

# Hydraulic & Offshore SUPPLIES

## Medium Pressure Filters

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Offshore House, Southwick Industrial Estate, Sunderland, SR5 3TX  
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**LA SERIE DI FILTRI HMM È  
 CONFORME ALLE SEGUENTI NORME ISO:**

- ISO 2941 - Oleoidraulica - Elementi filtranti - Verifica della resistenza allo schiacciamento o allo scoppio
- ISO 2942 - Oleoidraulica - Elementi filtranti - Verifica dell'integrità di fabbricazione e determinazione del punto di prima bolla
- ISO 2943 - Oleoidraulica - Elementi filtranti - Verifica della compatibilità dei materiali con i fluidi
- ISO 3723 - Oleoidraulica - Elementi filtranti - Verifica della resistenza alla deformazione assiale
- ISO 3724 - Oleoidraulica - Elementi filtranti - Verifica delle caratteristiche mediante prova di resistenza a fatica in funzione della portata
- ISO 3968 - Oleoidraulica - Filtri - Determinazione della perdita di carico in funzione della portata
- ISO 16889 - Oleoidraulica - Filtri - Metodo Multi-pass: valutazione delle caratteristiche di filtrazione di un elemento filtrante

**HMM FILTER SERIES IS SUITABLE  
 TO THE FOLLOWING ISO STANDARDS:**

- ISO 2941 - Hydraulic fluid power - Filter elements  
Verification of collapse / burst resistance
- ISO 2942 - Hydraulic fluid power - Filter elements  
Verification of fabrication integrity and determination of the first bubble point
- ISO 2943 - Hydraulic fluid power - Filter elements  
Verification of material compatibility with fluids
- ISO 3723 - Hydraulic fluid power - Filter elements  
Method for end load test
- ISO 3724 - Hydraulic fluid power - Filter elements  
Verification of flow fatigue characteristics
- ISO 3968 - Hydraulic fluid power - Filters - Evaluation of pressure drop versus flow characteristics
- ISO 16889 - Hydraulic fluid power filters - Multi-pass method for evaluating filtration performance of a filter element

**MATERIALI (elementi filtranti)**

<b>Fondelli</b>	Acciaio zincato
<b>Tubo di sostegno</b>	Acciaio zincato
<b>Reti di supporto</b>	Acciaio galvanizzato con rivestimento epossidico

**MATERIALS (filter elements)**

<b>Plates</b>	Galvanized steel
<b>Support tube</b>	Galvanized steel
<b>Support mesh</b>	Galvanized steel with epox coating

**SETTI FILTRANTI**

Elementi filtranti Filter elements	Descrizione Description	Materiale Material	Grado di filtrazione (µm) Filtration (µm)	Rapporto β / β Ratio	
				ISO 4572 β <sub>x</sub> ≥200	ISO 16889 β <sub>x(c)</sub> ≥200
F03	Fibra inorganica / Inorganic fibre	Fibra di vetro / Glass fibre	3	3	5
F06	Fibra inorganica / Inorganic fibre	Fibra di vetro / Glass fibre	6	6	6
F10	Fibra inorganica / Inorganic fibre	Fibra di vetro / Glass fibre	10	10	9
F25	Fibra inorganica / Inorganic fibre	Fibra di vetro / Glass fibre	25	25	20
T10	Tela / Wire mesh	Inox (aisi 304) / Inox (aisi 304)	10	-	-
T25	Tela / Wire mesh	Inox (aisi 304) / Inox (aisi 304)	25	-	-
C10	Carta trattata / Treaded paper	Fibre di cellulosa / Cellulose fibre	10	-	-
C25	Carta trattata / Treaded paper	Fibre di cellulosa / Cellulose fibre	25	-	-

**FILTRATION MATERIALS**
**SUPERFICI UTILI (cm<sup>2</sup>) ELEMENTI FILTRANTI  
 SERIE X - ΔP 2.000.000 Pa (20 bar)**

Elementi filtranti/Filter elements	CHP281	CHP282	CHP283	CHP421	CHP422
F03 - F06 - F10 - F25	325	450	870	900	1780
T10 - T25	325	450	870	900	1780
C10 - C25	325	450	870	900	1780

**FILTRATION AREA (cm<sup>2</sup>) FILTER ELEMENTS  
 SERIES X - ΔP 2.000.000 Pa (20 bar)**
**SUPERFICI UTILI (cm<sup>2</sup>) ELEMENTI FILTRANTI  
 SERIE Y - ΔP 21.000.000 Pa (210 bar)**

Elementi filtranti/Filter elements	CHP281	CHP282	CHP283	CHP421	CHP422
F03 - F06 - F10 - F25	290	410	810	810	1635
T10 - T25	290	410	810	810	1635

**FILTRATION AREA (cm<sup>2</sup>) FILTER ELEMENTS  
 SERIES Y - ΔP 21.000.000 Pa (210 bar)**

### MATERIALI (corpo)

<b>Testina</b>	HMM28 Alluminio HMM42 Ghisa
<b>Contenitore</b>	Acciaio
<b>Guarnizioni</b>	N: Nitrilica (Buna-N) V: Fluoroelastomero (Viton)
<b>Valvola di by-pass</b>	Ottone
<b>Valvola di flusso inverso</b>	Acciaio
<b>Indicatore</b>	Ottone

