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VacuHOIST® VH Series 2 Operations Manual

For Systems Purchased since 1/1/2018

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Getting Acquainted with your VacuHoist ®

Your VacuHoist ® system uses the principles of vacuum physics to lift, hold and lower loads. As the vacuum in the lift tube is increased by closing the valve in the control head, the tube is contracted.

Your VacuHoist ® system consists of the following:

A. POWER UNIT

The power unit consists of a direct drive two stage vacuum pump mounted to an electric motor. NOTE: DISCONNECT ALL POWER TO THE MOTOR/COMPRESSOR BEFORE ATTEMPTING ANY SERVICE.

B. SUPPLY HOSING

The supply hosing is made of a crush proof plastic compound. Plastic screw-on cuffs attach as each hosing end to ease connections to the vacuum pump, filter and top swivel. Hose clamps are provided to ensure that an airtight seal is made at each connection.

C. FILTER ASSEMBLY

The in-line filtration assembly is designed to trap ambient particulate in a filter element before it reaches, and damages, the vacuum pump. AT NO TIME SHOULD THE UNIT BE RUN WITHOUT THE USE OF THE FILTER ASSEMBLY! Frequency of maintenance (primarily cleaning) of the filter assembly varies depending on the amount of particulate present in your application; this should be determined by your maintenance department.

D. LIFT TUBE ASSEMBLY

The lift tube assembly contains the column of vacuum, which allows heavy loads to be lifted with ease. The lift tube is a double-layered neoprene tube reinforced by a spiral of wire. The top swivel, which provides the handing point, allows the system to rotate continuously through 360 degrees. Contained in the top swivel is the safety valve which functions only upon a sudden drop in vacuum level.

E. CONTROL HEAD

The control head, located at the bottom of the lift tube, allows the

operator to control the vacuum in the life tube by manually opening or closing the valve controls for unattended load height and unattended unloaded height are located on the control head.

F. SUCTION FOOT ASSEMBLY

The suction foot is the part of the system that makes contact with the product being lifted. The foot can take many forms, but generally consists of either a shaped metal vessel or pad with a rubber gasket attached, or an array of metal bars with these shaped vessels or pads attached. There are dozens of suction feet available with gaskets sized specifically for each foot. The foot must be properly sized to fit the application. If a multiple pad, adjustable foot is used, the location of the pads must be correct for the application. In addition, the connection between the suction foot and control head must be airtight.

G. OVERHEAD SUPPORT SYSTEM

NOTE: This is not VacuHoist ® manufactured equipment, but is necessary part of a VacuHoist ® system. VacuHoist ® must be suspended from an overhead system. If it is an ErgoSys ® brand overhead system, it is manufactured by us, please see appropriate ErgoSys ® manuals. If it is manufactured by others, please consult appropriate manufacturer.

Most overhead systems generally fall into three categories; jib cranes, bridges cranes, and monorails. Most VacuHoist ®s are suspended from jibs or bridges, since a monorail gives only bi-directional movement.

INSTALLATION INSTRUCTIONS

A. Your VacuHoist ® is powered by a 3 HP motor which requires 208/230/460V, 3 phase, AC power. The motor must be set by you for either proper voltage. Motor operates at either 60 Hz or 50Hz.

B. The minimum amperage requirement is 20 at 208/230V; 10 at 460V. A magnetic starter is recommended for simple on/off control. (running AMPS are 10.3 for 208/230V; 6 for 460V)

C. Apply power and check for proper rotational direction. If rotational direction is incorrect, reverse 2 power leads. Vacuum should be created at the small black orifice on the pump. This is the vacuum pump intake port.

D. Mount filter lid slide down. Filter height should take into consideration that the trapped particulate should fall into a waste receptacle when the lid is opened.

E. Connect enough 2' suction hose to reach from the compressor intake port to the filter outlet. Screw cuffs then fasten with a hose clamp. Hose should be at least 3' (1M) long to allow for contraction.

F. Check for proper air flow direction at filter canister. Hose between lift tube and filter should attach to the filter inlet (marked).

G. Connect the remaining 2" hose between the filter and upper swivel assembly. The hose may be shorted as required. Fasten with hose clamps (allow ½ add. Length for contractions).

