CONCRETE CURB AND GUTTER SLIPFORM PAVER OPERATING INSTRUCTIONS
C100
C101
CG200

It is the OWNER’S RESPONSIBILITY to communicate information on the SAFE USE and OPERATION of this machine to the operators!
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FORWARD

It will become obvious, that the MBW Paver is capable of slipforming great variety of applications. It will look easy. It will be easy **IF YOU KNOW WHAT YOU ARE DOING AND PERFORM ACCORDINGLY.**

When you purchase your MBW Paver, you also bought into, **COMMITTED TO**, a complete Slipforming Process.

Your MBW Paver will produce the desired results **ONLY** if you **UNDERSTAND** and **PROPERLY EXECUTE** the prescribed procedures.

And we advise you now, that lack of knowledge and follow through on the Paver will result in disappointment, poor quality curb, wasted money, and frustration.

The following pages will offer information that is absolutely critical to your mastery of this process.

It is your responsibility to control grade, stringline, mix, and slump. Your MBW Paver cannot function satisfactorily without your adequate control over these variables.

...we advise you now, that lack of knowledge and follow through on the Paver will result in disappointment, poor quality, wasted money and frustration.
MBW SLIPFORM PAVER PURCHASE AWARENESS

WHEN PURCHASING AN MBW SLIPFORM PAVER
YOU MUST CONSIDER THE PURCHASE OF NOT JUST A
“PAVER”, BUT A SLIPFORMING PROCESS.
PAVER PERFORMANCE IS DEPENDANT UPON ADEQUATE
CONTROL OF THE FOLLOWING VARIABLES:

1. GRADE MUST BE ACCURATE. GRADE CAN NOT BE HIGH. GRADE
CAN BE LOW, ALTHOUGH LOW GRADE WILL ADVERSELY AFFECT
YIELD. MBW RECOMMENDS DRY RUNNING BLADE OFF STRINGLINE
TO REFINE GRADE.

2. MBW recommended mix is stated on page 36 of manual.
50%-50% (about #1500 (680kg) each) mixture of 3/4”(2 cm) of rock and sand
550# (250 Kg) of cement (6 bag mix)
6% AIR ENTRAPMENT ON SITE

3. SLUMP MUST BE MAINTAINED AT APPROXIMATELY 1–1/2 TO 2–1/2” (2.5-6cm).

4. STRINGLINE MUST BE PROPERLY SET.

5. THERE MUST BE A PROFICIENT PAVER OPERATOR.

6. FINISHERS MUST KNOW HOW TO FINISH A SLIPFORM PRODUCT.
SAFETY PRECAUTIONS

READ AND STUDY THE FOLLOWING SAFETY INFORMATION BEFORE ATTEMPTING TO OPERATE THIS EQUIPMENT. IN ADDITION, ENSURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.

WARNING — LETHAL EXHAUST GAS!
An internal combustion engine discharges carbon monoxide, a poisonous, odorless invisible gas. Death or serious illness may result if inhaled. Operate only in an area with good ventilation, NEVER IN A CONFINED AREA!

WARNING — DANGEROUS FUELS!
Use extreme caution when storing, handling and using fuels — they are highly volatile and explosive in vapor state. Do not add fuel while engine is running. Stop and cool the engine before adding fuel. DO NOT SMOKE!

SAFETY GUARDS
It is the owner’s responsibility to ensure ALL GUARDS AND SHIELDS remain in place.

IGNITION SYSTEMS
Breakerless, magneto and battery ignition systems CAN CAUSE SEVERE ELECTRICAL SHOCKS. Avoid contacting these units or their wiring.

SAFE DRESS
DO NOT WEAR loose clothing, rings, wristwatches, etc., near machinery.

NOISE PROTECTION
Wear O.S.H.A. specified hearing protection devices.

FOOT PROTECTION
Wear O.S.H.A. specified steel tip safety shoes.

HEAD PROTECTION
Wear O.S.H.A. specified safety helmets.

EYE PROTECTION
Wear O.S.H.A. specified eye shields, safety glasses, and sweat bands.

OPERATOR
Keep children and bystanders off and away from the equipment.

REFERENCES
For details on safety rules and regulations in the United States, contact your local Occupational Safety and Health Administration (O.S.H.A.) office. Equipment operated in other countries must be operated and serviced in accordance and compliance with any and all safety requirements of that country. The publication of these safety precautions is done for your information. MBW Inc. does not by the publication of these precautions, imply or in any way represent that these are the sum of all dangers present near MBW equipment. If you are operating MBW Inc. equipment, it is your responsibility to insure that such operation is in full accordance with all applicable safety requirements and codes. All requirements of the United States Federal Occupational Safety and Healthy Administration Act must be met when operated in areas that are under the jurisdiction of that United States Department.
INTRODUCTION

READ THIS MANUAL
The information in this manual has been written in an easy to read style. The common construction features makes it convenient to operate and service your MBW Curb and Gutter Slipform Paver through the use of this manual. Read this manual carefully to learn how to assemble and operate your MBW Curb and Gutter Slipform Paver correctly. Failure to do so could result in personal injury or equipment damage. This manual should be considered a permanent part of the machine and should remain with it when sold.

MEASUREMENTS
U.S. Units of measure and their metric equivalents are used in this manual.

DIRECTIONS

Right and left sides of the paver are determined by facing the direction the machine travels when pouring concrete.

WARRANTY
A warranty is provided as part of MBW’s support for customers who operate and maintain their equipment as described in this manual. The warranty is stated in this manual on page 8.

IDENTIFICATION
This manual applies to different variations of the MBW Curb and Gutter Slipform Paver. To ensure prompt efficient service when ordering parts or requesting repairs from authorized MBW dealers, record the serial numbers in the spaces provided.

REMEMBER — You own the very best. If repairs are needed use only MBW Inc. parts purchased from Authorized MBW Inc. Distributors.
SAFETY NOTICE & DECALS

IMPORTANT NOTICE
The “SAFETY ALERT SYMBOL” is used to call attention to items or operations that may be dangerous to machine operators or others working with this equipment. The symbol can be found throughout this manual and on the unit itself. Please read these messages carefully.

READ SAFETY DECALS CAREFULLY
Carefully read and follow all safety decals. Keep them in good condition. If decals become damaged, replace as required. If repainting, REPLACE ALL decals. Decal Kits are available from authorized MBW Distributors.

SAFETY INSTRUCTIONS
Read the Operating Instructions before operating this piece of equipment.
Keep unauthorized, inexperienced, untrained people away from this equipment.
ROTATING & MOVING PARTS! Make sure all guards and safety devices are in place.
DO NOT RUN this machine in an enclosed area. The engine produces carbon monoxide, a POISONOUS gas.
SHUT OFF the engine before servicing, cleaning or adding fuel to engine or machine.
Failure to comply could result in serious bodily injury

CAUTION
Chain down SECURELY for transport.

HYDRAULIC OIL

CAUTION
Remove sensors before transport.

PULL HERE

WARNING
ROTATING FAN
Keep hands away!

CALIFORNIA
Proposition 65 Warning
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

USE
# 2 DIESEL FUEL ONLY

#01445, UPPER CORNER OF ENGINE DOOR

#11537, SIDE OF RADIATOR

#09311, ENGINE DOOR ABOVE EXHAUST

#08529, ENGINE OIL PAN FACING ENGINE DOOR

#01623, FUEL TANK

#12415, FRONT FENDER CROSSLOPBOX

#10318, ENGINE DOOR FRONT WHEEL FORK REAR WHEEL FORK

#08189, HYD. TANK

#11568, ON ALL SENSORS

#11413, BELOW RADIATOR
SAFETY DECAL LOCATIONS

CAREFULLY READ AND FOLLOW ALL SAFETY WARING DECALS. REPLACE ALL DAMAGED OR MISSING SAFETY DECALS.