### MATERIALS (housing)

<b>Head</b>	HMM28 Aluminium HMM42 Cast Iron
<b>Bowl</b>	Steel
<b>Seals</b>	N: Nitrilic (Buna-N) V: Fluoroelastomer (Viton)
<b>By-pass valve</b>	Brass
<b>Reverse flow valve</b>	Steel
<b>Indicator</b>	Brass

### CONDIZIONI DI ESERCIZIO

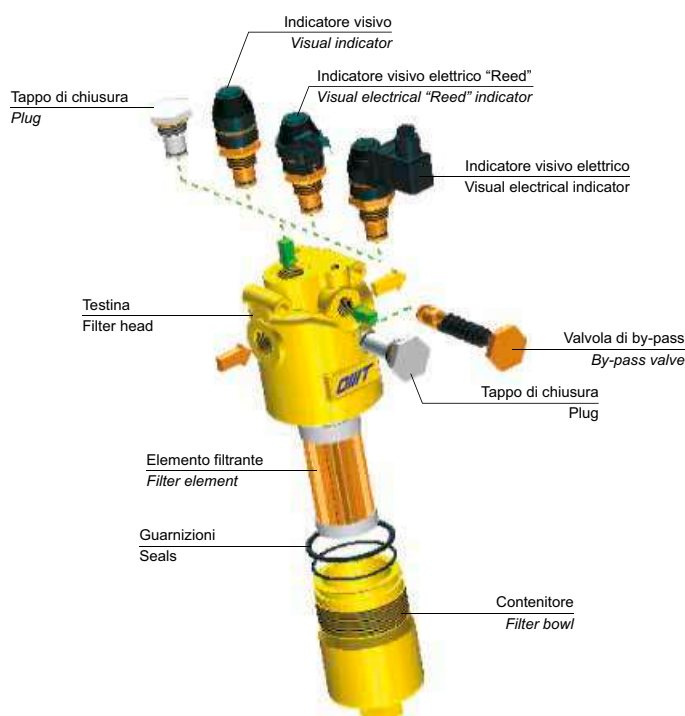
<b>Pressioni corpo filtro</b>	Pressione massima d'esercizio: HMM28 - 22.000.000 Pa (220 Bar) HMM42 - 32.000.000 Pa (320 Bar) Pressione di collaudo: HMM28 - 44.000.000 Pa (440 Bar) HMM42 - 64.000.000 Pa (640 Bar) Pressione di scoppio: HMM28 - 66.000.000 Pa (660 Bar) HMM42 - 96.000.000 Pa (960 Bar)
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<b>Temperatura d'esercizio</b>	Da -20 a +95° c
<b>Pressioni di collasso (Elemento Filtrante)</b>	Serie X : 2.000.000 Pa (20 bar) Serie Y : 21.000.000 (210 bar)
<b>Pressione taratura valvola di by-pass</b>	600.000 Pa ±10% (6 bar) (inizio apertura)
<b>Compatibilità con i liquidi - ISO 2943</b>	Compatibili con oli minerali tipo (HH, HM, HR, HV, HG secondo ISO 6743/4)

### WORKING CONDITIONS

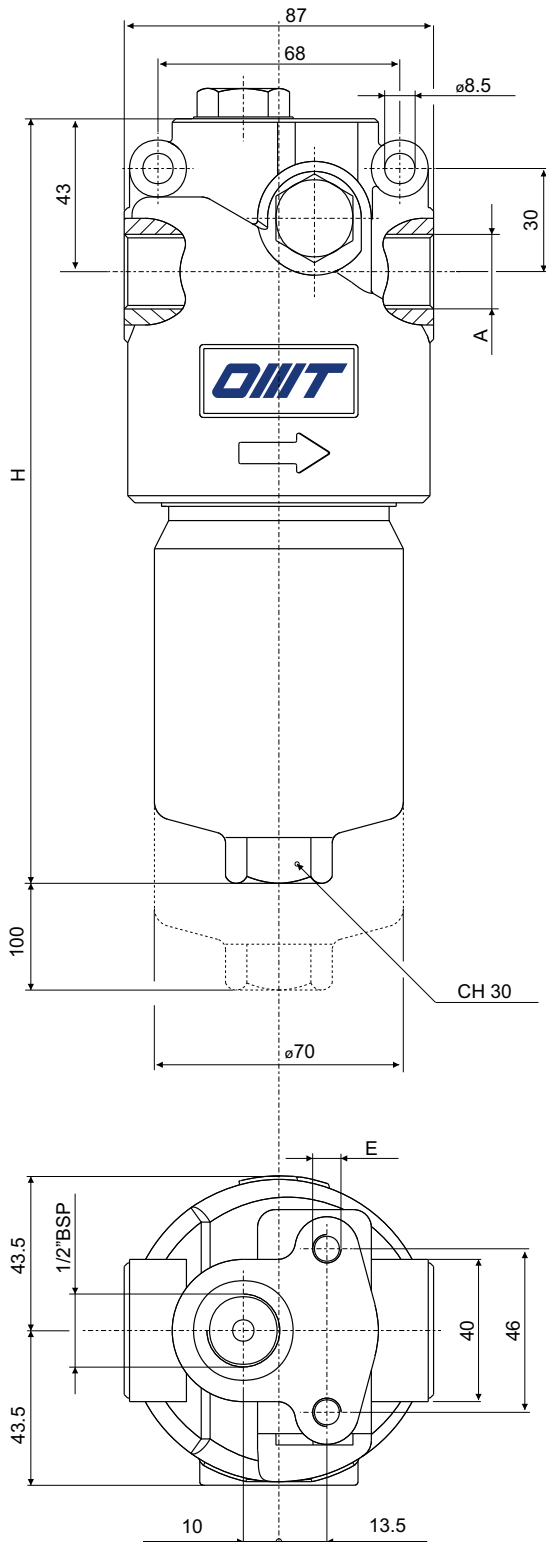
<b>Filter pressure</b>	Max working pressure: HMM28 - 22.000.000 Pa (220 Bar) HMM42 - 32.000.000 Pa (320 Bar) Testing pressure: HMM28 - 44.000.000 Pa (440 Bar) HMM42 - 64.000.000 Pa (640 Ba) Burst pressure: HMM28 - 66.000.000 Pa (660 Bar) HMM42 - 96.000.000 Pa (960 Bar)
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<b>Operating pressure</b>	-20 a +95° c
<b>Collapse pressure (Filter Element)</b>	X series : 2.000.000 Pa (20 bar) Y series : 21.000.000 (210 bar)
<b>By-pass valve setting pressure</b>	600.000 Pa ±10% (6 bar) (from opening)
<b>Compatibly with hydraulic fluids ISO 2943</b>	Compatible with mineral oils such as HH, HM, HR, HV, HG according to ISO 6743/4)



