



Operation and Maintenance Manual

Introduction

Snow, despite the beauty it may impart to a bleak winter landscape, poses the dual threat of inconvenience and danger. The environmental conditions associated with snow, not to mention the health hazards and economic loss it may impose, seriously endanger thousands of lives annually. Business and industry suffer, and millions of snowbelt residents may be affected by a single snowstorm.

Meyer Products LLC has published this manual to help you get maximum performance from your Meyer Snow Plow and familiarize you with the features designed for efficiency and safety; be sure you recognize and understand them. Follow recommended operation and maintenance instructions, so when the storm hits, your Meyer Snow Plow will be ready and you will know how to plow like a pro. DO NOT EQUIP ANY VEHICLE WITH A SNOW PLOW WITHOUT CONSULTING MANUFACTURERS' RECOMMENDATIONS.

Vehicles with Meyer Snow Plows installed may be so equipped as to meet vehicle manufacturers' specifications and recommended options for snow plowing use. **Most vehicle manufacturers insist that vehicles which are to be used for snow plowing be equipped with certain options and accessories, and it is so stated in vehicle**

IMPORTANT NOTICE: In conjunction with FMVSS (Federal Motor Vehicle Safety Standards) and OEM (Original Equipment Manufacturer) guidelines, Meyer Products LLC has designed this plow package with the following guidelines:

CAUTION: Installation of a snowplow may affect your new vehicle warranty. For more information consult your Vehicle Owner's Manual / Vehicle Dealer.

WARNING: The vehicle must not be operated when overloaded. In all cases, the loaded vehicle weight, including the entire snowplow system, all aftermarket accessories, driver, passenger, options, nominal fluid levels, and cargo must not exceed the front/rear Gross Axle Weight Rating (GAWR), and total Gross Vehicle Weight Rating (GVWR). These weight ratings are specified on the safety compliance certification label on the driver's side door opening. The use of rear ballast weight may be required to prevent exceeding the front GAWR.

According to the NHTSA (National Highway Traffic Safety Administration) new and untitled vehicles need to be verified by the installer that snowplow and ballast (if needed) do not exceed the front/rear GAWR and total GVWR.

manufacturer specifications for snow plow application.

WARNING: Deployment of an air bag while using a Meyer Snow Plow will not be covered under Meyer Products' warranty.

We also recommend that, for optimum performance, vehicles used for snow plowing be equipped with:

- Four-Wheel Drive
- Minimum 60 Amp Alternator or larger
- Minimum 70 Amp Battery or larger (550 C.C.A.)
- Mud and Snow Tires
- Increased Radiator Cooling
- Automatic Transmission
- Power Brakes
- Power Steering

The Drive Pro™ Snow Plow system is designed for residential plowing, to be used on 1/2 ton vehicles or lighter.

Under the continuing Meyer Product Improvement Plan, Meyer Products LLC reserves the right to change design details and construction without prior notice and without incurring any obligation.



THE INDUSTRY'S BEST WARRANTY PROTECTION

2 YEARS STANDARD ON ALL COMPONENTS

3 YEARS ON ALL COMPONENTS*

5 YEARS ON ALL STRUCTURAL STEEL*

* Register at www.meyerproducts.com to activate years 3-5.

Be sure to REGISTER your Meyer Snow Plow System online at www.meyerproducts.com to ensure maximum warranty protection.

Hydraulic Lift Serial Number _____

Moldboard Serial Number _____

SAFETY FIRST

Meyer Products recommends that this manual be read cover to cover so that you are completely aware of all important safety recommendations. Record your E-58H Serial Number and Moldboard Serial Number. These serial numbers are printed on the E-58H unit decal and on the back of the Moldboard on the part number decal

www.meyerproducts.com
e-mail info@meyerproducts.com

SAFETY FIRST

Meyer Products LLC recommends that this manual be read cover to cover so that you, the consumer, are completely aware of all important safety recommendations.

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1. Moldboard

Steel sheet is bump and corrosion resistant. Built to last.

2. Cutting Edge

Replaceable high carbon steel provides extra long operating life; should be 1/2" above ground in plowing position. (Can be higher when used on gravel driveways.)

3. Runners

Adjustable and replaceable runners hold cutting edge at proper height.

4. Trip Springs

Allow moldboard to trip forward and ride over obstructions, this protects the snow plow, vehicle, and operator.

5. Pivot Bar

High quality steel - positions moldboard straight across, or angle right or left.

6. Pivot Pin

Pin that attaches the pivot bar to the A-Frame.

7. A-Frame

Designed to attach the snow plow to the vehicle, to pivot moldboard for angle plowing, and to hold plow at proper distance in front of vehicle.

8. Power Angling Cylinders (1-1/2" x 10")

Hydraulically positions the moldboard straight, or to right or left.

9. Clevis Frame

Allows snow plow assembly to be attached or detached from vehicle in minutes.

10. Lift Frame

Allows for fast, complete removal of front end hardware, snow plow, lights and hydraulic unit in one complete module.

11. Attaching Pins

Pull 1 handle to remove complete assembly.

12. Lift Arm

Chain locks in position to lift snow plow.

WARNING: LIFT ARM EXTENDS BEYOND BUMPER OF VEHICLE. TO MINIMIZE DAMAGE FROM A FRONT END COLLISION, LIFT ARM SHOULD BE REMOVED FROM VEHICLE WHEN SNOW PLOW IS REMOVED.

13. Meyer Nite Saber® Snow Plow Lights

Complies with the Federal Motor Vehicle Safety Standards.

14. Electric Hydraulic Power Unit (E-58H)

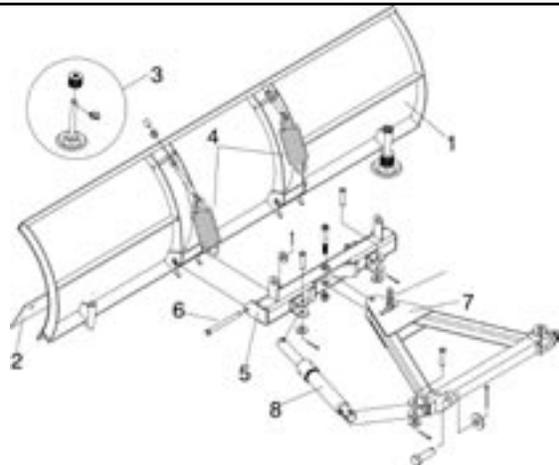
Operates snow plow hydraulically- raises, lowers, angles, holds and floats moldboard in plowing position.

15. Sno-Flo® Powder Coat

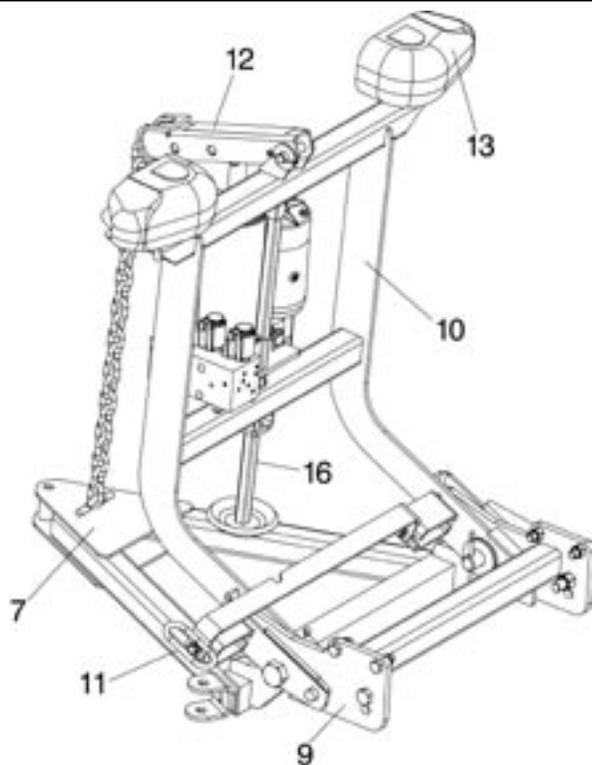
Baked on finish that looks like enamel, provides an extremely hard, low friction surface that outlasts ordinary paint by a large margin. Applied to all steel moldboards and mountings/frames.

