



**STANDARD ISARMATIC® MARK IIIa (1-1/2" Ram)**

1. Check system pressure by installing gage in one 4-way valve port and actuating IIIa Control. (Note pressure reading, system pressure must be increased per paragraph 4.)
2. Clean top surface around motor and remove motor, gasket and fill plug. Drain, flush and clean reservoir. Replace drain plug.
3. Install 3/8" Pipe Tee in fill plug hole, tightening so center port is between 1 and 2 o'clock position. Install 3/8" x 1/8" reducer and 1/8" swivel fitting into center port of tee.
4. Remove pump and adjust pump relief valve, turn screw in to obtain 1800-1900 PSI. One quarter turn equals approximately 250 PSI.
5. Clean filter screen, replace filter if damaged.
6. Reinstall pump (filter towards front of Isarmatic® Mark IIIa) making sure O-Ring is in place in bottom of pump. Alternately tighten bolts to 100-120 in. lbs.
7. Install motor with new motor gasket. **FINGER TIGHTEN** 7/16" x 1 1/2" motor bolts. To assure motor/pump alignment, energize unit momentarily using cab control. Alternately tighten motor flange bolts to 15-20 ft. lbs.

**LIFT CHANNEL — STANDARD DUTY (1 1/2" RAM)**

Replace existing lift channel with Lift Channel in A-Frame Box. Assemble channel to lift with 3/4" x 4 1/2" bolt and locknut. Attach to lift ram with 3/4" x 4" bolt and locknut. Tighten bolts to permit free pivotal motion.

**ALL UNITS  
IIIa CONTROL**

Remove lever and body label. Install TRI-PLOW label to top of body and reinstall lever.

**ELECTRICAL**

**TRI-PLOW HARNESS AND SWITCH**

**DISCONNECT THE BATTERY BEFORE PROCEEDING WITH THE ELECTRICAL HOOK-UP.**

Attach TRI-PLOW switch Mounting Bracket to either side of the IIIa Control with existing fasteners (Floor Bracket installations — use one existing screw and one furnished in this carton). Drill a third 1/2" hole thru firewall next to cable holes. Install grommet and feed TRI-PLOW Harness into cab from engine compartment. In cab, attach red wire to center terminal of Switch and gray and purple wires to other terminals. Assemble hex nut half way down switch threads. Place switch into Switch Bracket with center terminal towards long leg of bracket. Secure with knurled facenut. Align hole in short leg of Switch Bracket to hole in Mounting Bracket and secure with #8 x 3/8" screw and lock washer. Affix label over switch. In engine compartment, attach TRI-PLOW Harness red wire to Isarmatic® Mark IIIa solenoid terminal with 60" red battery cable and black wire to a good ground. Secure harness away from hot or moving engine parts. Reconnect vehicle battery.

**HOSE AND FITTING CONNECTIONS**

**IMPORTANT:** Installing hoses and fittings per these instructions allows all hydraulic couplers to be cross-coupled when plow is removed from vehicle. This prevents dirt from entering the couplers.

Installation — (See Diagram, Page 2)

1. One male coupler onto each 1/4" high pressure hose.
2. TRI-PLOW Valve Assembly
  - a. Curb side base end port — long male elbow with female coupler on short leg.
  - b. Curb side rod end port — long street elbow with 1/4" x 48" hose.
  - c. Driver side base end port — hex nipple with female coupler.
  - d. Driver side rod end port — 1/4" x 38" hose.
  - e. Bottom — Base End — long male elbow with female coupler on short leg.
  - f. Bottom — Rod End — 1/4" x 18" hose.
  - g. End of Valve Block — 3/16" x 24" low pressure hose to 1/8" street elbow.
3. Base End Ports of Double Acting Cylinders — long street elbow with 1/4" x 48" hose on curb side and 1/4" x 38" hose on driver side.
4. Rod End Ports of Double Acting Cylinders — short male elbows with female couplers.

