed on all the products guarantee that the valves function well even in the most difficult working conditions.

On request
- Complete with mounting nut (G)
- Viton seals (V)

MATERIALS

Body	9 S Mn Pb 28 - UNI 5105
Compensation unit	38 Ni Cr Mo 4 - UNI - EN 10083
Or	Nitrile
Antiextrusion ring	PTFE
Handwheel	GD Al Si 12 - UNI 5706 aluminium



EXAMPLE FOR ORDERING

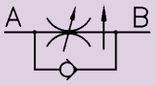
Accessories on request			
Code	**Type**	**Panel ring**	**Viton seal**
FT 270/2	**14**	**G**	**V**

CODE FT 270/2

Type	A UNI 338	B	C	D	E	F	G	H	CH	Weight kg
14	1/4" G	12.5	94	81.5	88.5	27	15	M20x1	30	0.580
38	3/8" G	13	110.5	94.5	103	33	17	M25x1.5	35	0.940
12	1/2" G	15.5	137	112	122	38	18	M30x1.5	45	1.830
34	3/4" G	17	163	138	150	47	24	M40x1.5	55	3.350
100	1" G	21	214	175	192	58	32	M50x1.5	70	7.000

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 270/5



PRESSURE COMPENSATED FLOW CONTROL VALVES

Single-acting pressure compensated flow control needle valves

Inside the base there are wide transverse sections which aprreaciably reduce the loss of pressure.
The accuracy of the working of the internal components ensures a very low hysterisis.
The careful controls performed on all the products guarantee that the valves function well even in the most difficult working conditions.

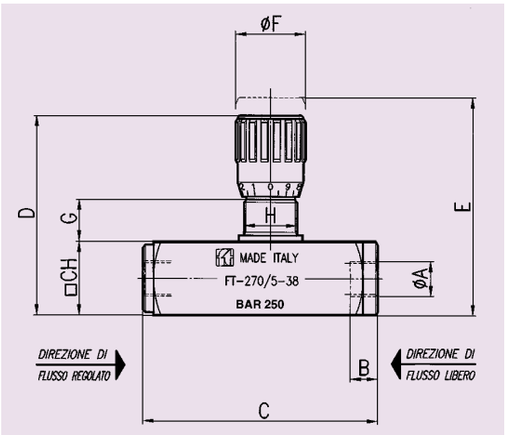
On request
- Complete with panel mounting nut
- Viton seals (V)

MATERIALS

Body	9 S Mn Pb 28 - UNI 5105
Compensation unit	38 Ni Cr Mo 4 - UNI - EN 10083
Or	Nitrile
Antiextrusion ring	PTFE
Handwheel	GD Al Si 12 - UNI 5706 aluminium

EXAMPLE FOR ORDERING

		Accessories on request	
Code	**Type**	**Panel ring**	**Viton seal**
FT 270/5	**14**	**G**	**V**



CODE FT 270/5

Type	A UNI 338	B	C	D	E	F	G	H	CH	Weight kg
14	1/4" G	12.5	94	81.5	88.5	27	15	M20x1	30	0.580
38	3/8" G	13	110.5	94.5	103	33	17	M25x1	35	0.940
12	1/2" G	15.5	137	112	122	38	18	M30x1.5	45	1.830
34	3/4" G	17	163	138	150	47	24	M40x1.5	55	3.350
100	1" G	21	214	175	192	58	32	M50x1.5	70	7.000

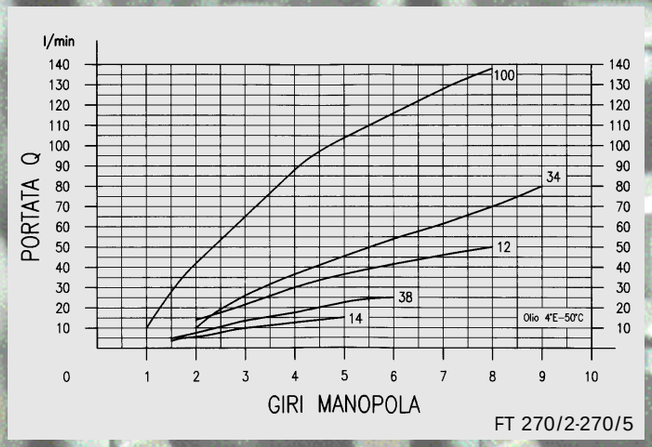
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 270/2 - FT 270/5

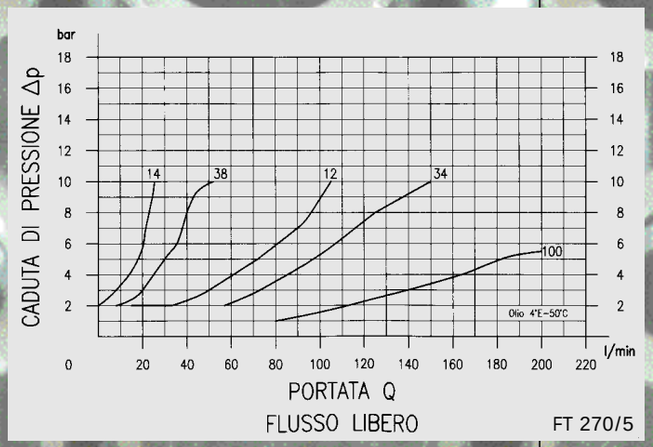
TECHNICAL DATA

Type	Working pressure bar	Minimum working Δp bar	Working temperature °C	Filtration grade µm absolute
14	210	5	-20°/+70°	25
38	210	7	-20°/+70°	25
12	210	10	-20°/+70°	25
34	210	10	-20°/+70°	25
100	210	16	-20°/+70°	25

