



LIQUID DYNAMICS™

PNEUMATIC OIL EXTRACTOR

Instruction & Parts Manual Model 24273R



! WARNING

Do not use this dispenser with flammable, explosive or corrosive products such as Gasoline, Diesel Fuel or Chemicals. Do not do any welding on the reservoir.

This manual contains important warnings and information. READ AND KEEP FOR REFERENCE.

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WARNING

This symbol indicates a potentially hazardous situation which, if not avoided, may result in death or serious injury.

Introduction:

This fluid extractor has been designed to remove motor oil, transmission fluid, antifreeze, gear oil and similar fluids from automobiles, trucks, buses, boats, forklifts and gearboxes.

WARNING

To avoid personal injury or death, do not use these extractors with flammable, explosive or corrosive products such as gasoline, diesel fuel or chemicals. Do not do any welding on the reservoir.

CAUTION

While draining high temperature oils, keep hands, exposed skin and face protected. Only use the device for the purpose for which it has been designed. Do not modify any components of the equipment. Use only original spare parts.

Standard Equipment:

The model 24273R oil extractor is supplied with six probes and three adapters as shown in Fig. 1. The standard oil extractor connector, indicated as item 'A' in Fig. 2 is used in conjunction with the six probes and three adapters to extract engine oil from most any automobile engine.



Figure 1

NOTE:

Some engines have the engine oil dip tubes incorporated to reach the bottom of the engine crankcase, which is the case on most Volkswagen, BMW and Mercedes engines. When this is the case, connect the standard oil extractor connector, item 'A' Fig. 2, to the appropriate oil dip tube adapter to fit the engine in question.

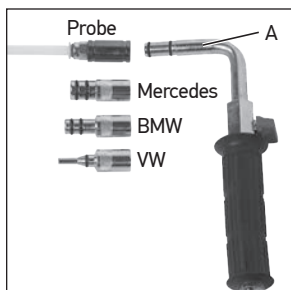


Figure 2

For engines that do not incorporate the oil dip tube to the bottom of the engine, use one of the six probes provided. Always use the largest diameter and shortest length possible to minimize extraction times.

CAUTION

This symbol indicates a potentially hazardous situation which, if not avoided, may result in injury or damage to equipment.

IMPORTANT:

This extractor is designed to be used for extracting hot engine oil in the temperature range 104° – 140° F. Extracting engine oil at temperatures lower than 104° F will result in extended extraction times or possibly failure to extract oil.

Optional Adapters:

Three additional adapters are available for use with marine engines as follows;

1. P/N 900199 Mastercraft engine adapter
2. P/N 900210 OMC engine adapter
3. P/N 900235 Outboard engine lower lube fitting

Standard Suction Probes: Supplied with extractor

Probe P/N	Diameter	Length	Material
P/N S46103-65	0.20 in. (5mm)	27.5" (700 mm)	Flexible
P/N S46103-68	0.20 in. (5 mm)	27.5" (700 mm)	Metal
P/N S46103-69	0.24 in (6 mm)	27.5" (700 mm)	Metal
P/N S46103-66	0.24 in. (6 mm)	27.5" (700 mm)	Flexible
P/N S46103-64	0.28 in. (7 mm)	39.4" (1000 mm)	Flexible
P/N S46103-67	0.32 in. (8 mm)	27.5" (700 mm)	Flexible

Assembly:

Model 24273R is shipped completely assembled and ready for use. It is, however, necessary to supply and install your preferred style 1/4" quick connect air nipple at the venturi air inlet "item #2 Fig. 3 and at the tank pressurization air inlet "item #4 Fig. 3.

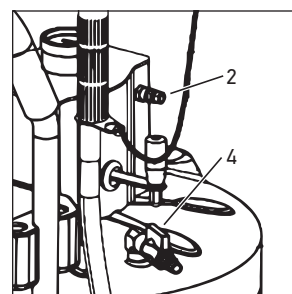


Figure 3

The oil drain bowl (Item #10 shown in Fig. 5) will need to be attached as follows (Fig. 4 and Fig. 5)

1. Loosen the riser drain tube knob #8, raise the oil drain tube #9, to a convenient height and retighten the knob #8 to secure riser tube in place (Fig. 5).
2. Place the drain bowl #10 into top of riser tube as shown in Fig. 4. **NOTE:** It may be necessary to loosen the two Allen screws #11 Fig. 4 to allow the drain bowl to fully seat.
3. Tighten both Allen screws #11 to secure drain bowl #10 to the riser tube #9.