Le portate sono state calcolate per avere una perdita di carico  $\Delta p \leq 120.000 \text{ Pa}$  (1.2 bar) con olio minerale avente viscosità cinematica 30 cSt e densità  $860 \text{ kg/m}^3$ . (vedi note a pag.106/107)

Flows have been calculated just in order to obtain a pressure drop  $\Delta p \leq 120.000 \text{ Pa}$  (1.2 bar) with mineral oil kinematic viscosity 30 cSt and  $860 \text{ kg/m}^3$  density. (See remarks on page 106/107)



### ATTACCHI FILETTATI THREADED CONNECTIONS

Tipo / Type	A	E (prof. 15mm) E (depth 15mm)
1	1/2" BSP	M 8
2	3/4" BSP	M 8
3	1/2" NPT	5/16" UNC
4	3/4" NPT	5/16" UNC
5	SAE8 - 3/4"-16UNF	5/16" UNC
	SAE12 - 1 1/16"- 12UN	5/16" UNC

### LUNGHEZZE LENGTHS

Tipo / Type	H (mm)	Lunghezza OMT/Pall Length OMT/Pall
1	187	HMM281..
2	214	HMM282..
3	310	HMM283..

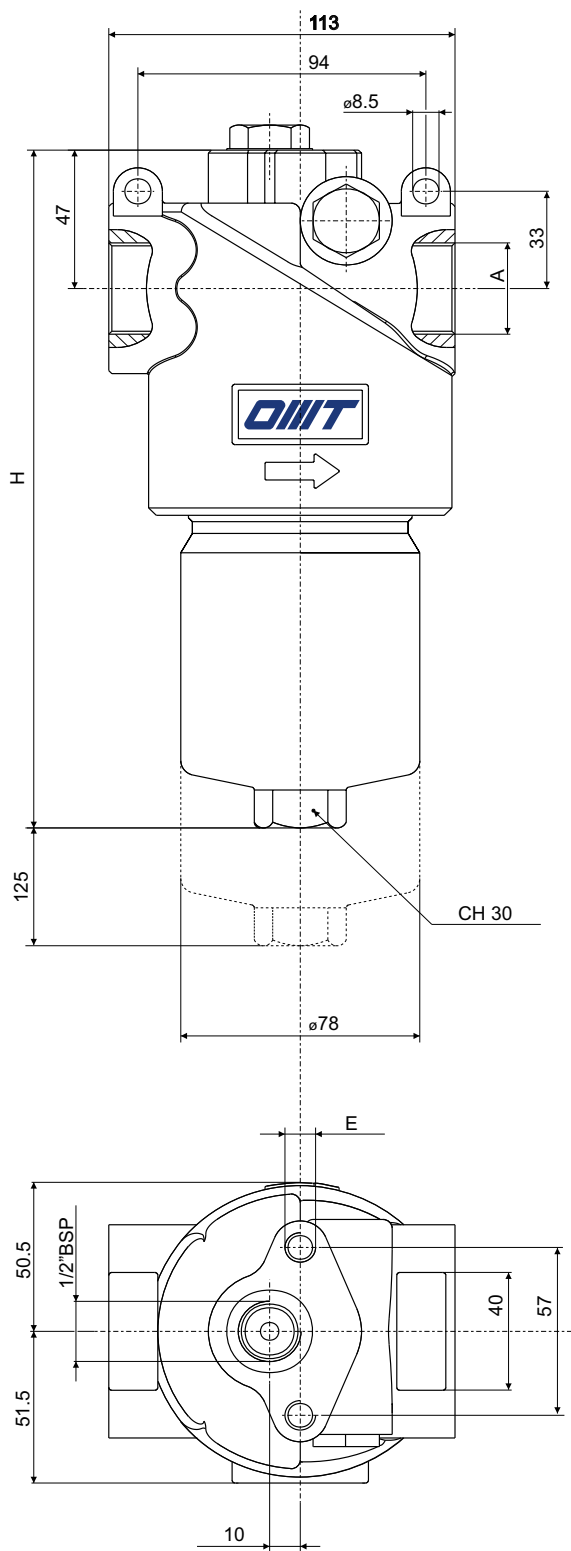
### PORTATE CONSIGLIATE RECOMMENDED FLOWS

