

# MOBILE KYDNEYLOOP



# Product Advantages:

- Fire ball 300, 5:1 Graco pump, be installed
- Incorporates a Non filter By-Pass Design.
- Maneuverable & Portable with 10” Solid Rubber Tires.
- Incorporated Sample Access Port. Allows for (in Operation) SOS Oil Sampling.
- Hose reel with 15 mtr dispensing hose and valve to make easy operating .
- Pressure Differential Gauges on each 3 stages filtration circuit.
- Incorporated Spill tray allows for mess free filter change and Screen Inspection.
- Capable to Filter High and low Viscosity fluids down to desired Cleanliness levels.
- Durable, Tough Low maintenance Self Priming Pumping System.
- Pumping and Filtration Speeds adjustable.

# ABOUT MOBILE KIDNEYLOOP UNIT

## Consists of Unit

Pneumatic Piston Pump, Suction pipe for drum, Filtration Unit, Sample Point, Flow meter, Hose reel & Dispensing Valve,

### FILTRATION UNIT



### Hose Reel & Dispensing Valve



### Pneumatic Piston Pump & Flow Meter



# PNEUMATIC FIRE BALL PUMP



## Unmatched reliability and durability!

For nearly 50 years, Graco's Fire-Ball pumps have been a mainstay in the lubrication marketplace for durability and long life. A package including a dependable Fire-Ball is sure to last!

Designed for applications requiring continuous duty operation, Graco Fire-Ball pumps repeatedly outperform and outlast the competition!

## Install it and forget about it!

Reduce downtime with Fire-Ball pumps from Graco! With so many unique maintenance-saving features, these pumps are built to ultimately save you money. Whether you are pumping oil or grease for low, medium or high volume applications, a trusty Fire-Ball pump gets the job done!

# FIREBALL PUMP SPECIFICATION



**MINI FIRE-BALL 225**

**IDEAL FOR:**

Lower volume applications, typically defined as 10-20 oil changes per day, where long piping runs and simultaneous dispense are not required.



**FIRE-BALL 300**

**IDEAL FOR:**

High pressure grease dispense and fluid oil transfer in medium volume applications.



**FIRE-BALL 425**

**IDEAL FOR:**

High pressure grease dispense or fluid oil transfer in high volume and longer distance applications such as truck shop service fleet facilities and in-plant applications.

## ***FIRE-BALL OIL PUMPS***

MODEL/RATIO	FLUID FLOW cycles/gallon(liter)	FLUID FLOW @ 80 CPM (gpm/lpm)	TYPICAL OIL VOLUME PUMPED/YEAR (gallons/liter)	PUMPING DISTANCE GUIDELINE (feet/meters)
<b>Mini Fire-Ball 225</b>				
3:1	43.5 (11.4)	1.8 (7.0)	6,500 (24,600)	Up to 250 (76.2)
<b>Fire-Ball 300</b>				
5:1	28.4 (8.6)	2.8 (9.3)	30,000 (113,550)	Up to 500 (152.5)
<b>Fire-Ball 425</b>				
3:1	6.0 (1.6)	13.4 (50.6)	30,000 (113,550) or more	Up to 250 (76.2)
6:1	12.0 (3.2)	6.6 (25.3)	30,000 (113,550) or more	Up to 500 (152.5)
10:1	19.6 (5.2)	4.1 (15.4)	30,000 (113,550) or more	Up to 750 (228.6)

# FEATURES & BENEFITS

## **CORROSION-RESISTANT**

*Corrosion-resistant design utilizes liquid salt nitriding, nickel plating, stainless steel, aluminum and chrome on key components for longer life*

