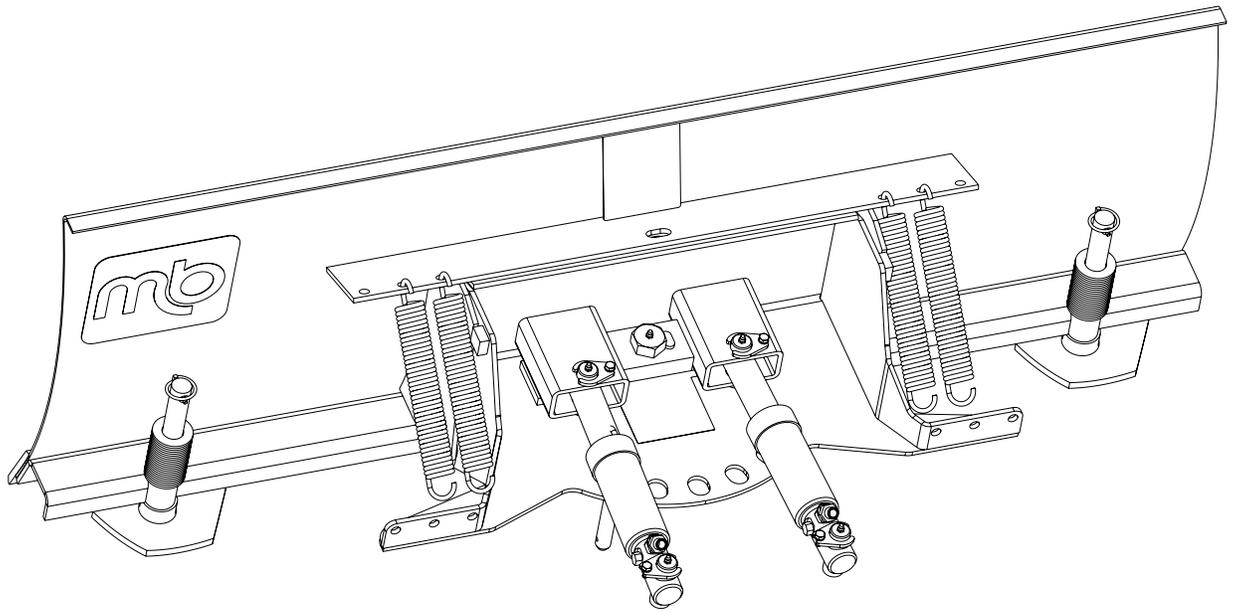


OPERATOR'S MANUAL

Model DZR

Straight Blade Plow



M-B Companies, Inc.
1615 Wisconsin Ave.
P. O. Box 200
New Holstein, WI 53061-0200
(920) 898-1560 or 800-558-5800
FAX: (920) 898-4588

Publication: DZR 070111
Copyright 2011

TABLE OF CONTENTS

INTRODUCTION	
Operator's Manual	3
Identification Numbers	3
SAFETY	
Safety Alerts	5
Safety Decals	5
Operation Guidelines	5
Maintenance Guidelines	6
CONTROLS AND FEATURES	7
SETUP AND ADJUSTMENTS	
Setup	9
Skid Shoe Adjustment	9
OPERATION	
Pre-Start Checks	11
Operation	11
Travel Procedure	11
MAINTENANCE	
Maintenance Schedule	13
Lubrication	13
STORAGE	15
TROUBLESHOOTING	15
SPECIFICATIONS	17
SERVICE PARTS	19
PARTS LISTS	
WARRANTY	
DRAWINGS	

INTRODUCTION

OPERATOR'S MANUAL

You must read, understand and comply with all the safety and operating instructions in this manual before attempting to set-up and operate your DZR Plow.

Failure to comply with the safety and operating instructions can result in loss of machine control, serious personal injury to you and/or bystanders, and risk of equipment and property damage.

IDENTIFICATION NUMBERS

When contacting your authorized dealer for information, replacement parts or service, you **MUST** have the model and serial number of your unit.

Record the serial number in the space provided. The serial number plate/decals can be found in the location shown in Figure 1.

