10MFP Series

with Moduflow *Plus*
Portable Filtration Trolley



The ideal way to pre-filter and transfer fluid

Transfer fluid from drums or storage tanks

Using a Parker portable filter trolley is the most economic way to protect your system from the harm that can be caused by contamination. *Option.* Consider specifying an icountPD particle detector to allow accurate detection of particulate when transferring oil.

The CE marked 10MFP filtration trolley will operate with a maximum recommended viscosity of 800 cSt.



Contact Information:

Parker Hannifin
Hydraulic Filter Division Europe

European Product Information Centre
Freephone: 00800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IT, PT, SE, SK, UK)
filtrationinfo@parker.com

www.parker.com/hfde

Product Features:

- 10MFP hydraulic trolley is the ideal way to pre-filter and transfer fluids into reservoirs or to clean up a system.
- Heavy-duty frame but still lightweight and portable.
- Maximum flow 38 l/min.
- CE marked.
- 10MFP trolley operating viscosity range - use below 800 cSt. (Note: icountPD recommended viscosity level is 108 cSt.)
- Par-Gel water removal elements available.
- icountPD particle detector with MS Moisture Sensor option.

10MFP Series

Portable Filtration Trolley

Applications for Portable Filtration Trolley

- **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 water from a system**
- **For use with fluids such as hydraulic, gear and lube oils**
- **Maximum viscosity is 800 cSt. The icountPD configuration with an online STI size 0 sensor allows a fluid viscosity range of 1 to 108 cSt**

Parker portable filter trolleys 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 trolley 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 controls finer particles or removes water. A rugged industrial quality gear pump gets the job done fast.

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

Features	Advantages	Benefits
• Two filters instead of one w/ 2.5 times increased DHC	• Pump protection and long element life	• Element cost savings and trouble-free service
• Wide variety of particulate elements available	• Capable of getting a fluid to a desired cleanliness level	• Extends fluid life and system performance
• Par-Gel™ water removal elements available	• Removes “free water” from a system	• Gets dirt and water out of system with one process
• Heavy duty frame	• Rugged and durable	• Built to last for many years of use
• Lightweight and portable	• Easy to move from place-to-place	• One person operation
• 3.35 m hose and wand assemblies included	• Additional hardware not necessary	• Ready to use as received

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Features

Hose & wand assembly

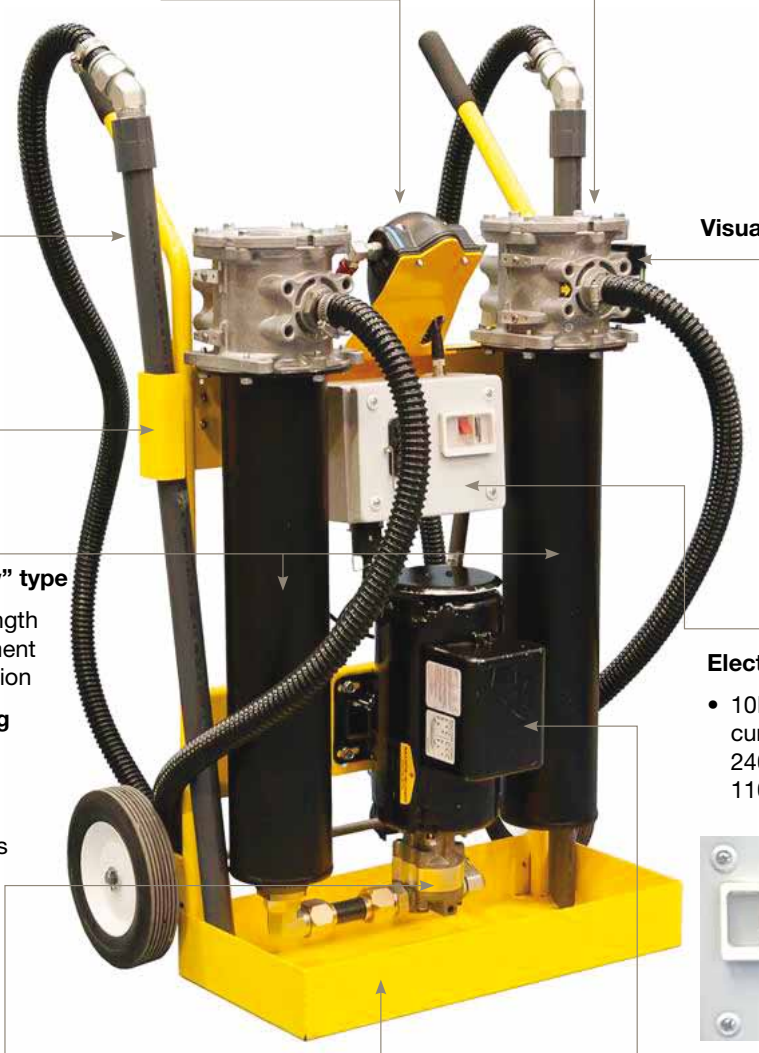
- Ready to use
- Flexible hoses for tight spots
- Kink-resistant hose prevents pump cavitation