## **FEWER REPAIRS**

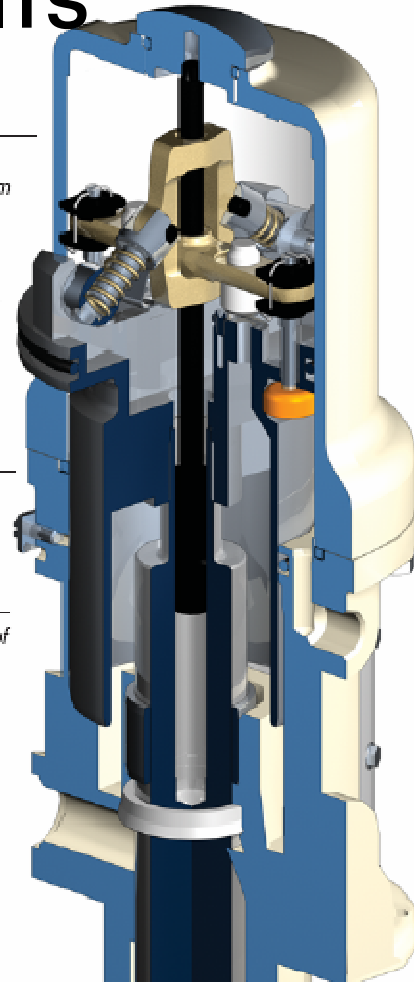
*Few moving parts in the air motor assembly means less downtime and low repair cost*

## **REDUCED DOWNTIME**

*Displacement rods have minimal wear due to a proprietary Graco manufacturing process*

## **ELIMINATE ICING**

*Large air porting design provides efficient use of compressed air supply for continuous pump operation without icing*



## **DURABLE**

*Thick cast aluminum air motor housing offers unmatched durability*

## **EXTENDED SEAL LIFE**

- *In-line pump design aligns the air motor piston and fluid piston rods to maximize seal life*
- *Throat packings have a u-cup design with a hardened steel displacement rod to minimize wear*
- *Non-metallic poppet valves offer positive sealing performance, even with contaminated "dirty" air environments for long life without repair*

## **BUILT TO LAST!**

Spend less time and money on service calls with a Fire-Ball pump from Graco! Constructed to withstand the toughest environments, Fire-Ball pumps have fewer moving parts for less repair and minimal downtime. Choose this classic Fire-Ball and you'll be guaranteed many years of reliable service.

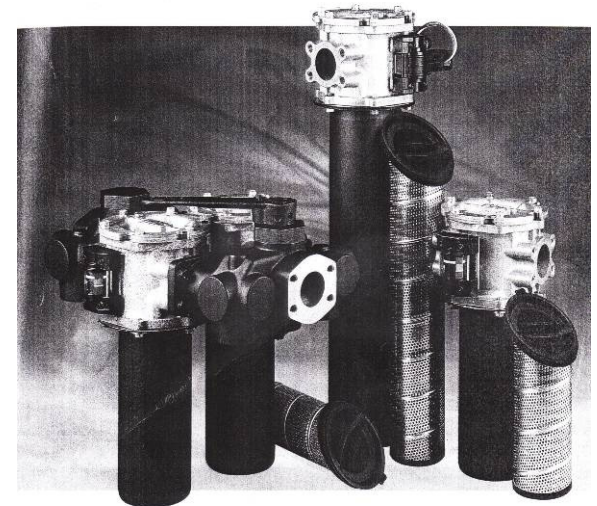


# Filter assembly

- **In Line Filter Assembly**
  - **Head Filter, Housing & Element**
- **Housings can be of different construction to suit which type and size filters are to be fitted.**
- **Filters can come in a variety of element filtration levels measured in microns ( $\mu$ ) depending on requirement for cleanliness of product to give an ISO rating.**
- **Can be mechanical or digital display.**
- **Various INLET and OUTLET port sizes & adaptors to suit flow rates and product type.**
- **Take off's are installed to read pressure differentials to assess condition of filter element and test points for sample taking.**

## Things to be considered

- **Product viscosity**
- **Flow rate**
- **Temperature**
- **Product type**



## Applications for Moduflow Filters

- Power Unit Fabrication
- Off-line Filter Loops
- Mobile Equipment

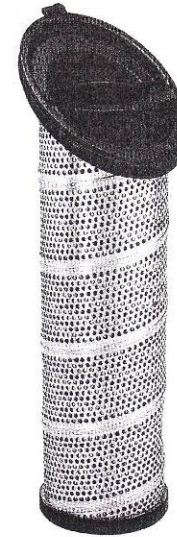
The Moduflow filter is widely considered the most versatile filter available on the market. The unique diverter valve assembly, and inside to outside flow through the element, allows the Moduflow to be configured for in-line, in-tank or suction filtration.

