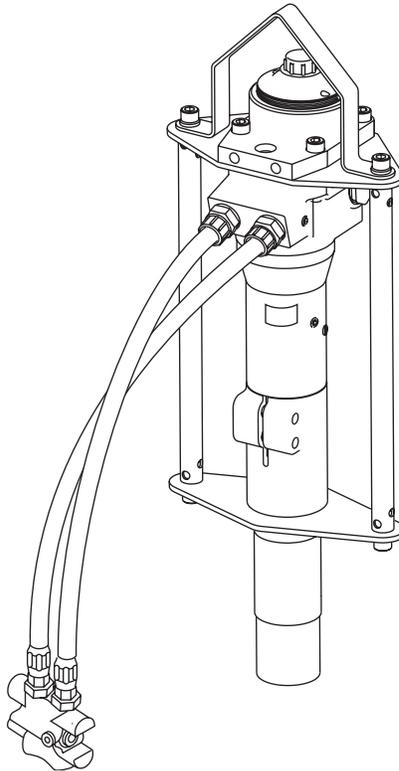


INSTRUCTION MANUAL

Fairmont[®]



HRD-1 and HRD-58 Hydraulic Ground Rod Drivers



Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

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Description

The HRD-1 and HRD-58 Fairmont Ground Rod Drivers are heavy-duty, hydraulically powered reciprocating tools designed for driving ground rods of various lengths. The high power-to-weight ratio and low vibration reduce operator fatigue and increase productivity. Included is a remote double-acting operating valve that allows operation on either open-center or closed-center hydraulic systems.

The HRD-1 can drive rods up to 25 mm (1") in diameter. The HRD-58 accommodates rods up to 16 mm (0.625") in diameter.

Safety

Safety is essential in the use and maintenance of Fairmont tools and equipment. This manual and any markings on the tool provide information for avoiding hazards and unsafe practices related to the use of this tool. Observe all of the safety information provided.

Purpose of this Manual

This manual is intended to familiarize personnel with the safe operation and maintenance procedures for the following Fairmont tools:

- HRD-1 1" Ground Rod Driver
- HRD-58 5/8" Ground Rod Driver

Keep this manual available to all personnel.
 Replacement manuals are available upon request at no charge.

Other Publications

Tool Owners/Users

SAE Standard J1273 (Hose and Hose Assemblies):
 Publication 99930323

All specifications are nominal and may change as design improvements occur. Greenlee Textron Inc. shall not be liable for damages resulting from misapplication or misuse of its products.
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KEEP THIS MANUAL

IMPORTANT SAFETY INFORMATION



SAFETY ALERT SYMBOL

This symbol is used to call your attention to hazards or unsafe practices which could result in an injury or property damage. The signal word, defined below, indicates the severity of the hazard. The message after the signal word provides information for preventing or avoiding the hazard.

⚠ DANGER

Immediate hazards which, if not avoided, WILL result in severe injury or death.

⚠ WARNING

Hazards which, if not avoided, COULD result in severe injury or death.

⚠ CAUTION

Hazards or unsafe practices which, if not avoided, MAY result in injury or property damage.



⚠ WARNING

Read and understand all of the instructions and safety information in this manual before operating or servicing this tool.

Failure to observe this warning could result in severe injury or death.



⚠ WARNING

Skin injection hazard:

- Do not use hands to check for leaks.
- Do not hold hose or couplers while the hydraulic system is pressurized.
- Depressurize the hydraulic system before servicing.

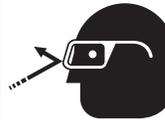
Oil under pressure easily punctures skin causing serious injury, gangrene or death. If you are injured by escaping oil, seek medical attention immediately.

⚠ WARNING

Do not exceed the following hydraulic power source maximums:

- Hydraulic flow: 30 l/min (8 gpm)
- Pressure relief: 160 bar (2300 psi)
- Back pressure: 15 bar (200 psi)

Failure to observe this warning could result in severe injury or death.



⚠ WARNING

Wear eye protection when operating or servicing this tool.

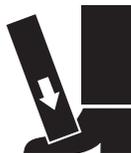
Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.



⚠ WARNING

Wear hearing protection when using this tool.

Long-term exposure to high noise levels could result in hearing loss.



⚠ WARNING

Wear foot protection when using this tool.

Failure to observe this warning could result in serious injury.

IMPORTANT SAFETY INFORMATION

	<p>⚠ WARNING</p>
	<p>Wear a hard hat when using this tool.</p> <p>Failure to observe this warning could result in serious injury or death.</p>

<p>⚠ WARNING</p>
<p>Do not reverse hydraulic flow. Operation with hydraulic flow reversed can cause tool malfunction. Connect the supply (pressure) hose and return (tank) hose to the proper ports.</p> <p>Failure to observe this warning could result in severe injury or death.</p>

	<p>⚠ WARNING</p>
	<p>Tool and accessory may be hot during and after operation. Allow to cool before handling, or handle with heat-resistant gloves.</p> <p>Contact with hot surfaces could result in serious injury.</p>

<p>⚠ WARNING</p>
<p>Do not change accessories, inspect, adjust or clean tool when it is connected to a power source.</p> <p>Accidental startup could result in serious injury or death.</p>

	<p>⚠ WARNING</p>
	<p>Electric shock hazard:</p> <p>This tool is not insulated. When using this unit near energized electrical lines:</p> <ul style="list-style-type: none"> • Use only certified non-conductive hoses and proper personal protective equipment. • Select and maintain the hydraulic fluid to meet the minimum dielectric standards required by your safety department. <p>Failure to observe this warning could result in severe injury or death.</p>

<p>⚠ WARNING</p>
<p>Serious injury could result if the operator does not maintain control of the tool.</p> <ul style="list-style-type: none"> • Wear slip-proof gloves when operating this tool. • Maintain a firm grip on the tool, using both hands at all times. • Do not lock the trigger in the power-ON position. Operator cannot stop tool when the trigger is locked. <p>Failure to observe these warnings could result in severe injury or death.</p>

<p>⚠ WARNING</p>
<p>Do not disconnect tool, hoses, or fittings while the power source is running or if the hydraulic fluid is hot. Hot hydraulic fluid could cause serious burns.</p>

<p>⚠ WARNING</p>
<p>Accumulator is charged with nitrogen under high pressure. This pressure must be unloaded before dismounting.</p> <p>Failure to observe this warning could result in severe injury or death.</p>

IMPORTANT SAFETY INFORMATION**⚠ CAUTION**

Vibration hazard:

Apply just enough pressure to do the work. Applying excess pressure to the tool can cause operator discomfort or temporary numbness.