H. Fasten the upper swivel assembly to the crane. On the hose trolleys of your crane, festoon (or loop) the suction hose in five foot loops every four feet so as to allow for contraction when lifting maximum weights at the far end of your overhead system

I. Be sure lift tube is sized so that the suction foot is a minimum of 6" from the floor when the tube is fully extended without power on.

Operating Instructions

A. Position the lift tube directly over the load. (Lifting from any angle is not recommended).

B. Depress the control level, the lift tube will extend lowering the suction tool to the load.

C. Establish firm contact with the load to ensure suction.

D. Raise the control lever gradually, to lift the load,

E. Adjust the black “load adjusting knob” for whatever working height is desired. The load will remain at this height without operator assistance.

F. Depress the control level slightly to lower the load.

G. To release the load, once the load is down, depress the control lever fully and lift up the control head to break the seal. Once the seal is broken, release the control lever and squeeze the handle to operate.

H. Without a load on the foot, use the small screw to adjust the height you would like the unit to return to when an operator releases the load.

Operating Instructions for (VH120) and Flex Handle Units

A. Operating instructions are the same as above except:

B. To adjust the load, turn small knob on rear of the valve box to adjust height to desired level. The load will remain at this height without operator assistance.

******CAUTION******

When lowering a load, the control lever should be depressed SLOWLY so as to decrease the possibility of releasing the load prematurely.

8.0 VacuHoist ® Preventative Maintenance Checklist

1.0 Power Unit:
- 1.1 Cowling Removed, Pump exterior cleaned of dust and debris
- 1.2 Exhaust Muffler Checked for Obstructions
- 1.3 Motor Exterior Cleaned of dust and debris
- 1.4 Circuit Breaker Checked
- 1.5 Motor Rotates in Proper Direction

2.0 Supply Hosing:
- 2.1 Hose Clamps tightened at all connections
- 2.2 Hosing Festooned Properly
- 2.3 Hosing Visually Inspected for Holes or Kinks

3.0 Filter Assembly:
- 3.1 Filter Element Cleaned and Inspected
- 3.2 Filter Housing Cleaned of Dust and Debris
- 3.3 Lid and Gasketing Maintaining Proper Seal

4.0 Lift Tube Assembly:
- 4.1 Top Swivel Rotates Properly
- 4.1 Non Return Valve Operating Properly
- 4.2 Lift Tube Clamps Secured
- 4.3 Lift Tube Inspected

5.0 Control Head:
- 5.1 Control Head Cleaned Thoroughly
- 5.2 Control Handle and Spring Operating Properly
- 5.3 Adjust Knobs Working Properly

6.0 Suction Foot Assembly:
- 6.1 Suction Foot Tightened Against Control Head
- 6.1 Pads of Feet Located Properly for Application
- 6.1 Air Passages Free From Obstruction
- 6.2 Gasketing Inspected for Wear and Secure Fit

7.0 Overhead Support System:
- 7.1 Jib Crane Inspected per Manufacture's Manual
- 7.2 Bridge Crane/ Monorail inspected per manufacturer's manual

