

OMIT



SERIE **AFR** SERIES

Filtri in aspirazione e sul ritorno
Suction or return filters

Con il fine di migliorare costantemente la qualità dei nostri prodotti, ci riserviamo il diritto di modificarne in qualsiasi momento le caratteristiche senza preavviso.
È responsabilità della spettabile clientela la costante verifica dei dati contenuti nei cataloghi.
Questo catalogo annulla e sostituisce i precedenti.

In order to constantly improve our products quality, we take the right to make changes to the catalogues at any time without notice.
Customers have the responsibility to continuously check all the information in the catalogues.
This catalogue cancels and replaces the previous ones.

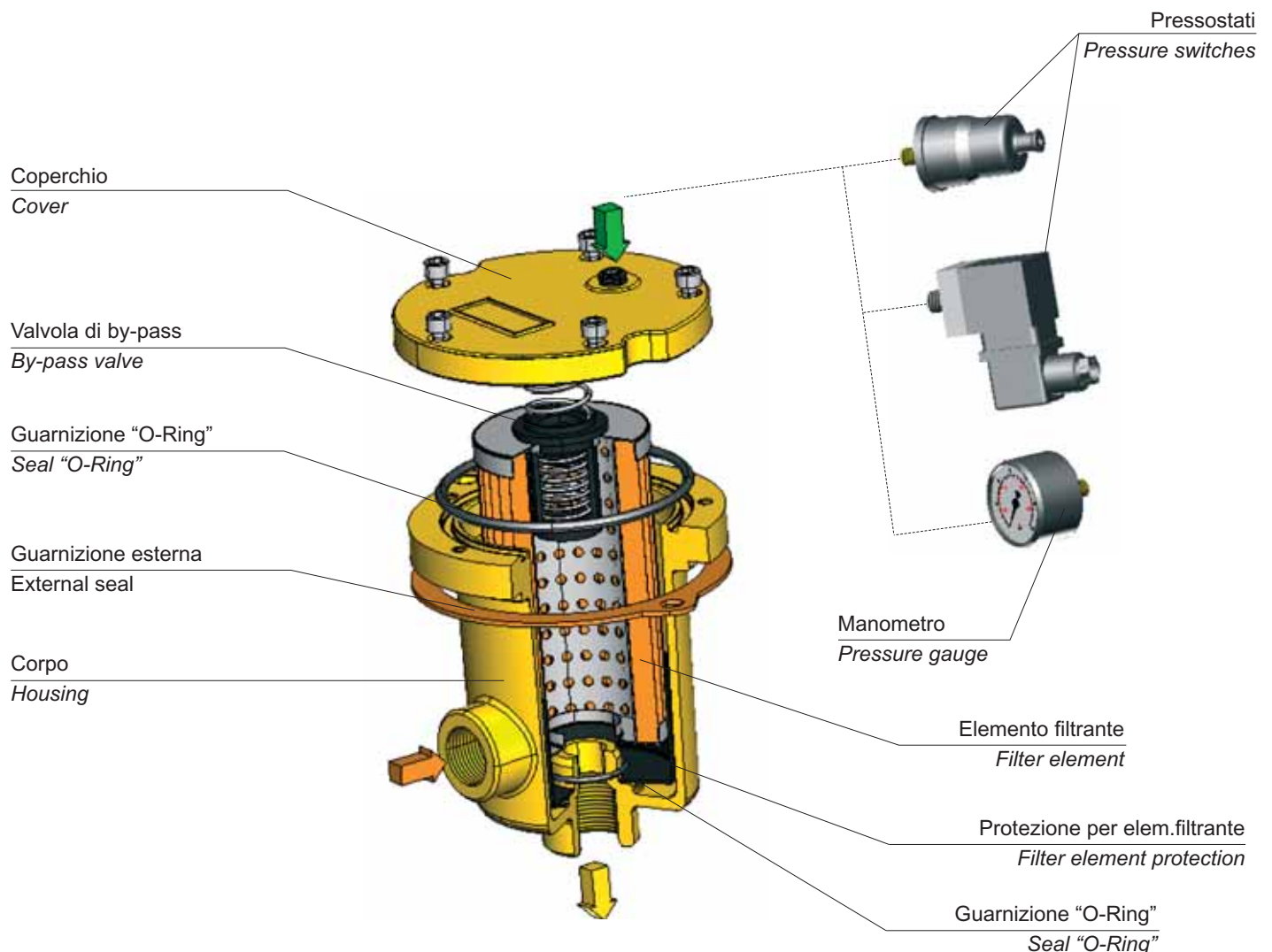
FILTRI IN ASPIRAZIONE E SUL RITORNO SERIE AFR
1.500.000 Pa (15 BAR)

SUCTION AND RETURN FILTER SERIES AFR
1.500.000 Pa (15 BAR)



AFR è la serie di filtri per linee in aspirazione e sul ritorno; la gamma è composta da quattro differenti grandezze con portate nominali fino a 180 L/min. Gli elementi filtranti sono costruiti con i più evoluti materiali, a garanzia di una elevata efficienza di filtrazione e della massima durata nel tempo. La divisione Ricerca e Sviluppo, presente nella sede di Calvenzano (Bg), utilizzando moderne e sofisticate apparecchiature di prova, esercita un costante controllo delle prestazioni dei filtri e degli elementi filtranti OMT.

AFR is the series to be installed on return and suction lines; the range includes four different sizes with nominal flow rates up to 180 L/min. Filter elements are made with the most advanced materials, to guarantee a high filtration efficiency and a long-lasting life. OMT Research & Development department, located in Calvenzano (Bg), uses modern and sophisticated test equipments and makes a continuous check about filter and filter element performances.



LA SERIE DI FILTRI AFR 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 della resistenza a fatica per variazioni di 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

AFR 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)

| | |
|-------------------------|--|
| Fondelli | Lamiera zincata |
| Tubo di sostegno | Lamiera zincata |
| Reti di supporto | Acciaio galvanizzato con rivestimento epossidico |

MATERIALS (filter elements)

| | |
|---------------------|------------------------------------|
| End caps | Galvanized sheet iron |
| Support tube | Galvanized sheet iron |
| Support mesh | Galvanized steel with epox coating |

SETTI FILTRANTI

FILTRATION MATERIALS

| Elementi filtranti Filter elements | Descrizione Description | Materiale Material | Grado di filtrazione (µm) Filtration (µm) | Rapporto β / β Ratio | |
|---------------------------------------|------------------------------------|--------------------------------------|--|----------------------|------------------------|
| | | | | ISO 4572 βx≥200 | ISO 16889 βx(c)≥200 |
| C10 | Carta trattata / Treated paper | Fibre di cellulosa / Cellulose fibre | 10 | - | - |
| C25 | Carta trattata / Treated paper | Fibre di cellulosa / Cellulose fibre | 25 | - | - |
| 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 |
| R60 | Rete a maglia quadra / Square mesh | Aisi 304 | 60 | - | - |
| R90 | Rete a maglia quadra / Square mesh | Aisi 304 | 90 | - | - |
| R125 | Rete a maglia quadra / Square mesh | Aisi 304 | 125 | - | - |
| R250 | Rete a maglia quadra / Square mesh | Aisi 304 | 250 | - | - |