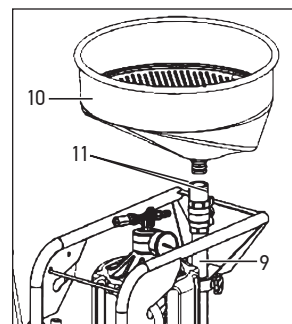


Figure 4

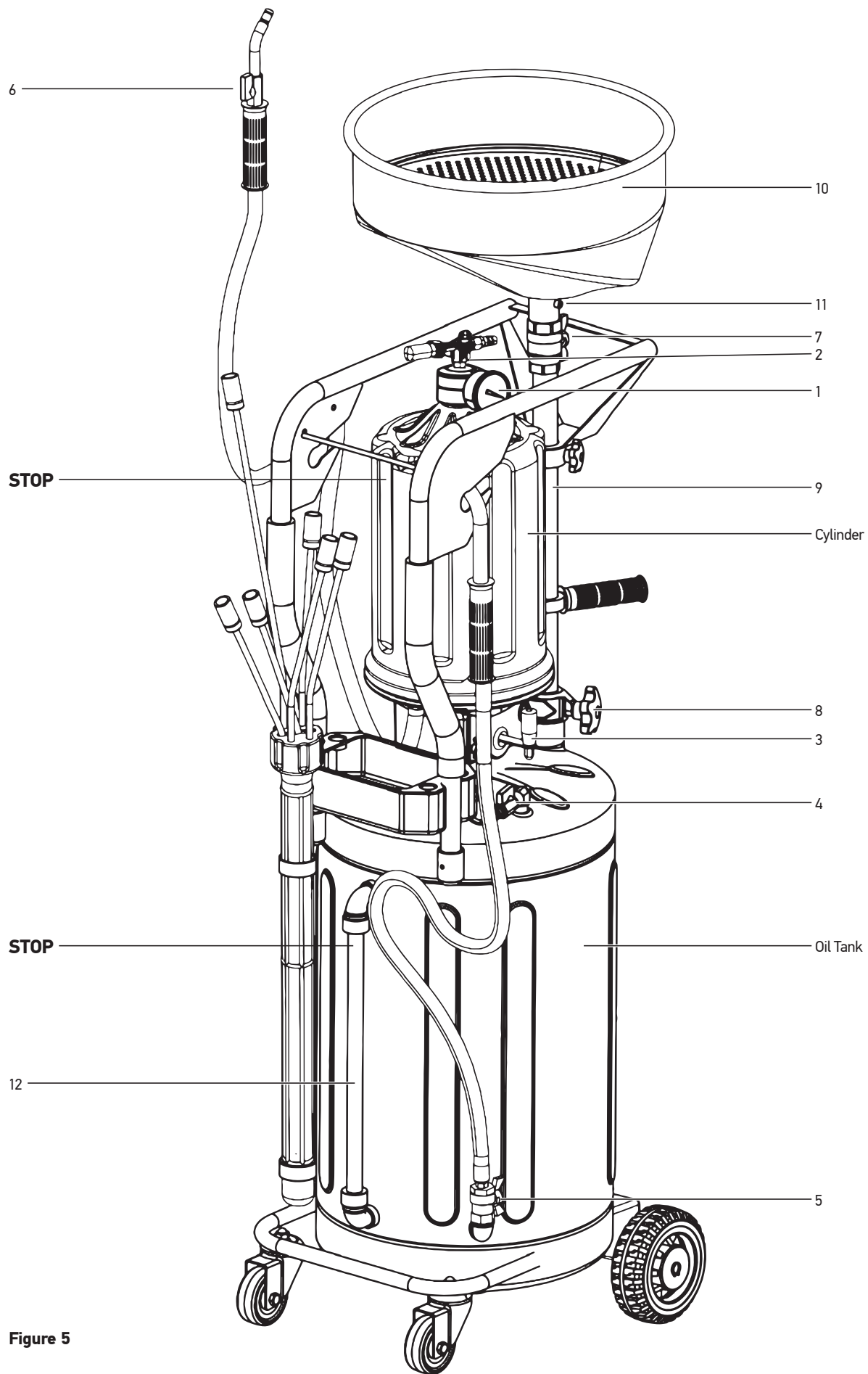


Figure 5

To Generate a Vacuum in the Transparent Bowl and Metal Tank:

(Refer to Fig. 5, Pg. 3)

4. Close oil discharge valve #5, oil suction valve #6 and tank pressurization valve #4. Open tank isolation valve #3 (vertical position).
5. Connect shop air supply (90 – 120 PSI) to venturi air inlet fitting, #2, and gradually open air supply (customer supplied), to generate vacuum inside tank and transparent bowl.
6. Monitor vacuum gauge #1, during vacuum generation until gauge indicator approaches red (MAX) zone. This may take 4 – 5 minutes if generating a vacuum in the tank as well as the transparent bowl.

To generate a Vacuum in the Transparent Bowl Only:

(Refer to Fig. 5, Pg. 3)

1. Close oil discharge valve #5, oil suction valve #6 and tank pressurization valve #4. Close tank isolation valve #3 (horizontal position).
2. Connect shop air supply (90 – 120 PSI) to venturi air inlet fitting, #2. Gradually open air supply valve (customer supplied) at venturi air inlet connection #2.
3. Monitor vacuum gauge #1, during vacuum generation until gauge indicator approaches red (MAX) zone. This will take 20 – 40 seconds when generating a vacuum in the transparent bowl only.

Operating Tips:

- Opening the air supply valve at the venturi air inlet #2 slowly has the benefit of reducing air consumption and speeds up vacuum generation.
- Creating a vacuum in the transparent bowl and metal tank also has the benefit of increasing the suction capacity since there is a larger vacuum volume. This may be helpful if the extractor is to be used in a location without an air supply.
- Creating a vacuum in the transparent bowl and metal tank also has the benefit of increasing the speed of oil extraction.