(Elementi in microfibra)  
(Glass fibre elements)

HMM	Elemento filtrante Replace element	Portata (L/min) serie X Flow (L/min) X series	Portata (L/min) serie Y Flow (L/min) Y series	Peso (Kg) Weight (Kg)
281	F03	17	15	2,65
281	F06	20	18	2,65
281	F10	35	33	2,65
281	F25	50	47	2,65
282	F03	26	22	3,2
282	F06	40	29	3,2
282	F10	55	50	3,2
282	F25	80	70	3,2
283	F03	38	32	4,7
283	F06	50	40	4,7
283	F10	70	60	4,7
283	F25	95	85	4,7

Le portate sono state calcolate per avere una perdita di carico  $\Delta p \leq 120.000 \text{ Pa}$  (1.2 bar) con olio minerale avente viscosità cinematica 30 cSt e densità  $860 \text{ kg/m}^3$ . (vedi note a pag. 107)

Flows have been calculated just in order to obtain a pressure drop  $\Delta p \leq 120.000 \text{ Pa}$  (1.2 bar) with mineral oil kinematic viscosity 30 cSt and  $860 \text{ kg/m}^3$  density. (See remarks on page 107)

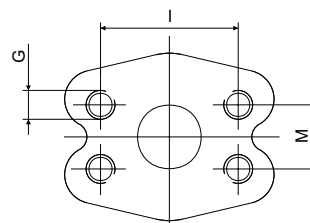


### ATTACCHI FILETTATI THREADED CONNECTIONS

Tipo / Type	A	E (prof. 15mm) E (depth 15mm)
	3/4" BSP	M 10
1	1" BSP	M 10
2	3/4" NPT	3/8" UNC
3	1" NPT	3/8" UNC
4	SAE12 - 1 1/16"-12UN	3/8" UNC
5	SAE16 - 1 5/16"-12UN	3/8" UNC

### ATTACCHI FLANGIATI FLANGED CONNECTIONS

Tipo Type	Attacco-Connection	I	M	G	E (prof. 15mm) E (depth 15mm)
6	3/4"SAE -3000 PSI/M	47.6	22.5	M 10	M 10
7	1"SAE -3000 PSI/M	52.4	26.2	M 10	M 10
8	3/4"SAE -3000 PSI/UNC	47.6	22.5	3/8" UNC	3/8" UNC
9	1"SAE -3000 PSI/UNC	52.4	26.2	3/8" UNC	3/8" UNC



### LUNGHEZZE - LENGTHS

Tipo Type	H (mm)	Lunghezza Length
1	230	HMM421..
2	341	HMM422..

### PORTATE CONSIGLIATE RECOMMENDED FLOWS

(Elementi in microfibra - Glass fibre elements)

HMM	Elemento filtrante Replace element	Portata (L/min) serie X Flow (L/min) X series	Portata (L/min) serie Y Flow (L/min) Y series	Peso (Kg) Weight (Kg)
421	F03	55	38	3,9
421	F06	65	55	3,9
421	F10	80	60	3,9
421	F25	104	75	3,9
422	F03	100	80	5,6
422	F06	113	90	5,6
422	F10	135	115	5,6
422	F25	170	145	5,6

La caduta di pressione completa si ottiene sommando la caduta di pressione del corpo filtro e quella dell'elemento filtrante.

#### Cadute di pressione nel corpo filtro

Le curve sono valide con olio minerale avente massa volumica di 860 Kg/m<sup>3</sup>.

La caduta di pressione è proporzionale alla massa volumica.

#### Cadute di pressione negli elementi filtranti

Le curve sono valide con olio minerale avente viscosità cinematica di 30 cSt.

La variazione di caduta di pressione è proporzionale alla viscosità cinematica.

The pressure drop of the complete filter is calculated by adding the pressure drop of the housing to that of the filter element.

#### Pressure drops in the housings

The graphics refer to use of mineral oil with a mass density of 860 Kg/m<sup>3</sup>.

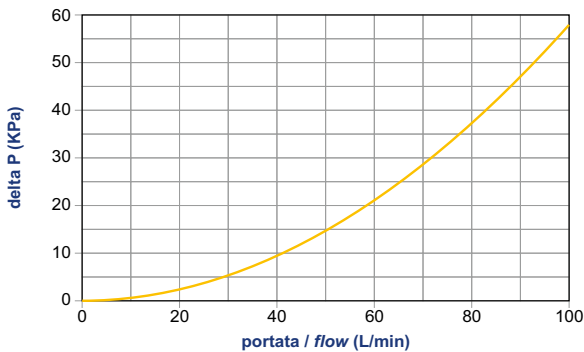
The pressure drop is proportional to the variations of mass density.