16. Jackstand

Positions Moldboard and Lift Frame for easy attaching and detaching.



E-58H (14)



DETACHING THE COMPLETE ASSEMBLY

Leave control switch in lower float position and push down on the Lift Arm (4) approximately 1/4". Disconnect the electrical plug and slip on weather caps over the both ends. Remove Safety Clip from jackstand. Push Jackstand Lever down, until it is parallel with the cross bar of the Lift Frame, to lower Jackstand to ground. At the same time push the top of the Lift Frame up and towards the vehicle. Reinstall Safety Clip to Jackstand below the lift frame. Pull, then rotate Handle so the notch hooks onto the bracket on lift frame. The vehicle is now free from mount and may safely back away.

ATTACHING THE COMPLETE ASSEMBLY

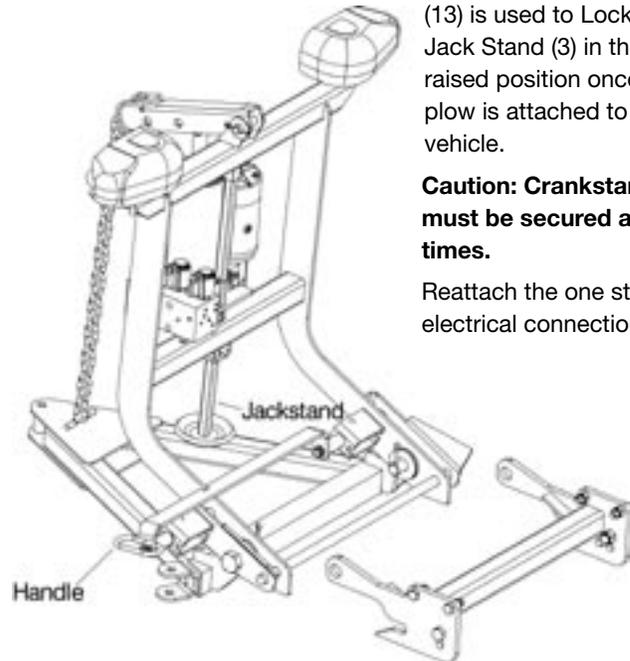
Check that the Handle Pin is disengaged. Drive the truck up to the Drive Pro™ assembly centering the hood of the truck to the lift arm to assure proper alignment with lift frame guide plates until contact is made. Once contact is made drive forward, pushing the assembly a few inches. This insures the A-Frame is square to the Clevis Frame for proper pin attachment. The rear fixed Pins should now be aligned with the rear notched hole on the clevis frame (1). Twist Handle Pin to unlock so that the pins become spring loaded then push the top of the Lift Frame towards the truck locking the front pins

to the clevis frame. Remove Safety Clip from jackstand. Push Jackstand Lever down and raise Jackstand to storage position. Reinstall Safety Clip to Jackstand above the lift frame.

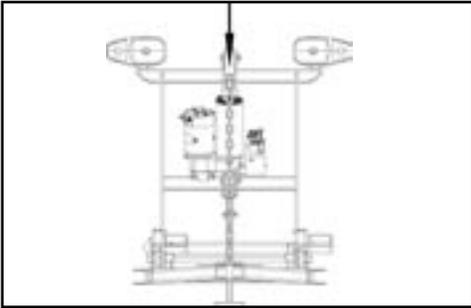
Note: Wire Lynch Pin (13) is used to Lock the Jack Stand (3) in the raised position once the plow is attached to the vehicle.

Caution: Crankstand must be secured at all times.

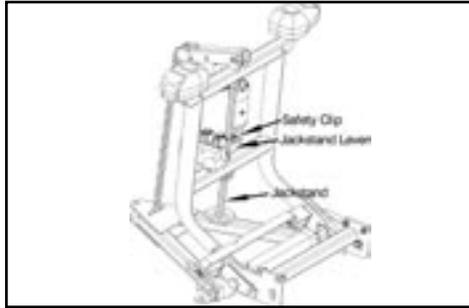
Reattach the one step electrical connection.



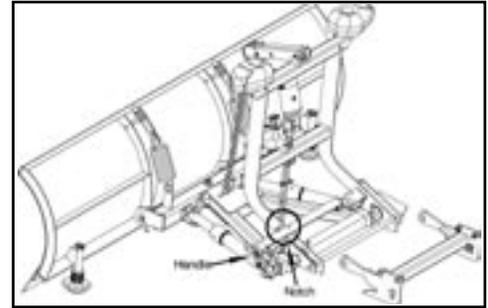
Removal



1 Lower Plow to float position and manually push lift arm down 1/4". Disconnect the electrical connection.

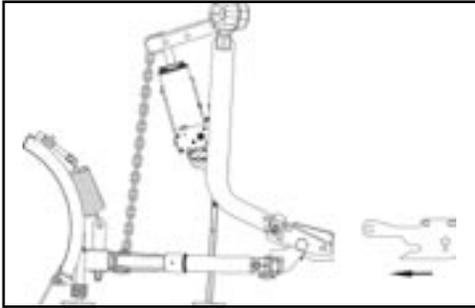


2 Remove Safety Clip from jackstand. Push Jackstand Lever down to lower Jackstand to ground. At the same time, push lift frame up and toward the vehicle. Reinstall Safety Clip to Jackstand below the lift frame.

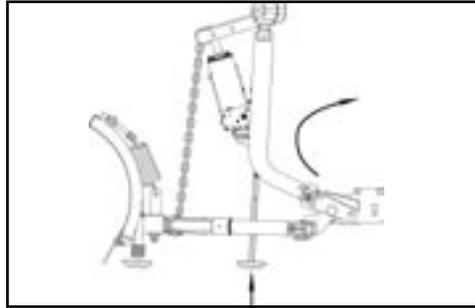


3 Pull, then rotate Handle so the notch hooks onto the bracket on lift frame. The vehicle is now free from mount and may safely back away.

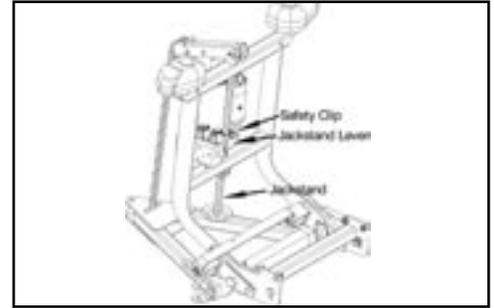
Attachment



1 Drive into assembly until contact is made and push assembly a few inches forward.



2 Rotate handle until engaged and push top of lift frame towards truck until pins click in place.

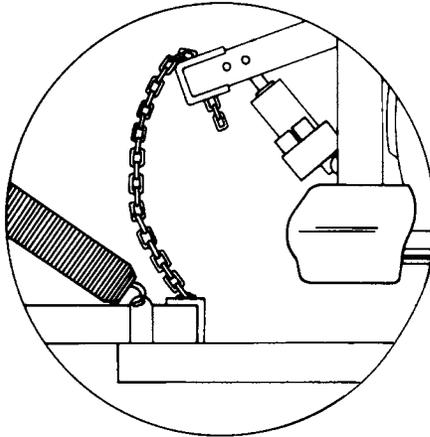


3 Remove Safety Clip from jackstand. Push Jackstand Lever down and raise Jackstand to storage position. Reinstall Safety Clip to Jackstand above the lift frame.

