STANLEY®

SKV20130A
V SERIES SINKER DRILL

USER MANUAL
Safety, Operation and Maintenance

7/2019 Ver. 4

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IMPORTANT

To fill out a Product Warranty Validation form, and for information on your warranty, visit Stanleyhydraulics.com and select the Company tab, Warranty.
(NOTE: The warranty Validation record must be submitted to validate the warranty).

SERVICING: This manual contains safety, operation, and routine maintenance instructions. Stanley Hydraulic Tools recommends that servicing of hydraulic tools, other than routine maintenance, must be performed by an authorized and certified dealer. Please read the following warning.

⚠ WARNING

SERIOUS INJURY OR DEATH COULD RESULT FROM THE IMPROPER REPAIR OR SERVICE OF THIS TOOL.

REPAIRS AND / OR SERVICE TO THIS TOOL MUST ONLY BE DONE BY AN AUTHORIZED AND CERTIFIED DEALER.

For the nearest authorized and certified dealer, call Stanley Hydraulic Tools at (503-659-5660) and ask for a Customer Service Representative.

SAFETY SYMBOLS

Safety symbols and signal words, as shown below, are used to emphasize all operator, maintenance and repair actions which, if not strictly followed, could result in a life-threatening situation, bodily injury or damage to equipment.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER — This safety alert and signal word indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING — This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION — This safety alert and signal word indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION — This signal word indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE — This signal word indicates a situation which, if not avoided, will result in damage to the equipment.

IMPORTANT — This signal word indicates a situation which, if not avoided, may result in damage to the equipment.

Always observe safety symbols. They are included for your safety and for the protection of the tool.

LOCAL SAFETY REGULATIONS

Enter any local safety regulations here. Keep these instructions in an area accessible to the operator and maintenance personnel.

SAFETY PRECAUTIONS

Tool operators and maintenance personnel must always comply with the safety precautions given in this manual and on the stickers and tags attached to the tool and hose.

These safety precautions are given for your safety. Review them carefully before operating the tool and before performing general maintenance or repairs.

Supervising personnel should develop additional precautions relating to the specific work area and local safety regulations. If so, place the added precautions in the space provided in this manual.

The models SKV20130Awill provide safe and dependable service if operated in accordance with the instructions given in this manual. Read and understand this manual and any stickers and tags attached to the tool and hoses before operation. Failure to do so could result in personal injury or equipment damage.

- Operator must start in a work area without bystanders. The operator must be familiar with all prohibited work areas such as excessive slopes and dangerous terrain conditions.
- Establish a training program for all operators to ensure safe operations.
- Do not operate the tool unless thoroughly trained or under the supervision of an instructor.
- Always wear safety equipment such as goggles, head protection, and safety shoes at all times when operating the tool.
- Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Do not operate this tool without first reading the Operation section.
- Do not install or remove this tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
- Never operate the tool near energized transmission lines. Know the location of buried or covered services before starting work.
- Do not wear loose fitting clothing when operating the tool. Loose fitting clothing can get entangled with the tool and cause serious injury.
- Supply hoses must have a minimum working pressure rating of 2500 psi/175 bar.
- Be sure all hose connections are tight.
- The hydraulic circuit control valve must be in the “OFF” position when coupling or uncoupling the tool. Wipe all couplers clean before connecting. Failure to do so may result in damage to the quick couplers and cause overheating. Use only lint-free cloths.
- Do not operate the tool at oil temperatures above 140 °F/60 °C. Operation at higher oil temperatures can cause operator discomfort and may cause damage to the tool.
- Do not operate a damaged, improperly adjusted, or incompletely assembled tool.
- To avoid personal injury or equipment damage, all tool repair, maintenance and service must only be performed by authorized and properly trained personnel.
- Do not exceed the rated limits of the tool or use the tool for applications beyond its design capacity.
- Always keep critical tool markings, such as labels and warning stickers legible.
- Always replace parts with replacement parts recommended by Stanley.
- Check fastener tightness often and before each use daily.
- Do not put your hands or any other body part under the volute while the trash pump is running.
- Do not lift the trash pump by pulling on the hydraulic hoses. Use a suitable line fastened to the trash pump handle.
- Do not point water discharge toward bystanders.