The flow diverter minimizes turbulence and pressure loss through the filter, improving system performance.

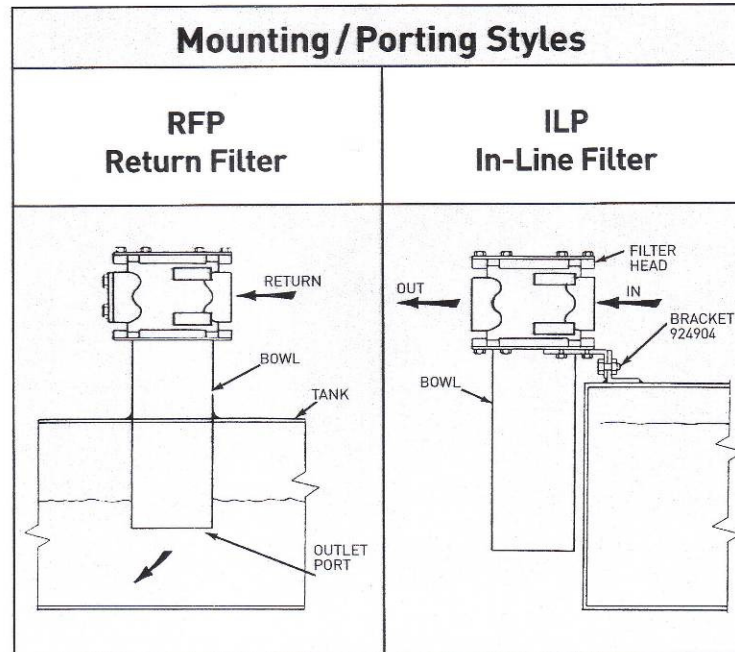
The newly designed closed bottom elements for the RFP and ILP models insures all contamination remains trapped within the element as the filter is serviced.

A wide variety of visual and electrical indicators allows you to know exactly when the element needs to be serviced. There is even a "no element" indicator that can sense when there is not an element installed in the filter.

From top to bottom, the Moduflow filter series provides the high level of filtration and long term dependability so vital to today's hydraulic systems.



Parker's new patented Moduflow element was designed with built-in diverter cone and bypass valve, to meet your application needs.



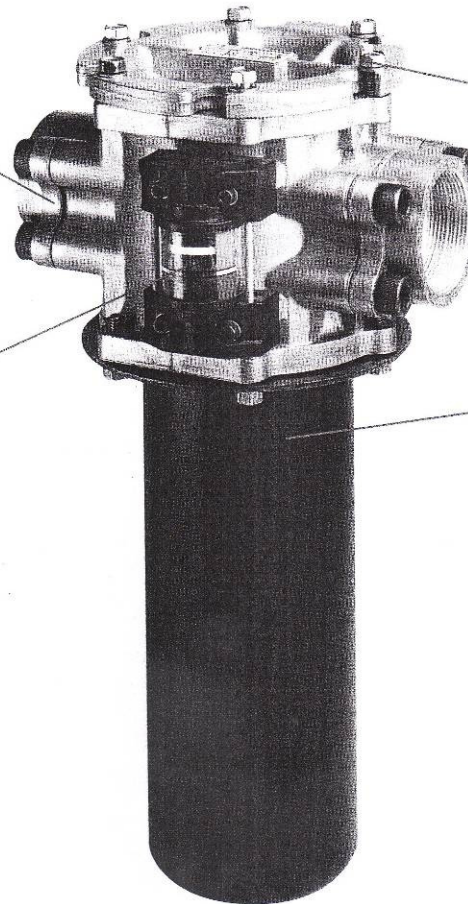


## Features

- Flanges**
- NPT or SAE 3/4" to 2"
  - Lightweight aluminum

- Indicators**
- Visual or electrical
  - Mounted on either side
  - Standard "no element" indication