1. Control Panel:

   1. Control Panel Decal #11231. (See page 13)
   2. Vibrator Decal #11699, Right side of control panel. (See page 14)

2. Engine Compartment:

   1. Pull Here #11413, Below radiator.
   2. Fan Warning #11537, right side of radiator and top of radiator shroud.
   3. Oil Drain #08529, Below radiator on front of oil pan

3. Main Unit, Engine Access Panel.

   1. Safety Operating Instructions
   2. Tie Down #10318.
   3. Hot #09311, Above exhaust opening
4. Fuel—Hydraulic Tank:
   1. #2 Diesel Fuel #10318, Right cap.
   2. Hydraulic oil #08189, Left cap.

5. Side Drive Unit
   1. Tie Down #10318, Near tire.
   2. Sensor #11568, Near each sensor bracket.

6. Hopper Unit, left side:
   1. Safety instructions #01445
   2. Tie Down #10318.

7. Front Fender:
   1. Emission warning #13421.
   2. California warning #12415.
WARRANTY

THIS IS YOUR WARRANTY – PLEASE READ AND SAVE

1. **MBW Inc.**, Slinger Wisconsin, warrants each new machine against defects in material and workmanship under normal use and service for a period of six (6) months. This warranty commences the first day the machine is sold, assigned to a rental fleet, or otherwise put to first use.

2. The obligation under this warranty is limited to the replacement or repair of parts and/or machine at MBW Inc. factory branches or at authorized MBW Inc. Distributors.

3. Machines altered or modified without MBW Inc. written consent voids this warranty. Misuse, negligence, accidents or the operation of machines in any way other than recommended by MBW Inc. will void this warranty. This warranty shall not apply to machines repaired by other than MBW Inc. factory branches or authorized MBW Inc. Distributors.

4. This warranty includes labor on all MBW Inc. products. Labor must be performed at an authorized MBW Inc. Distributor.

5. The cost of transportation and other expenses connected therewith are not covered by this warranty.

6. Written authorization for the return of merchandise under warranty must be obtained from MBW Inc., Slinger, Wisconsin. In England: MBW (UK) LIMITED, Bradley Fold Trading Estate Unit 6, Radcliffe Moor Road, Bolton BL2 6RT.

7. **MBW Inc.** reserves the right to inspect and render final decision on each warranty case.

8. **MBW Inc.** reserves the right to improve or make product changes without incurring any obligation to update, refit, or install the same on machines previously sold.

9. **MBW Inc.** is not responsible for any liability or damage or injury directly or indirectly from design, material or operation of its products.

10. Warranty card must be returned to MBW Inc., P.O. Box 440, Slinger, Wisconsin 53086—0440, within 10 days after purchase, assignment to a rental fleet, or first use. In England: MBW (UK) LIMITED, Bradley Fold Trading Estate Unit 6, Radcliffe Moor Road, Bolton BL2 6RT. Failure to return warranty card as specified renders the warranty null and void.

11. Requests for warranty must be submitted in writing within 30 days after machine failure to MBW Inc., P.O. Box 440, Slinger, Wisconsin 53086—0440. In England: MBW (UK) LIMITED, Bradley Fold Trading Estate Unit 6, Radcliffe Moor Road, Bolton BL2 6RT.

12. THE FOREGOING WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE, AND OF ALL OTHER OBLIGATION OR LIABILITIES ON OUR PART, AND WE NEITHER ASSUME NOR AUTHORIZE ANY OTHER PERSON TO_ASSUME FOR US ANY OTHER LIABILITY OR WARRANTY IN CONNECTION WITH THE SALE OR SERVICE OF ANY OF OUR PRODUCTS. LIKewise, THIS WARRANTY SHALL NOT APPLY WITH RESPECT TO ENGINES, MOTORS AND OTHER COMPONENT PARTS PRODUCED BY OTHER MANUFACTURERS AND USED ON MBW PRODUCTS, BUT SUCH ITEMS SHALL HAVE SUCH WARRANTIES AS MAY BE PROVIDED BY THE MANUFACTURER THEREOF.

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**MBW INC.**

250 HARTFORD ROAD • P.O. BOX 440
SLINGER, WI 53086—0440
PHONE: (262) 644—5234 • FAX (262) 644—5169

MBW CORPORATE INTERNET ADDRESS
E—MAIL: mbw@mbw.com
WEB SITE: www.mbw.com

IN ENGLAND:
MBW (UK) LIMITED
Bradley Fold Trading Estate Unit 6
Radcliffe Moor Road
Bolton BL2 6RT
Phone: 01204 387784 • FAX: 01204 387797
MBW WAREHOUSE LOCATIONS

MBW Inc. has established a network of reputable Distributors with trained mechanics and full facilities for maintenance and rebuilding, and to carry an adequate parts stock in all areas of the country. Their sales engineers are available for professional consultation. If you cannot locate an MBW Inc. Distributor in your area, contact one of our Sales Branches or MBW Inc. The locations and phone numbers of the Sales Branches are listed below.

Remember — you own the best. If repairs are needed use only MBW Inc. parts purchased from Authorized MBW Inc. Distributors.

Sales Branches:

1. MBW Inc.
   250 Hartford Rd.
   P.O. Box 440
   Slinger, WI 53086-0440
   Phone: (262) 644-5234
   FAX: (262) 644-5169

2. MBW (UK) LIMITED
   Units 2&3 Cochrane Street
   Bolton
   BL3 6BN
   Phone: 01204 387784
   Fax: 01204 387797

E—MAIL ON THE WORLD WIDE WEB mbw@mbw.com
WEB SITE ON THE INTERNET www.mbw.com
# SPECIFICATIONS

## MACHINE SPECIFICATIONS

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<th>MAIN UNIT</th>
<th>with 12” HOPPER</th>
<th>with 24” HOPPER</th>
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<tr>
<td>WEIGHT</td>
<td>2450 lbs. (1111 kg)</td>
<td>2725 lbs. (1236 kg)</td>
<td>3395 lbs. (1540 kg)</td>
</tr>
<tr>
<td>LENGTH</td>
<td>112 in (284 cm)</td>
<td>112 in (284 cm)</td>
<td>112 in (284 cm)</td>
</tr>
<tr>
<td>WIDTH</td>
<td>45 in (114 cm)</td>
<td>63 in (160 cm)</td>
<td>89 in (226 cm)</td>
</tr>
<tr>
<td>HEIGHT (in pouring position)</td>
<td>42 in (107 cm)</td>
<td>42 in (107 cm)</td>
<td>42 in (107 cm)</td>
</tr>
<tr>
<td>HYDRAULIC RESERVOIR</td>
<td>12 gal (45.4 ltr)</td>
<td>12 gal (45.4 ltr)</td>
<td>12 gal (45.4 ltr)</td>
</tr>
<tr>
<td>FUEL CAPACITY</td>
<td>12 gal (45.4 ltr)</td>
<td>12 gal (45.4 ltr)</td>
<td>12 gal (45.4 ltr)</td>
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<tr>
<td>NOISE LEVEL*</td>
<td></td>
<td></td>
<td>91dBA</td>
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*Reading taken at operators ear, engine rpm – 3300.

## ENGINE SPECIFICATIONS

<table>
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<tr>
<th>TYPE</th>
<th>Kubota D902</th>
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<tr>
<td>POWER RATING @ 3600</td>
<td>23.5 hp</td>
</tr>
<tr>
<td>FUEL TYPE</td>
<td>#2 Diesel</td>
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SERIAL NUMBERS

MAIN UNIT SERIAL NUMBER
Inside engine compartment towards left while facing the engine radiator.

450—______________________________

SIDE UNIT SERIAL NUMBER
On front face of side unit height cylinder top support.

450—______________________________

ENGINE SERIAL NUMBER
On engine block boss underneath air intake manifold.

______________________________
SAFETY ALERT SYMBOL

IMPORTANT NOTICE

This is the industry’s “SAFETY ALERT SYMBOL”. This symbol is used to call your attention to items or operations that could be dangerous to you or other persons using this equipment. Please read these messages carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or operate this machine.

