Hydraulic Filters

Reservoir Accessories
## Pictorial Index – Hydraulic Filters

### RIF-10 Inline Spin-On Filters 1.1/4” Ports
- **Ports:** 1.1/4” BSPP
- **Max. Pressure:** 10 bar/150 psi
- **Filtration:**
  - 10 & 25 MIC ABS
  - 10 & 25 MIC NOM
- **Flow Rates:** to 170 LPM

### RIF-12 Inline Spin-On Filters 1.1/2” Ports
- **Ports:** 1.1/2” BSPP & SAE CODE 61
- **Max. Pressure:** 10 bar/150 psi
- **Filtration:**
  - 10 & 25 MIC ABS
  - 10 & 25 MIC NOM
- **Flow Rates:** to 290 LPM

### RIF-06 Inline Spin-On Filters 3/4” Ports
- **Ports:** 3/4” BSPP
- **Max. Pressure:** 10 bar/150 psi
- **Filtration:**
  - 10 & 20 MIC ABS
  - 10 & 25 MIC NOM
- **Flow Rates:** to 70 LPM

### RIF-FA Inline Spin-On Filters 3/8” Ports
- **Ports:** 3/8” BSPT
- **Max. Pressure:** 7 bar/100 psi
- **Filtration:**
  - 15, 20, 32 MICRON
- **Flow Rates:** to 18 LPM

### RHF Heavy Duty Inline Filters
- **Ports:** 1/2” to 1.1/2” BSPP
- **Max. Pressure:** 20 bar/290 psi
- **Filtration:**
  - 10, 25 & 149 MIC
- **Flow Rates:** to 150 LPM

### RTI and RFI Tank Top Filters
- **Ports:** 1/2” to 1.1/4” BSPP
- **Max. Pressure:** 10 bar/150 psi
- **Filtration:**
  - 10 & 25 MICRON
- **Flow Rates:** to 110 LPM

### RCF Combination Filters
- **Ports:** 1/2” to 1.1/2” BSPP 2.1/2” SAE CD 61
- **Max. Pressure:** 20 bar/290 psi
- **Filtration:**
  - 10, 25 & 149 MIC
- **Flow Rates:** to 540 LPM

### RG & REI Clogging Indicators
- **Return Line and Suction Line Gauges and Electrical Indicators**

### RIF-15 Inline Spin-On Water Trap Filter
- **Ports:** 1” BSPT
- **Max. Pressure:** 7 bar/100 psi
- **Filtration:**
  - 15 MICRON
- **Flow Rates:** to 60 LPM
Filters Technical Section

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Important Note on Dash Sizes:
Dash Sizes for Ports of Hydraulic Filters and Reservoir Accessories are in EIGHTHS of an inch (not SIXTEENTHS);
-06 = 6/8 = 3/4 inch
except that R362, R356 and R358 Series Air Breathers are sized in SIXTEENTHS of an inch.
Reference is made to “Filter Series” in several manners in this manual.
For example, an Rif-Rp1210 Filter assembly is a:
RYCO Inline Filter with Spin-On Canister (RIF), 1.0 bar Bypass for Return Lines (R),
two parallel Canisters and BSPP Ports (P), 1.1/2” Ports (12), and 10 Micron filtration (10).
It could be referred to/included in the following “Filter Series” groups:
as an “RIF” Filter includes all RYCO Inline Filters with Spin-On Canisters, all types & sizes
as an “RIF-12” Filter includes all RYCO Inline Filters, Spin-On Canisters, 1.1/2” Ports (SAE or BSPP)
as an “RIF-R” Filter includes all RYCO Inline Filters, Spin-On Canisters, Return Line
as an “RIF-RP” Filter includes all RYCO Inline Filters, Return Line, two parallel Spin-On Canisters & BSPP Ports
as an “RIF-R12” Filter includes all RYCO Inline Filters with Spin-On canisters, Return Line,
1.1/2” SAE Code 61 or BSPP Ports
There are two series (RIF-E and RIF-EA) and two sizes (3/4" and 1.1/4") of Spin-On Canisters shown on pages 356 to 359. (The size 3/4" and 1.1/4" refers to the Port size of the Filter Head). These yellow Spin-On Canisters, and the Filter Heads they are used with, are sized and threaded the same as other internationally available Canisters and Heads:

- Canisters from Europe (“European standard”) mostly have BSPP Threads.
- Canisters from USA (“American standard”) mostly have UNF Threads.

**RYCO** have Spin-On Filter Canisters and Filter Heads using both the BSPP “European” and the UNF “American” system.

### 3/4" SPIN-ON FILTERS  
**PAGES 360 – 361**

For 3/4” Canisters and Heads, Post and Canister Threads are either BSPP 3/4”-14 TPI or UNF 1"-12 TPI. The Thread Diameters are almost the same, but the pitch of the threads is different. The Top Plates and Gaskets of the Canisters look similar. In both BSPP and UNF canisters, the Gasket is supplied fitted in a groove in the Canister. It is essential to use a BSPP Canister with a BSPP Filter Post, and a UNF Canister with a UNF Filter Post.

**RYCO** have 3/4” Spin-On Filter Series using both the BSPP “European” and the UNF “American” system:
- **RIF-E0610** and **RIF-E0625** Spin-On Canisters have BSPP Threads
- **RIF-EA0810** and **RIF-EA0825** Spin-On Canisters have UNF Threads.

**BSPP “European standard”**

- **RIF-RH06** Filter Head
  - 3/4”-14 TPI BSPP Post Thread

- **RIF-E0610** and **RIF-E0625**
  - Spin-On Canister
  - 3/4”-14 TPI BSPP Canister Thread

  Gasket is supplied fitted in Canister and seals against Gasket Seating area of Filter Head.

**UNF “American standard”**

- **“A” in part number denotes UNF Threads**

- **RIF-RHA06** Filter Head
  - 1”-12 TPI UNF Post Thread

- **RIF-EA0810** and **RIF-EA0825**
  - Spin-On Canister
  - 1”-12 TPI UNF Canister Thread

  Gasket is supplied fitted in Canister and seals against Gasket Seating area of Filter Head.

**NOTE:** The last two digits of Part Number of RIF-E06 and RIF-E10 Series Canisters are the ABSOLUTE filtration rating. The last two digits of Part Number of RIF-EA08 and RIF-EA12 Series Canister are the NOMINAL filtration rating. See pages 378 to 381 for more information on ABSOLUTE and NOMINAL filtration ratings.

1. ABSOLUTE means at least 98.7% of particles of the micron size and above are removed.
2. NOMINAL means approximately 50% of particles of the micron size and above are removed.

**NOTE:** Part Numbers for Filter Heads on pages 354 and 355 are for Return Line Filter Heads. For Suction Line Filter Heads, replace “R” after dash with “S”, eg RIF-SH06. For Blocked Bypass Filter Heads, replace “R” after dash with “B”, eg RIF-BHA06.
Similarly to 3/4” Spin-On Filters, for 1.1/4” Spin-On Filters:

- Canisters from Europe (“European standard”) mostly have BSPP Threads.
- Canisters from USA (“American standard”) mostly have UNF Threads.

**RYCO** have 1.1/4” Spin-On Filter Series using both the BSPP “European” and the UNF “American” system:

- **RIF-E1010 and RIF-E1025** Spin-On Canisters have BSPP Threads.
- **RIF-EA1210 and RIF-EA1225** Spin-On Canisters have UNF Threads.

The Top Plate of BSPP Canisters are shaped so the thread is close to the top of the Canister.

The Top Plate of UNF Canisters are “dished”, with the thread below the top of the Canister.

This difference allows the use of a Dual Post Thread on the Filter Head.

- BSPP 1.1/4”-11 TPI Canister threads onto the top part of a Dual Post Thread.
- UNF 1.1/2”-16 TPI Canister threads onto the bottom part of a Dual Post Thread.

**RYCO RIF-RH10**, **RIF-SH10** and **RIF-BH10** 1.1/4” Filter Heads, on pages 356 and 357, have dual BSPP and UNF Post Threads, to allow the use of both types of Canisters.