Failure to observe this precaution may result in injury.

⚠ CAUTION

These tools can weigh more than 25 kg (55 lb) and require two persons to lift and transport.

Failure to observe this precaution may result in injury.

⚠ CAUTION

Hydraulic oil can cause skin irritation.

- Handle the tool and hoses with care to prevent skin contact with hydraulic oil.
- In case of accidental skin contact with hydraulic oil, wash the affected area immediately to remove the oil.

Failure to observe these precautions may result in injury.

⚠ CAUTION

- Inspect the hydraulic hoses and couplings every operating day. Repair or replace if leakage, cracking, wear, or damage is evident. Damaged hoses or couplings may fail, resulting in injury or property damage.
- Use this tool for manufacturer's intended purpose only. Use other than that which is described in this manual may result in injury or property damage.
- Make sure all bystanders are clear of the work area when handling, starting, and operating the tool. Nearby personnel may be injured by flying or falling debris or by flying parts in the event of a tool malfunction.

IMPORTANT

Procedure for connecting or disconnecting hydraulic hoses, fittings or components:

1. Move the flow lever on the power source to the OFF position.
2. Stop the hydraulic power source.
3. Follow the sequence under "Hose Connections" to prevent pressure buildup. In case some pressure has built up, loosen hoses, fittings or components slowly.

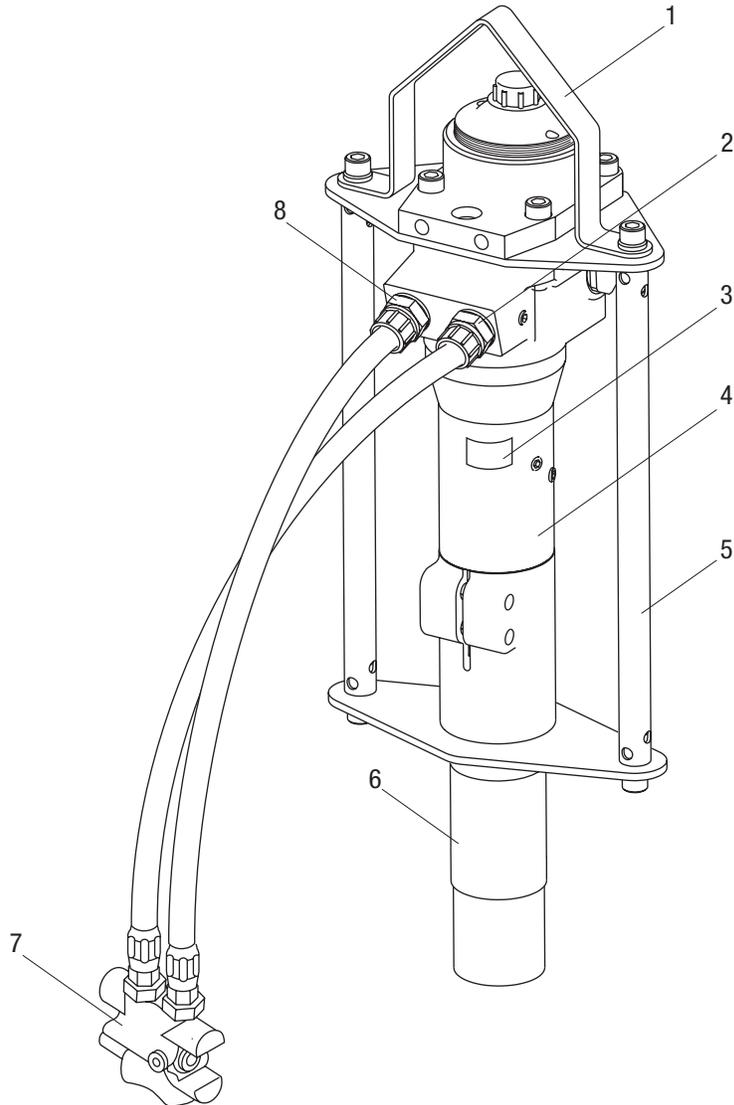
IMPORTANT

Emergency stop procedure:

1. Release the trigger.
2. Shut off the hydraulic power source.

Note: Keep decals clean and legible. Replace decals when necessary.

When disposing of any components (hydraulic hoses, hydraulic fluid, worn parts, etc.), do so in accordance with federal, state, and local laws or ordinances.

Identification**Ground Rod Drivers**

- | | |
|-----------------------|---------------------------|
| 1. Lifting Bracket | 5. Operator Handles |
| 2. Return (tank) Port | 6. Front Head |
| 3. Serial Number | 7. Remote Control Valve |
| 4. Driver Body | 8. Supply (pressure) Port |

Specifications

HRD-1 and HRD-58

Type of Hydraulic System.....Open-center
or closed-center

Weight

Without Hoses and Remote Control Valve 20.5 kg (45 lb)

With Hoses and Remote Control Valve 24.0 kg (53 lb)

Working Pressure 105 to 125 bar (1500 to 1800 psi)

Hydraulic Oil

Working Temperature 30 to 70 °C (86 to 158 °F)

Accumulator Charging

Pressure (nitrogen) 50 bar (723 psi)

Blow Frequency

@ 30 l/min (8 gpm) 29 Hz (1740/min)

Hydraulic Ports at Tool 1/2" BSP

Hydraulic Ports at Remote Control Valve

Pressure 9/16–18 SAE O-ring boss

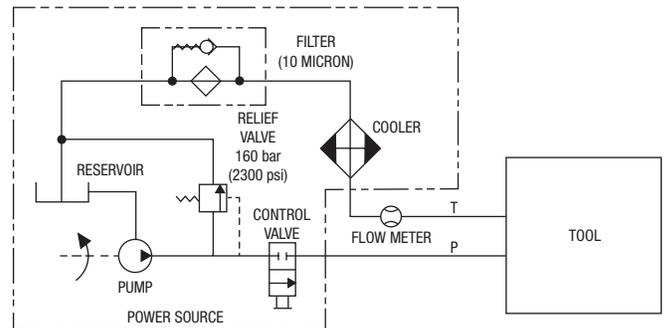
Return 3/4–16 SAE O-ring boss

Hydraulic Power Source

<p>⚠ WARNING</p>
<p>Do not exceed the following hydraulic power source maximums:</p> <ul style="list-style-type: none"> • Hydraulic flow: 30 l/min (8 gpm) • Pressure relief: 160 bar (2300 psi) • Back pressure: 15 bar (200 psi) <p>Failure to observe this warning could result in severe injury or death.</p>

