Operation Manual

Model: 1560

Covers Serial Number Range:

848-S-56TCG9Y2*03848 through _____

Sold & Serviced By:

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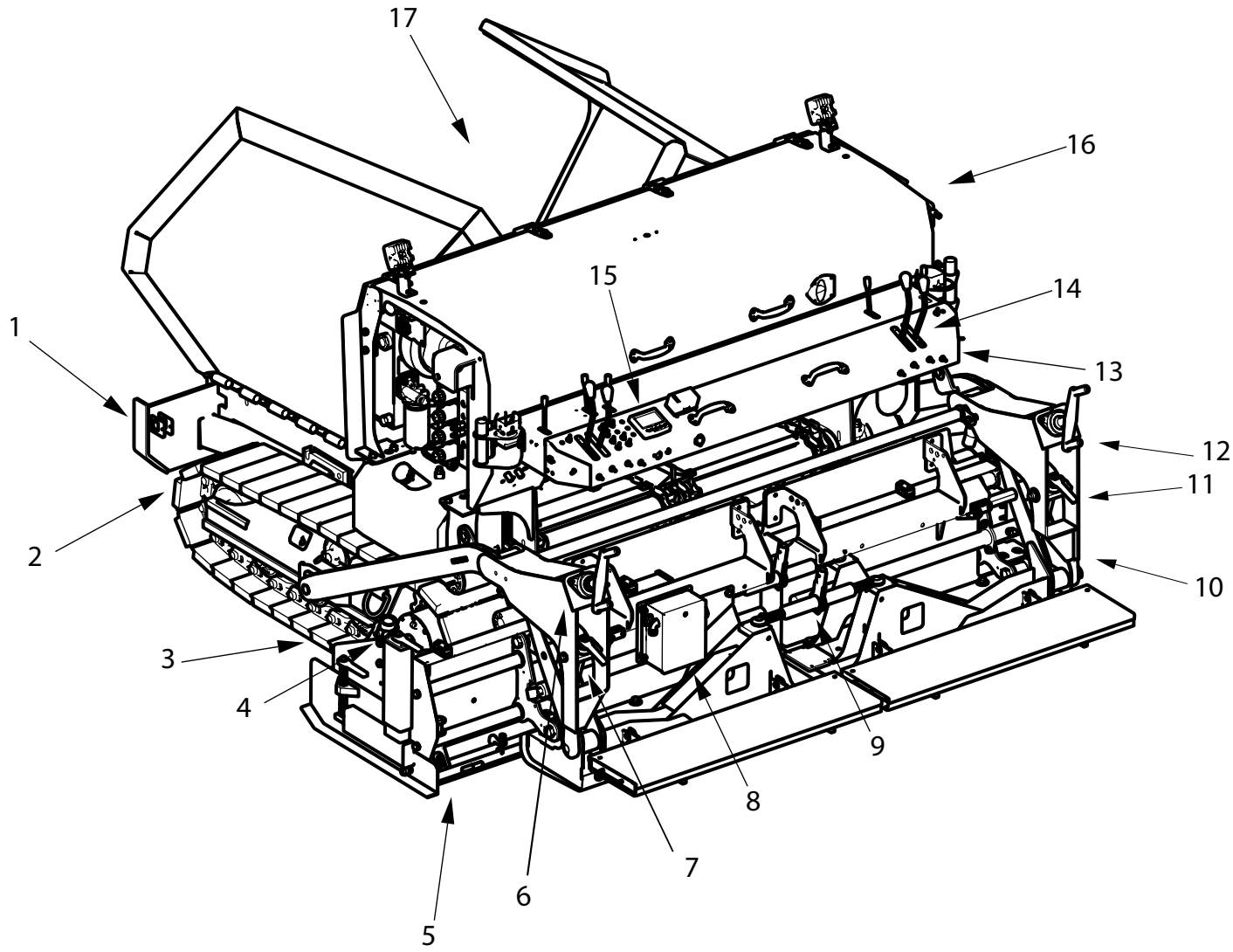
1. Introduction

1.1 Machine Components



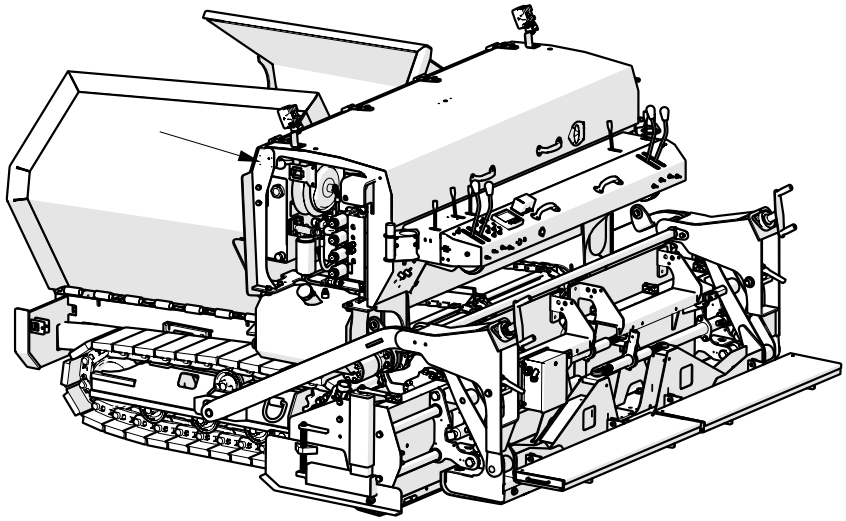
1. Sight Gauge Rod (both sides)
2. Front Tie Down (both sides)
3. Rear D-ring Tie Down (both sides)
4. Sonic Sensor
5. Left Extension
6. Left Mat Thickness Adjustment
7. Left Extension Match Height Adjustment
8. Screed Heat Control Box
9. Screed Crown Adjustment
10. Right Extension
11. Right Extension Match Height
12. Right Mat Thickness Adjustment
13. Dash
14. Machine Steering Levers
15. Operator Display
16. Engine Compartment
17. Hopper

1.2 Serial Number Plate

Serial number plate is located on the left side of the engine enclosure. Record serial number and date in spaces below.

Serial Number: _____

Date of Purchase:_____



2. Safety

2.1 General Safety Information

Operating personnel must perform service checks regularly to be sure systems are in good operating condition. If abnormal conditions are detected, inform maintenance personnel immediately.

Check all systems for proper operation. Check chassis and all components for physical damage and security of all fasteners and connectors.

2.1.1 Safety Alert And Signal Words

The safety information in this manual is denoted by the safety alert symbol: This symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

⚠ DANGER

Indicates a hazardous condition that will result in serious injury or death if not performed appropriately.

⚠ WARNING

Indicates a hazardous condition that could result in serious injury or death if not performed appropriately.

⚠ CAUTION

Indicates a hazardous condition that could result in serious injury if not performed appropriately.

NOTICE

Indicates a situation that could result in damage to the machine or other property.

2.2 Operation Hazards

The following hazards are possible during the operation of the paver. All operators, maintenance and service personal, or any one working with or near the paver must be familiar all hazards.

⚠ WARNING

Do not operate this paver until you read and understand the instructions in the operation section of this manual.

⚠ WARNING

Do not operate, work on or around paver while under the influence of alcohol, drugs or if feeling ill.

⚠ WARNING

Explosion, fire, or property damage hazard.

Do not use starting fluid with this engine.

Use of starting fluid can cause an explosion, fire, personal injury or damage to the engine and other property.

⚠ WARNING

Loud noise hazard.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Operators, workers and bystanders must use ear protection while machine is in operation.

⚠ WARNING

Entanglement hazard.

Do not wear loose fitting clothing.

Loose fitting clothing and long hair can become entangled in moving or rotating parts. Keep all personnel clear of moving parts when engine is running or about to be started.

Long hair must be tied back or netted.

Keep clear of moving components.

Never operate machine with open or missing guards or shields.

⚠ WARNING

Fire, burns or property damage hazard.

During after-treatment regeneration, exhaust gas temperature could reach 1500°F (800°C). Exhaust system surface could exceed 1300°F (700°C) which is hot enough to ignite or melt common materials and burn the skin.

Exhaust and exhaust components can remain hot after engine has been stopped.

To avoid risk of fire, burns and property damage or personal injury, allow the exhaust system to cool before service or repairs.

Be sure there are no combustible materials located where they are likely to come in contact with hot exhaust or exhaust components.

⚠ WARNING

Explosion, fire, or personal injury.

This engine is equipped with an air intake heater.

Do not use starting fluid with this engine.

Use of starting fluid can cause an explosion, fire, personal injury or damage to the engine and other property.

⚠ WARNING

Diesel exhaust fluid (DEF) hazard.

In case of contact with eyes, immediately flush eyes with water. Obtain medical attention immediately.

In case of skin contact, wash all exposed skin area with mild soap and water, followed by warm water rinse.

If ingested, obtain medical attention immediately.

⚠ WARNING

Crush hazard.

A raised screed or partially open hopper will fall if a hydraulic line or fitting is opened, or manual override button on hydraulic valve is pressed.

Always fully close hopper and lower screed to ground or engage screed service locks when parking paver or preparing paver for inspections, service and maintenance.

NOTICE

Dispose of waste properly.

Improper disposal of waste can harm the environment.

Use leak proof container when draining fluids. Do not use food or beverage containers.

Contact your local environmental or recycling center for the proper way to recycle or dispose of waste.

2.2.1 ⚠Pressurized Fluids

Hydraulic oil and grease injected into your skin can cause serious injury or death. Keep your hands and body away from any pressurized leak. Tighten connections before applying pressure. Never use your hand to check for leaks; use a piece of wood or cardboard. If fluid is injected into the skin, it must be surgically removed within a few hours or gangrene may result. Get immediate medical attention.

2.2.2 ⚠ Hazardous Chemicals

Lubricants and coolants can be hazardous. Before operating, check the Material Safety Data Sheet (MSDS) to understand each product, safe handling procedures, and first aid measures relating to the product. Clean up spilled fluids immediately.

Do not drain or pour any fluids or lubricants on the ground. Check with local environmental agencies or recycling centers for proper disposal information.

2.2.3 California Proposition 65 Warnings

⚠ WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Always start and operate the engine in a well-ventilated area.