Extracting Oil From Engine:

NOTE:

Always extract hot oil, 104° – 140° F



While extracting high temperature oils, keep hands and face protected with impermeable gloves and face shield.

NOTE:

The suction capacity of this extractor is equal to approximately 2/3 of the total tank capacity, i.e.; 14 gal.

1. Working with a hot engine, remove the dipstick and insert a suitable suction probe using the largest diameter possible and shortest length (in the case of Mercedes Benz,

BMW and VW engines, use the appropriate adapters as supplied). Push the suction probe down into the dipstick tube to the bottom of the oil sump. Fig. 6.

2. Open oil suction valve #6 (Fig. 5) at end of suction hose. Oil is extracted from the engine oil sump into the Oil Extractor reservoir tank. To prevent unnecessarily neutralizing the vacuum charge, close valve #6 as soon as possible after air is heard, or observed, in the suction hose. Allow the engine oil to “pool” for 15 – 20 seconds and again open #6 briefly to extract all free oil from engine sump.



Figure 6

NOTE:

If valve #6 is not closed promptly, you will need to charge the vacuum again for proper operation.

Operating Tip: For proper operation, care should be taken to keep oil out of the venturi. Oil can easily get into the venturi in any of the following situations:

- Do not fill tank above the “STOP” indicator on sight gauge, Fig. 5, Pg. 3.
- Before moving/transporting tank filled with oil, make sure tank isolation valve #3, Fig. 5 is closed (horizontal position). Otherwise oil can easily splash into the venturi which will adversely affect ability to create a vacuum.

Draining Oil via Drain Pan:



While draining high temperature oils, keep hands and face protected with impermeable gloves and face shield.