- Optimal performance occurs at maximum flow.
- Maximum hydraulic fluid temperature must not exceed 70 °C (158 °F). A sufficient oil cooling capacity is needed to limit the hydraulic fluid temperature.
- Hydraulic flow must not exceed 30 l/min (8 gpm). Install a flow meter in the return line to measure the rate of hydraulic flow before using the tool.
- Pressure relief valve setting must not exceed 160 bar (2300 psi) at your tool's maximum flow. Locate the pressure relief valve in the supply circuit to limit excessive hydraulic pressure to the tool.

Hydraulic Schematic



Specifications (cont'd)

Recommended Hydraulic Fluid

Viscosity

Ideal20 to 40 cSt

Allowable.....15 to 1000 cSt

Viscosity Index Min. 100

Standard mineral or synthetic oil can be used.

When the tool works continuously, the oil temperature will steady at a certain level called the oil working temperature. Depending on the nature of the job and the cooling capacity of the system, the oil working temperature will be 20 °C to 40 °C (68 °F to 104 °F) above the air temperature. At working temperature, the oil viscosity must be within the ideal area. The tool may not be operated if the oil viscosity is not within the allowable area or if the temperature is not within -20 °C to 70 °C (-4 °F to 158 °F).

The viscosity index expresses the dependence of the viscosity on the temperature. Thus, a high viscosity index is preferable so that the oil can be used within a wide temperature interval.

Applicable Oil Types

TYPE OF OIL	(-4 °F)	(14 °F)	(32 °F)	(50 °F)	(68 °F)	(86 °F)	(104 °F)	(122 °F)	(140 °F)	(158 °F)	Viscosity at 40 °C (104 °F)
	-20 °C	-10 °C	0 °C	10 °C	20 °C	30 °C	40 °C	50 °C	60 °C	70 °C	
BP Biohyd 32											36.0 cSt
BP Biohyd 46											44.0 cSt
BP Biohyd SE 46											46.0 cSt
BP Biohyd SE 68											72.2 cSt
CASTROL Biotech HTG 32											36.8 cSt
MOBIL EAL 224 H											36.0 cSt
Q8 Holbein 46											48.4 cSt
SHELL Naturelle HF											35.0 cSt
STATOIL M 32-68											47.4 cSt
SHELL Tellus oil T46											46.0 cSt
ESSO Unavis N46											45.7 cSt
TEXACO Rando oil HDZ46											51.0 cSt
MOBIL DTE 15											44.9 cSt

 Permitted oil temperature

 Recommended oil temperature

Hoses and Fittings

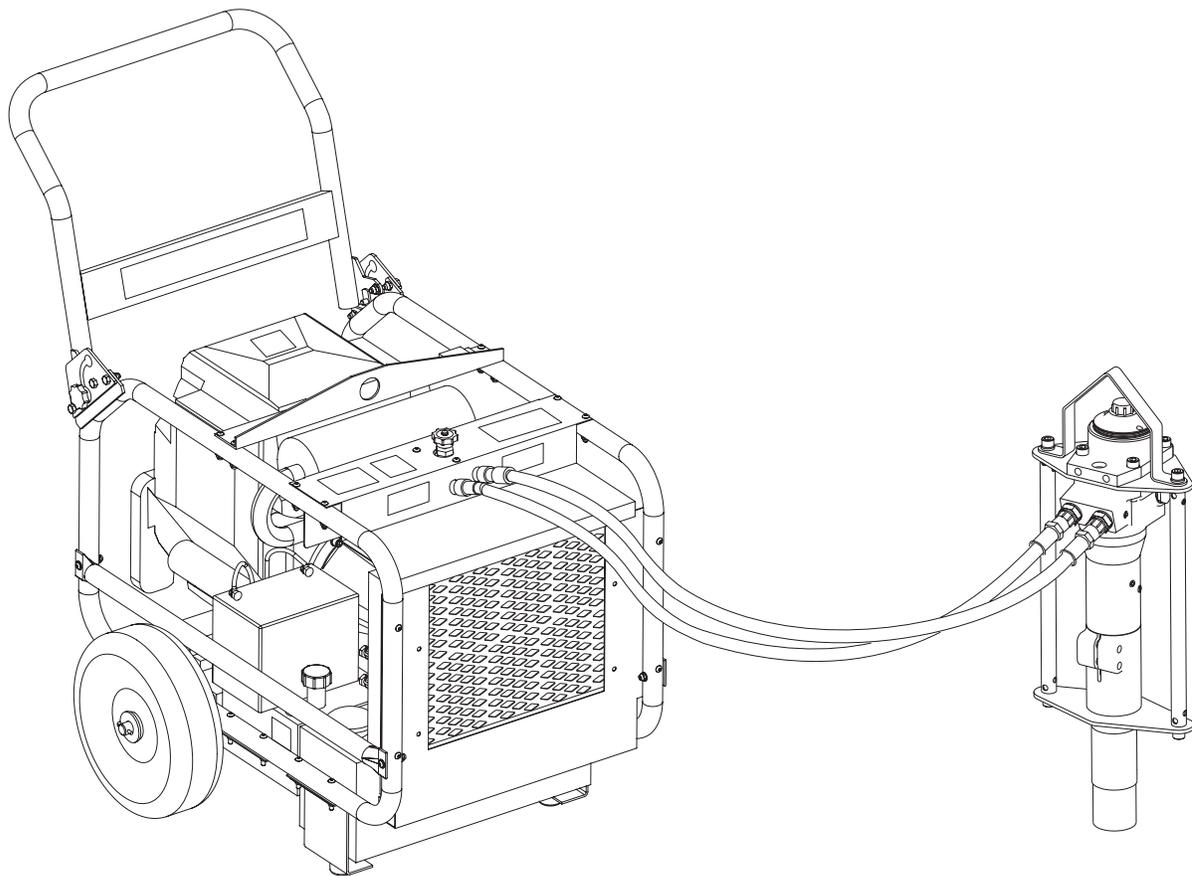
Installation and Maintenance

Refer to publication 99930323, SAE J1273
(Hose and Hose Assemblies).

