



# PORTABLE FLUID CONDITIONING CART

Models 5PFCC & 10PFCC



# PFCC

## Applications

- Filtering new fluid before putting into service
- Transferring fluid from drums or storage tanks to system reservoirs
- Conditioning fluid that is already in use
- Complimenting existing system filtration
- Removing free and emulsified water from a system
- For use with fluids such as hydraulic, gear and lube oils

Parker portable filter carts are the ideal way to prefilter and transfer fluids into reservoirs or to clean up existing systems.

Fluid should always be filtered before being put into use. New fluid is not necessarily clean fluid. Most new fluids (right out of the drum) are unfit for use due to high initial contamination levels. Contamination, both particulate and water, may be added to a new fluid during processing, mixing, handling and storage.

Water is removed by installing Par-Gel™ elements in the outlet filter. Par-Gel™ elements are made from a polymer which has a very high affinity for free water.

Once water comes into contact with this material, it is removed from the system.

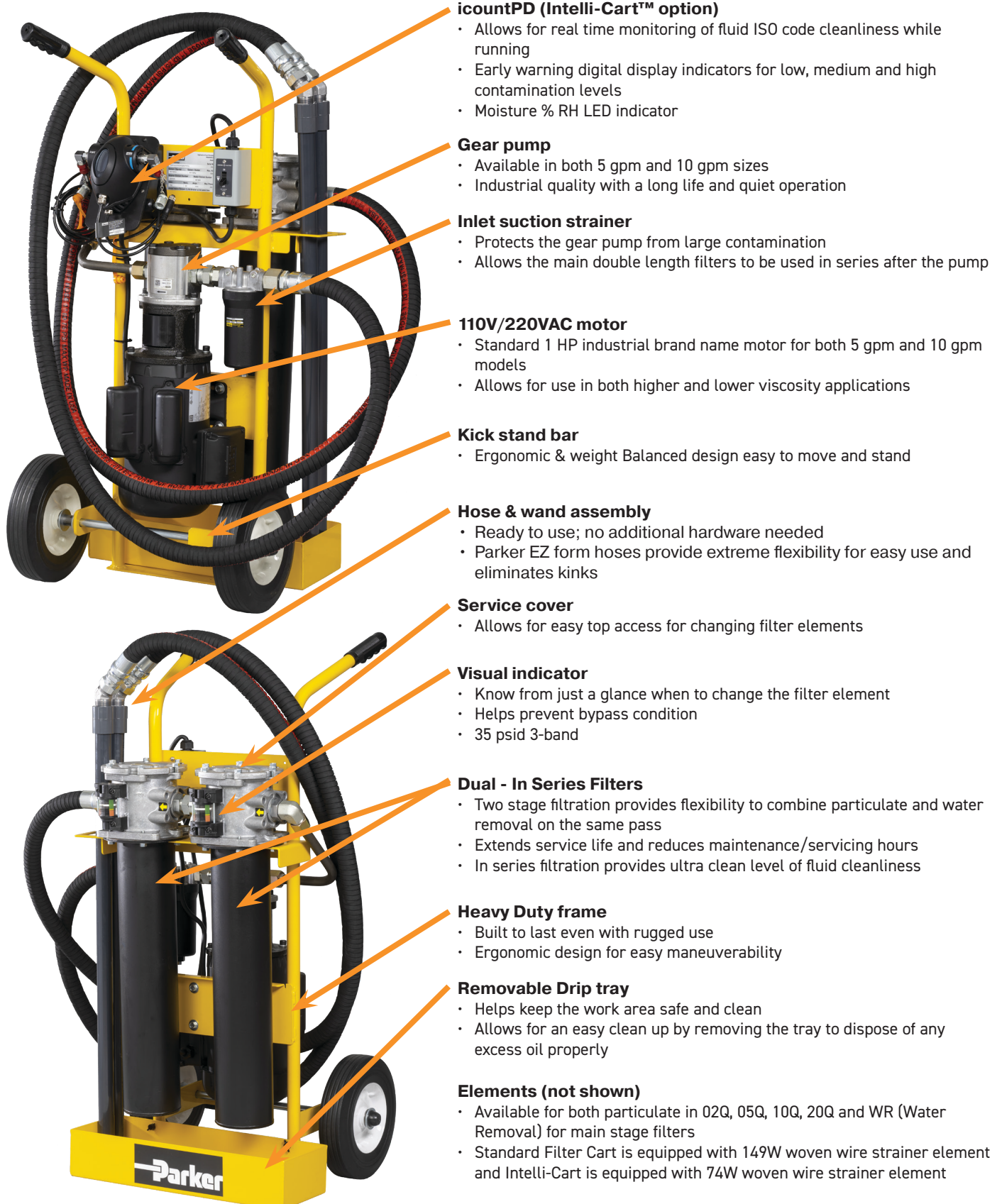
The Parker portable filter cart uses two high capacity ModuFlow™ Plus filters for long element life and better system protection. The first stage (inlet) filter captures larger particles, while the second stage (outlet) filter captures finer particles or removes water. A rugged industrial quality gear pump gets the job done fast.