**RYCO RIF-RH12** 1.1/2” Filter Heads on pages 358 and 359, using two 1.1/4” Canisters, also have Dual Post Threads.

The Gasket also seals differently in the two systems, BSPP and UNF, and there are two Gasket seating areas in a Dual Post Head.

- The BSPP Canister Gasket is supplied fitted in a groove in the Canister.
- The UNF Canister Gasket is supplied loose, to be fitted into the groove in the Filter Head.

**BSPP “European standard”**

- RIF-RH10 Filter Head
  - 1.1/4”-11 TPI BSPP post Thread
- RIF-E1010 and RIF-E1025 Spin-On Canister
  - 1.1/4”-11 TPI BSPP Canister Thread

Gasket is supplied fitted in Canister and seals against inner Gasket Seating area of Filter Head.

**UNF “American standard”**

- **A** in part number denotes UNF Threads

- RIF-RH10 Filter Head
  - 1.1/2”-16 TPI UNF Post Thread
- RIF-EA1210 and RIF-EA1225 Spin-On Canister
  - 1.1/2”-16 TPI UNF Canister Thread

Gasket is supplied loose and seals against outer Gasket Seating area of Filter Head.

Additionally, there are different types of Gaskets used by various manufacturers of UNF Threaded Filter Heads.

- Two Gaskets are supplied with **RYCO RIF-EA1210** and **RIF-EA1225** UNF Threaded Spin-On Canisters (only one is to be used).

- **RIF-EA12GW** wide L-Section Gasket for use with **RYCO** Filter Heads and other heads with similar (wide) groove.

- **RIF-EA12GM** square-section Gasket with green stripe for use with Filter Heads with narrow groove.

Photo shows a Filter Head with single UNF Post Thread and single Gasket Seating area only.

**WARNING:** The Gasket must be a tight fit in the groove of the Head. Use of incorrect Gasket prevents sealing, and may cause damage. Refer to pages 357, 388 and 389; and RYCO Hydraulics Technical Department for further information.
RECOMMENDED FOR:
RYCO RIF-10 Series Filters are designed for installation in return lines or suction lines of both stationary and mobile hydraulic equipment. Working pressures up to 10 bar (150 psi), and high flow rates enable these Filters to be utilised in a wide range of applications.

FEATURES OF RYCO SPIN-ON CANISTERS & HEADS:
- Disposable Spin-On Canisters.
- Changing of filter elements is quick and simple.
- High efficiency.
- Multi layer filtration media.
- Available in two different Absolute filtration ratings, and two different Nominal filtration ratings.
- High working pressures.
- Specially moulded Gaskets.
- Rolled seam on Canisters.
- High collapse resistance inner core.
- High quality cast Aluminium Head.
- Tapped mounting holes.
- Easy to install.
- BSPP threaded Ports.
- Inlet and Outlet Ports are clearly identified.
- Flow direction arrow.
- RYCO RIF-RH10, RIF-SH10 and RIF-BH10 Filter Heads are Dual Threaded on the Filter Port giving worldwide compatibility of Spin-On Canisters. RYCO RIF-RH10, RIF-SH10 and RIF-BH10 Filter Heads can be used with both RIF-E10 and RIF-EA12 Series Spin-On Canisters. See page 385 for more information.
- Bypass Valve in the Aluminium Head allows the flow of oil to bypass the Canister if the Filter becomes blocked with contaminant.
- Two different Bypass Valve cracking pressures are available to suit Return Lines or Suction Lines, plus Blocked Bypass for special applications.
- Clogging Indicators available, see page 370.
- Tapped and Plugged Ports for Clogging Indicator. Both Positions on Inlet Port are tapped and plugged for Return Line filters. Both Positions on Outlet Port are tapped and plugged for Suction Line filters. All four Positions are tapped and plugged for Blocked Bypass filters.

TECHNICAL DATA
- Filter Head: Cast Aluminium.
- Gasket: Nitrile (Buna N) oil resistant rubber.
- Filtration Media: Cellulose with reinforced synthetic fibres, folic impregnated resin; extensively pleated to maximise surface area available to trap contaminants, and maximise dirt holding capacity.
- Filtration Ratings:
  - RIF-E1010: 10 Micron Absolute (3 Mic Nom).  B10 ≥75, B3 ≥2.
- Maximum Working Pressure/Vacuum:
  - 10 bar/150 psi in Return Line applications.
  - 635 mmHg/25 inHg in Suction Line applications.
  - 5.5 bar/80 psi for Return Line applications with Blocked Bypass Valve.
- Operating Temperature: 80°C (176°F) maximum continuous working temperature.
- Fluid Compatibility: Mineral/petroleum based hydraulic oils.
- Bypass Valve Position: In Filter Head.
- Bypass Valve Differential Cracking Pressure:
  - RIF-R Series for Return Lines 1,0 bar/14.5 psi.
  - RIF-S Series for Suction Lines 0,2 bar/2.9 psi.
  - RIF-B Series Blocked Bypass for special applications.
- Clogging Indicators: RGR Gauge for return lines. Colour coded Green & Red sectors for quick visual inspection. RGS Gauge calibrated with negative pressures (for suction lines) and positive pressures (for return lines).
- RS02 Gauge, Stainless Steel, calibrated with negative pressures for Suction Lines.
- REIR and REIS Electrical Indicators. See page 370 for more information on Clogging Indicators.
- Nominal Flow Rates: As shown, cause a clean element pressure drop of 0,5 bar (7.3 psi) for RIF-R and 0,03 bar (0.5 psi) for RIF-S with 30 centistoke viscosity oil (see page 380 for more detail). The actual flow rate will vary if the oil is of a different viscosity. See also page 382 for “Pressure Drop Flow Graphs”, pages 384 and 385 for “Warnings and Filter Selection Guidelines” and pages 386 and 387 for “Effect of Temperature and Viscosity on Flow Rate and Pressure Drop”.

MOUNTING OPTIONS
RYCO RIF-10 Series Filter Heads can be mounted to equipment by means of two tapped mounting holes in head. Filter Heads can be mounted directly between rigid pipes, provided that the pipes are anchored to ensure that no undue stress is placed on the Filter Head casting. Allow 35 mm (1.35”) clearance below Spin-On Canister to allow Canister to be changed. Instructions for changing Canister are branded on the Canister, and are also shown on page 390.
HIGHER TECHNOLOGY EQUALS GREATER PERFORMANCE

RIF-10 Inline Spin-On Filters 1.1/4” Ports

PART NUMBERS AND SPECIFICATIONS – BSPP CANISTER THREADS, LAST 2 DIGITS ARE THE ABSOLUTE RATING

<table>
<thead>
<tr>
<th>COMPLETE FILTER</th>
<th>PORT BSPP</th>
<th>NOMINAL FLOW</th>
<th>MAXIMUM WORKING PRESSURE/VACUUM</th>
<th>ABSOLUTE FILTRATION</th>
<th>NOMINAL FILTRATION</th>
<th>REPLACEMENT SPIN-ON CANISTER</th>
<th>HEAD ONLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>SERIES</td>
<td>PART NO</td>
<td>INCH</td>
<td>LPM</td>
<td>MICRON</td>
<td>MICRON</td>
<td>PART NO</td>
<td>PART NO</td>
</tr>
<tr>
<td>Return Filter</td>
<td>RIF-R1010</td>
<td>1.1/4</td>
<td>100</td>
<td>10 bar</td>
<td>150 psi</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>1,0 bar Bypass</td>
<td>RIF-R1025</td>
<td>1.1/4</td>
<td>135</td>
<td>10 bar</td>
<td>150 psi</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Suction Filter</td>
<td>RIF-S1010</td>
<td>1.1/4</td>
<td>8</td>
<td>635 mmHg</td>
<td>25 inHg</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>0,2 bar Bypass</td>
<td>RIF-S1025</td>
<td>1.1/4</td>
<td>16</td>
<td>635 mmHg</td>
<td>25 inHg</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Blocked Filter</td>
<td>RIF-B1010</td>
<td>1.1/4</td>
<td>10</td>
<td></td>
<td></td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Bypass Filter</td>
<td>RIF-B1025</td>
<td>1.1/4</td>
<td>25</td>
<td></td>
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<td>25</td>
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</table>