HOSE TYPES

The rated working pressure of the hydraulic hose must be equal to or higher than the relief valve setting on the hydraulic system. There are three types of hydraulic hose that meet this requirement and are authorized for use with Stanley Hydraulic Tools. They are:

Certified non-conductive — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *Hose labeled **certified non-conductive** is the only hose authorized for use near electrical conductors.*

Wire-braided (conductive) — constructed of synthetic rubber inner tube, single or double wire braid reinforcement, and weather resistant synthetic rubber cover. *This hose is **conductive** and must never be used near electrical conductors.*

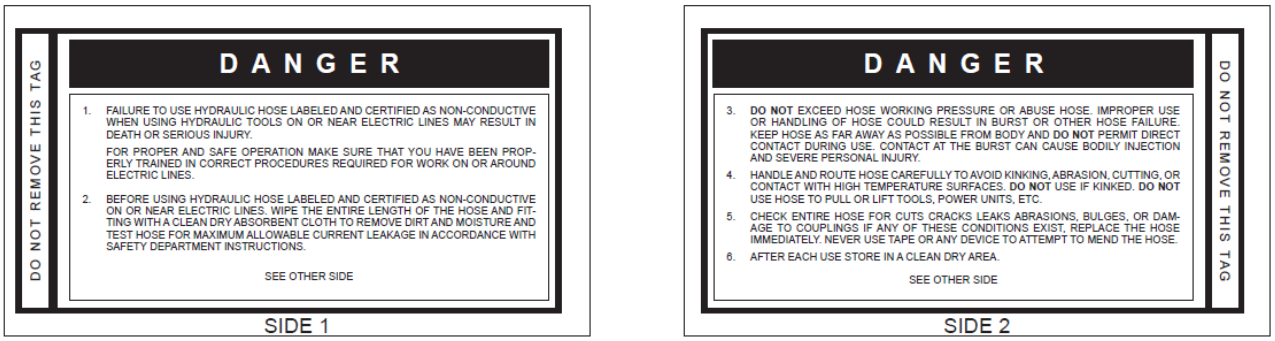
Fabric-braided (not certified or labeled non-conductive) — constructed of thermoplastic or synthetic rubber inner tube, synthetic fiber braid reinforcement, and weather resistant thermoplastic or synthetic rubber cover. *This hose is **not certified non-conductive** and must never be used near electrical conductors.*

HOSE SAFETY TAGS

To help ensure your safety, the following DANGER tags are attached to all hose purchased from Stanley Hydraulic Tools. DO NOT REMOVE THESE TAGS.

If the information on a tag is illegible because of wear or damage, replace the tag immediately. A new tag may be obtained from your Stanley Distributor.

THE TAG SHOWN BELOW IS ATTACHED TO "CERTIFIED NON-CONDUCTIVE" HOSE



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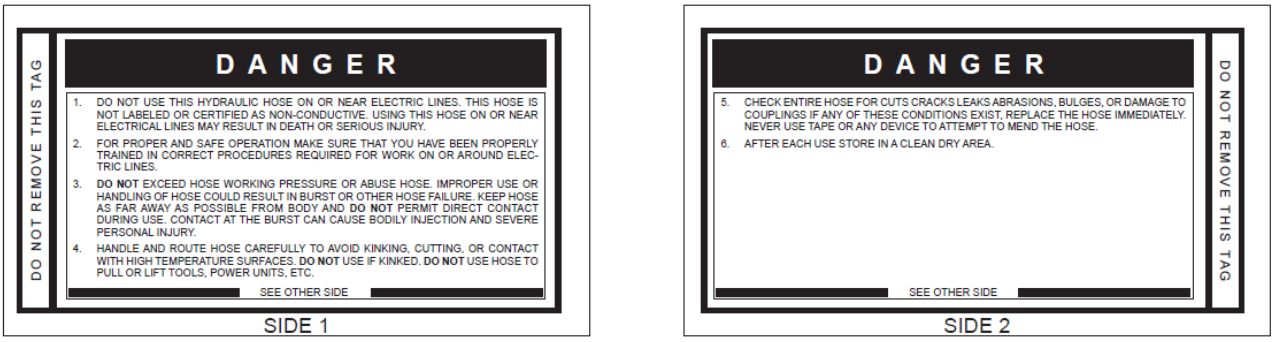
THE TAG SHOWN BELOW IS ATTACHED TO "CONDUCTIVE" HOSE.