(Refer to Fig. 5, Pg. 3)

1. Place oil drain pan directly below engine oil drain plug.
2. Open tank pressurization valve #4 (to allow air to vent as oil flows into tank).
3. Open oil drain valve #7 (to allow oil to drain from oil pan into tank).
4. Remove engine oil drain plug and allow oil to drain into drain pan/tank.
5. Re-install engine oil drain plug.

Emptying Oil from Transparent Bowl to Metal Tank:

(Refer to Fig. 5, Pg. 3)

NOTE:

When oil level in the transparent bowl reaches the “STOP” level (10 Liters or 2.6 gallons) you must empty the transparent bowl into the metal tank below.

If Metal Tank has a Vacuum Charge:

6. Open tank isolation valve #3 (vertical position), this allows rapid transfer of oil from the transparent bowl to the metal tank.
7. Close tank isolation valve #3 after oil has transferred from transparent bowl to metal tank

If Metal Tank does not have a Vacuum Charge:

1. Open tank pressurization valve #4 to relieve any pressure in the tank.
2. Open oil suction valve #6 to allow air to enter transparent bowl
3. Open tank isolation valve #3 (vertical position) to drain oil from transparent bowl into metal tank.
4. After oil has been drained from the transparent bowl, close oil suction valve #6, tank pressurization valve #4 and tank isolation valve #3 (horizontal position).

Operating tip

- For the fastest transfer of oil from the transparent Bowl to the Metal tank it is best to generate a vacuum in the metal tank and the transparent bowl.

Emptying Tank:

(Refer to Fig. 5, Pg. 3)

1. Referencing Fig. 5, make sure suction valve #6, discharge valve #5, tank pressurization valve #4 and tank isolation valve #3 (horizontal position) are closed.

**WARNING**

DO NOT EXCEED MAXIMUM TANK PRESSURE OF 14 PSI

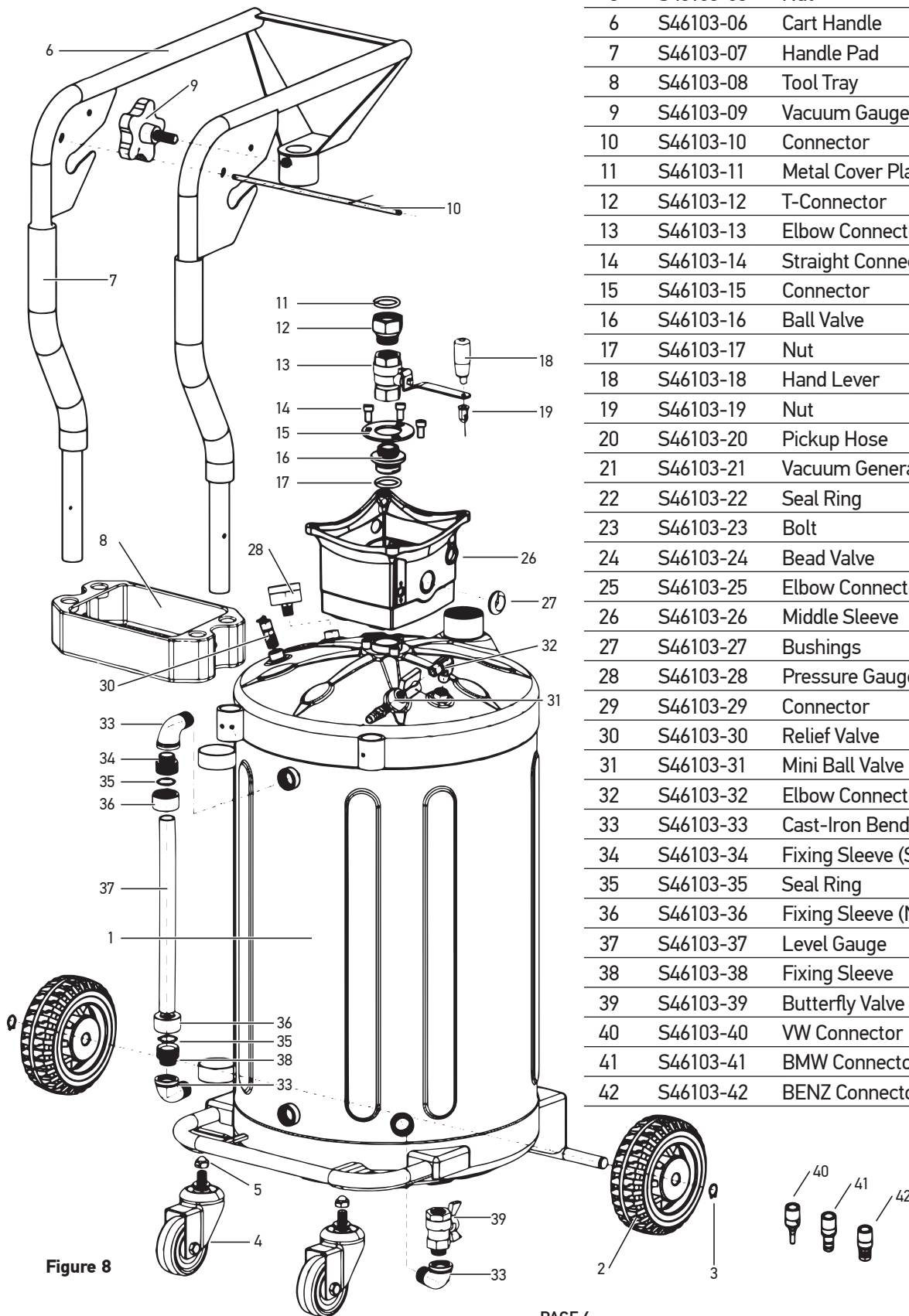
Technical Data:	
Model Number	24273R
Tank Capacity	21 gallons
Collection Bowl Capacity	5 gallons
Transparent Bowl Capacity	2.6 gallons
Suction Hose Length	6 ft.
Discharge Hose Length	6 ft.
Oil Suction Capacity per Charge	11 Gal.
Approximate Vacuum charging	4 – 5 Min.
Approximate suction rate (w/100 PSI shop air) w/6 mm dia. probe, with hot engine oil at 104° to 140° F	0.5 gal./min.
Weight (empty)	80 lb.
Dimensions	17" W x 21" D x 61" H
Minimum Bowl Height	61"
Maximum Bowl Height	71"