PART NUMBERS AND SPECIFICATIONS – UNF CANISTER THREADS, LAST 2 DIGITS ARE THE NOMINAL RATING

<table>
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<tr>
<th>COMPLETE FILTER</th>
<th>PORT BSPP</th>
<th>NOMINAL FLOW</th>
<th>MAXIMUM WORKING PRESSURE/VACUUM</th>
<th>ABSOLUTE FILTRATION</th>
<th>NOMINAL FILTRATION</th>
<th>REPLACEMENT SPIN-ON CANISTER</th>
<th>HEAD ONLY</th>
</tr>
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<tr>
<td>SERIES</td>
<td>PART NO</td>
<td>INCH</td>
<td>LPM</td>
<td>MICRON</td>
<td>MICRON</td>
<td>PART NO</td>
<td>PART NO</td>
</tr>
<tr>
<td>Return Filter</td>
<td>RIF-RA1210</td>
<td>1.1/4</td>
<td>135</td>
<td>10 bar</td>
<td>150 psi</td>
<td>27</td>
<td>10</td>
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<tr>
<td>1,0 bar Bypass</td>
<td>RIF-RA1225</td>
<td>1.1/4</td>
<td>170</td>
<td>10 bar</td>
<td>150 psi</td>
<td>36</td>
<td>25</td>
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<tr>
<td>Suction Filter</td>
<td>RIF-SA1210</td>
<td>1.1/4</td>
<td>16</td>
<td>635 mmHg</td>
<td>25 inHg</td>
<td>27</td>
<td>10</td>
</tr>
<tr>
<td>0,2 bar Bypass</td>
<td>RIF-SA1225</td>
<td>1.1/4</td>
<td>20</td>
<td>635 mmHg</td>
<td>25 inHg</td>
<td>36</td>
<td>25</td>
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<tr>
<td>Blocked Filter</td>
<td>RIF-BA1210</td>
<td>1.1/4</td>
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<td>10</td>
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<td>Bypass Filter</td>
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DIMENSIONS

<table>
<thead>
<tr>
<th>CANISTER DIAMETER</th>
<th>OVERALL HEIGHT</th>
<th>CANISTER HEIGHT</th>
<th>WIDTH ACROSS PORTS</th>
<th>PORT THREAD BSPP</th>
<th>MOUNTING HOLE CENTRES</th>
<th>MOUNTING HOLE THREADS</th>
<th>WEIGHT HEAD</th>
<th>WEIGHT CANISTER</th>
<th>WEIGHT TOTAL</th>
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<tbody>
<tr>
<td>D mm</td>
<td>H mm</td>
<td>L mm</td>
<td>W mm</td>
<td>A inch</td>
<td>X mm</td>
<td>M8 X 1,25</td>
<td>kg</td>
<td>kg</td>
<td>kg</td>
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<tr>
<td>127</td>
<td>246</td>
<td>178</td>
<td>140</td>
<td>1.1/4</td>
<td>48</td>
<td>0.96</td>
<td>1.08</td>
<td>2.04</td>
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</tbody>
</table>

CROSS REFERENCE INFORMATION

The Posts on RYCO RIF-RH10, RIF-SH10 and RIF-BH10 Series Heads are Dual Threaded to allow the use of both common types of Spin-On Canisters.

RYCO RIF-E1010 and RIF-E1025 Canisters, threaded 1.1/4”-11 TPI BSPP, can be used on standard BSPP or Dual Threaded Post Filter Heads.

RYCO RIF-EA1210 and RIF-EA1225 Canisters, threaded 1.1/2”-16 TPI UNF, can be used on standard UNF or Dual Threaded Post Filter Heads.

For Cross Reference information, please see pages 354 and 355, and pages 388 and 389.
**RECOMMENDED FOR:**
RYCO RIF-12 Series Filters are designed for installation in return lines or suction lines of both stationary and mobile hydraulic equipment. Working pressures up to 10 bar (150 psi), and high flow rates enable these Filters to be utilised in a wide range of applications.

**FEATURES OF RYCO SPIN-ON CANISTERS & HEADS:**
- **RIF-V12** series with BSPP Ports.
- **RIF-P12** series with BSPP Ports.
- **RIF-C12** series with SAE Code 61 Ports (with UNC Bolt Holes).
- Disposable Spin-On Canisters.
- Changing of filter elements is quick and simple.
- High efficiency.
- Multi layer filtration media.
- Available in two different Absolute filtration ratings, and two different Nominal filtration ratings.
- High working pressures.
- Specially moulded Gaskets.
- Rolled seam on Canisters.
- High collapse resistance inner core.
- High quality cast Aluminium Head.
- Tapped mounting holes.
- Easy to install.
- **RYCO RIF-12** Filter Heads are Dual Threaded on the Filter Post giving world wide compatibility of Spin-On Canisters. **RIF-12** Filter Heads can be used with both **RIF-E10** and **RIF-EA12** Series Spin-On Canisters. See page 355 for more information.
  - For Cross Reference information, see information on bottom of page 357; the same Spin-On Canisters are also utilised in a wide range of applications. See also pages 354 and 355, and 388 and 389.
- **Bypass Valve** in the Aluminium Head allows the flow of oil to bypass the Canister if the Filter becomes blocked with contaminant.
- Two different Bypass Valve cracking pressures are available to suit Return Line or Suction Lines, plus Blocked Bypass for special applications.
- Clogging Indicators available, see page 370.
- Tapped and Plugged Ports for Clogging Indicator. For **RIF-V12** Series, there are two Positions, one each for Return Line and Suction Line applications. Both are tapped and plugged.
- For **RIF-P12** and **RIF-C12** Series, both Return Line Positions on Inlet side for Return Line filters are tapped and plugged. Both Suction Line Positions on Outlet side for Suction Line filters are tapped and plugged.

**TECHNICAL DATA**
- **Filter Head:** Cast Aluminium.
- **Spin-On Canister Housing:** Powder coated steel casing. Pressed steel top plate.
- **Gasket:** Nitrile (Buna N) oil resistant rubber.
- **Filtration Media:** Cellulose with reinforced synthetic fibres, folic impregnated resin; extensively pleated to maximise surface area available to trap contaminants and maximise dirt holding capacity.
- **Filtration Ratings:**
  - **RIF-E1010:** 10 Micron Absolute (3 Mic Nom). B10 ≥75, B3 ≥2.
  - **RIF-E1025:** 25 Micron Absolute (10 Mic Nom). B25 ≥75, B10 ≥2.
  - **RIF-EA1210:** 10 Micron Nominal (27 Mic Abs). B27 ≥75, B10 ≥2.
  - **RIF-EA1225:** 25 Micron Nominal (36 Mic Abs). B36 ≥75, B25 ≥2.
- **Maximum Working Pressure/Vacuum:**
  - 10 bar/150 psi in Return Line applications. 635 mmHg/25 inHg in Suction Line applications.
  - 5,5 bar/80 psi for Return Line applications with Blocked Bypass Valve.
- **Operating Temperature:** 80°C (176°F) maximum continuous working temperature.
- **Fluid Compatibility:** Mineral/petroleum based hydraulic oils.
- **Bypass Valve Position:** In Filter Head.
- **Bypass Valve Differential Cracking Pressure:**
  - **RIF-R** Series for return lines 1,0 bar/14.5 psi.
  - **RIF-S** Series for suction lines 0,2 bar/2,9 psi.
  - **RIF-B** Series Blocked Bypass for special applications.
- **Clogging Indicators:** **RGR** Gauge for Return Lines. Colour coded Green & Red sectors for quick visual inspection.
  - **RG** Gauge calibrated with negative pressures (for Suction Lines) and positive pressures (for Return Lines).
  - **RGS02** Gauge, Stainless Steel, calibrated with negative pressures for Suction Lines.
  - **REIR** and **REIS** Electrical Indicators. See page 370 for more information on Clogging Indicators.
- **Nominal Flow Rates:** As shown, cause a clean element pressure drop of 0,5 bar (7,3 psi) for **RIF-R** and 0,03 bar (0,5 psi) for **RIF-S** with 30 centistoke viscosity oil (see page 380 for more detail). The actual flow rate will vary if the oil is of a different viscosity. See also page 382 for “Pressure Drop Flow Graphs”, pages 384 and 385 for “Warnings and Filter Selection Guidelines”, and pages 386 and 387 for “Effect of Temperature and Viscosity on Flow Rate and Pressure Drop”.