CAREFULLY READ AND FOLLOW ALL SAFETY SIGNS. KEEP THEM IN GOOD CONDITION. REPLACE ANY MISSING OR DAMAGED SAFETY SIGNS.

CONTROL PANEL DESCRIPTION

Read and understand the function of each control panel item listed below before operating this machine.

1. INDICATOR LAMP TEST: Push button for testing indicator lamp cluster.
2. HOUR METER: Counts elapsed hours of machine operation.
3. INDICATOR LAMP CLUSTER: Houses low fuel and engine warning lamps.
4. GLOW LAMP: Glow plug indicator lamp.
5. IGNITION SWITCH: Engine ignition switch.
6. SIDE DRIVE UNIT: Switches Auto Height control from main unit center wheel to Side Drive Unit wheel.
7. RIGHT REAR DRIVE: Controls power to right rear drive wheel.
8. MAIN POWER AND EMERGENCY STOP: Controls power to all non-engine related functions.
9. AUTO POWER: Controls power to on-board computer system.
10. HYDRAULIC POWER: Controls power to all hydraulic functions.
11. SPEED RANGE: Increases travel speed for quick transport.
12. ENGINE SPEED: Preset throttle operating position.
15. TRAVEL SPEED: Controls travel speed. “0” = stop, “9” = maximum.
17. STEERING: Controls front wheel steering.
18. FRONT: Controls front wheel height adjustment.
20. RIGHT: Controls right wheel height adjustment.
21. CENTER: Controls center wheel height adjustment.
22. LEFT: Controls left (side drive unit) wheel height adjustment.
23. HEIGHT TRIM: Sets automatic height control zero reference point.
24. VIBRATORS: Controls power to vibrator potentiometers.
25. LEFT REAR DRIVE: Controls power to left (side drive) wheel.
26. VIBRATOR 1 POT: Controls main unit vibrator speed. (Right side of panel)
27. VIBRATOR 2 POT: Controls hopper unit vibrator speed. (Right side of panel)
28. VIBRATOR 3 POT: Controls hopper unit vibrator speed. (Right side of panel)
OPERATING INSTRUCTIONS
BEFORE OPERATION, READ THESE INSTRUCTIONS
AND SEE THE “PERIODIC MAINTENANCE” SECTION.

MAKE SURE HANDS, FEET, AND CLOTHING ARE AT A SAFE DISTANCE FROM ANY MOVEABLE PARTS BEFORE STARTING. REVIEW RELATED SAFETY PRECAUTIONS LISTED ON PAGE 3.

MAKE SURE ALL CONTROLS ARE IN THE NEUTRAL OR OFF POSITION.

WARNING — DANGEROUS FUELS! Use extreme caution when storing, handling and using fuels — they are highly volatile and explosive in vapor state. Do not add fuel while engine is running. Stop engine and allow a cooling period to prevent spilled fuel from igniting on contact with hot engine parts. DO NOT SMOKE!

● OIL LEVEL - Check the oil level in the engine. See “Lubrication” under the respective engine’s “OWNERS MANUAL”.

● AIR CLEANER - Check to make sure the element is clean and in good condition and properly installed.

● FUEL FILTER - Clean the sediment bowl as required.

● ENGINE COOLANT - Check the level by removing the pressure cap at the top of the radiator. The coolant level should be 1/2” below the base of the filler neck. Be sure to tighten the radiator pressure cap. The radiator is filled with an antifreeze solution. If the coolant level becomes low due to evaporation, add water only. If the coolant level becomes low due to leakage or overflow, add a mixture of antifreeze and water in the ratio specified by the antifreeze manufacturer.

● BATTERY — Ensure that the electrolyte level is correct. The battery capacity diminishes as the temperature decreases. Monitor charging system performance to maintain battery capacity. During cold weather storage, remove the battery from the machine.

● FUEL SUPPLY - The engine on the MBW Curb and Gutter Slipform Paver requires diesel light oil #2 Diesel.

● HYDRAULIC OIL - Check the hydraulic oil reservoir. The oil level should be between 2–1/2” to 3” from bottom of dip stick. Fill with Dexron II ATF as required.
STARTING THE ENGINE

1. Open fuel valves:
   a. Fuel tank, front lower.
   b. Fuel filter on engine.

2. Turn key to “ON”. Depress indicator lamp test switch. Check function of indicator lights.
   a. OIL PRESSURE (LOW)
   b. BATTERY (DISCHARGE)
   c. FUEL LEVEL (LOW)
   d. COOLANT TEMPERATURE (HIGH).

3. Turn ignition key to “PREHEAT”. Standard preheat times:
   Temperature over 0°C (32°F): Preheat 15 seconds.
   Temperature below 0°C (32°F): Preheat 30 seconds.
   (Or until lamp glows bright red)
   Preheating not req. with warm engine.

4. Turn key to “START”. After engine starts, release key. If indicator lamps glow longer than 10 seconds, stop engine and correct problem. Allow engine to warm up.

NEVER TURN THE KEY TO START WHILE THE ENGINE IS RUNNING.
DO NOT OPERATE STARTER LONGER THAN 10 SECONDS AT ONE TIME. IF THE ENGINE FAILS TO START, WAIT 60 SECONDS AND TRY AGAIN.
1. FNR to Neutral. Turn all machine functions “OFF”. Engine speed to “IDLE”. Turn key to “OFF”. Remove ignition key.

**DO NOT STOP THE ENGINE WHILE OPERATING AT HIGH SPEED.**
**DO NOT STOP THE ENGINE IMMEDIATELY AFTER HARD OR EXTENDED OPERATION. ALLOW ENGINE TO IDLE FOR 2 MINUTES TO PREVENT HEAT BUILDUP.**
**IF THE KEY IS LEFT “ON” AFTER THE ENGINE HAS STOPPED THE BATTERY MAY BE DISCHARGED.**
ASSEMBLY INSTRUCTIONS

The C100 is delivered in 5 sections:
1. Base Drive Unit (power unit)
2. Hopper Unit 12”, Blade Kit attached.
3. Vibrator Kit (1 vibrator, Kit #11399)
4. Sensor Kit (4 sensors, Kit #11400)
5. Mold Unit (If ordered, otherwise not included)
(Machine may be ordered with multiple hoppers, molds, and/or vibrators.)

The C101 is delivered in 6 sections:
1. Base Drive Unit (power unit)
2. Hopper Unit 12”, Blade Kit attached
3. Sensor Kit (4 sensors, Kit #11400)
4. Vibrator Kit (1 vibrator, Kit #11399)
5. Auxiliary Drive Assembly
6. Mold Unit (If ordered, otherwise not included)
(Machine may be ordered with multiple hoppers, molds, and/or vibrators.)

The CG200 is delivered in 7 sections:
1. Base Drive Unit (power unit)
2. Hopper Unit 12”, Blade Kit attached.
3. Hopper Unit 24”, Blade Kit attached
4. Sensor Kit (4 sensors, Kit #11400)
5. Vibrator Kit, (2 Vibrator Kits, #11399)
6. Auxiliary Drive Assembly
7. Mold Unit (If ordered, otherwise not included)
(Machine may be ordered with multiple hoppers, molds, and/or vibrators.)
ATTACHING HOPPER:

1. Position the hopper unit level on the ground. Back off the three hopper joining nuts. (Two on main unit, one on hopper.)

2. Lower the Main unit so that the joining studs and mating slots are approximately the same height and back the Main unit up to the Hopper unit at an angle.

3. Continue backing until the rear stud begins to engage. Cut the front wheel hard right and continue backing until front studs engage. Tighten the nuts.

4. When using a hopper without the Side Drive Unit, flip the Side Drive Unit switch to “Detached”. (Transfers auto—height control to center cylinder.)