If in an enclosed area, vent the exhaust to the outside.

Do not modify or tamper with the exhaust system.

Do not idle the engine except as necessary.

For more information go to www.P65Warnings.ca.gov/diesel.

⚠ WARNING

Batteries, battery posts, battery terminals, and related accessories can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov.

2.2.4 Hazards From Modifying Equipment

Do not make any alterations to your paver. Altering may cause your equipment to be unsafe and may void the manufacturers' warranty.

Always use Mauldin replacement parts.

2.3 Maintenance Hazards

The following maintenance hazards are in additional to those found while operating the paver. All maintenance and service personal must be familiar with all hazards before working on the machine.

Most accidents are caused by failure to observe basic safety rules or precautions.

An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs.

⚠ WARNING

Improper operation, lubrication or maintenance of this paver can be dangerous and could result in injury or death.

⚠ WARNING

Do not perform any lubrication and maintenance on this paver until you read and understand the instructions in the maintenance section of this manual.

2.3.1 ⚠ Maintenance And Service

Before performing inspections, service or maintenance:

- Park paver on firm level surface.
- Lower screed to ground or engage screed support locks.
- Fully open or close hoppers.
- Turn engine off and remove ignition key.
- Attach a Do Not Operate tag or similar warning tag to the ignition switch.
- Follow lockout/tag out procedure as defined by your company.

After performing inspections, service or maintenance, verify all guards have been installed and all safety devices are functional.

Always wear face or eye protection, safety shoes, and other protective items as required by your company.

If you must troubleshoot machine with engine running, have someone in constant visual contact who can shut off the engine or engage an Emergency Stop.

If you must service machine with an attachment raised, block up that attachment in a safe position.

2.3.2 ⚠ Fire Or Explosion Prevention

⚠Engine fuel can cause an explosion or fire. Do not service fuel system with engine running or near open fire. Do not weld or smoke near fuel system. Do not spill fuel or hydraulic oil on hot machine components. Clean up spilled fuel or oils immediately.

⚠Keep sparks and flames away from batteries to prevent explosion of hydrogen gas in and near a battery. Other precautions include:

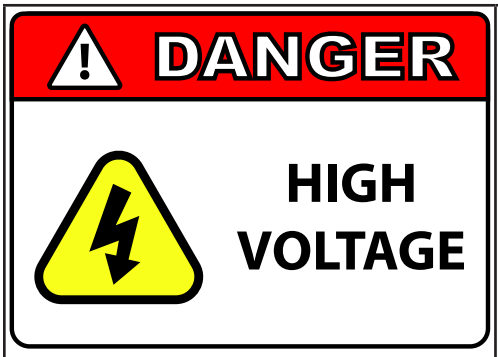
- When disconnecting battery cables, disconnect negative (-) cable first.
- When connecting battery cables, connect negative (-) cable last.
- Do not short circuit battery posts with metal items.

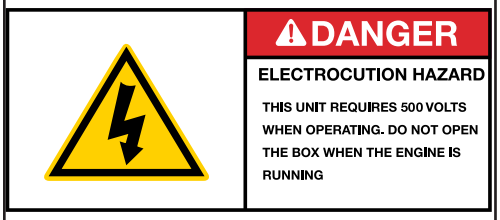
2.4 Safety Decals

Safety decals are located on the paver to identify operational and maintenance hazards. The safety decals are placed according to the hazard in that area of the paver. Read and understand each of the safety decals and the hazard it references. These safety messages are additional information to the safety content described in this operator's manual.

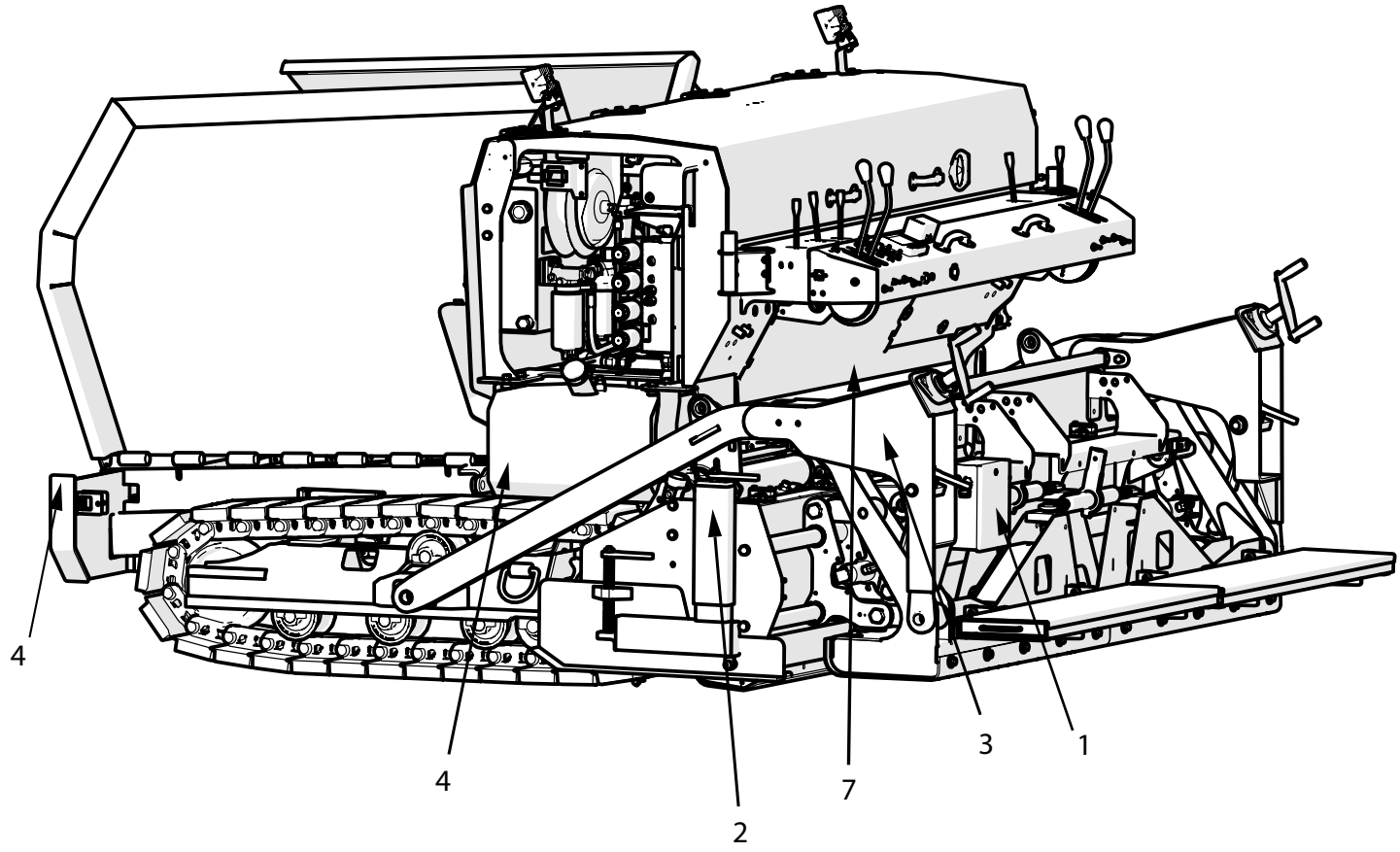
All safety decals must be legible at all times. Avoid using harsh chemicals or pressure washing. If the safety decal is no longer legible, replace it with a new one. Contact your dealer for new decals.

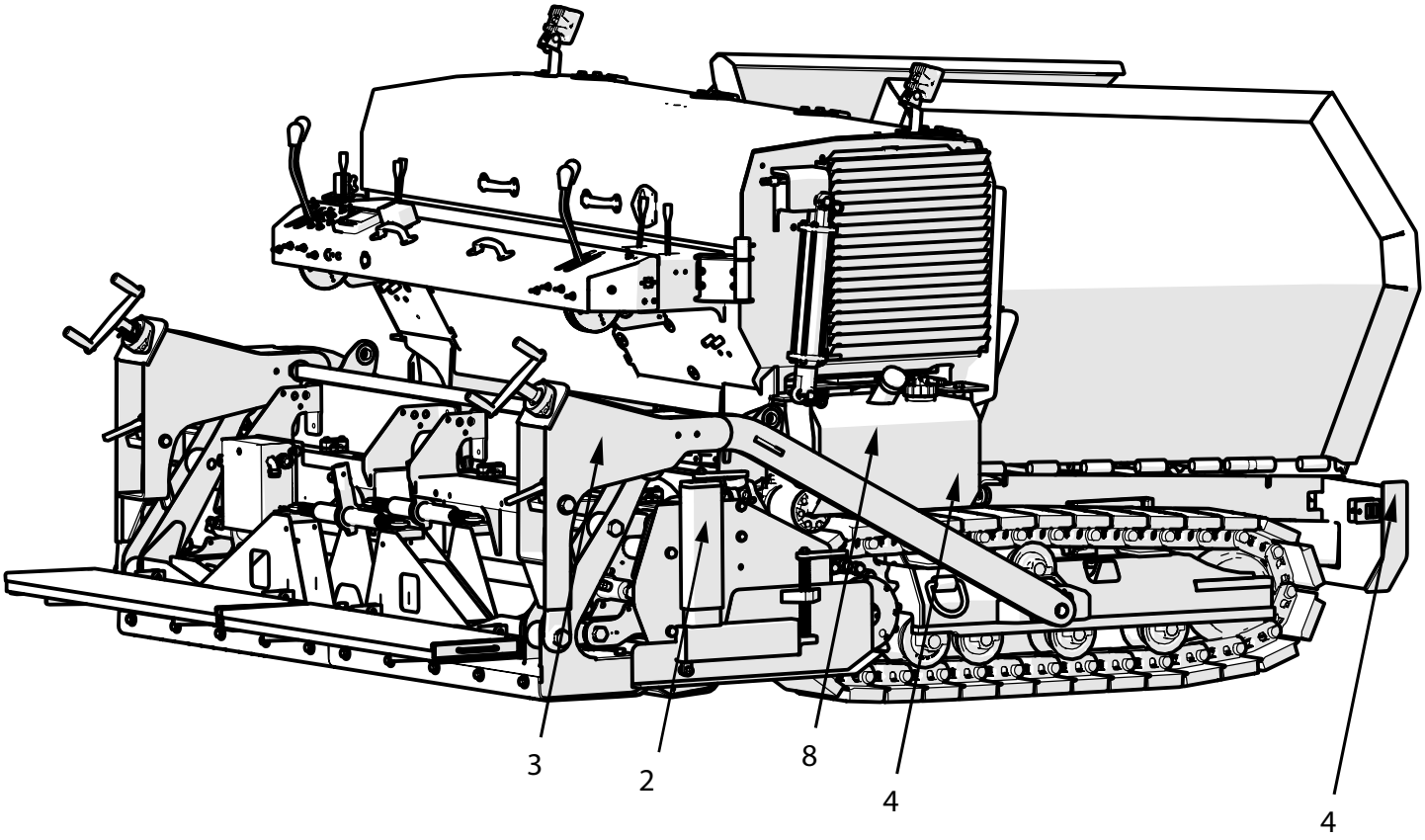
2.4.1 Safety Decals Defined

	1 - Danger High Voltage. The generator provides 250v for screed heater operation. Avoid working on any electrical components while the engine is on.
	2 - Danger Keep Clear. There are moving objects that could result in harm. Keep clear of moving objects. Failure to keep clear may result in serious injury or death.