Using a Parker portable filter cart is the most economical way to protect your system from the harm that can be caused by contamination.

| Features                                       | Advantages                                                                                       | Benefits                                                                                                                                                                                       |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| In-series filtration                           | Capable of multi-staged filtration Ability to remove free water and particulate in the same pass | Can extend the service life, reduce maintenance hours in servicing the filtration systems and equipment, and remove contaminant and water out of a system in a single pass across the elements |
| Wide variety of particulate elements available | Capable of getting a fluid to a desired cleanliness level                                        | Extends fluid life and system performance                                                                                                                                                      |
| Heavy duty frame                               | Rugged and durable                                                                               | Built to last                                                                                                                                                                                  |
| Lightweight and Portable                       | Easy to move from place-to-place                                                                 | One person operation                                                                                                                                                                           |
| Two flow rates available: 5 GPM or 10 GPM      | Motor is now 1 HP, enabling use in lower or higher viscosity applications                        | Matched to your needs                                                                                                                                                                          |
| Eleven-foot hose and wand assemblies included  | Additional hardware not necessary                                                                | Ready to use as received                                                                                                                                                                       |
| Narrow design                                  | Better maneuverability                                                                           | Exceptional movement through tight spaces, narrow aisles, and smaller overall footprint                                                                                                        |
| Ergonomic frame design                         | Improved handle height and center of gravity for most average users                              | Decreased force needed for tipping into moving position, improved handle height for comfort and decreased strain on neck, back, and shoulders                                                  |
| 10 inch wheels                                 | Larger 10 inch wheels                                                                            | Increased mobility and handling in various terrains                                                                                                                                            |
| Removable drip tray                            | Drip tray now removable                                                                          | Ability to easily dispose of any excess oil in drip pan by disconnecting it from the frame                                                                                                     |
| Filter pump strainer                           | Protection of pump from large contaminant                                                        | The addition of a filter pump strainer provides protection from large contaminants allowing both filters to be used in series after the pump                                                   |
| IcountPD                                       | Capable of polishing a systems hydraulic fluid to a specific ISO cleanliness code                | Ensure fluid entering system meets or exceeds specific component recommended ISO codes, guaranteeing longer service life and reduced maintenance of system                                     |

# PFCC

## Features



# PFCC

## Features

### Maximum Recommended Fluid Viscosity:

5PFCC – 5 GPM pump  
3500 SUS (755cSt)

10PFCC – 10 GPM pump  
1000 SUS (215 cSt)

For optimum particle detector performance results when monitoring contamination levels, fluid viscosity range should be 50 - 250 SUS.

### Visual Indicator (outlet filter):

Visual differential type 3-band  
(clean, change, bypass)

### Filter Bypass Valve Settings (Integral to Element):

Element 1 – 35 psid (2.4 bar)  
Element 2 – 35 psid (2.4 bar)

### Operating Temperature:

Seal option "B" (standard)  
-40°F to +150°F (-40°C to +66°C)