5. With hoppers (24” and wider) using the Side Drive Unit, flip the Side Drive Unit switch to “Attached”. (Transfers auto—height control to side drive unit cylinder.)

6. When not using the Side Drive Unit or the optional right rear drive wheel, the Rear Drive switches (left or right) must be off. If the Rear Drive switch is left on, the machine will not move.

7. When using the Side Drive Unit or the optional right rear drive wheel, the Rear Drive switch (left or right) may be in one of two positions:
   1. ON: drive is on and drives with the front wheel.
   2. OFF: drive is off and free wheels.

8. Connect hydraulic hoses as required.

NOTE: with the 12” hopper attached

- The side drive unit switch must be switched to the detached position.
- The left drive wheel must be switch off.
- The #3 or unused vibrator must be turned off completely
- If either the left drive wheel or unused vibrator is switched “on” the hydraulic system will dead head (a restricted flow of hydraulic fluid that will kill the engine).
ATTACHING MOLDS:

1. Molds for the 12” hopper bolt directly to the rear hopper face.

2. Molds larger than 12” slide into the tracks on the side unit frame. Adjust the mold support rack as required to line up the mold. Tighten all hardware and mounting nuts.

3. Adjust the front of the hopper with the grade blade 1” above zero grade and the rear of the mold on zero grade. This will result in one inch of mold taper when the paver is in its final position to pour. The mold taper provides a troweling function on the concrete as it exits the mold. Lower the trim bars to prevent concrete spill.
INSTALLING VIBRATORS:

1. The vibrator in the main unit is installed at the factory.

2. The 12” hopper requires use of one additional vibrator. The 24” and 36” hopper require the use of two additional vibrators.

3. The vibrator hydraulic ports are located directly below the steering yoke at the front of the main unit. Hoses and ports are equipped with quick disconnect fittings. Ports are arranged in pairs top and bottom. Replace the rubber quick disconnect covers when the ports are not in use.

NOTE: Any vibrator parts which are not being used, the corresponding vibrator control must be switched off completely or you will dead head (a restricted flow of hydraulic fluid that will kill the engine) the hydraulic system.

CHANGING HOPPERS IN THE SIDE UNIT:

1. Disconnect the side unit from the main unit. Brace the side unit to prevent it from tipping.
2. Remove the bolts holding the hopper flange to the side unit frame. Lift the hopper out of the side unit.
3. Place the new hopper in the side unit and install the bolts.
INSTALLING SENSORS:

1. Front steering & height sensors: Install socket toward front face of bracket.

2. Rear steering sensor: Install socket toward rear face of bracket.

3. Rear height sensor: Install socket toward rear face of bracket.
Set steering sensor location (Stringline height set at 20”)

This is the position that the hopper and mold should be in while pouring.

4. Front steering sensor: Install sensor with potentiometer shaft facing backward. Adjust sensor potentiometer shaft so that screw driver slot is horizontal. Install wand hanging straight down with wand weight to the inside. Tighten wand counter balance weight to secure wand to sensor.

5. Rear steering sensor: Install sensor with potentiometer shaft facing backward. Adjust sensor potentiometer shaft so that screw driver slot is horizontal. Install wand hanging straight down with wand weight to the inside. Tighten wand counter balance weight to secure wand to sensor.

SENSOR SHAFTS ARE VERY FRAGILE. REMOVE SENSORS BEFORE TRANSPORTING OR STORING MACHINE.

Note: Only one height sensor can be used at a time. Front (grade) or rear (pour).

Only one steering sensor can be used at a time. Front or rear.
The front grade sensor is set to cut 1” below zero grade.

6. Front height sensor: Install sensor with potentiometer shaft facing forward. Adjust sensor potentiometer shaft so that screw driver slot is horizontal. Remove counterbalance weight from one of the three wands that are the same length. Replace it with 1/4—20 x 1/2 Hex Head Bolt. Install wand in horizontal position. Tighten wand bolt to secure wand to sensor.

7. Rear height sensor: Install sensor with potentiometer shaft facing forward. Adjust sensor potentiometer shaft so that screw driver slot is horizontal. Install wand in horizontal position. Tighten wand bolt to secure wand to sensor.

8. Check wand motion to ensure that wand base does not bind on sensor face. Connect sensor plugs to pigtails from machine. The rear steering sensor cable is marked #4 and has a single cable tie near the end.

SENSOR SHAFTS ARE VERY FRAGILE. REMOVE SENSORS BEFORE TRANSPORTING OR STORING MACHINE.

Note: Only one height sensor can be used at a time. Front (grade) or rear (pour).

Only one steering sensor can be used at a time. Front or rear.
SET-UP AND POURING INSTRUCTIONS

JOB SITE SET-UP FOR APPLICATIONS USING SIDE DRIVE UNIT (24” AND LARGER).

1. The road bed for the paver must be graded up to approximately 10’ wide (depending on hopper size). Begin about 2’ outside the curb edge to about 8’ towards the center of the roadway. The grading should be approximately 8’ beyond the curb end point. Grade must be flat within approximately 1/2”. Compacting the grade will help provide traction for the paver.

2. Standard stakes, arms and string line are suitable for the paver. The string line should be set up approximately 18” to 24” left of the curb line (to the outside of the roadway) and 18” to 24” above the grade. Pull the string as tight as possible. This will ensure the most accurate operation of the paver’s on-board computer sensor system.

NOTE: Recommended stringline setup for 24” hopper or above is 20” x 20”

MACHINE SET-UP:

1. Start the paver engine. (See “Starting the Engine”, page 16.)
2. Flip Main Power and Hydraulic Power ON.
3. Check all hydraulic functions.
JOB SITE SET-UP FOR APPLICATIONS USING CURB ONLY (12” HOPPER):

3. The road bed for the paver must be graded approximately 6’ wide. Begin about 18” outside the curb edge to about 6’ towards the center of the roadway. The grading should be approximately 10’ beyond the curb end point. Grade must be flat within approximately 1/2”. Compacting the grade will help provide traction for the paver.

4. Standard stakes, arms and string line are suitable for the paver. The string line should be set up approximately 6”–12” left of the curb line (to the outside of the roadway) and 18” to 24” above the grade. Pull the string as tight as possible. This will ensure the most accurate operation of the Paver’s on-board computer sensor system.

NOTE: Recommended stringline setup for 12” hopper is 8” x 20”

MACHINE SET-UP:

4. Start the paver engine. (See “Starting the Engine”, page 16.)
5. Flip Main Power and Hydraulic Power ON.
6. Check all hydraulic functions.
AUTOMATIC SENSOR SET-UP:

1. Install sensors. (See “INSTALLING SENSORS”, page 22.)

2. Drive Paver to string line. Left side of curb mold should be about 18” to 24” from the string line. (6” to 12” for curb only). Bottom edge of mold (or mold edge bars) should be about 0” to 1/4” above grade level. Front wheel should point straight forward.

3. Manually level machine right—left. Adjust rear height to be slightly above front height for grading. Adjust front height to be slightly above rear height for pouring. This will ensure proper mold angle to provide pressure on concrete exiting the form.

4. Front steering sensor: Install sensor with potentiometer shaft facing backward. Adjust sensor head horizontally so that it is directly above the string line. Install wand hanging straight down with wand weight to the inside. Adjust sensor vertically until string line is approximately 1” to 3” above the end of wand. Adjust sensor potentiometer shaft so that screw driver slot is horizontal. Tighten wand counter balance weight to secure wand to sensor.

5. Rear steering sensor: Follow steps as listed for the front sensor. Note: 12” molds incorporate a sliding rear steering sensor bracket. This allows the paver to turn a very tight radius, while in automatic mode. Slide the bracket towards the rear of the mold to turn a tight radius and to the front for a larger radius.

Note: Only one height sensor can be used at a time. Front (grade) or rear (pour).

