KLT and KLS Series
Tank Top Return Line Filters

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding
KLT/KLS Series
Tank Top Return Line Filters

Applications for KLT and KLS Filters

- Mobile Equipment
- Construction, Refuse
- Industrial Power Units
- Machine Tool
- Oil Field

Parker’s new KLS/KLT Tank Top Return Line Filters are ideally suited for Mobile and Industrial high to medium flow return applications, from 30 to 120 GPM. This cost-effective, in-tank filter series provides maximum flow and dirt holding capacity for longer filter element life in a simple, easy-to-install-and-service assembly.

The generous element size with extensive media area ensures continuous filtration during cold start up conditions. The inside-to-out flow path with closed bottom provides additional assurance that all contaminants remain captured during element service removal. The filters have a pressure rating of 150 psi static, a temperature range of -40°F to 225°F, and are available in a wide range of high-efficiency Microglass III media in 2, 5, 10 and 20 micron for all system cleanliness requirements. Bypass valves are built into the element to ensure further performance integrity. A new bypass is provided with each element change.

This rugged design meets the needs for the demanding applications in mobile off-highway and on-highway applications for construction equipment, logging, refuse vehicles, mining, oil and gas recovery, marine, and industrial power units.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Advantage</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank top mounted filter</td>
<td>Saves space and reduces mounting hardware</td>
<td>Lower cost, easy to integrate KLS model directly retrofits competitive housing</td>
</tr>
<tr>
<td>Two-piece head and element construction perforated with metal outer wrap</td>
<td>No bowl required, Provides excellent flow diffusing, eliminating aeration</td>
<td>Reduced cost and assembly weight, Improved performance</td>
</tr>
<tr>
<td>High efficiency Microglass media maximizing filtration area</td>
<td>Combines high particle capture efficiency with high dirt holding capacity and lower ΔP</td>
<td>Cleaner fluids, longer lasting with fewer service intervals, Continuous filtration for cold start ups, Lower operating costs</td>
</tr>
<tr>
<td>Element design includes integral disposable bypass valve with closed bottom end cap</td>
<td>New bypass with each element change, Ensures captured contaminants are removed with each element change</td>
<td>Ensures reliable bypass performance, No leakage, Cleaner fluids reduce risk for contamination during service</td>
</tr>
<tr>
<td>Magnetic prefiltration</td>
<td>Removes large ferrous contaminants</td>
<td>Extends element life, Visual indication of component wear</td>
</tr>
<tr>
<td>Fill and gauge ports</td>
<td>Add fluid through high performance filter media, Gauge ports allow for added instrumentation</td>
<td>Initial fluid integrity extends system component life, Monitor element life</td>
</tr>
</tbody>
</table>
KLT/KLS Series
Specifications

Pressure Ratings:
Maximum Allowable Operating Pressure (MAOP): 150 psi (10.3 bar)
Operating Temperatures: -40°F (-40°C) to 225°F (107°C)
Element Burst Rating: 150 psid (10.3 bar)
Filtration Rating: 2, 5, 10 & 20 Microns at Beta > 200

Element Condition Indicators:
Gauge: 0-60 psi color coded
Switch: SPDT 5A @ 24 VDC and 250 VAC

Materials:
Head & Cover: Cast Aluminum Alloy
Bypass Valve: Nylon
Filter Media: Microglass III
Element End Caps: Nylon

Weights (approximate):
KLT-2 .......... .3 lbs. (1.36 kg)
KLT-4 .......... .4 lbs. (1.81 kg)
KLT(S)-7 ........ .8 lbs. (3.63 kg)
KLT(S)-8 ....... 10 lbs. (4.54 kg)

KLT Weld Plate Drawings

<table>
<thead>
<tr>
<th>Dimension</th>
<th>KLT Filter Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>KLT-2/KLT-4</td>
</tr>
<tr>
<td>A</td>
<td>5/16-18 UNC-2A</td>
</tr>
<tr>
<td>B</td>
<td>5.33 [135]</td>
</tr>
<tr>
<td>C</td>
<td>1.00 [25]</td>
</tr>
<tr>
<td>D</td>
<td>4.50/3.75 [114/95]</td>
</tr>
</tbody>
</table>

Linear Measure: inch (mm)

Drawings are for reference only. Contact factory for current version.
KLT Series
Dimensional Drawings