### Electrical Service Required:

110/120 volts, 60 Hz  
Single phase, 10/5.5 amps

### Electrical Motor:

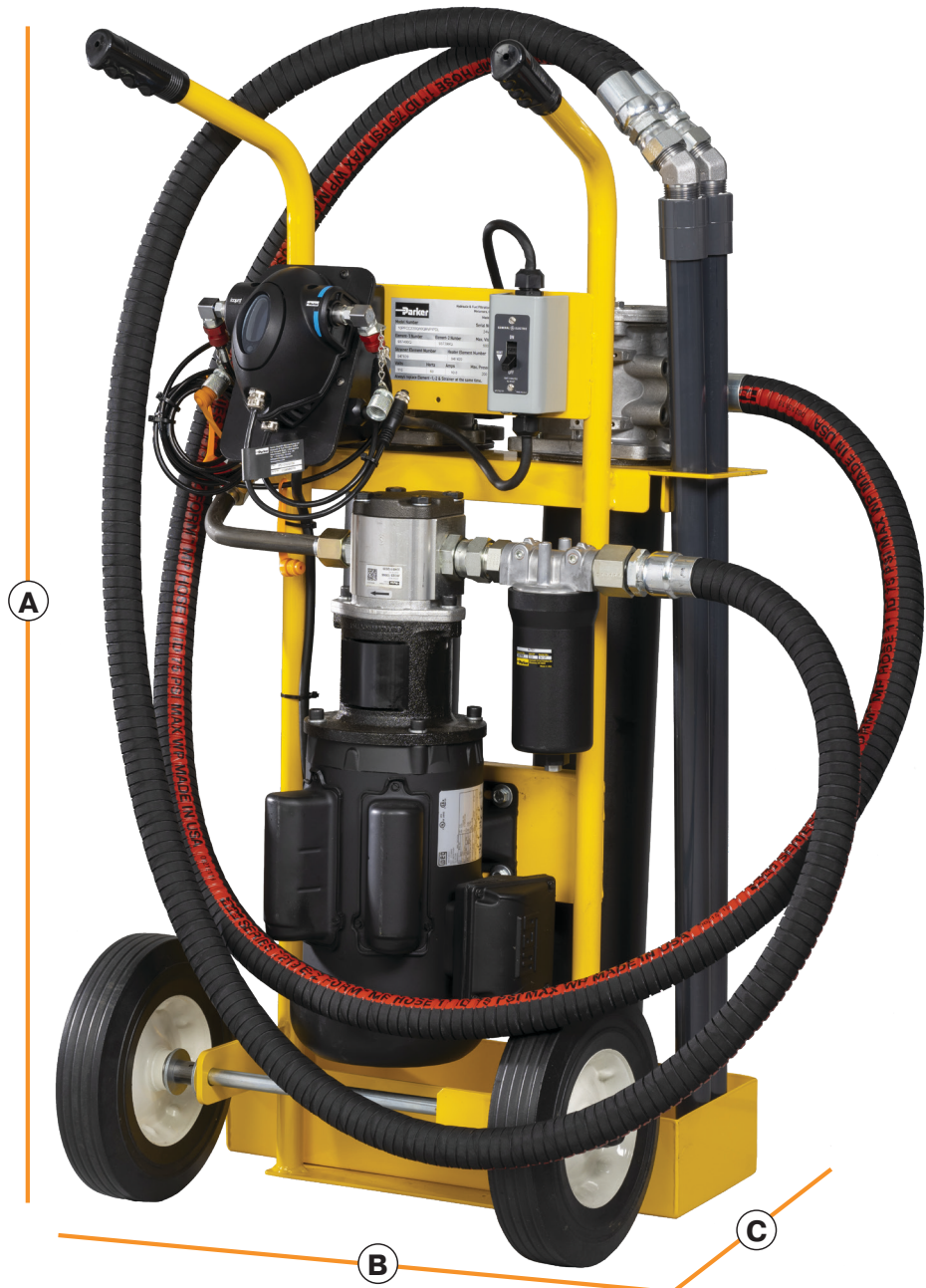
1 hp @ 1745 rpm  
open, drip proof

### Construction:

Cart frame – Steel  
Filter head – Aluminum  
Filter bowl – Steel  
Hoses – Parker EZ form Buna  
Wands – PVC

### Weight:

145 lbs (65.77 kg)



A - Height: 43 in (1092 mm)  
B - Width: 21 in (536 mm)  
C - Depth: 19 in (472 mm)