	3 - Danger Stand Back. There are moving objects that could result in harm. Stand back a safe distance to avoid harm. Failure to keep back may result in serious injury or death.
	4 - Danger Crush Hazard. There are moving objects with sharp and or hard edges. Failure to observe moving parts and keep clear can and will result in serious injury.
	5 - Fan Hazard. Keep away from moving fan.
	6 - Danger High Voltage. This machine uses 250v to operation. Avoid working on any electrical components while the engine is on.
	7 - Caution Moving Augers. Keep clear of moving augers. Failure to do so may result in serious injury or death. Do not stand on or near the augers at any time, even if the machine is not running.
	8 - Danger. Fuel and or flammable fluid is present. Do not smoke or use any open flame. Decal is inside engine enclosure.

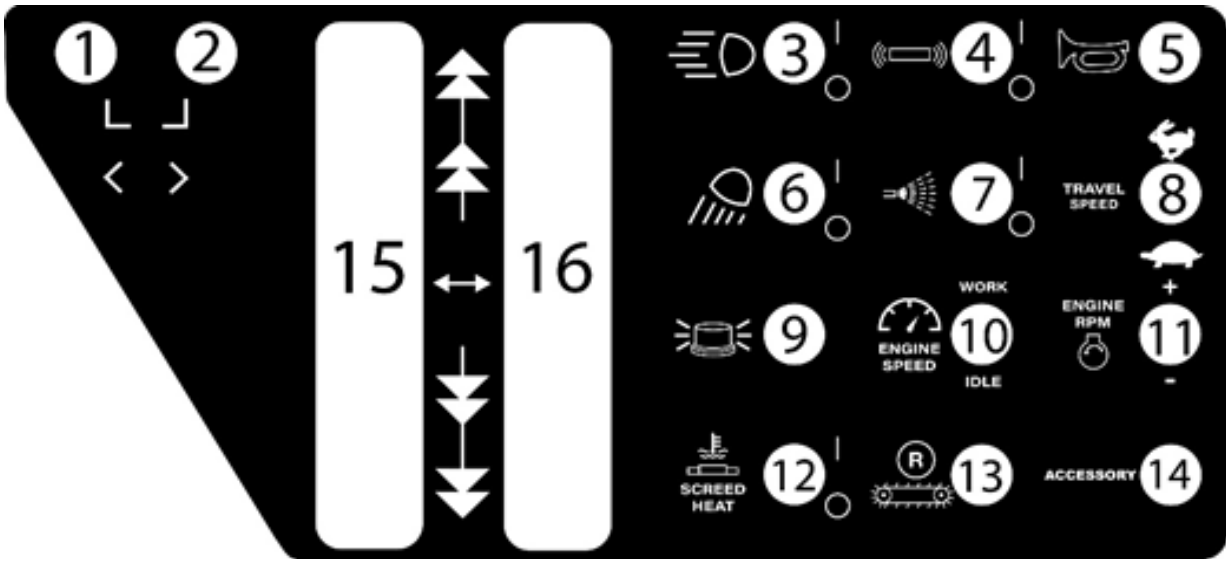
2.4.2 Safety Decals on Machine



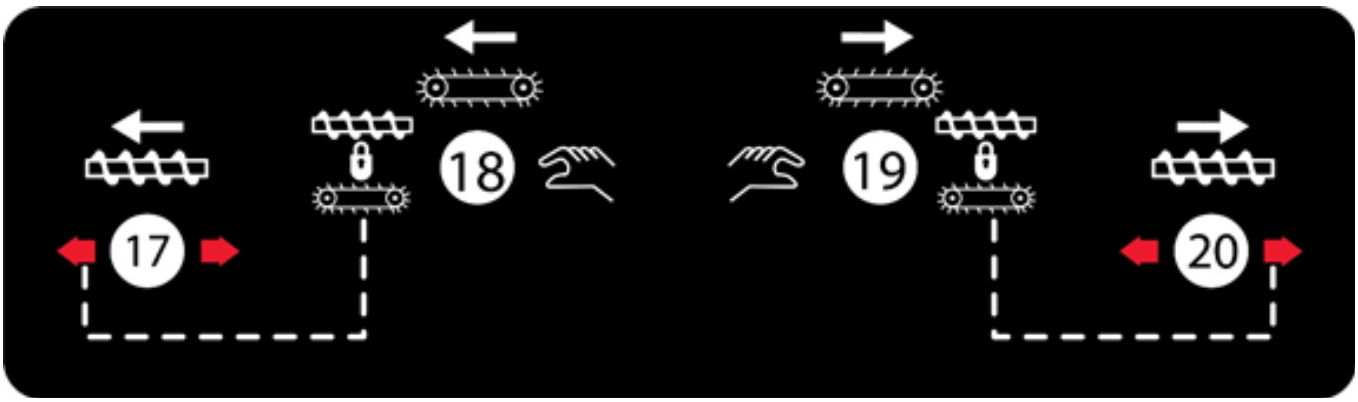


3 Paver Operation

3.1 Machine Functions Explained

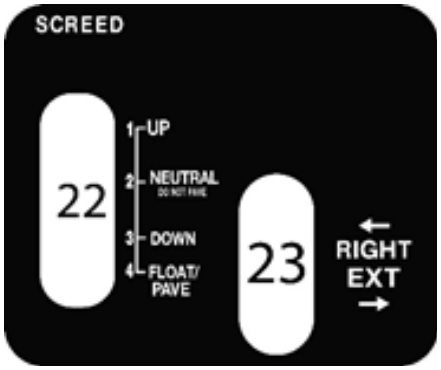


1. Hopper Open and Close. Left or Both Hoppers
2. Hopper Open and Close Right Hopper (optional)
3. Forward Hopper Lights On/off
4. Screed Vibrator On/off
5. Horn
6. Screed Lights On/Off
7. Wash down pump On/off
8. Travel speed High or Low speed. Paving and Machine loading/unloading should always be done in low speed range.
9. Beacon Light (Optional)
10. Engine Speed: this is to select a set RPM for idle or high RPM for work mode.
11. Engine RPM Adjustment: this increases or decreases the idle or work RPM a small increment.
12. Screed Heat On/off. This turns the screed heat on or off. The desired temperature is set in the digital display. See Screed Heating Section.
13. Conveyor Reverse. This reverses the conveyor direction to return material to the hopper.
14. Accessory. This is for extra options.
15. Left Drive Lever
16. Right Drive Lever

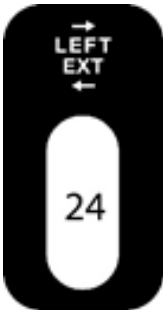


17. Left Auger Direction In/Out
18. Left Conveyor Feed AUTO/Manual
19. Right Conveyor Feed AUTO/Manual
20. Right Auger Direction In/Out

21. Auger Control AUTO/Manual. Auto uses the sonic sensors to determine when to turn on the feed system (augers and conveyors). The feed system will turn off once it reaches the desired head of material.



22. Screed Lever Up/Down. Push the Lever forward to raise the screed, pull the lever down to lower the screed. To float the screed pull the lever down passed the detent, the lever will stay and the screed will be in float mode.
23. Right Extension Lever. This extends and retracts the right hand screed extension.

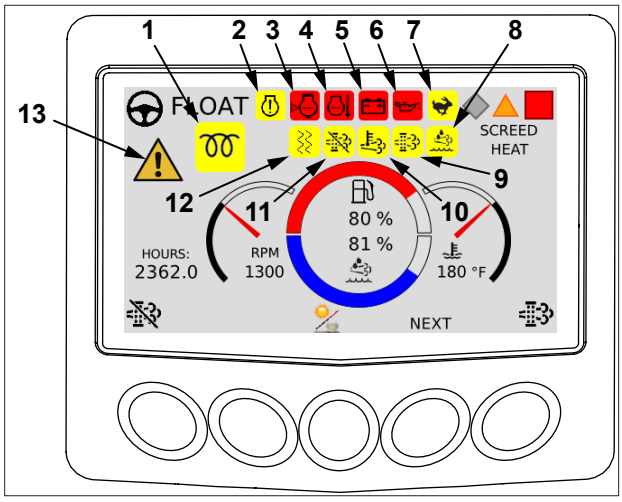


24. Left Extension Lever. This extends and retracts the left hand screed extension

3.2 Digital Display

This digital display indicates engine oil pressure, engine coolant temperature, battery voltage, engine speed, engine torque being used, diesel exhaust fluid tank level, diesel fuel tank level and engine hours.