Always confirm pins are fully engaged before over the road or snow plow operation.

ADJUSTING CHAIN FOR PROPER SLACK WHEN PLOWING SNOW

1. Be sure lift piston is fully retracted.
2. Hold chain taut and choose the third link above lift arm, place that link in lift arm locking groove. This procedure will provide the proper amount of slack when snow plowing for the moldboard to follow the contour of the ground. You may wish to mark that link with paint or tape for easy identification. Due to the differences in vehicle ride heights, extra chain links may vary in length. **To prevent the extra chain links from causing damage, remove or secure the chain links together using an electrical tie strap.**



Snow Plow Operation

Electro-Touch Control

The snow plow should only be in operation when the vehicle ignition switch and the **Electro-Touch®** control switch are in the “ON” position. Care should be taken to insure that the **Electro-Touch®** control switch is kept dry and free from moisture during normal operation.

When the **Electro-Touch®** control switch is turned “On,” yellow lights illuminate the location of the individual touch pads for the functions of the snow plow: (Up), (Angle Left), (Angle Right), and (Down).

Lowering of the snow plow an inch at a time is possible by tapping the down arrow in short intervals. Holding down the down arrow will activate a green light located in the upper left corner of the **Electro-Touch®** switch. This green light indicates the snow plow is now in the Lower/Float position. In this position the snow plow will be able to follow the contour of the road and the snow plow can also be angled to the left or right. Touching the up arrow automatically cancels the Lower/Float position.



This switch is short circuit and temperature protected. All wire connections must be securely plugged together. If any of these conditions exist, the red overload LED will light. The overload LED (red light) is located in the upper left corner below the float light of the **Electro-Touch®** switch. Reset is accomplished by turning off the ignition switch or by turning the power switch off momentarily and then back on. If an overheating temperature condition exists, it will be necessary to allow the unit to cool down for approximately 2 minutes. If the overload light is still illuminated after attempts to reset the switch have failed, contact your nearest authorized Meyer Distributor for repairs.

CAUTION: When the snow plow is not in operation, the Electro Touch® Control Switch should be in the “OFF” position.

Over-the-Road Operation

WARNING

Based on the experience of our representatives and other background, we advise a maximum transporting speed of 40 m.p.h. or locally regulated speeds, whichever is less, dependent upon road conditions. The operators should, of course, maintain a safe stopping distance and adequate passing clearance at all times.

When transporting the snow plow to avoid engine overheating, angle the moldboard completely, carrying it as low as permitted for safety by road and surface conditions.

Pistol Grip Controller

The snow plow should only be in operation when the vehicle ignition switch and the control switch are in the “ON” position. Care should be taken to insure that the control switch is kept dry and free from moisture during normal operation.

When the control switch is turned “On,” lights illuminate the location of the individual touch pads for the functions of the snow plow: (Up), (Angle Left), (Angle Right) and (Down). Also when the control switch is turned “On” the snow plow lights are activated.

Lowering of the snow plow an inch at a time is possible by tapping the down arrow in short intervals. Holding down the down arrow will activate a float light located in the upper right corner of the control switch. This

22690 Pistol Grip Controller



light indicates the snow plow is now in the Lower/Float position. In this position the snow plow will be able to follow the contour of the road and the snow plow can also be angled to the left or right. Touching the up arrow automatically cancels the Lower/Float position.

While angling left or right or raising the

snow plow if the button is pressed for more than four seconds the operation will be cancelled. This feature eliminates unnecessary amp draw from the vehicle charging system.

This switch is self diagnosing. The monitor light is located in the upper left corner next to the float light of the control switch. When the monitor light turns on and begins to flash the control switch is sensing a problem with a specific coil/connection on the hydraulic unit. The label below is on the back side of your control switch.

Reset is accomplished by turning off the ignition switch or by turning the power switch off momentarily and then back on. If the monitor light is still illuminated after attempts to reset the switch have failed, contact your nearest authorized Meyer Distributor for repairs.



General Maintenance

Meyer Products recommends this maintenance information for regular service. Sustained heavy operation may call for more frequent use. Snow plowing subjects a vehicle to exceptionally rugged use. As a result, it is important to inspect and bring the snow plow and vehicle up to maximum operating conditions. ***Inspection should be made of both the vehicle and snow plow prior to the plowing season and after each use.***

IMPORTANT: Maintenance and repairs should be performed with the moldboard on the ground.

Pre-Season Maintenance

Scheduled vehicle maintenance should be performed as recommended by the manufacturer.

Don't forget that in addition to keeping equipment in order:

1. Keep windshield wipers, heaters and lights working.
2. Use emergency flasher lights for increased visibility and safety. Meyer offers as standard equipment quartz halogen snow plow lights for even brighter illumination.
3. Equip vehicles with chains where necessary.
4. Provide operators with protective clothing and with rubber gloves for handling snow melting chemicals.

VEHICLE ELECTRICAL SYSTEM — For maximum efficiency, the vehicle supporting the snow plow must be properly serviced. The

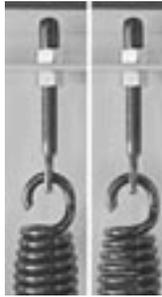
system should consist of at least a 70 amp/hr. battery and a 60 amp alternator. Be sure to check regularly:

1. Battery terminals to assure they're clean and free of corrosion.
2. Electrical connections, to assure they're tight and corrosion-free. Taping may be called for. All wires must be held clear of moving or hot engine parts or sharp sheet metal.
3. Battery must be in top operating condition.
4. Alternator and regulator, to assure maximum electrical output.

SNOW PLOW

NOTE: Always lower moldboard to ground when vehicle is not in use. Check the Electro-Touch® Diagnosis Chart, page 13-15, and Post Season Maintenance, page 11-12, for advice on maintaining the unit.

1. Check and maintain hydraulic fluid reservoir level to 1" - 1-1/2" from top cap. Oil level should be checked with lift ram in the down position.
2. Check entire hydraulic system for leaks. A significant drop in hydraulic fluid level is evidence of a leak which must be corrected to prevent serious damage. See page 13.
3. Before and after each season, grease pivot tubes. Lubricate all pivot points with chassis lube.
4. **ADJUSTING TRIP SPRING TENSION** - Tighten top locknut 4 turns beyond the point when spring coils begin to separate. Tighten bottom locknut to hold eye bolt in position as shown.



5. RUNNERS

- A. Inspect moldboard runners for wear and height adjustment.
- B. Always replace runners as soon as they start to wear through.
- C. Adjust the runners to maintain cutting edge height of 1/2" above ground in snow plowing position. (Can be set higher when used on gravel driveways).

6. CUTTING EDGE

Replace the cutting edge as soon as it appears worn approximately 4" on either corner. This will prevent permanent damage to the moldboard.

7. MOUNTING BOLTS

Retighten all mounting bolts after first snow plowing session and at regular intervals through the season.

8. **SNO-FLO® POWDER COATING**, both black and yellow, should be checked at the beginning and end of each season for any signs of rust. If any exists, use Meyer special Sno-Flo® powder coat touch-up available in spray cans.

