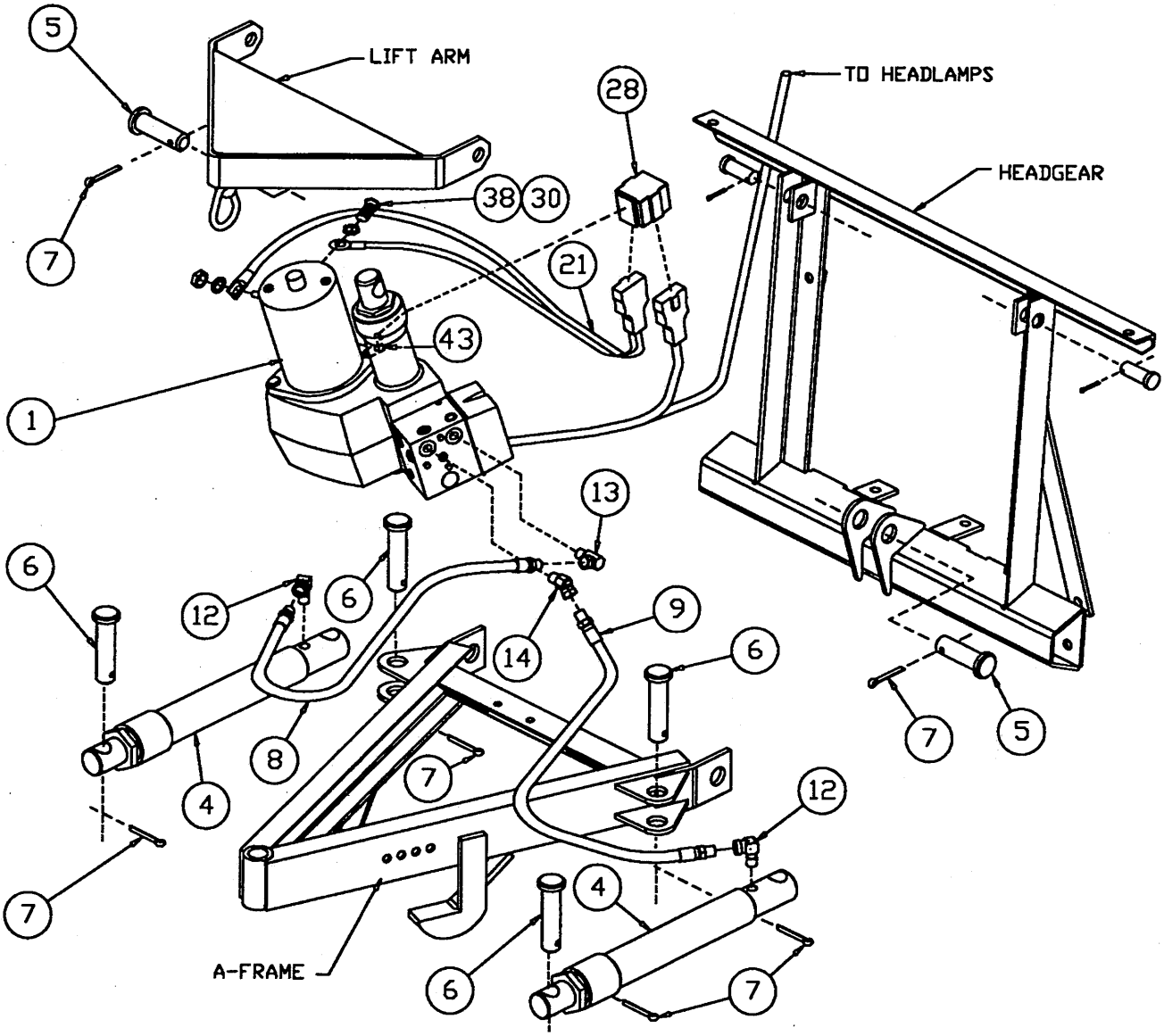
8225/ 8240

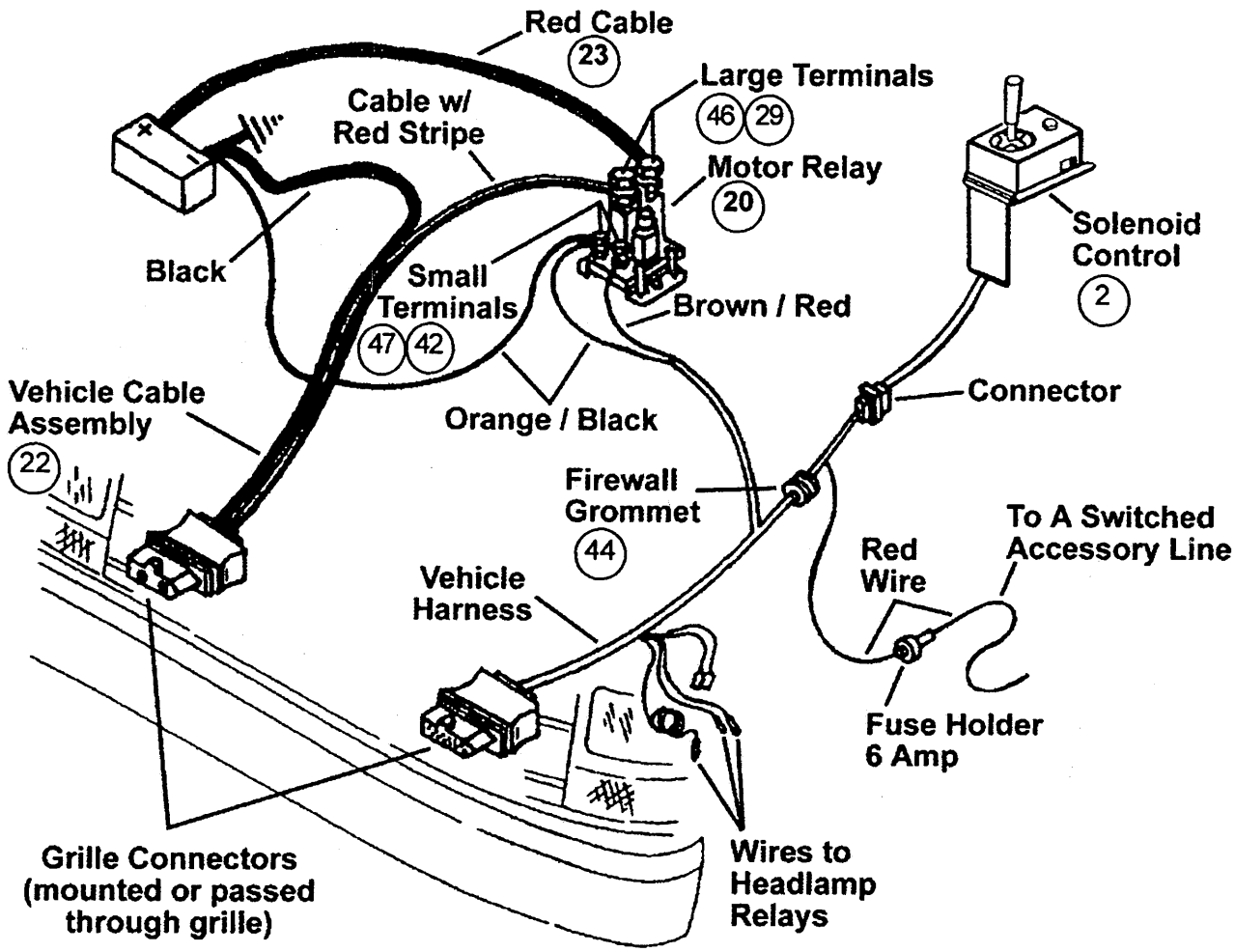
Solenoid Electric Hydraulic Pak



NOTE: LIFT ARM, HEADGEAR, & A-FRAME ARE IN COMMON ATTACHMENT KIT.

