

RA

MATERIALS

Head and cover:
Aluminium alloy

Bowl :
Polyamide for FRA21-31-32-33-41
Zinc plated steel for FRA11-42-51-52-53-5D

Bypass valve:
Polyamide

Seals:
NBR Nitrile
FKM Fluoroelastomer on request

Indicator housing:
Brass

PRESSURE (ISO 10771-1:2002)

Max working:
300 kPa (3 bar)

Test:
500 kPa (5 bar)

Bursting:
1 MPa (10 bar)

Collapse, differential
for the filter element (ISO 2941):
300 kPa (3 bar)

BYPASS VALVE

Setting:
170 kPa (1,7 bar) $\pm$ 10%

WORKING TEMPERATURE

From -25° to +110° C

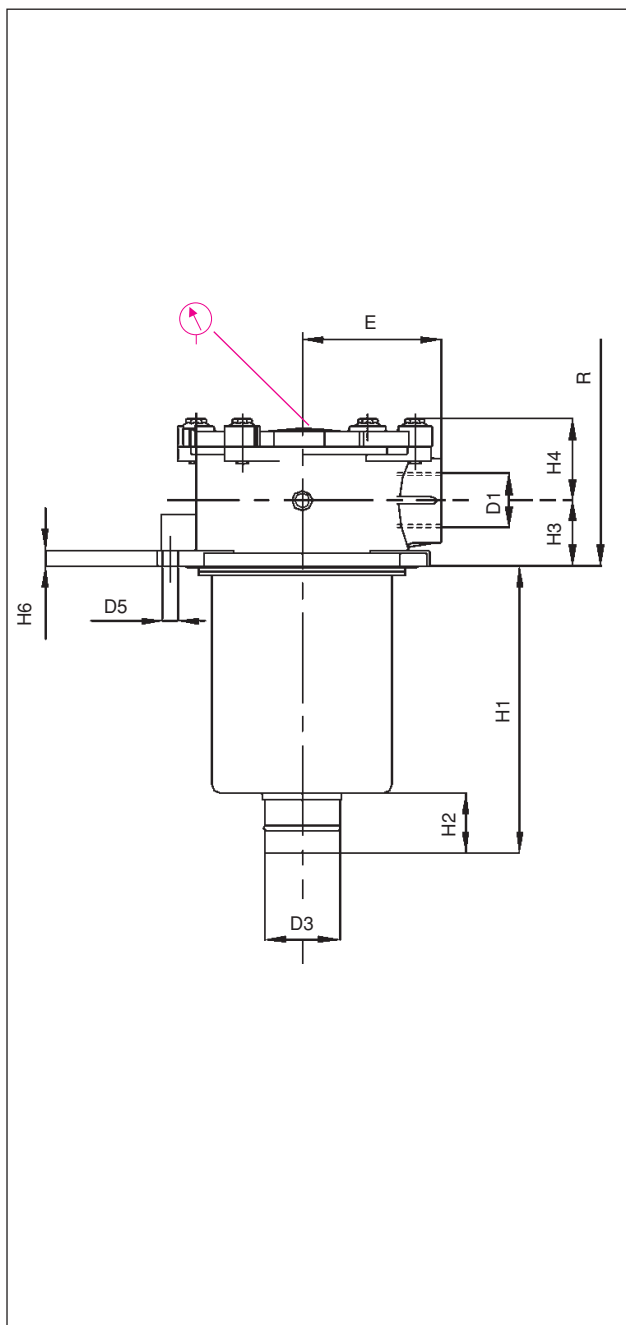
COMPATIBILITY (ISO 2943:1999)

Full with fluids: HH-HL-HM-HV-HTG
(according to ISO 6743/4)
For fluids different than the above mentioned, please contact our Sales Department.