NOTE: PROTECTION AGAINST RUST AND CORROSION

When the power unit is not used for extended periods, **protect the chromed lift piston by fully extending and coating it with chassis lubricant.** On power angling models, coat the exposed portions of the power angling cylinder rods with chassis lubricant to protect against corrosion.

Post Season Summer Maintenance

1. Draining & Replacing Meyer M-1 Hydraulic Fluid

Drain fluid through drain hole in base, shown in Figure 0-3, by completely retracting cylinder lift position and unbolting unit to pour fluid out, or use a suction pump. On models without drain plug, fluid must be drained by removing filler plug and turning unit upside down. Follow same procedure of retracting cylinder lift piston. On Power Angling models, disconnect the fittings at the Power Angling cylinders, completely retract the cylinder rods and purge cylinders and hoses of all hydraulic fluid. The complete hydraulic system should then be flushed out with Meyer Hydra-Flush before adding new Meyer Hydraulic Fluid.

2. **Screen-Type Filters** - Clean the filters (all models) with mineral spirits or equivalent and blow out with compressed air. See Figure 0-3.

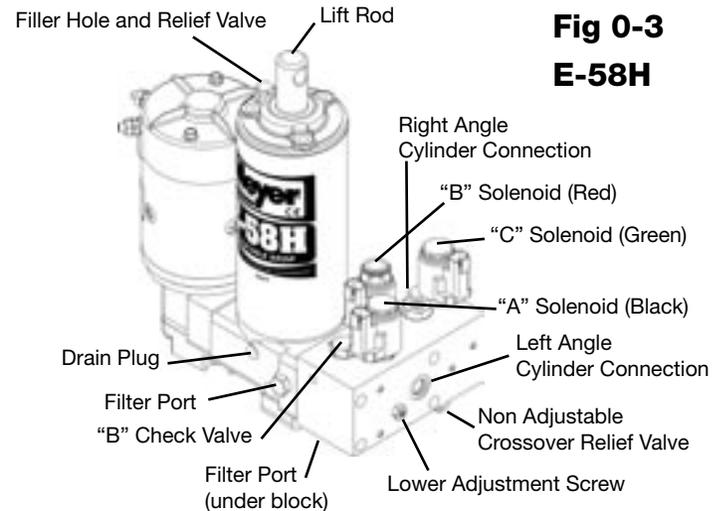
3. **Meyer Hydraulic Fluid M-1** is specially formulated with an anti-ice additive for almost constant viscosity in subzero temperatures. Because it is free-flowing in extreme cold, the unit's performance and efficiency are not affected by winter weather. It is effective for a maximum of one year. Always carry an extra quart of **Meyer Hydraulic Fluid M-1** or equal fluids. Use of any inferior fluids will void the Meyer warranty.
4. Refill power unit with **Meyer Hydraulic Fluid M-1** by fully retracting lift piston and filling reservoir to 1-1/2" below the filler hole. On Power Angling models, fill and bleed hoses and Power Angling cylinders by loosening hydraulic fittings at cylinders until they leak. Power angle the plow repeatedly from one side to the other unit fluid flows steadily from the fittings while maintaining a constant check on the reservoir fluid level. The filling end of the cylinder should be higher than the piston end to facilitate removal of air. Raise and lower the plow several times. With lift rod fully retracted check fluid level and replace filter plug.

SNOW PLOW STORAGE

1. When snow plow is disconnected, **extend lift cylinder to end of stroke and coat chrome rod with light grease**. This fills the cylinder with hydraulic fluid and protects the interior and exterior from rust and corrosion.
2. Whenever Moldboard is disconnected, coat the exposed portions of the power angling cylinder chrome rods with light grease to protect them from corrosion.
3. Be sure to reconnect optional quick couplers at the P.A. Rams to keep them clean and prevent contamination of the system.
4. Coat all pivot pins and other wear points with chassis lubricant.
5. Unplug all electrical connections at power unit. Coat all connections

with a dielectric compound to prevent corrosion and plug into their corresponding weather plugs. Unplug the snow plow lights, tape or use a dielectric compound at light connections to prevent corrosion.

6. **WARNING: LIFT ARM EXTENDS BEYOND BUMPER OF VEHICLE. TO MINIMIZE DAMAGE FROM A FRONT-END COLLISION, LIFT ARM SHOULD BE REMOVED FROM VEHICLE WHEN SNOW PLOW IS REMOVED.**



**Fig 0-3
E-58H**

DIAGNOSTIC FLOW CHART FOR ELECTRIC HYDRAULIC POWER UNITS

These charts are intended to be used as an aid in diagnosing problems on Meyer Hydraulic Power Units. They are not a substitute for factory training and experience. Be certain to read the General Information and Testing Tips sections before attempting any troubleshooting. Additional detailed information as well as all electrical schematics may be found in Service Manuals 1-822.

GENERAL INFORMATION

Before any troubleshooting is started, make certain the following conditions are met.

1. The moldboard is pointing straight ahead. This can often be done by connecting the hose from the left cylinder into the right cylinder and pushing the snow plow by hand.
2. The power angling cylinders must be installed correctly. Reverse them if installed on wrong side. (See Figure 0-3)
3. The solenoid coils must be on their proper valve: the "C"- coil (green and white wire), the "B"-coil (red and white wire) and the "A" coil (black and white wire).
4. The electrical installation must have been made according to instructions supplied by Meyer Products.

TESTING TIPS

Many tests do not require removing the Power Unit from the vehicle. However, more thorough testing can be done by using the Meyer Test Stand which allows direct pressure and Amperage readings.

1. Use a screwdriver or other small tool to check for magnetism of solenoid coils "A", "B" & "C". Place the tool on the side of the coil and have an assistant operate the switch. You should feel strong magnetic attraction.
2. Use a test light or volt meter to determine whether there is power at harness or switches. (The wire must be probed)
3. When determining Ampere draw of motor, always obtain the highest value possible, i.e., at maximum raise or angle with motor running.
4. Proper rotation for motor is indicated by an arrow on the top of the E-58H pump.
5. The pump shaft (all models) of a good pump can be turned smoothly using two fingers. If it can't be turned easily, the pump is too tight and must be replaced.
6. Pump pressure can be measured at an angle hose (note pressure at full angle) or in the pressure filter port (an adapter is necessary for the filter port). (See Figure 0-3.)
7. If hydraulic system is contaminated it is recommended that the hydraulic unit, power angling rams and hoses be drained and flushed clean. The system should then be refilled with Meyer M-I oil. See pages 19-20.