Model Name/Number:	
Date Purchased:	Serial #:

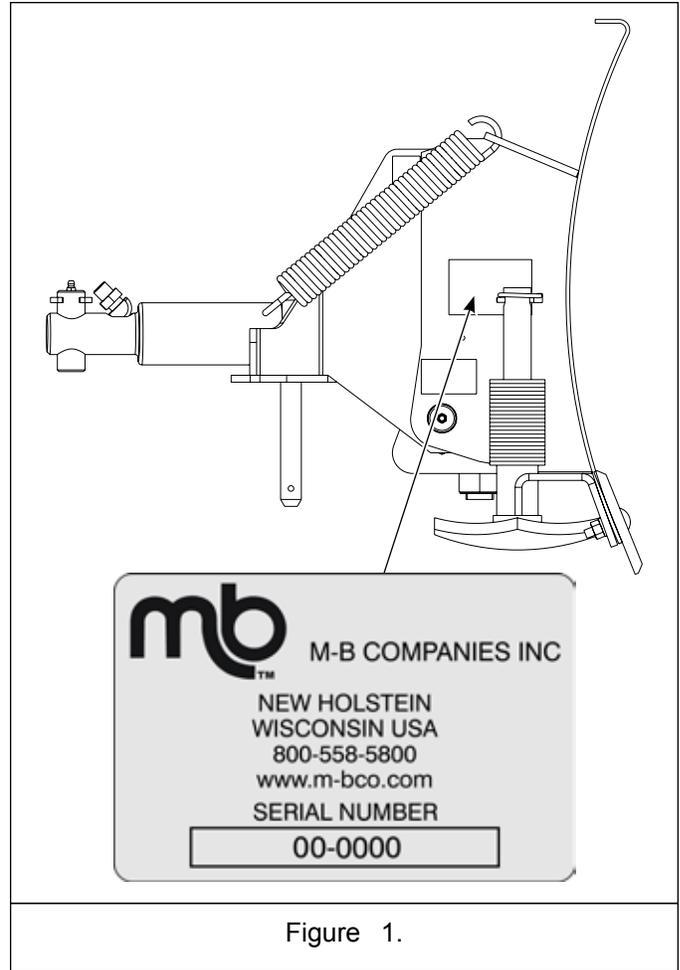


Figure 1.

This Page Intentionally Blank

SAFETY

SAFETY ALERTS

Signal words and alert symbols notify of important safety precautions.

DANGER!



Indicates a hazardous situation which, if not avoided, will result in serious injury or death.

WARNING!



Indicates a hazardous situation which, if not avoided, could result in serious injury or death.

CAUTION!



Indicates a hazardous situation or unsafe practice which, if not avoided, could result in minor or moderate injury or property damage.

SAFETY DECALS

Although reading this manual and the safety instructions it contains will provide you with the necessary basic knowledge to operate this equipment safely and effectively, we have placed several safety labels on the unit to remind you of this important information while you are operating your unit.

All DANGER, WARNING, CAUTION, and instructional messages on your unit should be carefully read and obeyed. Bodily injury can result when these instructions are not followed. The information is for your safety and it is important.

These labels will act as a constant visual reminder to you, and others who may use the equipment, to follow the safety instructions necessary for safe, effective operation.

If any of these labels are lost or damaged, replace them at once. See your local dealer for replacements.



PRE-START GUIDELINES

- Install any covers or guards which may have been removed for shipping purposes.
- Before starting equipment, walk around equipment, making a visual inspection that all safety devices are properly installed and secured.
- Check that all hardware, fasteners, hydraulic fittings, etc. are in good condition and properly fastened. Replace any fatigued or damaged items with proper replacements.
- Personnel who are not required to be in the work area should be kept away. Never start the equipment unless you are absolutely certain that everyone in the area is clear of the machine and aware it is being started.
- Follow the manufacturer's recommended start-up procedure.

OPERATION GUIDELINES

Read, understand and follow all instructions in the manual and on the unit before starting.

- Only allow responsible adults who are familiar with the instructions, to operate the unit (local regulations can restrict operator age).
- Clear the area of objects such as rocks, toys, wire, etc., which could be picked up and thrown.
- Be sure the area is clear of other people, bystanders or pets. Stop unit if anyone enters the area.
- Always look down and behind before and while traveling in reverse.
- Always stand clear of the discharge area when operating this unit.
- Disengage all clutches and PTO's before starting engine.
- Never leave a running machine unattended. Always disengage the attachment and traction controls, lower the attachment, set the park brake, stop the engine and remove the ignition key before leaving the machine.
- Operate only in daylight or good artificial light.
- Never carry passengers.
- Do not operate the unit while under the influence of drugs, alcohol or other medication.
- Watch for traffic when operating near or crossing roadways.
- Use extra care when loading or unloading the unit into a trailer or truck.
- Keep in mind the operator is responsible for accidents occurring to other people or property.
- Data indicates that operators, age 60 years and above, are involved in a large percentage of power equipment-related injuries. These operators should evaluate their ability to operate the unit safely enough to protect themselves and others from injury.
- All operators should seek and obtain professional and practical instruction.
- Protect eyes, face and head from objects that may be thrown from unit. Wear appropriate hearing protection.
- Always wear substantial footwear and appropriate clothing. Wear footwear that improves traction on slippery slopes. DO NOT wear long scarves or loose clothing that could become entangled in moving parts.
- Never place your hands or any part of your body or clothing inside or near any moving part while unit is running.
- Stop engine before: refueling, cleaning, making adjustments or removing the attachment assembly.
- Follow the drive unit manufacturer's recommendations for wheel weights or counter weights.