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Tool to Hydraulic Circuit Hose Recommendations

The chart to the right shows recommended minimum hose diameters for various hose lengths based on gallons per minute (gpm)/ liters per minute (lpm). These recommendations are intended to keep return line pressure (back pressure) to a minimum acceptable level to ensure maximum tool performance.

This chart is intended to be used for hydraulic tool applications only based on Stanley Hydraulic tools tool operating requirements and should not be used for any other applications.

All hydraulic hose must have at least a rated minimum working pressure equal to the maximum hydraulic system relief valve setting.

All hydraulic hose must meet or exceed specifications as set forth by SAE J517.

Oil Flow		Hose Lengths		Inside Diameter		USE (Press/Return)	Min. Working Pressure	
GPM	LPM	FEET	METERS	INCH	MM		PSI	BAR
Certified Non-Conductive Hose - Fiber Braid - for Utility Bucket Trucks								
4-9	15-34	up to 10	up to 3	3/8	10	Both	2250	155
Conductive Hose - Wire Braid or Fiber Braid -DO NOT USE NEAR ELECTRICAL CONDUCTORS								
4-6	15-23	up to 25	up to 7.5	3/8	10	Both	2500	175
4-6	15-23	26-100	7.5-30	1/2	13	Both	2500	175
5-10.5	19-40	up to 50	up to 15	1/2	13	Both	2500	175
5-10.5	19-40	51-100	15-30	5/8	16	Both	2500	175
5-10.5	19-40	100-300	30-90	5/8	16	Pressure	2500	175
				3/4	19	Return	2500	175
10-13	38-49	up to 50	up to 15	5/8	16	Both	2500	175
10-13	38-49	51-100	15-30	5/8	16	Pressure	2500	175
				3/4	19	Return	2500	175
10-13	38-49	100-200	30-60	3/4	19	Pressure	2500	175
				1	25.4	Return	2500	175
13-16	49-60	up to 25	up to 8	5/8	16	Pressure	2500	175
				3/4	19	Return	2500	175
13-16	49-60	26-100	8-30	3/4	19	Pressure	2500	175
				1	25.4	Return	2500	175