**MOUNTING OPTIONS**
RYCO RIF-12 Series Filter Heads can be mounted to equipment by means of two or four tapped mounting holes in head. Filter Heads can be mounted directly between rigid pipes, provided that the pipes are anchored to ensure that no undue stress is placed on the Filter Head casting.

Allow 35 mm (1.35") clearance below Spin-On Canister to allow Canister to be changed. Instructions for changing Canister are branded on the Canister, and are also shown on page 390.
### PART NUMBERS AND SPECIFICATIONS – BSPP CANISTER THREADS, LAST 2 DIGITS ARE THE ABSOLUTE RATING

<table>
<thead>
<tr>
<th>SERIES</th>
<th>PART NO</th>
<th>INCH</th>
<th>LPM</th>
<th>NOMINAL FLOW</th>
<th>MAXIMUM WORKING PRESSURE/VACUUM</th>
<th>ABSOLUTE FILTRATION</th>
<th>NOMINAL FILTRATION</th>
<th>REPLACEMENT SPIN-ON CANISTER</th>
<th>HEAD ONLY</th>
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<tbody>
<tr>
<td><strong>Return Filter 1,0 bar Bypass</strong></td>
<td></td>
<td></td>
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<td></td>
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### PART NUMBERS AND SPECIFICATIONS – UNF CANISTER THREADS, LAST 2 DIGITS ARE THE NOMINAL RATING

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### Dimensions

**RIF – P12/C12 SERIES**

**RIF – V12 SERIES**

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<th>WEIGHT CANISTER</th>
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QUALITY FILTERS AND ACCESSORIES

RECOMMENDED FOR:
RYCO RIF-06 Series Filters are designed for installation in return lines or suction lines of both stationary and mobile hydraulic equipment. Working pressures up to 10 bar (150 psi), and high flow rates enable these filters to be utilised in a wide range of applications.

FEATURES OF RYCO SPIN-ON CANISTERS & HEADS:
- Disposable Spin-On Canisters.
- Changing of filter elements is quick and simple.
- High efficiency.
- Multi layer filtration media.
- Available in two different Absolute filtration ratings, and two different Nominal filtration ratings.
- High working pressures.
- Rolled seam on Canisters.
- High collapse resistance inner core.
- High quality cast Aluminium Head.
- RYCO RIF-RH06, RIF-SH06 and RIF-BH06 Filter Heads have BSPP threaded post and are used with RIF-E0610 and RIF-E0625 Spin-On Canisters. RYCO RIF-RHA06, RIF-SHA06 and RIF-BHA06 Filter Heads have UNF threaded post and are used with RIF-EA0810 and RIF-EA0825 Spin-On Canisters. See page 354 for more information.
- Tapped mounting holes.
- Easy to install.
- BSPP threaded Ports.
- Inlet and Outlet Ports are clearly identified.
- Flow direction arrow.
- Bypass Valve in the Aluminium Head allows the flow of oil to bypass the Canister if the Filter becomes blocked with contaminant.
- Two different Bypass Valve cracking pressures are available to suit return or suction lines, plus Blocked Bypass for special applications.
- Clogging Indicators available, see page 370.
- Tapped and Plugged Ports for Clogging Indicator. Both Positions on Inlet Port are tapped and plugged for Return Line filters. Both Positions on Outlet Port are tapped and plugged for Suction Line filters. All four Positions are tapped and plugged for Blocked Bypass filters.

RYCO RIF-06 Inline Spin-On Filters 3/4” Ports

TECHNICAL DATA
- Filter Head: Cast Aluminium.
- Gasket: Nitrile (Buna N) oil resistant rubber; rectangular section.
- Filtration Media: Cellulose with reinforced synthetic fibres, folic impregnated resin; extensively pleated to maximise surface area available to trap contaminants and maximise dirt holding capacity.
- Filtration Ratings:
  - RIF-E0610: 10 Micron Absolute (3 Mic Nom). 810 ≥75, B3 ≥2.
- Maximum Working Pressure/Vacuum:
  - 10 bar/150 psi in Return Line applications.
  - 635 mmHg/25 inHg in Suction Line applications.
  - 10 bar/150 psi in Return Line applications. 5,5 bar/80 psi for Return Line applications with Blocked Bypass Valve.
- Operating Temperature: 80°C (176°F) maximum continuous working temperature.
- Fluid Compatibility: Mineral/petroleum based hydraulic oils.
- Bypass Valve Position: In Filter Head.
- Bypass Valve Differential Cracking Pressure:
  - RIF-R Series for Return Lines 1,0 bar/14.5 psi.
  - RIF-S Series for Suction Lines 0,2 bar/2.9 psi.
  - RIF-B Series Blocked Bypass for special applications.
- Clogging Indicators: RGR Gauge for return lines. Colour coded Green & Red sectors for quick visual inspection. RGS Gauge calibrated with negative pressures (for suction lines) and positive pressures (for return lines). RGS02 Gauge, Stainless Steel, calibrated with negative pressures for Suction Lines. REIR and REIS Electrical Indicators. See page 370 for more information on Clogging Indicators.
- Nominal Flow Rates: As shown, cause a clean element pressure drop of 0,5 bar (7.3 psi) for RIF-R and 0,03 bar (0,5 psi) for RIF-S with 30 centistoke viscosity oil (see page 380 for more detail). The actual flow rate will vary if the oil is of a different viscosity. See also page 382 for “Pressure Drop Flow Graphs”, pages 384 and 385 for “Warnings and Filter Selection Guidelines”, and pages 386 and 387 for “Effect of Temperature and Viscosity on Flow Rate and Pressure Drop”.

MOUNTING OPTIONS
RYCO RIF-06 Series Filter Heads can be mounted to equipment by means of two tapped mounting holes in head. Filter Heads can be mounted directly between rigid pipes, provided that the pipes are anchored to ensure that no undue stress is placed on the Filter Head casting.

Allow 25 mm (1”) clearance below Spin-On Canister to allow Canister to be changed. Instructions for changing Canister are branded on the Canister, and are also shown on page 390.
**RIF-06 Inline Spin-On Filters 3/4” Ports**

**PART NUMBERS AND SPECIFICATIONS – BSPP CANISTER THREADS, LAST 2 DIGITS ARE THE ABSOLUTE RATING**

<table>
<thead>
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<th>SERIES</th>
<th>PART NO</th>
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<th>REPLACEMENT SPIN-ON CANISTER</th>
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<td>RIF-E0610</td>
<td>RIF-RH06</td>
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**PART NUMBERS AND SPECIFICATIONS – UNF CANISTER THREADS, LAST 2 DIGITS ARE THE NOMINAL RATING**

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<th>ABSOLUTE FILTRATION</th>
<th>NOMINAL FILTRATION</th>
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**DIMENSIONS**

**CROSS REFERENCE INFORMATION**

The Posts on RYCO RIF-RH06, RIF-SH06 and RIF-BH06 Filter Heads have 3/4"-14 TPI BSPP thread.

RYCO RIF-E0610 and RIF-E0625 and “European standard” Canisters have 3/4"-14 TPI BSPP thread.