2. Connect a regulated air supply, set at a maximum of 14 PSI, to tank pressurization valve #4
3. Place the discharge hose securely into a receiving container/tank
4. Slowly open tank pressurization valve #4, to allow tank to be pressurized thus discharging oil into the receiving container.
5. Slowly open discharge valve #5, to discharge used oil into receiving container/tank.
6. Once tank is empty, close tank pressurization valve #4 and discharge valve #5. Remove the regulated air supply connection made in step 2 above and store the discharge hose.



Figure 7

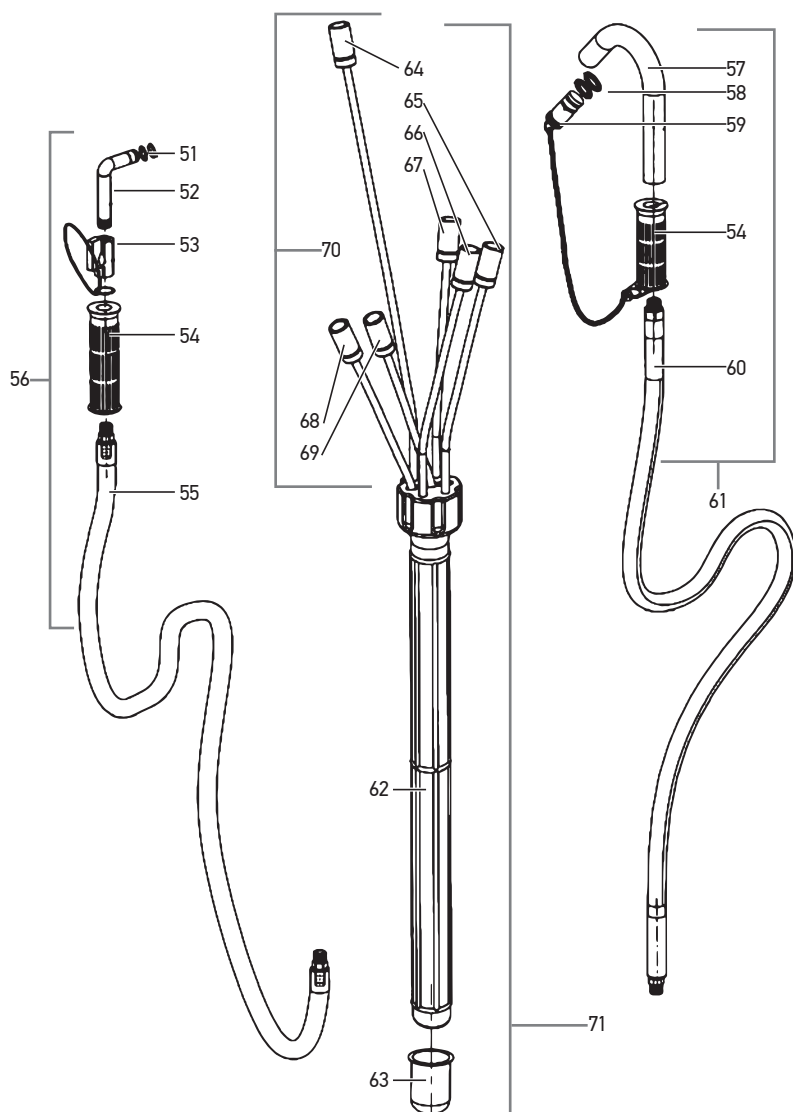
Exploded Parts Items:



ITEM	PART NO.	DESCRIPTION	QTY
1	S46103-01	Tank	1
2	S46103-02	Fixed Wheel	2
3	S46103-03	Snap Ring	2
4	S46103-04	Universal Wheel	2
5	S46103-05	Nut	2
6	S46103-06	Cart Handle	1
7	S46103-07	Handle Pad	1
8	S46103-08	Tool Tray	1
9	S46103-09	Vacuum Gauge	1
10	S46103-10	Connector	1
11	S46103-11	Metal Cover Plate	1
12	S46103-12	T-Connector	2
13	S46103-13	Elbow Connector	1
14	S46103-14	Straight Connector	1
15	S46103-15	Connector	1
16	S46103-16	Ball Valve	1
17	S46103-17	Nut	1
18	S46103-18	Hand Lever	1
19	S46103-19	Nut	1
20	S46103-20	Pickup Hose	1
21	S46103-21	Vacuum Generator	1
22	S46103-22	Seal Ring	1
23	S46103-23	Bolt	1
24	S46103-24	Bead Valve	1
25	S46103-25	Elbow Connector	1
26	S46103-26	Middle Sleeve	1
27	S46103-27	Bushings	1
28	S46103-28	Pressure Gauge	1
29	S46103-29	Connector	1
30	S46103-30	Relief Valve	1
31	S46103-31	Mini Ball Valve	1
32	S46103-32	Elbow Connector	1
33	S46103-33	Cast-Iron Bend	3
34	S46103-34	Fixing Sleeve (Screw)	1
35	S46103-35	Seal Ring	2
36	S46103-36	Fixing Sleeve (Nut)	2
37	S46103-37	Level Gauge	1
38	S46103-38	Fixing Sleeve	1
39	S46103-39	Butterfly Valve	1
40	S46103-40	VW Connector	1
41	S46103-41	BMW Connector	1
42	S46103-42	BENZ Connector	1