icountPD

- Independent monitoring of system contamination trends
- ISO code range 7 - 22
- Self diagnostic software
- Moisture sensor [%] RH

Service cover

- Top-accessible for easy changing of elements



Visual indicator

Heavy Duty frame

Dual filters “Moduflow” type

- Two stage, double length filtration for long element life and pump protection

Elements (see ordering information)

- Available for both particulate and Water Removal (WR) options



Electrical Box

- 10MFP motor/pump current trip limiter set to 240V unit = 3.50 Amps 110V unit = 6.00 Amps



Gear pump

- Industrial quality
- Quiet operation
- Dependable, long life

Drip tray

- Helps keep the work area safe and clean

Technical specification

Dimensions (Approx.) (mm / inches)	A - Height : 1029mm / 40.5” B - Width : 648mm / 25.5” C - Depth : 483mm / 19”
Weight (Approx.) (Kg / lbs)	62kg / 137lbs
Principle of operation IPD	Laser diode for optical detection of actual particulates
International codes	ISO 7 - 22
icountPD calibration	By recognised online methods confirmed by the relevent ISO procedures: MTD - via a certified primary ISO 11171 automatic particle detector using ISO 11943 principles, with particle distribution reporting to ISO 4406:1996
icountPD recalibration	Every 12 months: **conmoninfo@parker.com**
Unit Ambient storage temperature	-26°C to +70°C (-79°F to + 158°F)
Unit operating environment	**DO NOT** use the filtration trolley in wet or damp environmental conditions
Recommended fluid operating viscosity	Up to 108 cSt (500 SUS) (0.85 Specific Gravity)
Filter trolley operating viscosity range	Use below 800 cSt (3880 SUS)

Pump Flow Rate	38 l/min (10 GPM)
1st stage filtration (Suction / Inlet Filter)	Micron rating specified in part number, visual indicator (Optional), 0.2 bar (3 psi) bypass preventing pump cavitation
2nd stage filtration (Pressure / Outlet Filter)	Micron rating specified in part number, visual indicator, 1.7 bar (25 psi) prevents excessive pressures
Suction / Pressure Hose	PVC (Standard, 1 metre (39”)
Suction Pressure Wand	PVC (Standard, 1 metre (39”)
Certification CE	IP22 rating EN61326-1-2006 Electrical equipment for measurement, control and laboratory EN61029-1-2009 + A11:2010 Modified Safety of transportable motor operated electric tools 2006/42/EC Machinery Directive
Construction	Cart frame = Steel Filter head = Aluminium Filter bowl = Steel Hoses = PVC (std.) Wands = PVC (std.) Steel tube
Electrical Motor	10MFP - ¾ hp@ 3450 rpm, O.D.P. Thermal overload protection.

New feature!