SUPERFICI UTILI (cm²) ELEMENTI FILTRANTI

FILTRATION AREA (cm²) FILTER ELEMENTS

| Elementi filtranti / Filter elements | CR 091 | CR 111 | CR 112 | CR 171 |
|--------------------------------------|--------|--------|--------|--------|
| C10 - C25 | 500 | 890 | 1380 | 4650 |
| F03 - F06 - F10 - F25 | 380 | 820 | 1260 | 3780 |
| R60 - R90 - R125 - R250 | 280 | 450 | 700 | 1860 |

MATERIALI (corpo)

| | |
|---------------------------|--|
| Corpo | Alluminio |
| Coperchio | Alluminio |
| Guarnizioni | N: Nitrilica (Buna-N) V: Fluoroelastomero (viton) |
| Valvola di by-pass | Corpo (nylon) |
| Indicatore | Ottone |

MATERIALS (housing)

| | |
|----------------------|---|
| Housing | Aluminium |
| Cover | Aluminium |
| Seals | N: Nitrile (Buna-N) V: Fluoroelastomer (viton) |
| By-pass valve | Housing (nylon) |
| Indicator | Brass |

CONDIZIONI DI ESERCIZIO

| | |
|---|---|
| Pressioni corpo filtro | Pressione massima d'esercizio: 1.500.000 Pa (15 bar) Pressione di collaudo: 2.400.000 Pa (24 bar) Pressione di scoppio: 45.000.000 Pa (45 bar) |
| Temperatura d'esercizio | Da -25 a +95 °C |
| Pressioni di collasso degli elementi filtranti | 1.000.000 Pa (10 bar) |
| Pressione taratura valvola di by-pass | Ritorno: 170.000 Pa ±10% (1.7 bar) (inizio apertura) Aspirazione: 25.000 Pa ±10% (0.25 bar) (inizio apertura) |
| Compatibilità con i liquidi - ISO 2943 | Compatibili con oli minerali tipo (HH, HM, HR, HV, HG secondo ISO 6743/4) |

WORKING CONDITIONS

| | |
|--|---|
| Filter pressure | Max working pressure: 1.500.000 Pa (15 bar) Test pressure: 2.400.000 Pa (24 bar) Bursting pressure: 45.000.000 Pa (45 bar) |
| Working temperature | -25 to +95 °C |
| Collapse pressure (filter element) | 1.000.000 Pa (10 bar) |
| By-pass valve setting pressure | Return: 170.000 Pa ±10% (1.7 bar) (starting of opening) Suction: 25.000 Pa ±10% (0.25 bar) (starting of opening) |
| Compatibly with hydraulic fluids ISO 2943 | Compatible with mineral oils type (HH, HM, HR, HV, HG according to ISO 6743/4) |

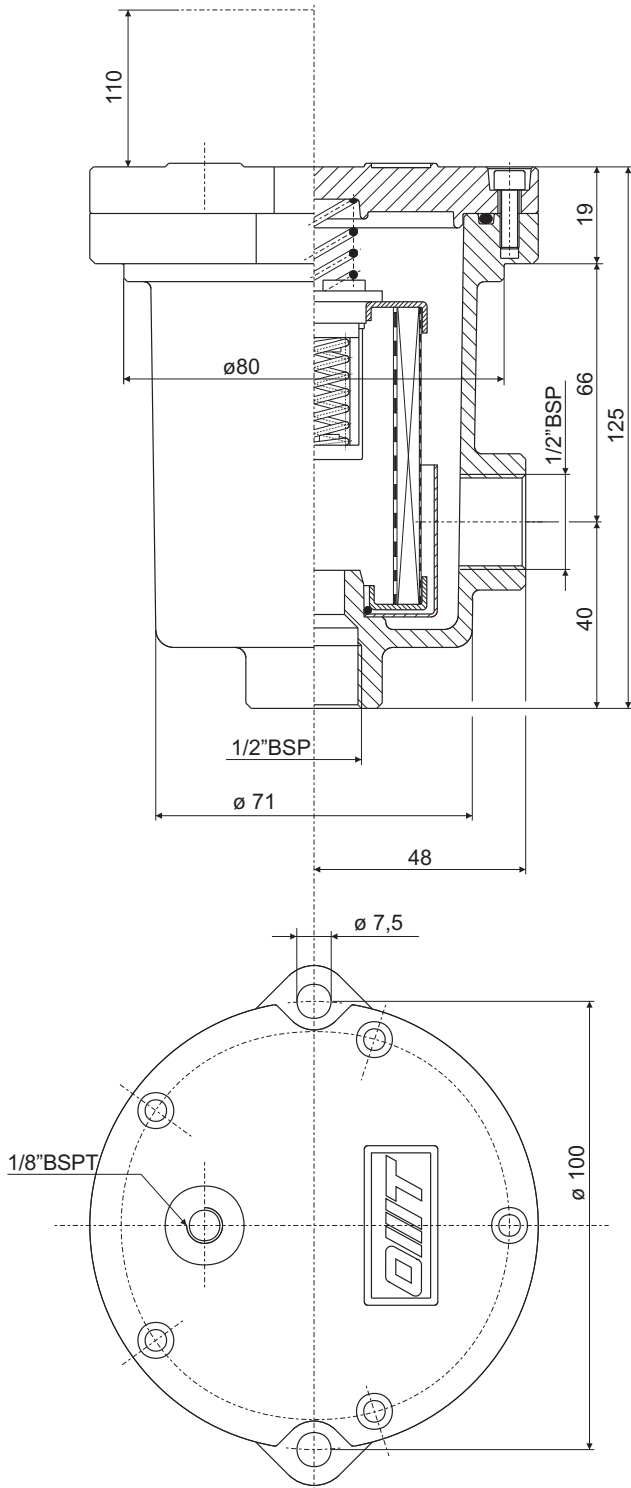
Le portate sono state calcolate per avere una perdita di carico $\Delta p \leq 40.000$ Pa (0.4 bar) per i filtri sul ritorno e $\Delta p \leq 0.000$ Pa (0.1 bar) per i filtri in aspirazione.