Electric Hydraulic Power Unit Diagnosis

| MODEL | CONDITION | POSSIBLE CAUSE | CORRECTION |
|--------------------------|--|--|--|
| All Power Angling Models | Plow does not lift or lifts slowly - motor operates. | <ol style="list-style-type: none"> 1. Low hydraulic fluid level. 2. Discharged battery. 3. Leaking or open "A" cartridge. 4. No current to "B" coil. (red and white wire) 5. Inoperative "B" coil. (red and white wire) 6. Malfunctioning motor. 7. Malfunctioning pump. | <ol style="list-style-type: none"> 1. Add fluid to proper level 2. Recharge battery. 3. Clean or replace "A" cartridge. 4. Locate malfunction and repair. 5. Replace "B" coil. (red and white wire) 6. Repair or replace motor. 7. Replace pump. |
| All Power Angling Models | Plow does not angle right - motor operates. | <ol style="list-style-type: none"> 1. Improper coupler arrangement. 2. Mechanical bind or interference. 3. Malfunctioning coupler. (if equipped) 4. No current to "C" coil. (green and white wire) 5. Inoperative "C" coil. (green and white wire) 6. Inoperative "C" cartridge. 7. Leaking or open crossover relief valve. | <ol style="list-style-type: none"> 1. Engage coupler properly. 2. Eliminate mechanical bind or interference. 3. Repair or replace coupler. 4. Locate malfunction and repair. 5. Replace "C" coil. (green and white wire) 6. Clean or replace "C" cartridge. 7. Clean or replace crossover relief valve. |
| All Power Angling Models | Plow does not angle left - motor operates. | <ol style="list-style-type: none"> 1. Improper coupler engagement. 2. Mechanical bind or interference. 3. Malfunctioning coupler. (if equipped) 4. Leaking or open crossover relief valve. | <ol style="list-style-type: none"> 1. Engage coupler properly. 2. Eliminate mechanical bind or interference. 3. Repair or replace coupler. 4. Clean or replace crossover relief valve. |
| All Power Angling Models | Plow will not angle - motor operates. | <ol style="list-style-type: none"> 1. Improper coupler engagement. 2. Mechanical bind or interference. 3. Leaking or open crossover relief valve. | <ol style="list-style-type: none"> 1. Engage coupler properly. 2. Eliminate mechanical bind or interference. 3. Clean or replace crossover relief valve. |
| All Power Angling Models | Plow will not hold in angled position. | <ol style="list-style-type: none"> 1. Air in cylinders and hoses. 2. Leaking or open dual pilot check valve. 3. Leaking crossover relief valve. 4. Crossover relief valve opening at too low a pressure. | <ol style="list-style-type: none"> 1. Bleed cylinders and hoses. Tighten P.A. cylinder gland nut. 2. Clean or replace pilot check valve. 3. Clean or replace crossover relief valve. 4. Replace crossover relief valve. |

Electric Hydraulic Power Unit Diagnosis

| MODEL | CONDITION | POSSIBLE CAUSE | CORRECTION |
|--------------------------|-------------------------|--|--|
| All Power Angling Models | Motor does not operate. | <ol style="list-style-type: none"> 1. Discharged or defective battery. 2. Loose or corroded electrical connections. 3. Inoperative starter solenoid. 4. Malfunctioning control switch. 5. Malfunctioning motor. | <ol style="list-style-type: none"> 1. Recharge or replace battery. 2. Clean and tighten electrical connections. 3. Replace starter solenoid. 4. Replace control switch. 5. Repair or replace motor. |
| All Power Angling Models | Plow does not lower. | <ol style="list-style-type: none"> 1. No current to "A" coil. (black and white wire) 2. "A" cartridge jammed in closed position. 3. Inoperative "A" coil. (black and white wire) 4. Lower Adj. screw | <ol style="list-style-type: none"> 1. Locate malfunction and repair. 2. Clean or replace "A" cartridge. 3. Replace "A" coil. (black and white wire) 4. Adj lower Adj. screw |
| All Power Angling Models | Plow creeps down. | <ol style="list-style-type: none"> 1. Leaking "A" cartridge. 2. Leaking "A" cartridge O-ring. 3. Leaking "B" check valve. 4. Leaking Ram Packing Cup. 5. Leaking O-ring at bottom of lift cylinder. | <ol style="list-style-type: none"> 1. Clean or replace "A" cartridge. 2. Replace O-ring. 3. Clean or replace "B" check valve. 4. Replace Ram Packing Cup. 5. Replace O-ring. |

Efficient Snow Clearance Starts with Planning

PREPARING AREAS, USE OF GUIDE MARKERS

Every area to be plowed should be inspected before snowfall for potential hazards. Holes should be repaired, raised manhole covers leveled or noted and obstructions noted to prevent damage to the plow mounting or vehicle undercarriage.

Markers or stakes with reflectors should be in position to indicate boundaries of areas to be plowed, location of shut-off valves, catch basins and other hazards. Markers should be at least three feet above the ground; higher in areas of deeper snowfall.

The first step in organizing an efficient plan is to prepare a map or procure a blueprint of the area. Locate and mark all utilities, outlets, shutoffs, catch basins and possible emergency equipment that must be reached from outside. Figure the square footage of each area and the total area. Especially note areas from which snow will have to be carried, call “trapped” areas. Although hauling is expensive, it is necessary where piled snow would limit access. Indicate clearing priorities on your map. This may aid you in preparing a priority plan for your clearance operation.

KEEP SNOW UNDER CONTROL

Deep or heavy, wet snow, because of its increased weight, calls for more skillful and powerful plowing than light powder snow.

Always plow in low gear and keep plowing. Heavy snow may also require clearing a path or area for working room to move snow to another area. Remember that wet snow weighs about 12 pounds per cubic foot. As it piles up in front of a snow plow blade, the weight can quickly increase to several tons.

Where packed snow or ice must be plowed, it is sometimes necessary to lower the cutting blade to rest directly on the surface. In that situation, plow in lowest gear for greatest power to the cutting edge. This method also prevents the plow from “climbing over” the icy surface.

If plowing very deep snow, 12 inches or more, you may have to plow with the blade partially raised to shear off successive layers of snow until a working area is clear. Then work small “bites” into the edge. The “bite” depth should be inversely proportional to the snow depth. A rule of thumb: 6-inch snow may be plowed with the entire blade width; 9-inch snow with 3/4 of the blade width; and 12-inch snow with only 1/2 of the width. Experience will show what work can be done without stalling or getting stuck.

Plow with the Storm

It is of utmost importance to remember one basic rule -- Always plow with the storm. Start plowing when snow is 1 to 4 inches deep, depending upon traffic or other limitations. Heavy wet snow can be very hazardous when just 1 inch is on the ground. Accumulations of more than 4 inches can be very difficult to clear.

Angle Moldboard for Optimum Results. You will not be able to plow snow of any significant depth straight ahead for more than a short distance. Set the moldboard at the best angle for rolling snow sideways in the desired direction. The snow



plow path, in the angled position, should exceed the tire track by at least two inches on either side. Be sure to have enough slack in the lift chain while plowing so the cutting edge of the moldboard can follow the ground contour. Use the adjustable runner shoes to set the bottom edge of the plow just above the ground for best operation.

It's important to recognize the significance of even a few inches of snow. Besides being slippery, especially when wet, snow can be extraordinarily heavy, and make auto travel impossible. Snowfall of just 1 to 3 inches will produce hazardous traffic and roadway conditions even for experienced drivers.

Snow is heaviest when wet, and most difficult to handle. The National Weather Service reports that a 6-inch, average weight snowfall on a 200 x 200 foot parking lot weighs 62 tons. Heavy, wet snow for the same area might weigh as much as 248 tons. If the heavy snow had to be hauled away, you'd need 74 full loads on a 10-yard truck.

Obviously, the only way to assure clear traffic areas is to be prepared with the proper equipment. Remember to keep current with accurate snowfall information from local weather bureaus via radio and television.

Established Snow Clearance Plan

Recommended equipment: A four wheel drive vehicle; a Drive Pro™ 6'-8" snow plow; snow shovels; and ice control equipment.

Recommended procedure: **PLOW WITH THE STORM.**

Begin plowing at the suggested accumulation for your type of establishment. Continue until snow has been cleared. Don't forget - snowfall often surpasses weather forecasts. A well planned clearing schedule will help prevent the necessity for expensive emergency action.