3.2.1 Engine Warning Lamps

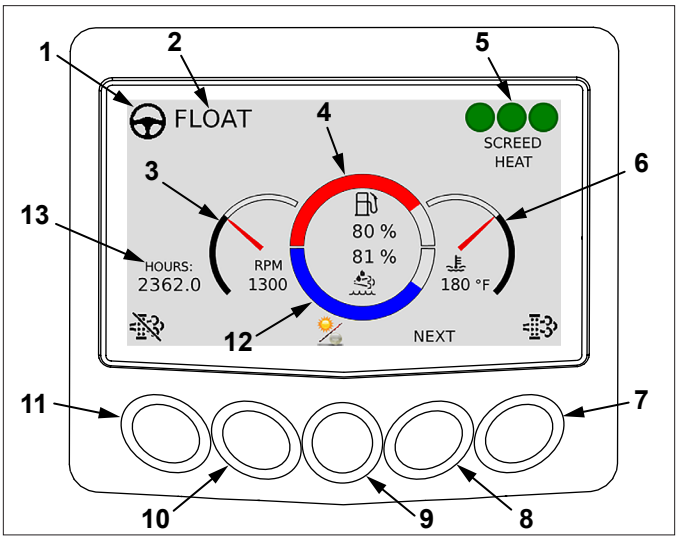


1. Wait to start indicator. Icon is illuminated when engine preheat is activated.
2. Engine warning code present. Warning symbol (12) will also be illuminated. Check engine codes as soon as possible.
3. Coolant level low. Indicates coolant level is too low. Stop engine immediately.
4. Coolant temperature high. Indicates coolant temperature is too high. Stop engine immediately.
5. Battery voltage low.
6. Oil temperature high. Indicates oil temperature is too high. Stop engine immediately.
7. High speed. Indicates travel switch is in high.
8. DEF tank level low.
9. Force regen. Indicates forced exhaust regen has been activate.
10. Exhaust temperature high. Indicates exhaust temperature is too high.
11. Regen inhibit. Indicates exhaust regen inhibit has been selected.
12. Screed vibration. Icon indicates vibration requested. Screed vibration only operates when paver is moving forward.
13. Warning indicator. Indicates an minor engine warning code is present. Check engine codes as soon as possible. A red stop sign indicates a serious engine code is present and engine must be stopped immediately.

3.2.2 Engine Screen

1. Selected station indicator. This symbol will be displayed on operators station screen with active travel controls.
2. Screed float mode indicator. When illuminated, screed is in float mode.
3. RPM gauge.

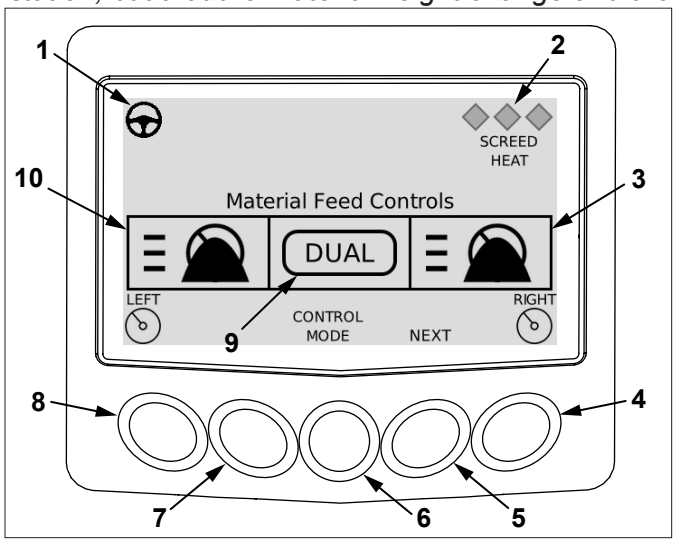
4. Fuel tank level.
5. Screed heat status. Indicates status of screed heat zones.
6. Coolant temperature gauge.
7. Force regen. Press to start exhaust regen.
8. Press to move to next screen.
9. Day/night mode.
10. Press to display engine code(s) if present.
11. Regen inhibit. Press to inhibit exhaust regen.
12. DEF tank level. (Not available on 1560)
13. Machine hour meter.



3.2.3 Material Feed Screen

Note: *Material feed screen can be viewed at the right hand station, but that the material height change and the dual/single can only be changed from the left hand station.*

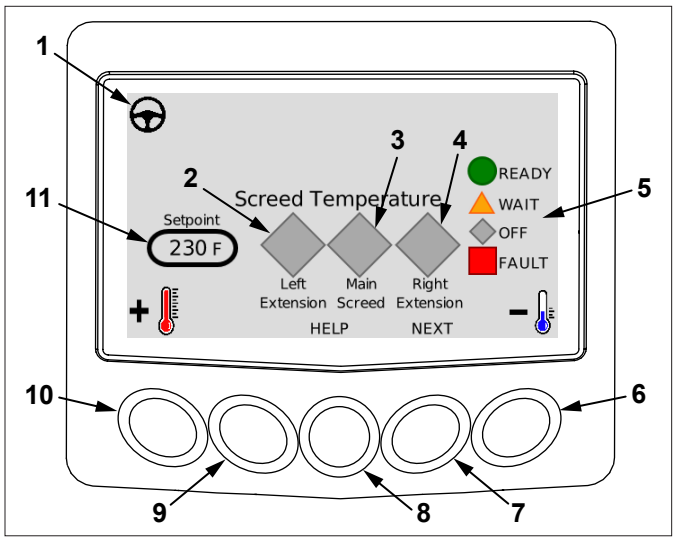
14. Selected station indicator. This symbol will be displayed on operators station screen with active travel controls.
15. Screed heat status. Indicates status of screed heat zones.
16. Right material height indicator (sonic).
17. Right side material height adjustment. Select low, medium or high.
18. Press to move to next screen.
19. Press to change feed mode. Select dual or single.
20. Press to display engine code(s) if present.
21. Left side material height adjustment. Select low, medium or high.
22. Feed control mode indicator.
23. Left material height indicator (sonic).



3.2.4 Screed Temperature Screen

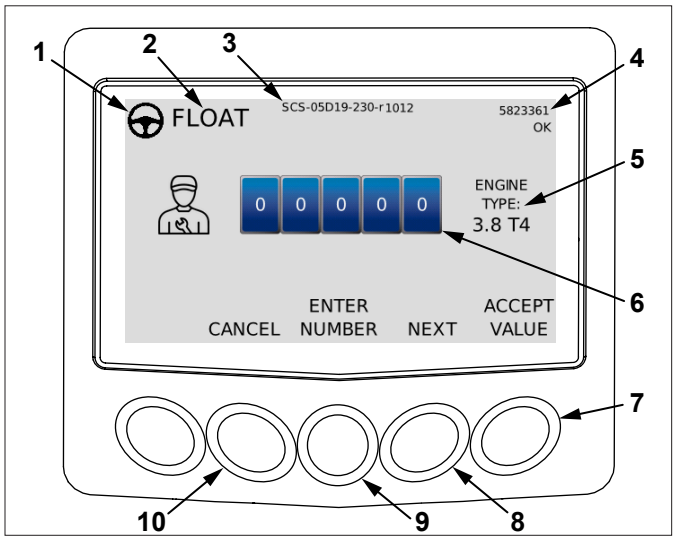
Note: *Screed temperature can only be changed from the left hand station.*

1. Selected station indicator. This symbol will be displayed on operators station screen with active travel controls.
2. Left screed extension status. Display will show ready to pave, wait to pave, off, or fault icon.
3. Main screed status. Display will show ready to pave, wait to pave, off, or fault icon.



4. Right screed extension status. Display will show ready to pave, wait to pave, off, or fault icon.
5. Screed heat status icons. Press and hold help button (8) to show icons.
6. Press to lower screed temperature set point.
7. Press to move to next screen.
8. Press to show icon legend.
9. Press to display engine code(s) if present.
10. Press to raise screed temperature set point.
11. Selected screed heat set-point. Default temperature is 230°F.

3.2.5 Password Screen



Password screen should only be accessed while being directed by a Mauldin Paving Products service technician.

12. Selected station indicator. This symbol will be displayed on operators station screen with active travel controls.
13. Screed float mode indicator. When illuminated, screed is in float mode.
14. Program version.
15. Display serial number.
16. Machine engine model.
17. Password input field.
18. Press to accept input field value.
19. Press to move to next screen.
20. Press to enter number in input field.
21. Press to cancel input field value.

3.3 Prestart Checks

Prior to starting the machine, the following procedures must be completed.

Note: *Refer to OEM engine manual for important safety, operational and maintenance information.*

1. Check engine oil level.
2. Check engine coolant level.
3. Check hydraulic oil level.
4. Check fuel and DEF levels.
5. Check wash down tank level.
6. Check around machine to verify nothing is on or under the machine.

3.4 Start Engine

⚠ WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.
Always start and operate the engine in a well-ventilated area.

If in an enclosed area, vent the exhaust to the outside.

Do not modify or tamper with the exhaust system.

Do not idle the engine except as necessary.

For more information go to www.P65Warnings.ca.gov/diesel.

⚠ WARNING

Explosion, fire, or personal injury.

This engine is equipped with an air intake heater. Do not use starting fluid.
Use of starting fluid can cause an explosion, fire, personal injury or damage to the engine and other property.

1. Turn key switch to on position, pause light indicator should be on.
2. Turn key switch to start and release. During cooler temperatures, there may be slight delay before starter engages while engine preheat is engaged.
3. Run engine at low idle to warm up.
4. Press active station control to enable the driving/steering control on that operators station. Left hand station is the default active station. When engine is started, it will be in pause. The engine will start with a track control lever out of neutral, but you must recenter the levers and toggle pause/resume switch to begin driving.

3.2.2 Driving

The paver will move forward by pushing both levers forward and will move backwards by pulling the levers back. Steering a course is accomplished by adjusting the speed of one handle relative to the other. HINT - to make driving easy, push both handles forward to desired speed, then use only one handle to fine-tune your direction.

3.2.3 Steering Tension

The steer handles can be adjusted for operator preference on tension, (or drag). In a loose position the handles will spring return to neutral, this requires constant pressure on the handles by the operator. Tension can be added to the point were the handles are locked and cannot be moved. The ideal setting is somewhere in-between were the handles have enough tension to stay in the position the operator chooses, but not so stiff as to produce fatigue.