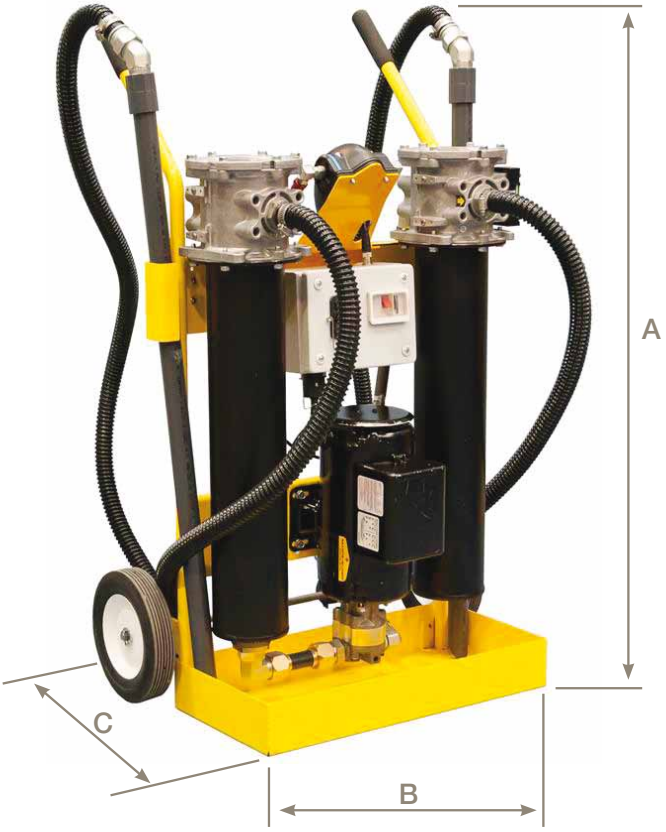
‘SmartCart’

A diagnostic filter trolley - the ‘SmartCart’. The icountPD particle detector can be mounted to the standard frame of the filter cart for enhanced monitoring of your hydraulic system.

Oil Type verses Recommended Kinematic Viscosity Chart for icountPD operation*.

Oil Type	Kinematic Viscosity @ 40°C in cSt	Kinematic Viscosity @ 30°C in cSt	Kinematic Viscosity @ 20°C in cSt	Kinematic Viscosity @ 10°C in cSt
ISO 7	7	9.5	13	19
ISO 10	10	14	20	32
ISO 15	15	25	35	60
ISO 22	21.6	35	60	108
ISO 32	32.2	55	90	180
ISO 46	46.3	80	140	280
ISO 68	60	120	220	450
ISO 100	96.7	280	350	800
ISO 150	147	300	550	1200
ISO 220	220	400	850	2000

* yellow boxes= the work range of 10MFP and icountPD operation



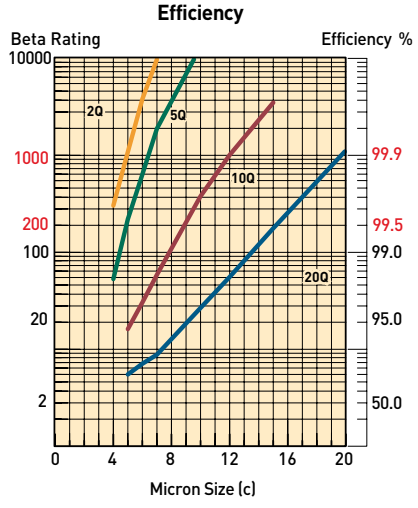
Typical Fluid Cleanliness Level Requirements

Many manufacturers of hydraulic components have established fluid cleanliness levels for their components. Using a portable filter trolley 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 Trolley Element Performance

Media Code	Filter Media	Capacity (Grams)
40W	Woven Wire	*
40SA	Synthetic	*
20Q	Microglass III	140
10Q	Microglass III	135
05Q	Microglass III	130
02Q	Microglass III	110



Notes: Multipass test run @ 80 l/pm to 3.5 bar terminal - 5 mg/l BUGL.