**TRI-PLOW VALVE AND MOUNT PLATES**

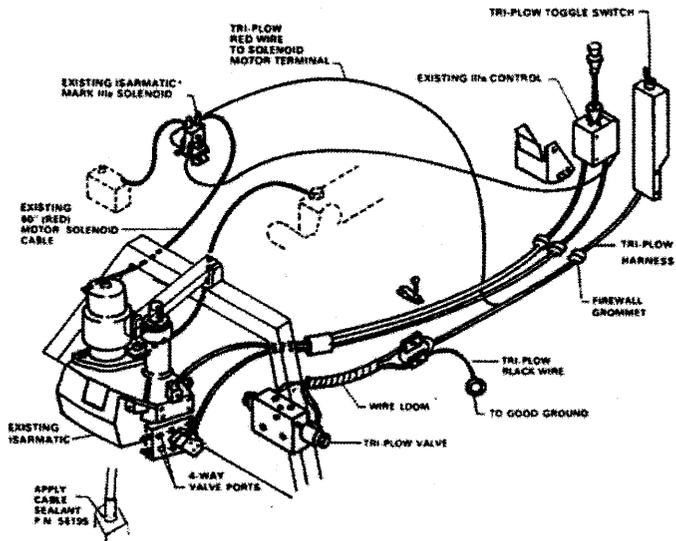
Assemble two Mount Plates, large holes together, to inside of driver side lift angle at the lower light bracket hole with 3/8" x 1 1/2" bolt, lock washer and hex nut. Attach TRI-PLOW Valve to Mount Plates with 1/4" x 2 1/2" bolts and locknuts. Insert wires from the two TRI-PLOW Valve coils into Wire Loom and feed thru grille into engine compartment. Plug connectors from coils into connectors on TRI-PLOW Harness.

**HOSE CONNECTIONS.** Attach Blade and A-Frame to vehicle. (See Diagram, Page 2)

1. Couple 18" hose between BOTTOM of TRI-PLOW Valve and Isarmatic® Mark IIIa. Couple 38" Isarmatic® Mark IIIa hose to BOTTOM coupler of TRI-PLOW Valve.

**HEAVY DUTY ISARMATIC® MARK IIIa (2" RAM)**

1. Clean top surface around motor and remove motor, gasket and fill plug. Drain, flush and clean reservoir. Replace drain plug.
2. Install 3/8" Pipe Tee into fill plug hole, tightening so center port is between 1 and 2 o'clock position. Install 3/8" x 1/8" reducer and 1/8" swivel fitting into center port of tee.
3. Clean pump filter screen, replace filter if damaged.
4. Install motor with new gasket. **FINGER TIGHTEN** 7/16" x 1 1/2" motor bolts. To assure motor/pump alignment, energize unit momentarily using cab control. Alternately tighten motor flange bolts to 15-20 ft. lbs.



2. Couple 48" hoses between TOP of TRI-PLOW Valve and CURB side cylinder.
3. Couple 38" hoses between FRONT of TRI-PLOW Valve and DRIVER side cylinder.
4. Attach 3/16" x 24" hose from TRI-PLOW valve to female adapter union.

Whenever blade is removed from vehicle, cross couple hose male ends into female couplers to prevent entrance of dirt. (See Diagram)

#### OIL FILL

Remove filler plug in top of tee next to motor. Fill with automatic transmission fluid (ATF) (alternate 10W non-detergent motor oil — 5W in extreme cold). **IMPORTANT:** Fill the reservoir only through the filler opening as it is designed to prevent overfilling. Reservoir capacity is 1½ quarts. Total system capacity is 2¼ quarts.

#### OPERATION

Smoothly and without hesitation, move the Illa Control lever into the desired position. Always return lever to the neutral position when not in operation, use lock spool during transport.

**RAISE-LOWER BLADE** — Move Illa Control lever up (forward) to raise blade. Move lever down (back) to lower/float blade.

**LEFT WING** — TRI-PLOW toggle switch to LEFT WING. Moving Illa lever to right moves wing OUT (away from vehicle). Moving Illa lever to left brings wing IN (towards vehicle).

**RIGHT WING** — TRI-PLOW toggle switch to RIGHT WING. Moving Illa lever to right moves wing OUT (away from vehicle). Moving Illa lever to left brings wing IN (towards vehicle).

**NOTE:** If wings do not operate as indicated, interchange coil plugs at the TRI-PLOW harness under the hood. The Illa Control is equipped with a manual lock to prevent accidental movement of the blade. Push the Lock Spool down into the center of the cross slots to prevent movement. Pull up the lock spool to allow blade movement.

#### VALVE ADJUSTMENT CHECK

Lift Valve and 4W cable adjustments are extremely critical for proper operation. Move TRI-PLOW wings into scoop position. Back Lift Valve out (CCW) ½ turn or until plow will not lift in "raise" position. GRADUALLY turn Lift Valve in (CW) until plow just lifts. To adjust lowering speed, hold check valve (hex socket wrench) while loosening or tightening jam nut. Loosen jam nut maximum ¼ turn (to prevent O-Ring "blow out"). Turn check valve: IN (CW) to increase speed, OUT (CCW) to decrease speed. 4W cable adjustment affects wing speed. Wing IN time should be 5 seconds, wing OUT - 4 seconds. Turning base end of adjustable 4W cable: into female thread increases wing IN speed, out of female thread increases wing OUT. After adjusting, tighten the set screw, and tighten the jam nut to 12 in.-lb. See TRI-PLOW Mechanics Guide for additional information. **IMPORTANT:** After adjustments, seal cable entries to housing with 56195 Cable Sealant.