The Posts on RYCO RIF-RHA06, RIF-SHA06 and RIF-BHA06 Filter Heads have 1"-12 TPI UNF thread.

RYCO RIF-EA0810 and RIF-EA0825 and “American standard” Canisters have 1"-12 TPI UNF thread.
RIF14-1 Inline Spin-On Filters 1” Ports

RECOMMENDED FOR:
RYCO RIF14-1 Filters are designed for installation in mineral and petroleum based hydraulic oil return lines, to maximum working temperature 80°C (176°F) and maximum working pressure 7 bar/100 psi.

FEATURES:
- Disposable Spin-On Canisters.
- Changing of filter element is quick and simple.
- Cast Aluminium Head with tapped mounting holes.
- Easy to install.
- 1 inch BSPT threaded Ports.
- Inlet and Outlet Ports are clearly identified by flow direction arrow.
- Bypass Valve in the Aluminium Head allows the flow of oil to bypass the Canister if the Filter becomes blocked with contaminant.

TECHNICAL DATA
- Filter Head: Cast Aluminium.
- Gasket: Nitrile (Buna N) oil resistant rubber.

TECHNICAL DATA (CONTINUED)
- Filtration Media: Cellulose with synthetic fibres added, phenolic resin impregnated, and silicone treated for water resistance; extensively pleated to maximise surface area available to trap contaminants, and maximise dirt holding capacity.
- Filtration Rating: 32 Micron Nominal.
- Maximum Working Pressure: 7 bar (100 psi).
  Not suitable for Suction Line applications.
- Operating Temperature: 80°C (176°F) maximum continuous working temperature.
- Fluid Compatibility: Mineral/petroleum based hydraulic oils.
- Bypass Valve Position: In Filter Head.
- Bypass Valve Differential Cracking Pressure: 0.7 bar (10 psi)
- Nominal Flow Rates: As shown, cause a clean element pressure drop of 0.3 bar (4.4 psi) with 30 centistoke viscosity oil (see page 380 for more detail). The actual flow rate will vary if the oil is of a different viscosity. See also page 383 for “Pressure Drop Flow Graphs”, pages 384 and 385 for “Warnings and Filter Selection Guidelines”, and pages 386 and 387 for “Effect of Temperature and Viscosity on Flow Rate and Pressure Drop”.

PART NUMBERS AND SPECIFICATIONS

<table>
<thead>
<tr>
<th>COMPLETE FILTER</th>
<th>PORT BSPP</th>
<th>NOMINAL FLOW</th>
<th>MAXIMUM WORKING PRESSURE</th>
<th>NOMINAL FILTRATION</th>
<th>REPLACEMENT SPIN-ON CANISTER</th>
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DIMENSIONS

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<th>CANISTER DIAMETER</th>
<th>OVERALL HEIGHT</th>
<th>CANISTER HEIGHT</th>
<th>WIDTH ACROSS PORTS</th>
<th>PORT THREAD BSPT</th>
<th>MOUNTING HOLE CENTRES</th>
<th>MOUNTING HOLE THREADS</th>
<th>WEIGHT HEAD</th>
<th>WEIGHT CANISTER</th>
<th>WEIGHT TOTAL</th>
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<tbody>
<tr>
<td>D mm</td>
<td>H mm</td>
<td>L mm</td>
<td>W mm</td>
<td>A inch</td>
<td>X mm</td>
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MOUNTING OPTIONS

RYCO RIF14-1 Series Filter Heads can be mounted to equipment by means of two tapped mounting holes in head. Filter Heads can be mounted directly between rigid pipes provided, that the pipes are anchored to ensure that no undue stress is placed on the Filter Head casting.

Allow 15 mm (0.6”) clearance below Spin-On Canister to allow Canister to be changed.

Instructions for changing Canister are shown on page 390.
**RIF-FA Inline Spin-On Filters 3/8” Ports**

**RECOMMENDED FOR:**
RYCO RIF-FA9 and RIF-FA10 Filters are designed for installation in mineral and petroleum based hydraulic oil return lines.

RYCO RIF-FA8 and RIF-FA39 Filters are designed for petrol and diesel fuel filtration. Not suitable for aviation applications.

**FEATURES:**
- Disposable Spin-On Canisters.
- Changing of filter elements is quick and simple.
- Cast Aluminium Head with tapped mounting holes.
- Easy to install.
- 3/8” BSPT threaded Ports.
- Inlet and Outlet Ports are clearly identified by a flow direction arrow.
- Filter Head dimensions are the same for all RIF-FA Series.
- Bypass Valve built into the Canister of RIF-FA9 and RIF-FA10 allows the flow of oil to bypass the Canister if the Filter becomes blocked with contaminant.
- RIF-FA8 and RIF-FA39 have no Bypass Valve. Spin-On Canisters must be replaced at regular intervals, before clogging occurs.

Allow 20 mm (3/4”) clearance below Spin-On Canister to allow Canister to be changed. Instructions for changing Canister are shown on page 390.

**TECHNICAL DATA**
- **Filter Head:** Cast Aluminium.
- **Spin-On Canister Housing:** Painted steel casing. Z39 Canister is also zinc passivated inside and out for extra corrosion resistance. Pressed steel top plate.
- **Gasket:** Nitrile (Buna N) oil resistant rubber.
- **Filtration Media:** Cellulose, phenolic resin impregnated and silicone treated for water resistance, extensively pleated to maximise surface area available to trap contaminants, and maximise dirt holding capacity.
- **Maximum Working Pressure:** See table below. Not suitable for Suction Line applications.
- **Operating Temperature:** 80°C (176°F) maximum continuous working temperature.
- **Bypass Valve Differential Cracking Pressure & Location:** RIF-FA9 and RIF-FA10: 1,0 bar (14.5 psi) in Canister. RIF-FA8 and RIF-FA39: no Bypass Valve.
- **Nominal Flow Rates:** As shown below cause a clean element pressure drop as follows:
  - with 30 centistoke viscosity oil; 0,5 bar (7.3 psi) for RIF-FA9 and RIF-FA10 (see page 380 for more detail).
  - The actual flow rate will vary if the oil is of a different viscosity.
  - with petrol and diesel fuel; 0,3 bar (4.4 psi) for RIF-FA8 and RIF-FA39. See also page 383, pages 384 and 385, and pages 386 and 387 for more information.

**PART NUMBERS AND SPECIFICATIONS**

<table>
<thead>
<tr>
<th>COMPLETE FILTER</th>
<th>PORT BSPP</th>
<th>NOMINAL FLOW</th>
<th>MAXIMUM WORKING PRESSURE</th>
<th>NOMINAL FILTRATION</th>
<th>REPLACEMENT SPIN-ON CANISTER</th>
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<tr>
<td>PART NO</td>
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<td>psi</td>
<td>MICRON</td>
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**DIMENSIONS**

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<tr>
<th>COMPLETE FILTER</th>
<th>CANISTER DIAMETER</th>
<th>OVERALL HEIGHT</th>
<th>CANISTER HEIGHT</th>
<th>WIDTH ACROSS PORTS</th>
<th>PORT THREAD BSPT</th>
<th>MOUNTING HOLE CENTRES</th>
<th>MOUNTING HOLE THREADS</th>
<th>WEIGHT HEAD</th>
<th>WEIGHT CANISTER</th>
<th>WEIGHT TOTAL</th>
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<tbody>
<tr>
<td>PART NO</td>
<td>D mm</td>
<td>H mm</td>
<td>L mm</td>
<td>W mm</td>
<td>A inch</td>
<td>X mm</td>
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<td>kg</td>
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<td>kg</td>
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RECOMMENDED FOR HEAVY DUTY:

RYCO RHF Series Heavy Duty Inline Filters are designed for installation in return lines or suction lines of both stationary and mobile hydraulic equipment.

Heavy duty design, maximum working pressures up to 20 bar (290 psi) and high flow rates enable these Filters to be used in a wide range of applications. They may also be used for low pressure delivery applications.

There are three sizes: RHF-05, RHF-10, and RHF-20; with RHF-10 and RHF-20 models each available with two different Port sizes.

