



WESTERN PRODUCTS
 7777 NORTH 73RD STREET
 P.O. BOX 23045
 MILWAUKEE, WISCONSIN 53223

UniMount

DD A DIVISION OF DOUGLAS DYNAMICS, INC.

**Vehicle Installation Instructions and
 Parts List**

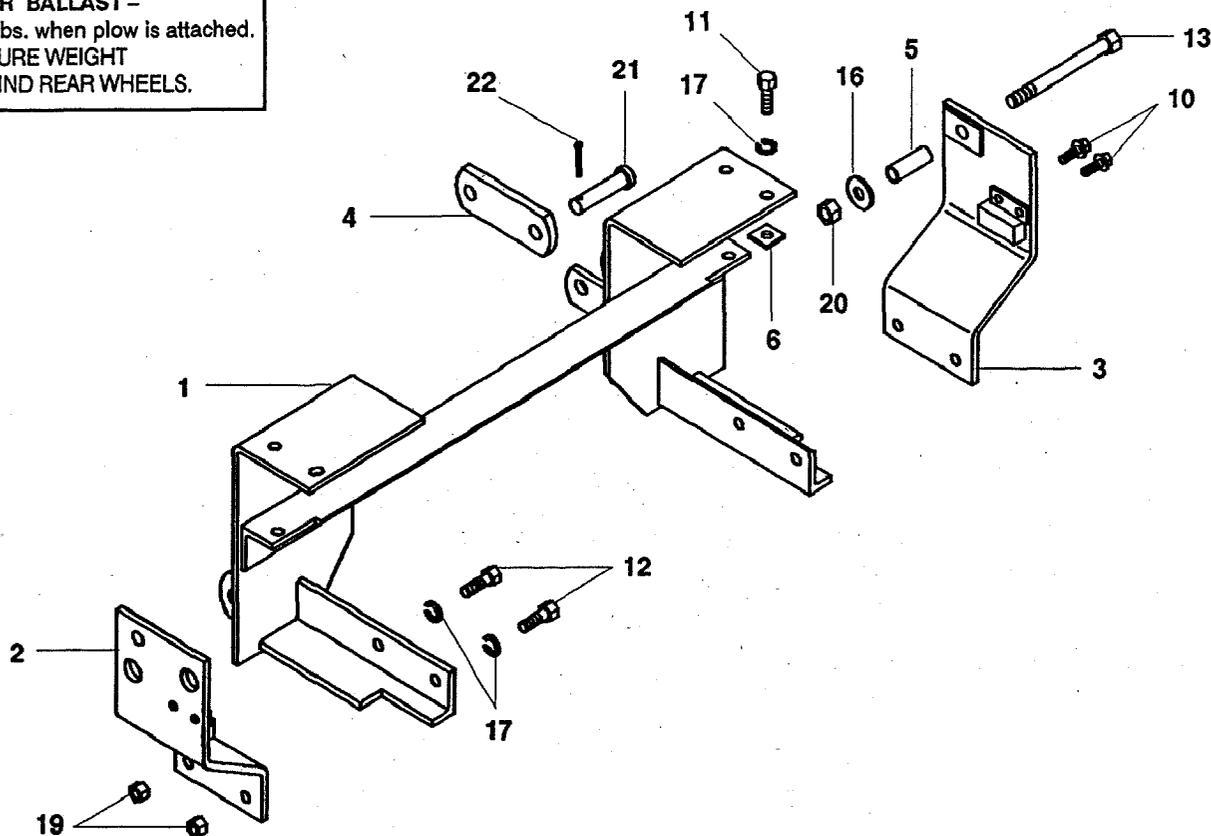
Model 235
 Mount Assembly Box No. 62050
 Jeep Wrangler 4 x 4
 1986-1/2 & Later
 Headlamp Kit No. 61540
 Hydraulics Box No. 56355
 Harness Kit No. 61545
 April 26, 1993

**Mount Assembly Box No. 62050
 PARTS DIAGRAM & LIST**

**MINIMUM VEHICLE
 RECOMMENDATIONS**

HD Alternator
 HD Battery
 HD Suspension

REAR BALLAST -
 300 lbs. when plow is attached.
 SECURE WEIGHT
 BEHIND REAR WHEELS.



ITEM	PART NO.	QTY	DESCRIPTION
1	62045	1	MOUNT FRAME 235
2	62051	1	THRUST ARM DR
3	62052	1	THRUST ARM CU
4	61412	2	LINK ARM
5	60650	2	TUBE SPACER
6	61874	2	SPACER
10	93172	4	3/8-16X1-1/2 HXW TRTS BP
11	90099	2	1/2-13X1-1/4 HX CS G5 ZP
12	90100	4	1/2-13X1-1/2 HX CS G5 ZP
13	90136	2	5/8-11X4-1/2 HX CS G5 ZP
16	91139	2	5/8 PLAIN WASHER TY A SAE ZP
17	91205	6	1/2 SP LK WASHER ZP
19	91415	4	1/2-13 HX NUT ZP
20	91337	2	5/8-11 PT HX LK NUT NYIS ZP
21	93062	2	RIVET 3/4" X 3-1/4" G5 ZP
22	91911	2	5/32X1-1/2 COTTER PIN ZP

Abbreviations	
BP	Black Phosphate
CS	Capscrew
CU	Curb-Side
DR	Driver-Side
G	Grade
HX	Hex
HXW	Hex Washer
LK	Lock
NYIS	Nylon Insert
PT	Prevalling Torque
SAE	Society of Automotive Engineers
SP	Spring
TRTS	Thread Rolling Tapping Screw
TY	Type
ZP	Zinc Plate

Parts listed above may be found in the following assembly.
 62048 1 BOLT BAG ASSY (62050)

**Mount Box No. 62050
INSTALLATION INSTRUCTIONS**

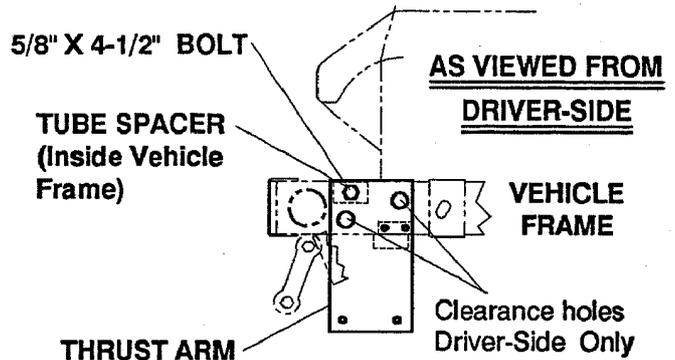
IMPORTANT: Read instructions before assembling. Bolts should be finger tight until instructed to tighten to torque shown in torque chart. Use standard methods and practices when attaching snowplow including wearing safety glasses during drilling.