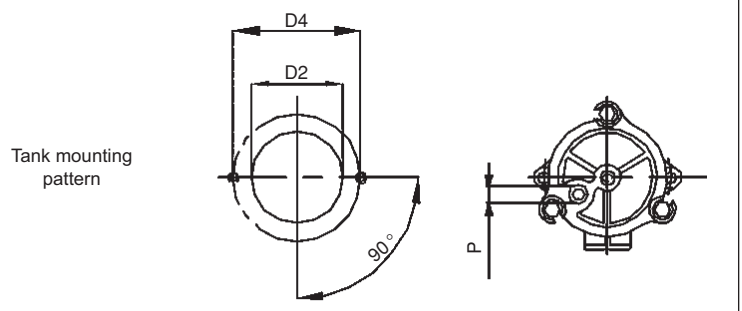


APPLICATION EXAMPLE

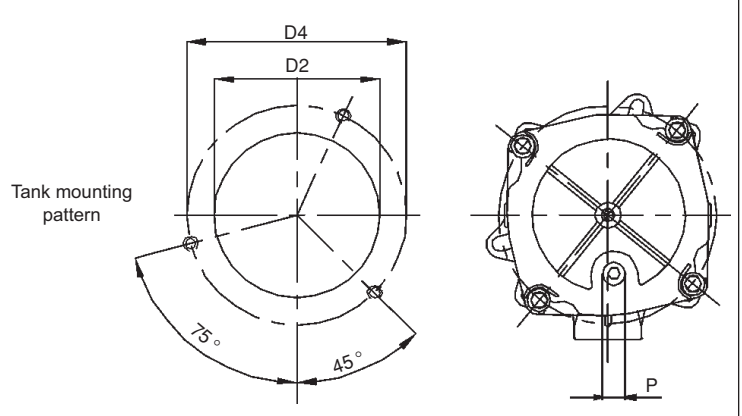




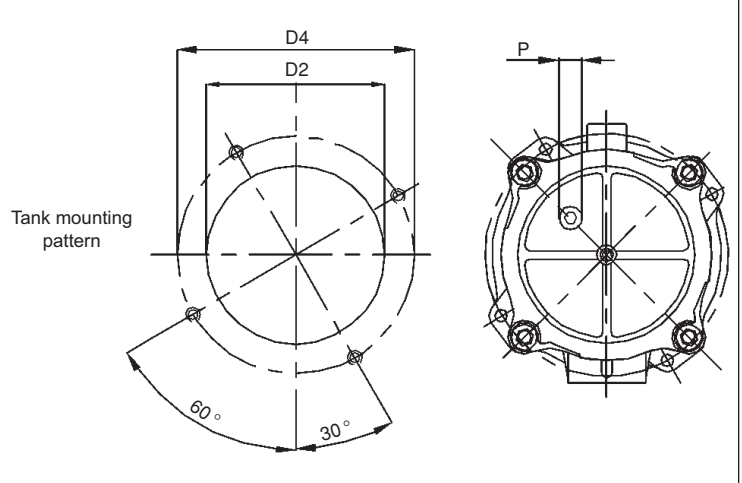
FRA 11 - 21 - 31 - 32 - 33



FRA 41 - 42



FRA 51 - 52 - 53 - 5D



FILTER HOUSING

	D1	min D2	max D2	D3	D4	D5	E	H1	H2	H3	H4	H6	P	R	kg
FRA11	3/8"	50	50	12	80	6,5	40	59	16	12	33	9	1/8"	90	0,30
FRA21	1/2"	67	68	24	90	6,5	50	80	20	22	33	9	3/8"	120	0,45
FRA31	1/2" - 3/4"	89	90	28	115	9	67	102	25	28	47	10	3/8"	150	0,80
FRA32	3/4" - 1"	89	90	28	115	9	67	150	25	28	47	10	3/8"	190	0,95
FRA33	3/4" - 1"	89	90	40	115	9	67	234	30	28	47	10	3/8"	270	1,10
FRA41	1" - 1 1/4" - 1 1/2"	126	131	40	175	10,5	95	248	50	35	56	13	1/2"	289	2,10
FRA42	1" - 1 1/4" - 1 1/2"	126	131	40	175	10,5	95	265	30	35	56	13	1/2"	306	2,30
FRA51	1 1/4" - 1 1/2" - 2" - 2 1/2"	174	180	50	220	10,5	115	178	50	55	69	13	1/2"	250	3,10
FRA52	1 1/4" - 1 1/2" - 2" - 2 1/2"	174	180	63,5	220	10,5	115	240	50	55	69	13	1/2"	315	3,60
FRA53	2" - 2 1/2"	174	180	63,5	220	10,5	115	285	50	55	69	13	1/2"	355	4,10
FRA5D	2" - 2 1/2"	174	180	63,5	220	10,5	115	300	50	55	69	13	1/2"	370	4,30