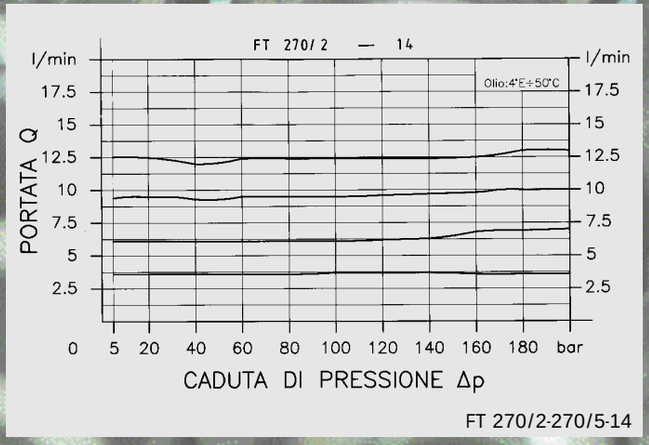
FLOWRATE CURVES



FT 270/2-270/5

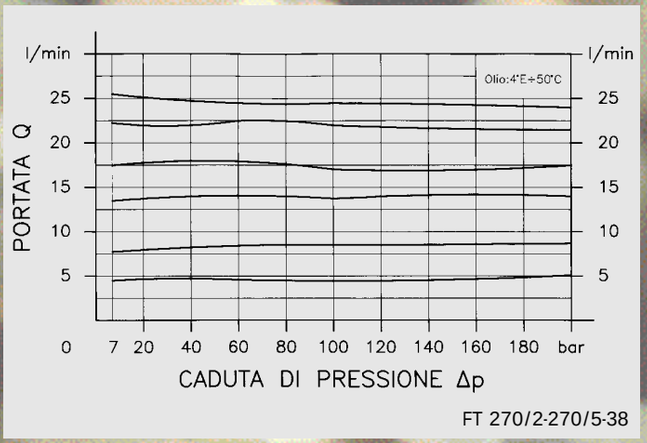


FT 270/5

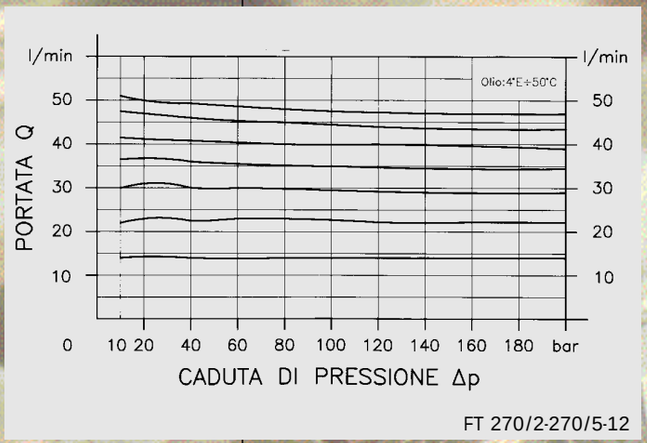


FT 270/2-270/5-14

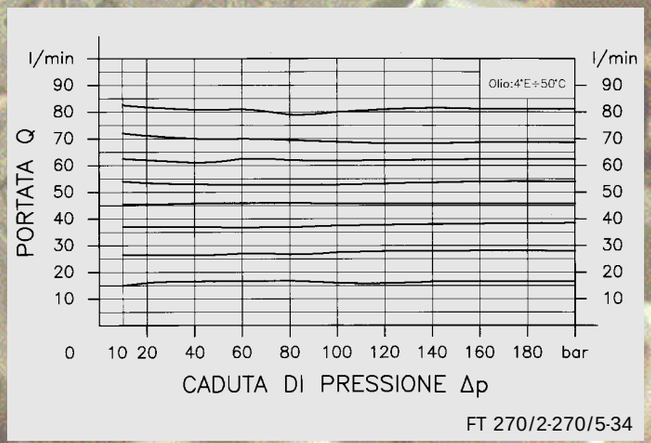
FLOWRATE CURVES



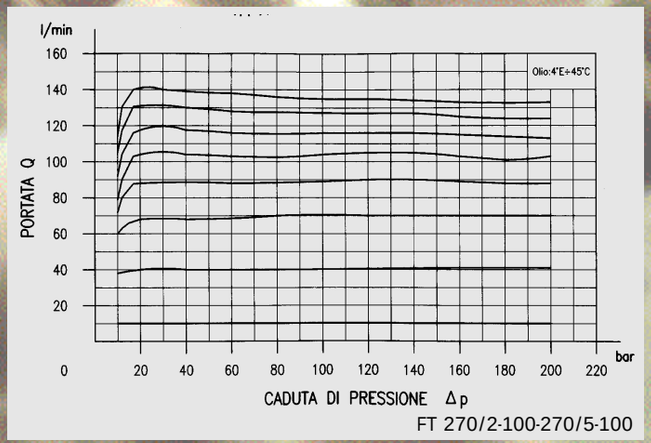
FT 270/2-270/5-38



FT 270/2-270/5-12



FT 270/2-270/5-34

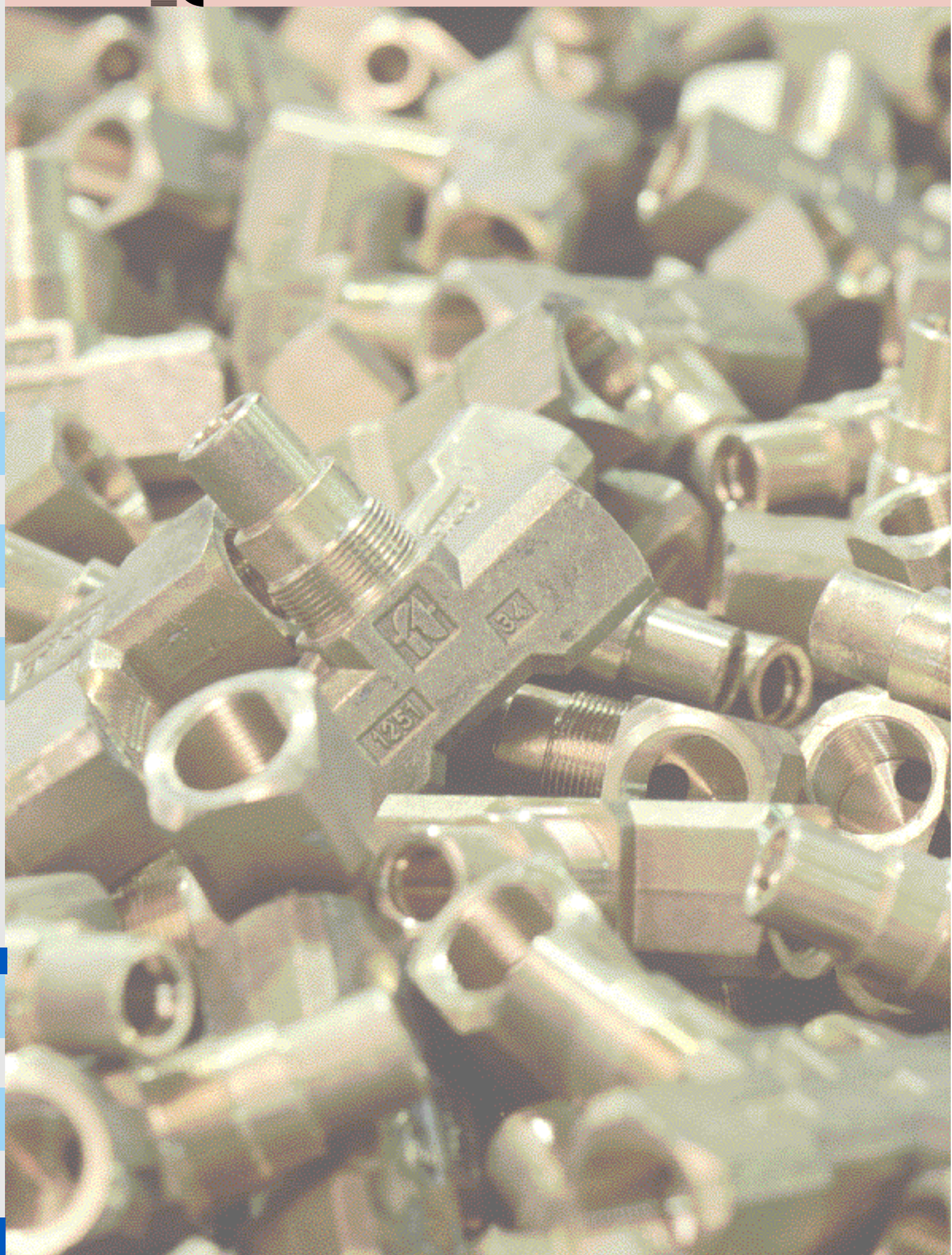


FT 270/2-100-270/5-100

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FLOW CONTROL NEEDLE VALVES MANIFOLD MOUNTED

FT 280/2
FT 280/5
FT 280/6
FT 281/2
FT 281/5
FT 288/2
FT 288/5
FT 289/2
FT 289/5

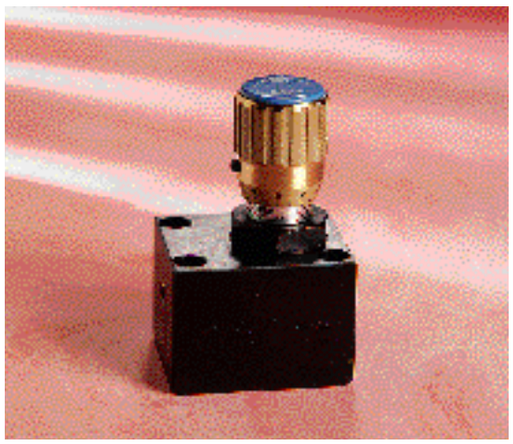


FT 280/2 (type 03, 60, 18, 14, 38, 12)

Flow control needle valves

They allow for flow control in both directions.
Needle adjustement to give:
- full shut off (via metal seal);
- accurate control for a wide range of flowrates.

The valve has a graduated adjustement scale below the handle to indicate accurately the valve position.
There i a locking screw in the handle to allow the handle to be fixed (preventing accidental adjustement or movement due to vibration).
They are provided with panel mounting connections mod. CETOP 03 or interchangeable with the broadly used valves.
Max. working pressure is 250 bar.

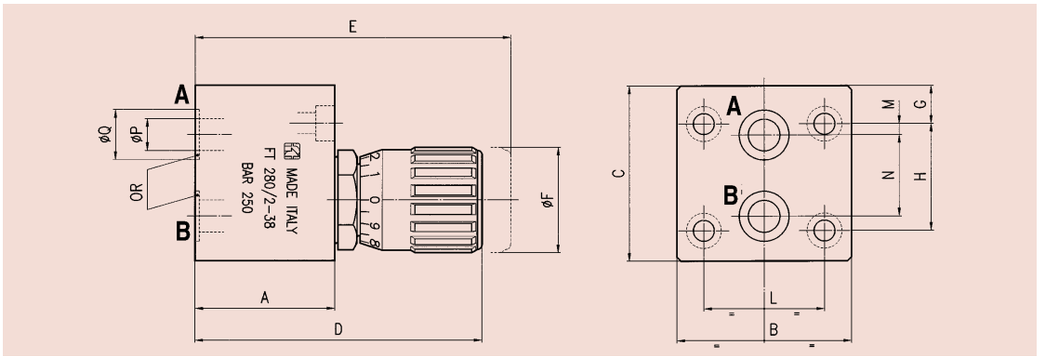


FLOW CONTROL NEEDLE VALVES MANFOLD MOUNTED

MATERIALS

Terminal strip body	Steel 9 S Mn Pb 28 UNI 5105
Cartridge body	Steel 9 S Mn Pb 28 UNI 5105
Needle	Steel 1 C 40 - UNI 8373
Handwheel	GD Al Si 12 UNI 5706 aluminium
Nipple	Nylon 6
OR	Nitrile
Antiextrusion rings	PTFE