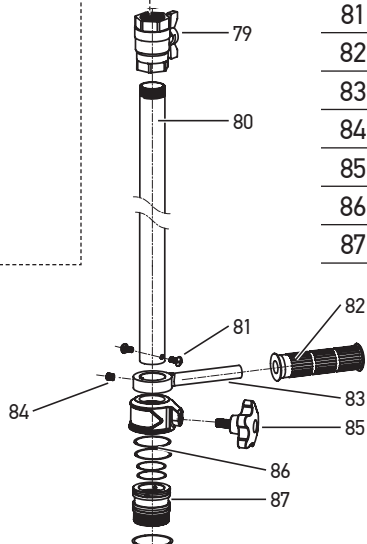
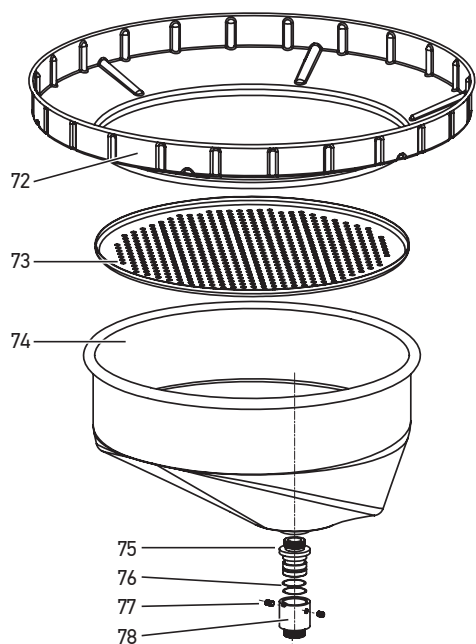
Figure 8

Exploded Parts Items:

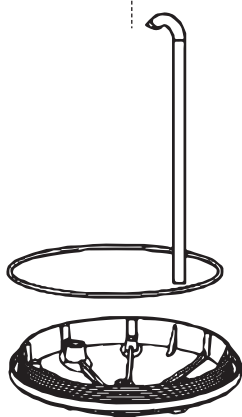
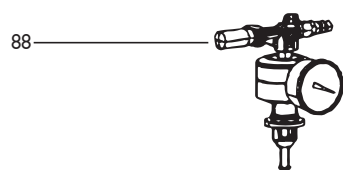


ITEM	PART NO.	DESCRIPTION	QTY
51	S46103-51	Seal Ring	2
52	S46103-52	Oil Extraction Hook	1
53	S46103-31	Mini Ball Valve	1
54	S46103-54	Handle Sleeve	1
55	S46103-55	Extraction Oil Hose	1
56	S46103-56	Oil Suction Hose w/ Hook Assy.	1
57	S46103-57	Oil Drain Hook	1
58	S46103-58	Seal Ring	2
59	S46103-59	Stopper	1
60	S46103-60	Oil Hose	1
61	S46103-61	Oil Drain Hose w/ Hook Assy.	1
62	S46103-62	Probe Sleeve	1
63	S46103-63	Oil Cup	1
64	S46103-64	Oil Probe: 0.28 in. (7 mm) x 39.4" (1000 mm), Flexible	1
65	S46103-65	Oil Probe: 0.20 in. (5mm) x 27.5" (700 mm), Flexible	1
66	S46103-66	Oil Probe: 0.24 in. (6 mm) x 27.5" (700 mm), Flexible	1
67	S46103-67	Oil Probe: 0.32 in. (8 mm) x 27.5" (700 mm), Flexible	1
68	S46103-68	Oil Probe: 0.20 in. (5 mm) x 27.5" (700 mm), Metal	1
69	S46103-69	Oil Probe: 0.24 in (6 mm) x 27.5" (700 mm), Metal	1
70	S46103-70	Oil Extractor Probe (Set)	1
71	S46103-71	Oil Extractor Probe Assy.	1

Figure 9



ITEM	PART NO.	DESCRIPTION	QTY
72	S46100-01	Extension Funnel	1
73	S46100-02	Filter Grate	1
74	S46100-03	Collection Bowl	1
75	S46100-04	Swivel Connection	1
76	S46100-05	O-ring	2
77	S46100-07	Nut	2
78	S46100-06	Swivel Connection	1
79	S46100-08	Ball Valve	1
80	S46100-09	Riser Tube	1
81	S46100-11	Screw	6
82	S46100-14	Handle, Sleeve	1
83	S46100-13	Lift Handle Bar	1
84	S46100-12	Screw	1
85	S46100-17	Knob	1
86	S46100-15	O-Ring	2
87	S46100-16	Connector	1



ITEM	PART NO.	DESCRIPTION	QTY
88	S		1



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