Date Performed: _____ Performed By: _____

Signature: _____

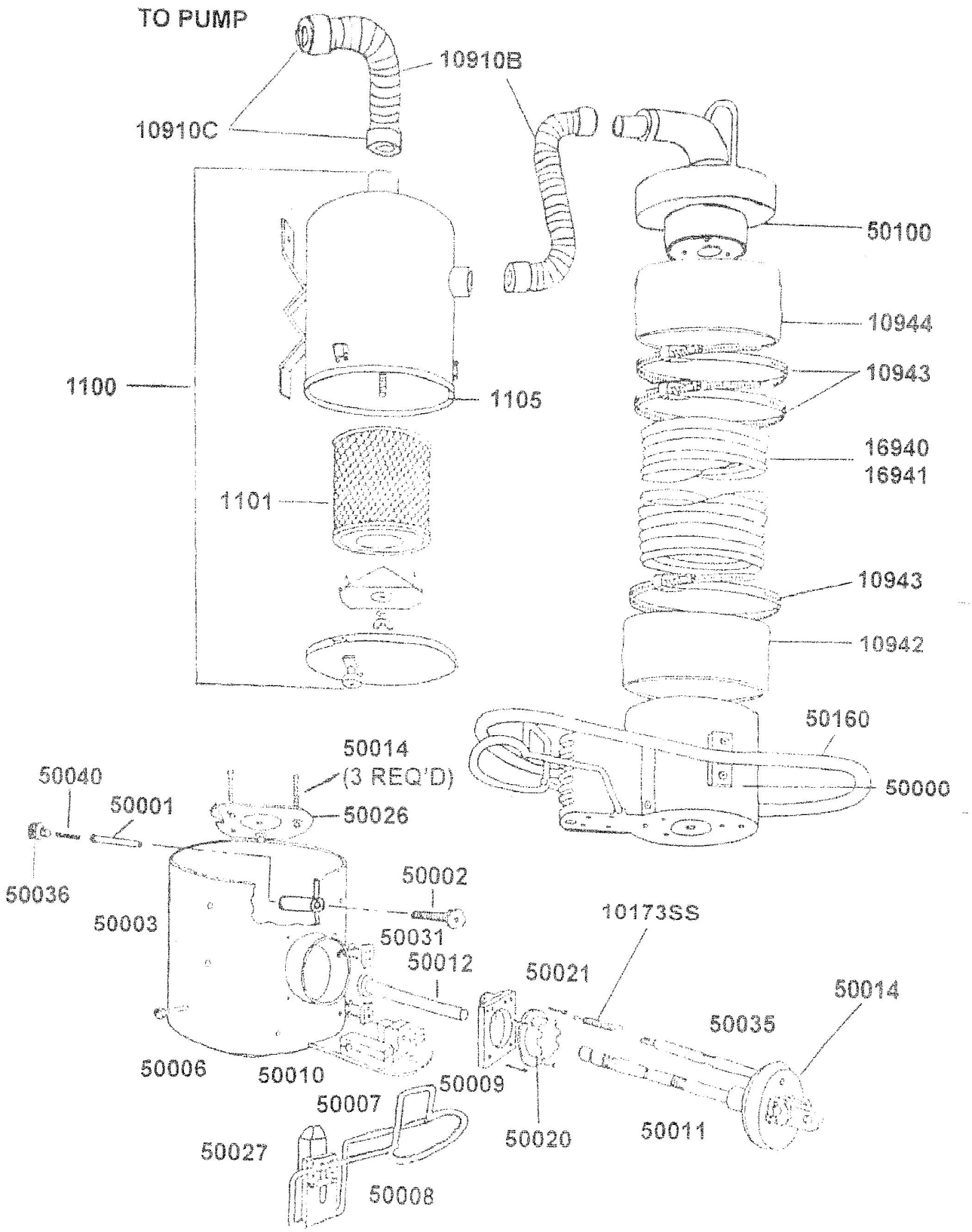
Troubleshooting Guide

Problems	Cause	Things to Check or Try
Will not lift of lifts slowly	Blocked air flow or vacuum leak.	Clear Filter. Eliminate Leaks by: Tightening foot. Checking valve on filter. Checking hoses for leaks (on hose itself and at connection). Checking integrity of gasket or skirt. Tightening limit screw into head. Checking suction head and top swivel valves for blockage. Checking gasket on canister.
Will not balance.	Improper valve aperture or closure ratio.	Adjust black knob with load-to-balance load. Release load and adjust silver no-load screw for no-load balance. If these first tow thing fail to balance in the load position, check for jamming of valves by foreign matter. Check tension on