- Bypass**  
(not visible)
- Integral 35 psi bypass replaced with every element change



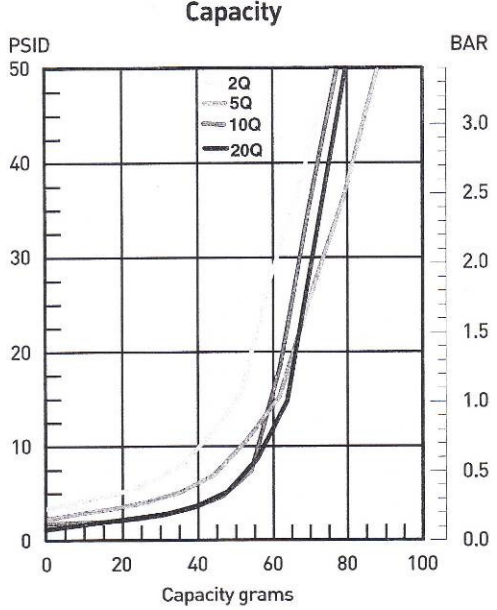
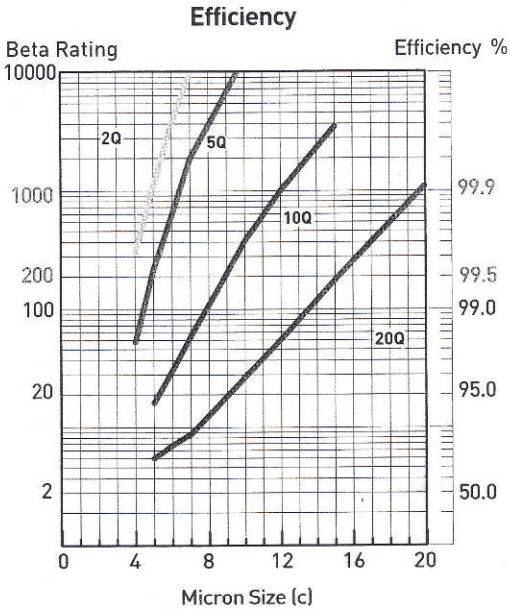
- Cover**
- Slotted for quick release
  - Lightweight aluminum

- Bowl**
- Single or double length
  - Durable steel construction

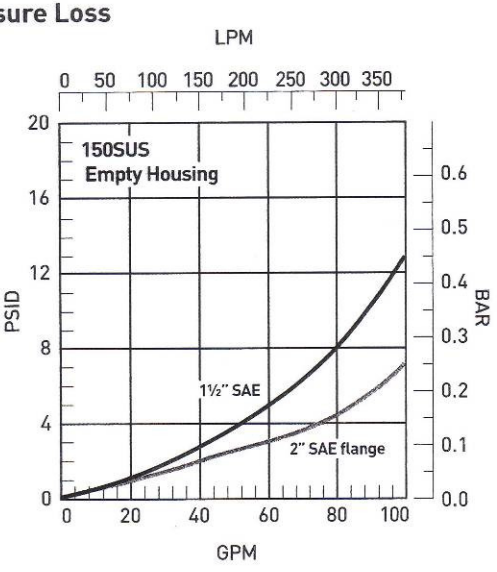
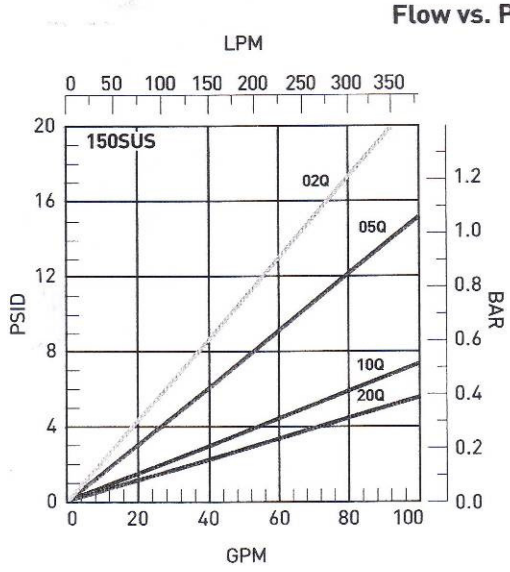
- Element**  
(not visible)
- Available in cellulose, wire mesh or high performance Microglass III media
  - Single or double length