All components are surface treated and protected



CODE FT 280/2

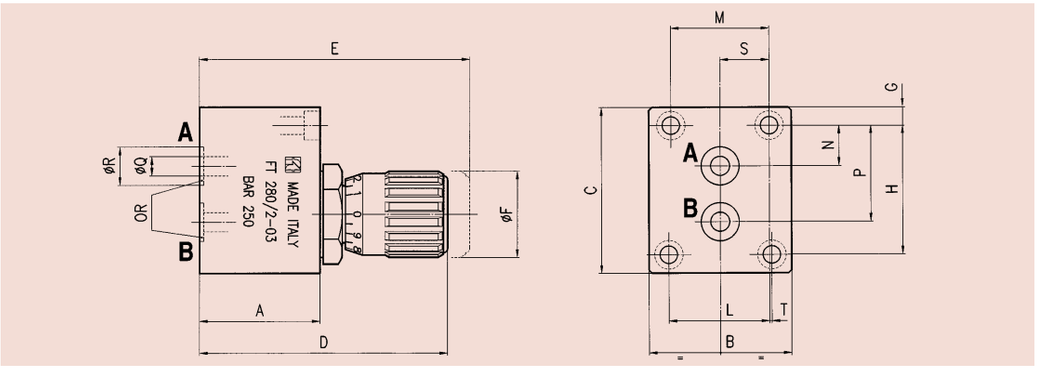
Type	A	B	C	D	E	n F	G	H	L	M	N	n P	n Q	OR	Screws	Weight kg
18	32	42	35	66.8	71.8	22	8	19	28.5	1.5	16	4	9.5	2025	M6x40	0.350
14	38	50	50	78.3	85.3	27	7.5	35	33.5	5	25.5	6	12.7	2037	M6x45	0.730
38	44	55	55	90.5	99.5	33	12	33.5	38	3.5	25.5	8	15.7	2050	M6x50	1.040
12	55	60	70	109.1	119.6	38	18	38	44.5	4	30	11	19.7	119	M6x60	1.810

EXAMPLE FOR ORDERING

Code	Type
FT 280/2	**18**
FT 280/2	**38**

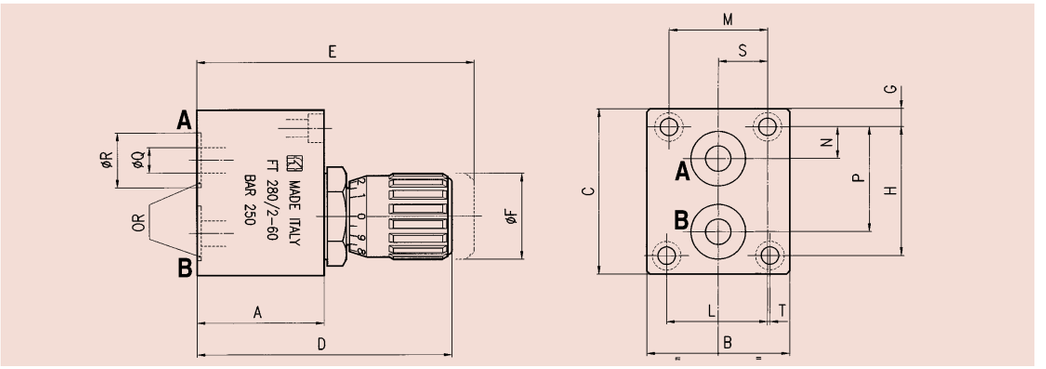
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 280/2



CODE FT 280/2

Type	A	B	C	D	E	nF	G	H	L	M	N	P	nQ	nR	S	T	OR	Screws	Weight kg
03	38	45	52	78.3	85.3	27	5.75	40.5	31.75	31	12.7	30.2	6	12	15.5	0.75	108	M5x40	0.700

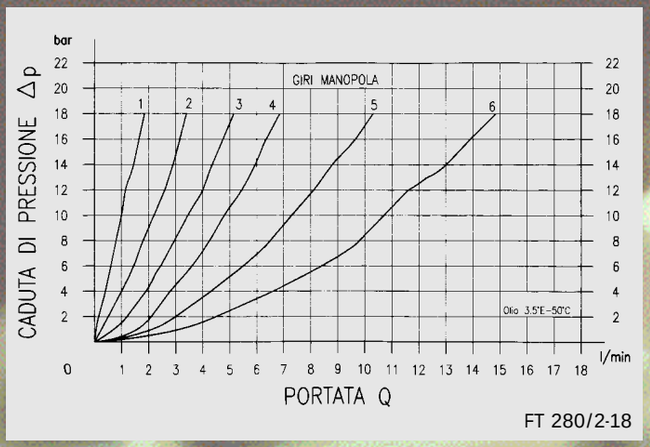


Type	A	B	C	D	E	nF	G	H	L	M	N	P	nQ	nR	S	T	OR	Screws	Weight kg
60	40	45	52	80.3	87.3	27	5.75	40.5	31.75	31	10	33	8	17.2	15.5	0.75	2056	M5x45	0.720