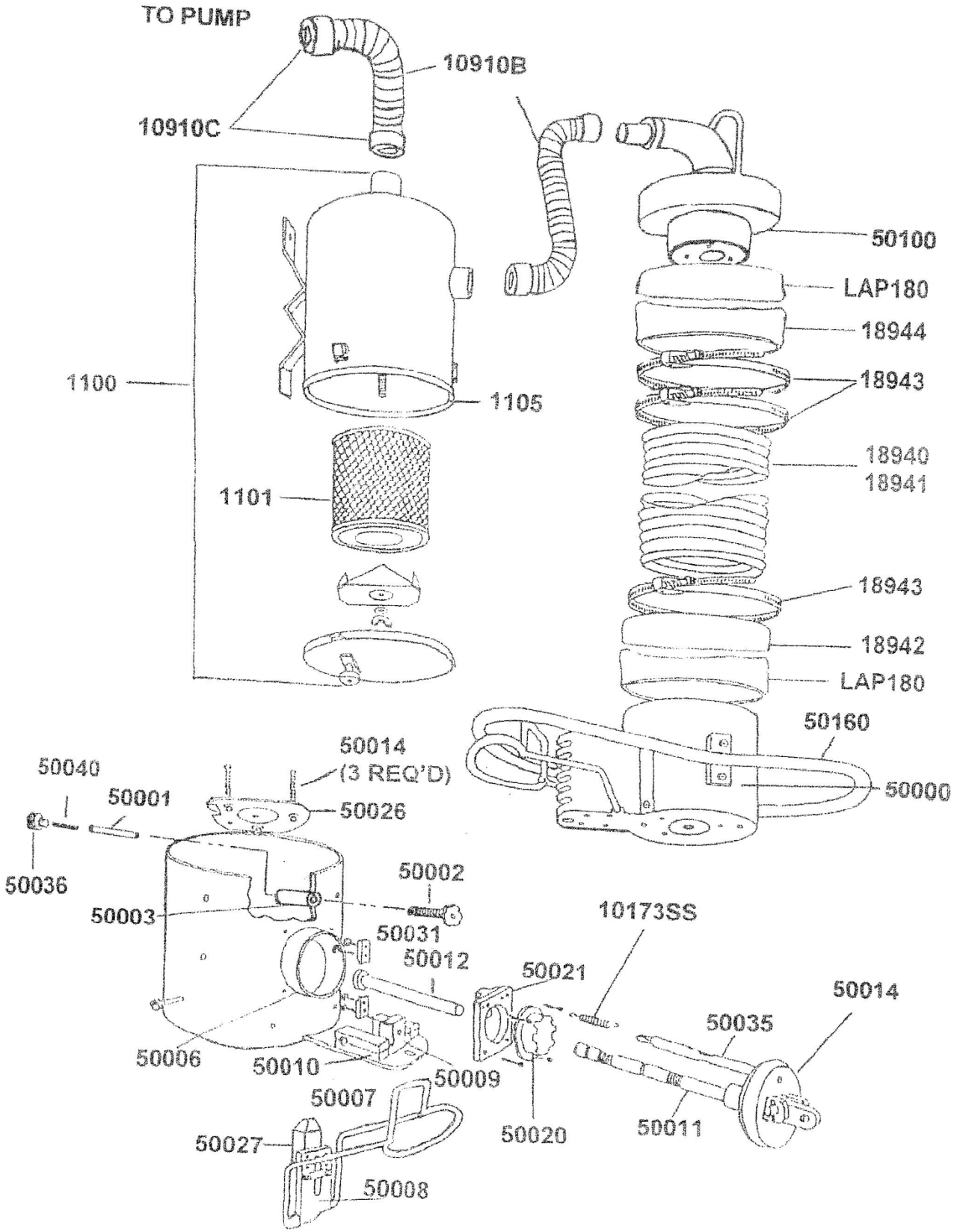
		three springs on bottom valve plate in suction head. Tighten nuts if springs seem weak.
Black handle loose.	Side bolts (1/4" Allen) loose or bottom bolt loose or missing.	Check bolts and tighten or replace as needed.
Frozen black load adjustment knob.	Cover mis-aligned or black shaft mis-threaded.	Loosen four Phillips heads.
Black throttle extremely loose.	Main spring is off inside head.	Remove suction head and reattach main spring.
Frozen black load adjustment knob.	Cover mis-aligned or black shaft mis-threaded.	Loosen four Phillips heads.
Lift tube collapse.	Suction foot sits on floor in off position or foot placed on immovable object while extended (this is not under warranty)..	New tube should be cut to allow 4-6 inches of neutral height above floor.
Jammed pump/burned out motor.	Particulate by passing filter due to improper cleaning or pump may be jammed by contents of a broken bag or may be jammed by portions of a broken bag	Pump/motor replacement required. (Call your distributor for repair service).
Breaks or cuts in lift tube.	Breakdown immediately above suction head or below swivel indicated	Short term repairs; Duct tape. Severe cuts may require a new tube. Overhead