**KLT 2 / KLT 4**

- **Torque:** 3 FT-LB (4 N-m)
- **SAE-16 Straight Thread O-Ring Port**
- **Recommended Head To Tank Torque:** 11 FT-LB (15 N-m)
- **Min. Service Clearance:** \( \frac{1}{4} \) NPT Plugged Gauge Port(s) (3 Places)

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>KLT Filter Model</th>
<th>KLT-2</th>
<th>KLT-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
<td>5.75 (146)</td>
<td>9.50 (241)</td>
</tr>
<tr>
<td>L</td>
<td></td>
<td>4.16 (106)</td>
<td>7.75 (197)</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>3.6 (93)</td>
<td>3.56 (90)</td>
</tr>
</tbody>
</table>

**KLT 7 / KLT 8**

- **Torque:** 7 FT-LB (10 N-m)
- **SAE-24 Straight Thread O-Ring Port**
- **Recommended Head To Tank Torque:** 30 FT-LB (40 N-m)
- **Min. Service Clearance:** \( \frac{1}{4} \) NPT Plugged Gauge Port(s) (3 Places)

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>KLT Filter Model</th>
<th>KLT-7</th>
<th>KLT-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
<td>13.00 (330)</td>
<td>19.25 (489)</td>
</tr>
<tr>
<td>L</td>
<td></td>
<td>11.46 (291)</td>
<td>17.70 (450)</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>5.36 (136)</td>
<td>5.26 (133)</td>
</tr>
</tbody>
</table>

Linear Measure: inch (mm)

Drawings are for reference only. Contact factory for current version.
KLT Series
Dimensional Drawings

KLS 7 / KLS 8

TORQUE: 12 FT-LB (16 N-m)

¼3 (11) DIA. MOUNTING HOLES (4 PLACES) ON 6.25 (158.8) B.C.
RECOMMENDED HEAD TO TANK TORQUE: 30 FT-LB (40 N-m)

6.76 (172)

TORQUE: 12 FT-LB (16 N-m)

C
MIN. SERVICE CLEARANCE

3.62 (92)

1.62 (41)

D
RESERVOIR CUTOUT DIAMETER

L

SAE-24 STRAIGHT THREAD O-RING PORTS (BOTH SIDES)

1/4 NPT PLUGGED GAUGE PORTS (2 PLACES)

Linear Measure: inch (mm)

Drawings are for reference only.
Contact factory for current version.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>KLS Filter Model</th>
<th>KLS-7</th>
<th>KLS-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
<td>13.00 (330)</td>
<td>19.25 (489)</td>
</tr>
<tr>
<td>L</td>
<td></td>
<td>11.46 (291)</td>
<td>17.70 (450)</td>
</tr>
<tr>
<td>D</td>
<td></td>
<td>5.00 (127)</td>
<td>4.80 (122)</td>
</tr>
</tbody>
</table>
KLT Series
Dimensional Drawing
KLT with 2” Port

Drawings are for reference only. Contact factory for current version.
KLT Series
KLT-2 Element Performance

Efficiency

<table>
<thead>
<tr>
<th>Beta Rating</th>
<th>Efficiency %</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000</td>
<td>99.9</td>
</tr>
<tr>
<td>1000</td>
<td>99.5</td>
</tr>
<tr>
<td>100</td>
<td>99.0</td>
</tr>
<tr>
<td>200</td>
<td>95.0</td>
</tr>
</tbody>
</table>

Micron Size (c)

Multipass tests run @ 15 gpm to 25 psid terminal - 10 mg/L BUGL

Flow vs. Pressure Loss

LPM

Pressure Loss

BAR
KLT Series
KLT-4 Element Performance

Efficiency

Beta Rating
10000

Efficiency %

Micron Size [c]

Capacity

PSID
25.0

BAR
1.50

Grams
0.00
0.25
0.50
0.75
1.00
1.25
1.50

Multipass tests run @ 30 gpm to 25 psid terminal - 10 mg/L BUGL

Flow vs. Pressure Loss

LPM

PSID
0.0
0.2
0.4
0.6
0.8
1.0
1.2

BAR
0.0
0.2
0.4
0.6
0.8
1.0
1.2

GPM
0
10
20
30
40
50

0 4 8 12 16 20

150SUS

02Q

05Q

10Q

20Q
KLT/KLS Series
KLT/KLS-7 Element Performance

**Efficiency**

<table>
<thead>
<tr>
<th>Micron Size (µ)</th>
<th>Efficiency %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2Q</td>
<td>99.9</td>
</tr>
<tr>
<td>5Q</td>
<td>99.5</td>
</tr>
<tr>
<td>10Q</td>
<td>99.0</td>
</tr>
<tr>
<td>20Q</td>
<td>99.0</td>
</tr>
</tbody>
</table>