ORDERING AND OPTION CHART

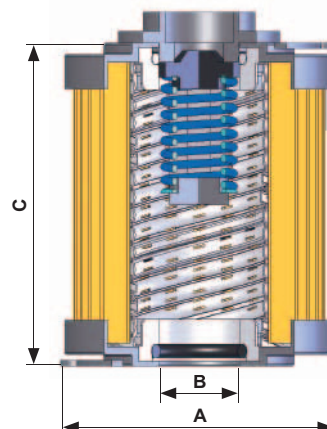
		TYPE													
		F = FILTER COMPLETE													
		B = FILTER HOUSING												ELEMENT	
R	A	FAMILY, NOMINAL SIZE & LENGTH												FAMILY SIZE & LENGTH	
		11	21	31	32	33	41	42	51	52	53	5D			
		PORT TYPE													
		B = BSP thread													
		N = NPT thread													
		S = SAE thread													
		F = SAE flange 3000 psi													
		PORT SIZE													
		03 = 3/8"	03	-	-	-	-	-	-	-	-	-	-		
		04 = 1/2"	-	04	04	-	-	-	-	-	-	-	-		
		06 = 3/4"	-	-	06	06	06	-	-	-	-	-	-		
		08 = 1"	-	-	-	08	08	08	08	-	-	-	-		
		10 = 1" 1/4 (F10 not available)	-	-	-	-	-	10	10	10	10	-	-		
		12 = 1" 1/2 (** F12 available for FRA4+ only)	-	-	-	-	-	(**)	(**)	12	12	-	-		
		16 = 2" (F16 not available)	-	-	-	-	-	-	-	16	16	16	16		
		20 = 2" 1/2 (F20 only)	-	-	-	-	-	-	-	20	20	20	20		
B		BYPASS VALVE													
		B = 170 kPa (1,7 bar)	X	B	B	B	B	B	B	B	B	B	B		
		SEALS												SEALS	
		N = NBR Nitrile	N	N	N	N	N	N	N	N	N	N	N	N = NBR	
		F = FKM Fluoroelastomer	F	F	F	F	F	F	F	F	F	F	F	F = FKM	
		FILTER MEDIA												FILTER MEDIA	
		FA = fiber 5 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA = fiber 5 $\mu\text{m}_{(c)}$ $\beta > 1.000$	
		FB = fiber 7 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB = fiber 7 $\mu\text{m}_{(c)}$ $\beta > 1.000$	
		FC = fiber 12 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC = fiber 12 $\mu\text{m}_{(c)}$ $\beta > 1.000$	
		FD = fiber 21 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD = fiber 21 $\mu\text{m}_{(c)}$ $\beta > 1.000$	
		CC = cellulose 10 μm $\beta > 2$	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC = cellulose 10 μm $\beta > 2$	
		CD = cellulose 25 μm $\beta > 2$	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD = cellulose 25 μm $\beta > 2$	
		ME = wire mesh 60 μm	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME = wire mesh 60 μm	
		CLOGGING INDICATOR													
		01 = 1/8" port, plugged	01	01	01	01	01	01	01	01	01	01	01		
		30 = press. gauge, rear connection	30	30	30	30	30	30	30	30	30	30	30		
		32 = press. gauge, bottom connection	32	32	32	32	32	32	32	32	32	32	32		
		P1 = SPDT, press. switch	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1	P1		
		ACCESSORIES													
		W = without	W	W	W	W	W	W	W	W	W	W	W		
		P = with filling plug	P	P	P	P	P	P	P	P	P	P	P		
X		ACCESSORIES													
		X = no other accessory available	X	X	X	X	X	X	X	X	X	X	X		

(*) special mounting pattern, pls ask for relevant information

When the filter is ordered with FKM seals, the first digit of the indicator code is a letter (please see page 184 - 185).