SAFETY

- Adjust pattern before operating.
- Do not touch parts which may be hot from operation. Allow such parts to cool before attempting to service the unit.
- Before using, always visually check that hardware is present, intact and secure. Replace worn or damaged parts.
- Never operate the machine with damaged guards, or without safety protective devices in place.

MAINTENANCE GUIDELINES

- Maintain or replace safety and instruction decals/labels as necessary.
- Never run a unit in an enclosed area.
- Keep nuts and bolts tight and keep equipment in good condition
- Never tamper with safety devices. Check their proper operation regularly and make necessary repairs if they are not functioning properly.
- Keep unit free of debris and build-up. Clean up any oil spillage.
- Stop and inspect equipment if you strike an object. Repair, if necessary, before restarting.
- Never make adjustments or repairs with the engine running unless specified otherwise in the engine manufacture's manual.
- Components are subject to wear, damage, and deterioration. Frequently check components and replace with the manufacturer's recommended parts, when necessary.
- Check control operation frequently. Adjust and service as necessary.
- Use only factory authorized parts when making repairs.
- Always comply with factory specifications on all settings and adjustments.
- Only authorized service locations should be utilized for major service and repair requirements.
- Never attempt to make your own repairs on this unit unless you have been properly trained. Improper service procedures can result in hazardous operation, equipment damage and voiding the manufacturer' warranty.
- Stop engine on tractor and set parking brake before performing any adjustments on the machinery.
- Escaping hydraulic fluid under pressure can have sufficient force to penetrate the skin, causing serious injury. Before operation, be sure that all hydraulic connections are tight and hoses are not damaged. Relieve pressure in system before making adjustments.

CONTROLS AND FEATURES

CONTROLS

Operation of the DZR Plow is usually accomplished with the prime mover's controls. Refer to the prime mover's Operation/Owner's Manual.

The Plow may also be supplied with an optional electrical control. A single, momentary toggle switch (LEFT/OFF/RIGHT) is used to angle the plow up to 30° left or right of center (0°).

FEATURES

Refer to the Setup and Adjustments instruction, Specifications, and Parts Lists within this manual for information on the DZR Plow components and functions.

This Page Intentionally Blank

SETUP AND ADJUSTMENTS

SETUP

Proper setup of your plow will increase the life of the components and produce more efficient movement of material. Visually inspect the adjustments before each operating session and measure the adjustments once every 10 hours of operation.

SKID SHOE ADJUSTMENT

See Figure 1.

1. After the plow is mounted to the prime mover, park the unit on a flat, level surface; preferably concrete or asphalt.
2. Shut off prime mover and apply parking brake.

NOTE: The cutting edge mounting position is fixed and cannot be adjusted.

3. Adjust the skid shoes so that the plow cutting edge, mounted on the bottom front of plow blade, has light contact along the full length of the blade edge.

- a. Measure and note distance between ground surface and bottom of cutting edge.

If using the plow on gravel or rough, uneven surfaces, a higher cutting edge position is recommended to prevent it digging into ground and/or forcing the blade into the trip position. Proper adjustment of the skid shoes will also prolong the life of the cutting edge.

- b. Raise plow high enough to place adequate supports of sufficient height below it to allow skid shoe removal.
- c. Lower plow onto supports.
- d. Remove the lynch pin from top of skid shoe shaft.
- e. Slide skid shoe out of housing mount while retaining all washers and/or spacer located on top of mount.

Raising (retracting) the skid shoes will increase the cutting edge contact, causing more scraping of the ground.

Lowering (extending) the skid shoes will decrease the cutting edge contact with the ground.