**Beta Rating**

<table>
<thead>
<tr>
<th>PSID</th>
<th>1000</th>
<th>10000</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>99.9</td>
<td>99.5</td>
</tr>
<tr>
<td>200</td>
<td>99.0</td>
<td>95.0</td>
</tr>
</tbody>
</table>

**Capacity**

<table>
<thead>
<tr>
<th>Grams</th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>100</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAR</td>
<td>0.00</td>
<td>0.50</td>
<td>0.75</td>
<td>1.00</td>
<td>1.25</td>
<td>1.50</td>
<td></td>
</tr>
</tbody>
</table>

Flow vs. Pressure Loss

<table>
<thead>
<tr>
<th>LPM</th>
<th>0</th>
<th>50</th>
<th>100</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSID</td>
<td>0</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>BAR</td>
<td>0.00</td>
<td>0.2</td>
<td>0.4</td>
<td>0.6</td>
<td>0.8</td>
<td>1.0</td>
<td>1.2</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Multipass tests run @ 50 gpm to 25 psid terminal - 10 mg/L BUGL
KLT/KLS Series
KLT/KLS-8 Element Performance

Efficiency

Beta Rating
10000
1000
200
100
20

Micron Size (c)
0 4 8 12 16 20

Efficiency %
25.0
20.0
15.0
10.0
5.0
0.0

Capacity

PSID
BAR

Grains
0 20 40 60 80 100 120 140 160 180 200

Flow vs. Pressure Loss

LPM
0 100 200 300 400

PSID
0 2 4 6 8 10

BAR
0 0.1 0.2 0.3 0.4 0.5 0.6

GPM
0 20 40 60 80 100 120

Multipass tests run @ 70 gpm to 25 psid terminal - 10 mg/L BU/L
KLT/KLS Series
KLT with 2” Port - Element Performance

Efficiency

Beta Rating

Efficiency %

Micron Size (c)

Flow vs. Pressure Loss

LPM

PSID

BAR

GPM

Micron Size (c)
KLT and KLS Series
Operating and Maintenance Instructions

A. Mounting
1. Standard mounting.
   a. Cut proper size hole in the top of the reservoir.
   b. Drill holes for studs within the proper bolt circle.
   c. Set the filter into the cutout hole and secure with proper size bolts, nuts and lock washers.
   d. Torque nuts in accordance with drawing.
   a. Rough cut proper size hole in the top of reservoir.
   b. Weld the weld plate concentric to the rough cut hole.
   c. Mount the filter onto the studs and secure with nuts and lock washers.
   d. Torque nuts in accordance with drawing.
3. Utilize proper fittings.

B. Start-Up
1. Check for and eliminate leaks upon system start-up.
2. Check differential pressure indicator, if installed, to monitor element condition.

C. Service
1. An element must be serviced when the indicator indicates service is required.

NOTE: If the filter is not equipped with an indicator, the element should be serviced according to machine manufacturer’s instructions.

D. Servicing Dirty Element
1. Shut system down to assure that there is NO PRESSURE OR FLOW into the filter housing.
2. Remove the filter cover.
3. Remove and discard the contaminated element cartridge.

E. Before Installing a New Element Cartridge
1. Clean the magnetic core with a lint-free cloth.
2. Check all seals and replace if necessary.

F. To Install a New Element Cartridge
1. Lubricate all seals.
2. Mount new filter cartridge.
3. Re-install the cover.
4. Torque the cover nuts per drawing.

Perform procedures B1 and B2 to ensure no leaks are present.

Parts List

<table>
<thead>
<tr>
<th>Index</th>
<th>Description</th>
<th>Part Number</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cover Assembly (Includes Cover o-ring)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KLT2/KLT4</td>
<td>937049</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLT7/KLT8</td>
<td>937047</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLS7/KLS8</td>
<td>937048</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Cover o-ring</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KLT2/KLT4, Nitrile</td>
<td>N72239</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLT2/KLT4, FKM</td>
<td>V72239</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLT7/KLT8, Nitrile</td>
<td>N72251</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLT7/KLT8, FKM</td>
<td>V72251</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLS7/KLS8, Nitrile</td>
<td>N72251</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLS7/KLS8, FKM</td>
<td>V72251</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Element (see How to Order page)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Filter Head (Includes gauge plugs &amp; studs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KLT2/KLT4 (S16)</td>
<td>5841216</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLT7/KLT8 (S24)</td>
<td>5841224</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLS7/KLS8 (S24)</td>
<td>937318</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLS7/KLS8 (2&quot; Flange)</td>
<td>942157</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Tank Gasket</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>KLT2/KLT4</td>
<td>108x98x5.5B</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLT7/KLT8</td>
<td>152x136x6B</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>KLS7/KLS8 (O-Ring)</td>
<td>N72355 (C.F.)</td>
<td>1</td>
</tr>
</tbody>
</table>