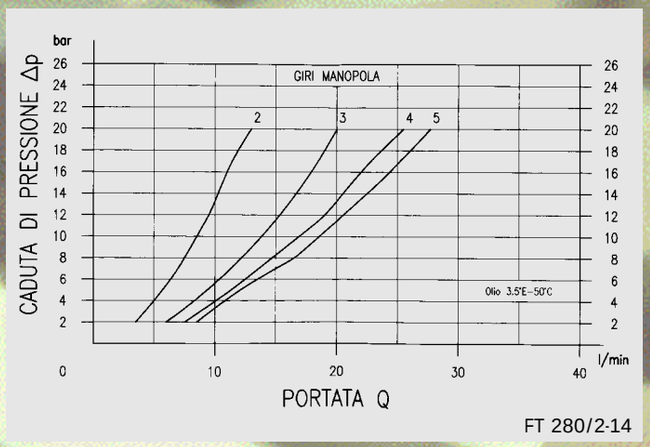
EXAMPLE FOR ORDERING

Code	Type
FT 280/2	03
FT 280/2	60

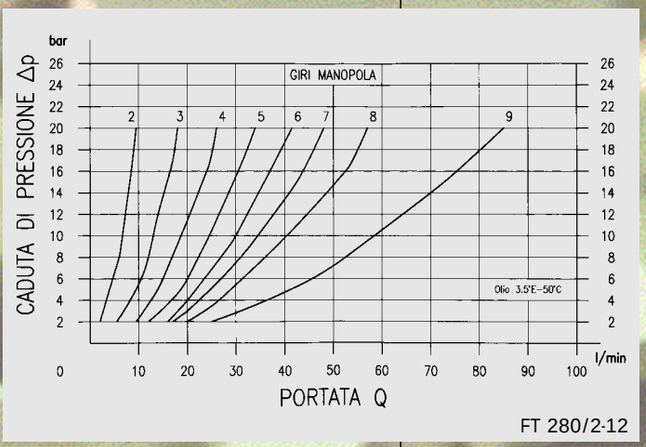
FLOWRATE CURVES



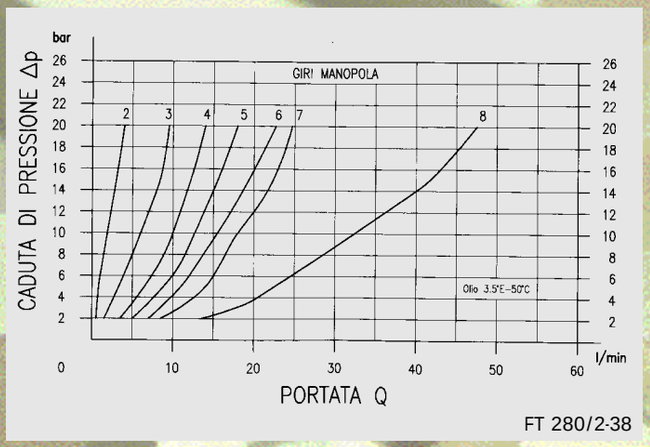
FT 280/2-18



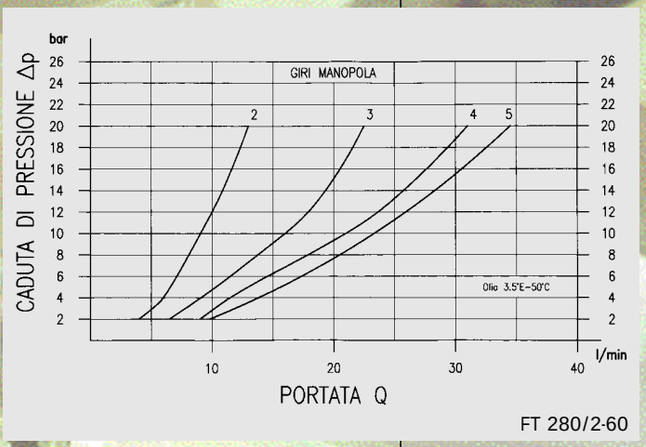
FT 280/2-14



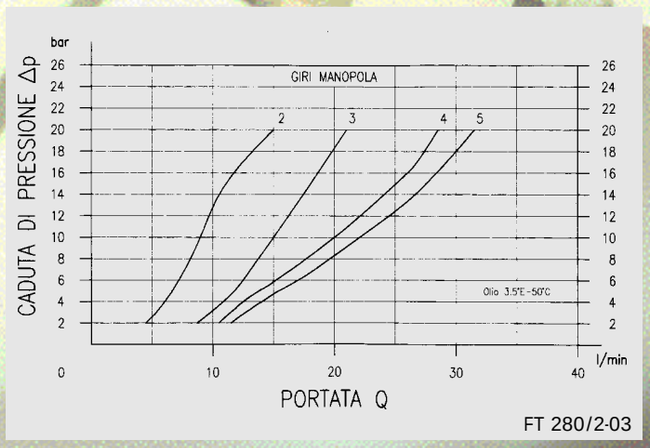
FT 280/2-12



FT 280/2-38



FT 280/2-60



FT 280/2-03

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 280/5

FLOW CONTROL NEEDLE VALVES MANIFOLD MOUNTED

FT 280/5 (type 03, 14, 38, 12, 60)

Flow control needle valves manifold mounted

They control and eventually shut-off the flow in one direction, allowing a free return in the opposed direction.
As all the valves pertaining to series FT 257, they ensure:

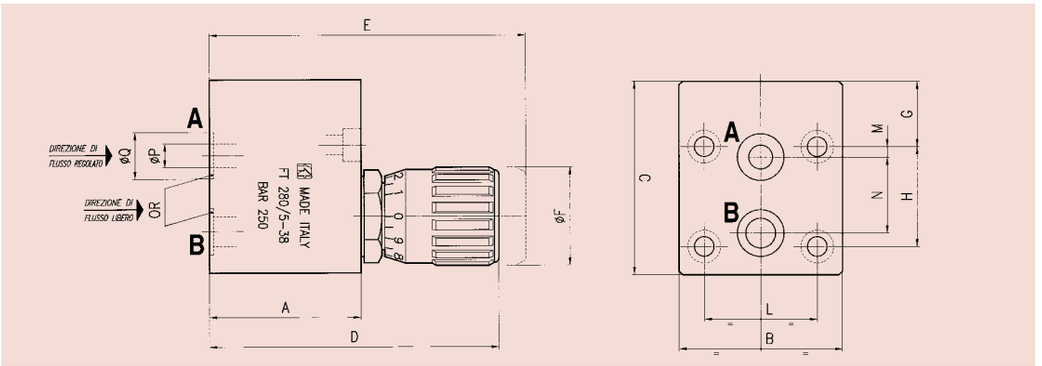
- efficient metallic sealing;
- flow linearity during opening;
- accurate flow control, made well visible by the double reference device;
- wide control range of specific flowrate;
- absolute safety against needle withdrawal also in the maximum opening position;
- positioning stability, thanks to the dowel inserted in handwheel.