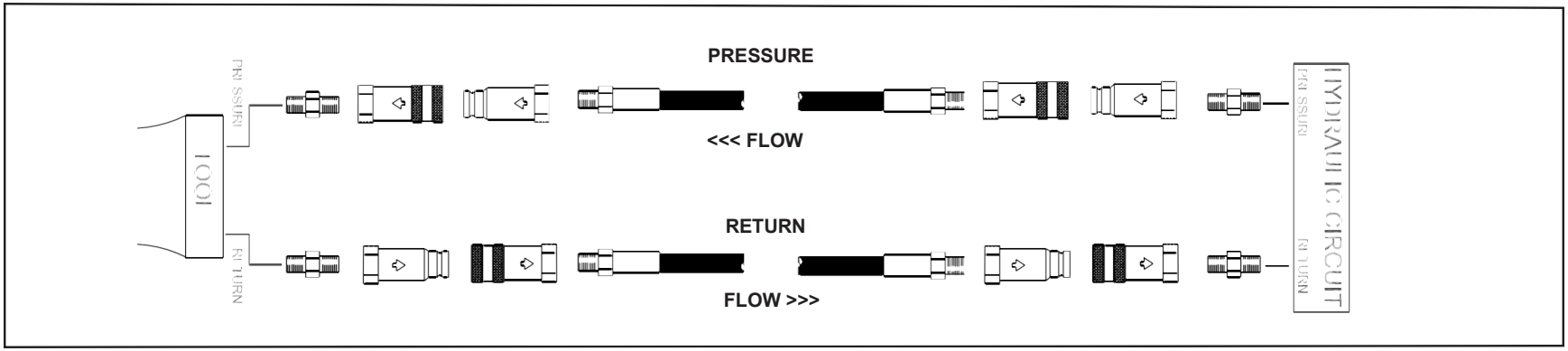

Figure 1. Typical Hose Connections

HTMA / EHTMA REQUIREMENTS

HTMA HYDRAULIC SYSTEM REQUIREMENTS	TOOL TYPE TYPE I	TYPE II	TYPE RR	TYPE III
Flow Range	4-6 gpm (15-23 lpm)	7-9 gpm (26-34 lpm)	9-10.5 gpm (34-40 lpm)	11-13 gpm (42-49 lpm)
Nominal Operating Pressure (at the power supply outlet)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)
System relief valve setting (at the power supply outlet)	2100-2250 psi (145-155 bar)	2100-2250 psi (145-155 bar)	2200-2300 psi (152-159 bar)	2100-2250 psi (145-155 bar)
Maximum back pressure (at tool end of the return hose)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)	250 psi (17 bar)
Measured at a max. fluid viscosity of: (at min. operating temperature)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)	400 ssu* (82 centistokes)
Temperature: Sufficient heat rejection capacity to limit max. fluid temperature to: (at max. expected ambient temperature)	140° F (60° C)	140° F (60° C)	140° F (60° C)	140° F (60° C)
Min. cooling capacity at a temperature difference of between ambient and fluid temps	3 hp (2.24 kW) 40° F (22° C)	5 hp (3.73 kW) 40° F (22° C)	6 hp (5.22 kW) 40° F (22° C)	7 hp (4.47 kW) 40° F (22° C)
NOTE: Do not operate the tool at oil temperatures above 140° F (60° C). Operation at higher temperatures can cause operator discomfort at the tool.				
Filter	25 microns	25 microns	25 microns	25 microns
Min. full-flow filtration Sized for flow of at least: (For cold temp. startup and max. dirt-holding capacity)	30 gpm (114 lpm)	30 gpm (114 lpm)	30 gpm (114 lpm)	30 gpm (114 lpm)
Hydraulic fluid Petroleum based (premium grade, anti-wear, non-conductive) Viscosity (at min. and max. operating temps)	100-400 ssu*	100-400 ssu* (20-82 centistokes)	100-400 ssu*	100-400 ssu*

NOTE:
When choosing hydraulic fluid, the expected oil temperature extremes that will be experienced in service determine the most suitable temperature viscosity characteristics. Hydraulic fluids with a viscosity index over 140 will meet the requirements over a wide range of operating temperatures.

*SSU = Saybolt Seconds Universal

EHTMA HYDRAULIC SYSTEM REQUIREMENTS	CLASSIFICATION B	C	D	E	F
					
Flow Range	3.5-4.3 gpm (13.5-16.5 lpm)	4.7-5.8 gpm (18-22 lpm)	7.1-8.7 gpm (27-33 lpm)	9.5-11.6 gpm (36-44 lpm)	11.8-14.5 gpm (45-55 lpm)
Nominal Operating Pressure (at the power supply outlet)	1870 psi (129 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)	1500 psi (103 bar)
System relief valve setting (at the power supply outlet)	2495 psi (172 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)	2000 psi (138 bar)

NOTE: These are general hydraulic system requirements. See tool specification page for tool specific requirements