I valori sono stati ottenuti con olio minerale avente viscosità cinematica 30 cSt e densità 860 kg/m³. (vedi note a pag. 8)

Flows have been calculated just in order to obtain a pressure drop $\Delta p \leq 40.000$ Pa (0.4 bar) for return lines and $\Delta p \leq 10.000$ Pa (0.1 bar) for suction lines. The values have been obtained using mineral oil kinematic viscosity 30 cSt and 860 kg/m³ density. (See remarks on pag. 8)

PORTATE CONSIGLIATE RECOMMENDED FLOWS

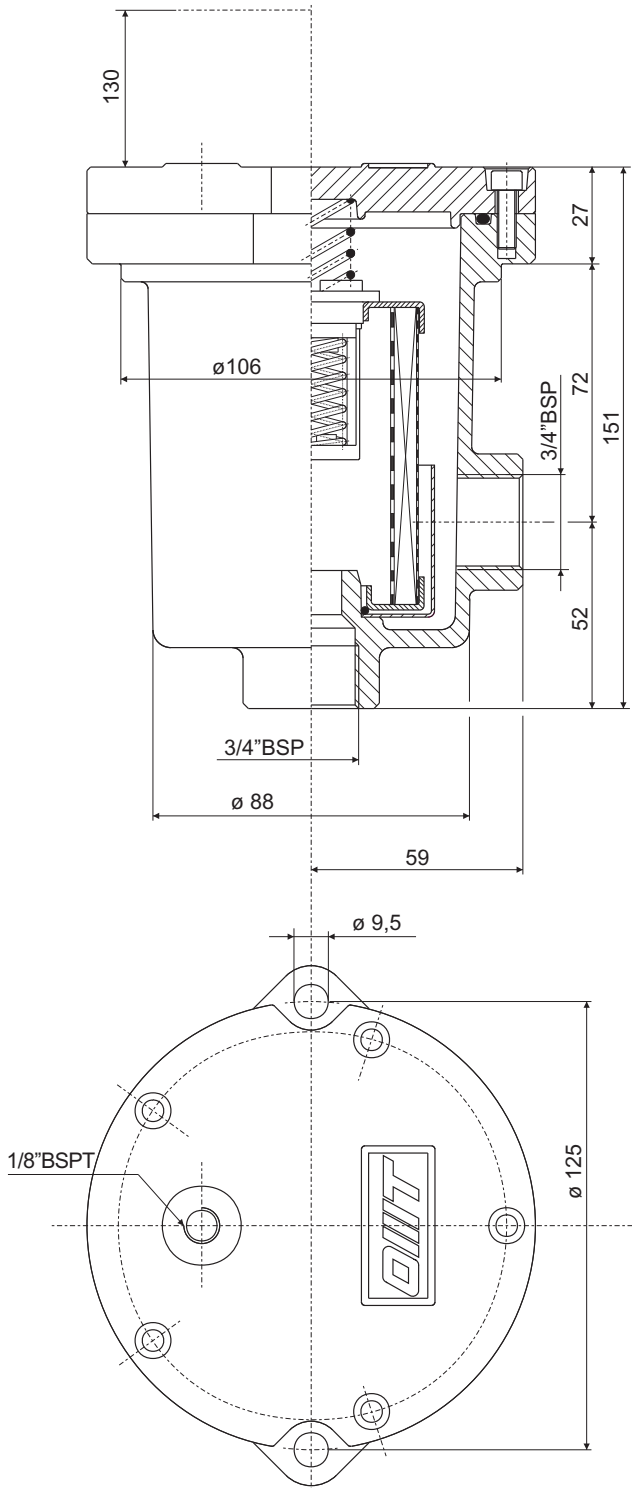
| AFR | Elemento filtrante Filter element | Portata / Flow (l/min) | | Peso Weight (kg) |
|-----|--------------------------------------|---------------------------|-------------------|------------------------|
| | | Aspirazione Suction | Ritorno Return | |
| 30 | C10 | 5 | 16 | 0,700 |
| 30 | C25 | 8 | 20 | 0,700 |
| 30 | F03 | - | 9 | 0,700 |
| 30 | F06 | - | 10 | 0,700 |
| 30 | F10 | - | 13 | 0,700 |
| 30 | F25 | - | 17 | 0,700 |
| 30 | R60 / R90 | 12 | 30 | 0,700 |
| 30 | R125 / R250 | 15 | 30 | 0,700 |



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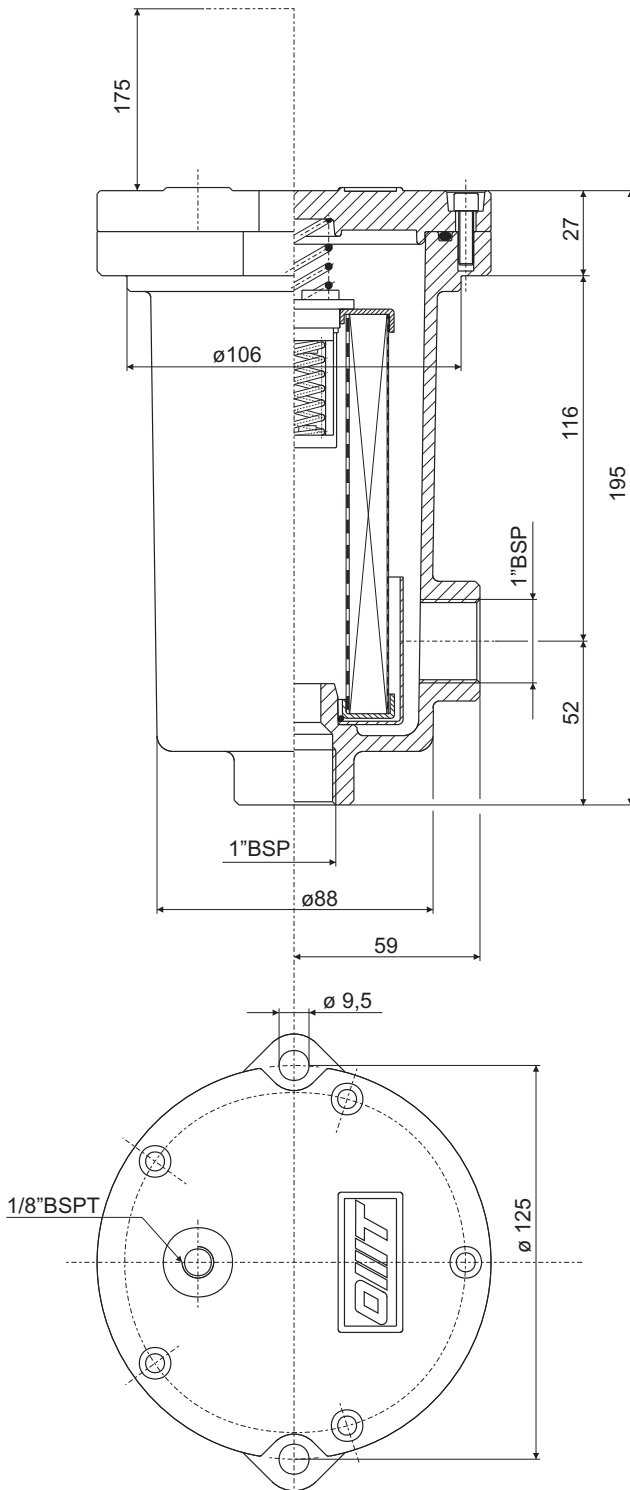
PORTATE CONSIGLIATE RECOMMENDED FLOWS

| AFR | Elemento filtrante Filter element | Portata / Flow (l/min) | | Peso Weight (kg) |
|-----|--------------------------------------|---------------------------|-------------------|------------------------|
| | | Aspirazione Suction | Ritorno Return | |
| 60 | C10 | 15 | 49 | 1,200 |
| 60 | C25 | 25 | 65 | 1,200 |
| 60 | F03 | - | 27 | 1,200 |
| 60 | F06 | - | 29 | 1,200 |
| 60 | F10 | - | 32 | 1,200 |
| 60 | F25 | - | 41 | 1,200 |
| 60 | R60 | 27 | 68 | 1,200 |
| 60 | R90 | 29 | 71 | 1,200 |
| 60 | R125 / R250 | 30 | 71 | 1,200 |