They are provided with plate connections mod. CETOP 03 or interchangeable with the broadly used valves.
Max. working pressure is 250 bar.

MATERIALS

Terminal strip body	Steel 9 S Mn Pb 28 UNI 5105
Cartridge body	Steel 9 S Mn Pb 28 UNI 5105
Needle	Steel 1 C 40 - UNI 8373
Handwheel	GD Al Si 12 - UNI 5706 painted aluminium
Nipple	Nylon 6
Guide cage	Nylon 66 + carbon fibre
Ball	Steel - UNI 100 C 6
Spring	Stainless steel AISI 302
Plug	Steel 35 S Mn Pb 10 UNI 5105
OR	Nitrile
Antiextrusion rings	PTFE
Obturator	Steel C 15 Pb

All components are surface treated and protected

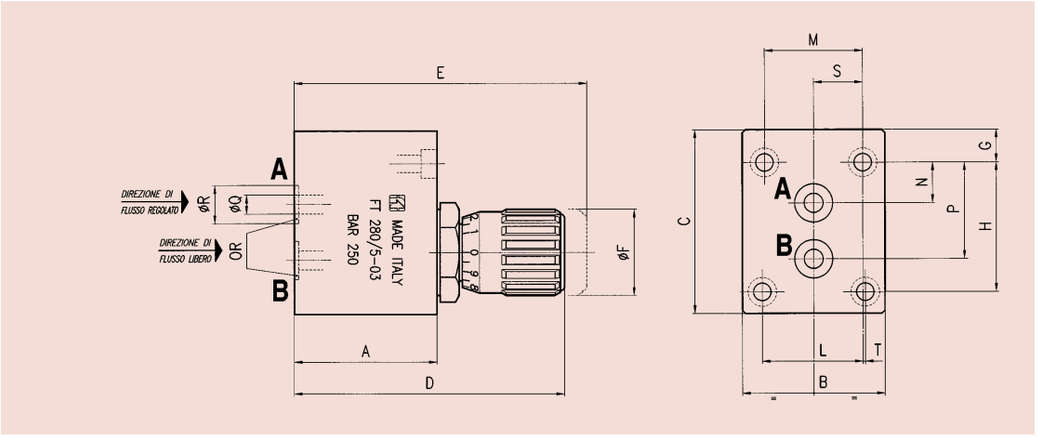


EXAMPLE FOR ORDERING

Code	Type
FT 280/5	**14**

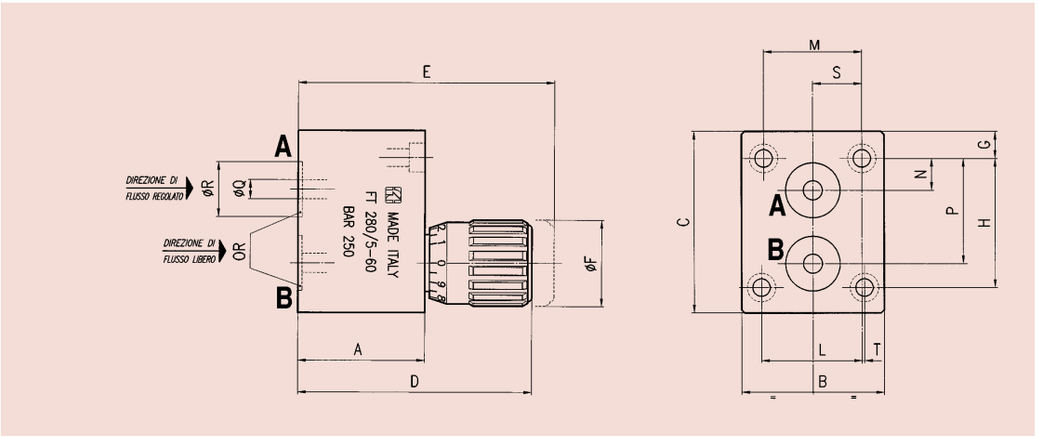
CODE FT 280/5

Type	A	B	C	D	E	nF	G	H	L	M	N	nP	nQ	OR	Screws	Weight kg
14	45	50	60.5	85.3	92.3	27	18	35	33.5	5	25.5	6	12.7	2037	M6x50	1.020
38	51	55	65	97.5	106.5	33	22	33.5	38	3.5	25.5	8	15.7	2050	M6x55	1.380
12	65	65	82.5	119.1	129.6	38	30.5	38	44.5	4	30	11	19.7	119	M6x70	2.620



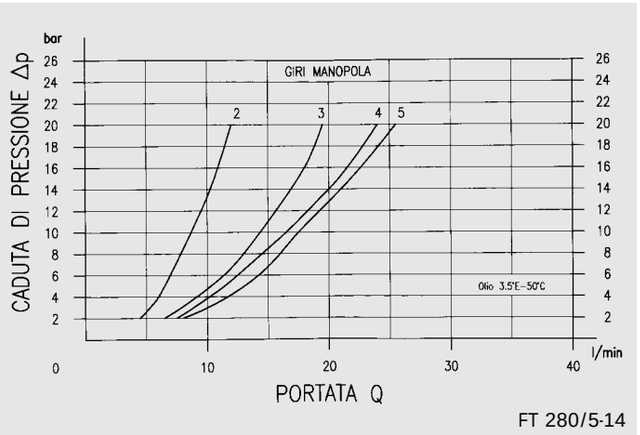
CODE FT 280/5

Type	A	B	C	D	E	nF	G	H	L	M	N	P	nQ	nR	S	T	OR	Screws	Weight kg
03	45	45	57.5	85.3	92.3	27	10.3	40.5	31.75	31	12.7	30.2	6	12	15.5	0.75	108	M5x50	0.885