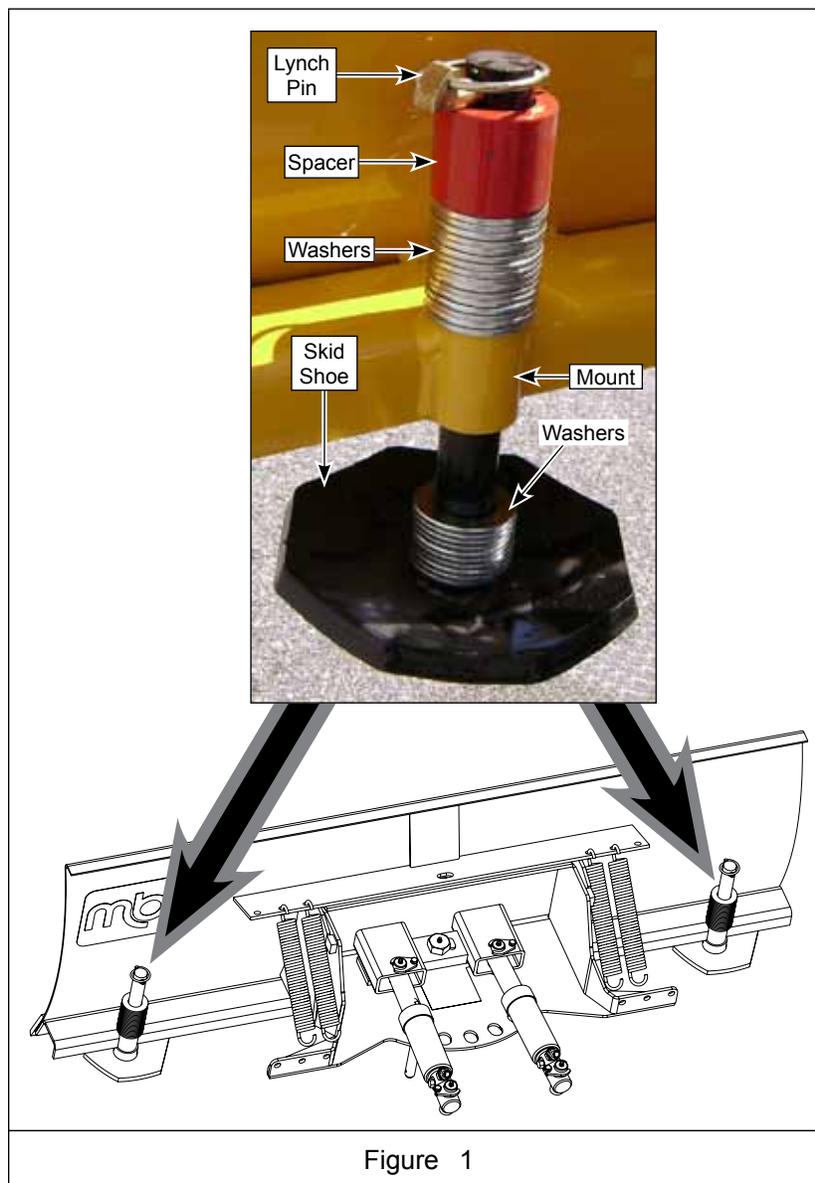


Figure 1

SETUP AND ADJUSTMENTS

IMPORTANT! The spacer/washers placement must be identical on both skid shoes to ensure the plow is level.

NOTE: Spacer is 1-1/2" thick. Washers are 1/8" thick. Any combination of the spacer and washers positions is allowable.

- f. Lower the skid shoe (raises cutting edge) by adding spacer/washers to shaft.
 - g. Raise the skid shoe (lowers cutting edge), by amount measured in step a, by removing spacer/washers from shaft.
 - h. Install skid shoe into mount and hold fully raised.
9. Install remaining spacer/washers on skid shoe shaft, above mount.
 10. Install lynch pin through top end of skid shoe shaft.
 11. Lower plow to ground and verify cutting edge contact (gap).
 12. Run the unit forward for about 10 feet in the operating position. Stop, lift plow and then back the unit away. The 'cleaned' portion of the surface should show minimal contact from the cutting edge and a trace amount from the skid shoes.

OPERATION

PRE-STARTUP CHECKS

IMPORTANT! You must read, understand and comply with all the safety and operating instructions in this manual before attempting to set-up and operate the plow.

Failure to comply with the safety and operating instructions can result in loss of machine control, serious personal injury to you and/or bystanders, and risk of equipment and property damage.

1. Visually inspect equipment and hardware to ensure that all parts are secure and all hardware is tightened and secure.
2. Check for oil leaks and loose hose connections.
3. Inspect the cutting edge to ensure proper skid shoe adjustment. Skid shoe height determines if the plow is level and at the proper height for the terrain. Refer to the **SETUP AND ADJUSTMENT** section of this manual.
4. Inspect the skid shoes to determine if replacement parts are needed.