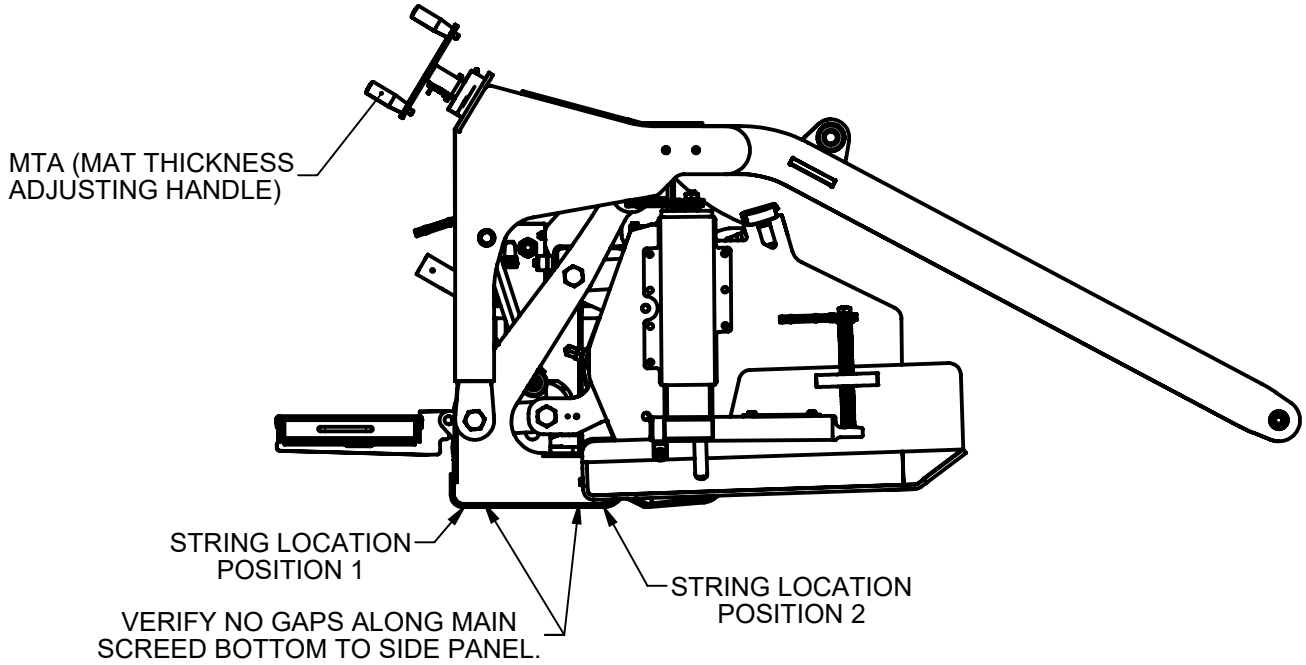
To adjust tension: loosen or tighten the nut located at the center of the aluminum discs were the handles are attached.

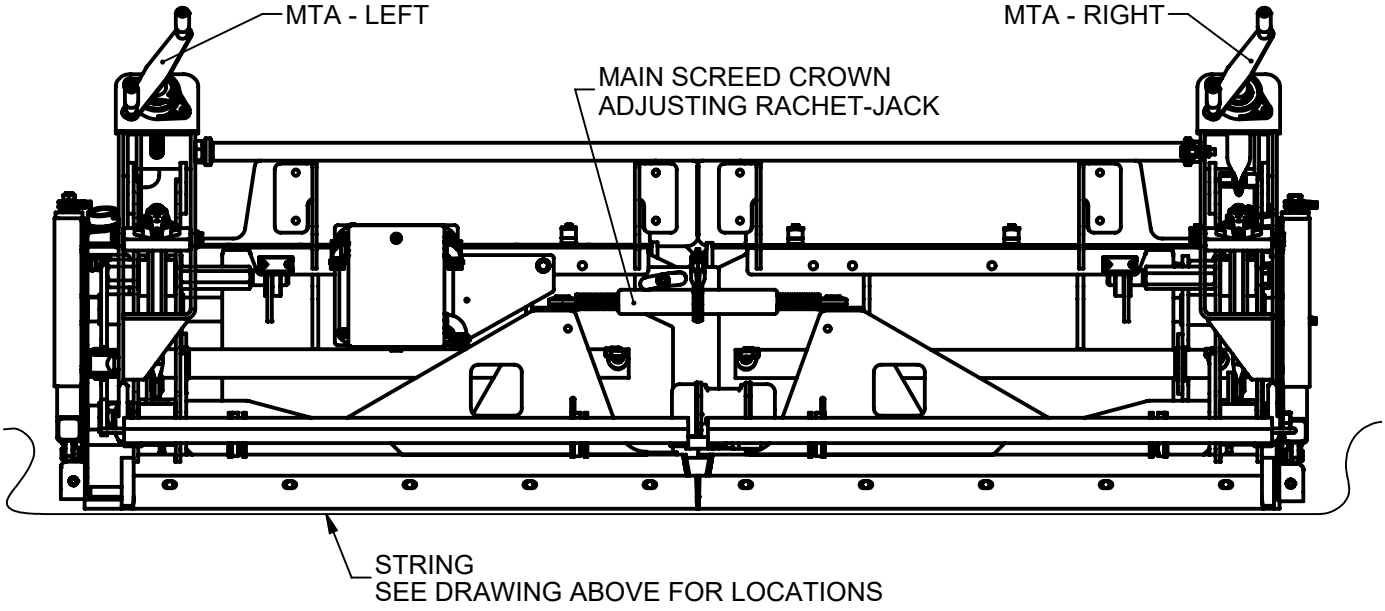
3.2.4 Two Speed

CAUTION: INJURY/OR DAMAGE MAY OCCUR: When switching to high range, bring paver to a stop before switching. To engage from low to high flip the High range switch up.

4 Screed Setup

4.1 Initial Screed Setup

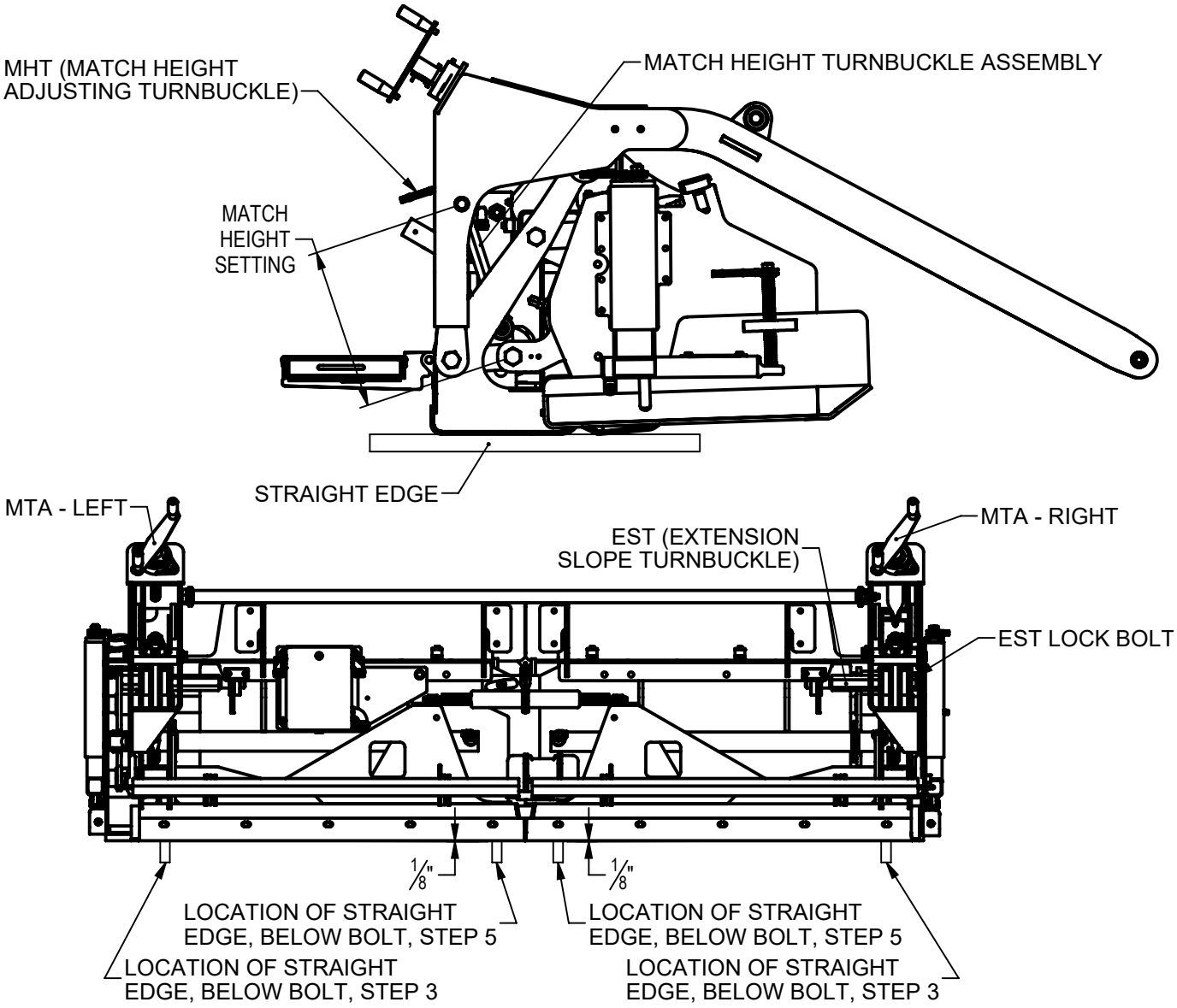




MAIN SCREED CROWN INITIAL SETTING:

1. USING THE MTA, ADJUST HANDLES TO BE APPROXIMATELY THE SAME. THIS CAN BE DONE BY NULLING OUT THE SCREED OR MEASURING THE MTA EXPOSED THREADED RODS.
2. USE A STRING AND PLACE IT AT "POSITION 1". ADJUST REAR CROWN RACHET-JACK UNTIL THE MIDDLE IS BARELY ABOVE THE STRING. THE STRING SHOULD NOT BE TOUCHING THE SCREED PLATE IN THE MIDDLE.
3. MOVE THE STRING TO "POSITION 2" AND ADJUST THE FORWARD RACHET-JACK UNTIL THERE IS APPROXIMATELY 1/8" GAP AT THE CENTER OF THE MAIN SCREED PLATE.
4. MOVE STRING BACK TO "POSITION 1" AND VERIFY REAR CROWN. ADJUST AS NECESSARY. IF ADJUSTMENT HAS BEEN MADE, VERIFY FORWARD CROWN AND ADJUST IF NEEDED. REPEAT UNTIL THE REAR AND FORWARD CROWNS ARE CORRECT.