In addition to standard Filter Elements, 149 Micron Stainless Steel Mesh Filter Elements are available. They are especially suitable for Suction Line use, as they are easier to service than an in-tank Suction Strainer.

FEATURES:

- All Aluminium Cast Construction.
- One Piece castings for Filter Head and Bowl.
- Tapped mounting holes.
- Easy to install.
- BSP thread Ports.
- Inlet and Outlet Ports are clearly identified.
- Sealing of Filter Head and Bowl is by O Ring located in groove in Bowl.
- Bypass Valve in the Aluminium Head.
- Two different Bypass Valve cracking pressures are available to suit Return Lines or Suction Lines, plus Blocked Bypass for special applications.
- Drain Plug on RHF-10 and RHF-20 sizes allows Filter to be drained prior to changing Filter Element.
- Clogging Indicators available, see page 370.
- Tapped and Plugged Port for Clogging Indicator. Position 3 on Inlet Port is tapped (for Return Line Filters). If required, Positions 1, 4 or 6 can also be tapped.

TECHNICAL DATA

- Filter Head and Bowl: Cast Aluminium.
- Gasket: Nitrile (Buna N) oil resistant rubber O Ring between Filter Head and Bowl.
- Filtration Ratings: 10 Micron Nominal; 25 Micron Nominal; and 149 Micron Absolute.
- Filtration Media: 10 and 25 Micron Nominal are Cellulose, phenolic resin impregnated; 149 Micron is Stainless Steel Mesh. All are extensively pleated to maximise surface area available to trap contaminants, and maximise dirt holding capacity.
- Maximum Working Pressure/Vacuum:
  - 20 bar/290 psi in Return Line applications.
  - 635 mmHg/25 inHg Maximum Vacuum in Suction Line applications. Recommended use for suction lines is Stainless Steel Mesh Filter Element, Cellulose not recommended.
  - 5.5 bar/80 psi for Return Line applications with Blocked Bypass Valve.
- Operating Temperature:
  - 80°C (176°F) maximum continuous working temperature.
- Fluid Compatibility: Mineral/petroleum based hydraulic oils.
- Bypass Valve Position: In Filter Head.
- Bypass Valve Differential Cracking Pressure:
  - RIF-R Series for return lines 1.0 bar/14.5 psi.
  - RIF-S Series for suction lines 0.2 bar/2.9 psi.
  - RIF-B Series Blocked Bypass for special applications.
- RGS Gauge calibrated with negative pressures (for Suction Lines) and positive pressures (for Return Lines).
- RGS02 Gauge, Stainless Steel, calibrated with negative pressures for Suction Lines.
- REIR and REIS Electrical Indicators.
- See page 370 for more information on Clogging Indicators.
- Nominal Flow Rates: As shown, cause a clean element pressure drop of 0.5 bar (7.3 psi) or RHF-R and 0.03 bar (0.5 psi) for RHF-S with 30 centistoke viscosity oil (see page 380 for more detail). The actual flow rate will vary if the oil is of a different viscosity. See also page 383 for “Pressure Drop Flow Graphs”, pages 384 and 385 for “Warnings and Filter Selection Guidelines”, and pages 386 and 387 for “Effect of Temperature and Viscosity on Flow Rate and Pressure Drop”.

MOUNTING OPTIONS

RYCO RHF Series Filters can be mounted to equipment by means of two tapped mounting holes in head.

Filters can be mounted directly between rigid pipes, provided that the pipes are anchored to ensure that no undue stress is placed on the Head casting.

Allow length L of Bowl clearance below Bowl to allow Filter Elements to be changed.

Instructions for changing filter elements are shown on page 390.
**HIGHER TECHNOLOGY EQUALS GREATER PERFORMANCE**

**RHF Heavy Duty Inline Filters**

### PART NUMBERS AND SPECIFICATIONS

<table>
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<th>SERIES</th>
<th>PART NO</th>
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<th>LPM</th>
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<th>MAXIMUM WORKING PRESSURE/VACUUM</th>
<th>NOMINAL FILTRATION</th>
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<td>25 inHg</td>
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**DIMENSIONS**

![Diagram of filter dimensions](image)

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<th>CASTING SIZE</th>
<th>BOWL DIAMETER</th>
<th>OVERALL HEIGHT</th>
<th>BOWL HEIGHT</th>
<th>WIDTH ACROSS PORTS</th>
<th>PORT THREAD BSPP</th>
<th>PORT CENTRE TO TOP</th>
<th>HEAD TOP TO GASKET</th>
<th>MOUNTING HOLES CENTRES</th>
<th>MOUNTING HOLES THREADS</th>
<th>WEIGHT FILTER ELEMENT</th>
<th>WEIGHT TOTAL</th>
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<td>50</td>
<td>44</td>
<td>M8 x 1,25</td>
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<td>1.1/4 or 1.1/2</td>
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<td>M10 x 1,5</td>
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<td>3,5</td>
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</tbody>
</table>
RECOMMENDED FOR:

RYCO RTI and RFI Series Tank Top Filters are designed for Return Line installation on the top of hydraulic oil reservoirs on earth moving, construction, agricultural and industrial equipment. They are compact and easy to mount, and only a small part of the Filter projects above the top of the reservoir. The Filter Element is replaceable by removing the Top Cover Plate.

RTI Tank Immerged Series has Inlet Port above the top of the tank. RFI Fully Immersed Series has Inlet Port below the top of the tank.

FEATURES:

- All Aluminium Cast Construction.
- One-Piece casting for Main Body Housing.
- Cast Top Cover Plate.
- Maximum Working Pressure 10 bar (150 psi) all sizes.
- Inlet Port (BSPP) is at side of Filter.
  NOTE: RTI-R10 has two Inlet ports. Both can be used, otherwise one must be plugged - plug not supplied.
- Outlet Port (BSPP) is at bottom of Filter.
- Easy installation of RYCO RD Series Diffuser onto Outlet Port, see page 374.
- Outlet Port can be extended below the level of the oil, to reduce foaming and aeration.
- O Ring seals Top Cover Plate to Main Body Housing.
- Bypass Valve built into the Filter Element.
- Flow of oil bypasses the Filter Element if the Filter becomes blocked with contaminant.
- Permanent magnet bonded to bottom of Top Cover Plate to catch coarse ferrous particles.
- Gauge Port tapped into Top Cover Plate.
- Clogging Indicators available, see page 370.
- Supplied with Gasket to seal Filter to Tank.
- RTI Series have O Ring located in groove in mounting flange, to seal filter housing to reservoir.
- RFI Series have Cork Gasket, to seal filter housing to reservoir.

TECHNICAL DATA

- Main Body Housing and Top Cover Plate: Cast Aluminium.
- Gaskets: 1. Nitrile (Buna N) oil resistant rubber O Ring between Main Body Housing and Top Cover Plate.
  2. RTI Series: O Ring supplied for seal between Main Body Housing and Tank.
  RFI Series: Cork Gasket supplied for seal between Main Body Housing and Tank.
- Filtration Media: Cellulose, phenolic resin impregnated; extensively pleated to maximise surface area available to trap contaminants, and maximise dirt holding capacity.
- Filtration Ratings: 10 Micron Nominal, and 25 Micron Nominal.
- Operating Temperature: 80°C (176°F) maximum continuous working temperature.
- Fluid Compatibility: Mineral/petroleum based hydraulic oils.
- Bypass Valve Position: In Filter Cartridge.
- Bypass Valve Differential Cracking Pressure: 1,0 bar/14.5 psi.
- Clogging Indicators: RGR Gauge for Return lines. Colour coded Green & Red sectors for quick visual inspection. REIR Electrical Indicators.
  See page 370 for more information on Clogging Indicators.
- Nominal Flow Rates: As shown, cause a clean element pressure drop of 0,5 bar (7.3 psi) with 30 centistoke viscosity oil (see page 380 for more detail). The actual flow rate will vary if the oil is of a different viscosity. See also page 383 for “Pressure Drop Flow Graphs”, pages 384 and 385 for “Warnings and Filter Selection Guidelines”, and pages 385 and 386 for “Effect of Temperature and Viscosity on Flow Rate and Pressure Drop”.