OPERATION

- Operate at a speed that is appropriate for the conditions and location.
- For rougher surfaces such as gravel or stones, re-adjust the skid shoes for optimum performance.
- When moving heavier material, a slower machine speed will aid in vehicle control.
- When moving lighter material, a faster machine speed may aid in a casting effect when the blade is angled.

TRAVEL PROCEDURE

Use the lift control to bring the plow to the fully raised position.

This Page Intentionally Blank

MAINTENANCE

MAINTENANCE SCHEDULE

- Check adjustments – every 10 hours
- Grease pivot points – every 50 hours

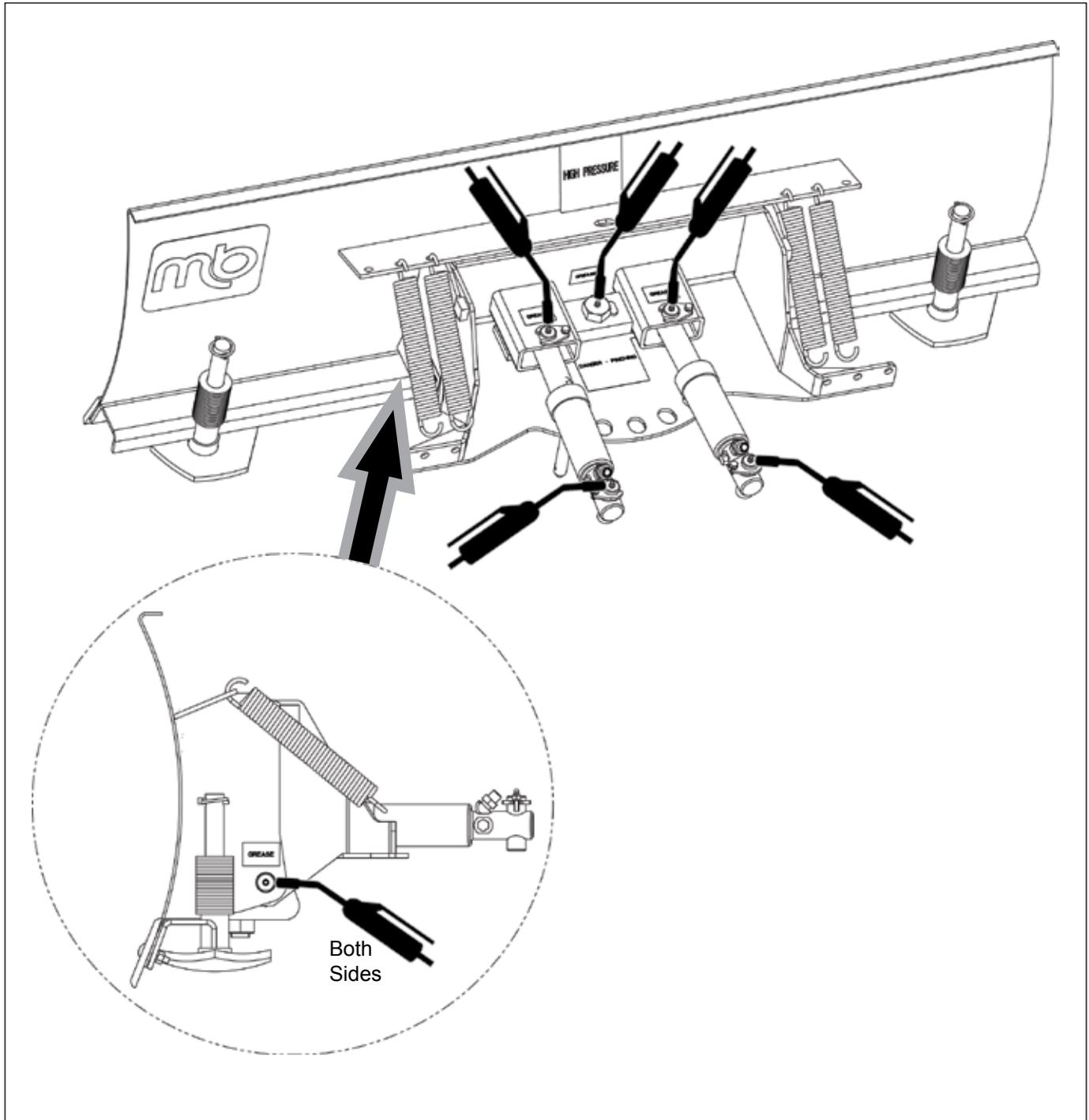
NOTE: Grease points are noted with an applicable decal.