Filter Trolley Performance

Fluid cleanliness levels are a function of initial contamination levels, contamination ingression 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 (Litres)	Time Required (Hours)	Projected Cleanliness Level (ISO)
190	0.5	20/18/15
190	1.0	17/15/12
190	2.5	16/14/11
378	1.5	18/16/13
378	2.5	17/15/12
378	4.0	16/14/11
757	2.5	19/17/14
757	3.5	18/16/13
757	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 (10MFP trolley).
2. Inlet filter fitted with 40SA element; outlet with 20Q element.
3. System ingression rate equal to 1 X 10^6 particles greater than 10 micrometers entering the system per minute.

Par-Gel Media Water Capacity

Model	Fluid Viscosity	Capacity
10MFP	14cSt	500 ml
	43cSt	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 108 cSt (500 SUS).



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Assembly

1. Install hoses to inlet and outlet filters by threading the hose end with the straight thread o-ring seal fitting into the filter flange.
2. Connect the PVC tube wands to the swivel fitting on the hose end. When servicing the PVC tube wand, do not over-torque the metal fittings going into the PVC coupling. Over-torque will result in cracking the coupling. Generally, 1/4 turn beyond hand-tight is sufficient.

Operating Instructions

1. Insert the inlet wand assembly into the supply fluid receptacle (drum/reservoir). The RFP filter is the inlet filter.
2. Insert the outlet wand assembly into the clean fluid receptacle (drum/reservoir). The ILP fllter is the outlet filter.

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, remove inlet filter access cover and verify the cover sealing o-ring is in place. For very viscous fluids it may be necessary to pour 1 or 2 quarts of fluid into the RFP inlet filter housing to prime pump initially.
5. The condition of the filter element should be monitored by observing the cleanliness indicator on the outlet filter. When the indicator is in the CHANGE position, both inlet and outlet filter elements MUST be replaced to prevent fluid from going through the bypass in the filters.
6. The inlet filter element is provided with a 0.2 bar bypass spring, and prevents the pump from cavitating if the element is not changed. The outlet filter element is provided with a 2.4 bar bypass spring to prevent excessive pressure which may be harmful to personnel or to the filter trolley.

Warning: The filter bypass spring acts as a relief valve for the pump. Do not restrict the outlet hose with a shut-off valve which will defeat the function of the bypass valve, causing excessive pressure, which may be harmful to personnel or to the filter trolley.

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

NOTE: The filter trolley 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.

   a) Replace the synthetic or Microglass III elements. Verify replacement.

   b) Wire mesh elements can be cleaned. Ultrasonic cleaners provide best results.
5. 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. Relocate the cover and tighten hex head screws until they are snug. Do not over-torque these screws (Max torque is shown in maintenance leaflet). Do not interchange the inlet filter cover with the outlet filter cover. (The inlet filter has a “RFP” prefix, the outlet filter has a “ILP” prefix).
8. Contact the Parker HFDE regarding IPD calibration.
9. IPD removal: remove oil lines from the IPD at the two fittings closest to the IPD. Disconnect the two cables from the IPD. Remove IPD from trolley via two screws. The trolley can be used without the IPD as long as the sample hoses are removed from the System 20. Protect sampling connectors from contamination.

Trouble Shooting

Problem	Cause	Solution
Does not start	ON/OFF Switch	Turn switch ON, replace switch if defective
	No electrical power	Plug in cart
	Defective motor	Contact service department
No oil flow or erratic pump noise	Filter housing not filled with oil	Allow pump to run 30 to 60 seconds
	Suction leak	Check tightness of inlet fittings
		Check o-ring in inlet filter cover for nicks
		Kink or restriction in inlet hose
		Add 1 or 2 quarts of oil to inlet filter
	Defective pump	Contact service department
Indicator reads CHANGE or BYPASS	Element dirty	Replace or clean elements (both filters)
	Oil extremely cold or viscous	Change element to coarser micron rating
Indicator does not seem to move	No outlet element	Install element
	40 micron element installed in outlet filter	Check trolley model number to verify correct element. The inlet filter has a rating RFP prefix; the outlet filter has an ILP prefix