Feature	Advantage	Benefit
<ul style="list-style-type: none"> <li>• Top access element service</li> </ul>	<ul style="list-style-type: none"> <li>• Oil remains in housing</li> <li>• Quicker elements change</li> </ul>	<ul style="list-style-type: none"> <li>• No Spills</li> <li>• Reduced maintenance costs</li> </ul>
<ul style="list-style-type: none"> <li>• Slotted cover</li> </ul>	<ul style="list-style-type: none"> <li>• Quick release cover</li> <li>• Cap screws remain in housing</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced maintenance costs</li> <li>• No loose parts to lose</li> </ul>
<ul style="list-style-type: none"> <li>• Closed bottom elements</li> </ul>	<ul style="list-style-type: none"> <li>• Removes all contaminant during element service</li> </ul>	<ul style="list-style-type: none"> <li>• No downtime contamination from servicing</li> </ul>
<ul style="list-style-type: none"> <li>• Visual or electrical indicators</li> </ul>	<ul style="list-style-type: none"> <li>• Know exactly when to service elements</li> </ul>	<ul style="list-style-type: none"> <li>• Helps prevent bypass condition</li> <li>• No premature disposal</li> </ul>
<ul style="list-style-type: none"> <li>• Flange face ports</li> </ul>	<ul style="list-style-type: none"> <li>• Flexible mounting (3/4" to 2")</li> </ul>	<ul style="list-style-type: none"> <li>• Easy plumbing to your system</li> </ul>

**RFP-1 & ILP-1 Element Performance**



Multipass tests run @ 40 gpm to 50 psid terminal - 5mg/L BUGL



**Specifications: RFP, ILP**

**Pressure Ratings:**

Maximum Allowable Operating Pressure (MAOP): 200 psi (13.8 bar)

Design Safety Factor: 2:1

Rated Fatigue Pressure: 150 psi (10.3 bar)

**Element Burst Rating:** 70 psid (4.8 bar)

**Filter Materials:**

Head, Cover, Flanges: die cast aluminum  
Bowl: steel

**Operating Temperatures:**

Nitrile: -40°F to 225°F (-40°C to 107°C)

Fluorocarbon: -15°F to 275°F (-26°C to 135°C)

**Weight (approximate):**

Single: 20 lbs. (9.1 kg)

Double: 25 lbs. (11.3 kg)

**Indicators:**

Visual (optional)

Electrical (optional) 15A @ 250VAC / .5A @ 125 VDC

Electrical ("D" option) 5A @ 250VAC / 3A @ 28 VDC

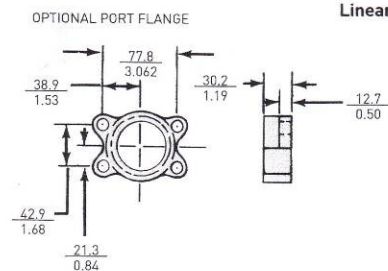
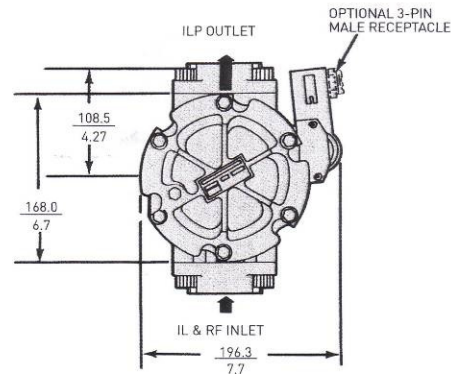
**Color Coding:**