- Replace cutting edge and skid shoes – as needed

LUBRICATION

- Grease pivot points per the MAINTENANCE SCHEDULE using Chevron Ultra Duty II, Grade 2; or equivalent high-temp grease.
- There are a minimum of (7) grease points on the unit; (1) in the center pivot pin, (4) in the pivot pins at the ends of the swing cylinders and (2) in the blade horizontal tilt pins.
- If equipped with optional hydraulic swing, hydraulic oil is supplied by the prime mover. Use the prime mover manufacturer's recommended fluid.



This Page Intentionally Blank

STORAGE

STORAGE

- Store the unit in a supported position with the cutting edge off the ground, such as on a wooden skid. If stored on the ground, the components are subjected to more moisture which can accelerate rusting.
- Properly drain hydraulic hoses or cap off to prevent spillage of oil. Clean up any spills quickly and appropriately.
- Connect Quick couplers together if disconnecting plow from prime mover to allow fluid to circulate.
- Disconnect all electrical connections between the plow and prime mover for extended storage to prevent battery drain.
- Properly clean the unit before storage, removing dirt, gravel, salt, etc. to extend paint life.
- If the unit is power-washed, all lubrication points should be greased or oiled before storage

TROUBLESHOOTING

Trouble	Possible Cause	Remedy
Cutting edge or skid shoe wearing unevenly.	<ol style="list-style-type: none"> 1. Improperly height adjustment for terrain type or uneven adjustment of skid shoes. 	<ol style="list-style-type: none"> 1. Adjust skid shoes to an equal and level height. Refer to the SKID SHOE ADJUSTMENT procedure within the Setup and Adjustments instruction.
Blade trips excessively.	<ol style="list-style-type: none"> 1. Caked on or frozen debris on plow/cutting edge. 2. Uneven ground surface. 3. Material being plowed is too heavy. 4. Prime mover speed is too fast. 5. Multiple obstructions encountered. 	<ol style="list-style-type: none"> 1. Remove built-up debris. 2. Adjust skid shoes to compensate. 3. Lift blade slightly while moving. 4. Slow down prime mover speed. 5. Avoid obstructions.
Blade does not lift or angle.	<ol style="list-style-type: none"> 1. No/Low hydraulic pressure/flow. 2. Electric valve not functioning. 3. System backpressure. 4. Make sure angle lock pin is removed. 	<ol style="list-style-type: none"> 1. Check prime mover operation. Check hydraulic oil level. 2. Check electrical connections. 3. Check prime mover instructional manual. 4. Angle lock pin is not used with hydraulic swing feature.

This Page Intentionally Blank

SPECIFICATIONS

Model:	DZR
Plow Dimensions	
Width (at 0°):	5' (60") or 6' (72")
Width (at 30°)	54.26" (for 5') or 63.73" (for 6')
Height:	20.10"
Plow Angle:	0° (center), 15° or 30° (maximum) left/right of center for manual swing. Infinitely variable from 0° to 30° (maximum) left/right of center for hydraulic swing.
Lift Method:	Provided by prime mover.
Swing Method:	Manual (Standard)
	Hydraulic (Optional) (Cylinder only - Must be connected to prime mover hydraulics.)
Cutting Edge:	0.375" x 4.00" x Length, Reversible
Mounting:	No Mounting by M-B (Provided by customer.)
	Custom Mount Design by M-B (Applies to mounts not previously designed by M-B Co.)
Options:	Hydraulic Swing
	Hose Kit (Hydraulic Swing)

This Page Intentionally Blank

SERVICE PARTS

Part Number	Description
203-147118	Hydraulic Cylinder, Swing
202-147118-01	Seal Kit, Swing Cylinder
104-147061	Shoe, Skid
400-56795	Cutting Edge, 60"
401-132400	Cutting Edge, 72"

Part Number	Description
109-131128	Paint, Spray, MB Yellow
249-92003	Paint, Spray, Black
249-92005	Primer, Spray

Please have your serial number (S/N) ready when contacting M-B Co. or an Authorized Dealer for replacement parts or service information.