# PFCC

## Performance

### Typical Fluid Cleanliness Level Requirements

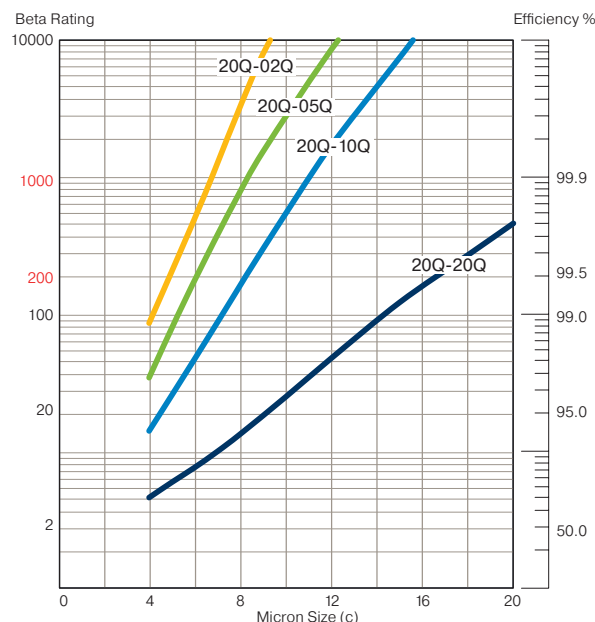
Many manufacturers of hydraulic components have established fluid cleanliness levels for their components. Using a portable filter cart can be a very effective way to reach and maintain these cleanliness levels.

| Component                               | ISO Cleanliness Level |
|-----------------------------------------|-----------------------|
| Servo control valves                    | 16/14/11              |
| Proportional valves                     | 17/15/12              |
| Vane and piston pumps/motors            | 18/16/13              |
| Directional and pressure control valves | 18/16/13              |
| Gear pumps/motors                       | 19/17/14              |
| Flow control valves cylinders           | 20/18/15              |
| New fluid                               | 20/18/15              |

### Filter Cart Element Performance (two-stage filtration)

| Element 1 | Element 2 | Minimum Overall Capacity, grams |
|-----------|-----------|---------------------------------|
| 20Q       | 20Q       | 391                             |
| 20Q       | 10Q       | 375                             |
| 20Q       | 05Q       | 326                             |
| 20Q       | 02Q       | 296                             |

### In-Series Filtration Efficiency



Notes: Multipass test run @ 25 GPM, 70 PSID terminal, 10 mg/l BUGL

### Filter Cart Performance

Fluid cleanliness levels are a function of initial contamination levels, contamination ingress rates, reservoir size and filter element efficiency.

The chart below lists approximate time requirements to achieve certain cleanliness levels based on the assumptions noted.

| Reservoir Capacity (Gallons) | Time Required (Hours) | Projected Cleanliness Level (ISO) |
|------------------------------|-----------------------|-----------------------------------|
| 50                           | 0.5                   | 20/18/15                          |
| 50                           | 1.0                   | 17/15/12                          |
| 50                           | 2.5                   | 16/14/11                          |
| 100                          | 1.5                   | 18/16/13                          |
| 100                          | 2.5                   | 17/15/12                          |
| 100                          | 4.0                   | 16/14/11                          |
| 200                          | 2.5                   | 19/17/14                          |
| 200                          | 3.5                   | 18/16/13                          |
| 200                          | 5.0                   | 17/15/12                          |

Notes: The results in the chart are based on the following assumption:

1. Initial contamination level is 500,000 particles greater than 10 micrometers per 100 ml of fluid (10PFCC cart).
2. Element 1:20Q element; Element 2:10Q element.
3. System ingress rate equal to  $1 \times 10^6$  particles greater than 10 micrometers entering the system per minute.

The Intelli-Cart™ with particle detector provides an excellent method for filtering and trending contamination levels.

For optimum particle detector performance results when monitoring contamination levels, fluid viscosity range should be 50 - 250 SUS.

### Par-Gel™ Media Water Capacity

| Model  | Fluid Viscosity | Capacity |
|--------|-----------------|----------|
| 5PFCC  | 75 SUS          | 600 ml   |
|        | 200 SUS         | 420 ml   |
| 10PFCC | 75 SUS          | 500 ml   |
|        | 200 SUS         | 300 ml   |

Notes:

1. Par-Gel™ elements are designed to remove "free water", which is defined as water that is above a particular fluid's saturation level.
2. Capacity is very dependent on flow rate and viscosity. Not recommended with fluids in excess of 500 SUS.

# PFCC

## Assembly & Operating Instructions

### Assembly

1. Install hoses to inlet strainer and outlet of series filters by threading the hose end with the straight thread o-ring seal fitting.
2. Connect the PVC tube wands to the swivel fitting.
3. The Intelli-Cart™ is shipped with a bag that contains accessory parts.
4. The iPD is shipped with the factory default setting. Users can reprogram the iPD with the cable located in the attached bag and the iPD owners manual.