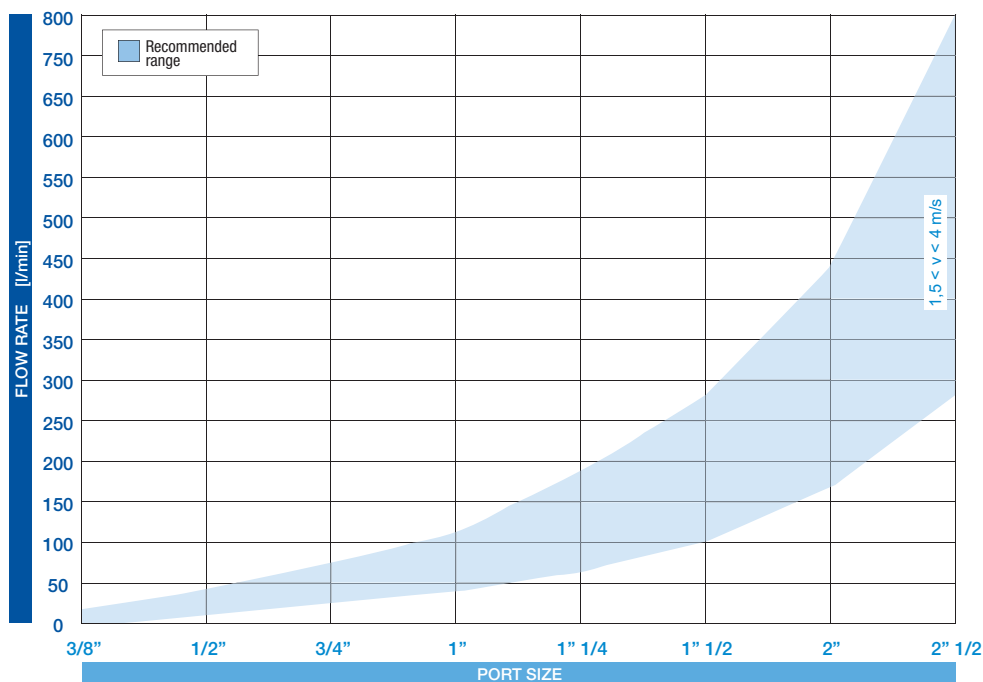
FILTER ELEMENT

	A	B	C	kg	Area (cm ²)	
					Media F+	Media C+
ERA11	38	13	50	0,05	270	345
ERA21	52	24	70	0,10	310	380
ERA31	70	28	85	0,20	620	990
ERA32	70	28	130	0,25	1.000	1.600
ERA33	70	40	210	0,40	1.660	2.670
ERA41	99	40	211	0,75	3.800	4.280
ERA42	99	40	250	0,90	4.550	5.100
ERA51	130	51	140	1,00	4.140	4.360
ERA52	130	63	200	1,35	6.190	6.520
ERA53	130	63	251	1,50	7.930	8.350
ERA5D	130	63	266	1,60	8.400	8.800



FLUID SPEED

when selecting the filter size, we suggest to consider also the max recommended fluid speed (in return lines normally $1,5 < v < 4$ m/s)

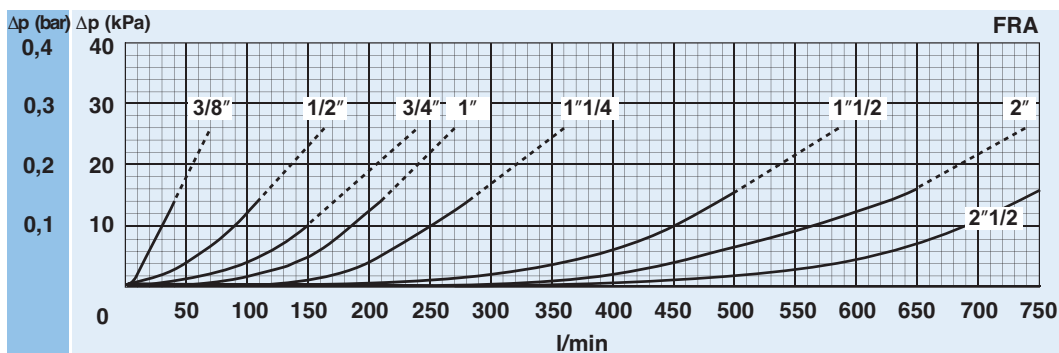


PRESSURE DROP CURVES (Δp)