SPLASH GUARD

Remove plastic splash guard located between bumper and grill. Retain guard and fasteners for replacement should the snowplow mounting be removed from the vehicle.

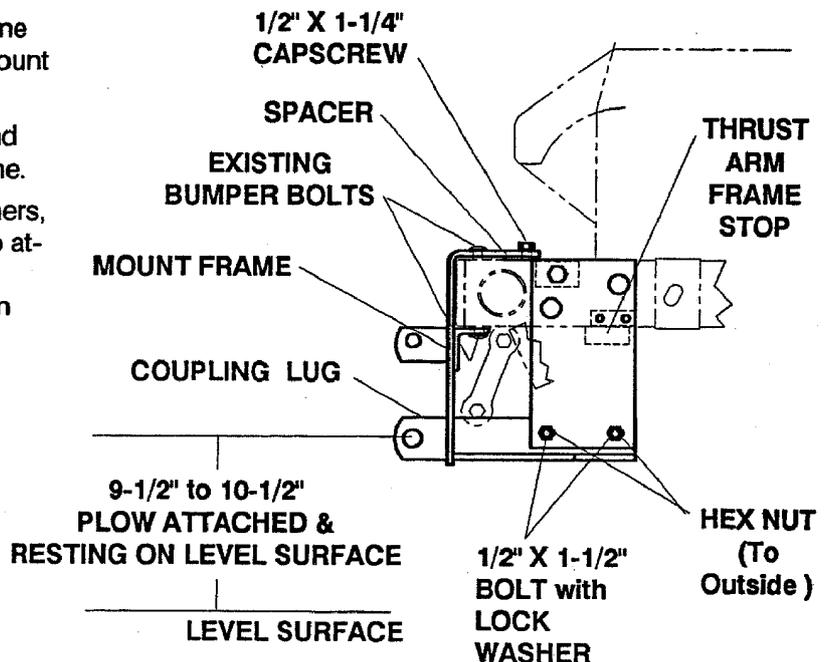
THRUST ARMS

1. Align 11/16" hole in each thrust arm with the upper hole in vehicle frame behind the front tube crossmember. (NOTE: Driver-Side, position large clearance holes over steering gear fasteners).
2. Insert a 5/8" x 4-1/2" capscrew through 11/16" hole of each thrust arm, and through vehicle frame.
3. Place a tube spacer over each capscrew into vehicle frame.
4. Retain with one flat washer and locknut on each side.



MOUNT FRAME

1. Remove top and bottom bumper bolts from both sides of vehicle. Leave bumper in place.
2. Position mount frame on vehicle frame. Place the mounting plates on top of the bumper and align holes in mount frame with the holes in the bumper and the threaded holes in the vehicle frame.
3. Loosely install existing bumper bolts into original holes.
4. Install a spacer on top of each vehicle frame rail aligning it under the rear hole in the mount frame.
5. Retain spacers with a 1/2" x 1-1/4" bolt and lock washer in top rear hole of mount frame.
6. Use two 1/2" x 1-1/2" bolts with lock washers, inserted from center of vehicle outward, to attach bottom of each thrust arm to mount frame angles. Retain bolts with hex nuts on the outside of thrust arms.
7. Rotate thrust arms rearward so the frame stops are firmly against bottom of vehicle frame and tighten 5/8" fasteners.



TIGHTEN ALL FASTENERS TO CORRESPONDING TORQUE VALUES.

Recommended Fastener Torque Chart (Ft.-Lbs.)				
Size	SAE Grade 2		SAE Grade 5	
	Grade 2	Grade 5	Grade 5	Grade 8
1/4-20	6	8	13	
5/16-18	11	18	28	
3/8-16	19	31	46	
3/8-24	24	46	68	
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	202	378	591	
1-8	300	583	899	

Metric Grade 8.8 (Ft.-Lbs.)			
Size	Torque	Size	Torque
M 6	7	M 12	60
M 8	17	M 14	95
M 10	35	M 16	155

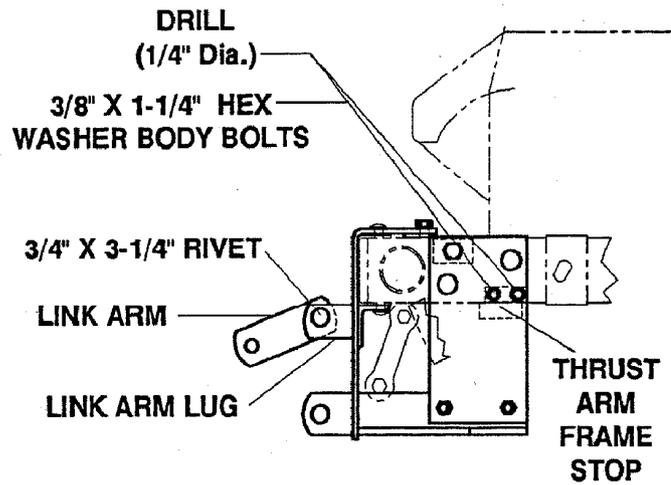
These torque values apply to mount assembly fasteners except those noted in the instruction.

NOTE: Thrust arm frame stops MUST be tight against vehicle frame.

8. Use the two 3/8" holes in each thrust arm as a template to drill two 1/4" holes into each vehicle frame rail. **IMPORTANT:** Make certain the 1/4" holes are **CENTERED** in the 3/8" holes.
9. Fasten with 3/8" x 1-1/4" thread forming body bolts. Torque to 30-35 ft. lbs.

LINK ARMS

Fasten a link arm between each pair of upper lugs (3/4" holes) on the front of the mount frame with a 3/4" x 3-1/4" grade 5 rivet and cotter pin.



