



LIQUIDYNAMICS™

PNEUMATIC OIL EXTRACTOR

Instruction & Parts Manual

Model 24224R



⚠ 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 24224R 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.

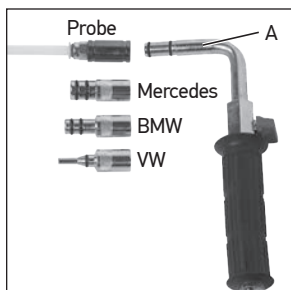


Figure 2

! CAUTION

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

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.

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 24224R 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.

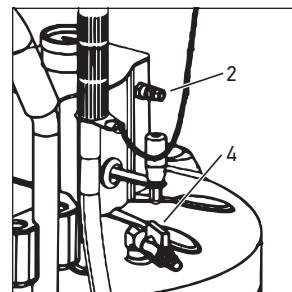


Figure 3



Figure 4

Vacuum Charging:

NOTE:

An air supply capable of supplying a minimum of 7 CFM for a period of 3 – 4 min at 90 – 120 PSI is required for proper operation.

Using an air supply pressure significantly more or less than 90 – 120 PSI will adversely effect vacuum created in tank.

1. Referring to Fig. 4, Pg. 3, close oil discharge valve #5, oil suction valve #6 and tank pressurization valve #4. Open tank isolation valve #3 (vertical position).
2. Connect shop air supply (90 – 120 PSI) to venturi air inlet fitting, #2, Fig. 4 and gradually open air supply to generate vacuum inside tank.
3. Monitor vacuum gauge #1, Fig. 4, Pg. 3 during vacuum generation until gauge indicator approaches red (MAX) zone on gauge, this may take 2 – 4 minutes, close tank isolation valve #3, Fig. 4 (horizontal position) and disconnect air supply.

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.; 5 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. 5.
2. Open oil suction valve #6, Fig. 4 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, Fig. 4 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, Fig. 4 briefly to extract all free oil from engine sump.



Figure 5

NOTE:

If valve #6, Fig. 4 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. 4.
- Before moving/transporting tank filled with oil, make sure tank isolation valve #3, Fig. 4 is closed (horizontal position). Otherwise oil can easily splash into the venturi which will adversely affect ability to create a vacuum.

Emptying Tank:

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



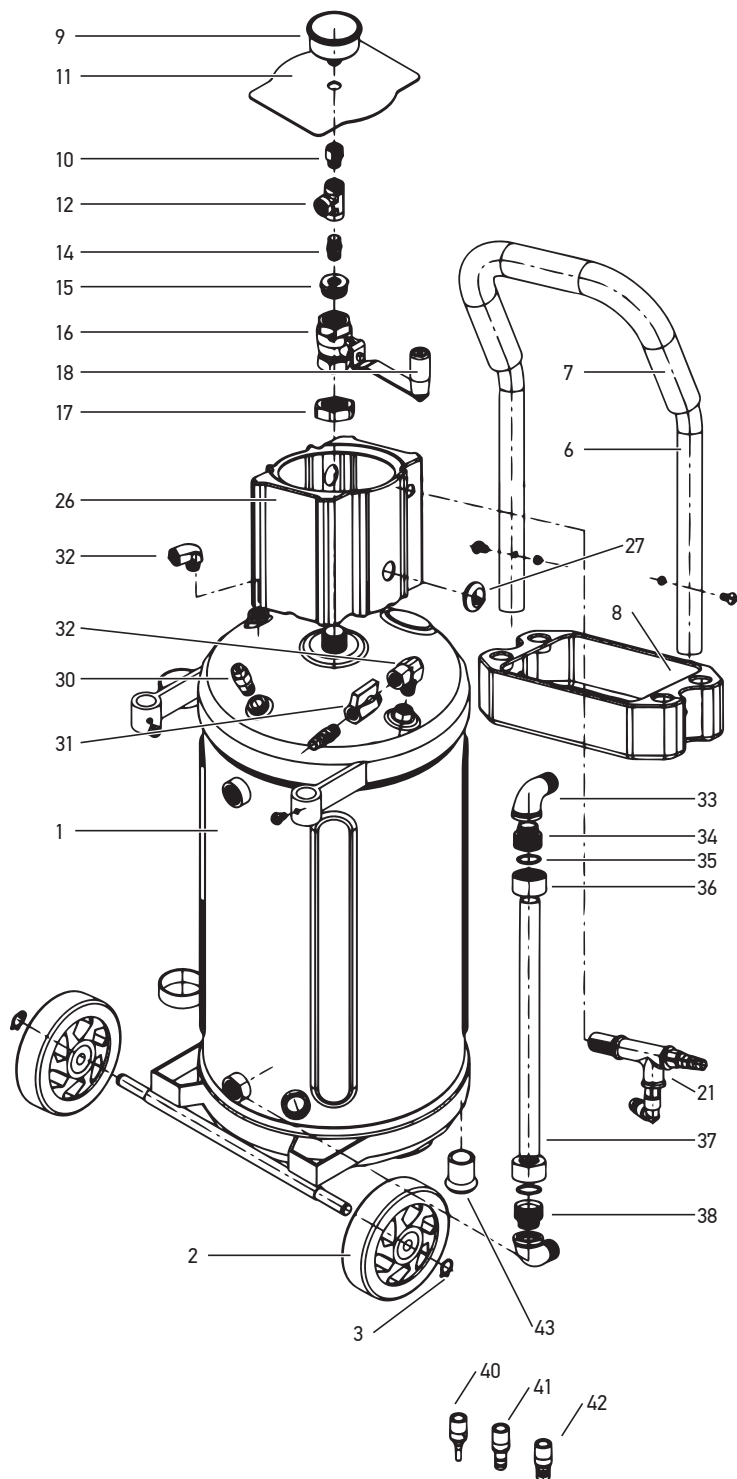
DO NOT EXCEED MAXIMUM TANK PRESSURE OF 14 PSI