OPERATION

PREOPERATION PROCEDURES

CHECK POWER SOURCE

1. Each sinker drill has been assembled before leaving the factory, so it is necessary to check whether there is any damage caused in the shipping process or whether there is debris
2. entrained in the assembly when the first use
3. Using a calibrated flow meter and pressure gauge, make sure the hydraulic power source develops a flow of 20 lpm at 155 bar.
4. Make certain that the power source is equipped with a relief valve set to open at 2100-2250 psi/145-155 bar maximum.
5. Make certain that the power source return pressure

CHECK TOOLS

1. Make sure all tool parts are properly assembled
2. Make sure There was no oil leak
3. Make sure all assemblies must be clean and all accessories and interfaces must be securely assembled

CONNECT HOSES

1. Wipe all hose couplers with a clean lint free cloth before making connections.
2. Connect the hoses from the hydraulic power source to the couplers on the sinker drill.
3. Observe the arrow on the couplers to ensure the flow is in the proper direction.

NOTE:

If uncoupled hoses are left in the sun, pressure increase inside the hoses might make them difficult to connect. Whenever possible, connect the free ends of the hoses together.

OPERATION

1. Observe all safety precautions.
2. Connect hydraulic hose, clean coupler before connection.
3. Focus on the object you plan to work on.

IMPORTANT

Never point the hose at bystanders.

4.Put the hydraulic control valve in the "ON".

5.Turn on the hydraulic power source to start operation.

6.When operating, first turn the knob switch to 0 position, and then punch a small pit on the working surface to facilitate the positioning of the drill bit.

7.Adjust the know switch to appropriate level (1-3) for working.

COLD WEATHER OPERATION

If the tool is to be used during cold weather, preheat the hydraulic fluid at low engine speed. When using the normally recommended fluids, fluid temperature should be at or above 50 °F/10 °C (400 ssu/82 centistokes) before use.

Drill deep holes for operation

1. When the depth of the drilling hole is more than 1 meter, an external air source is required for operation. An external air source pipe is inserted at the lower inlet hole..

TROUBLESHOOTING

If symptoms of poor performance develop, the following chart can be used as a guide to correct the problem.

When diagnosing faults in operation of the tool, always make sure the hydraulic power source is supplying the correct hydraulic flow and pressure as listed in the table. Use a flowmeter know to be accurate. check the flow with the hydraulic fluid temperature at least 80 °F/27 °C.

PROBLEM	CAUSE	SOLUTION
Sinker drill will not work	No hydraulic fluid flow or pressure.	Turn on power unit and check that 7–11 gpm/26-40 lpm at 2000 psi/140 bar is available
	Impeller jammed with debris.	Clean the pumping chamber.
	Defective inlet/ return hose	Check and adjust the hose.
Poor performance.	Improper hydraulic fluid flow.	Check that 7–11 gpm/26–40 lpm at 2000 psi/140 bar is available
	Sinker drill inlet hose or coupler restricted.	Remove restriction and thoroughly clean.
	Discharge hose kinked or restricted.	Straighten the hoes. If the hose must bend at the top of the hole, use a piece of split rigid conduit with large diameter of the expanded hose. This keeps the hose from kinking. Use a 90° 4-inch pipe elbow on the trash pump outlet if necessary.
	The temperature of the hydraulic oil is too high(>60° C)	Use a cooling device to cool

SPECIFICATIONS

Weight	20 kg
Flow Range	20-25lpm
Working pressure	90-140bar
Nitrogen pressure	40bar
Size	550x350x130mm
Rotate speed	0-400rpm
Drill bit diameter	38-50mm
Max drill depth	3m
Percussive Power	50J
Torque	15Nm
Air compressor pressure	0.08m3/min , 2bar