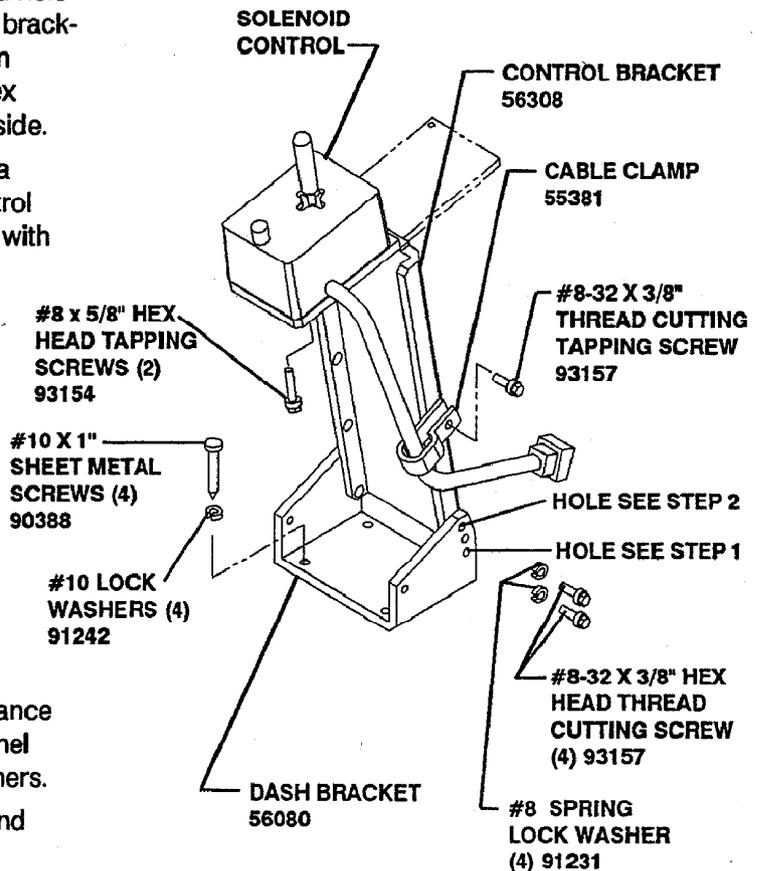
NOTE: After 5 to 10 hours of snowplow usage, retorque all mount assembly fasteners.

HARNESS KIT SELECTION

For DUAL Type 2B/2D headlamps, use 61540 Headlamp Kit 9-Pin and 61545 Harness Kit 2B/2D 9-Pin -A.

**Solenoid Control
INSTALLATION INSTRUCTIONS**

1. Align dash bracket hole shown in diagram to end hole of control bracket. **NOTE:** Top flange of control bracket may be reversed in dash bracket from position shown in diagram. Attach with one #8 x 3/8" hex head thread cutting screw and lock washer per side.
2. Use top holes in dash bracket (see diagram) as a template to drill a 9/64" hole in each side of control bracket. Secure dash bracket to control bracket with a second screw and lock washer in each side.
3. Secure solenoid control to control bracket with two #8 x 5/8" hex head tapping screws.
4. Move seat forward and 4 wheel drive lever toward seat. Locate control and bracket assembly on floor tunnel so that it does not interfere with the operation of vehicle controls. Mark this location.
5. Remove control bracket from dash bracket.
6. Place dash bracket in marked location. Use dash bracket as a template to drill four 1/8" holes in tunnel. **CAUTION:** Check for clearance before drilling holes. Secure dash bracket to tunnel with four #10 x 1" tapping screws and lock washers.
7. Reassemble control bracket to dash bracket. Bend top flange of control bracket to desired position.
8. Secure harness to control bracket with cable clamp and one #8 x 3/8" hex head thread cutting screw.





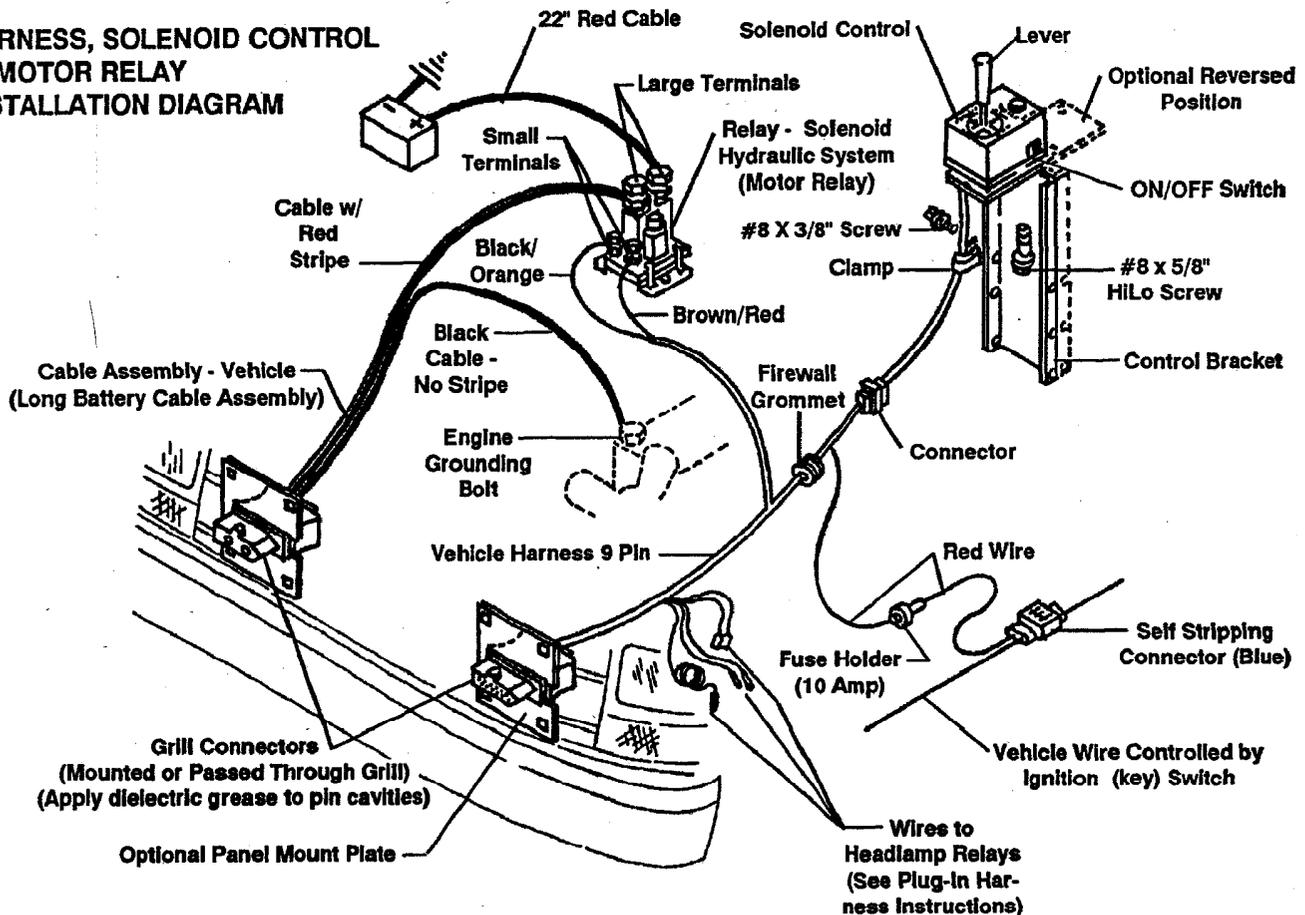
SAFETY NOTE: Whenever you see this symbol, it notes a **SAFETY WARNING**. To avoid serious injury to yourself or others, follow all warnings.