Not Shown:
- Weld Plate
- KLT2/KLT4: 300041
- KLT7/KLT8: 300042
- Pressure Switch: NS-1C-19R/EL
- Pressure Gauge: 936913

C.F. = Consult Factory

Diagram:

1. Cover Assembly
2. Cover O-Ring
3. Element
4. Filter Head
5. Tank Gasket
### KLT and KLS Series

Select the desired symbol (in the correct position) to construct a model code.

**Example:**

<table>
<thead>
<tr>
<th>BOX 1</th>
<th>BOX 2</th>
<th>BOX 3</th>
<th>BOX 4</th>
<th>BOX 5</th>
<th>BOX 6</th>
<th>BOX 7</th>
<th>BOX 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>KLT</td>
<td>7</td>
<td>10Q</td>
<td>B</td>
<td>P</td>
<td>G</td>
<td>S24</td>
<td>1</td>
</tr>
</tbody>
</table>

**BOX 1:** Filter Series

- **Symbol:** KLT
  - Single port return-line filter
- **Symbol:** KLS
  - Dual port return-line filter (-7 and -8 models only)

**BOX 2:** Filter Model

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>30 GPM (115 l/m nominal flow)</td>
</tr>
<tr>
<td>4</td>
<td>50 GPM (190 l/m nominal flow)</td>
</tr>
<tr>
<td>7</td>
<td>100 GPM (380 l/m nominal flow)</td>
</tr>
<tr>
<td>8</td>
<td>120 GPM (455 l/m nominal flow)</td>
</tr>
</tbody>
</table>

**BOX 3:** Media Code

- **Symbol:** 02Q
  - Microglass III, 2 micron
- **Symbol:** 05Q
  - Microglass III, 5 micron
- **Symbol:** 10Q
  - Microglass III, 10 micron
- **Symbol:** 20Q
  - Microglass III, 20 micron
- **Symbol:** WR
  - Water Removal

**BOX 4:** Seals

- **Symbol:** B
  - Nitrile (NBR)
- **Symbol:** V
  - Fluorocarbon

*NOTE: Nitrile tank gasket always supplied.

**BOX 5:** Indicator

- **Symbol:** P
  - No indicator; plugged pressure port(s)
- **Symbol:** G
  - Pressure gauge, 0-60 psig
- **Symbol:** S
  - Pressure switch

**BOX 6:** Bypass

- **Symbol:** G
  - 25 psid (1.7 bar)

**BOX 7:** Ports

- **Symbol:** KLT-2/4
- **Symbol:** S16
  - SAE-16 (1 5/16"-12)
- **Symbol:** S24
  - SAE-24 (1 7/8"-12)
- **Symbol:** N24
  - 1 1/2" NPT
- **Symbol:** Y32
  - 2" Code 61 Flange Face
- **Symbol:** KLS-7/8

**BOX 8:** Options

- **Symbol:** 1
  - None
- **Symbol:** TP
  - Weld plate (KLT only)

### Replacement Elements

<table>
<thead>
<tr>
<th>Element Code</th>
<th>Nitrile</th>
<th>Fluorocarbon</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>20Q</td>
<td>936967Q</td>
<td>937269Q</td>
</tr>
<tr>
<td>10Q</td>
<td>936966Q</td>
<td>937268Q</td>
</tr>
<tr>
<td>05Q</td>
<td>936965Q</td>
<td>937267Q</td>
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<tr>
<td>02Q</td>
<td>936964Q</td>
<td>937266Q</td>
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<tr>
<td>WR</td>
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<td>C.F.</td>
</tr>
<tr>
<td></td>
<td>4</td>
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</tr>
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</tr>
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<td>937272Q</td>
</tr>
<tr>
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<td>936979Q</td>
<td>937270Q</td>
</tr>
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<td></td>
<td>936973Q</td>
<td>937265Q</td>
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<td></td>
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</tr>
</tbody>
</table>

C.F. = Consult Factory

Global products as identified are offered worldwide through all Parker locations and utilize a common ordering code.