6443

Harness Solenoid Control & Motor Relay Installation Diagram



Parts List

A = 8225 B = 8240

Ref #	Qty	Part #	Description
1A	1	7616	Sol Isarmatic 6" - 2500 PSI
1B	1	7923	Sol Isarmatic 10" - 4000 PSI*
2	1	8292	Solenoid Control - Style 3
4A	2	20116	1-1/2" x 10" Cylinder Assy - XL
4B	2	20117	1-1/2" x 12" Cylinder Assy - XL
5	2	6814*	Clevis Pin - 1" x 3-5/16"
6	4	6816*	Anchor Pin - 1" x 4"
7	6	90601*	1/4" x 1-1/2" Cotter Pin
8	1	4424	Hose -36" HP 1/4P - 1/4P
9	1	8728	Hose -28" HP 1/4P - 1/4P
10B	1	8325	Panel Mount Set - Short (not shown)
11B	1	8290	Panel Mount set - Long (not shown)
12	2	2780K*	1/4" NPT x 90° Street Elbow
13	1	319*	1/4" NPT x 90° Sw Adt Elbow
14	1	8127*	1/4" NPT x 45° Street Swivel
16	1	21306	.187 Insulated Receptacle
17	1	21307	.250 Insulated Receptacle
18	1	21308	Fuse Tap; .250 Tab
19	1	21309	Fuse Tap; .187 Tab
20	1	5794	Motor Relay
21	1	8245	Plow Cable Assy M
22	1	8274	Cable Assembly - Vehicle
23	1	5799	22" Cable (Red)
27	8	3666*	Hose Tie, Nylon
28	1	8284	Cable Boot
29	2	90360	5/16" Sp Lk Washer ZP
30	1	90692	5/16 Ex Tooth Lk Washer
31	2	90461*	1/4" x 3/4" (NC) Cap Screw
32	2	90311*	1/4" Flat Washer
33	2	90350*	1/4" (NC) Lock Nut
38	1	90691	5/16-18 x 1/2" Cap Screw
41	1	8329K	Dielectric Grease Tube
42	2	90657	#10 Sp Lk Washer BPO
43	1	8289	Boot Bracket
44	1	3042	Grommet - Rubber, Split
46	2	90672	5/16 - 24 Hx Jam Nut ZP
47	2	90673	#10 - 32 Hx Nut ZP
48	1	7714*	Dash Bracket Bag - SEHP (not Shown)
49	1	91055*	M6-1.0 X 25MM Hex Washer Hd Screw Zp (not shown)
50	1	91056*	M6-1.0 Hex Nut Zp (not shown)
51	1	91057*	M6 Flat Washer 12MM OD Zp (not shown)

*** Part of 8731 Bolt Bag**

49, 50, 51 -- Hardware for vehicles equipped w/ one piece formed sheet metal battery clamp.

ABBREVIATIONS

ASSY	Assembly	LK	Lock	SOL	Solenoid
BP	Black Phosphate	NAR	Narrow	SP	Spring
BPO	Black Phosphate & Oil	NPTF	National Pipe Thread (Fluid)	SPL	Special
BRG	Bearing	NYIS	Nylon Insert	SQ	Square
BZP	Black Zinc Plate	PC	Printed Circuit	STD	Standard
CS	Cap Screw	PN	Pan	TCTS	Thread Cutting Tapping Screw
EX	External	PR	Prestolite	TFTS	Thread Forming Tapping Screw
G	Grade	PSI	Pounds per Square Inch	TRTS	Thread Rolling Tapping Screw
HD	Heavy Duty	PT	Prevailing Torque	TY	Type
HX	Hex	SL	Slotted	W/	With
HXW	Hex Washer	SO	Socket Head	W/O	Without
				ZP	Zinc

1. Hydraulics Assembly

NC FASTENER TORQUE (FT-LB)			
DIAMETER-THREADS PER INCH	GRADE G2	GRADE G5	GRADE G8
1/4 - 20	6	9	13
5/16 - 18	11	18	28
3/8 - 16	19	31	46
7/16 - 14	30	50	75
1/2 - 13	45	75	115
9/16 - 12	66	110	165
5/8 - 11	93	150	225
3/4 - 10	150	250	370
7/8 - 9	150	378	591
1 - 8	220	583	893

A. Using a bench vise to hold angle cylinders (4), remove closures from ports. Screw 90 deg street elbows (12) into ports. When tight, elbows should point slightly inboard to protect angle hoses from pinching between angle cylinders and headgear while stacking snow. Install a 36" HP hose (8) to the passenger-side cylinder and a 28" HP hose (9) to the driver-side cylinder.

Attach cylinders to A-frame and blade on their respective sides with anchor pins (6) and cotter pins (7). Assemble common attachments per common attachment instructions before proceeding further.