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Filter Trolley Spare Parts List

(For more information consult Parker)

Part No.	Description	Qty
928690	Frame	1
941468	Frame (SmartCart)	1
940980	Pipe Reducer Fitting	1
940979	Tube Fitting	1
937526	Suction Tube Assy.	1
928652	Adapter Fitting	1
928731	Pump	1
940977	Adapter Fitting	1
928650	Wheel	2
928653	Axle	1
928678	Motor 10MFP	1
937527	Discharge Tube Assy.	1
941467	Discharge Tube Top (SmartCart)	1
941466	Discharge Tube Bottom (SmartCart)	1
STI.0144.100	System 20 (SmartCart)	1
3/8-8F40HG5S	System 20 Fitting 1 (SmartCart)	2

Part No.	Description	Qty
12/8 F50X-S	System 20 Fitting 2 (SmartCart)	2
940978	Tube Fitting	1
928623	Cord Reel	1
940960	Inlet Filter – Nitrile	1
941024	Inlet Filter – Fluorocarbon	1
928784	Tube Wand Assy. – Seal Option B	2
940961	Outlet Filter – Nitrile	1
941025	Outlet Filter – Fluorocarbon	1
928663	Hose Assy. – Seal Option B	2
928651	Handle Grip	2
See Chart**	Element, (1) Inlet & (1) Outlet	2
See Chart**	Icount PD	1
ACC6NN014	Icount Cable	1
ACC6NH001	Icount Hoses	2
ACC6NW009	Icount Fitting 2	2

***Refer to chart on the ordering information page.*

Ordering Information

Standard Products Table - icount PD fitted option

Part Number	Model	Motor Option	Inlet element	Outlet element	Filter bowl length	Electrical plug type	Standard fitted elements	
							Inlet	Outlet
10MFP140SA10Q1UKPD	10MFP	1*	40 SA	10Q	1	UK	940802	937399Q
10MFP140SA10Q1EURPD	10MFP	1*	40 SA	10Q	1	EUR	940802	937399Q
10MFP240SA10Q1INDPD	10MFP	2*	40 SA	10Q	1	IND**	940802	937399Q

Standard Products Table - Standard trolley specification

Part Number	Model	Motor Option	Inlet element	Outlet element	Filter bowl length	Electrical plug type	Standard fitted elements	
							Inlet	Outlet
10MFP140SA10Q1UK	10MFP	1*	40 SA	10Q	1	UK	940802	937399Q
10MFP140SA10Q1EUR	10MFP	1*	40 SA	10Q	1	EUR	940802	937399Q
10MFP240SA10Q1IND	10MFP	2*	40 SA	10Q	1	IND**	940802	937399Q

Note 1: Motor options* Option 1 = 220/240 VAC. Option 2 = 110 VAC.
Note 2: Plug Type** IND = industrial 110 VAC UK option.
Note 3: PD = icountPD, type IPD12322230.
Note 4: Standard items (Part number shown in bold type) are in stock.

Replacement filter element part numbers

Parker Moduflow Plus inlet filter (suction) 0.2 bar bypass	Nitrile
20µ Microglass III element	940971Q
40µ synthetic element	940802
40µ stainless steel element	940803

Parker Moduflow Plus outlet filter (pressure) 2.4 bar bypass	Nitrile
2µ Microglass III element	937397Q
5µ Microglass III element	937398Q
10µ Microglass III element	937399Q
20µ Microglass III element	937400Q
Water removal element	940734

Accessory part numbers

Description	Reference	Part Number
Mains cable (UK 2m cable, 230V~)		ACC6JE001
Mains cable (EUR 2m cable, 230V~)		ACC6JE002
N72530 Filter cover 0-ring replacement (x2)		ACC6NX003

Description	Reference	Part Number
10MFP UK extension reel length 7.5m	**Contact Parker**	ACC6JE004
10MFP EUR extension reel length 7.5m	**Contact Parker**	ACC6JE005