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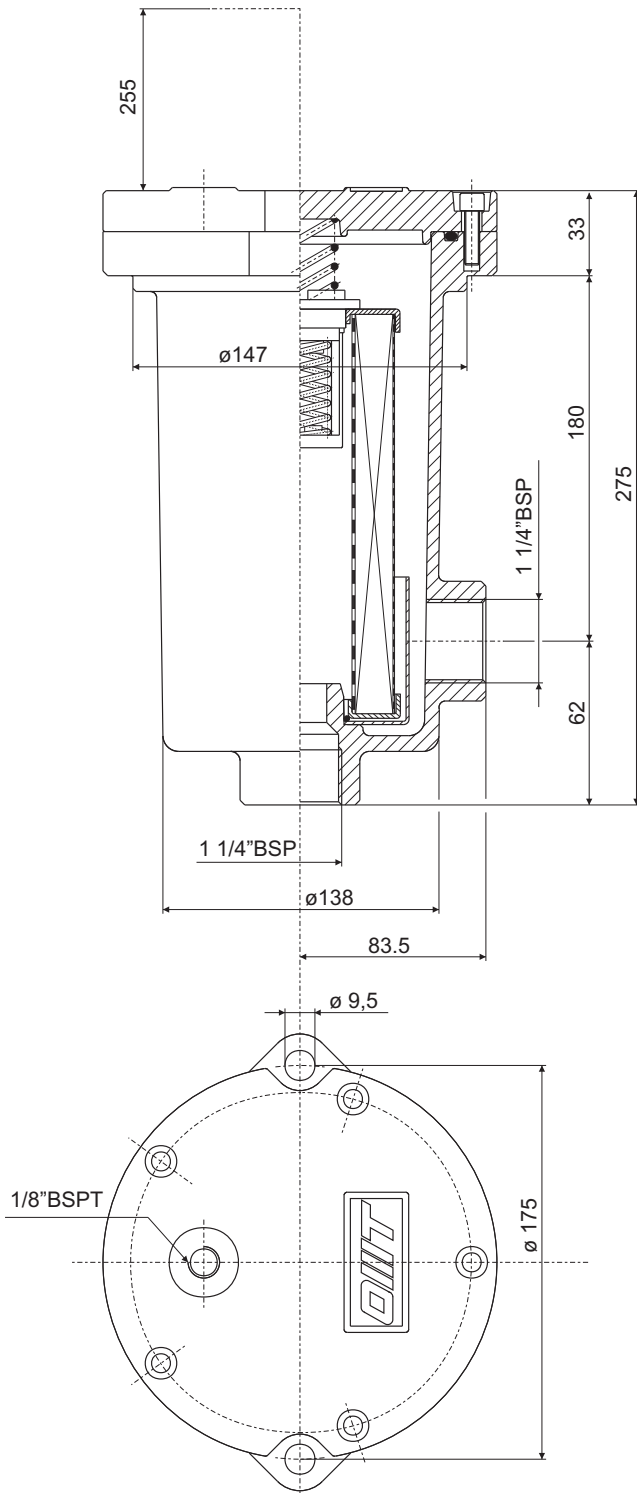
PORTATE CONSIGLIATE RECOMMENDED FLOWS

| AFR | Elemento filtrante Filter element | Portata / Flow (l/min) | | Peso Weight (kg) |
|-----|--------------------------------------|---------------------------|-------------------|------------------------|
| | | Aspirazione Suction | Ritorno Return | |
| 100 | C10 | 22 | 85 | 1,450 |
| 100 | C25 | 41 | 110 | 1,450 |
| 100 | F03 | - | 36 | 1,450 |
| 100 | F06 | - | 40 | 1,450 |
| 100 | F10 | - | 56 | 1,450 |
| 100 | F25 | - | 73 | 1,450 |
| 100 | R60 | 47 | 110 | 1,450 |
| 100 | R90 | 50 | 110 | 1,450 |
| 100 | R125 / R250 | 50 | 110 | 1,450 |

Le portate sono state calcolate per avere una perdita di carico $\Delta p \leq 40.000$ Pa (0.4 bar) per i filtri sul ritorno e $\Delta p \leq 10.000$ Pa (0.1 bar) per i filtri in aspirazione.

I valori sono stati ottenuti con olio Minerale avente viscosità cinematica 30 cSt e densità 860 kg/m³. (vedi note a pag. 8)

Flows have been calculated just in order to obtain a pressure drop $\Delta p \leq 40.000$ Pa (0.4 bar) for return lines and $\Delta p \leq 10.000$ Pa (0.1 bar) for suction lines. The values have been obtained using mineral oil kinematic viscosity 30 cSt and 860 kg/m³ density. (See remarks on pag. 8)



PORTATE CONSIGLIATE RECOMMENDED FLOWS

| AFR | Elemento filtrante Filter element | Portata / Flow (l/min) | | Peso Weight (kg) |
|-----|--------------------------------------|---------------------------|-------------------|------------------------|
| | | Aspirazione Suction | Ritorno Return | |
| 180 | C10 | 53 | 150 | 3,5 |
| 180 | C25 | 60 | 189 | 3,5 |
| 180 | F03 | - | 94 | 3,5 |
| 180 | F06 | - | 104 | 3,5 |
| 180 | F10 | - | 123 | 3,5 |
| 180 | F25 | - | 131 | 3,5 |
| 180 | R60 | 69 | 200 | 3,5 |
| 180 | R90 | 72 | 200 | 3,5 |
| 180 | R125 / R250 | 80 | 200 | 3,5 |

Cadute di Pressione (conformi a ISO 3968)

Pressure Drops (according to ISO 3968)



La caduta di pressione del filtro completo 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/m³. La caduta di pressione è direttamente 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 the one of the filter element.

Pressure drops in the housing

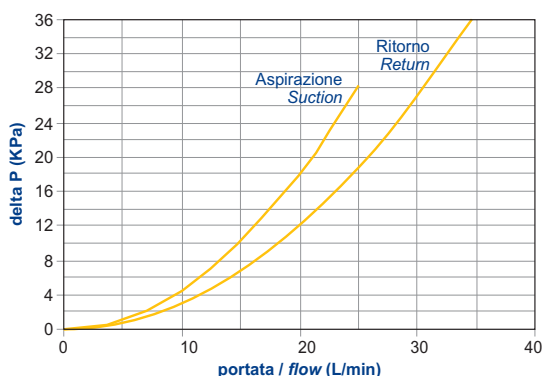
The graphics refer to the use of mineral oil with a mass density of 860 kg/m³. The pressure drop is directly proportional to the mass density.