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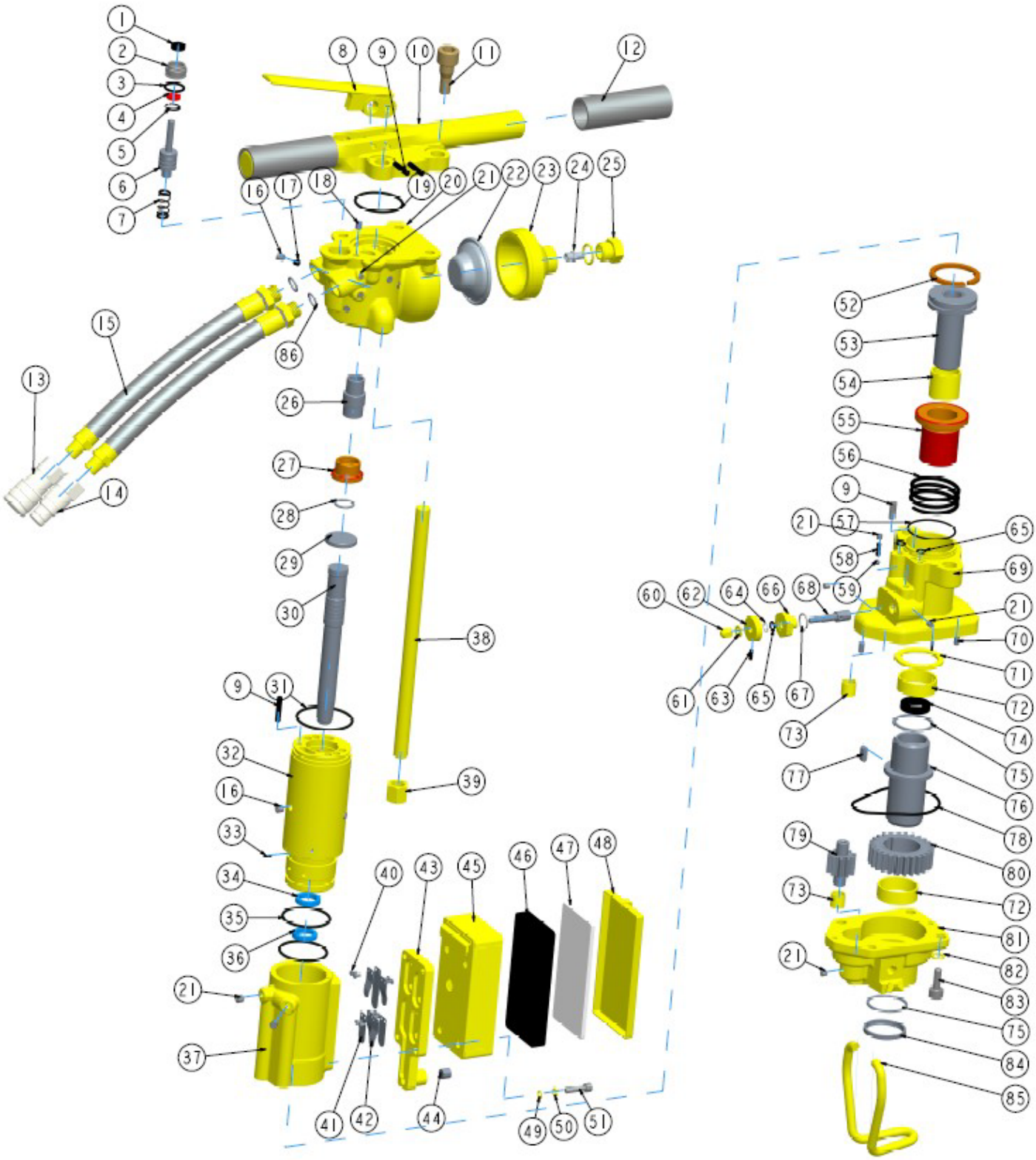
NOTES