EXTENSIONS SLOPE SETTING



EXTENSIONS INITIAL SETTING INSTRUCTIONS:

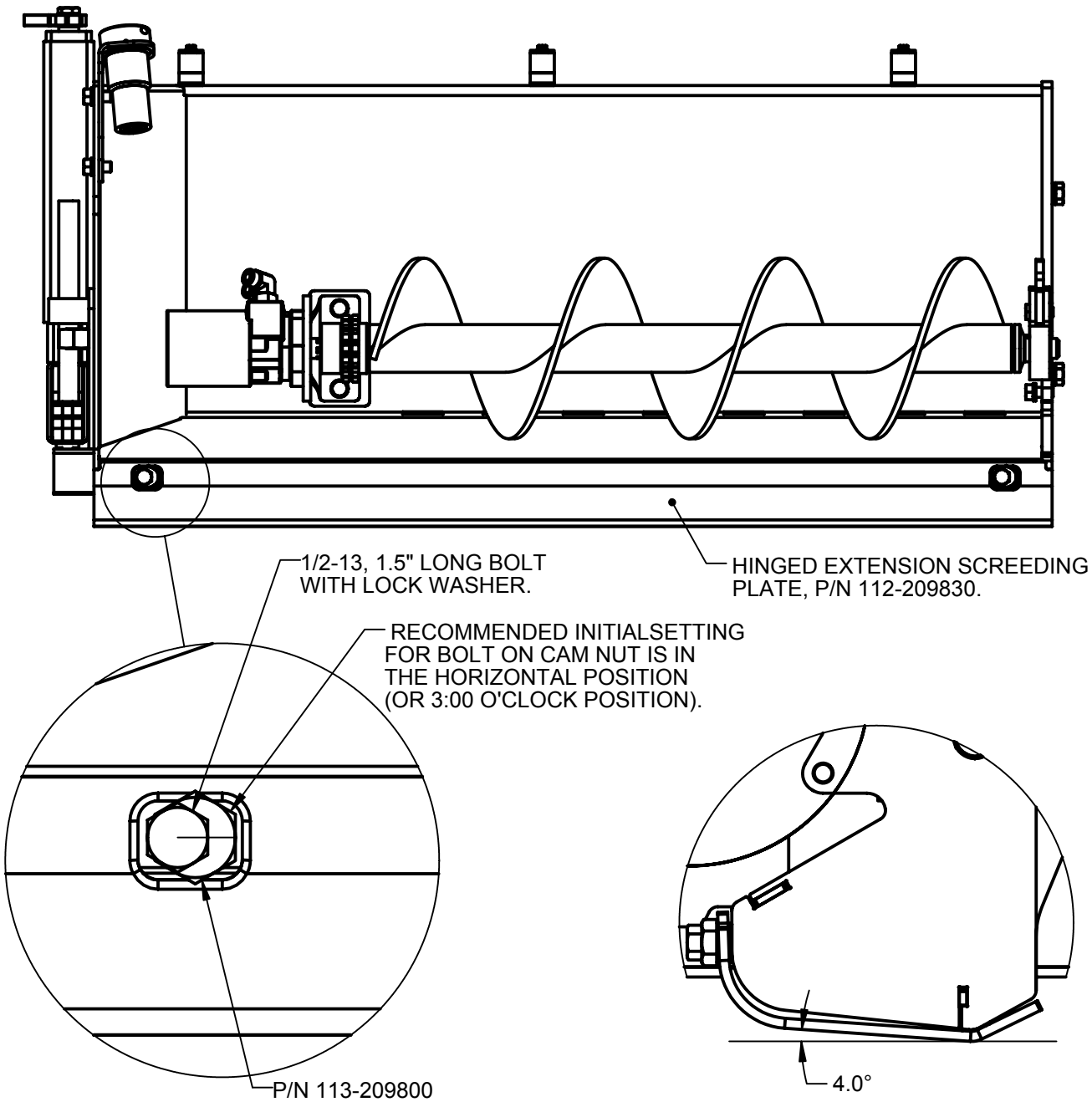
1. RETRACT BOTH EXTENSION COMPLETELY.
2. USING THE MHT, ADJUST THE MATCH HEIGHT SETTING TO 15-3/4" FOR BOTH SIDES.
3. USE THE MTA TO MOVE THE EXTENSION UP OR DOWN UNTIL THE TRAILING EDGE OF EXTENSION BOTTOM TOUCHES THE STRAIGHT EDGE. STRAIGHT EDGE MUST BE FLAT TO THE MAIN SCREED BOTTOM.
4. LOOSEN EST (EXTENSION TURNBUCKLE) LOCK BOLT.
5. ADJUST THE EST TO BRING THE EXTENSION SCREED PLATE INSIDE EDGE 1/8" BELOW THE STRAIGHT EDGE.

PAVING ADJUSTMENT INSTRUCTIONS:

1. IF LINES APPEAR BETWEEN THE EXTENSIONS AND MAIN MATS:
   1. TO RAISE EXTENSION ASSEMBLY, USE THE MHT DECREASE THE SETTING ON THE MATCH HEIGHT TURNBUCKLE ASSEMBLY.

4.2 Extension Bottom Setup

Extension Adjustable Bottom



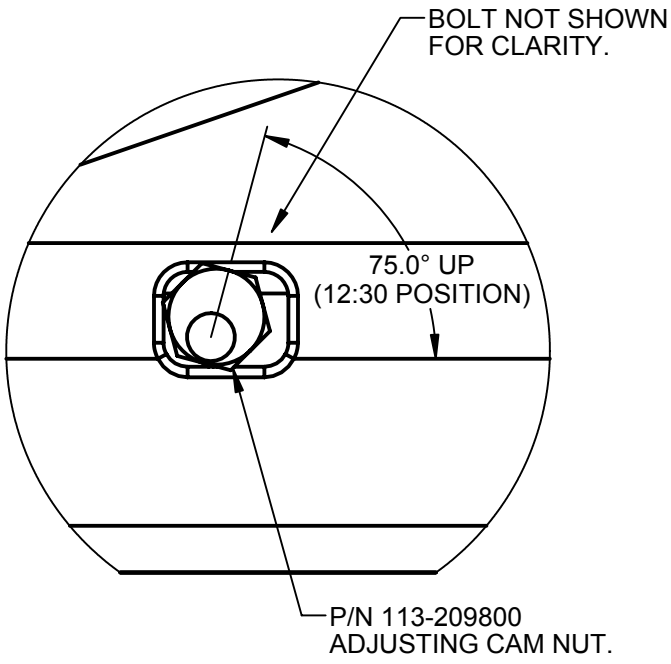
DETAIL OF ADJUSTING CAM NUT (POSITION OF ADJUSTING CAM NUT SHOWN IS RECOMMENDED INITIAL SETTING)

END VIEW OF EXTENSION BOTTOM (ATTACK ANGLE SHOWN IS RECOMMENDED INITIAL SETTING)

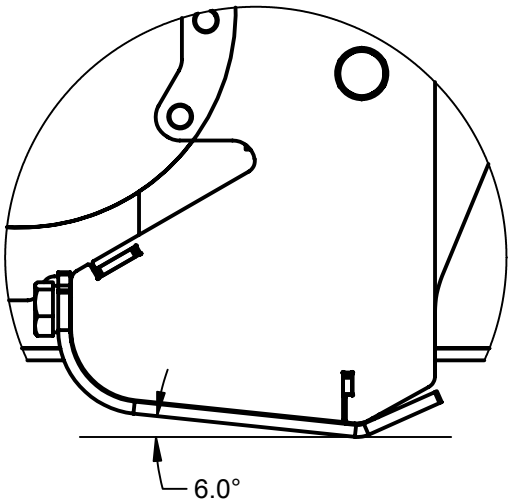
NOTES:

1.If adjusting the attack angle of the extension screeding plate is required, replace P/N 113-209801 with P/N 113-209800 adjusting cam nut. See the following two (2) pages for instructions to raise or lower the extension screeding plate profile to obtain seemless mat paving performance.

Extension Adjustable Bottom



**DETAIL OF ADJUSTING NUT
(POSITION OF ADJUSTING CAM NUT
SHOWN IS FOR MAXIMUM ATTACK ANGLE)**

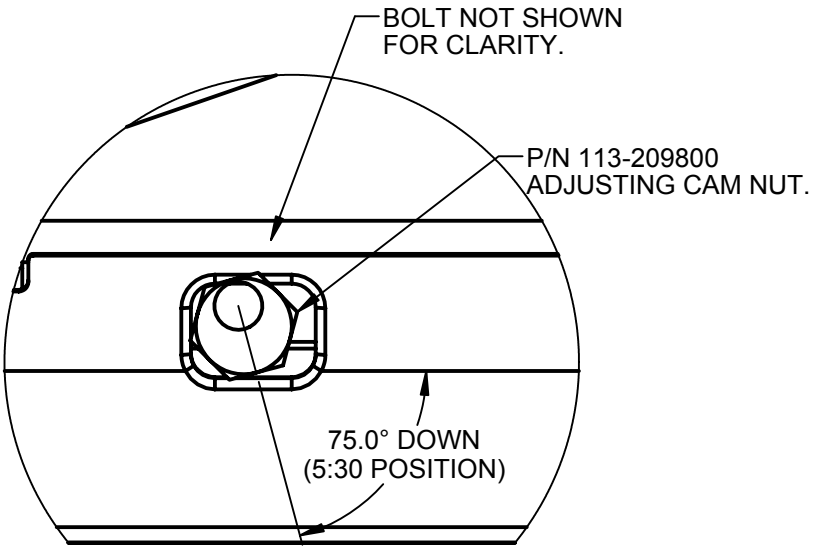


**END VIEW OF EXTENSION BOTTOM
(ATTACK ANGLE SHOWN IS MAXIMUM)**

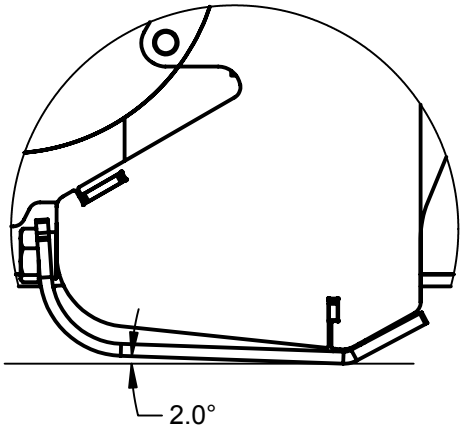
NOTES:
1. If the extensions are lower than the main screed at full paving widths, then increase the extension attack angle, see table below.