#### Pressure drops in the filter elements

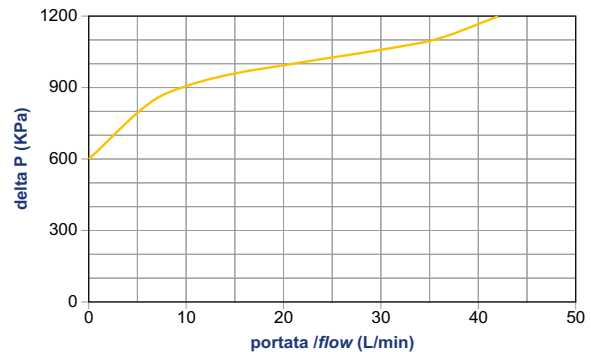
The graphics refer to mineral oil with a kinematic viscosity of 30 cSt. The variation of the pressure drop is proportional to viscosity.

## HMM serie/series 28

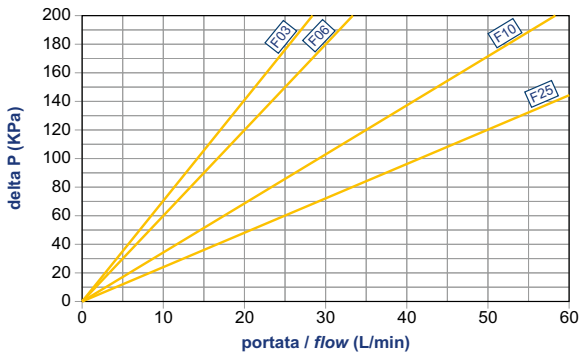
### ΔP CORPI / ΔP HOUSINGS



### BY-PASS / BY-PASS

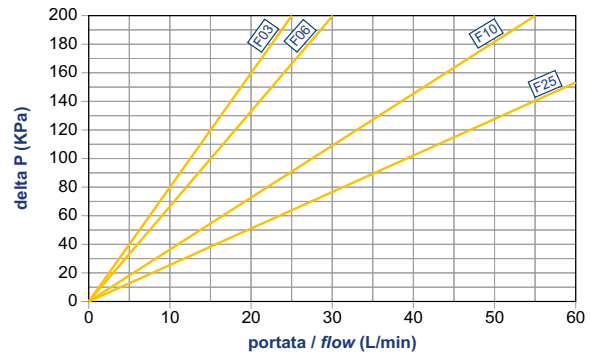


### ΔP ELEMENTI X / ΔP X ELEMENTS

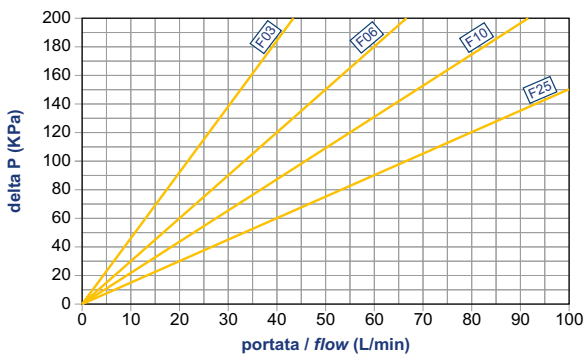


### tipo 281 series

### ΔP ELEMENTI Y / ΔP Y ELEMENTS

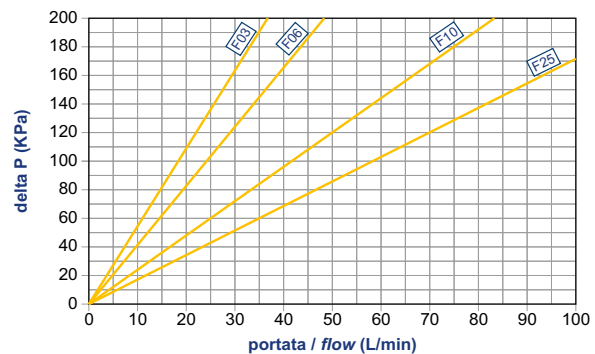


### ΔP ELEMENTI X / ΔP X ELEMENTS

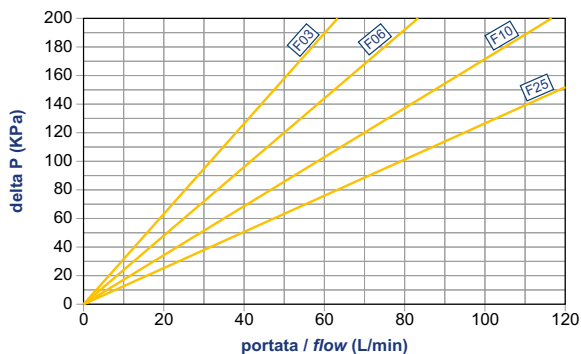


### tipo 282 series

### ΔP ELEMENTI Y / ΔP Y ELEMENTS

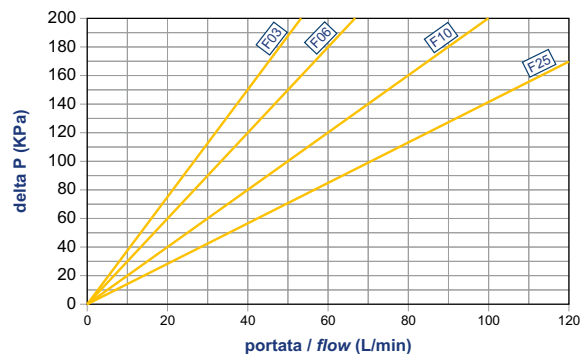


$\Delta P$  ELEMENTI X /  $\Delta P$  X ELEMENTS



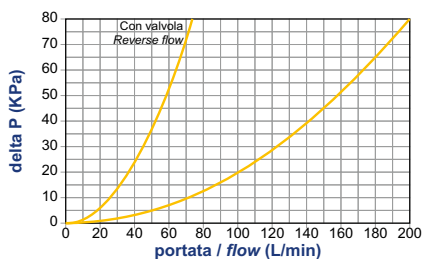
tipo 283 series

$\Delta P$  ELEMENTI Y /  $\Delta P$  Y ELEMENTS

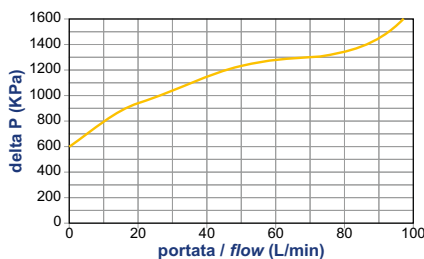


## HMM serie/series 42

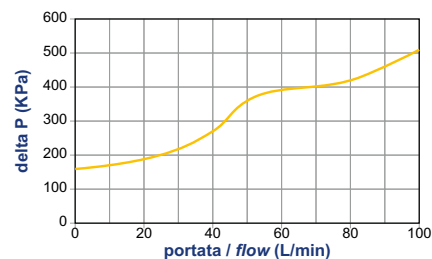
$\Delta P$  CORPI /  $\Delta P$  HOUSINGS