**Vehicle Underhood
INSTALLATION INSTRUCTIONS**

9-Pin Vehicle Harness And Motor Relay

Except as noted, parts to be installed are found in the hydraulics box.

**HARNESS, SOLENOID CONTROL
& MOTOR RELAY
INSTALLATION DIAGRAM**



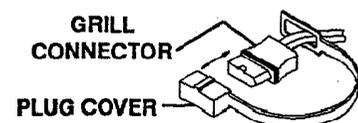
NOTE: To prevent corrosion on all underhood electrical connections, use dielectric grease to fill receptacles and lightly coat ring terminals and blades before assembly or lightly coat connections after assembly.

1. Identify wires for the parking lamp on the driver-side and the turn signals on both sides. Attach a black self-stripping bullet receptacle connector (found in harness kit) to each of these three wires.
2. Remove negative battery cable from battery.



WARNING: Electrical shock hazard. Disconnect battery before beginning electrical installation.

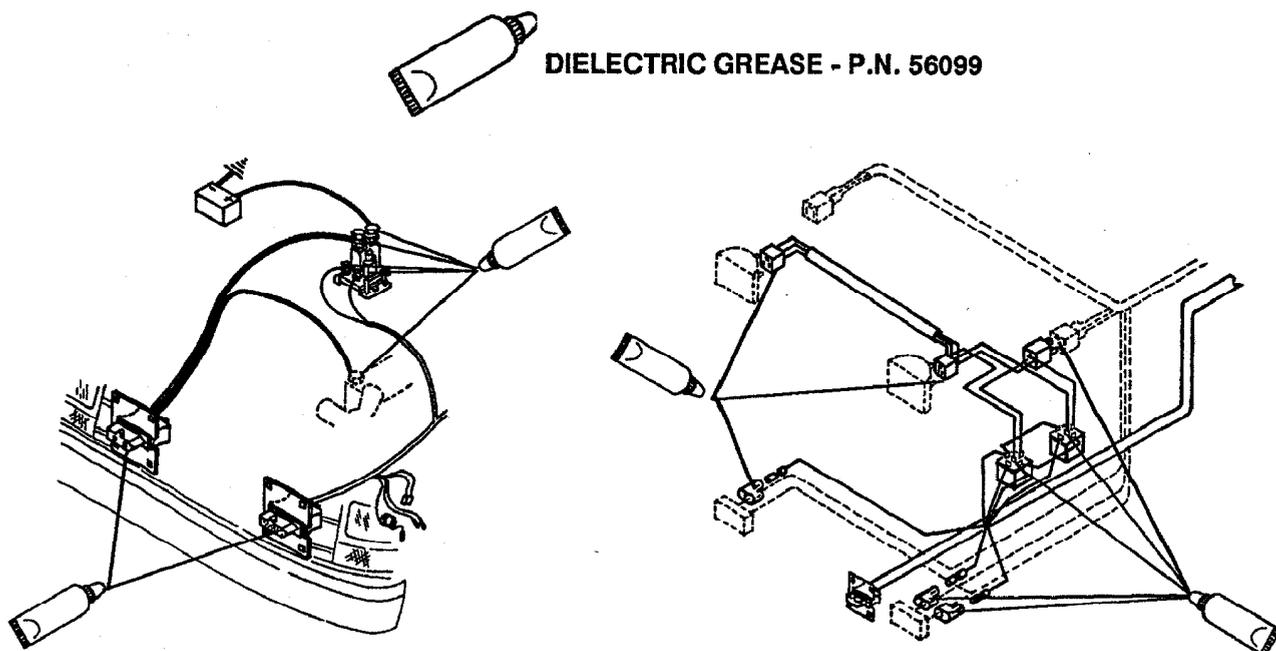
3. Find a location for the motor relay where it will be protected from road splash and will be within 18" of the vehicle primary battery. Note: Motor relay terminals must be up or horizontal. Using the motor relay mounting plate as a template, drill two 9/32" holes, and mount motor relay to holes using 1/4" x 3/4" bolts, flat washers, and locknuts.
4. Route 22" red battery cable between a large motor relay terminal and the POS battery terminal taking care to avoid sharp edges and moving parts. Attach cable to motor relay terminal with a lock washer and 5/16"-24 jam nut. Attach cable to battery POS terminal with existing terminal fastener.
5. Stretch rectangular openings of plug cover straps (found in harness kit) over grill connector ends of long battery cable assembly (found in hydraulics box) and 9 pin vehicle harness (found in harness kit). Place plug covers over molds on harnesses.