PARTS ILLUSTRATION



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PARTS LIST

No.	Item	Qty	Description
1	MFJ0001	1	ROD WIPER
2	LBK16003	1	OIL SEAT
3	MFJ0145	1	O-RING
4	MFJ0002	1	CUP SEAL
5	BZJ0001	1	CIRCLIP
6	LDHD2042	1	SWITCH VALVE
7	BZJ0035	1	COMPRESSION SPRING
8	LBK18004	1	TRIGGER
9	BZJ0420	4	ROLL PIN
10	LDHD2041	1	HANDLE
11	LDHD2040	4	HANDLE FIXING BOLT
12	LBK18005	2	HANDLE GRIP
13	LBK18033	1	3/8 FEMAIE COUPLER
14	LBK18034	1	3/8 MALE COUPLER
15	LBK18032	2	HOSE ASSY
16	BZJ1202	14	SET SCREW
17	LBK16021	1	ORIFICE PLUG
18	BZJ0518	1	HIGH PRESSURE PLUG
19	MFJ0013	1	O-RING
20	LBK16010	1	BREAK FOOT
21	BZJ0522	9	SET SCREW
22	LBK16018	1	ACCUMULATOR DIAPHRAGM
23	LBK16014	1	ACCUMULATOR HOUSING
24	LBK1820499	1	NITROGEN CHARGE
25	LBK18002	1	PLUG
26	LDHD2014	1	RESERSING VALVE
27	LDHD2015	1	RESERSING VALVE BASE
28	MFJ0251	1	O-RING
29	LDHD2012	1	VALVE BASE
30	LDHD2001	1	PISTON
31	MFJ0141	1	O-RING
32	LDHD2013	1	SLEEVE
33	BZJ0419	1	ROLL PIN
34	MFJ0016	1	U SEAL
35	MFJ0013	2	O-RING
36	MFJ0017	1	DUST SEAL
37	LDHD2010	1	AIR COMPRESSOR HOUSING
38	LDHD2025	2	ROD
39	LBK16013	2	ROD SCREW
40	BZJ0534	8	HEAD SCREW
41	LDHD2020	4	FILTER
42	LDHD2021	4	FILTER
43	LDHD2017	1	AIR INLET BASE
44	BZJ1296	1	END CAP

45	LDHD2019	1	INLET BOX
46	LDHD2034	1	SPONGE
47	LDHD2033	1	FILTER SPONGE
48	LDHD2018	1	INLET BOX CAP
49	BZJ0164	4	WASHER
50	BZJ0342	4	WASHER
51	BZJ0364	4	M6*20 HEX SOCKET SCREW
52	LDHD2031	1	SEAL
53	LDHD2022	1	PISTON
54	LDHD2027	1	BEARING SLEEVE
55	LDHD2016	1	PISTON BUSH
56	BZJ1204	1	SPRING
57	MFJ0014	1	O-RING
58	BZJ1203	1	SPRING
59	BZJ0091	1	STEEL BALL
60	LDHD2011	1	ROTATE VALVE CAP
61	MFJ0120	1	WASHER
62	LDHD2008	1	KNOB
63	BZJ0506	1	SCREW
64	MFJ0019	1	RING
65	MFJ0012	3	O-RING
66	LDHD2009	1	ROTATE VALVE BASE
67	MFJ0043	1	O-RING
68	LDHD2007	1	ROTATE VALVE
69	LDHD2023	1	MOTOR
70	BZJ0533	2	PIN
71	LDHD2006	1	COPPER WASHER
72	LDHD2028	2	BUSHING
73	LDHD2026	2	BEARING BUSH
74	LDHD2038	1	DUST SEAL
75	MFJ0249	2	SEAL
76	LDHD2005	1	SLEEVE
77	BZJ0149	1	KEY
78	MFJ0015	1	O-RING
79	LDHD2002	1	DRIVING GEAR
80	LDHD2003	1	DRIVEN GEAR
81	LDHD2004	1	GEAR HOUSING
82	BZJ0162	4	WASHER
83	BZJ0363	4	SCREW
84	MFJ0421	1	DUST SEAL
85	LDHD2024	1	LATCH
86	MFJ0251	1	O-RING

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