Replacement

Refer to a Fairmont catalog or bulletin 99910322 for a
complete selection of hoses and fittings.

Typical Setup



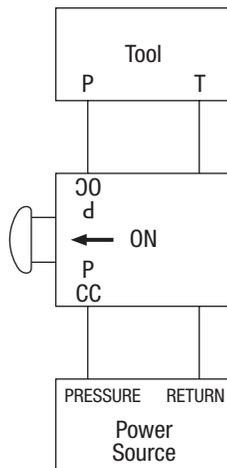
Hose Connections

⚠ WARNING

Do not disconnect tool, hoses, or fittings while the power source is running or if the hydraulic fluid is hot. Hot hydraulic fluid could cause serious burns.

Connecting Hoses on a Closed-Center Hydraulic System

1. Stop the hydraulic power source. Refer to the illustration below.

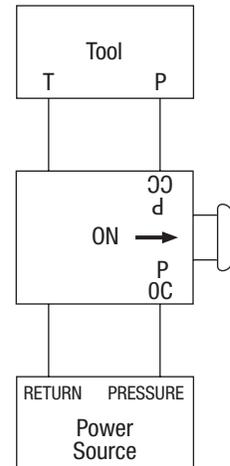


**Closed-Center Hydraulic System
Hose Connections**

2. Connect the return (tank) hose from the tool's tank port (port T) to the control valve return port (next to the port labeled P/OC, the open-center pressure port).
 3. Connect the return (tank) hose from the control valve's tank port (next to the port labeled P/CC, the closed-center pressure port) to the power source's tank port (port T).
- Note: Connect the return (tank) hoses before the supply (pressure) hoses to prevent pressure buildup inside the tool.*
4. Connect the supply (pressure) hose from the tool's pressure port (port P) to the control valve's open-center pressure port (port P/OC).
 5. Connect the supply (pressure) hose from the control valve's closed-center pressure port (port P/CC) to the power source's pressure port (port P).

Connecting Hoses on an Open-Center Hydraulic System

1. Stop the hydraulic power source. Refer to the illustration below.



**Open-Center Hydraulic System
Hose Connections**

2. Connect the return (tank) hose from the tool's tank port (port T) to the control valve return port (next to the port labeled P/CC, the closed-center pressure port).
 3. Connect the return (tank) hose from the control valve's tank port (next to the port labeled P/OC, the open-center pressure port) to the power source's tank port (port T).
- Note: Connect the return (tank) hoses before the supply (pressure) hoses to prevent pressure buildup inside the tool.*
4. Connect the supply (pressure) hose from the tool's pressure port (port P) to the control valve's closed-center pressure port (port P/CC).
 5. Connect the supply (pressure) hose from the control valve's open-center pressure port (port P/OC) to the power source's pressure port (port P).

Disconnecting Hoses

1. Move the flow lever on the power source to the OFF position.
2. Stop the hydraulic power source.
3. Disconnect hoses in the reverse order of the connection sequence.
4. Install dust caps over the ports to prevent contamination.

Operation

	⚠ WARNING
	<p>Electric shock hazard: This tool is not insulated. When using this unit near energized electrical lines:</p> <ul style="list-style-type: none"> • Use only certified non-conductive hoses and proper personal protective equipment. • Select and maintain the hydraulic fluid to meet the minimum dielectric standards required by your safety department. <p>Failure to observe this warning could result in severe injury or death.</p>

	⚠ WARNING
	<p>Skin injection hazard:</p> <ul style="list-style-type: none"> • Do not use hands to check for leaks. • Do not hold hose or couplers while the hydraulic system is pressurized. • Depressurize the hydraulic system before servicing. <p>Oil under pressure easily punctures skin causing serious injury, gangrene or death. If you are injured by escaping oil, seek medical attention immediately.</p>

⚠ WARNING
<p>Do not exceed the following hydraulic power source maximums:</p> <ul style="list-style-type: none"> • Hydraulic flow: 30 l/min (8 gpm) • Pressure relief: 160 bar (2300 psi) • Back pressure: 15 bar (200 psi) <p>Failure to observe this warning could result in severe injury or death.</p>

	⚠ WARNING
	<p>Wear eye protection when operating or servicing this tool. Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.</p>

	⚠ WARNING
	<p>Wear hearing protection when using this tool. Long-term exposure to high noise levels could result in hearing loss.</p>

	⚠ WARNING
	<p>Wear foot protection when using this tool. Failure to observe this warning could result in serious injury.</p>

	⚠ WARNING
	<p>Wear a hard hat when using this tool. Failure to observe this warning could result in serious injury or death.</p>

⚠ WARNING
<p>Serious injury could result if the operator does not maintain control of the tool.</p> <ul style="list-style-type: none"> • Wear slip-proof gloves when operating this tool. • Maintain a firm grip on the tool, using both hands at all times. • Do not lock the trigger in the power-ON position. Operator cannot stop tool when the trigger is locked. <p>Failure to observe these warnings could result in severe injury or death.</p>