6. Find a location in the vehicle grill on the battery side for mounting the battery cable grill connector. The best location is at least 10-1/2" from the center of the grill and at a convenient height for connecting the plow plugs. Allow grill connector of each harness to hang out in front of grill. Allow enough cable so it is easy to mate and remove connectors.
 7. Route battery cable through the grill at the selected location and through or around the radiator bulkhead to motor relay taking care to avoid sharp edges and hot or moving parts.
 8. Attach cable with red stripe to the unused large terminal on the motor relay, and secure it with a lock washer and 5/16"-24 jam nut.
 9. Attach cable without stripe to a **ground bolt on engine or directly to the negative battery terminal** (separate the two cables as needed to reach ground bolt or battery).
 10. Find a location in grill on driver-side for mounting 9 pin vehicle harness (similar position to battery cable mount). See Step #6 & 7 above for how to mount. Route 9 pin vehicle harness through grill and around or through radiator bulkhead (drill 5/8" hole if needed) into engine compartment.
 11. Route the wires that break out of the 9 pin vehicle harness to the area behind the driver-side headlamp. Route rest of harness to the firewall. Drill a 5/8" hole through the firewall in any convenient location away from hot or moving engine parts. Feed fuse holder through hole first and then feed the plastic connector and harness through to the cab.
 12. Route brown/red and black/orange wire loom to motor relay. Attach each ring terminal to a separate small terminal on motor relay using a lock washer and #10-32 nut for each terminal.
 13. Reconnect vehicle ground cable to battery negative terminal.
 14. Inside the cab, route 9 pin vehicle harness connector to solenoid control and couple the connectors together.
 15. Locate an accessory wire that is controlled by the ignition switch (power is turned off when ignition switch is in OFF position). Route the 10 amp fuse holder red wire to this location and trim excess length (leave 10 amp fuse holder in system). Open blue self-stripping connector and place the end of the red wire against the inner groove stop (end of wire must not protrude from connector when it is closed) and the accessory wire in the outer groove. Close connector over the wires with pliers and snap locking tab into place.
- OPTION: Locate an unused fuse box terminal operated by the ignition switch and attach a terminal (not furnished) to the red wire and plug into fuse box terminal.

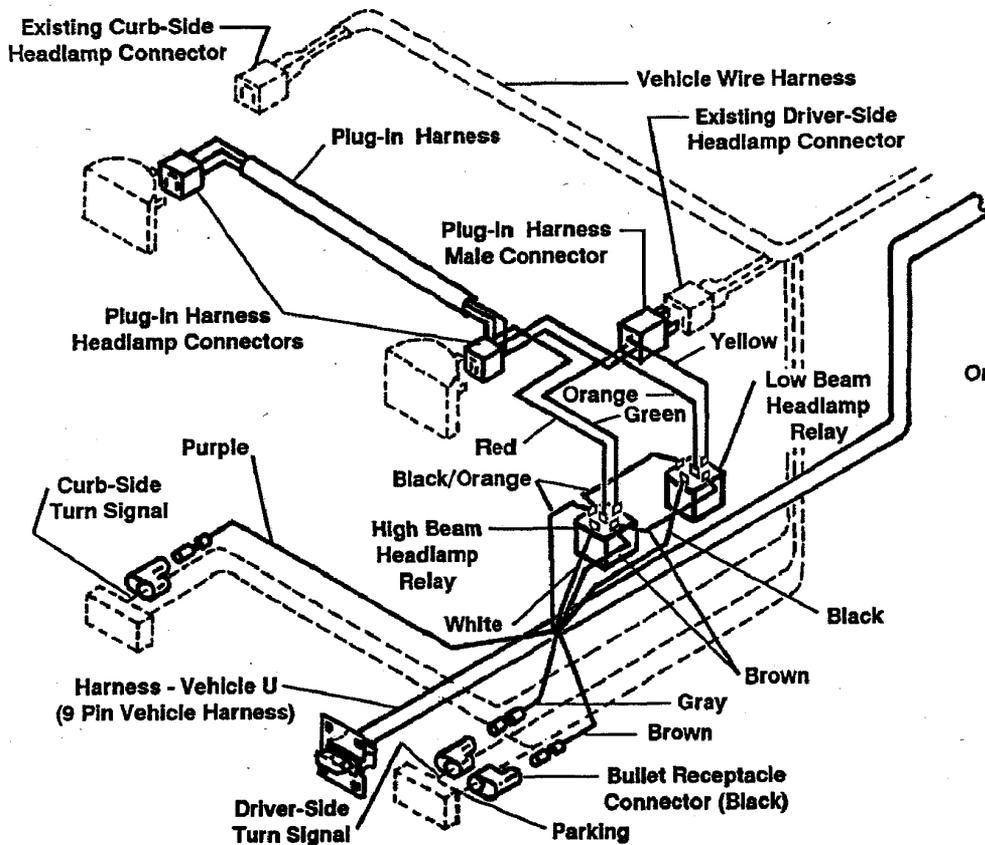
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REMINDER: To prevent corrosion on all underhood electrical connections, use dielectric grease to fill receptacles, including grill connectors, and lightly coat ring terminals and blades before assembly or lightly coat connections after assembly.