White (normally closed)

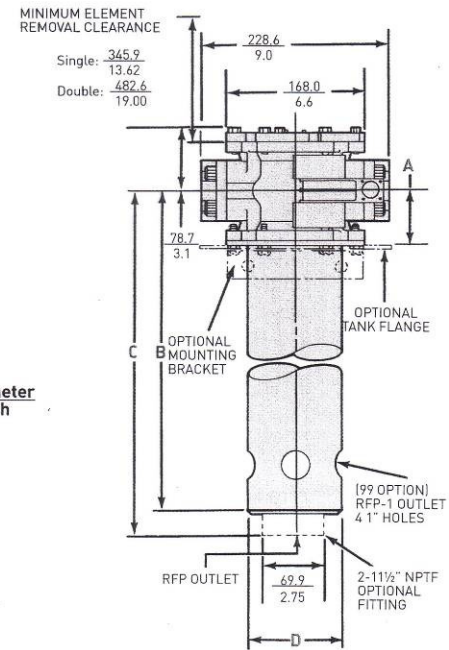
Red (normally open)

Black (common)

Model	Dimensions: <small>mm</small> <small>inch</small>			
	A	B	C	D
RFP-1 without optional 2" fitting	65.0 2.56	330.2 13.0	—	110.0 4.3
ILP-1	65.0 2.56	330.2 13.0	N/A	110.0 4.3
RFP-1 with optional 2" fitting	68.3 2.69	—	383.4 15.07	114.0 4.5
RFP-2	68.3 2.69	617.5 24.31	623.8 24.56	114.0 4.5
ILP-2	68.3 2.69	617.5 24.31	N/A	114.0 4.5



Linear Measure: **millimeter**  
**inch**



# What is ISO Rating ??

**ISO** rating come from **I**nternational **S**tandards **O**rganization procedure **4406**, measures & organises debris into 3 size categories,

- 4 microns (and larger)
- 6 microns (and larger)
- 14 microns (and larger)
- The number of particles counted in a millilitre of fluid is then sorted into 3 bins and converted into a broad classification or code.