Pressure drops in the filter elements

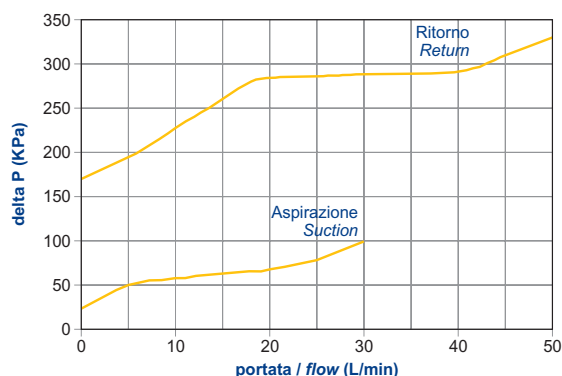
The graphics refer to mineral oil with a kinematic viscosity of 30 cSt. The variation of the pressure drop is proportional to the kinematic viscosity.

AFR serie/series 30

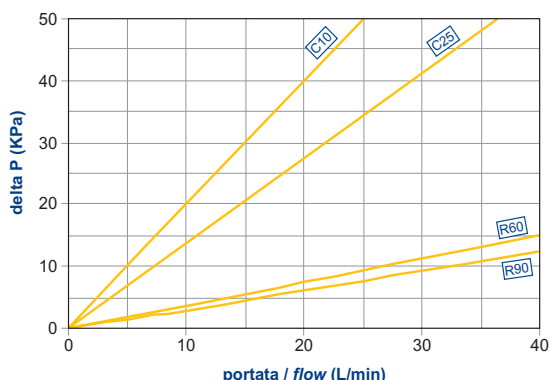
ΔP CORPI / ΔP HOUSINGS



BY-PASS / BY-PASS

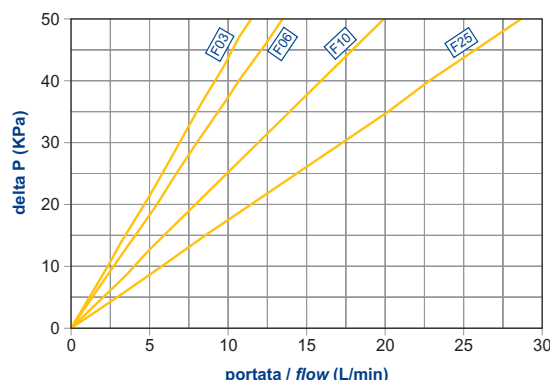


ΔP ELEMENTI (ritorno)

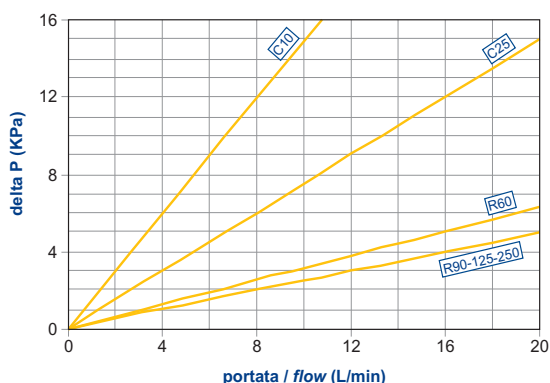


tipo CR091 (R) series

ΔP ELEMENTS (return)



ΔP ELEMENTI (aspirazione)

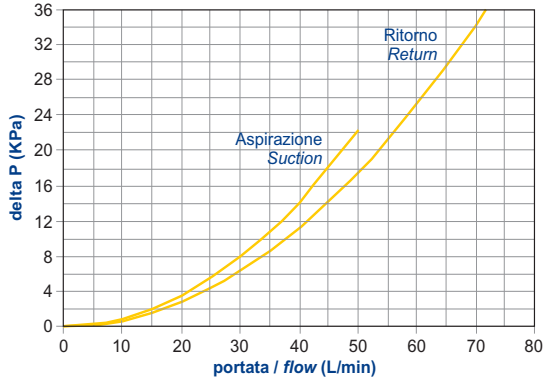


tipo CR091 (A) series

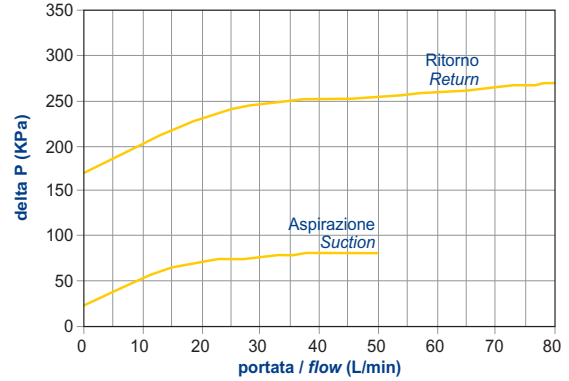
ΔP ELEMENTS (suction)

AFR serie/series 60

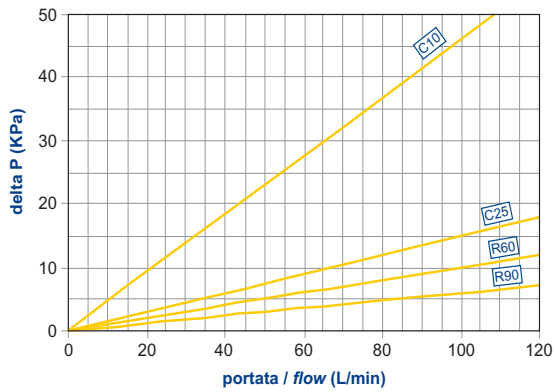
ΔP CORPI / ΔP HOUSINGS



BY-PASS / BY-PASS

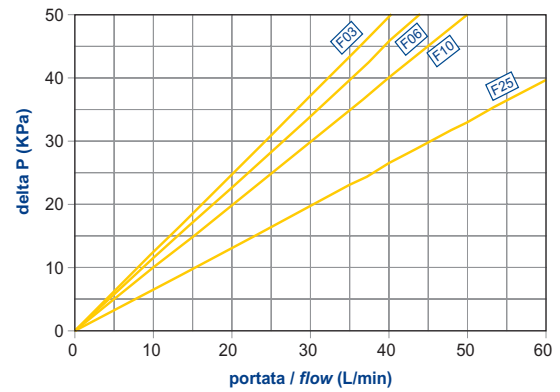


ΔP ELEMENTI (ritorno)

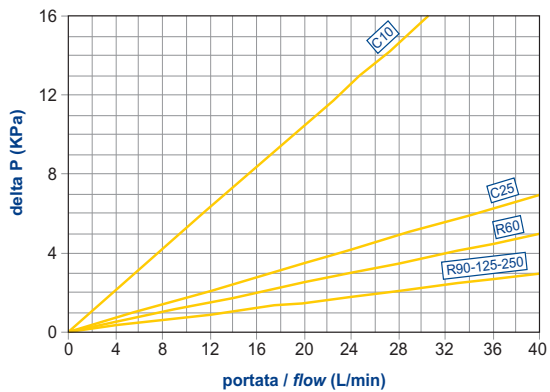


tipo CR111 (R) series

ΔP ELEMENTS (return)



ΔP ELEMENTI (aspirazione)