Only one steering sensor can be used at a time. Front or rear.
6. Front height sensor: Install sensor with potentiometer shaft facing forward. If not previously done, remove counterbalance weight from one of the three wands that are the same length. Replace it with 1/4–20 x 1/2 Hex Head Bolt. Install wand in a horizontal position. Adjust sensor horizontally until string line is approximately 1” to 3” inside end of wand. Adjust sensor vertically until wand is roughly parallel to the grade. Adjust sensor potentiometer shaft so screw driver slot is horizontal. Tighten wand bolt to secure wand to sensor.

7. Rear height sensor: Install sensor with potentiometer shaft facing forward. Install wand in roughly a horizontal position. Adjust sensor horizontally until string line is approximately 1” to 3” inside end of wand. Adjust sensor vertically until wand is roughly parallel to the grade. Adjust sensor potentiometer shaft so screw driver slot is horizontal. Tighten wand bolt to secure wand to sensor.

8. Check each wand to ensure that the wand base does not bind on the sensor face. Connect sensor plugs to appropriate sensor cable on the main unit. The height sensor cable is marked #3. The rear steering sensor cable is marked #4 and has a single cable tie near the end. Extension cords are provided with the sensor kit for the rear steering and height sensors.

AUTOMATIC STEERING SENSOR ADJUSTMENTS:

1. All switches off, FNR to neutral, steering sensor selector to manual and Height Pour—Manual—Grade to Manual. Turn Main Power on and Auto power on.
2. Flip the steering sensor selector switch to front sensor and check Steering Auto—Manual indicator lamps. If neither lamp glows, then the front steering sensor is “zeroed” and requires no further adjustment. Proceed with adjusting the rear steering sensor.

3. If a lamp glows, manually rotate the front steering sensor wand slightly. If the lamp turns off within about 1/2” of rotation, do not adjust the sensor and proceed with adjusting the rear steering sensor.

4. If the wand requires more than 1/2” of rotation, loosen the wand counterbalance weight and turn the sensor pot shaft with a screwdriver while gently holding the wand against the string line. If the lamp turns off within about 10° of shaft rotation, tighten wand weight and proceed. If the pot shaft requires more than 10° of rotation move the sensor in or out of the socket as required and readjust wand and pot shaft. When the wand is in a suitable position and both indicator lights are off, the front steering sensor is set. Note the physical position of the machine and sensor assembly for future reference. Proceed with adjusting the rear steering sensor.

5. Flip the steering sensor selector switch to rear sensor and repeat steps 2, 3 and 4 for the steering sensor. Note that once the rear steering sensor is zeroed, the entire sensor should be slid an additional 1” into socket (i.e. away from the string line.)
AUTOMATIC HEIGHT SENSOR ADJUSTMENTS:

1. There are two height sensor locations.
   Front sensor for **GRADING**.
   Rear sensor for **POURING**.

2. Check the Height Pour—Manual—Grade indicator lamps. If neither lamp glows, then height is “zeroed” and requires no further adjustment.

3. If a lamp glows, adjust the Height Trim potentiometer on the control panel until both lamps are off. When the wand is in a suitable position and both indicator lights are off the Height sensor is set. Gently rotate the Height Trim Pot Knob Lock clockwise. Note the physical position of the machine and sensor assembly for future reference.

4. Turn the Auto Power switch off.
ADJUSTING THE HEIGHT LIMIT SWITCH:

1. The limit switch cuts power to the appropriate solenoid when the Automatic Height Control lifts the rear wheel to an adjustable set point. This keeps the rear wheel in contact with the ground at all times to maintain stability and traction.

2. Plug the limit switch pigtails into the limit switch cable on the Paver main unit. Use the extension cable (#11447) if required.

3. The paver must be completely adjusted and ready to pour for a given concrete mold. Loosen the 1/4” bolt holding the limit switch in place. Slide the switch down until the wheel actuator contacts sensor bracket, continue sliding the switch down until the switch contact snap is heard. Raise the switch until the contact snap is heard again, then lower the switch down an additional 1/4” to 1/2” and tighten the bolt.

4. Test the limit switch position by placing the paver on a flat slab (concrete or asphalt) and lowering mold (manual control). The bottom edge of the mold should be above the slab approximately 1/8” to 1/4”. Mark the location of the limit switch on cylinder.

5. The limit switch will stop the bottom edge of the mold from traveling below the bottom edge of the rear tire. This will prevent the mold from dragging on the ground and also maintain solid traction on the near wheel next to mold.

6. The limit switch height may have to be fine tuned depending on base stability. Example: on loose base you may have to lower the limit switch approximately 1/4” to 1/2” to maintain better wheel traction.
GRADING WITH THE PAVER BEFORE POURING:

1. Set control switches: Main power off, Auto power on, hydraulic power on, steering auto—manual switch to auto, engine speed to high, transport speed range in pour, vibrators off, FNR in neutral, height sensor switch to GRADE, travel speed to 0. Turn Main power on, FNR to forward and adjust travel speed to approximately 8’ to 15’ per minute, the Paver should follow the string line. If it does not, correct grade or readjust machine as required. Note: correct operation of the machine results in many small height and steering corrections as opposed to a few large corrections. Automatic adjustments will operate smoothly with concrete in the hopper.

2. Adjust rear of machine to be approx. 1” higher than the front. (The back of the mold is approx. 1” above the grade)

3. After grading for approx. 10’, check the distance between the grade and the stringline. Make sure you are grading at the proper height.

4. Rerun machine to beginning point of string line and reset as required. Cutting the grade accurately will ensure a uniform curb.

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THIS BLADE WILL KNOCK OFF HIGH AREAS AND IDENTIFY LOW AREAS, WHICH MAY NEED FILL. THIS BLADE IS NOT DESIGNED TO REMOVE LARGE AMOUNTS OF HEAVILY COMPACTED SOIL. IF SOIL IS HEAVILY COMPACTED, GRADE SHOULD BE CUT LOW. IF GRADE IS TOO HIGH, THE MOLD COULD DRAG OR BECOME HUNG UP WHILE POURING.
BEGIN POURING:

1. Make sure the Height Sensor switch is flipped to the POUR position.

2. First Pour: Fill weight box (above mold) with concrete.

3. Spray hopper area and mold inside and outside with form oil. Fill hopper to within 8” to 10” of the top with standard slip form paver concrete mixture. (See operating hints for concrete mix, page 36.)

4. Proceed with pour. Adjust vibrator potentiometers as required to fill mold and aid flow of concrete into curb area. Lower slump concrete will require higher vibrator settings to fill the form. Generally, start with vibrators set between 5 and 6.

5. If the engine is lugging or the exhaust is exceptionally black, check the position of the vibrator pots. It is recommended that all three vibrator pots be set at approximately the same position. Unused vibrators should be turned off. This reduces the hydraulic load on the engine.

6. The three main manual operator functions while pouring are
   1. Adjusting vibrator speed.
   2. Adjusting travel speed.
   3. Adjust the pitch of mold from front to back by rising or lowering the front cylinder. Use the black mark on the front steering sensor wand as a reference mark.
   4. The above three settings will be determined by the concrete mix.

7. To move back of curb away from the stringline move the steering sensor closer to the stringline.

8. To move back of curb closer to the stringline move the steering sensor away from the stringline.

9. To change top of curb height, use the height trim knob. Move clockwise (+) to raise the curb and counter-clockwise (-) to lower the curb.

NOTE: Fewer adjustments are better than many.
SWITCHING STEERING SENSORS:

1. When pouring in a straight line, use the front steering sensor.

2. As the paver approaches a curve, use the front sensor until the sensor reaches the beginning of the curve.

3. When the front sensor reaches the curve, flip the steering sensor selector switch to manual (center position).

4. Leave the selector switch in manual until the rear steering sensor reaches the beginning of the curve.

5. When the rear steering sensor reaches the curve, flip the selector switch to the rear sensor.

6. The front wheel will turn sharply and the mold will follow the stringline accurately.

7. As the front sensor approaches the stringline, the sensor wand will be pushed back towards vertical. When the front sensor wand reaches its original orientation, flip the sensor selector switch back to the front sensor position.
ADJUSTMENTS WHILE POURING:

The three main manual operator functions while pouring are
1. Adjusting vibrator speed.
2. Adjusting travel speed.
3. adjust the pitch of mold from front to back by rising or lowering the front cylinder. Use the black mark on the front steering sensor wand as a reference mark.
4. The above three settings will be determined by the concrete mix.