	improper overhead system or improper usage.	System may be too heavy. (Check with dealer on a universal joint to eliminate this problem).
Lift tube drops away from top swivel.	Tape adhesive dried out or insufficient clamping at top swivel.	Re-tape, taping gasket directly to metal, then taping lift tube to gasket, add additional hose clamp, tape this and refit gasket over taped clamps.
Unit flutter or vibrates in neutral no-load state.	Balancing valve is loose.	Tighten bolts holding springs. (See part #10142)
Product being lifted drops.	Insufficient vacuum at foot or improper unit.	Check and clean filter.

Exploded View VH160



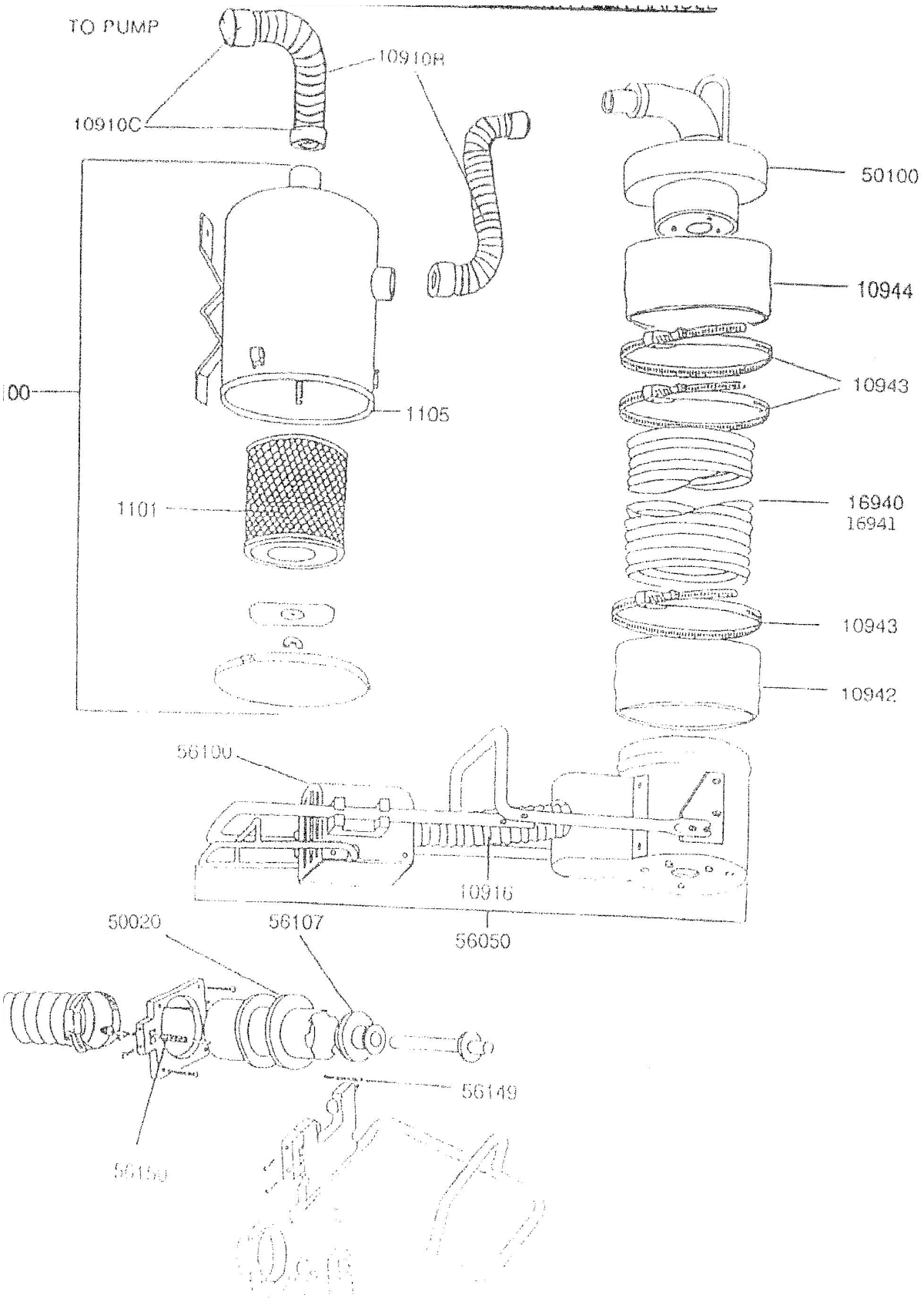
Exploded View VH180



Spare Parts for VH160/180

Part#	Description
10910B	Suction Hose (7.5 or 15 meter)
10910C	2” Hose Cuffs
10942	Rubber Hose- Lower (VH160)
10944	Rubber Hose- Upper (VH160)
1100	Heavy Duty Filter Assembly (Complete)
1101	Filter Element
1105	Gasket for 1100
50000	Suction Head Assembly
50001	Plunger
50002	Plunger Body
50012	Détente Bearing
50014	Valve Plug Assembly
50020	Valve Ring
50026	Foot Valve (Balancing View)
50036	Plunger Stop
50040	Load Adjustment Spring
50041	Foot Valve Spring (3 Needed)
50100	Top Swivel
16940	Lift Tube 160MM X 2.5 MTR (VH160)
16941	Lift Tube 160MM X 4.0 MTR (VH160)
18940	Lift Tube 180MM X 2.5 MTR (VH180)
18941	Lift Tube 180MM X 4.0 MTR (VH180)
18942	Rubber Hose- Lower (VH180)
18944	Rubber Hose- Upper (VH180)
10943	Lift Tube Clamp (VH160)
18943	Lift Tube Clamp (VH180)
10173SS	Standard Spring for Primary Valve (SS)
LPA18Q	Adaptor for 180MM Lift Tube