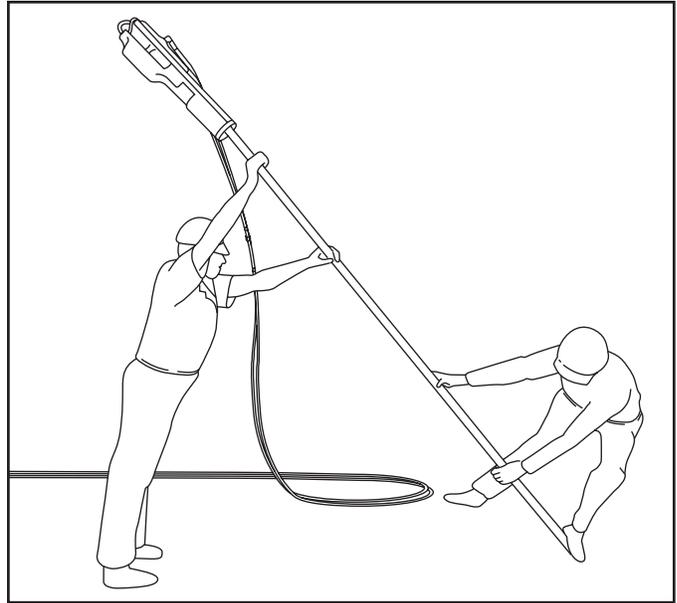
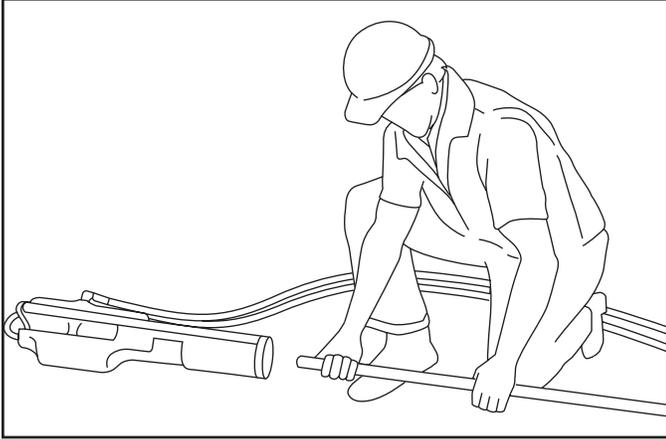
IMPORTANT
<p>Emergency stop procedure:</p> <ol style="list-style-type: none"> 1. Release the trigger. 2. Shut off the hydraulic power source.

Operation (cont'd)

1. Start the power source.

Note: Allow the power source to run for a few minutes to warm the hydraulic fluid.

2. Slide the ground rod into the driver, as shown.

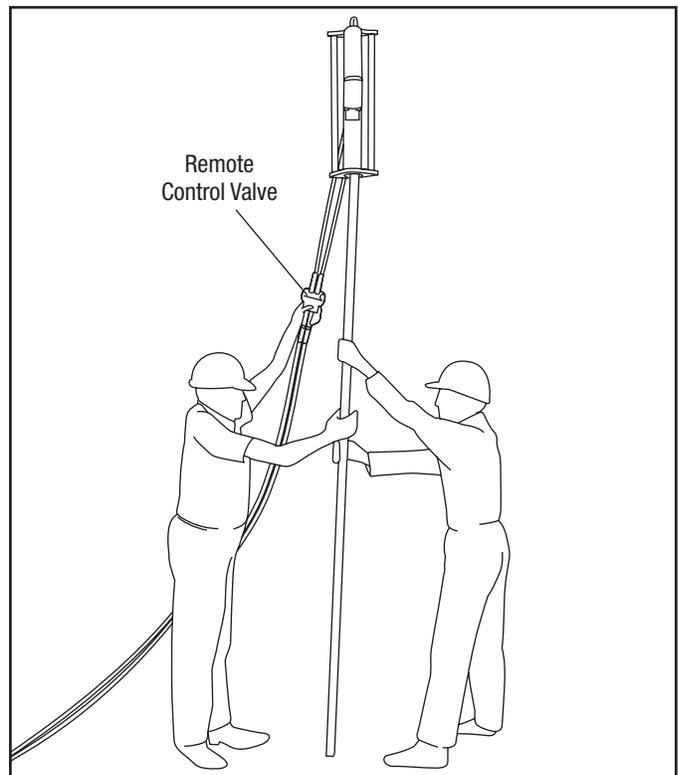
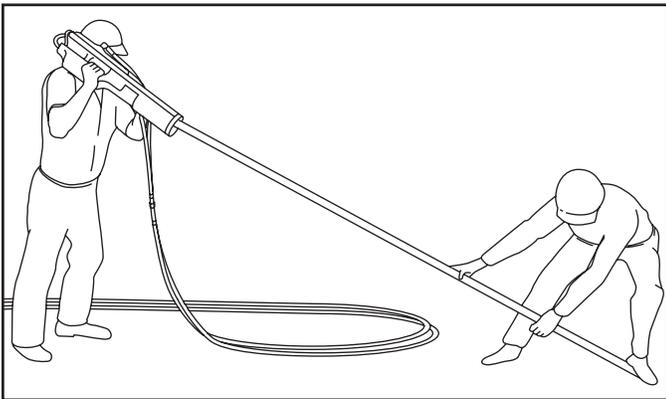


3. Lift the rod and driver to a vertical position, as shown.

Notes: Rods longer than 2 m (6') may require a second person to lift the driver and steady the rod.

When the ground rod driver is within reach, grasp both handles firmly.

4. To start the tool, move the control spool on the remote control valve to the ON position.



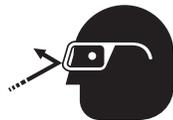
5. To stop the tool, move the control spool on the remote control valve to the OFF position.
6. After the rod is driven, remove the driver.
7. When the tool is not in use, stop the power source to reduce heat and wear on tool components.

Maintenance

⚠ WARNING

Do not change accessories, inspect, adjust or clean tool when it is connected to a power source. Accidental startup could result in serious injury or death.

⚠ WARNING



Wear eye protection when operating or servicing this tool. Failure to wear eye protection could result in serious eye injury from flying debris or hydraulic oil.

Use this maintenance schedule to maximize the tool's service life.

Note: Keep decals clean and legible. Replace decals when necessary.

When disposing of any components (hydraulic hoses, hydraulic fluid, worn parts, etc.), do so in accordance with federal, state, and local laws or ordinances.

Daily

1. Wipe all tool surfaces clean.
2. Inspect the hydraulic hoses and fittings for signs of leaks, cracks, wear, or damage. Replace if necessary.
3. Install dust caps over the hydraulic ports when the tool is disconnected.
4. Apply a light oil to all moving parts.

Monthly

Perform a thorough inspection of the hydraulic hoses and fittings as described in publication 99930323, SAE J1273 (Hose and Hose Assemblies).

Annually

If required by your organization, have the tool inspected by an authorized Fairmont service center.