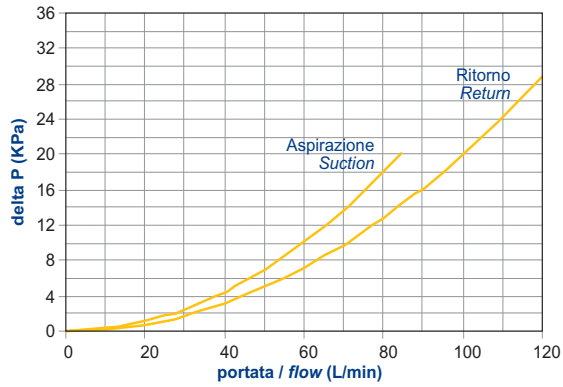


tipo CR111 (A) series

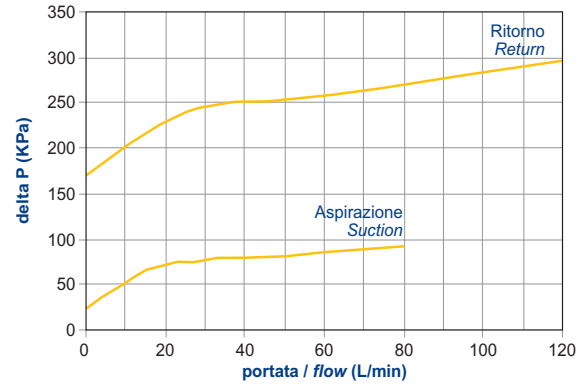
ΔP ELEMENTS (suction)

AFR serie/series 100

ΔP CORPI / ΔP HOUSINGS



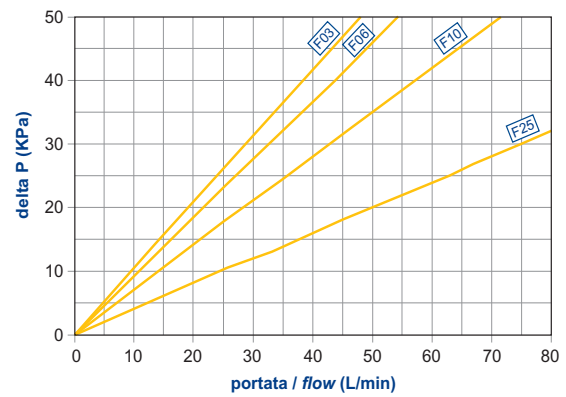
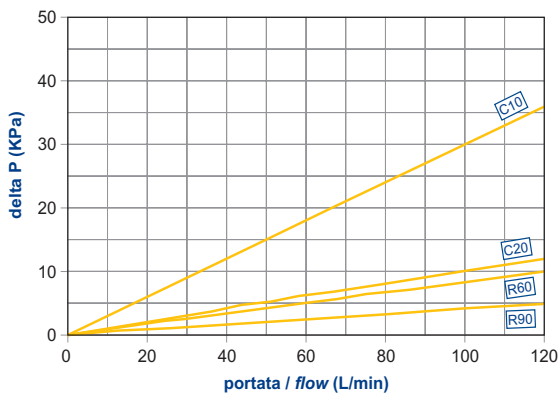
BY-PASS / BY-PASS



ΔP ELEMENTI (ritorno)

tipo CR112 (R) series

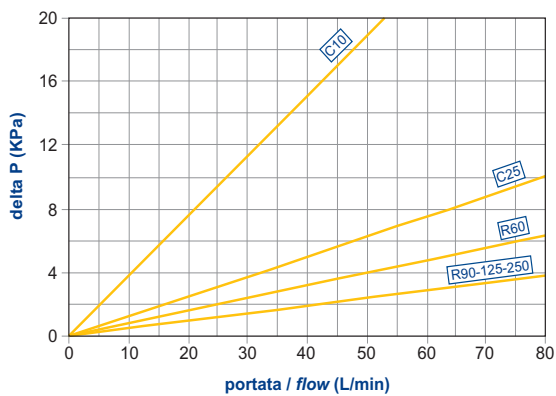
ΔP ELEMENTS (return)



ΔP ELEMENTI (aspirazione)

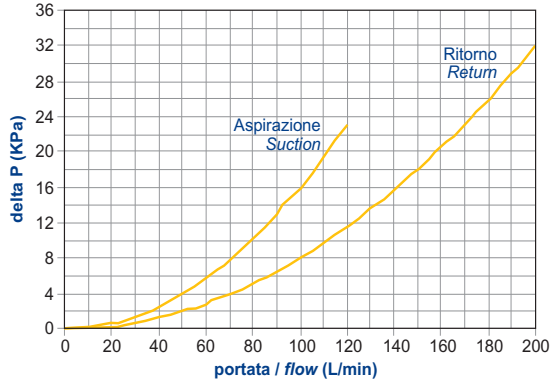
tipo CR112 (A) series

ΔP ELEMENTS (suction)

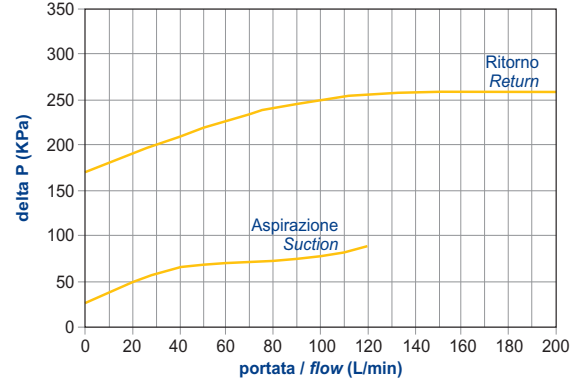


AFR serie/series 180

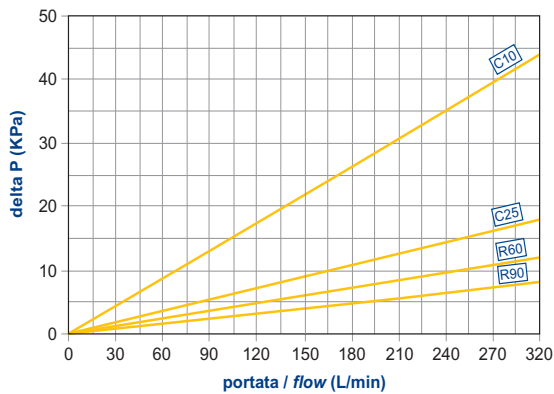
ΔP CORPI / ΔP HOUSINGS



BY-PASS / BY-PASS

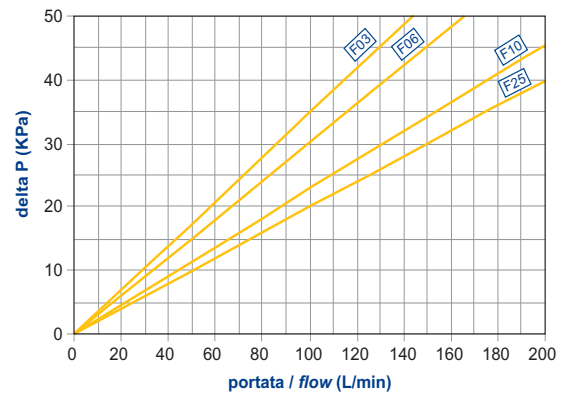


ΔP ELEMENTI (ritorno)