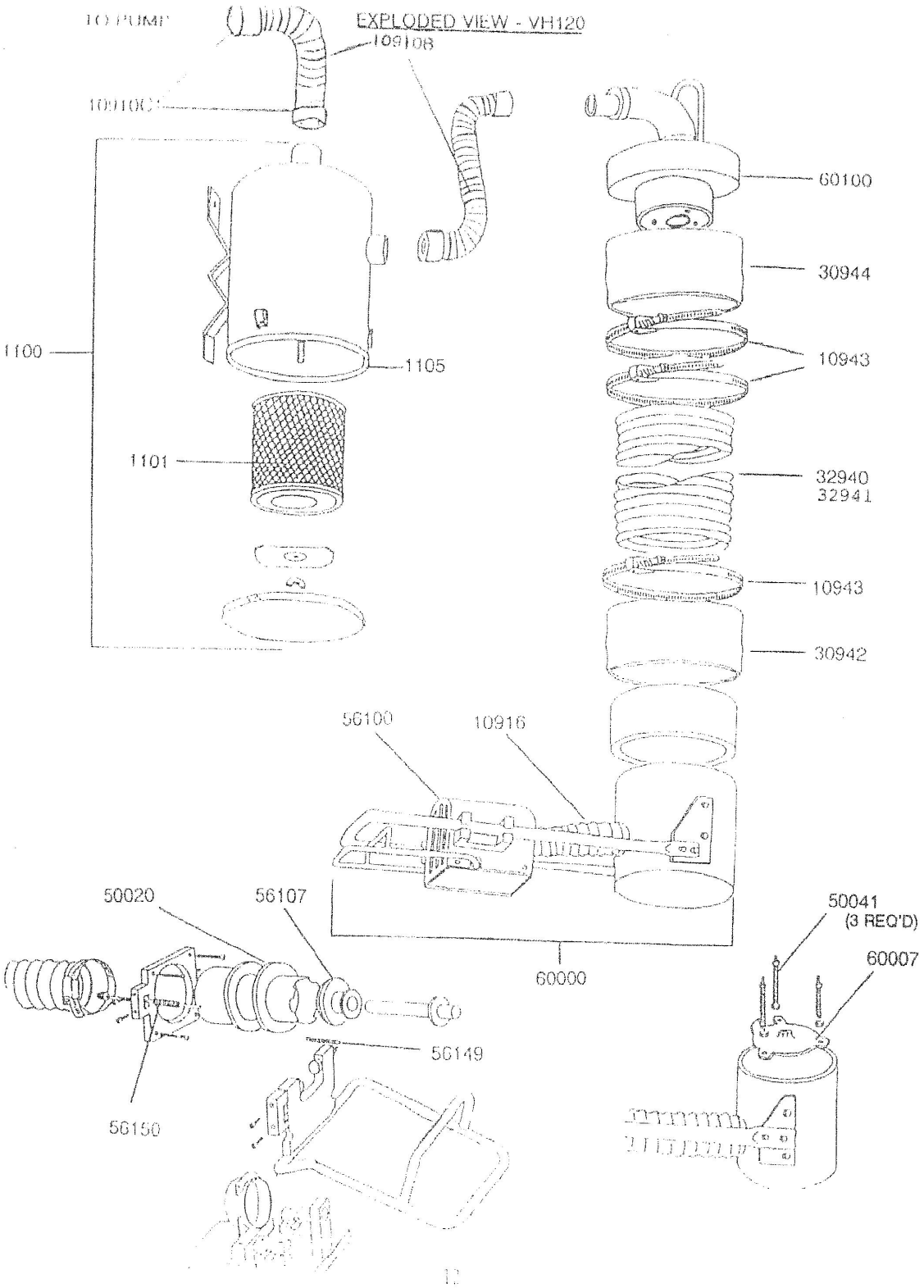
Exploded View VH160 with Flex Handle



Spare Parts for Flex Handle

Part #	Description
10910C	Hose Cuffs
10910B	2” Suction Hose (7.5 or 15 Meter)
10942	Rubber Hose- Lower
10943	Lift Tube Clamp Upper and Lower
10944	Rubber Hose- Upper
16940	Lift Tube 160MM X 2.5 MTR (VH160)
16941	Lift Tube 160MM X 4.0 MTR (VH160)
18940	Lift Tube 180MM X 2.5 MTR (VH180)
18941	Lift Tube 180MM X 4.0 MTR (VH180)
1100	Heavy Duty Filter Assembly
1101	Filter Element for Heavy Duty Filter
50100	Top Swivel
56050	Suction Head Assembly
50020	Valve Ring
56107	Valve Plug
56149	Primary Spring
5650	Load Adjustment Spring
56100	Valve Box
10916	Hosing