#### CHECK OIL LEVEL

After cycling system for above checks, check Isarmatic® Mark Illa reservoir level with both wings IN (V-shaped plow) and Illa Control lever in float (detent in lower) position. Do not collapse lift ram. Fill reservoir thru fill plug in tee only.

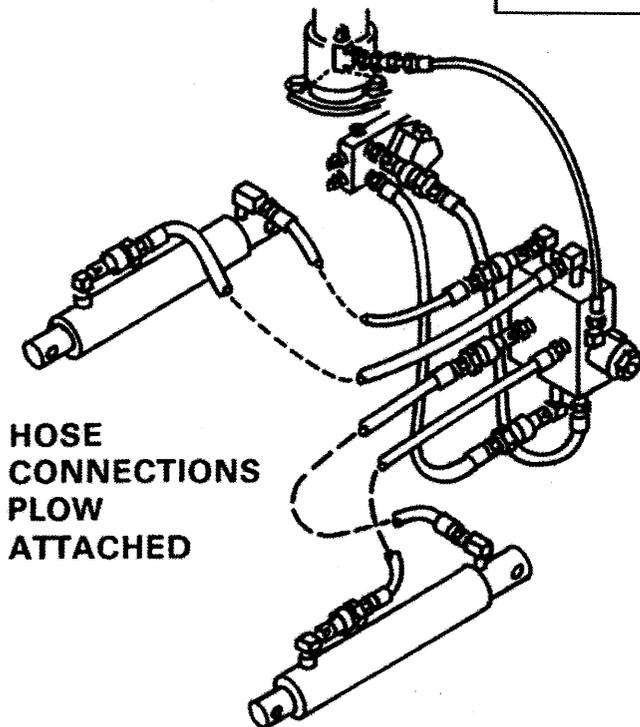
#### FINAL INSPECTION

Your Western Isarmatic® Mark Illa TRI-PLOW is now installed and ready for operation. As a final check, make sure all fasteners and hydraulic and electrical connections are tight. Check the lift ram packing nut for possible oil leakage while raising the plow. If any leakage is observed, tighten not more than ¼ turn after you feel packing nut contact the packing. Over-tightening affects cylinder operation and life of the packing. After plow is operated a short time, chevron packing will become saturated and normally leakage stops.

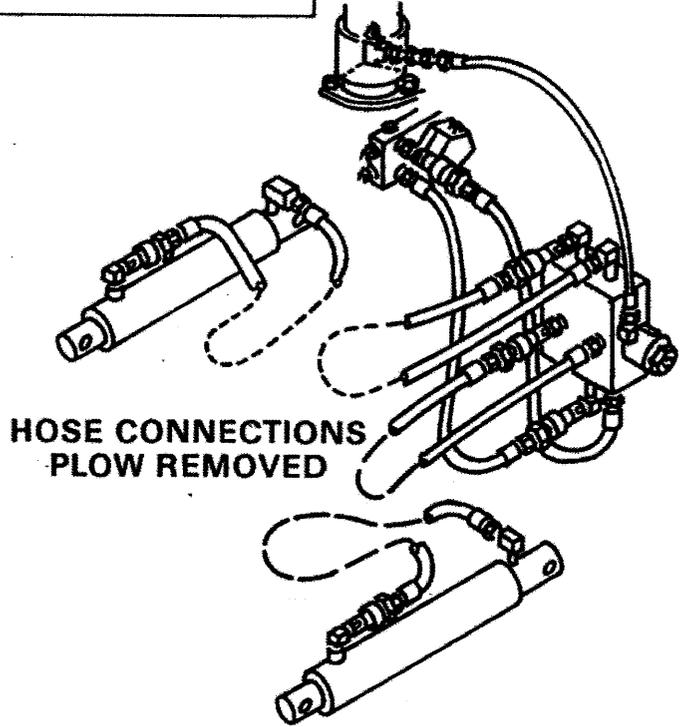
Care must be taken in routing of hydraulic hose to prevent pinching of hoses between vehicle bumper and A-Frame.