Storage

If the tool requires long-term storage, protect the striking piston against corrosion. Press the striking piston to its upper position (through the anvil bushing). As the quick-release couplings are blocked when disassembled, the striking piston must be pressed upward with the hoses mounted but the power source turned off.

Maintenance (cont'd)

Accumulator Recharging Procedure

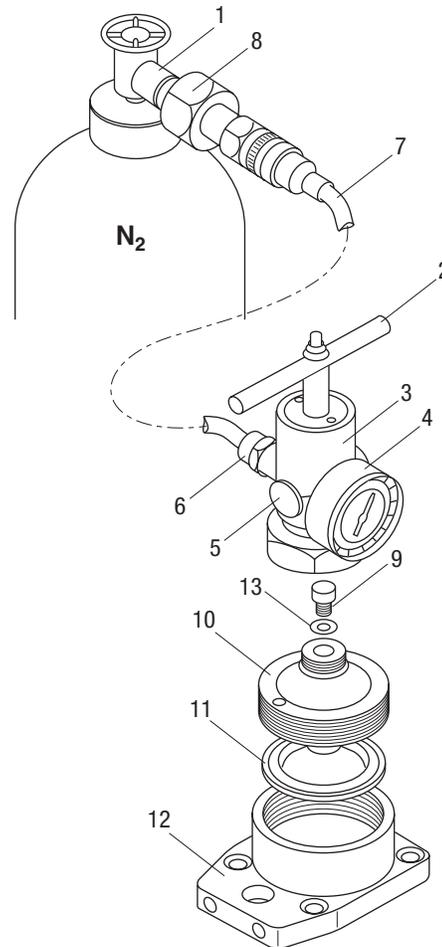
⚠ WARNING

Accumulator is charged with nitrogen under high pressure. This pressure must be unloaded before dismounting.

Failure to observe this warning could result in severe injury or death.

1. Check that the oil inlet of the accumulator is depressurized.
 2. Remove the protective cap over the charging screw (9) of the accumulator. The socket head screw must be perfectly clean.
 3. Loosen the charging screw on top of the accumulator (maximum of two turns). Totally neutralize the pressure before dismounting the accumulator.
 4. Unscrew the accumulator cover (10), take out the diaphragm (11), and check for leakage and damage.
 5. Clean, check, and replace damaged or worn parts.
 6. Grease the seal faces of the accumulator body (12) and the accumulator cover (10) with silicone.
 7. Spray both sides of the diaphragm with silicone. Place the diaphragm with its bead pointing downward so that it fits in the groove of the accumulator body (12).
 8. Unscrew the charging screw and replace the seal ring (13).
 9. Grease the thread of the accumulator cover (10) with copper grease and tighten to approximately 200 Nm (148 ft-lb).
 10. Fasten the charging screw lightly, and loosen it two turns afterward.
 11. Mount the filling device on the filling socket of the accumulator cover and fasten it lightly while turning the handle (2) forward and backward, ensuring that the hexagon resiliently fits into the charging screw.
 12. Close the bleeder valve (5) by turning it clockwise.
 13. Connect the hose (7) to the check valve (6).
 14. Connect the free end of the hose directly to the nitrogen bottle by using the reducing nipple.
- Note: Use only pure nitrogen.*
15. Read the pressure on the gauge (4). Carefully open the valve of the nitrogen bottle (1) and charge with nitrogen until the pressure is approximately 20% higher than required charging pressure. Close the valve of the nitrogen bottle.
 16. If the gauge (4) shows too high a nitrogen pressure, loosen the bleeder valve (5) until the required pressure is achieved.

17. Close the charging screw (9) of the accumulator by turning the handle (2) clockwise.
18. Unload the nitrogen hose by opening the bleeder valve (5).
19. Dismount the filling device and check the charging screw (9) for leakage with drops of oil.
20. Fit the protective cap over the accumulator.



50027182 Accumulator filling device
(includes items 2–8)

50027174 Accumulator kit (fully charged)
(includes items 9–14)

- | | |
|-------------------------------------|---------------------------------|
| (1) Valve of nitrogen bottle | (9) Charging screw |
| (2) Handle | (10) Accumulator cover |
| (3) Filling adaptor | (11) Diaphragm |
| (4) Gauge | (12) Accumulator body |
| (5) Bleeder valve | (13) Seal ring |
| (6) Check valve | (14) Protective cap (not shown) |
| (7) Hose, approximately 3 m (10 ft) | |
| (8) Reducing nipple (24.32-14WFG) | |