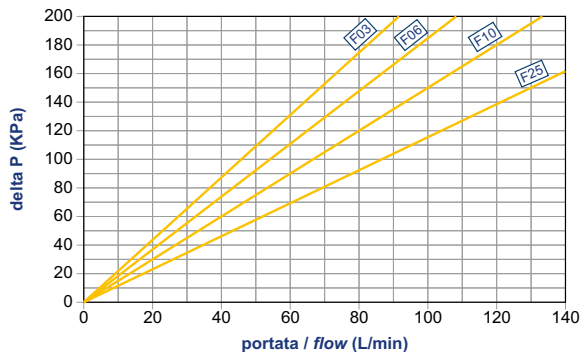
BY-PASS / BY-PASS



RF FLUSSO INV. / REV. FLOW VALVE

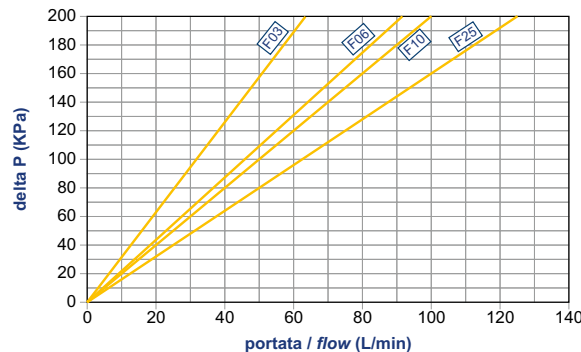


$\Delta P$  ELEMENTI X /  $\Delta P$  X ELEMENTS

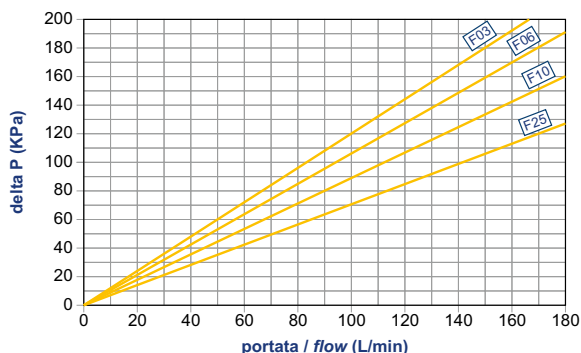


tipo 421 series

$\Delta P$  ELEMENTI Y /  $\Delta P$  Y ELEMENTS

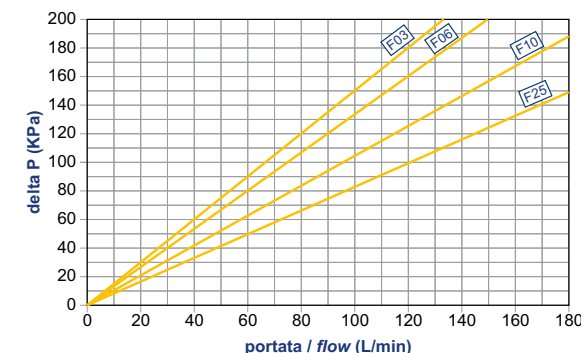


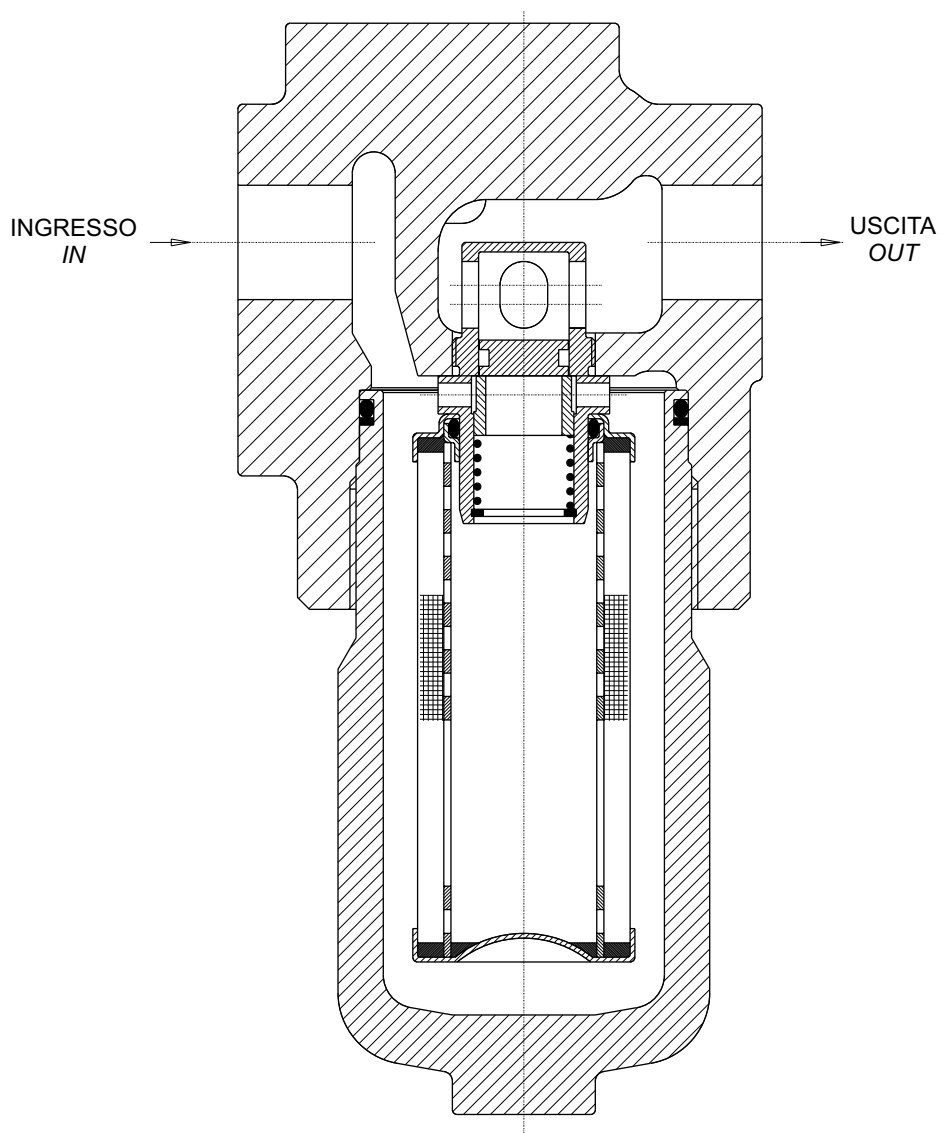
$\Delta P$  ELEMENTI X /  $\Delta P$  X ELEMENTS



tipo 422 series

$\Delta P$  ELEMENTI Y /  $\Delta P$  Y ELEMENTS