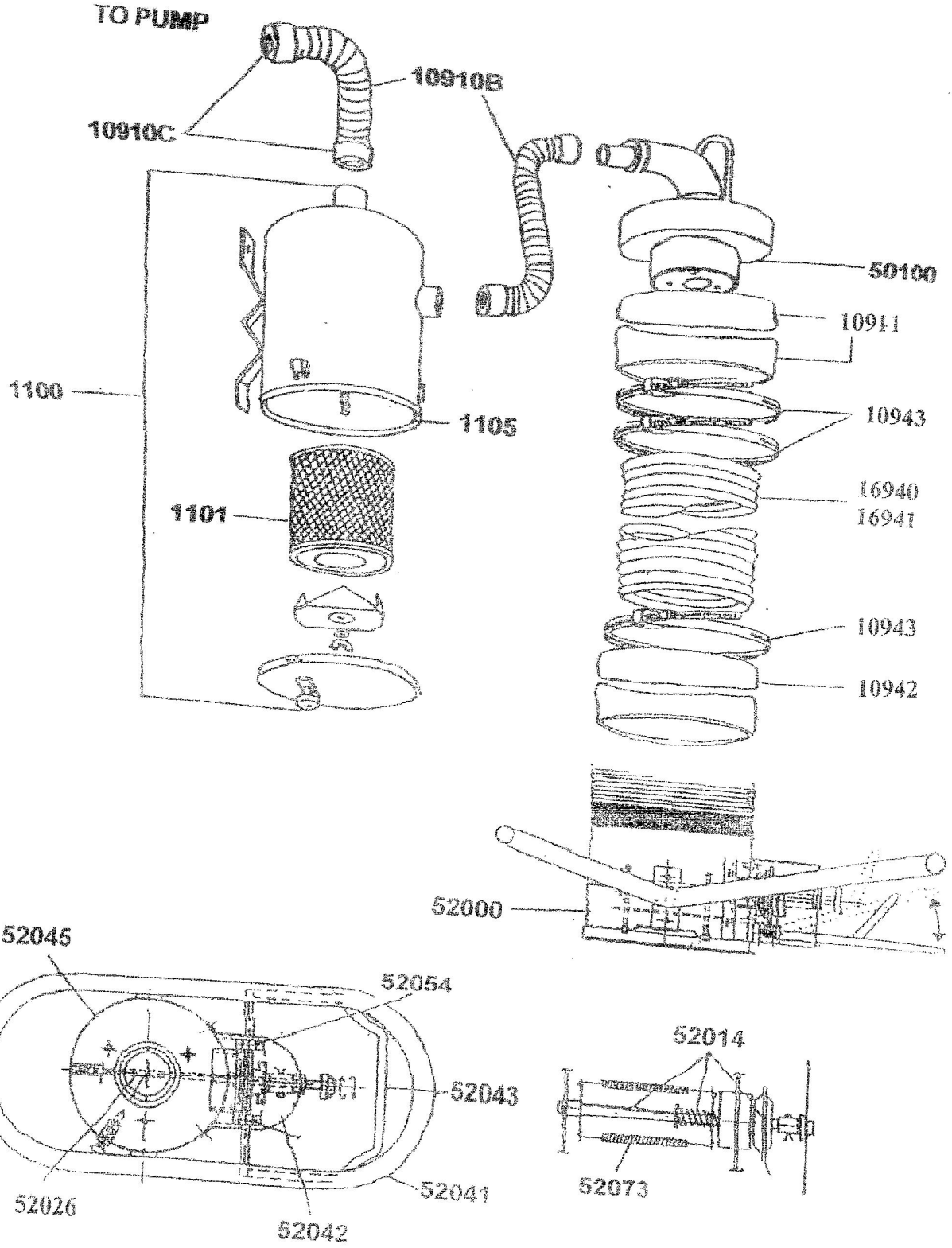
Exploded View- VH120



Spare Parts for VH120

Part #	Description
10910B	Suction Hose (7.5 or 15 Meter)
10910C	2” Hose Cuffs
30943	Lift Tube Clamp
1100	Heavy Duty Filter Assembly Complete
1101	Filter Element
1105	Gasket for 1100
30942	Rubber Hose- Lower
30944	Rubber Hose- Upper
32940	120MM X 2.5 MTR Lift Tube
32941	120MM X 4.0 MTR Lift Tube
50020	Valve Ring
50041	Foot Valve Spring
56100	Valve Box
56107	Valve Plug
56149	Primary Spring
56150	Load Adjustment Screw Assembly
60000	Suction Head Assembly
60007	Foot Valve (Balancing Valve)
60100	Top Swivel

Exploded View- VAC II-160



Spare Parts for VAC II-160/180

Part #	Description
10910B	Suction Hose (7.5 or 15 Meter)
10910C	2” Hose Cuffs
10942	Rubber Hose- Lower (VH160)
10944	Rubber Hose- Upper (VH160)
1100	Heavy Duty Filter Assembly Complete
1101	Filter Element
1105	Gasket for 1100
52000	Vac Suction Head Assembly
52041	Handle
52042	Cover
52043	Throttle
52045	Can
50026	Bearing Block
52014	Valve Plug Assembly
52073	Retrun Spring Set
50100	Top Swivel
16940	Lift Tube 160MM X 2.5 MYT (VH160)
16941	Lift Tube 160MM X 2.5 MTR (VH160)
18940	Lift Tube 180MM X 2.5 MTR (VH180)
18941	Lift Tube 180MM X 4.0 MTR (VH180)
18942	Rubber Hose- Lower (VH180)
18944	Rubber Hose- Upper (VH180)
10943	Lift Tube Clamp (VH160)
18943	Lift Tube Clamp (VH180)
10173SS	Standard Spring for Primary Valve (SS)
LPA180	Adaptor for 180MM Lift Tube

Exploded View VAC II-180