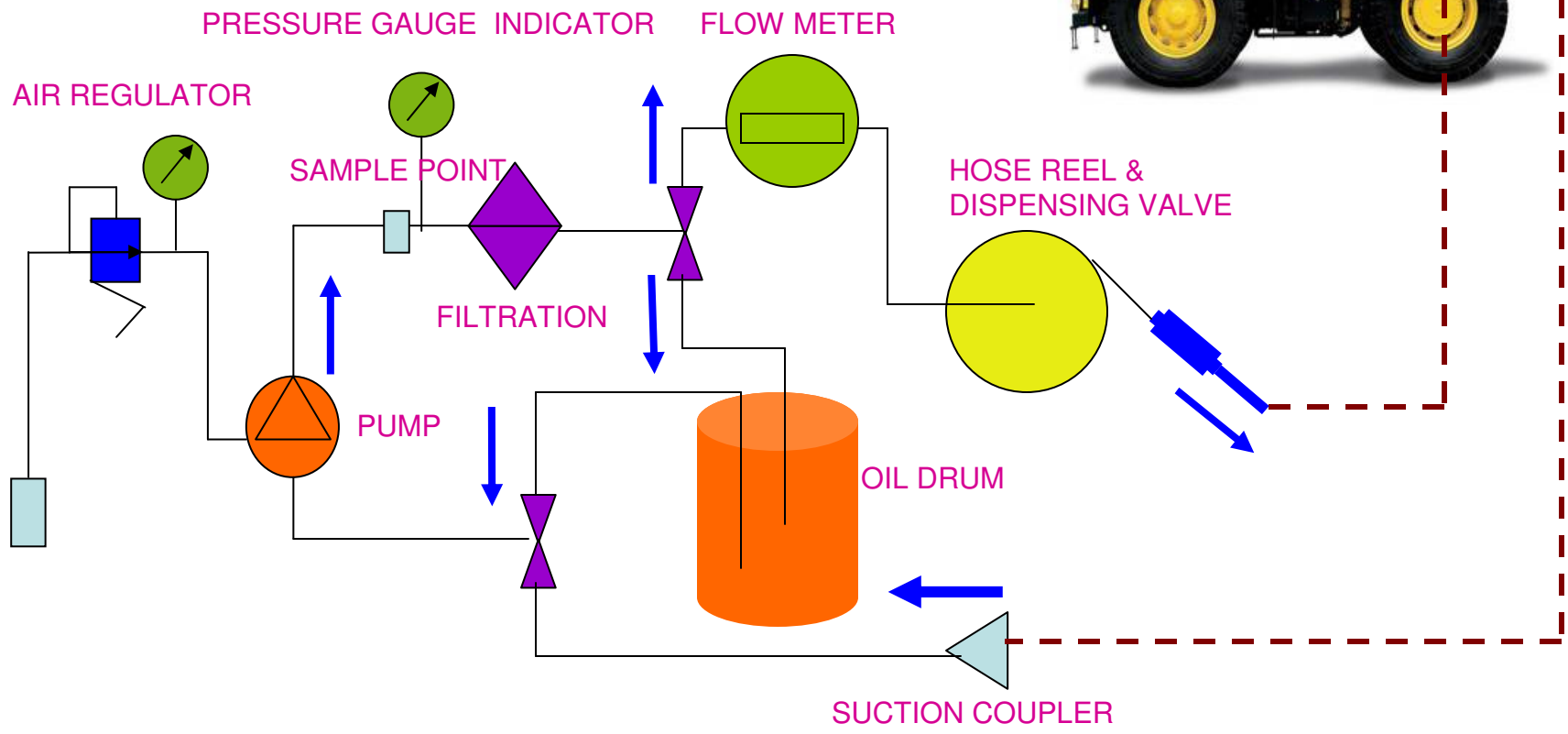
Example of Dirty Oil		
Particle size	ISO range	Number of particles in 1ml
4	21	10,000-20,000
6	19	2,500-5,000
14	17	640-1300
Example of Clean Oil		
Particle size	ISO range	Number of particles in 1ml
4	18	1,300-2,500
6	16	320-640
14	13	40-80

ISO 4406 CHART		
Range #	Number of particles per ml	
	More then	Up to & including
24	80,000	160,000
23	40,000	80,000
22	20,000	40,000
21	10,000	20,000
20	5,000	10,000
19	2,500	5,000
18	1,300	2,500
17	640	1,300
16	320	640
15	160	320
14	80	160
13	40	80
12	20	40
11	10	20
10	5	10
9	3	5
8	1	3
7	1	1
6	0	1

# FLUID ROUTE CIRCUIT

Connect Suction Hose Coupler to Oil tank of Unit & Discharge coupler return to Tank Filling. Fluid travels from tank through diaphragm pump, Filter assembling and back to tank.

**FOLLOW BLUE ARROWS**



# FLUID ROUTE CIRCUIT

## The unit consist of :

Female Coupler of Suction Line

- Fire Ball Graco Oil Pump
- In Line Filter 20 micron PARKER
- Oil Drum 200 liter
- Hose reel with 15m hose
- Air pressure gauge
- Inlet air coupler
- Air regulator
- Dispensing valve
- Accessible Oil sample point
- Oil Pressure Gauge of blocking indicator
- Flow meter

## **2. Operating Instruction**

- To fill the unit, adjust 3-way valve to the pump,
- Open dispensing valve to fill the unit, directly
- Check flow meter to control how much oil to be supplied
- To Fill The Drum
- Connect oil coupler for suction the oil from bulk
- Adjust 3-way valve to drum
- Running the pump as well