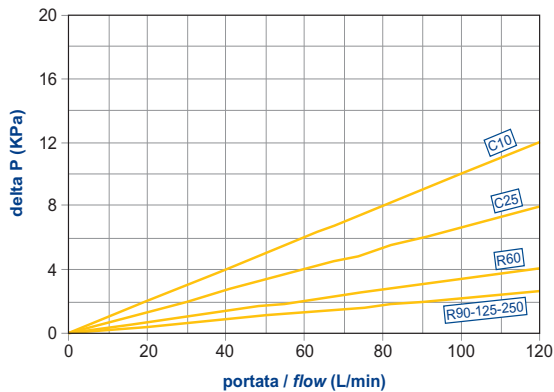


tipo CR171 (R) series

ΔP ELEMENTS (return)



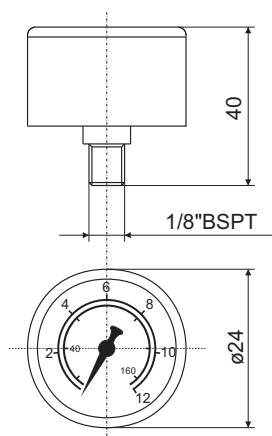
ΔP ELEMENTI (aspirazione)



tipo CR171 (A) series

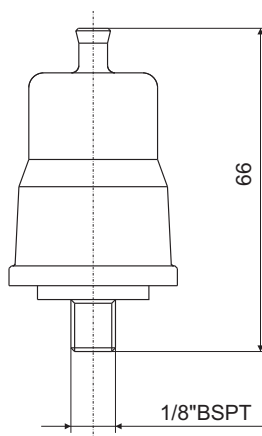
ΔP ELEMENTS (suction)

PV1



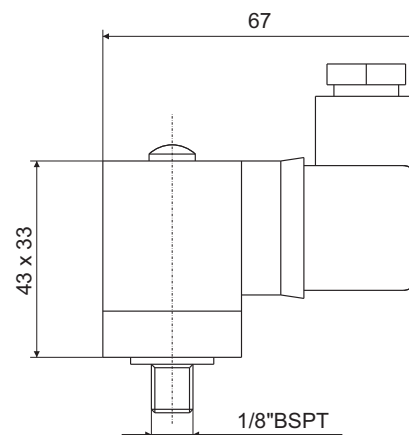
MANOMETRO
PRESSURE GAUGE

PE1 - PE2



PRESSOSTATO CON
CONTATTI N.A. O N.C.
PRESSURE SWITCH WITH
CONTACTS N.O. OR N.C.

PE3



PRESSOSTATO A MEMBRANA
REGOLABILE CON CONTATTI
IN SCAMBIO
PRESSURE SWITCH
WITH CHANGEOVER
CONTACTS

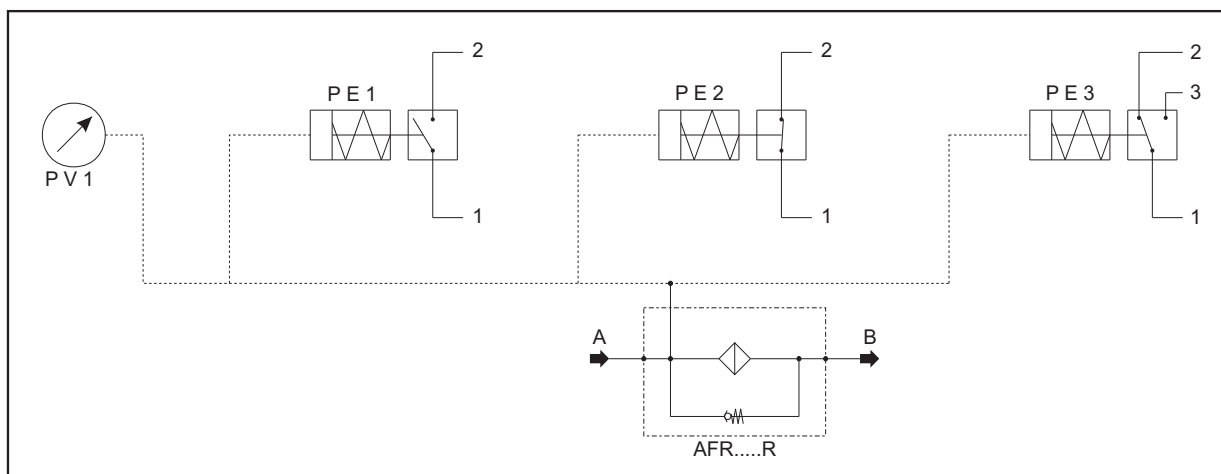
CARATTERISTICHE TECNICHE TECHNICAL DATA

| Codice Part number | Descrizione Description | Scala taratura Setting | Contatti elettrici Electrical Contacts | Tipo Type |
|--------------------|-------------------------|------------------------|--|-------------------------|
| PV1 | visivo visual | 0-120000 Pa (0-12 bar) | - | Puntuale On the spot |
| PE1 | elettrico electrical | 130000 Pa (1,3 bar) | N.A. / N.O. | |
| PE2 | | | N.C. | |
| PE3 | | | Scambio Changeover | |