2. Connect a regulated air supply, set at a maximum of 14 PSI, to tank pressurization valve #4, Fig. 4.
3. Place the discharge hose #7, Fig. 4 securely into a receiving container/tank
4. Slowly open tank pressurization valve #4, Fig. 4 to allow tank to be pressurized thus discharging oil into the receiving container.
5. Slowly open discharge valve #5, Fig. 4 to discharge used oil into receiving container/tank.
6. Once tank is empty, close tank pressurization valve #4, Fig. 4 and discharge valve #5, Fig. 4. Remove the regulated air supply connection made in step 2 above and store the discharge hose #7, Fig. 4.



Technical Data:	
Model Number	24224R
Tank Capacity	8 gallons
Suction Hose Length	6 ft.
Discharge Hose Length	6 ft.
Oil Suction Capacity per Charge	5 Gal.
Approximate Vacuum charging	2 – 3 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)	28 lb.
Dimensions	13" W x 15" D x 38" H

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
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
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
21	S46103-21	Vacuum Generator	1
26	S46103-26	Middle Sleeve	1
27	S46103-27	Bushing	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 Elbow	3
34	S46103-34	Fixing Sleeve (Screw)	1
35	S46103-35	Bushing	2
36	S46103-36	Fixing Sleeve (Nut)	2
37	S46103-37	Level Gauge	1
38	S46103-38	Fixing Sleeve	1
40	S46103-40	VW Connector	1
41	S46103-41	BMW Connector	1
42	S46103-42	BENZ Connector	1
43	S46103-43	Rubber Foot	1

Figure 7

Exploded Parts Items:

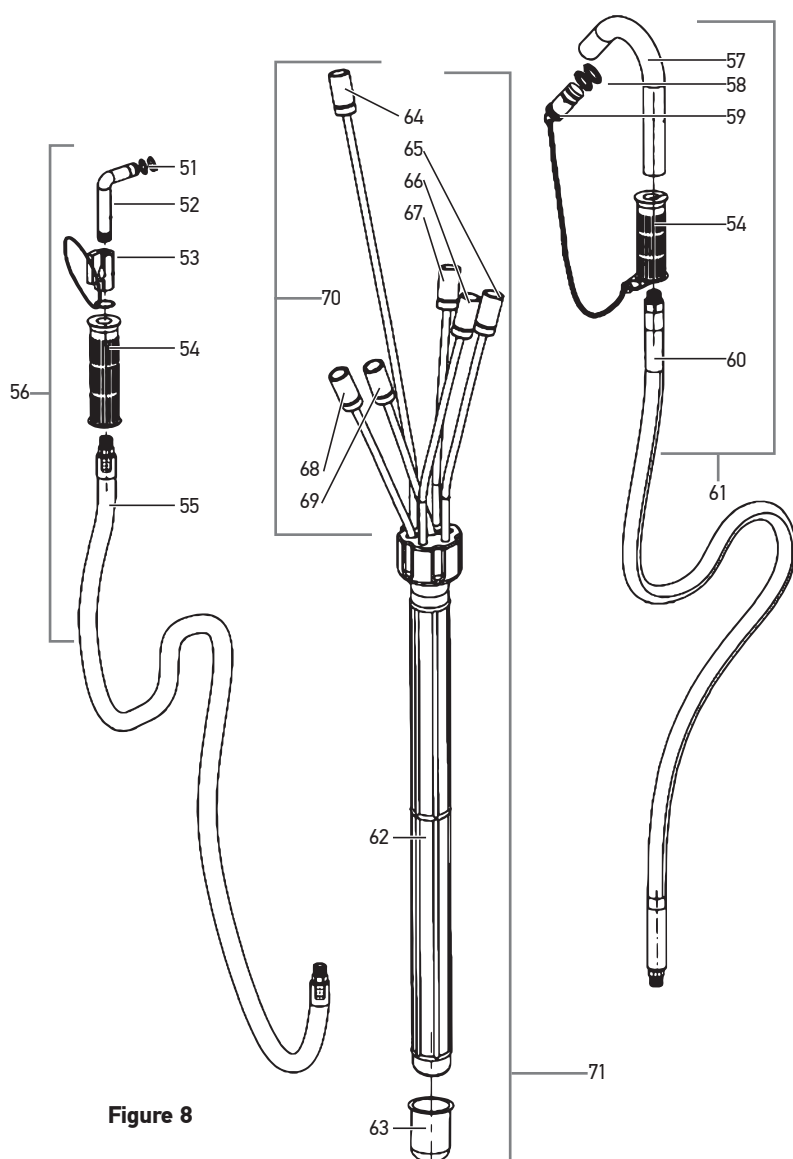


Figure 8

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



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