A typical small-area strategy:

1. Keep in touch with local weather forecasts for preparatory measures.
2. Notify scheduled personnel.
3. Have vehicles and equipment inspected, fueled and ready.
4. Clear area by pushing snow first to sides of drives. It is often true that the smaller the establishment, the greater the proportion of "trapped" areas which will require snow to be hauled away. Always deposit snow as far back as possible for greatest use of dumping areas.
5. Use snow shovels to clear walks, gates and doorways.
6. Treat with snow-melting materials as needed.



Snow Plowing Tips from the Pros

STRAIGHT LINE SNOW PLOWING

This method is most efficient for drives and walkways.

Moldboard type blade snow plows mounted on utility vehicles or service trucks are best for such an operation.

Set the snow plow moldboard at an angle so that the snow is rolled to the shoulder or curb.

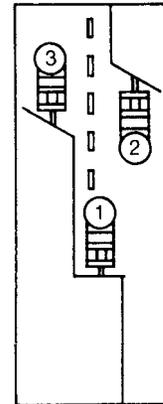
Single lane walks and aisles can often be cleared with one pass.

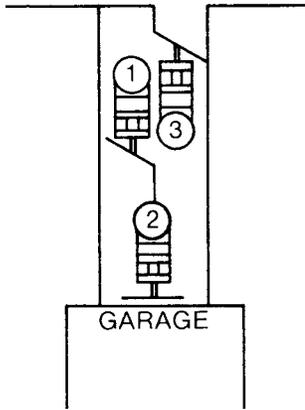
When the driveway is more than twice the moldboard's width, plow a center lane for the first full pass. Then, in follow-up passes, work the snow to the sides. The diagram illustrates plowing sequence for a typical 20-foot road.

Plow with the storm.

WIDE DRIVEWAY

1. Make one pass down center with blade in straight position.
2. Push snow to side with moldboard angled.
3. Do the same on either side.





DRIVEWAYS

1. Plow toward garage pushing snow to one side.
2. Set blade to straight position, lift it as high as possible and drive through snow to garage. Drop blade and back drag to street.
3. Back into driveway and angle blade again. Use as many passes as necessary to clear drive.

BACK DRAGGING:

WARNING: Use caution when back dragging. Runners can catch on objects causing damage to the equipment or the plowing surface. To reduce the risk of damage, remove or raise runners when back dragging.



CLEARING TRAPPED AREAS

Areas where there is little or no space for stacking cleared snow are considered “trapped.” An example is an area requiring full access from surrounding buildings. Snow plowing techniques are the same as for any other space of comparable size, but heavy accumulations must be piled for removal by truck.

CLEARING RESIDENTIAL AREAS

Driveways and aprons are most efficiently cleared by maneuverable four wheel drive vehicles. Recommended procedure is to enter the driveway rolling snow away from the residence. Stop about two-thirds of the way in, set the blade in bucking position, lift as high as possible, then drive through the snow to the garage. Drop the blade and back drag to the street. Turn around, back into the cleared path to the garage, reset the blade angle and continue rolling snow away from the house. Complete as many passes as necessary to clear the snow.

STACKING

When snow clearance conditions are perfect, snow can be merely pushed out of the way to unused areas. The first storm of the season, plow back from the drive area to allow space to pile future snowfall. It is usually necessary to pile snow up to considerable heights. In that case, **push the snow forward and upward by raising the snow plow as you move into the pile.** The vehicle's momentum will carry the plow into the pile, avoiding equipment damage. The pile should slope outward, so later snows can be pushed upward. **WARNING: Stacking snow or pushing up into high snow piles with the plow in Lower/Float or Angled position can cause damage to the Snow Plow components or the vehicle that will not be covered under the Meyer Products Warranty Program.** Such damage may include, without limitation, twisting the A-Frame, the Moldboard hitting the Lift Arm, or the Plow Markers striking the vehicle.



Minerals and Chemicals for Snow and Ice

Except in very light snow, ice melting materials should never be used in place of snow plowing. However, in combination with trained personnel and equipment, ice melting materials play an important part in controlling ice and snow. Whenever possible, apply ice melting materials before a snowfall. You'll use less, and it will be more effective in preventing snow and ice from adhering to the pavement surface and less damaging for the environment. You may have to increase the use of ice melting materials at night and as temperatures fall.

Experts agree a mixture of two parts mixed ice melting materials (1:3 calcium chloride to salt, by weight) mixed with one part abrasive (cinder, sand or slag) is more effective than rock salt alone in melting snow and ice below 30°F. One hundred fifty pounds of such mixture with abrasives will treat a 50,000 sq.ft. surface.

It is imperative to treat priority areas such as hills, heavy traffic areas, bridges and intersections first, especially where snow may compact and adhere to the road surface, causing icy road conditions. When slush begins to stiffen and refreeze, it will be necessary to plow again and reapply ice melting materials.



Meyer Spreaders



Hotshot™ (38100) & Hotshot HD™ (38110)

The Meyer Hotshot spreaders promise to last season after season. These Spreaders are available in steel and stainless steel (HD). Both use a polypropylene hopper with a capacity to hold 1.3 c.f. / 70lbs. of salt, sand seed or any other free flowing material. Other features include; infinitely adjustable feed gate (up to 12 foot wide pattern), pneumatic tires and weather resistant fitted hopper covers which will keep the spreader material dry and contained in the hopper.



Mini Jr. (36006)

The Meyer Mini Jr (5.75cu.ft.) is an ideal solution for small and medium sized jobs: walkways, intersections, access ramps and parking lots. The no rust thermoplastic hopper and internal vertical spiral auger provide continuous and even flow of material. Adjustable controls allow spreading of #1 rock salt from 3 to 30 feet. Easy to attach and detach. The Mini Jr. mounts to a standard 2" trailer receiver hitch.



Blaster™ Spreader

350/350S

750/750S

The Blaster™ Spreader is a poly tailgate spreader, available in four models that spread salt or salt & sand. What makes this spreader unique is its 1/2 horsepower direct drive motor, it's the most powerful spreader motor available. The motor's "Fast Blast" feature can produce up to 70 amps of surge power to grind through chunks of salt or sand. The 750- and 350-pound hoppers are made of extended life polyethylene and are backed by Meyer's exclusive 3 + 5 year ROC Solid Warranty. Variable speed control allows for precise material spread pattern up to 40 feet.

MEYER ACCESSORIES

M-1 Hydraulic Fluid

Keep your Meyer Electro-Touch® snow plow control system operating at peak performance; change hydraulic fluid yearly. Meyer M-1 Hydraulic Fluid has additives that insure peak efficient operation of all Meyer electric hydraulic power units (15134).



Meyer® M1 Hydraulic Fluid

Keep your Meyer electric hydraulic control system operating at peak performance. It features special additives to ensure efficient operation.



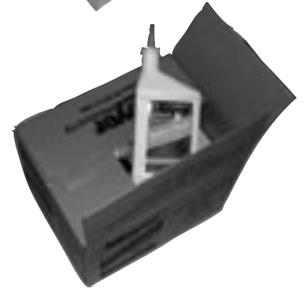
Hydra-Flush®

Hydra-Flush™ advanced technology maintains your lift's maximum performance by removing contaminants and performance robbing deposits. Hydra-Flush™ protects and preserves the life of your pump, seals, o-rings, and hoses. It is ideal for off-season storage (15901).



Meyer® M2 Hydra-Flush™

Hydra-Flush contains a blend of additives that ensure maximum performance for flushing and off-season storage for all electric mechanical hydraulic units.