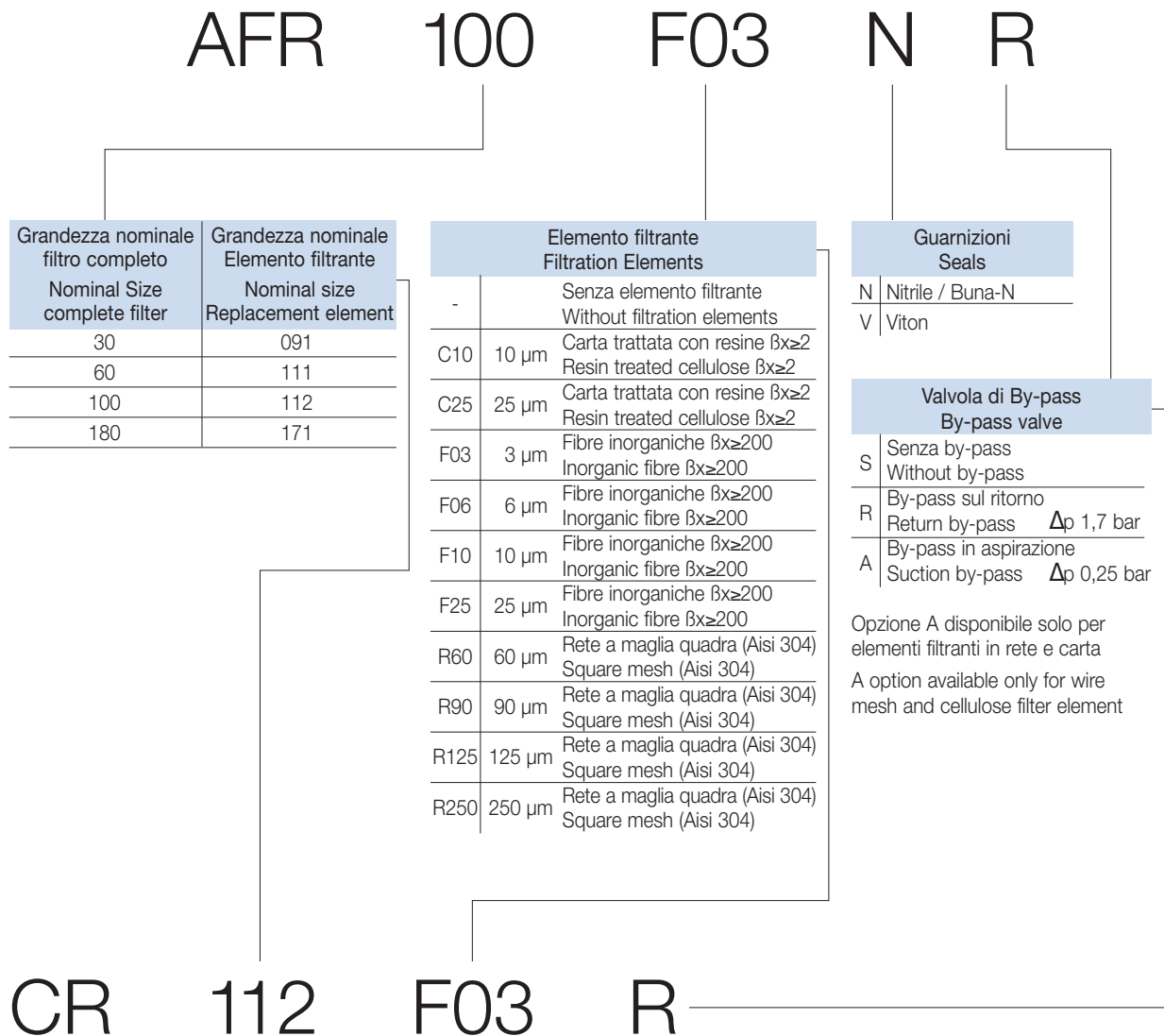
CARATTERISTICHE ELETTRICHE ELECTRICAL DATA

| Codice Part number | Tensione max di lavoro (V) Max feeder voltage (V) | Carico resistivo (A) Resistive load (A) | Carico induttivo (A) Inductive load (A) | Protezione (completo) Protection (complete) |
|--------------------|---|---|---|---|
| PE1 | C.A. 48 | 0,5 | 0,2 | IP 00 |
| PE2 | C.A. 48 | 0,5 | 0,2 | IP 00 |
| PE3 | C.A. 250 | 3 | 2 | IP 65 DIN40050 |

SIMBOLOGIA / SIMBOLOGY



CODICE PER L'ORDINAZIONE
DEL FILTRO COMPLETO
HOW TO ORDER THE COMPLETE FILTER



Codice per l'ordinazione dell'elemento filtrante di ricambio
How to order the replacement element

* Per l'ordinazione degli indicatori di intasamento, guardare pag. 12
* See page 12 for information how to order clogging indicators

**ELEMENTO FILTRANTE
 FILTRATION ELEMENTS**

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA30AR | CR091C10R |
| CA30BR | CR091C25R |
| CA30CR | CR091R60R |
| CA30UR | CR091R90R |
| CA30ER | CR091R125R |
| CA30GR | CR091F10R |
| CA30HR | CR091F25R |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA30AA | CR091C10A |
| CA30BA | CR091C25A |
| CA30CA | CR091R60A |
| CA30UA | CR091R90A |
| CA30EA | CR091R125A |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA30AS | CR091C10S |
| CA30BS | CR091C25S |
| CA30CS | CR091R60S |
| CA30US | CR091R90S |
| CA30ES | CR091R125S |
| CA30GS | CR091F10S |
| CA30HS | CR091F25S |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA60AR | CR111C10R |
| CA60BR | CR111C25R |
| CA60CR | CR111R60R |
| CA60UR | CR111R90R |
| CA60ER | CR111R125R |
| CA60GR | CR111F10R |
| CA60HR | CR111F25R |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA60AA | CR111C10A |
| CA60BA | CR111C25A |
| CA60CA | CR111R60A |
| CA60UA | CR111R90A |
| CA60EA | CR111R125A |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA60AS | CR111C10S |
| CA60BS | CR111C25S |
| CA60CS | CR111R60S |
| CA60US | CR111R90S |
| CA60ES | CR111R125S |
| CA60GS | CR111F10S |
| CA60HS | CR111F25S |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA100AR | CR112C10R |
| CA100BR | CR112C25R |
| CA100CR | CR112R60R |
| CA100UR | CR112R90R |
| CA100ER | CR112R125R |
| CA100GR | CR112F10R |
| CA100HR | CR112F25R |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA100AA | CR112C10A |
| CA100BA | CR112C25A |
| CA100CA | CR112R60A |
| CA100UA | CR112R90A |
| CA100EA | CR112R125A |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA100AS | CR112C10S |
| CA100BS | CR112C25S |
| CA100CS | CR112R60S |
| CA100US | CR112R90S |
| CA100ES | CR112R125S |
| CA100GS | CR112F10S |
| CA100HS | CR112F25S |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA180AR | CR171C10R |
| CA180BR | CR171C25R |
| CA180CR | CR171R60R |
| CA180UR | CR171R90R |
| CA180ER | CR171R125R |
| CA180GR | CR171F10R |
| CA180HR | CR171F25R |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA180AA | CR171C10A |
| CA180BA | CR171C25A |
| CA180CA | CR171R60A |
| CA180UA | CR171R90A |
| CA180EA | CR171R125A |

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| CA180AS | CR171C10S |
| CA180BS | CR171C25S |
| CA180CS | CR171R60S |
| CA180US | CR171R90S |
| CA180ES | CR171R125S |
| CA180GS | CR171F10S |
| CA180HS | CR171F25S |

**FILTRO COMPLETO
 COMPLETE FILTER**

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| AFR__A__ | AFR__C10__ |
| AFR__B__ | AFR__C25__ |
| AFR__C__ | AFR__R60__ |
| AFR__U__ | AFR__R90__ |
| AFR__E__ | AFR__R125__ |
| AFR__G__ | AFR__F10__ |
| AFR__H__ | AFR__F25__ |

Esempio / Exemple

| Codici vecchi Old codes | Codici nuovi New codes |
|----------------------------|---------------------------|
| AFR100CNR | AFR100R60NR |

A series of 25 horizontal light blue lines for writing notes.

A series of horizontal light blue lines for writing notes, arranged in a vertical column.

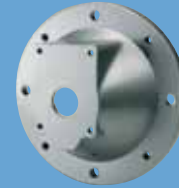
SCAMBIATORI
HEAT EXCHANGERS

FILTRI
FILTERS

ACCESSORI
ACCESSORIES

COMPONENTI
COMPONENTS

FLANGE / FLANGES
RACCORDI / COUPLINGS
BLOCCHI / MANIFOLDS



OMIT