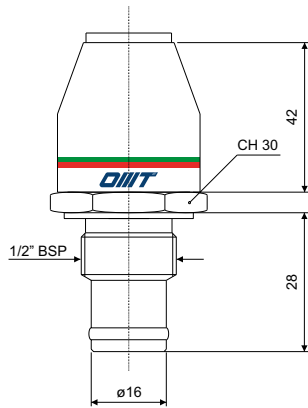
Disponibile per i modelli HMM:  
421 - 422

Available for HMM models:  
421 - 422



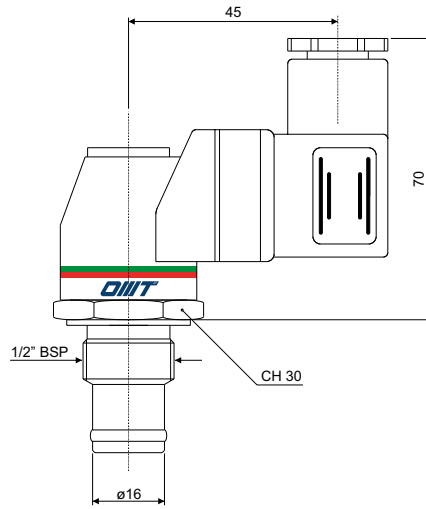
## DV500/800

Indicatore visivo  
Visual Indicator



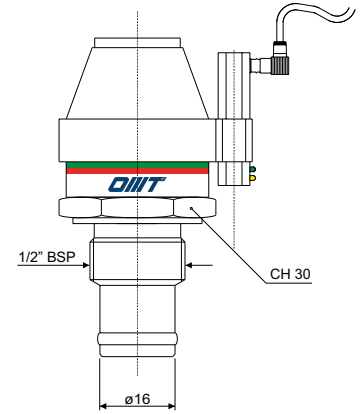
## DE500/800\*

Indicatore visivo-elettrico  
Electrical visual Indicator



## DR500/800\*

Indicatore visivo-elettrico  
con contatti REED  
Electrical visual Indicator  
with REED contacts