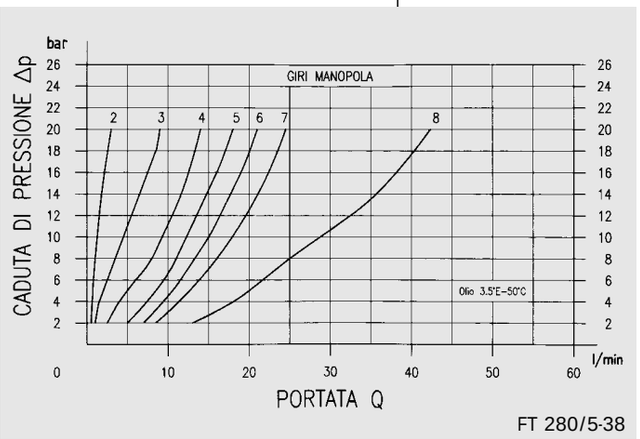


Type	A	B	C	D	E	nF	G	H	L	M	N	P	nQ	nR	S	T	OR	Screws	Weight kg
60	45	45	57	73.8	80.8	27	8.5	40.5	31.75	31	10	33	6	17.2	15.5	0.75	2056	M5x45	0.785

FLOWRATE CURVES



FT 280/5-14

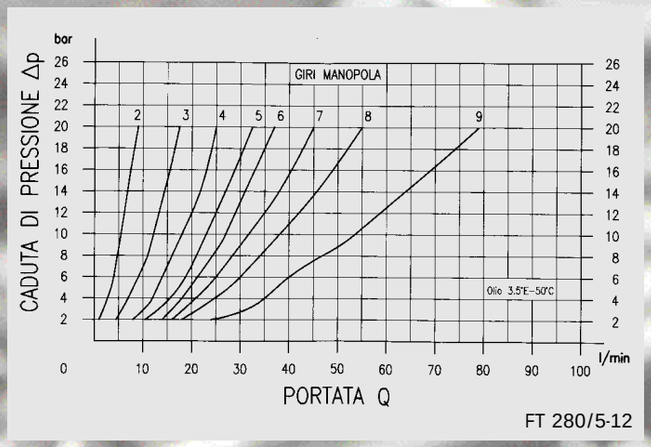


FT 280/5-38

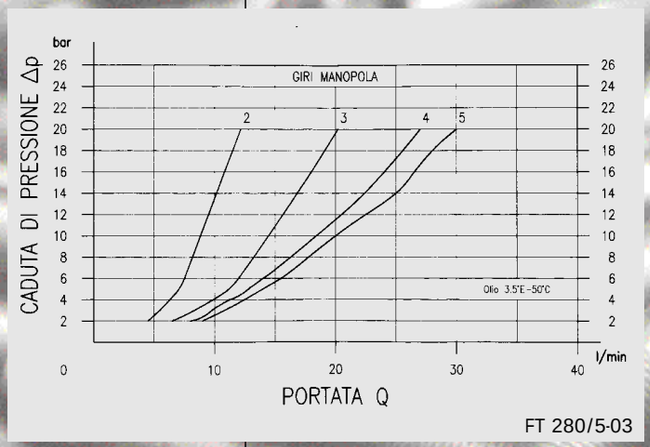
HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