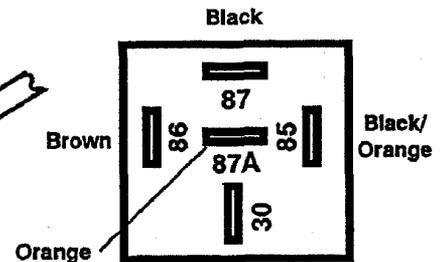


PLUG-IN HARNESS & HEADLAMP RELAY INSTALLATION

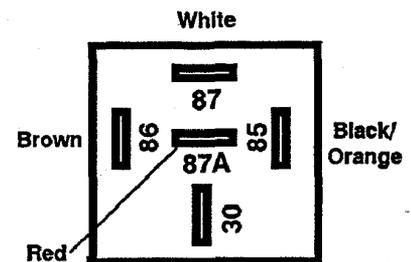
PLUG-IN HARNESS INSTALLATION DIAGRAM



HEADLAMP RELAY WIRING DIAGRAM Type - A



Low Beam Headlamp Relay



High Beam Headlamp Relay

Plug-in Harness & Headlamp Relay

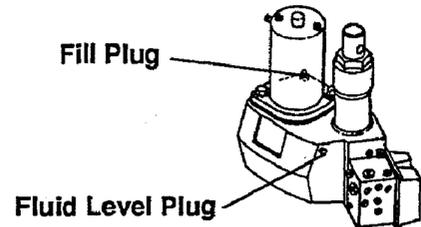
- In the engine compartment behind the driver-side headlamp, insert wire bullets from 9 pin vehicle harness into black bullet connectors (installed in step #1 of previous section) as follows:
Brown wire to parking lamp wire on driver-side.
Gray wire to turn signal wire on driver-side.
- At the vehicle driver-side headlamp, remove the connector from the headlamp and couple connector with plug-in harness 3-wire male plug (plug-in harness found in harness kit). Attach plug-in harness headlamp connector to headlamp terminals.
- Route other end of plug-in harness along radiator bulkhead or over radiator shroud to curb-side headlamp. Remove headlamp connector and secure connector with a cable tie (found in harness kit). Attach plug-in harness headlamp connector to headlamp terminals.
- On the curb-side, insert purple wire bullet from plug-in harness into vehicle turn signal black bullet connector installed in step # 1 of the previous section.
- At the driver-side headlamp, insert the purple wire bullet from the vehicle harness into the purple wire receptacle on the plug-in harness.
- At driver-side headlamp, connect 9 pin vehicle and plug-in harness wires with receptacles to the two headlamp relays (found in harness kit) as shown in the above diagram. Use cable ties (found in harness kit) to secure relays and prevent accidental grounding of connections.
- Place grommet around 9 pin vehicle harness and insert into firewall hole (also put a grommet in the hole in the radiator bulkhead if one was drilled). Use cable ties to secure harnesses and wires away from hot or moving engine parts.
- Unless noted in Harness Kit Selection paragraph on page 3 of these instructions, replace vehicle turn signal flasher with the flasher furnished in the harness kit.
- Lubricate terminal cavities of both grill connectors with dielectric grease. Furnish dielectric grease tube to vehicle owner for future lubrication of grill connectors.

OPERATIONAL TESTS AND ADJUSTMENTS

Mount plow assembly to vehicle. (See label on back of blade or owner's manual for mounting instructions.)

Filling Hydraulic Unit

1. Push lift channel all the way down.
2. Remove fill plug and fluid level plug.
3. Fill unit with automatic transmission fluid (ATF) through fill plug hole until fluid runs out of fluid level hole. Replace both plugs. NOTE: For low temperature operation you can use Mobil One or Texaco 1537 Aircraft Hydraulic Oil.



Alternate method: (Systems without fluid level plug.) Remove plow from vehicle. With stand lock pin in place, refill unit through fill plug opening. Unit is full when fluid reaches fill hole threads. Replace fill plug.

4. Turn ignition (key) switch to ON or ACCESSORY position.
5. Turn the control ON/OFF switch ON.
6. Move control lever to angle left and angle right several times to remove air from Hydra-Turn® rams. **DO NOT raise blade as this may cause pump cavitation.**
7. Refill unit with fluid following procedure in paragraph 3 of this section.
8. Move the control lever as indicated on label to control the plow. Raise and lower plow several times to remove air. Recheck fluid level per paragraph 3 of this section.

Capacity: Solenoid ISARMATIC® Mark IIIa reservoir	1-3/4 quarts
Equipped with 6" Hydra-Turn® rams	2-1/8 quarts



WARNING: To prevent accidental movement of plow, always turn the solenoid control to OFF when the mounted plow is not in use.

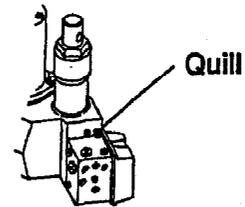
Blade Drop Speed Adjustment

The quill on the top rear of the valve manifold (see diagram) adjusts blade drop speed.

Turn quill IN (clockwise) to slow drop speed.

Turn quill OUT (counterclockwise) to increase drop speed.

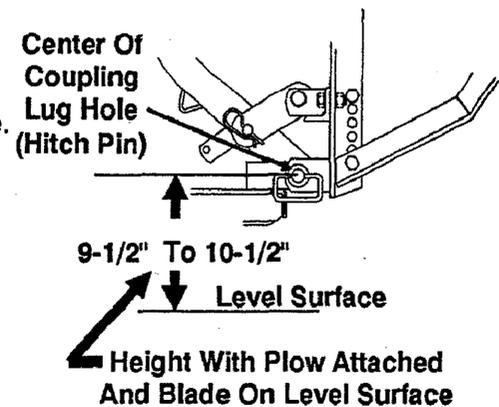
NOTE: Turning quill too far IN can slow raise time.



COUPLING LUG HEIGHT CHECK

Coupling Lug Height Check:

1. Mount plow to vehicle (see label on back of blade or owner's manual for mounting instructions).
2. Lift plow and move vehicle. Travel a minimum of 10 feet. Lower blade.
3. After step 2, with: blade on level surface, slack in lift chain, rear ballast located behind rear wheels, center of coupling lug holes (hitch pin shaft) to level surface should measure 9-1/2" to 10-1/2".



NOTE: Coupling height must be 9-1/2" minimum to allow stand to be pinned to lift frame.

4. Adjust chain slack with plow mounted to vehicle and lift channel pushed all the way down. To adjust, remove chain from hook. Straighten chain and pull tight. Rehook it to lift channel. After it is hooked, it will have the correct amount of slack for blade "float". DO NOT remove chain from lift channel when removing plow from vehicle.

Continued on next page.

Final Hydraulic Inspection

1. Make sure all fasteners and hydraulic and electrical connections are tight.
2. Check ram packing nuts for oil leakage. If any leakage is observed, tighten the packing nut 1/4 turn after you feel the nut contact the packing. Do not overtighten – overtightening affects cylinder operation and shortens the life of the packing. A short period of normal operation will allow chevron packings to become saturated, and leakage will normally stop.