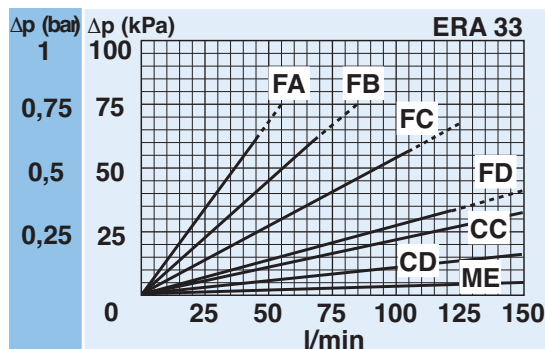
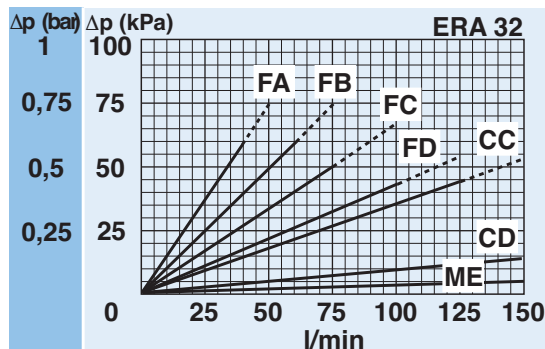
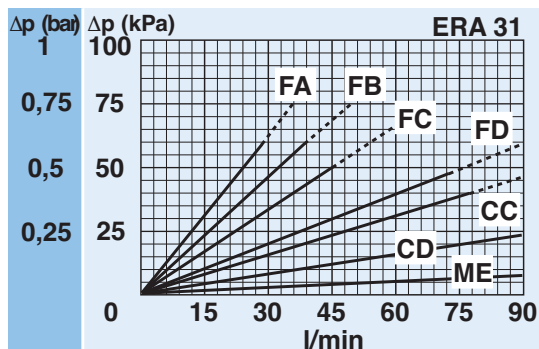
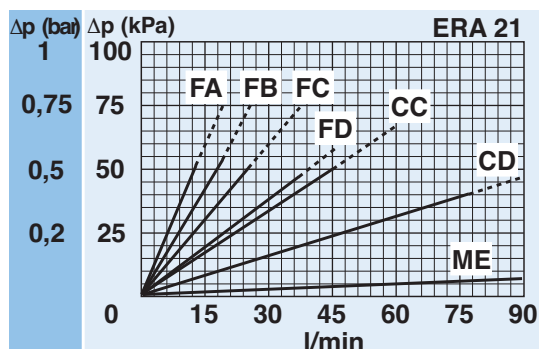
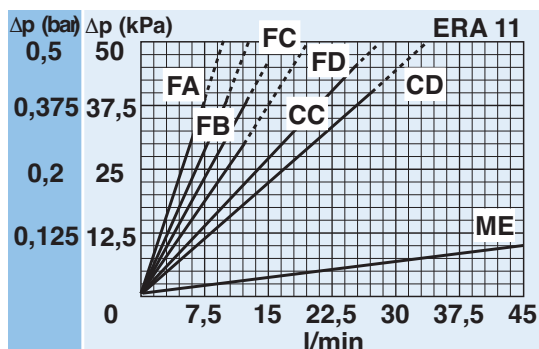
The "Assembly Pressure Drop (Δp)" is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow Rate and it must be lower than 50 kPa (0,5 bar).

FILTER HOUSING PRESSURE DROP

(mainly depending on the port size)

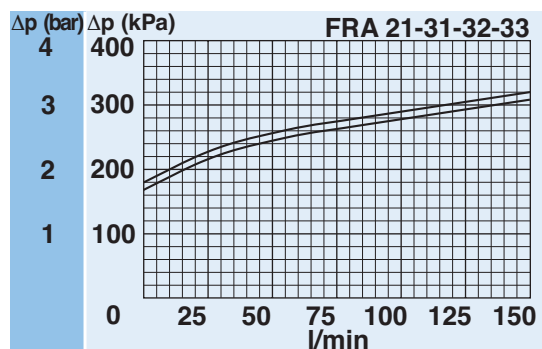


CLEAN FILTER ELEMENT PRESSURE DROP WITH F+, C+ AND ME MEDIA
(depending both on the internal diameter of the element and on the filter media)