M-B Co.
1615 Wisconsin Ave.
P.O. Box 200
New Holstein, WI 53061-0200

website: www.m-bco.com
email: sales@m-bco.com
Phone: 800-558-5800 or 920-898-4203
FAX:

Main 920-898-4588
Attachments 920-898-1085
Brush Dept. 920-898-1082

1

⚠ WARNING



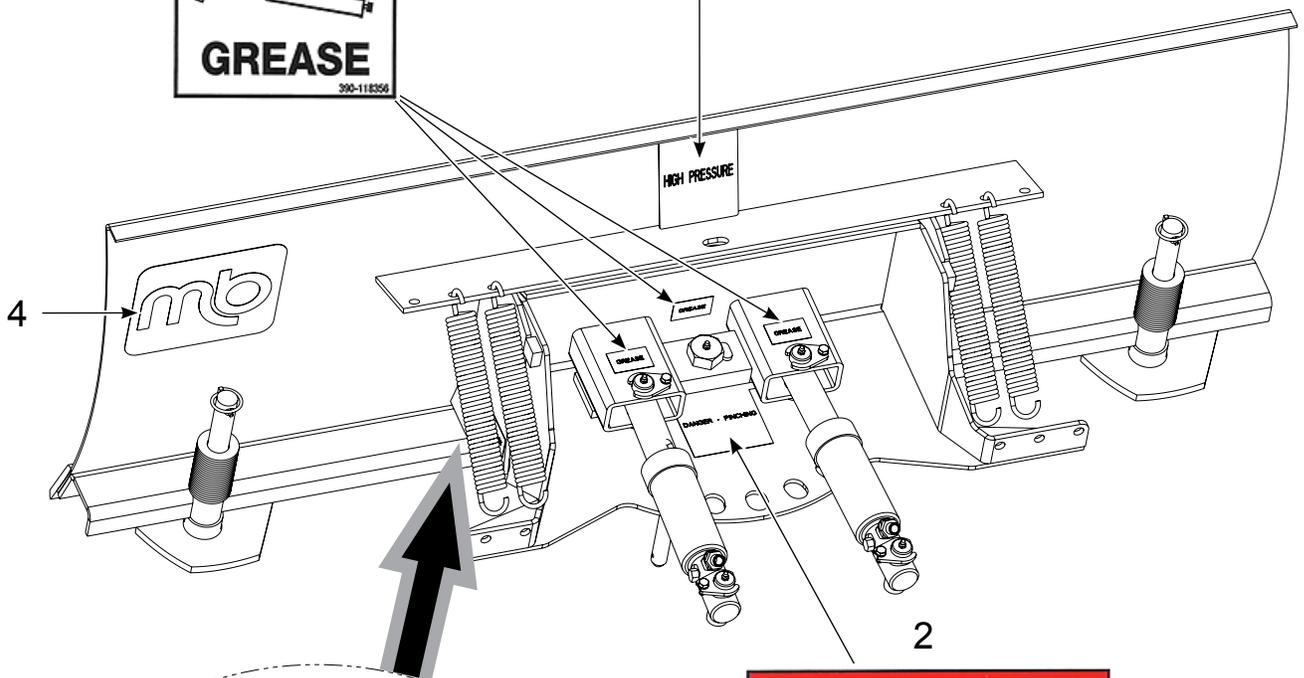
HIGH PRESSURE FLUID HAZARD
 Use cardboard or wood (not your hand) to search for leaks.
 Keep away from hydraulic system until pressure is relieved.
 If high pressure fluid penetrates the skin, see a doctor immediately.

390-188221

3



GREASE
390-118356



2

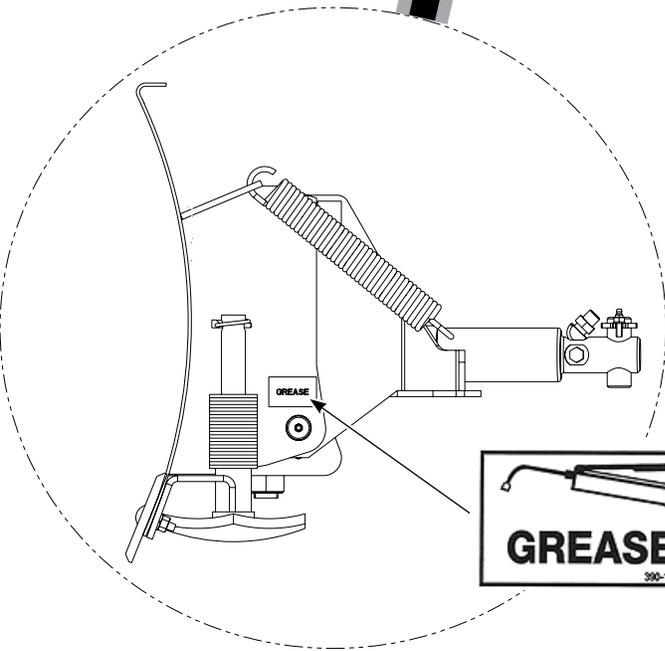
⚠ DANGER



To prevent serious injury or death from pinching:

- Keep all persons and objects clear while any part of this machine is in motion.