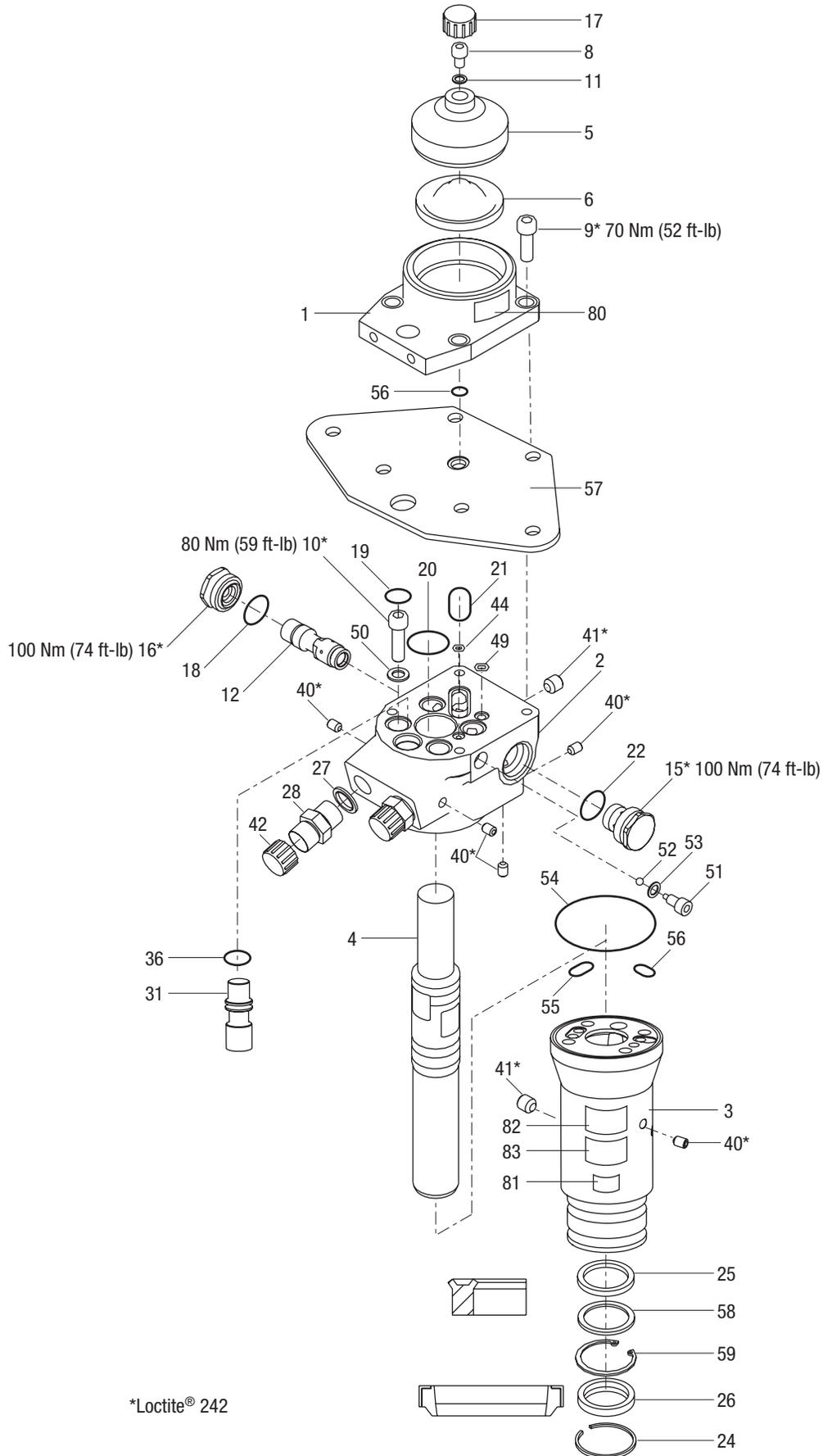
Troubleshooting

Before troubleshooting, determine whether the problem is in the tool, the hoses, or the power source. Substitute a tool, hoses, or power source known to be in good working order to eliminate the item that is not operating.

If the problem is in the tool, refer to the troubleshooting table below. If the problem is in the power source, refer to the troubleshooting section of the power source instruction manual.

Problem	Probable Cause	Probable Remedy
Tool does not operate.	Improper power source. Hydraulic fluid level low. Incorrect hydraulic fluid viscosity.	Verify that the power source meets the specifications. Check the fluid level. Check system for leaks. Use hydraulic fluid with the correct viscosity.
Tool operates slowly or erratically.	Hydraulic fluid cold. Power source not adjusted correctly. Hydraulic fluid level low. Air in the hydraulic system. Incorrect hydraulic fluid viscosity.	Allow fluid to warm to the operating temperature. Actuate the tool intermittently to reduce the warming time. Refer to the power source operator's manual. Set the flow and pressure to correspond with the tool. Check the fluid level. Check system for leaks. Refer to the power source manufacturer's instructions for removing air from the system. Use hydraulic fluid with the correct viscosity.
Tool feels hot.	Hydraulic fluid level low. Incorrect hydraulic fluid viscosity. Hydraulic fluid dirty.	Check the fluid level. Check for leaks. Use hydraulic fluid with the correct viscosity. Refer to the power source owner's manual for procedure to replace hydraulic oil and filter.
Strike rate is normal; blow energy is weak.	Low accumulator gas pressure. Broken accumulator diaphragm.	Return tool to an authorized Fairmont service center. Return tool to an authorized Fairmont service center.