1. For temporary work stoppages or while waiting for a concrete truck, push Main power switch off to stop all machine functions.
2. Flip auto power switch off to shut off all automatic computer controls. Flip off individual Height or Steering auto—manual switches to disable height or steering sensor as required.
3. Adjust travel speed as required by turning speed pot.
4. To move back of curb away from the stringline move the steering sensor closer to the stringline.
5. To move back of curb closer to the stringline move the steering sensor away from the stringline.
6. To change top of curb height, use the height trim knob. Move clockwise (+) to raise the curb and counter-clockwise (-) to lower the curb.

ADJUSTMENTS AFTER POURING:

1. At the end of the string line flip the auto power switch off and run out the concrete. Raise the machine slightly and proceed to a suitable clean up area. Ensure that the instrument panel is closed.
2. Shovel or brush off concrete deposits and wash down the machine. Clean mold thoroughly inside and outside or surface quality will be affected on subsequent pours.
3. Remove sensors from machine during transportation and storage. Sensor potentiometer shafts are fragile. Guard them from damage at all times.
4. Do not ride on machine while shifting into transport speed range. The machine could surge. Do not attempt to pour concrete with the machine in the transport speed range.
5. Install Panel Safety Cover over Control Panel when machine is not in use.
OPERATING HINTS

1. If Automatic controls appear to work backwards, ensure that the sensor potentiometer shafts are in the correct orientation:
   1. Front steering sensor: pot shaft faces rear of machine.
   2. Rear steering sensor: pot shaft faces rear of machine.
   3. Height sensor: pot shaft faces front of machine.

2. If entire mold does not fill with concrete, increase vibrator pot settings as required. Ensure that concrete level is maintained in the hopper at all times.

3. If curb surface quality is not acceptable, confirm concrete mixture or adjust vibrators as required. Ensure that mold was cleaned after previous pour.

4. If concrete surface quality is not acceptable, check:
   1. Use of proper concrete mix.
   2. Proper concrete slump.
   3. Proper mold angle.
   4. Air escape slot at rear of mold must be clear.

5. Recommended concrete mixture:
   1. Standard Slipform paver mixture: (for 1 cubic yard)
      A. 50%—50% (about #1500 each) mixture of 3/4” rock and sand.
      B. 550# of cement (6 bag mix).
      C. 6% air entrainment on site.
   2. 1—1/2” to 2—1/2” slump. Generally, the taller the form, the stiffer the mixture must be. Low wide forms may be poured with a wetter mixture.

6. When not using automatic controls (sensors) turn Auto Power off.

7. While pouring a gradual radius, adjust front sensor horizontally to keep paver from interfering with string line. Reposition the sensors after the string line straightens out. Flip rear drive off while turning.

8. The position of the stringline determines the final alignment of the curb and gutter. Therefore the position of the stringline must be consistent in relation to the desired curb and gutter line. Keep stringline vertical and horizontal variations within 1” of ideal for best results.

9. If machine will not drive, check the Rear Drive switches. If the side drive unit or the optional right rear drive wheel is not used, flip the switch to the off position. (See Assembly Instructions, page 18.)

10. If auto—height control does not appear to function correctly, ensure that the Side Drive Unit switch is in the correct position. The Side Drive Unit switch transfers auto—height control between the center wheel and the side drive unit wheel. When using the Side Drive Unit, flip the switch to attached. When not using the Side Drive Unit, flip the switch to detached.
11. When using the Side Drive Unit or the optional right rear drive wheel, the Rear Drive switch (left or right) may be in one of two positions:
   1. **ON:** drive is on and drives with the front wheel.
   2. **OFF:** drive is off and free wheels. (For use during turns)
12. If the engine is lugging or the exhaust is exceptionally black, check the position of the vibrator pots. It is recommended that all three vibrator pots be set at approximately the same position. Unused vibrators should be turned off. This reduces the hydraulic load on the engine.
13. If automatic controls cause frequent and / or large corrections, recheck grade. Grade should be flat within 1/2” for the entire run.
14. If the grade is uneven the height cylinder could be given a sudden signal to lower the machine a large amount (e.g. coming out of a pothole or running over a large bump.) If the machine is not able to react fast enough, this will cause the rear wheel to lift off the ground and may result in a loss of hydraulic power to the steering circuit. If the rear wheel is lifted off the ground by the automatic height control, adjust the height trim pot to reposition the wheel at grade. Then, slowly turn the trim pot back at the original grade. If this occurs repeatedly, ensure that the grade is within specifications and there are no dips or waves.
15. To prevent the rear wheel from lifting of the ground adjust the auto height limit switch. The switch location and adjusting procedures are outlined on page 31.
16. If the vibrator output seems low or if the travel speed seems slow, check the hydraulic pump suction hoses (from filters to pumps) for kinks.
PERIODIC MAINTENANCE

ALWAYS STOP ENGINE BEFORE PERFORMING MAINTENANCE PROCEDURES. REMOVE IGNITION KEY AND ALLOW ENGINE TO COOL.

CHECKING ENGINE OIL LEVEL:

1. Park paver on level surface.
2. Clean dirt from around dipstick and oil filler areas to prevent dirt from falling into engine.
3. Remove dipstick and check oil level.
4. Add oil as required to maintain level between upper ("Full") mark and lower ("Low") mark. See “Lubrication Chart” for proper oil type.

CHANGING ENGINE OIL AND FILTER:

Note: When changing and handling oil, it is recommended to use protective equipment to prevent skin exposure. Properly dispose of used oil at a reputable disposal facility.
1. Park paver on level surface.
2. Run engine a few minutes to warm oil.
3. Stop engine.
4. Remove oil pan drain plug.
5. Turn the filter counterclockwise to remove.
6. Place a drain pan under the filter to collect soiled oil.
7. Wipe a film of clean oil on the new filter seal.
8. Tighten filter until seal contacts mounting surface. Hand tighten an additional 1/2 to 3/4 turn.
9. Replace drain plug and fill engine with oil.
10. Run engine for a few minutes and shut off.
11. Check oil level and inspect for leaks.

CLEANING ENGINE AIR FILTER:

1. Remove and inspect filter.
2. Clean or replace frequently in dusty work conditions.
3. Replace filter. Ensure that all seals seat properly.

CLEANING/REPLACING FUEL FILTER:

1. Stop engine.
2. Place a drain pan under fuel filter and loosen drain plug approximately 1 turn.
3. Water should drain. If necessary, operate priming pump to drain water, but only until fuel flows from filter.
5. Remove drain plug (on bottom of filter) and discard O-ring.
6. Remove fuel filter with filter wrench.
7. Screw new filter on by hand until gasket contacts housing. Then tighten 1/3 turn more.
8. Install drain plug with new O-ring.
9. Operate priming mechanism on top of filter.
10. Start engine. Check for leaks.
CHECKING ENGINE COOLANT LEVEL:

- DO NOT REMOVE RADIATOR CAP WHILE ENGINE IS WARM. WAIT UNTIL THE ENGINE IS COOL. ROTATE THE CAP SLOWLY TO THE FIRST STOP AND RELEASE ALL PRESSURE BEFORE REMOVING THE CAP.
- DO NOT POUR COOLANT INTO A HOT RADIATOR. THE CYLINDER HEAD OR ENGINE BLOCK COULD BE DAMAGED.