Desired Attack Angle	Angle from Horizontal	O'Clock Position
4.0°(Initial Setting)	90° (Initial Setting)	3:00 (Initial Setting)
4.5°	15° UP	2:30
5.0°	30° UP	2:00
5.5°	45° UP	1:30
6.0°	75° UP	12:30

Extension Adjustable Bottom



**DETAIL OF ADJUSTING CAM NUT
(POSITION OF ADJUSTING CAM NUT
SHOWN IS FOR MINIMUM ATTACK ANGLE)**



**END VIEW OF EXTENSION BOTTOM
(ATTACK ANGLE SHOWN IS MINIMUM)**

NOTES:
1. If the extensions are higher than the main screed at full paving widths, then decrease the extension attack angle, see table below.

Desired Attack Angle	Angle from Horizontal	O'Clock Position
4.0° (Initial Setting)	90° (Initial Setting)	3:00 (Initial Setting)
3.5°	15° DOWN	3:30
3.0°	30° DOWN	4:00
2.5°	45° DOWN	4:30
2.0°	75° DOWN	5:30

5 Inspections and Maintenance

5.1 Inspection and Maintenance Chart

Item	Daily Before Use	Daily After Use	Initial 50 Hrs	Initial 100 Hrs	Monthly/ 250 Hrs	Yearly/ 500 Hrs	5 Year/ 5000 Hrs
Check engine oil and coolant level.	•						
Check hydraulic oil level.	•						
Check operation of all lights.	•						
Check operation of horn and signal devices.	•						
Check that all safety decals are legible.	•						
Inspect air intake system and service indicator.	•						
Inspect radiator fins for debris.	•						
Drain fuel/water separator	•						
Grease Crown Adjustment					•		
Grease Screed Links					•		
Clean residue from paver.		•					
Wash paver.		•					
Change hydraulic filter.			•				
Change engine oil and filter.			•				
Inspect conveyor chain.					•		
Change engine oil and filter.					•		
Change hydraulic oil and filter						•	
Change engine coolant.						•	
Change engine fuel filters.						•	
Change engine air filter.						•	
Clean radiator fins.						•	
Clean battery terminals and cable connections.						•	
Change Planetary Gear Fluid				•		•	

5.2 Fluid Capacities

Fluid	Capacity	Recommendation
Engine Oil	8.5 Quarts	15w40
Hydraulic Oil	15.5 US Gallons	AW46 Hydraulic Oil
Grease	As required	N.G.L.I #2 high Temp
Engine Coolant	2.5 US Gallons	Extended Life 50/50 Mix
Diesel	13 US Gallons	Ultra Low Sulfur Diesel
Planetary (Final Drive)	1 Quart	80w90 Gear oil

5.3 Prepare Paver For Inspections And Maintenance

⚠ WARNING

Entanglement and crush hazard.

Keep all personnel clear of augers, conveyors and other rotating shafts when engine is running or about to be started.

Verify all guards are in place.

Follow lockout/tagout procedure before performing inspections or maintenance.

Before performing inspections, service or maintenance:
- Park paver on firm level surface.
- Lower screed to ground or engage screed support locks.
- Fully open or close hoppers.
- Turn engine off and remove ignition key.
- Attach a Do Not Operate tag or similar warning tag to the ignition switch.
- Follow lockout/tag out procedure as defined by your company.

After performing inspections, service or maintenance, verify all guards have been reinstalled and all safety devices are functional.

Wear personal protective equipment appropriate for the task.

Use Mauldin replacement parts.

5.4 Daily Before Use

5.4.1 Check Engine Oil Level

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Push dipstick down fully and pull out. If oil level is below add mark, add proper grade and viscosity of oil through filler tube to raise oil level to full mark. Do not overfill. Refer to engine OEM manual for oil specifications.

5.4.2 Check Engine Coolant Level

⚠ WARNING

Hot pressurized liquid.

Burn hazard.

Do not remove cap when hot.

NOTICE

Do not add coolant to a hot engine. Engine can be damaged.

Check engine coolant level in sight glass. Coolant must be visible in sight glass. Add coolant if necessary. Refer to OEM engine manufacturers' manual for coolant specifications.

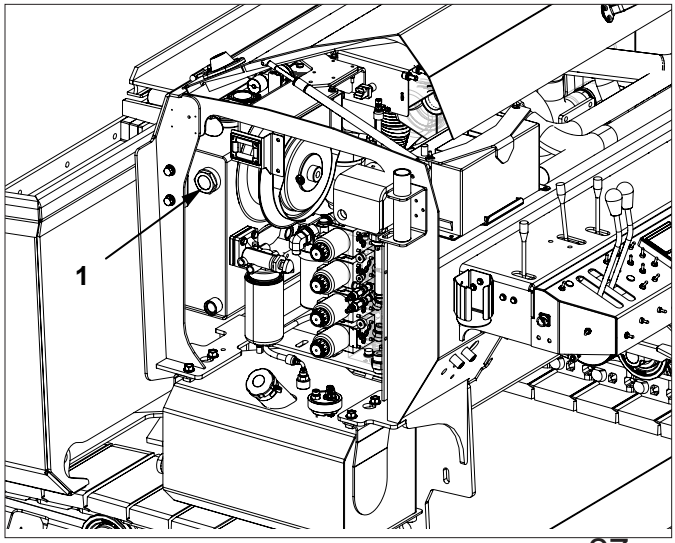
5.4.3 Check Engine Fuel

⚠ WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- **Always start and operate the engine in a well-ventilated area.**
- **If in an enclosed area, vent the exhaust to the outside.**
- **Do not modify or tamper with the exhaust system.**
- **Do not idle the engine except as necessary.**

For more information go to www.P65Warnings.ca.gov/diesel



5.4.4 Check Hydraulic Oil Level

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Hydraulic oil level must be visible in sight gauge (1) with engine stopped.
3. Add proper hydraulic oil if necessary.

5.4.5 Verify Lights Are Operable

Verify that all lights installed on paver are operational. Do not operate if any lights are not operational.

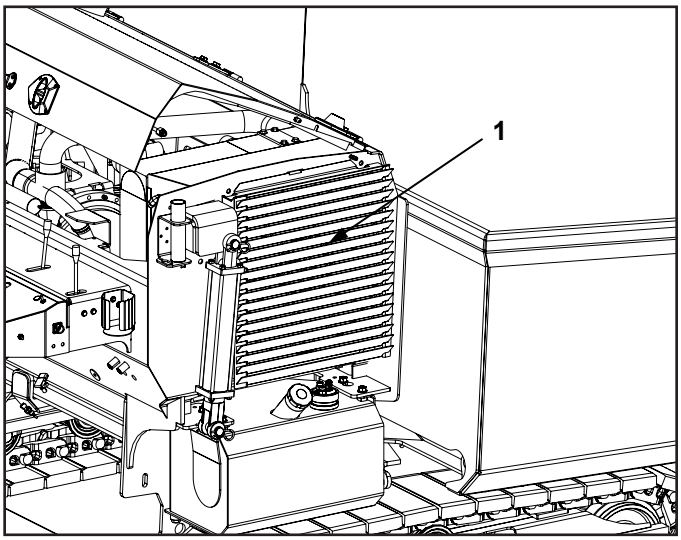
5.4.6 Check Horn And Signal Devices

Verify horn is operational. Both operator stations are equipped with a horn switch.

Check operation of the backup alarm.

5.4.7 Check Safety Decals

All safety decals are in place and legible. If the safety decal is no longer legible, replace it with a new one. Contact your dealer for new decals.

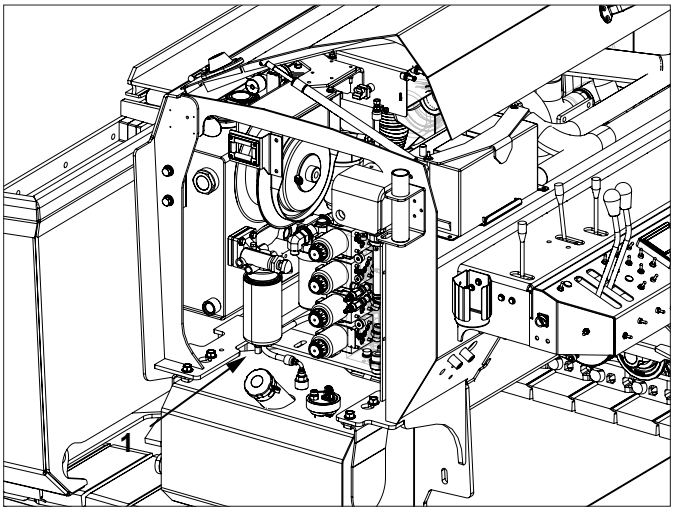


5.4.8 Check Engine Radiator Intake Screen

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Check engine radiator intake screen for dirt and debris. Clean with low pressure compressed air or spray wash if required.

5.4.9 Drain Fuel/Water Separator

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Drain fuel/water separator (1) into a suitable container. Dispose of fuel/water in an environmentally safe manner.