Vehicle Lighting Check

1. Check the operation of vehicle and plow lights.

Turn signals and parking lamps:

Parking lamps ON	Both vehicle and plow lamps should be on at the same time.
Right Turn Signal ON	Both vehicle and plow lamps should flash at the same time.
Left Turn Signal ON	Both vehicle and plow lamps should flash at the same time.

Headlamps:

Move vehicle headlamp switch to the ON position. Connecting and disconnecting the 9 or 12 pin plow plug from the grill connector should switch between vehicle and plow headlamps as follows:

9 or 12 pin plow plug DISCONNECTED	Vehicle headlamps should be on
9 or 12 pin plow plug CONNECTED	Plow headlamps should be on

Dimmer switch should dim whichever headlamps are operating. Likewise, the high beam indicator on the dash should light when either set of headlamps is on high beam.

Solenoid Control

The control indicator light should light whenever the control ON/OFF switch and the ignition (key) switches are both turned ON and the plow plugs are connected to the grill connectors.

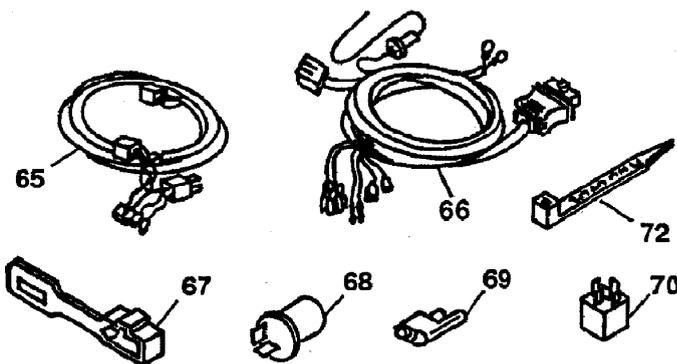
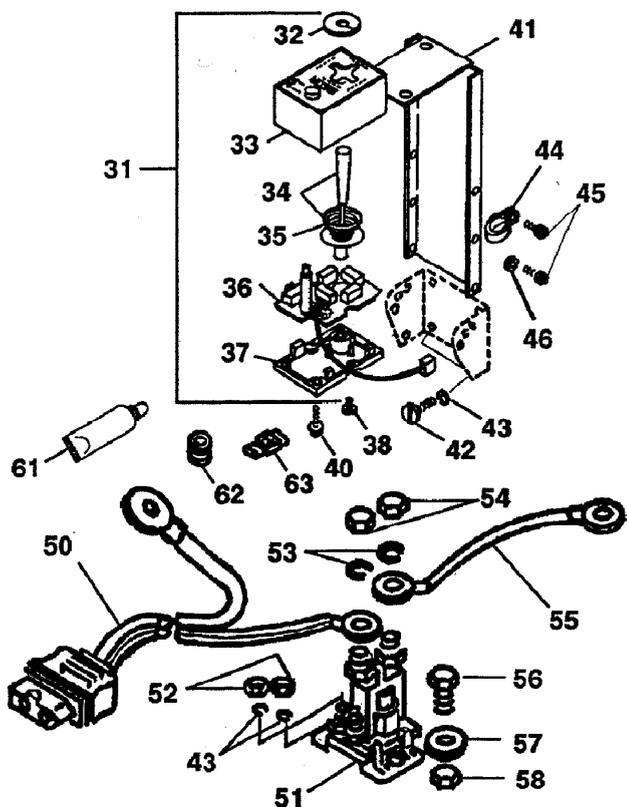
The indicator light will also light when the control and ignition (key) switches are on and the plow plugs are disconnected. If the parking lights are turned on (with plow plugs disconnected), the indicator light will go out.

2. Connect plow plug to grill connector. Raise plow and aim plow headlamps according to SAE J599 Lighting Inspection Code (See Service Bulletin SP 608) and any applicable federal, state, or local regulations.
3. Check aim of vehicle headlamps with plow removed.
4. When plow is removed from the vehicle, install plug covers on grill connectors and insert the plow plugs into the boot on the hydraulic unit.

NOTE: After 5 to 10 hours of snowplow usage, retorque all mount assembly fasteners.

Mount Assembly Box No. 62050
 Harness Kit Box No. 61545
 Hydraulics Box No. 56355

PARTS DIAGRAM & LIST



ITEM PART NO. QTY. DESCRIPTION
 Found in Hydraulics Box No. 56355

31	56369	1	SOLENOID CONTROL (Style 2)
32	56283	1	SHIELD
33	49286	1	BODY W/LABEL & LENS (Style 2)
34	49287	1	LEVER, SPRING & ACTUATOR KIT (Style 2)
35	55923	1	SPRING - CONICAL
36	49283	1	PC BOARD ASSY MOLEX (Style 2)
37	56199	1	BASE
38	93153	2	#6-19X3/8 SL HXW TFTS HILO
40	93154	2	#8-18X5/8 SL HXW TFTS HILO
41	56308	1	CONTROL BRACKET
42	90388	4	#10X1 SL PN TFTS TY AB BZP
43	91242	4	#10 SP LK WASHER BPO
44	55381	1	CABLE CLAMP
45	93157	5	#8-32X3/8 SL HXW TCTS TY T BP
46	91231	4	#8 SP LK WASHER BP
50	61169	1	CABLE ASSEMBLY - VEHICLE
51	56134K	1	RELAY - SOLENOID HYDRAULIC SYS
43	91242	2	#10 SP LK WASHER BPO
52	91402	2	#10-32 HX NUT ZP
53	91202	2	5/16 SP LK WASHER ZP
54	92842	2	5/16-24 HX JAM NUT
55	22511	1	BATTERY CABLE 22" RED
56	90002	2	1/4-20X3/4 HX CS G2 ZP
57	91101	2	1/4 PLAIN WASHER TY A STD ZP
58	91331	2	1/4-20 PT HX LK NUT NYIS ZP
61	56099	1	DIELECTRIC GREASE TUBE
62	66130	2	RUBBER GROMMET
63	59114	1	SELF STRIP WIRE CONNECTOR

Parts listed above may be found in one of these assemblies.