### Operating Instructions

1. Insert the inlet wand assembly into the supply fluid receptacle (drum/reservoir).
2. Insert the outlet wand assembly into the clean fluid receptacle (drum/reservoir).

**Caution:** Do not kink the hose assemblies. This may result in excessive vacuum or pressure at the pump.

3. Verify that the ON/OFF switch is OFF and plug the cord into the proper grounded power source (3 wire).
4. Turn switch to ON position and check outlet wand for oil flow. Allow 30 to 60 seconds for filters

to fill with oil. If repeated attempts to obtain oil flow fail, check pump inlet fittings for tightness.

5. The condition of the filter elements should be monitored by observing the cleanliness indicator on the filters. When the indicator is in the CHANGE position, both filter elements MUST be replaced to prevent fluid from going through the bypass in the filters.
6. The inlet strainer element is provided to protect the pump from damaging contaminants. The series filter elements are provided with a 35 PSI bypass to prevent excessive pressure which may be harmful to personnel or to the filter cart.

**Warning:** The filter bypass acts as a relief valve for the pump. Do not restrict the discharge hose in any way which will defeat the function of the bypass valve, causing excessive pressure, which may be harmful to personnel or to the filter cart.

7. The cleanliness indicator works on differential pressure and will indicate the condition of the element (CLEAN - green, CHANGE - yellow, or BYPASS - red).