1. Remove the radiator cap. Liquid level must be 1/2” to 1” (13mm to 25mm) below the bottom of the filler neck.
2. A 50/50 mixture of phosphate free antifreeze and tap water.
3. Replace radiator cap and clean debris from radiator.
4. Inspect hoses and connections for leaks.

CHECKING BATTERY:

- BATTERY GASES ARE EXPLOSIVE! KEEP CIGARETTES, SPARKS AND FLAMES AWAY FROM THE BATTERY. BATTERY ACID IS A POISON AND CAN CAUSE BURNS. PROTECT SKIN, EYES AND CLOTHING WHILE WORKING AROUND THE BATTERY.

1. Remove battery cell caps.
2. The electrolyte should be 1/4” to 1/2” (6mm to 12mm) above the plates. Do not fill to bottom of filler neck.
3. Use only battery grade sulfuric acid electrolyte of 1.265 specific gravity.
4. Install battery cell caps.
CHECKING ENGINE FAN BELT:

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STOP ENGINE BEFORE CHECKING.

1. Apply moderate thumb pressure to fan belt halfway between pulleys. The belt should deflect approximately 3/8” to 1/2” (10 mm to 13 mm).
2. Loosen adjusting nut on alternator to adjust belt. Move alternator as required. Tighten nut. Check belt tension.
3. Replace belt if it is damaged or cracked.

CHECKING HYDRAULIC OIL LEVEL:

1. Park paver on a flat surface.
2. Remove cover from hydraulic oil tank. Oil level should be between 2—1/2” & 3.0” (64 mm & 76 mm) from the bottom of the dipstick. Add oil as required.
CHANGING HYDRAULIC OIL FILTERS:

1. Hydraulic oil filters are located underneath the main unit hopper and slightly below the front of the oil tank.
2. Park paver on a level surface.
3. Stop engine.
4. Turn off 1/4 turn valves between hydraulic oil filters and oil tank.
5. Remove both hydraulic oil filters.
6. Turn filters counterclockwise to remove. Oil may leak out of filters. Place a drain pan under the filters to collect spilled oil.
7. Wipe a film of clean oil on new filter seals.
8. Tighten filters until seal contacts mounting surface. Hand tighten an additional 1/2 turn.
9. Open cut off valves.
10. Start engine and operate hydraulic system.
11. Check oil level and inspect for leaks.

CHANGING HYDRAULIC OIL:

Note: When changing and handling oil, it is recommended to use protective equipment to prevent skin exposure. Properly dispose of used oil at a reputable disposal facility.

1. Park paver on a level surface.
2. Stop engine.
3. Remove drain plug and collect old oil.
4. Replace drain plug and fill tank.
5. Start engine and operate hydraulic system.
6. Check oil level and inspect for leaks.
# PERIODIC MAINTENANCE CHART

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<th>SERVICE FREQUENCY</th>
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- ● Inspect—Check, add or adjust.
- ▲ Change.
- ■ Clean.

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## LUBRICANT & CAPACITY CHART

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<tr>
<td>ENGINE OIL</td>
<td>API SERVICE SF/CC SAE 30 W</td>
<td>4.2 QUARTS (4.0 LITERS)</td>
</tr>
<tr>
<td>ENGINE COOLANT</td>
<td>ANTIFREEZE—COOLANT MIXTURE</td>
<td>2.3 QUARTS (2.2 LITERS)</td>
</tr>
<tr>
<td>ENGINE FUEL</td>
<td>#2 DIESEL FUEL</td>
<td>12.0 US GALLONS (45.4 LITERS)</td>
</tr>
<tr>
<td>HYDRAULIC OIL</td>
<td>DEXRON—II ATF</td>
<td>12.0 US GALLONS (45.4 LITERS)</td>
</tr>
</tbody>
</table>
## TROUBLE SHOOTING – ENGINE

<table>
<thead>
<tr>
<th>SYMPTOMS</th>
<th>SEE PROBLEMS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Engine hard to start or will not start:</td>
<td>1. 2. 3. 4. 5. 6. 7. 8. 10. 15. 28.</td>
</tr>
<tr>
<td>2. Engine runs rough or stalls frequently:</td>
<td>2. 3. 4. 5. 7. 8. 17. 25.</td>
</tr>
<tr>
<td>4. Lack of engine power:</td>
<td>3. 5. 7. 8. 10. 17. 25. 28.</td>
</tr>
<tr>
<td>8. White Exhaust smoke:</td>
<td>3. 8. 16. 18.</td>
</tr>
<tr>
<td>9. Gray or black exhaust smoke:</td>
<td>3. 5. 7. 8. 25. 26.</td>
</tr>
<tr>
<td>10. Excess fuel consumption:</td>
<td>2. 3. 7. 8. 17. 25. 27. 28.</td>
</tr>
<tr>
<td>11. Battery will not charge:</td>
<td>22. 29. 30. 31. 32.</td>
</tr>
<tr>
<td>PROBLEMS</td>
<td>CORRECTION</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>1. Low fuel warning lamp glows.</td>
<td>Check fuel level.</td>
</tr>
<tr>
<td>2.Leaks in fuel system.</td>
<td>Check hose connections.</td>
</tr>
<tr>
<td>3. Improper fuel type.</td>
<td>Consult fuel supplier, use proper fuel for operating conditions.</td>
</tr>
<tr>
<td>4. Water, dirt or air in fuel system.</td>
<td>Drain, flush, fill &amp; bleed fuel system.</td>
</tr>
<tr>
<td>7. Dirty or faulty fuel injectors.</td>
<td>Contact an MBW Dealer.</td>
</tr>
<tr>
<td>10. Engine oil viscosity too heavy.</td>
<td>Use proper viscosity oil.</td>
</tr>
<tr>
<td>11. Engine oil viscosity too light.</td>
<td>Use proper viscosity oil.</td>
</tr>
<tr>
<td>12. Improper oil type.</td>
<td>Drain and fill engine with correct oil for operating conditions.</td>
</tr>
<tr>
<td>15. Cold weather.</td>
<td>Use cold weather starting options.</td>
</tr>
<tr>
<td>17. Low coolant temperature.</td>
<td>Check thermostat.</td>
</tr>
<tr>
<td>18. Defective thermostat.</td>
<td>Check thermostat.</td>
</tr>
<tr>
<td>19. Low coolant level.</td>
<td>Fill radiator to proper level, inspect for leaks.</td>
</tr>
<tr>
<td>20. Restricted cooling system.</td>
<td>Flush and refill system.</td>
</tr>
<tr>
<td>22. Loose alternator—fan belt.</td>
<td>Adjust or replace belt.</td>
</tr>
<tr>
<td>23. Low idle speed.</td>
<td>Check and adjust idle speed.</td>
</tr>
<tr>
<td>25. Restricted air intake.</td>
<td>Check air cleaner element and supply hoses.</td>
</tr>
<tr>
<td>26. Restricted exhaust system.</td>
<td>Clean exhaust system.</td>
</tr>
<tr>
<td>27. Plugged crankcase vent tube.</td>
<td>Check and clean as required.</td>
</tr>
<tr>
<td>28. Improper valve adjustment.</td>
<td>Contact an MBW Dealer.</td>
</tr>
<tr>
<td>29. Loose or corroded terminals.</td>
<td>Clean and tighten as required.</td>
</tr>
<tr>
<td>30. Defective battery.</td>
<td>Check electrolyte level.</td>
</tr>
<tr>
<td>31. Dead battery cell.</td>
<td>Replace battery.</td>
</tr>
<tr>
<td>32. Defective alternator.</td>
<td>Contact an MBW Dealer.</td>
</tr>
<tr>
<td>33. Defective ignition switch or starter.</td>
<td>Contact an MBW Dealer.</td>
</tr>
</tbody>
</table>
TROUBLE SHOOTING – PAVER

ALWAYS STOP ENGINE BEFORE PERFORMING ANY SERVICE PROCEDURES. REMOVE IGNITION KEY AND ALLOW ENGINE TO COOL.