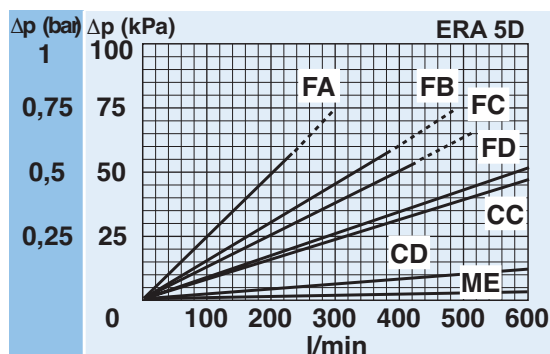
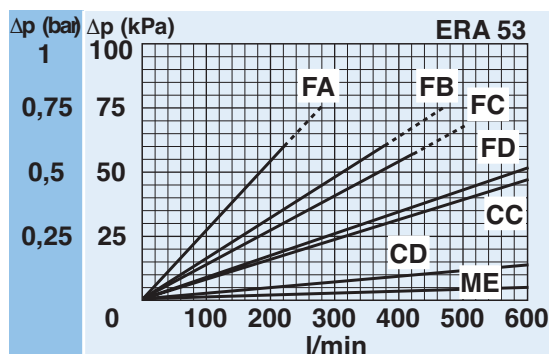
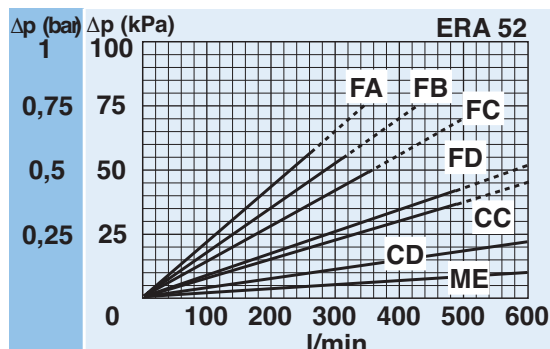
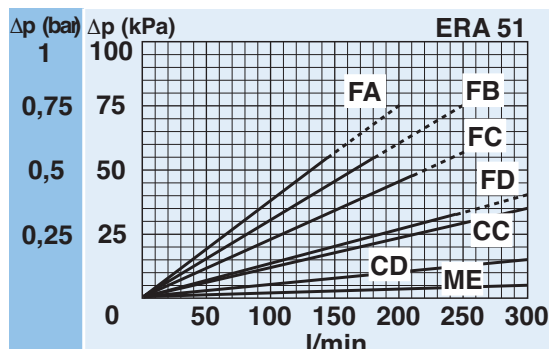
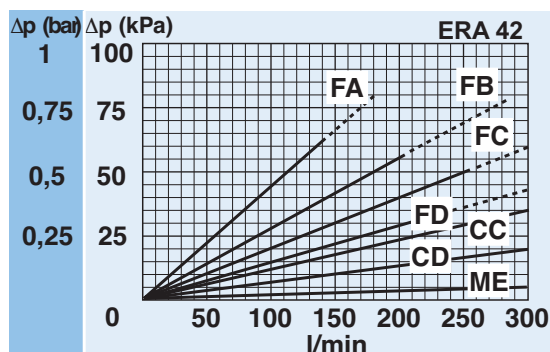
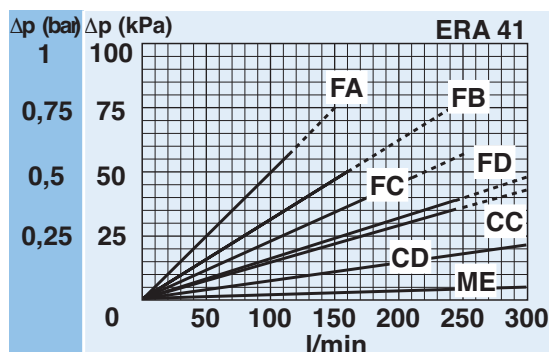
BYPASS VALVE PRESSURE DROP

When selecting the filter size, these curves must be taken into account if it is foreseen that any flow peak is to be absorbed by the bypass valve, it also must be of proper configuration to avoid pressure peaks. The valve pressure drop is directly proportional to fluid specific gravity.



PRESSURE DROP CURVES (Δp)

The “Assembly Pressure Drop (Δp)” is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow Rate and it must be lower than 50 kPa (0,5 bar).



BYPASS VALVE PRESSURE DROP

When selecting the filter size, these curves must be taken into account if it is foreseen that any flow peak is to be absorbed by the bypass valve, it also must be of proper configuration to avoid pressure peaks. The valve pressure drop is directly proportional to fluid specific gravity.