**NOTE:** The filter cart must be in operation for the indicator to read properly.

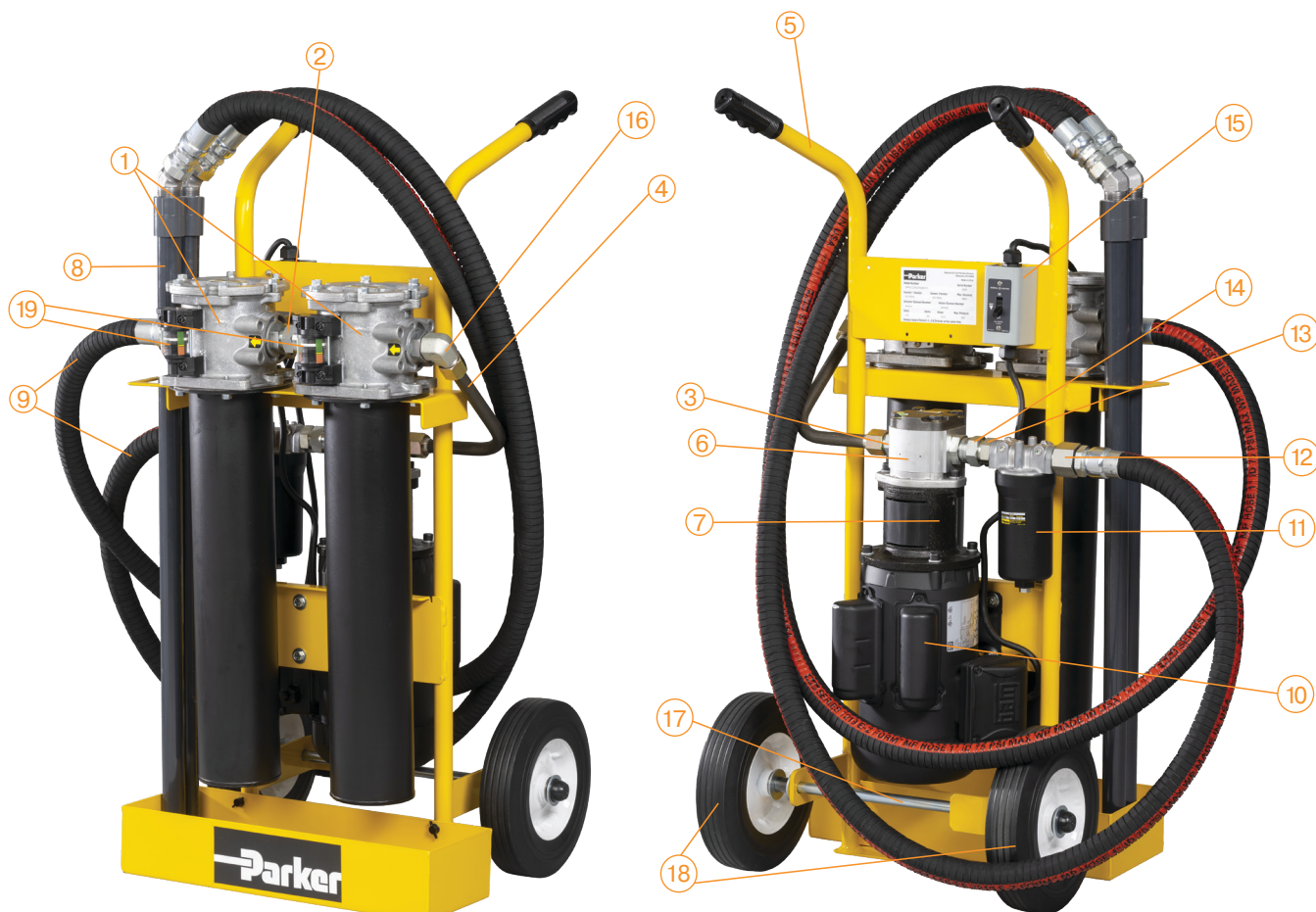
### Maintenance Instructions

1. Turn switch to OFF position and unplug cord from electrical outlet.
2. Remove tube wands from oil to prevent siphoning.
3. Loosen hex head screws on filter cover. Turn cover to clear screws, remove cover.
4. Pull filter element from the filter head.
5. Replace with new filter element. Make sure element o-rings seat properly into the head, making sure that the notch on the element lines up with the notch in the head.
6. Inspect the cover o-ring and replace if necessary.
7. Replace cover and tighten hex head screws until they are snug. Do not over-torque (16 - 19 Ft. lbs.) these screws.
8. Remove drain plug from strainer bowl and allow oil to drain. Remove strainer bowl and replace used element with a new element.

| Problem                           | Cause                                                                                                                                                                         | Solution                                                                                                                                                                                                                                               |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Does not start                    | <ul style="list-style-type: none"> <li>• ON/OFF Switch</li> <li>• No electrical power</li> <li>• Defective motor</li> <li>• Motor overload</li> <li>• Fuse failure</li> </ul> | <ul style="list-style-type: none"> <li>• Turn switch ON, replace switch if defective</li> <li>• Plug in cart/Check power source</li> <li>• Replace</li> <li>• Reset ON/OFF switch</li> </ul>                                                           |
| No oil flow or erratic pump noise | <ul style="list-style-type: none"> <li>• Filter housing not filled with oil</li> <li>• Suction leak</li> <li>• Defective pump</li> </ul>                                      | <ul style="list-style-type: none"> <li>• Allow pump to run 30 to 60 seconds</li> <li>• Check tightness of inlet fittings</li> <li>• Check for kink or restriction in inlet hose</li> <li>• Replace strainer element</li> <li>• Replace pump</li> </ul> |
| Indicator reads CHANGE or BYPASS  | <ul style="list-style-type: none"> <li>• Element dirty</li> <li>• Oil extremely cold or viscous</li> </ul>                                                                    | <ul style="list-style-type: none"> <li>• Replace elements</li> <li>• Change element to coarser micron rating</li> </ul>                                                                                                                                |
| Indicator does not seem to move   | <ul style="list-style-type: none"> <li>• No element</li> </ul>                                                                                                                | <ul style="list-style-type: none"> <li>• Install element</li> </ul>                                                                                                                                                                                    |

# PFCC

## Parts List



| Item No. | Qty       | PN             | Description                  |
|----------|-----------|----------------|------------------------------|
| 1        | 2         | 941666         | Filter Housing               |
| 2        | 1         | 16 F5OX-S      | Straight Thread Fitting      |
| 3        | 1         | 12 F5OX-S      | Straight Thread Fitting      |
| 4        | 1         | 947584         | Inlet Tube Assembly w/o IPD  |
| 4        | See Below |                | Inlet Tube Assembly with IPD |
|          | 1         | 947556         | Tubing                       |
|          | 1         | 12 6F4OMXS     | Male tubing connector        |
|          | 1         | STI.0144.100   | IPD In-Line Sensing Ports    |
|          | 1         | 16 3-8 AOE4O-S | Male Elbow                   |
| 5        | 1         | 947636         | Filter Cart Frame            |
| 6        | 1         | 947586         | 10 GPM Pump                  |
| 6        | 1         | 947623         | 5 GPM Pump                   |
| 7        | 1         | 947561         | Bell Housing                 |
| 8        | 2         | 928784         | Wand Assembly - Buna         |
| 9        | 2         | 945582         | EZ Form Hose                 |
| 10       | 1         | 947398         | 1 HP Motor                   |