MOUNTING OPTIONS

RYCO RTI and RFI Series Filters are mounted in the top of the reservoir. A circular hole is cut in the reservoir. Mounting bolt holes are drilled (and tapped if required) and the Filter Housing is bolted in place. The Filters can be mounted inline between rigid pipes, provided that the pipes are anchored to ensure that no undue stress is placed on the Housing casting, and the housing is supported.

Instructions for changing Filter Element are shown on page 390.
**RTI and RFI Tank Top Filters**

**PART NUMBER AND SPECIFICATIONS**

<table>
<thead>
<tr>
<th>COMPLETE FILTER</th>
<th>PORT BSPP</th>
<th>NOMINAL FLOW</th>
<th>MAXIMUM WORKING PRESSURE</th>
<th>NOMINAL FILTRATION</th>
<th>REPLACEMENT FILTER ELEMENT</th>
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<td>10</td>
<td>150</td>
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</table>

* NOTE: RTI-R10 has two Inlet Ports. Both can be used; otherwise one must be plugged - plug not supplied.

**NOTE:** RTI-E and RFI-E Filter Elements are interchangeable (except RTI-E1010, RTI-E1025, RFI-E1010 and RFI-E1025).

**NOTE:** RTI-R08 has 1 inch BSPP Inlet Port and 3/4 inch BSPP Outlet Port.

**DIMENSIONS**

**RTI SERIES**

**RFI SERIES**

**MOUNTING HOLES RTI & RFI**

**RYCO FILTER SERIES | PORT THREAD BSPP | BOWL DIAMETER | INTO TANK HEIGHT | PORT HEIGHT | WIDTH PORT TO CENTRE | PORT CENTRE TO TOP | HEAD TOP TO GASKET | MOUNTING DIAMETERS | APERTURE DIAMETER | WEIGHT FILTER ELEMENT | WEIGHT TOTAL**
<table>
<thead>
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<td>78</td>
<td>13</td>
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<td>150</td>
<td>175</td>
<td>9,0 x 4</td>
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</table>
RCF Combination Filters

**RECOMMENDED FOR:**
RYCO RCF Series Combination Filters are designed for installation in both stationary and mobile industrial hydraulic equipment, and are suited to large systems. With 20 bar (290 psi) maximum working pressure; high flow rates; optional use of either, or both Inlet Ports; mounting options of either tank top or inline; 10, 25 and 149 Micron Cartridges for Return Line or Suction Line use; RCF Filters combine the advantages of RHF Heavy Duty and RTI Tank Top into a single Filter Range.

**FEATURES:**
- All Aluminium Cast Construction.
- One-Piece casting for Main Body Housing.
- Cast Top Cover Plate.
- BSPP Ports up to 1.1/2”.
- SAE Code 61 Ports for 2.1/2" size (with UNC Bolt Holes).
- Two Inlet Ports at side of Filter housing (both can be used, otherwise one must be plugged - plug not supplied).
- Outlet Port is at bottom of Filter.
- Easy installation of RYCO RD Series Diffuser, see page 374.
- Outlet Port can be extended below the level of the oil, to reduce foaming and aeration.
- Two different Bypass Valve cracking pressures are available to suit Return Line or Suction Lines, except RCF-04 size only available as Return Line Filter.
- Permanent magnet bonded to bottom of Top Cover Plate to catch coarse ferrous particles.
- Gauge Port tapped into Top Cover Plate.
- Clogging Indicators available, see page 370.

**TECHNICAL DATA**
- **Main Body Housing and Top Cover Plate:** Cast Aluminium.
- **Gaskets:**
  1. Nitrile (Buna N) oil resistant rubber O Ring between Main Body Housing and Top Cover Plate.
  2. Cork Gasket supplied for seal between Main Body Housing and Tank.
- **Filtration Media:**
  - 10 and 25 Micron Nominal are Cellulose, phenolic resin impregnated; 149 Micron is Stainless Steel Mesh. All are extensively pleated to maximise surface area available to trap contaminants and maximise dirt holding capacity.
- **Filtration Ratings:**
  - 10 Micron Nominal, 25 Micron Nominal; and 149 Micron Absolute. 149 Micron not available in RCF-SP04149 size.
- **Maximum Working Pressure/Vacuum:**
  - 20 bar/290 psi in Return Line applications.
  - 635 mmHg/25 inHg Maximum Vacuum in Suction Line applications. Recommended use for Suction Lines is Stainless Steel Mesh Cartridges, Cellulose is not recommended.
- **Operating Temperature:**
  - 80°C (176°F) maximum continuous working temperature.
- **Fluid Compatibility:**
  - Mineral/petroleum based hydraulic oils.
- **Bypass Valve Position:** attached to Top Cover Plate; except RCF-04 size has Bypass Valve in Cartridge.
- **Bypass Valve Differential Cracking Pressure:**
  - RHF-R Series for Return Lines 1,0 bar/14.5 psi.
  - RCF-S Series for Suction Lines 0,2 bar/2.9 psi.
- **Clogging Indicators:**
  - RGS Gauge, calibrated with negative pressures (for Suction Lines) and positive pressures (for Return Lines).
  - RGS02 Gauge, Stainless Steel, calibrated with negative pressures for Suction Lines.
  - REIR and REIS Electrical Indicators. See page 370 for more information on Clogging Indicators.
- **Nominal Flow Rates:** As shown, cause a clean element pressure drop of 0.5 bar (7.3 psi) for RCF-R and 0.03 bar (0.5 psi) for RCF-S with 30 centistoke viscosity oil (see page 380 for more detail). The actual flow rate will vary if the oil is of different viscosity. See also page 383 for “Pressure Drop Flow Graphs”, pages 384 and 385 for “Warnings and Filter Selection Guidelines”, and pages 386 and 387 for “Effect of Temperature and Viscosity on Flow Rate and Pressure Drop”.

**MOUNTING OPTIONS**
RYCO RCF Series Filters can be mounted in the top of the reservoir. A circular hole is cut in the reservoir. Mounting bolt holes are drilled (and tapped if preferred) and the Filter Housing is bolted in place.

RCF Filters can be mounted inline directly between rigid pipes, provided that the pipes are anchored to ensure that no undue stress is placed on the Filter housing, and the Housing is supported.

See page 390 for instructions on changing Filter Elements.
## RCF Combination Filters

### PART NUMBERS AND SPECIFICATIONS

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<thead>
<tr>
<th>SERIES</th>
<th>PART NO</th>
<th>INCH</th>
<th>LPM</th>
<th>NOMINAL FLOW</th>
<th>MAXIMUM WORKING PRESSURE/VACUUM</th>
<th>NOMINAL FILTRATION</th>
<th>REPLACEMENT FILTER ELEMENT</th>
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### DIMENSIONS

![Image of RCF Combination Filters Diagram]

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<th>PORT HEIGHT</th>
<th>WIDTH PORT TO CENTRE</th>
<th>PORT CENTRE TO TOP</th>
<th>HEAD TOP TO GASKET</th>
<th>FLANGE DIAMETER</th>
<th>MOUNTING DIMENSIONS</th>
<th>HOLE DIAMETER</th>
<th>WEIGHT ELEMENT</th>
<th>WEIGHT TOTAL</th>
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<td>D mm 26</td>
<td>W mm 51</td>
<td>C mm 34</td>
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<td>E mm 82</td>
<td>mm 84</td>
<td>X mm 95</td>
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QUALITY FILTERS AND ACCESSORIES

RG & REI Clogging Indicators

SPECIFICATIONS: GAUGES

Part No RGR-40 Return Line Gauge
Mounted in a Gauge Port on the Inlet Port of Return Line Inline Filter Heads*, or the Top Cover Plate of RTI/RFI Tank Top and RCF-R Combination Filters, to indicate the flow restriction. When the needle is in the GREEN zone, the flow restriction is less than 1,0 bar (14.5 psi) and the Bypass Valve is closed. All flow is filtered through the Element. When the needle is in the RED zone, the Bypass Valve is open and the flow is not filtered. Filter Elements require replacing before the needle enters the RED zone.