(\* Protection IP65 connector DIN 43650)

### CARATTERISTICHE TECNICHE TECHNICAL DATA

Codice Part number	Descrizione Description	Taratura Setting	Contatti elettrici Electrical Contacts	Applicazione Application
D V 500	visivo - visual	500.000Pa (5 bar)	-	Filtri con By-pass ed elementi filtranti serie "X" Filters with By-pass and elements "X" series
D E 500	elettrico - electrical		Scambio Switch	
D R 500	visivo- elettrico con contatti "reed" Visual-electrical with "reed" contacts			
D V 800	visivo - visual	800.000Pa (8 bar)	-	Filtri con By-pass ed elementi filtranti serie "Y" Filters with By-pass and elements "Y" series
D E 800	elettrico - electrical		Scambio Switch	
D R 800	visivo- elettrico con contatti "reed" Visual-electrical with "reed" contacts			

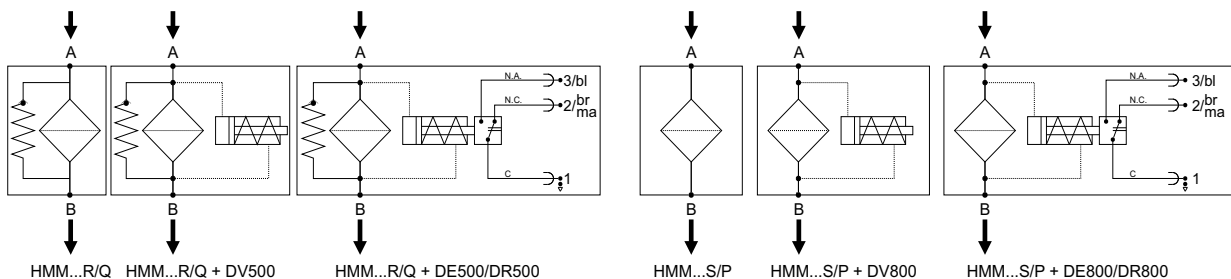
Tensioni di rottura per "DR 500 e DR 800" Breakdown voltage for "DR 500 and DR 800"	
Tensione di alimen. (V) Feeder voltage (V)	Potenza con carico induttivo (VA) Power with inductive load (VA)
A.C. 3-115	20
D.C. 3-115	20

Tensioni di rottura per "DE 500 e DE 800" Breakdown voltage for "DE 500 and DE 800"		
Tensione di alimen. (V) Feeder voltage (V)	Carico resistivo (A) Resistive load (A)	Carico induttivo (A) Inductive load (A)
A.C. 125	5	5
A.C. 250	5	5
D.C. 15	10	10
D.C. 30	5	5
D.C. 50	2	2
D.C. 125	0.5	0.06

### SIMBOLOGIA / SIMBOLOGY

Con By-pass / With By-pass

Senza By-pass / Without By-pass



HMM 281 T25 Y N S 3

Grandezza nominale  
Nominal Size

281
282
283
421
422

Elemento filtrante  
Filtration Element

-	-	Senza elemento filtrante Without filtration elements
C10*	10 µm	Carta trattata con resine βx>2 Resin treated cellulose βx>2
C25*	25 µm	Carta trattata con resine βx>2 Resin treated cellulose βx>2
F03	3 µm	Fibre inorganiche βx>200 Inorganic fibre βx>200
F06	6 µm	Fibre inorganiche βx>200 Inorganic fibre βx>200
F10	10 µm	Fibre inorganiche βx>200 Inorganic fibre βx>200
F25	25 µm	Fibre inorganiche βx>200 Inorganic fibre βx>200
T10	10 µm	Tela metallica (Aisi304) Steel Aisi 304 Wire mesh
T25	25 µm	Tela metallica (Aisi304) Steel Aisi 304 Wire mesh

\*Solo versione X  
\*Only X version

## ΔP. Cartuccia / Cartridge

X	2.000.000 (20 Bar)	per filtri con By-pass for filters with By-pass
Y	21.000.000 (210 Bar)	per filtri senza By-pass for filters without By-pass

Guarnizioni  
Seals

N	Nitrica / Buna-N
V	Viton

Valvola di By-pass  
By-pass valve

S	Senza By-pass Without By-pass
R	By-pass Δp 6 bar
P	Con valvola di flusso inverso With reverse flow valve
Q	Con valvola di flusso inverso + By-Pass With reverse flow valve + By-Pass

\*Opzioni P, Q non valide per versioni di tipo HMM28  
\*P, Q options not valid for HMM28 versions

CHP 421 F03 Y N

Codice per l'ordinazione della cartuccia  
How to order the replacement elementATTACCHI  
CONNECTIONS

A	HMM28	HMM42
-	1/2" BSP	3/4" BSP
1	3/4" BSP	1" BSP
2	1/2" NPT	3/4" NPT
3	3/4" NPT	1" NPT
4	SAE8 3/4" - 16UNF	SAE12 1 1/16" - 12UN
5	SAE12 1 1/16" - 12UN	SAE16 1 5/16" - 12UN
6		3/4" SAE-3000PSI/M
7		1" SAE-3000PSI/M
8		3/4" SAE-3000PSI/UNC
9		1" SAE-3000PSI/UNC

# Hydraulic & Offshore SUPPLIES



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