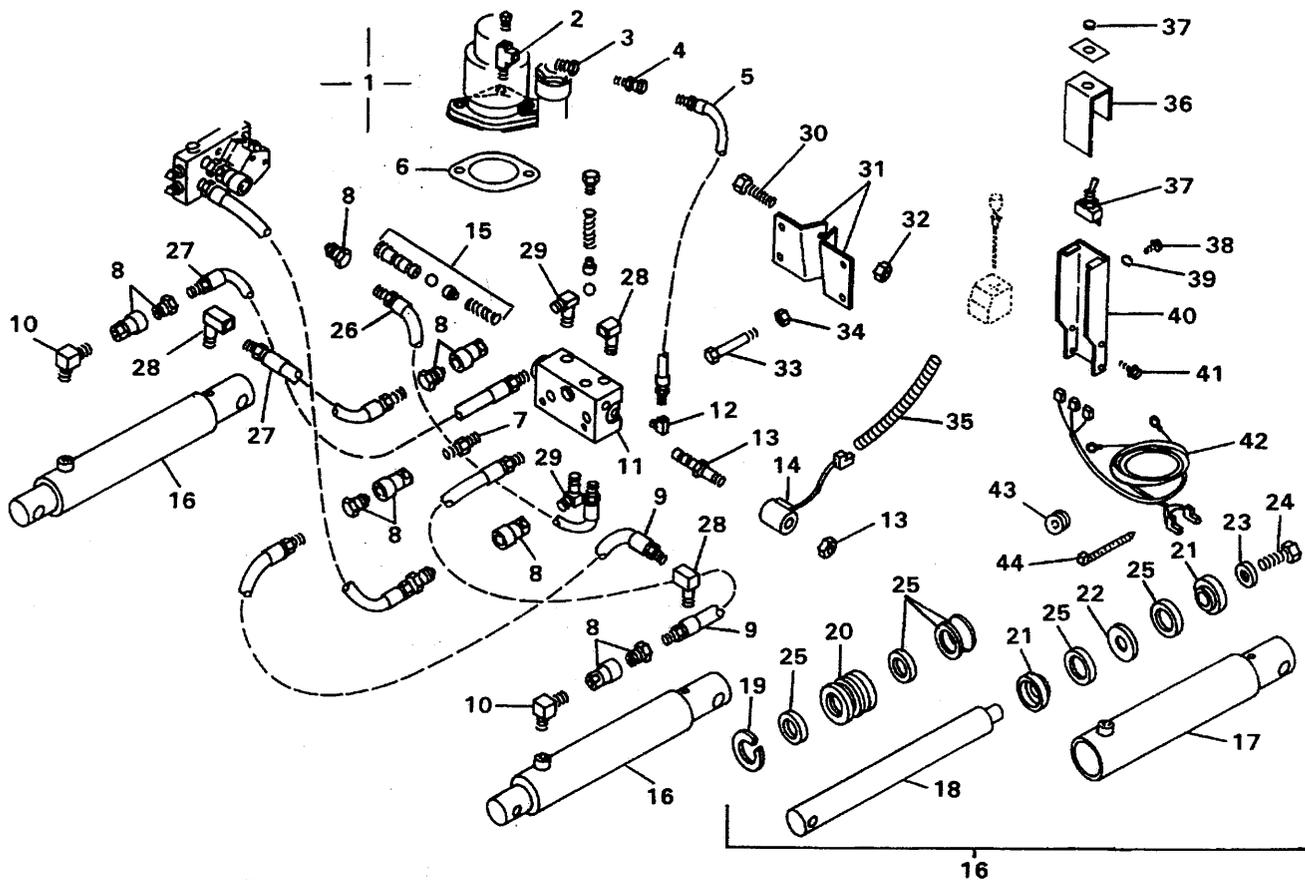
**WARNING:** DO NOT stand between the vehicle and blade or directly in front of blade when it is being raised, lowered or wings positioned. Clearance between vehicle and blade decreases as blade is operated. Serious bodily injury can result from blade striking a body or dropping on feet or hands.