Part No RGS-40 Suction Line Gauge
Mounted in a Gauge Port on the Outlet Port of Suction Line Inline Filter Heads* and the Top Cover Plate of RCF-S Combination Filters, to indicate the flow restriction. The Gauge shows negative pressure readings. When the needle indicates -0.2 bar (-5.9 inHg) or beyond, the Bypass Valve is open and the flow is not being filtered. Filter Elements require replacing before the needle reaches -0.2 bar (-5.9 inHg).

Part No RGS02-50 - Stainless Steel, Glycerine filled, 50mm Suction Line Gauge
Mounted in a Gauge Port on the Outlet Port of Suction Line Inline Filter Heads* and the Top Cover Plate of RCF-S Combination Filters, to indicate the flow restriction. The Gauge shows negative pressure readings. When the needle indicates -0.2 bar (-5.9 inHg) or beyond, the Bypass Valve is open and the flow is not being filtered. Filter Elements require replacing before the needle reaches -0.2 bar (-5.9 inHg).

SPECIFICATIONS: ELECTRICAL INDICATORS

Part No REIR Return Line Electrical Indicator
REIR Electrical Indicators are mounted in a Gauge Port on the Inlet Port of Return Line Inline Filter Heads* and the Top Cover Plate of RTI/RFI Tank Top Filters and RCF-R Combination Filters. They are designed to operate a warning buzzer or light when the flow restriction reaches 1,0 bar (14.5 psi), or other preset value.

Part No REIS Suction Line Electrical Indicator
REIS Electrical Indicators are mounted in a Gauge Port on the Outlet Port of Suction Line Inline Filter Heads* and the Top Cover Plate of RCF-S Combination Filters. They are designed to operate a warning buzzer or light when the flow restriction reaches -0.2 bar (-5.9 inHg), or other preset value.

TECHNICAL DATA

- Electrical Micro Switch:
  Maximum 3A-250V AC.
- Operating Temperature:
  85°C (185°F) maximum continuous working temperature.
- Test Pressure:
  10 bar/150 psi.
- Maximum Working Pressure Range:
  REIR can be adjusted via screw to trigger at pressures from 0.5 to 2.0 bar (7.3 to 29 psi).
  REIS can be adjusted via screw to trigger at pressures from -0.15 to -0.4 bar (-2.2 to -5.8 psi).

*NOTE: Not suitable for use with RIF14-1, RIF-FA Series, RIF15.
#NOTE: Requires the use of S72N-0202 with RIF-SH10 filter head.
**CONNECTING PARTNERSHIPS**

**RIF15 Inline Spin-On Water Trap Filter**

**Intro**

**Hose**

**Couplings**

**Adaptors**

**Accessories**

**Filters**

**Technical**

---

**RECOMMENDED FOR:**

RYCO RIF15 Filters are designed for installation on petrol, kerosene, and diesel fuel storage tanks, with gravity feed or pressure to 7 bar (100 psi), to remove solid particles and water from the fuel. Contact RYCO Hydraulics Technical Department for suitability with Ethanol Blend Fuels.

*Not suitable for aviation applications.*

**FEATURES:**

- Disposable Spin-On Canister.
- Changing of Filter Element is quick and simple.
- Extremely fine Filter, silicone treated to resist water; removes dirt, rust, grit and water.
- Cartridge has tap at bottom to enable trapped water to be manually drained off at regular intervals.
- Cast Aluminium Head with tapped mounting holes.
- Easy to install.
- 1” BSPT threaded Ports.
- Inlet and Outlet Ports are clearly identified by a flow direction arrow.
- Bypass Valve is not fitted to RIF15 Filters.
- Flow of fluid through the Filter will slow as the Canister traps contaminants. Before the flow becomes too slow, the Canister should be drained of trapped water via the tap (turn off flow to the filter before draining). Slow flow of fuel after draining the trapped water indicates that the Canister has become blocked by contaminants and must be replaced. Spin-On Canister must be replaced at maximum intervals of twelve months, or earlier if it has become blocked.

**TECHNICAL DATA**

- **Filter Head:** Cast Aluminium.
- **Spin-On Canister Housing:** Painted steel casing. Pressed steel top plate.
- **Gasket:** Nitrile (Buna N) rubber; resistant to petrol, kerosene and diesel fuel.
- **Filtration Media:** Cellulose, phenolic resin impregnated, and silicone treated for water resistance; extensively pleated to maximise surface area available to trap contaminants, and maximise dirt holding capacity.
- **Filtration Rating:** 15 Micron Nominal.
- **Maximum Working Pressure:** 7 bar (100 psi). Not suitable for Suction Line applications.
- **Operating Temperature:** 80°C (176°F) maximum continuous working temperature.
- **Fluid Compatibility:** Petrol, kerosene and diesel fuels. Contact RYCO Hydraulics Technical Department for suitability with Ethanol Blend Fuels.
- **Nominal Flow Rates:** At ambient temperature of 20°C (68°F), petrol and kerosene have viscosity of less than 1 centistoke; and diesel fuel has viscosity of less than 4 centistokes. Due to these low viscosities, nominal flow rate is not significantly affected by temperature except at large variance to 20°C (68°F). See pages 384 and 385 for “Warnings and Filter Selection Guidelines”.

**PART NUMBER AND SPECIFICATIONS**

<table>
<thead>
<tr>
<th>COMPLETE FILTER</th>
<th>PORT BSPT</th>
<th>NOMINAL FLOW</th>
<th>MAXIMUM WORKING PRESSURE</th>
<th>NOMINAL FILTRATION</th>
<th>REPLACEMENT SPIN-ON CANISTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PART NO RIF15</td>
<td>INCH 1</td>
<td>LPM 60</td>
<td>BAR 7</td>
<td>psi 100</td>
<td>MICRON 15 PART NO R15</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

<table>
<thead>
<tr>
<th>CANISTER DIAMETER</th>
<th>OVERALL HEIGHT</th>
<th>CANISTER HEIGHT</th>
<th>WIDTH ACROSS PORTS</th>
<th>PORT THREAD BSPT</th>
<th>MOUNTING HOLE CENTRES</th>
<th>MOUNTING HOLE THREADS</th>
<th>WEIGHT HEAD</th>
<th>WEIGHT CANISTER</th>
<th>WEIGHT TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>D mm 94</td>
<td>H mm 220</td>
<td>L mm 160</td>
<td>W mm 116</td>
<td>A inch 1</td>
<td>X mm 63,5</td>
<td>BSW 3/8 - 16</td>
<td>kg 0,47</td>
<td>kg 0,52</td>
<td>kg 0,99</td>
</tr>
</tbody>
</table>

**MOUNTING OPTIONS**

RYCO RIF15 Series Filter Heads can be mounted to equipment by means of two tapped mounting holes in head. Filter Heads can be mounted directly between rigid pipes, provided that the pipes are anchored to ensure that no undue stress is placed on the Filter Head casting.

Allow 15 mm clearance below Spin-On Canister to allow Canister to be changed. Instructions for changing Canister are shown on page 390.

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**COMPLETE FILTER**

**PORT BSPT**

**NOMINAL FLOW**

**MAXIMUM WORKING PRESSURE**

**NOMINAL FILTRATION**

**REPLACEMENT SPIN-ON CANISTER**

**FILTER HEAD**

**CANISTER HOUSING**

**GASKET**

**FILTRATION MEDIA**

**FILTRATION RATING**

**MAXIMUM WORKING PRESSURE**

**OPERATING TEMPERATURE**

**FLUID COMPATIBILITY**

**NOMINAL FLOW RATES**

**DIMENSIONS**

**MOUNTING OPTIONS**

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