390-118356




GREASE
390-118356

3 (Both Sides)

DZR Decals

Item	Description	Part Number
1	Decal, WARNING, High Pressure Fluid	390-169221
2	Decal, DANGER, Pinch Point	390-118353
3	Decal, Grease	390-118356
4	Decal, M-B Logo, Black, Medium	390-117897

LIMITED WARRANTY

Limited Warranty: Subject to the limitations set forth herein, M-B Companies, Inc. ("M-B") warrants its products to be free from defects in material and workmanship for a period of twelve (12) months from the date of delivery of the product to its original owner, except that the warranty is twelve (12) months solely for the following products: Truck Mounted Pavement Marking Equipment, Airport Snow Removal Products, Attachment Products, Brushes, MSV Multi-Service Vehicles. Parts shall have a ninety (90) day warranty. This warranty is not transferable without the written consent of M-B.

Notice: M-B's obligations under this Limited Warranty are conditioned on M-B receiving, within the warranty period, written notice from Buyer specifying the nature of any alleged defect and requesting corrective action by Seller.

Remedies: M-B, at its option, will repair or replace, or provide a credit to Buyer for, defective warranted items. If requested by M-B, products or parts for which a warranty claim is made shall be returned, transportation prepaid, to M-B's factory. Buyer shall not return any product for repair, replacement or credit without M-B's advance written consent.

Other Manufacturer's Warranty: On products furnished by M-B, but manufactured by any other manufacturer, the warranty of said manufacturer, if any, will be assigned to Buyer, if the said warranty is assignable. However, M-B does not represent or guarantee that such manufacturer will comply with any of the terms of the warranty of such manufacturer.

Exclusions: Any improper use, operation beyond capacity, or substitution of parts not approved by M-B, or alteration or repair by others in such a manner as in M-B's judgment materially and/or adversely affects the product shall void this warranty. This warranty does not apply to defects caused by damage or unreasonable use while in the possession of the owner, including but not limited to: failure to provide reasonable and necessary maintenance, normal wear, routine tune ups or adjustments, improper handling or accidents, operation at speed or load conditions contrary to published specifications, improper or insufficient lubrication, or improper storage.

Seller manufactures power brooms that mount to many makes and models of equipment. Seller attempts to ensure that the mounting frames fit correctly. However, the large number of tractor models, types and options currently available, compounded by frequent manufacturer design changes, may prevent Seller from supplying a frame that fits every unit correctly. Therefore, unless Buyer supplies drawing which detail the attachment points on the specific unit to which the broom will be mounted, Seller will not be responsible for the fit of the mounting frame.

The batteries, tires, rubber material, brushes and material normally consumed in operation, and major components such as engines, air compressors, and hydraulic pumps and motors are excluded from this warranty but may be covered to the extent of any warranty received by M-B from its supplier if permitted by the terms of such warranty.

Limitations of liability: M-B shall not be liable for any incidental, consequential, punitive or special damages of any kind, including, but not limited to, consequential labor costs or transportation charges in connection with the repair or replacement of defective parts, or lost time profits or expense which may have accrued because of said defect.

M-B disclaims all other warranties, whether express or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. This warranty is exclusive remedy of buyer. This warranty cannot be extended, broadened or changed in any respect except in writing by an authorized officer of M-B.

Notwithstanding anything in this warranty is to the contrary, in no event shall M-B's total liability hereunder exceed the purchased price of the particular product.

AIRPORT SNOW REMOVAL EQUIPMENT
1200 Park Street
Chilton, WI 53014
800-558-5800

PAVEMENT MARKING EQUIPMENT-PA
79 Montgomery Street
Montgomery, PA 17752
888-323-2900

PAVEMENT MARKING EQUIPMENT-OR
2490 Ewald Avenue SE
Salem, OR 97302
800-253-2909

ATTACHMENTS DIVISION
1615 Wisconsin Avenue
New Holstein, WI 53061
800-558-5800



WWW.M-B.CO.COM

M-B Companies, Inc.
1615 Wisconsin Ave.
P. O. Box 200
New Holstein, WI 53061-0200
(920) 898-1560 or 800-558-5800
FAX: (920) 898-4588