B. Attach Solenoid Electric Hydraulic Pak (SEHP) (1) to lift arm and then to headgear with two clevis pins (5) and cotter pins (7). Connect lift arm and SEHP to headgear with two 3/4 x 1-7/8" machine pins and 5/32 x 1-1/4" cotter pins from common attachment kit.

C. Remove the two angle port plugs from the SEHP. Install a 90° swivel fitting (13) in the rear (passenger-side) angle port tightened to a 10 o'clock position.

For 8225: Install a 45° swivel fitting (14) to the front (driver-side) tightened to a 6 o'clock position.

For 8240: Install a 45° swivel fitting (14) to the front (driver-side) tightened to a 9 o'clock position.

Attach hose from passenger-side angle cylinder to a 90° swivel fitting and hose from driver-side to 45° swivel fitting.

2. Solenoid Control and Harness Installation

Note: Use dielectric grease (41) to prevent corrosion on all under hood electrical connections. Fill receptacles and lightly coat ring terminals and blades before assembly or lightly coat connections after assembly.

A. Check both sides of fire wall for wires and hot or moving engine parts, then drill a 5/8" hole through the fire wall in a convenient location.

B. Install the solenoid control (2) and dash bracket according to the instructions found in the 7714 - SEHP Dash Bracket Bag (48).

C. Install plow headlamp harness according to the harness kit instructions.

Warning: Disconnect battery before installing, removing or replacing electrical components such as the motor, motor relay or battery cables.

D. Remove negative battery cable from battery.

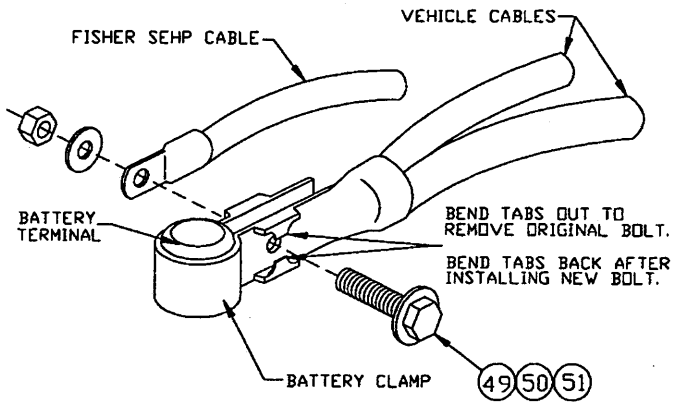
E. Mount motor relay (20) with terminals up or horizontal within 18" of primary battery in an area protected from road splash. Using relay plate as a guide, drill two 9/32" holes and attach relay with two 1/4 x 3/4" cap screws (31), flat washers (32) and locknuts (33).

F. Attach 22" red battery cable (23) to large motor relay terminal with one 5/16" jam nut (46) and lock washer (29) and to "Positive" terminal of battery.

Note: Route battery cables to avoid sharp edges or moving parts.

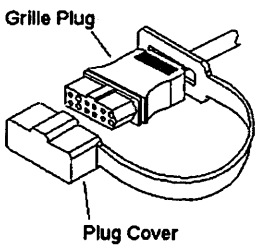
TO FASTEN SEHP CABLE TO FORMED SHEET METAL BATTERY TERMINAL CLAMP

1. Carefully lift retainer tabs and remove 6mm terminal clamp bolt.
2. Replace clamp bolt with 6mm x 25mm (1") bolt (49) in kit. Reposition retainer tabs.
3. Tighten terminal normally.
4. Secure cable eye on end of clamp bolt with nut (50) and washer (51). Hold bolt head while tightening to avoid disturbing terminal clamp.



G. Stretch rectangular opening of plug cover straps (from light kit) over grille connector ends of long battery cable (from hydraulics box) and vehicle harness (from light kit). Place plug cover over mold on harness.

Use two panel mount plates (10B or 11B for 8240 or from peculiar attachment kit for 8225) to mount molded end of vehicle cable assembly (22) and vehicle harness (from light kit) to grille. For grille openings 3/4" to 1-1/4" mount plates to front grille. Plates may be mounted behind grilles with larger openings if connections can be easily mated. Slide grooves in molded ends of harnesses into large opening in panel mount plates.



H. Determine location in vehicle grille where connector is to be installed (same side as battery and motor relay). The best location is 12" - 14" or more from center of grille at a convenient height for connecting to plow plugs. Route vehicle cable assembly (22) through grille and through or around radiator bulkhead to location of motor relay. Secure panel mount plate to grille (with center key up) with long cable ties (from peculiar attachment kit). Keep cable tie latching behind grille for neat appearance.