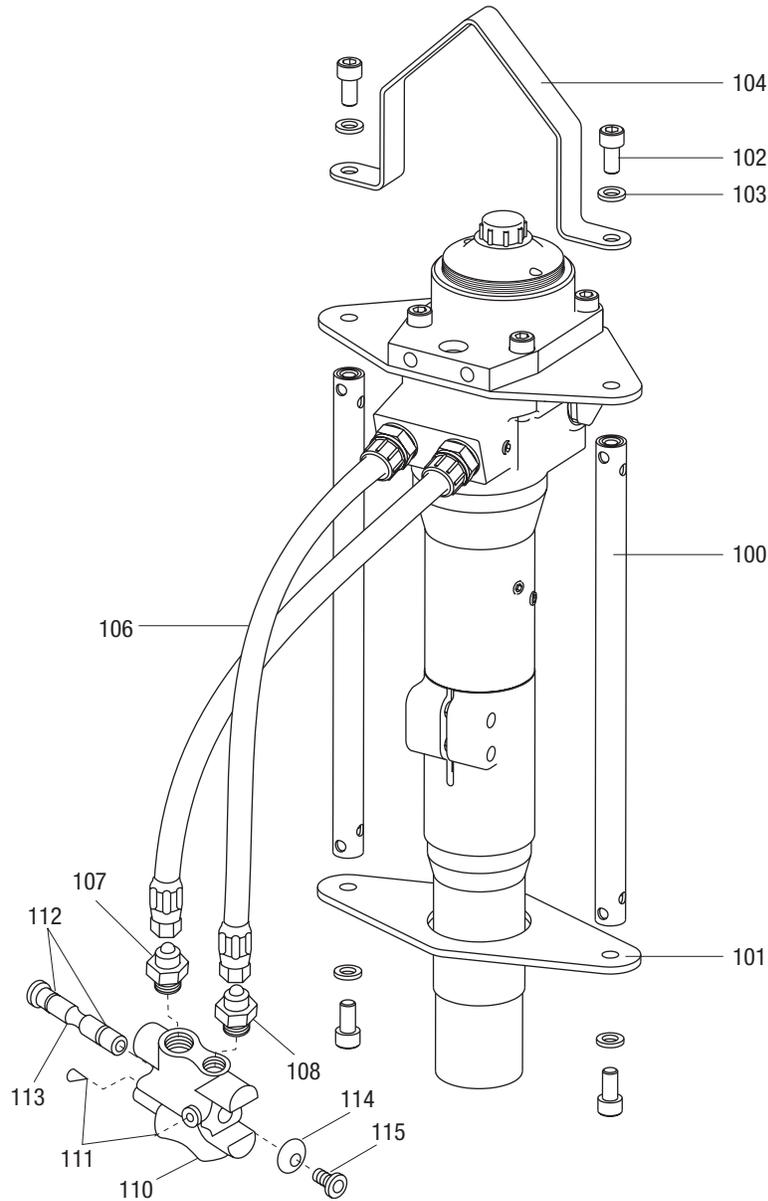
Illustration—Main



Parts List—Main

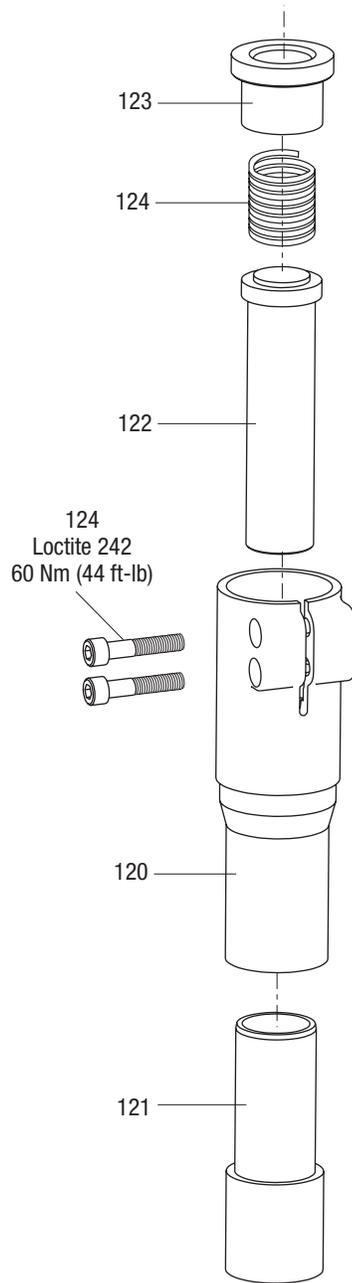
Key	Part No.	Description	Qty	Key	Part No.	Description	Qty
1	50022083	Accumulator body	1	36*	50022512	O-ring, Ø16.3x2.4.....	1
2	50022130	Valve housing	1	40	50022555	Fitting, 02 KRG	6
3	50022148	Cylinder.....	1	41	50022563	Fitting, 04 KRG	3
4	50028871	Striking piston	1	42	50028731	Protective cap, 3/4" JIC.....	2
5	50022164	Accumulator cover	1	44*	50022768	O-ring, Ø6x2.....	1
6	50022172	Diaphragm	1	49*	50022784	O-ring, Ø8x2.....	1
8	50022180	Charging screw	1	50	50022814	Backup washer	4
9	50022202	Screw, M10x35	4	51	50022822	Screw.....	1
10	50022202	Screw, M10x35	4	52	50022830	Check valve ball	1
11*	50022210	Seal ring, Ø8/Ø12x1	1	53*	50022849	Seal ring, Ø9/Ø14x1	1
12	50024710	Spool.....	1	54*	50022857	O-ring, Ø82x1.5.....	1
15	50022253	Guide socket	1	55*	50022881	O-ring, Ø16x1.5.....	1
16	50022261	Spool socket.....	1	56*	50022890	O-ring, Ø13x1.5.....	2
17*	50022270	Protective cap, M24x1.5.....	1	57	50028880	Top plate GRD	1
18*	50022288	O-ring, Ø24x1.5.....	1	58*	50022962	Backup washer, Ø32.7/45x2.5.....	1
19*	50022296	O-ring, Ø18x2.....	4	59*	50023063	Locking ring	1
20*	50022300	O-ring, Ø30x2.....	1	Decals			
21*	50022318	O-ring, Ø32x2.....	1	80	50110764	Decal, accumulator.....	1
22*	50022326	O-ring, Ø25x1.5.....	1	81	50109499	Plate, identification.....	1
24*	50022334	Locking ring	1	82	50463268	Decal, Fairmont	1
25*	50022342	Seal, Ø32/Ø40x6	1	83	50490095	Decal, warning	1
26*	50022350	Seal, Ø32/Ø45x7/10	1	Kits			
27*	50022369	Seal ring, 1/2"	2	*	50028782	Seal kit (includes items marked with an asterisk)	
28	50028767	Adapter, 08-12	2				
31	50028820	Trigger cartridge.....	1				

Illustration and Parts List—Handles, Hoses, and Remote Control Valve



Key	Part No.	Description	Qty	Key	Part No.	Description	Qty
Tube Handles and Lifting Bracket				Remote Control Valve			
100	50028944	Handle W.A.	2	111952	Control valve, complete		
101	50028960	Bottom plate.....	1	110	111953K	Valve body.....	1
102	50031082	Screw, M10x20	4	111	F021673	Pipe plug, 1/16"	2
103	50028758	Washer, Ø10.....	4	112	F015257	O-ring, .437 x .562 x .062-68	2
104	50028979	Lifting bracket.....	1	113	113418	Spool.....	1
Hoses				114	106576	Button	2
106	500 28732	Whip hose, 70"	2	115	F018627	Screw, cap, #10-24 x .500, flat head	2
107	F013516	Adapter	1				
108	F019509	Adapter	1				

Illustration and Parts List—Nose Part



Key	Part No.	Description	Qty	Key	Part No.	Description	Qty
HRD-1				HRD-58			
	50028790	Nose part, 1", complete			50028804	Nose part, 5/8", complete	
120	50028898	Nose part	1	120	50028898	Nose part	1
121	50028901	Anvil bushing.....	1	121	50028901	Anvil bushing.....	1
122	50028910	Anvil, 25 mm (1")	1	122	50028936	Anvil, 16 mm (5/8")	1
123	52026861	Spacer	1	123	50026861	Spacer	1
124	52022622	Spring	1	124	52022622	Spring	1
125	50023756	Screw, M10x55	2	125	50023756	Screw, M10x55	2



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A Textron Company

USA	800-435-0786	Fax: 800-451-2632
	815-397-7070	Fax: 815-397-1865
Canada	800-435-0786	Fax: 800-524-2853
International	+1-815-397-7070	Fax: +1-815-397-9247

4455 Boeing Drive • Rockford, IL 61109-2988 • USA • 815-397-7070
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