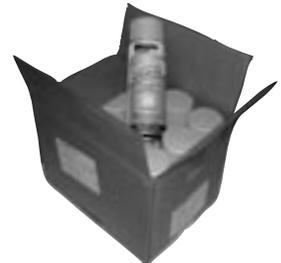
Sno•flo® Powder Coat Touch-Up Paint

Super-smooth high gloss paint especially formulated for use on powder coat finishes. Available in 12 oz. aerosol cans. Black (07026) Yellow (07027) & 1 qt. brush-on (07181).



Industrial Sno-Flo® Paint

Specially formulated to improve snow-rolling action. Aerosol spray available in Gloss Yellow, Gloss Black and White Primer. Gloss Yellow also available in 1-quart can.



MEYER ACCESSORIES

Lock Pin

Protect your Meyer Snow Plow components with this sturdy, durable stainless steel and brass lock pin. Available in two sizes for the Quik-Lift or Electro-Touch power units and the EZ-Mount Xpress™. Quik-lift - 2" long (07694C) Electro-lift - 3" long (07695C)



Urethane Cutting Edge

Produces excellent results on wet or unpacked snow. It's reversible for extended wear.



Timbren Suspension Enhancement System

Timber Suspension Enhancement Systems help reduce sway, improve roll stability, cushion road shock and enhance the handling of your 4 x 4.



Nite Saber® II Lights

Meyer offers two snowplow light choices: Optional Nite Saber II lights are an upgrade to our standard Nite Saber I lights. Nite Saber II lights feature a four headlamp system, advanced complex reflectors, and high output harnessing. (see page 4 for further information). Nite Saber I lights are standard equipment on new Meyer mounts. They have a slim profile and a strong light output.



Meyer Genuine Parts Kit

The Meyer Genuine Parts Kit includes the most commonly requested Meyer Genuine Parts. Inside the durable tool box, you'll find Meyer Hydraulic Oil, Hinge and Linch Pins, Eye Bolt, Solenoid Starter, the Hydraulic Coupler Assembly, Hose Assembly and Ell Swivel, all neatly packed in a sturdy Craftsman tool kit with room to spare for a few important tools (08823).



Meyer Touch Pad Leg Strap

A perfect complement to the Touch Pad Controller is the durable nylon leg strap that keeps the Touch Pad attached to the operator's leg for easy locating. The adjustable plastic buckle allows for a custom fit. The strap's velcro attaches to the velcro already on the Touch Pad (22265C).



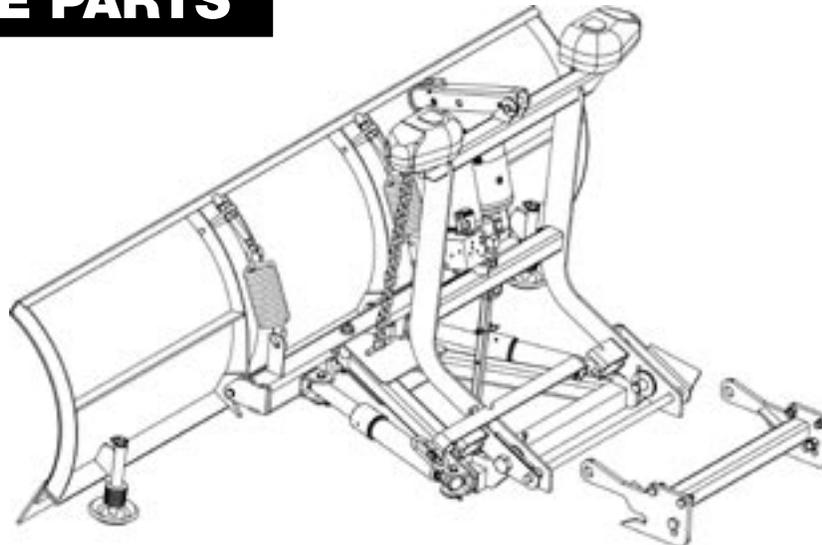
Whelen Lights/Alarms

Stand out and get noticed with warning lights, strobes and backup alarms from Whelen. These products are available in select styles and can easily be added to new or existing vehicles to increase your safety when plowing in congested or busy areas.



MEYER GENUINE PARTS

E-58H



CUTTING EDGES - (STEEL)

09277

09131 ST-6.5

NUTS & BOLTS (STEEL)

08486 SET OF 6 DRIVE PRO™

URETHANE EDGES W/HARDWARE (OPTIONAL)

08277 DRIVE PRO™

SNOWPLOW HARDWARE

12978 TRIP SPRING

09124 EYE BOLT & NUTS

09916 MARKER KIT

13507 KING BOLT W/GREASE FIT.

22720 PIVOT PIN

RUNNERS & SPINDLES

09127 RUNNER ASSEMBLY

DRIVE PRO™ FRAME

13596 FRAME

POWER ANGLING CYLINDERS

07968 1 1/2" X 10"

ANGLING CYLINDER SEAL KITS

07705 1 1/2" CYLINDER (OMCO)

07831 1 1/2" CYLINDER (MONARCH)

HOSE & HOSE FITTINGS

22461 HOSE ASSY.

COUPLER (OPTIONAL)

22444 M COUPLER SAE 6 HOSE END

22443 F COUPLER SAE 6 HOSE END

22445 F COUPLER SAE 6 VLV BLOCK SIDE

22442 M CPLR SAE 6 VLV BLOCK SIDE

08206 COUPLER KIT

SNOW DEFLECTOR KITS (OPTIONAL)

12706 6.8 FT. LG. DRIVE PRO™

ELECTRIC/HYDRAULIC POWER

15254 E-58H SEAL KIT

15969 E-58H MASTER SEAL KIT

POWER UNITS

15995 E-58H UNIT ONLY

MISC. POWER UNIT

15727 MOTOR (ISKRA) TWO TERMINAL E-58H

15854 BRUSH KIT - ISKRA

15889 PUMP ASSEMBLY E-58H

15980 BASE & STRNR. ASSY E-58H

MISC. POWER UNIT PARTS

15738 TOP CAP ASSY. E-58H

15925 A SOLENOID ASSY.

15916 A COIL

15917 A VALVE

15926 B SOLENOID ASSY.

15918 B VALVE

15916 B COIL

15987 C SOLENOID ASSY.

15916 C COIL

15958 C VALVE

15370 MOTOR SOLENOID

SINGLE HARNESS PLUG ASSEMBLY

07290 PLUG ASSEMBLY

22610 MALE PLUG (VEHICLE SIDE)

22604 FEMALE SOCKET (HYD. SIDE)

22263 WEATHER COVER

22279 VEH. WEATHER COVER

SWITCHES

22154 TOUCH PAD

08583 FLOOR MOUNT BRACKET

22690 PISTOL GRIP CONTROLLER

LIGHTS - 07223

07224 PLOW LIGHT - PASSENGER

07225 PLOW LIGHT - DRIVER

SNOW PLOW LIGHTS

07116 CONTROL MODULE

07118 "C" HARNESS

07119 ROCKER SWITCH

07347 CONTROL MODULE

PAINT - TOUCH UP

| | |
|-------|--------------------------------|
| 07026 | BLACK AEROSOL (1) |
| 08676 | BLACK AEROSOL (12) |
| 07027 | SNO-FLO AEROSOL (1) YE |
| 08677 | SNO-FLO AEROSOL (12) YE |
| 07028 | SNO-FLO BRUSH-ON .6 OZ. (1) YE |
| 08678 | SNO-FLO BRUSH-ON .6 OZ.(12) YE |
| 07066 | SNO-FLO - QT. (1) YE |
| 08686 | SNO-FLO - QT. (12) YE |