56368	1	CARTON ASSY LOOSE PARTS U
56367	1	BOLT BAG ASSY LARGE U
56358	1	BOLT BAG SMALL U

ITEM PART NO. QTY. DESCRIPTION

Found in Harness Kit Box No. 61545

65	61546	1	PLUG-IN HARNESS 2B/2D U -A (For Harness Kit No. 61545)
66	61437	1	VEHICLE HARNESS 9-PIN U
67	61548	2	PLUG COVER U
68	60109	1	FLASHER HD
69	59224	3	BULLET RECEPTACLE CONNECTOR
70	61535	2	HEADLAMP RELAY SPDT
72	59223	8	CABLE TIE

Parts listed above may be found in the following assembly.

61547	1	PARTS BAG
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ITEM PART NO. QTY. DESCRIPTION

Found in Mount Box No. 62050

85	61536	2	CABLE TIE - LONG
90	56080	1	DASH BRACKET

Parts listed above may be found in the following assembly.

62048	1	BOLT BAG ASSEMBLY
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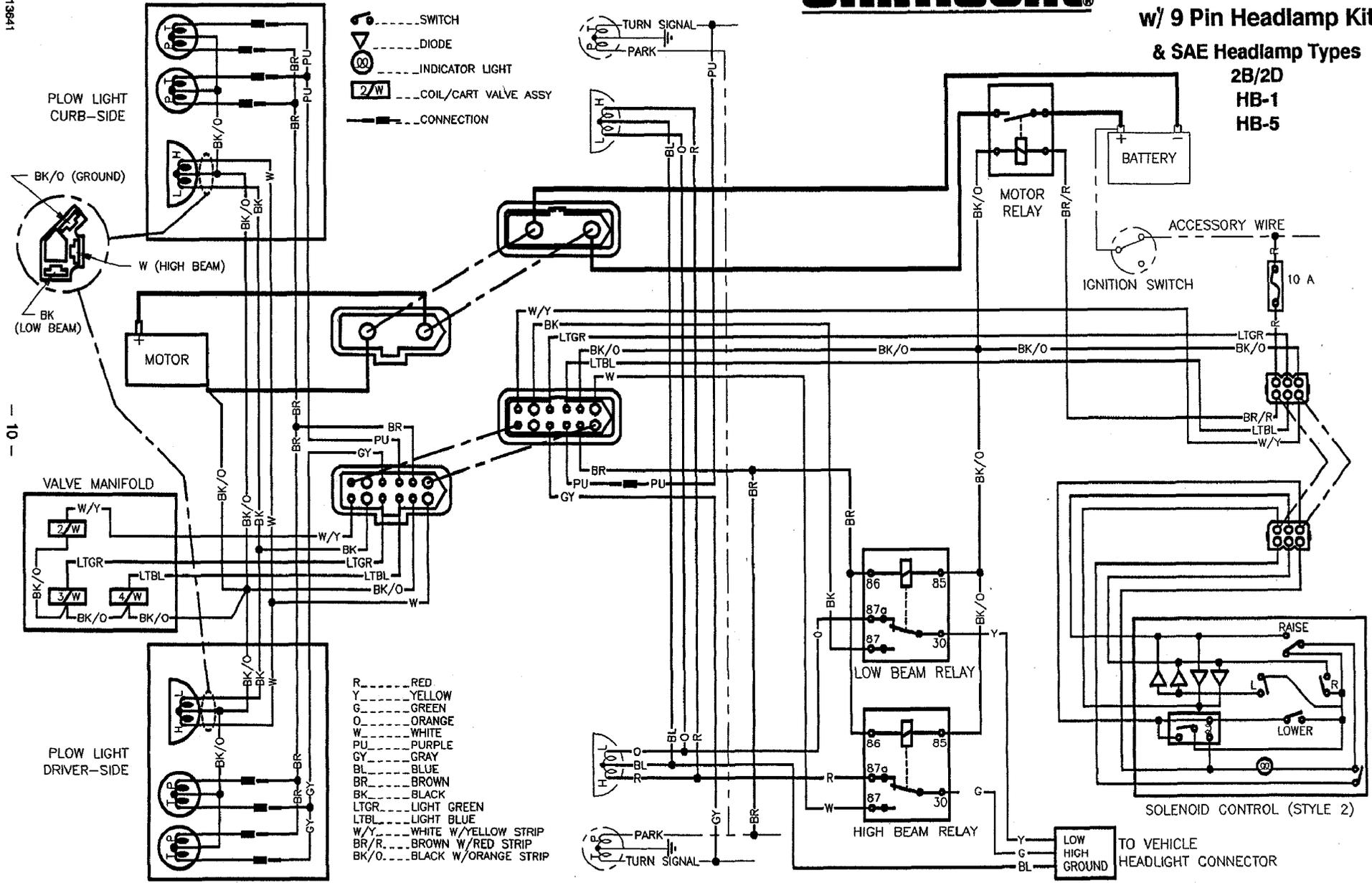
Abbreviations			
ASSY	Assembly	SL	Slotted
BP	Black Phosphate	SP	Spring
BPO	Black Phosphate & Oil	SPDT	Single Pole Double Throw
BZP	Black Zinc Plate	STD	Standard
CS	Capscrew	SYS	System
G	Grade	TCTS	Thread Cutting Tapping
HD	Heavy Duty		Screw
HX	Hex	TFTS	Thread Forming Tapping
HXW	Hex Washer		Screw
LK	Lock	TY	Type
NYIS	Nylon Insert	U	UniMount® System
PC	Printed Circuit	W/	With
PN	Pan	ZP	Zinc Plate
PT	Prevailing Torque		

Indented part numbers are included in the assembly under which they are listed. Quantities shown are included with the assembly.

Unimount SYSTEM

Wiring Diagram Harness Type - A w/ 9 Pin Headlamp Kit & SAE Headlamp Types

2B/2D
HB-1
HB-5



Solenoid Control - The control indicator light should light whenever the control ON/OFF switch and the ignition (key) switch are both turned ON and the plow plugs are disconnected. If the parking lights are turned on (with plow plugs disconnected), the indicator light will go out.

The indicator light will also be on when the control and ignition (key) switches are ON and the plow plugs are disconnected. If the parking lights are turned on (with plow plugs disconnected), the indicator light will go out.

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WESTERN® ISARMATIC® Hydra-Turn® UniMount® Roll-Action™ PRO-GUARD™

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