FT 280/5

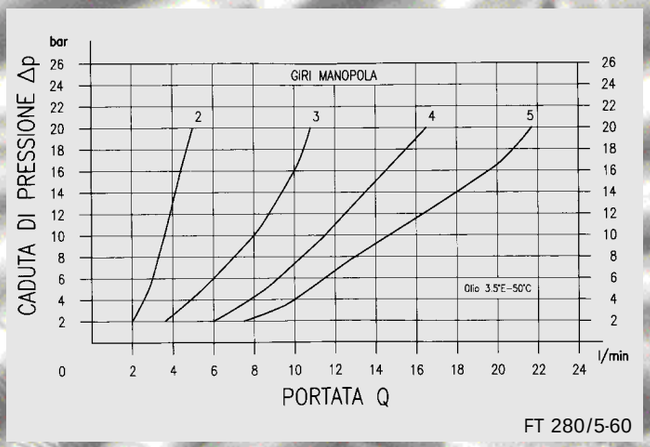
FLOWRATE CURVES



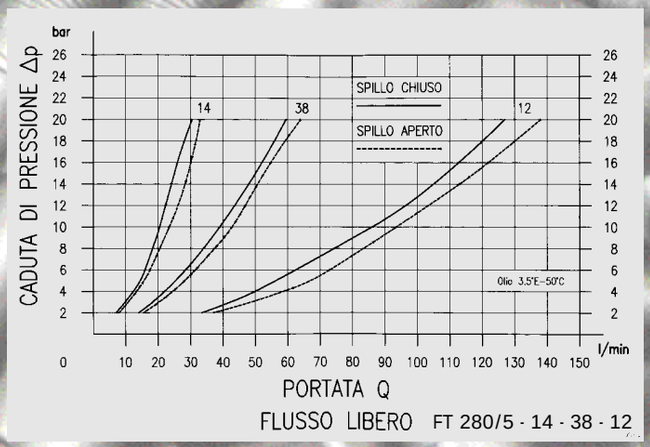
FT 280/5-12



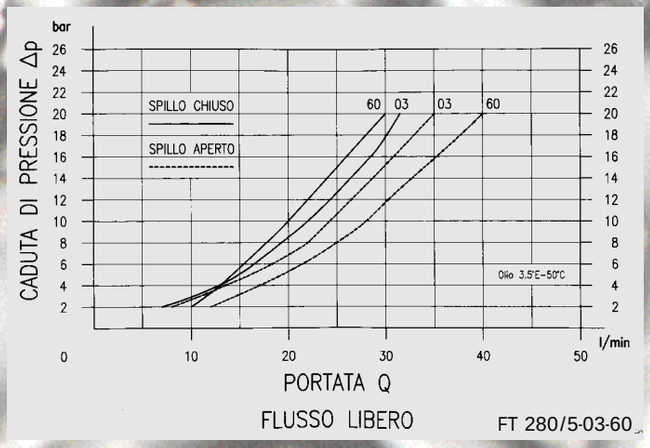
FT 280/5-03



FT 280/5-60



FT 280/5 - 14 - 38 - 12



FT 280/5-03-60

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT

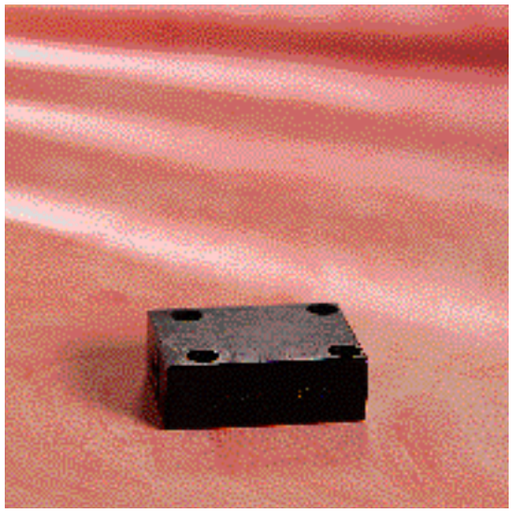
FT 280/6 (type 03, 14, 38, 12)

Check valves manifold mounted

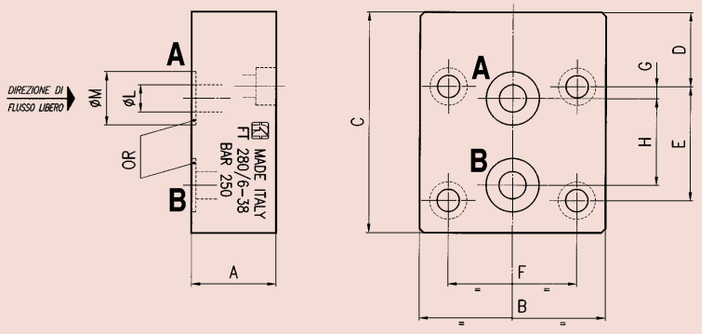
They are inserted in circuit branches where a free flow circulation is wanted in one direction, and passage obstruction in the opposed direction.
The check valves are of ball type with guide housing and centering, made of composite material with very high mechanical resistence, which allows a total passage and exceptional resistence to wear and breakage, shown by the highstress and varied tests to which they were subjected.
They may be supplied with two setting values of the release pressure (0.35 swtandard and 4.5 bar).
They are used for working pressures up to 250 bar.
They are provided with panel mounting connections mod. CETOP 03 or interchangeable with the broadly used valves.

Valve body	Steel 9 S Mn Pb 28 - UNI 5105
Ball guide	Nylon 66 + carbon fibre
Ball	Steel - UNI 100 C 6
Spring	Stainless steel AISI 302
Plug	Steel 35 S Mn Pb 10 - UNI 5105

All components are surface treated and protected

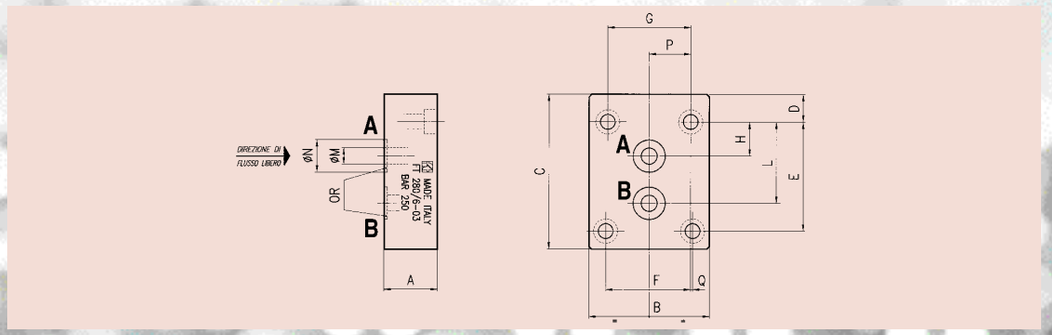


Code	Type
FT 280/6	**03**



Type	A	B	C	D	E	F	G	H	n L	n M	OR	Screws	Weight kg
14	20	50	60.5	18	35	33.5	5	25.5	6	12.7	2037	M6x25	0.410
38	25	55	65	22	33.5	38	3.5	25.5	8	15.7	2050	M6x30	0.605
12	30	65	82.5	30.5	38	44.5	4	30	11	19.7	119	M6x35	1.010

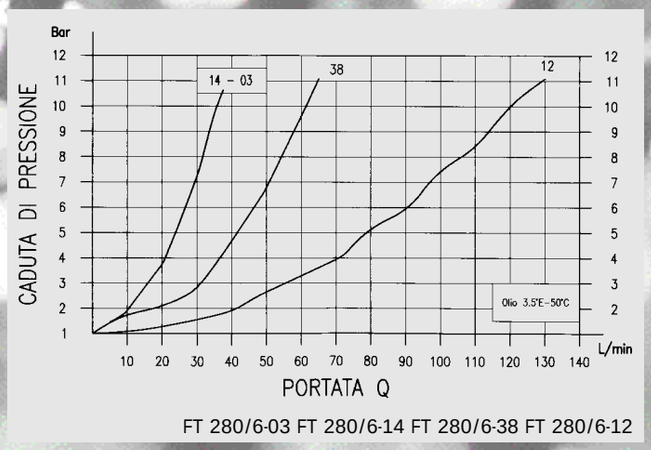
FT 280/6



CODE FT 280/6

Type	A	B	C	D	E	F	G	H	L	n M	n N	P	Q	OR	Screws	Weight kg
03	20	45	57.5	10.3	40.5	31.75	31	12.7	30.2	6	12	15.5	0.75	108	M5x25	0.350

FLOWRATE CURVES



FT 280/6-03 FT 280/6-14 FT 280/6-38 FT 280/6-12

HOME
INTRODUCTION
VALVES INDEX
FIT IN WINDOW
LAST VIEW
PRINT
QUIT