HYDRAULIC FLUID

| | |
|-------|-----------------------|
| 15134 | M-1 FLUID QUART |
| 15487 | M-1 FLUID 12 QT. CASE |

Meyer Products LLC**U.S. Patent Numbers**

| | | |
|-----------|-----------|-----------|
| 7,114,270 | 6,138,388 | 5,036,608 |
| 6,015,219 | 6,265,829 | 5,075,988 |
| 6,005,300 | 6,276,075 | 5,088,215 |
| 6,273,729 | 6,318,975 | 5,361,519 |
| 6,163,985 | 6,354,024 | 6,134,813 |
| 6,153,975 | 6,618,964 | 6,564,479 |
| 6,594,923 | 7,117,617 | 4,803,790 |
| 6,256,909 | 399,326 | 4,845,866 |

Canadian Patent Numbers

| | |
|-----------|-----------|
| 2,260,509 | 2,298,243 |
| 2,282,045 | 2,327,155 |
| 2,300,012 | 2,326,946 |
| 2,293,858 | 85,202 |
| 2,370,925 | 2,266,738 |
| 2,331,653 | 1,315,094 |
| 2,314,772 | |

Other Patents Pending
For Patent Information, see
www.meyerproducts.com

NOTE: ELECTRICAL REPLACEMENT PARTS LISTED ABOVE ARE FOR 12 VOLT SYSTEMS ONLY.

**MEYER@DIAMOND@ SNOW PLOWS
LIMITED WARRANTY EFFECTIVE AUGUST 1, 2006
(Continued from reverse side)**

What Meyer Products Will Do:

Meyer Products will repair any product that proves to be defective in materials or workmanship. In the event repair is not possible or practical (as determined by Meyer Products in its sole discretion), Meyer Products will either replace the product with a new product of similar model and price, or refund the full purchase price, as determined by Meyer Products.

Customer Responsibilities:

Customer must keep the complete Snow Plow Package serviced/maintained as recommended by Meyer Products. A written record of service must be maintained, along with receipts for maintenance materials purchased. A copy of the maintenance record and pertinent receipts may be requested in the event of a claim.

How To Get Service:

In order to obtain service under this warranty, the original purchaser must:

- Use all reasonable means to protect the complete snow plow package from further damage;
- Return the claimed defective part to the Meyer@Diamond@ Distributor/Sub-Distributor from whom the product was purchased or to any authorized Meyer@Diamond@ Distributor/Sub-Distributor, transportation and freight charges prepaid. Only Meyer@Diamond@ Distributors/Sub-Distributors are authorized to perform the obligations under this warranty. For the address and telephone number of the Meyer@Diamond@ Distributor/Sub-Distributor nearest you, check the telephone directory, go to www.meyerproducts.com, write us at the address below, or call (216) 486-1313 for assistance;
- Provide maintenance record and receipts for required maintenance, if requested;
- Allow inspection of damaged parts and/or complete snow plow package if deemed necessary by Meyer Products.
- It is the responsibility of the original purchaser to establish the warranty period by verifying the original delivery date. A bill of sale/sales receipt, cancelled check or some other appropriate payment record may be kept for that purpose.

How State Law Applies:

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

How to register your Meyer/Diamond Plow to receive the ROC Solid Warranty

Go to www.meyerproducts.com and click on the link to register your plow.

Fill out the information on the form as required.

The serial number location of the moldboard is shown in Figure 1.

The serial number location of the hydraulic unit is shown in Figure 2.

Fill out the remainder of the information to complete the registration.



MEYER PRODUCTS LLC
18513 Euclid Avenue • Cleveland, Ohio 44112-1084
www.meyerproducts.com • e-mail info@meyerproducts.com

MEYER®/DIAMOND® SNOW PLOWS LIMITED WARRANTY EFFECTIVE AUGUST 1, 2006

What is Covered:

Meyer Products, LLC, warrants to the original purchaser of Meyer® and Diamond® brand products that they will be free from defects in materials or workmanship, with the exceptions stated below. No person is authorized to change this warranty or to create any additional warranty on Meyer®/Diamond® products.

How Long Coverage Lasts:

This warranty runs for a period of two years from the date of purchase on any purchase of a complete Snow Plow Package¹. If the Package is registered online at www.meyerproducts.com within sixty (60) days of purchase, your warranty for the Package will be extended for a period of one year and you will also receive a warranty for a period of five years from the date of purchase on Structural Steel². In addition to the warranties covering a complete Snow Plow Package and Structural Steel, you will receive a warranty for a period of one year from the date of purchase on individual parts, components, or accessories. All foregoing warranties apply only to an original purchaser of the product if the product is installed by an authorized Distributor/Sub-Distributor and terminate if the product is sold or otherwise transferred. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

What is Not Covered:

This warranty does not cover:

- Problems caused by failure to follow the product instructions, failure to maintain the product as described in the Operator's Manual, or failure to maintain proper levels of lubricants;
- Problems caused by contamination or restriction of lubricant systems, or damage resulting from rust, corrosion, freezing or overheating;
- Paint, or expendable snow plow parts such as pins, runners, cutting edges, chrome plating, springs and markers;
- Damage to any vehicle to which the products are mounted, or the suitability of any product for vehicles which are not fitted with the appropriate heavy-duty snow plow service preparation parts;
- Damage caused by usage that is not in accordance with product instructions (use of the snow plow for any purpose other than plowing snow is considered misuse and abuse);
- Any snow plow, or any part, component, or assembly thereof, which has been modified or altered;
- Problems caused by using accessories, parts, or components not supplied by Meyer Products;
- Cost of tax, freight, transportation or storage charges, environmental charges, solvents, sealants, lubricants or any other normal shop supplies.
- Problems caused by collision, fire, theft, vandalism, riot, explosion, lightning, earthquake, windstorm, hail, water, flood, or any other Acts of God;
- Liability for damage to property, or injury to, or death of any person arising out of the operation, maintenance or use of the covered product;
- Products with missing or altered serial numbers;

The original purchaser's sole and exclusive remedy against Meyer Products and its Distributors and Sub-Distributors, and Meyer Products' sole obligation for any and all claims, whether for breach of contract, warranty, tort (including negligence) or otherwise shall be limited to providing, through its authorized Distributor/Sub-Distributor network, all labor and/or parts necessary to correct such defects free of charge. Any cost incurred in returning the product to an authorized Meyer®/Diamond® Distributor/Sub-Distributor is the responsibility of the original purchaser. ALL EXPRESS AND IMPLIED WARRANTIES FOR THE PRODUCT, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN TIME TO THE TERM OF THE LIMITED WARRANTY PERIOD. NO WARRANTIES, WHETHER EXPRESS OR IMPLIED, WILL APPLY AFTER THE LIMITED WARRANTY PERIOD HAS EXPIRED. Meyer Products disclaims liability beyond the remedies provided for in this limited warranty, and disclaims all liability for incidental, consequential, and special damages, including, without limitation, any liability for third-party claims against you for damages, for products not being available for use, or for lost profits. Meyer Products' liability will be no more than the amount you paid for the product that is the subject of a claim; this is the maximum amount for which we are responsible. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

¹A complete Snow Plow Package consists of the hydraulic motor, operating controller, lift-frame, moldboard and all related items.

²Structural elements consist of the mounting, lift-frame, A-frame, sector, and the moldboard.

(Continued on Reverse Side)