1. If the front wheel seems to “hunt” to find straight ahead, check the steering feedback potentiometer setting. Remove the elongated grommet from the housing at the top of the steering spindle. If the set screw is loose, the potentiometer will need to be reset. Remove the housing. Center the potentiometer shaft and gently reposition the housing. Tighten the set screw and replace the grommet. The set screw may be loctited for added security.

2. If machine will not drive, check the Rear Drive switch. If the side drive unit or the optional right rear drive wheel is not used, flip the switch to the off position. (See Assembly Instructions, page 18.)

3. If auto—height control does not appear to function correctly, ensure that the Side Drive Unit switch is in the correct position. The Side Drive Unit switch transfers auto—height control between the center wheel and the side drive unit wheel. When using the Side Drive Unit, flip the switch to attached. When not using the Side Drive Unit, flip the switch to detached.

4. When using the Side Drive Unit or the optional right rear drive wheel, the Rear Drive switches (left or right) may be in one of two positions:
   1. ON: drive is on and drives with the front wheel.
   2. OFF: drive is off and free wheels. (For use during turns)

5. If the engine is lugging or the exhaust is exceptionally black, check the position of the vibrator pots. It is recommended that all three vibrator pots be set at approximately the same position. Unused vibrators should be turned off. This reduces the hydraulic load on the engine.

6. If the rear wheel is lifted off the ground by the automatic height control, adjust the height trim pot to reposition the wheel at grade. Then, slowly turn the trim pot back to its original setting, lowering the machine as it moves forward until it is back at the original grade. If this occurs repeatedly, ensure that the grade is within specifications and there are no dips or waves.

7. To prevent the rear wheel from lifting off the ground adjust the auto height limit switch. The switch location and adjusting procedures are outlined on page 31.

8. If the automatic height control will not allow the mold to be lowered to its proper position, check the location of the auto height limit switch. The switch may have to be raised to allow the mold to be positioned correctly.

9. If the vibrator output seems low or if the travel speed seems slow, check the hydraulic pump suction hoses (from filters to pumps) for kinks.
MOLD ORDERING

Complete information is necessary to insure delivery of the mold.

Accurate engineering drawings or sketches are necessary to insure the accuracy of the mold being built. Molds will not be manufactured until ALL dimensions are clarified.

IMPORTANT

All information on the order form must be complete before manufacturing of mold will begin. Use hopper size chart. The size of the opening in which the mold bolts up to is critical. There are several different size hopper openings currently in the field. WE NEED THE DIMENSIONS OF THE OPENING TO PROPERLY FIT THE MOLD TO YOUR HOPPER. Please write these dimensions down in the space provided. This will allow us to ship your mold as soon as possible.

TERMINOLOGY CURB AND GUTTER

BACK OF CURB  The distance from the grade to the top of curb on the back fill side.

TOP OF CURB   The distance from the back of curb to the face of curb.

FACE OF CURB  The slope on the curb face, which must be toward the gutter.

FLOW LINE    The distance from the grade to the low point in the gutter.

GUTTER       The sloped area or PITCH. This can be measured in inches/foot or the intersection of the FACE OF CURB and the GUTTER surface.

TOE OF CURB  The distance from the grade to the top of the gutter.

BATTER       Batter is added to the base to insure the curb will stand. If there is no batter, MBW Inc. cannot guarantee the curb will stand.

Typical minimum batter dimensions.
BACK OF CURB  12” = BATTER  1/2”
BACK OF CURB  18” = BATTER  3/4”
TOE OF CURB   6” = BATTER  1/4”

BASE         The distance across the bottom of the curb minus the batter.

RADII        Corners of mold can not be made without a bend radii. Minimum radius is 1/4”.

![Diagram of curb and gutter terminology]
**TERMINOLOGY CURB**

BACK OF CURB  The distance from the grade to the top of curb on the back fill side.

TOP OF CURB  The distance from the back of curb to the face of curb.

FACE OF CURB  The slope on the curb face, a typical slope is 1”.

TOE OF CURB  The distance from the grade to the face of curb.

BATTER  Batter is added to the base to insure the curb will stand. If there is no batter, MBW Inc. cannot guarantee the curb will stand.

BASE OF CURB  The distance across the bottom of the curb minus the batter.

RADII  Corners of mold can not be made without a bend radii. Minimum radius is 1/4”.

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**TERMINOLOGY SIDEWALK**

SIDE  The distance from the grade to the top of the sidewalk.

TOP  The distance from one side to the other side.

BATTER  Batter is added to the base to insure the curb will stand. If there is no batter, MBW Inc. cannot guarantee the curb will stand.

BASE  The distance across the bottom of sidewalk minus the batter.

RADII  Corners of mold can not be made without a bend radii. Minimum radius is 1/4”.

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POURING CONDITIONS

ON GRADE The concrete is poured on the same surface the machine is run on.

BELOW GRADE The concrete is being poured at a surface lower than what the machine runs on.

DROP POUR ADAPTER:

When pouring below grade, a drop pour adapter will be needed. A drop pour adapter will extend the length of the hopper and bolts on similar to a mold. Additional information is needed in order to manufacture a drop pour adapter. Adapters can be made either closed or open side and drop pour depth must be known. Drop pour depths can range from 4” to 10”, after 10” adapter and mold will have to be bolted on in the trench.

Note: There will be an additional charge for drop adapters.

CLOSED SIDE The side drive unit and mold are at a lower grade than the main unit.

OPEN SIDE The side drive unit and mold are at a lower grade than the main unit, but the gutter side of the mold is left open. This allows you to pour up against existing roadway.

Open mold requires open drop adapter
CATCHING WATER  The gutter is sloped to hold water.
SPILLING WATER  The gutter is sloped to allow water to flow out of gutter.

REBAR LOCATIONS  An opening in the front cover of hopper, to allow rebar to pass through.

When rebar openings are required, three options exist.

A) If you are ordering a hopper, it can be modified while it is being manufactured. Locations for rebar must included on sketch or drawing.

B) A new front cover maybe ordered. Locations for rebar must be received.

C) You will modify your existing hopper.

Note: There is an additional charge for MBW Inc. to modify hoppers for rebar.

Note: A mold will only pass over rebar which is laid out in a straight line. You cannot pass a curved piece of rebar through a straight mold.
MBW INC. MOLD ORDER FORM

DEALER: ____________________________  CONTRACTOR: ____________________________
ADDRESS: __________________________  ADDRESS: __________________________
SALESMAN: _________________________  PHONE: __________________________
PHONE: ____________________________  MOBILE: __________________________
FAX: ______________________________  FAX: __________________________

MOLD PURCHASE ORDER OF THE MOLD WILL NOT BEGIN UNTIL ALL REQUIRED INFORMATION IS RECEIVED !!! THEN 10 WORKING DAYS ARE NECESSARY TO PRODUCE A MOLD. FULL PAYMENT IS REQUIRED BEFORE SHIPMENT.

Main Unit Serial #: __________________________
Side Drive Serial #: __________________________

Size of Hopper Opening For Mold

Use hopper size chart
HEIGHT: __________________________
WIDTH: __________________________

POURING CONDITIONS

ON GRADE: YES / NO
BELOW GRADE: YES / NO
When pouring below grade, a drop pour adapter and the following information will be needed.
DEPTH: __________________________
CLOSED SIDE: YES / NO
OPEN SIDE: YES / NO
Open side drop adapter pour up against existing roadway. There is an additional charge for a drop pour adapter.

HEIGHT

Max Height = 18”
Max Width = 60”

REBAR LOCATIONS

When rebar is required three options are available.
A ) You will modify your current hopper.
B ) A new hopper can be purchased.
C ) A new front cover can purchased. Dimensions for rebar will be needed.
D ) There will be an additional charge for MBW Inc. to modify hoppers for rebar.
E ) Molds will not travel over curved rebar.