I. Attach ring terminal on cable with red stripe to motor relay on large unused terminal with one 5/16" jam nut (46) and lock washer (29). Split cable as required to attach cable without stripe to ground bolt on engine or negative side of the battery terminal.

J. Reconnect negative battery cable to battery terminal.

K. Determine location in grille on driver-side and route vehicle harness (from light kit) through grille and through or around radiator bulkhead into engine compartment. The white, gray, purple and brown wires that break out of harness should be routed to the area behind the driver-side headlamp. Route harness to hole drilled in fire wall. Feed fuse holder through hole first, then plastic connector and harness.

L. Connect control power lead (red wire from fuse holder) to a switched accessory line (lines with power applied only when the ignition switch is on). Fuse taps (18 & 19) and insulated receptacles (16 & 17) are supplied in the bolt bag.

M. In engine compartment, route the brown and the orange/black wires from the vehicle harness to the motor relay (20). Connect the 24" orange/black stripe lead from the motor relay connections to the negative terminal of the battery. Attach each #10 ring terminal to a small motor relay terminal with a #10-32 nut (47) and lock washer (42).

N. Place grommet (44) around harness and insert into hole in firewall. Use cable ties (27) to secure harnesses and wires away from hot or moving engine parts.

O. Lubricate both grille connectors with dielectric grease (41). Save tube for future lubrication of grille connectors.

3. Electrical Connections

A. Attach plow lights/harness to headgear. Route harness down driver-side headgear upright. Remove plastic cover from back side of valve and install solenoid wires according to instructions inside cover. With harness strain relief in place inside the cover, and black with orange trace wire outside, screw the cover in place.

B. Attach black/orange wire from plow harness and ground cable from plow cable assembly (21) to ground connection (threaded hole on side of motor) with a 5/16 x 1/2" cap screw (38) and toothed lock washer (30).

C. Slide small pocket of cable boot (28) over boot bracket (43) for later off-truck storage of harness plugs.

D. Attach red motor lead to positive stud on motor.

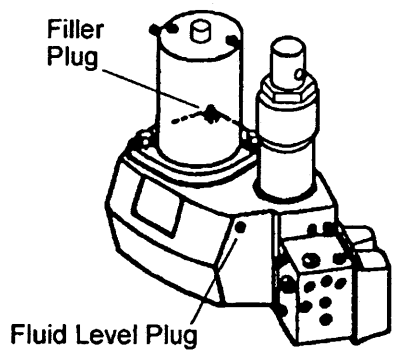
E. Check all fittings, cap screws and nuts for tightness.

4. Filling Hydraulic Fluid

A. Push lift arm all the way down.

B. Remove filler plug behind motor.

C. Fill unit with FISHER® High Performance Hydraulic Fluid (recommended for superior cold-weather performance) or type "A" automatic transmission fluid (ATF) through filler plug hole. Unit is full when fluid reaches hole threads.



D. Drive vehicle to Minute Mount® and adjust vertical height by tipping headgear forward or back using carrying chain. Move vehicle fully into Minute Mount and install according to installation instructions on rear of blade on driver-side.

E. Turn ignition (key) switch to on.

F. Turn the control on/off switch on.

G. Raise front end of vehicle until plow is clear of ground with the lift cylinder fully retracted. Check reservoir oil level. Angle blade with lift cylinder retracted to remove air from system. Recheck reservoir oil level.

H. Refill unit with fluid. Remove filler plug (behind motor) and fluid level plug on driver-side front corner of reservoir. Fill reservoir through filler plug hole until fluid runs out right front corner hole. Replace both plugs.

Alternate method for systems without fluid level plug: Refill unit through fill plug opening.

I. Move control lever as indicated on label to control the plow. Raise and lower plow several times to remove air. Recheck fluid level according to Step H.

Capacity:	Solenoid EHP reservoir:	1-3/4 quarts
	Equipped with angle cylinders:	2-3/8 quarts

J. Adjust headlights with blade raised off ground.

K. Use cable ties to secure wiring harness to headgear.

L. Consult owner's manual for proper operating procedures, inspection and routine service and service parts information.

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