| Item No. | Qty    | PN           | Description                                |
|----------|--------|--------------|--------------------------------------------|
| 11       | 1      | 947632       | Strainer Assembly                          |
| 12       | 1      | 12-16 F5OX-S | Fitting Reducer / Expander                 |
| 13       | 2      | 16-F65OX-S   | Fitting                                    |
| 14       | 1      | 16-12 F5OX-S | Straight Thread Fitting                    |
| 15       | 1      | 947458       | Manual Motor Starter Assembly              |
| 16       | 1      | 940978       | Elbow Fitting                              |
| 17       | 1      | 947633       | Axle                                       |
| 18       | 2      | 947638       | 10 Inch Wheel                              |
| 19       | 2      | 926750       | Visual Indicator                           |
|          | 1 each | See Chart *  | Elements for both Stage 1, 2, and Strainer |
|          | 1      | IPD12322230  | LCD IPD with RH Sensor                     |
|          | 2      | ACC6NH001    | Hose Extension with M12 Coupling           |
|          | 2      | EMA3_1_8ED   | IPD Fitting                                |
|          | 2      | 2-2A4OEG4M-S | IPD Fitting                                |

# 5PFCC & 10PFCC<sup>1</sup>

## How to Order

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

| BOX 1  | BOX 2 | BOX 3 | BOX 4 | BOX 5 | BOX 6 | BOX 7 | BOX 8 |
|--------|-------|-------|-------|-------|-------|-------|-------|
| 10PFCC | 2     | 20Q   | 10Q   | B     | VP    | I     | 1     |

| BOX 1: Filter Series |                       |
|----------------------|-----------------------|
| Symbol               | Description           |
| 5PFCC                | 5 GPM (3500 SUS max)  |
| 10PFCC               | 10 GPM (1000 SUS max) |

| BOX 2: Element Length |             |
|-----------------------|-------------|
| Symbol                | Description |
| 2                     | Double      |

| BOX 3: Stage 1 Element |                         |
|------------------------|-------------------------|
| Symbol                 | Description             |
| 20Q                    | Microglass, 20 micron   |
| X                      | No Element <sup>2</sup> |

| BOX 4: Stage 2 Element |                         |
|------------------------|-------------------------|
| Symbol                 | Description             |
| 10Q                    | Microglass, 10 micron   |
| WR                     | Par-Gel Water Removal   |
| X                      | No Element <sup>2</sup> |

| BOX 5: Seal Material |             |
|----------------------|-------------|
| Symbol               | Description |
| B                    | Nitrile     |

| BOX 6: Indicator |                                                   |
|------------------|---------------------------------------------------|
| Symbol           | Description                                       |
| VP               | Visual indicator, 3-band (mounted on both stages) |

| BOX 7: Bypass |                                      |
|---------------|--------------------------------------|
| Symbol        | Description                          |
| I             | 35 PSID (2.4 bar) (on both elements) |

| BOX 8: Options |                                |
|----------------|--------------------------------|
| Symbol         | Description                    |
| 1              | None                           |
| PDL            | Particle Detector <sup>3</sup> |

### Notes:

1. The cart includes the elements you select installed.
2. For the No Element option, "X" must be selected in Boxes 3 & 4.
3. Particle Detector option is only available on model 10PFCC.
4. 74W comes standard with particle detector option.

## Replacement Elements

| Symbol           | Media         | Element 1 | Element 2 | Strainer |
|------------------|---------------|-----------|-----------|----------|
| 02Q              | Microglass    | NA        | 937397Q   | NA       |
| 05Q              | Microglass    | NA        | 937398Q   | NA       |
| 10Q              | Microglass    | 937399Q   | 937399Q   | NA       |
| 20Q              | Microglass    | 937400Q   | 937400Q   | NA       |
| WR               | Water Removal | NA        | 940734    | NA       |
| 74W <sup>4</sup> | Woven Wire    | NA        | NA        | 947629   |
| 149W             | Woven Wire    | NA        | NA        | 947630   |

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