**HOSE CONNECTIONS  
PLOW  
ATTACHED**



**HOSE CONNECTIONS  
PLOW REMOVED**



Item	Part No.	Quantity	Description
1	49217	1	Isarmatic® TRI-PLOW Hydraulic Unit w/4W Valve
2	92253	1	Pipe Tee — 3/8"
3	92179	1	Reducer Bushing — 3/8" x 1/8"
4	92924	1	Female Adapter Union (Swivel) — 1/8"
5	56226	1	Low Pressure Hose — 3/16" x 24"
6	25861	1	Gasket
7	25519	1	Hex Nipple — 1/4"
8	25232	5	Hydraulic Coupler — 1/4"
9	55020	2	High Pressure Hose — 1/4" x 38"
10	92278	2	Male Pipe Elbow — 1/4" x 90° — Short
11	56240	1	TRI-PLOW Valve Assembly
12	92202	1	Street Elbow — 1/8" x 90°
13	56251	2	Cartridge — 3 Way with Jam Nut
14	56252	2	Coil — 10 Volt
15	49219	1	Cushion Valve Kit — TRI-PLOW (2 Sets)
16	56206	2	Hydraulic Cylinder Assembly — 2" x 9-1/2" D.A.
17	56207	1	Cylinder Unit — 2" x 9-1/2" D.A.
18	56325	1	Plunger — 2" x 9-1/2" D.A.
19	56218	1	Retaining Ring — Internal
20	56214	1	Stop Plug
21	56209	2	Piston
22	56212	1	Spacer — Piston
23	56326	1	Retainer
24	90124	1	Capscrew — 9/16"-12 x 1-1/4" — Grade 5 — Special
25	49218	1	Seal Kit — 2" x 9-1/2" D.A.
26	56224	1	High Pressure Hose — 1/4" x 18"
27	56225	2	High Pressure Hose — 1/4" x 48"
28	92208	3	Street Elbow — 1/4" x 90° — Long
29	92275	2	Male Pipe Elbow — 1/4" x 90° — Long
30		1	Capscrew — 3/8"-16 x 1-1/2"
31	56229	2	Mount Plate, TRI-PLOW Valve Assembly
32	91333	1	Locknut — 3/8"-16 — Nylon Insert Type
33		2	Capscrew — 1/4"-20 x 2-1/2"
34	91331	2	Locknut — 1/4"-20
35	56255	1	Wire Loom — 24"
36	56253	1	Switch Bracket
37	56239	1	Toggle Switch — SPDT — with Knurled Facenut
38	93157	1	Capscrew — Thread Cutting — #8-32 x 3/8"
39	91231	1	Lock Washer — #8
40	56254	1	Mounting Bracket
41	93154	1	Hex Head Screw — #8 x 5/8" — Hi-Lo
42	56247	1	Harness — TRI-PLOW
43	25301	1	Rubber Grommet
44	59223	3	Cable Tie

NOTE: Only those items listed with a PART NUMBER are available for service.

USE ONLY GENUINE WESTERN® REPLACEMENT PARTS

**INSTALLATION INSTRUCTIONS  
FOR 59700 BLADE GUIDE ASSEMBLY**

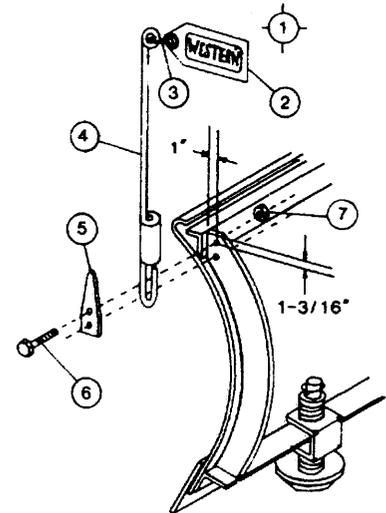
The following instructions simply outline the attachment of this blade guide assembly.

- Step 1. Lower blade to ground level.
- Step 2. If hole is not pre-drilled, drill one 1 1/32" hole, 1-3/16" down and 1" out on the outside rib of the blade. See diagram below.
- Step 3. Insert pointed end of clamp into coil of guide. Attach guide to rib using top hole of clamp. Secure assembly using supplied 5/16" x 1" bolt and locknut. Tighten until guide will stand alone perpendicular to road surface.
- Step 4. If hole is not pre-drilled, use lower hole of clamp as locator, drill bottom hole 1 1/32".
- Step 5. Bolt lower hole in place. Finish securing top bolt.
- Step 6. Attach other side following above steps.

Pictorial view supplied below. Remember to use standard methods and practices in attaching blade guides including wearing safety glasses during drilling.

**PARTS LIST  
59700 — BLADE GUIDE ASSEMBLY**

Item	Part No	Quan.	Description
1	59697	2	Blade Guide Rod, S-Hook & Flag
2	59694	1	Flag
3	59696	1	S-Hook
4	59691	1	Blade Guide Rod
5	59946	2	Clamp
6		4	Capscrew — 5/16"-18 x 1" Gr.2
7		4	Locknut - 5/16"-18 Nylon Insert



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

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