5.5 Daily After Use

5.5.1 Clean Residue After Use

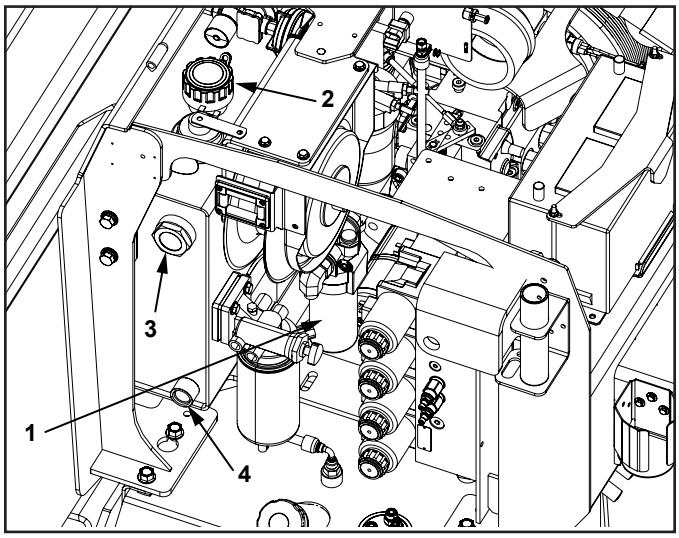
1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Clean conveyor, augers and screed at end of each days use with on-board wash system.

5.5.2 Wash Paver

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Wash paver as necessary to remove dust and dirt.

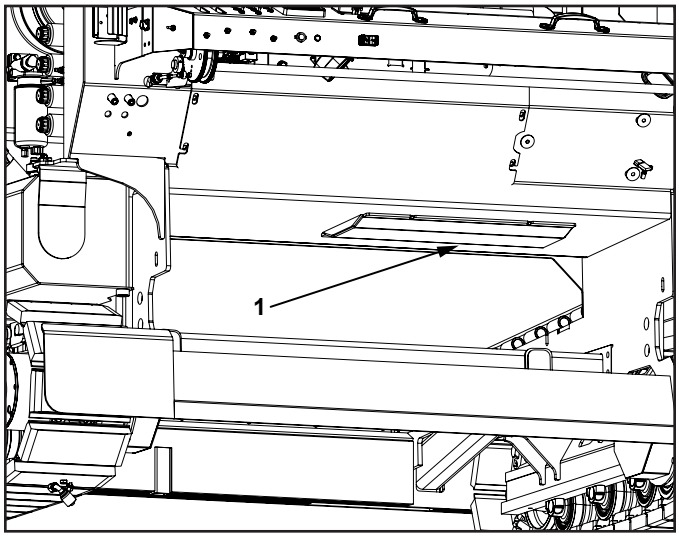
5.6 After Initial 50 Hours

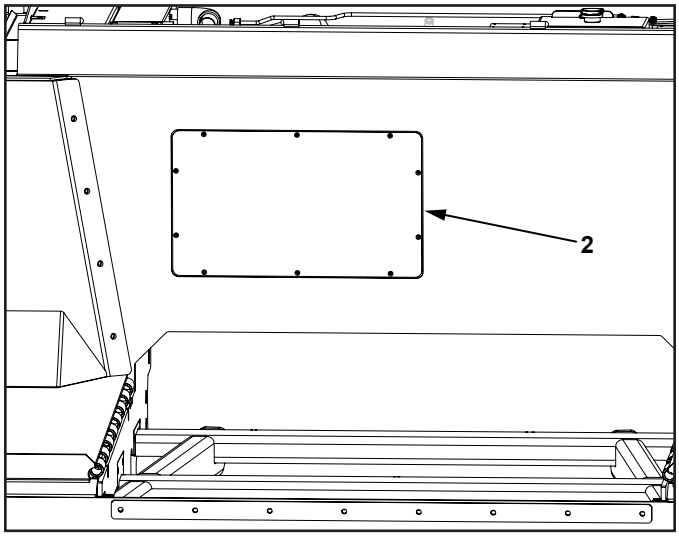
5.6.1 Change Hydraulic Filters



1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Place catch pan under filter.
4. Remove and replace spin on filter (1) and in tank filter (2).
5. Check hydraulic oil level in sight glass (3). Add hydraulic oil if necessary.
6. Dispose of hydraulic oil in an environmentally safe manner.

5.6.2 Change Engine Oil And Oil Filter

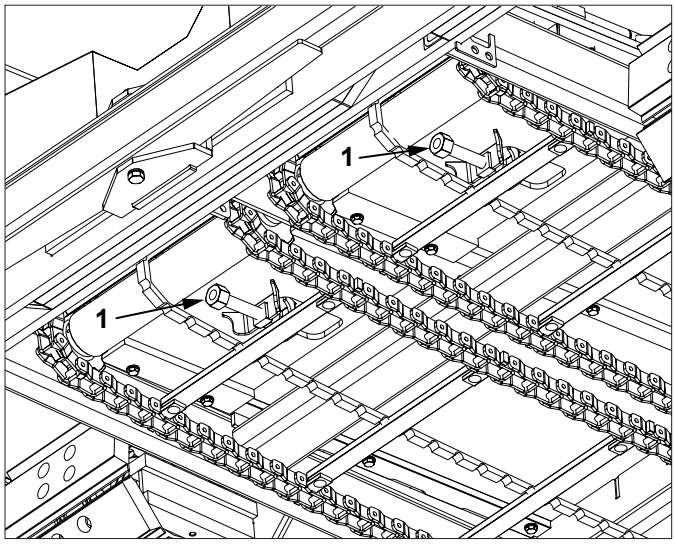




1. See OEM engine operators manual for oil and filter specification.
2. Fully open hopper doors.
3. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
4. Wear personal protective equipment appropriate for the task.
5. Allow engine and surrounding parts to cool before proceeding.
6. Remove belly pan (1). Remove Oil pan drain plug to drain oil. Replace plug with appropriate torque.
7. Remove cover (2) to access engine oil filter.
8. Remove and discard existing oil filter.
9. Fill new filter with clean engine oil.
10. Lightly coat filter sealing ring with oil.
11. Install filter until seals contacts flange. Tighten an additional 1/2 - 3/4 turn by hand. Do not over tighten.
12. Fill crankcase to correct level.
13. Start engine and run at low idle.
14. Stop engine and check for leaks.
15. Check engine oil level.
16. Install cover (2).
17. Dispose of oil and filter in an environmentally safe manner.

5.7 Monthly / Every 250 Hours

5.7.1 Inspect Conveyor And Drive System

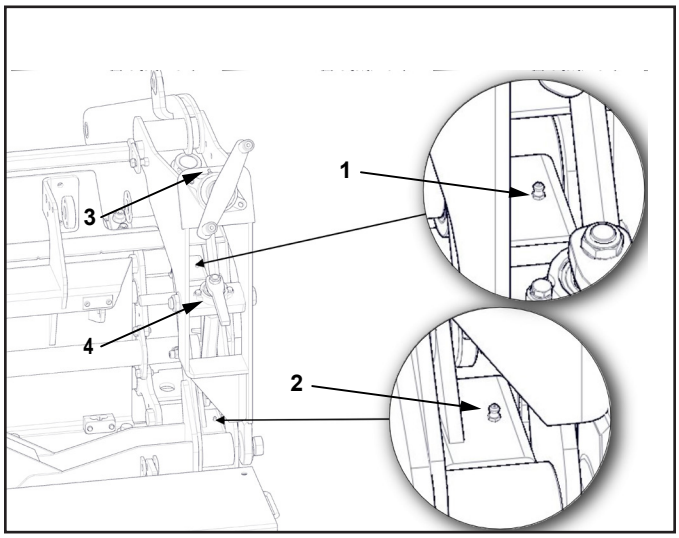


1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Check for worn sprockets and chain.
4. Check keys and keyways for wear. Replace keys if needed.
5. Tighten conveyor chains with slack adjusters (1) mounted to the underside of the conveyor. Tighten until the chains pull up to within 8 in. (203 mm) of the underside of the conveyor deck. Measurement should be made from the peak of the arc in the chains. Do not over tighten.

5.7.2 Change Engine Oil And Oil Filter

See Change Engine Oil and Oil Filter instructions in section 5.6.2

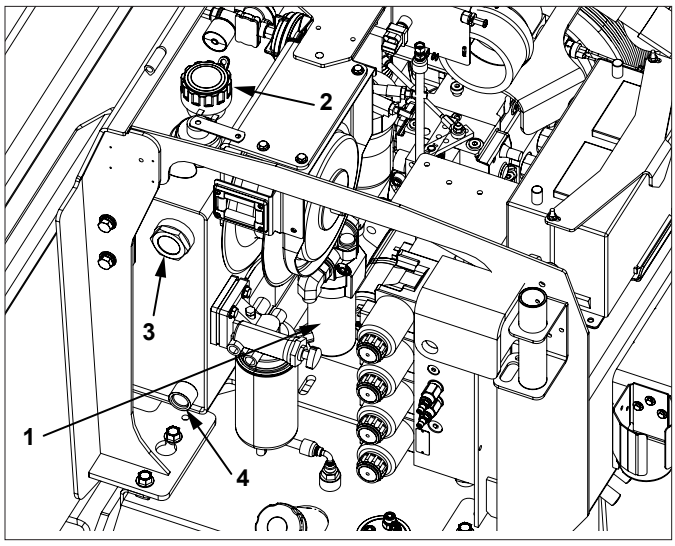
5.7.3 Grease Points



1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Locate the grease points (1) and (2) on the screed links located inside the screed arms.
3. Grease the Depth Adjustment Handle Bearing. (3)
4. Grease the Match Height Adjustment bearing. (4)

5.8 Yearly / 500 Hours

5.8.1 Change Hydraulic Oil And Filters



1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Place catch pan under filter.
4. Remove and replace spin on filter (1) and in tank filter (2).
5. Pump hydraulic oil out of reservoir fill cap with a transfer pump.
6. Remove drain plug (4) and drain hydraulic oil into a suitable container. Install plug after draining.
7. Add new hydraulic oil to reservoir until oil is visible in sight glass (3).
8. Start engine and safely operate hydraulics. Stop engine and check hydraulic oil level. Add hydraulic oil if necessary.
9. Dispose of hydraulic oil in an environmentally safe manner.

5.8.2 Change Engine Coolant

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Refer to OEM engine manufacturers' manual for coolant specifications.
4. To change coolant first be sure engine is cool then drain coolant completely. Drain valve is located at bottom of radiator.
5. Remove radiator cap and add coolant until full. Install cap and close access door.

5.8.3 Change Engine Fuel Filters

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Refer to OEM engine manufacturers' manual for fuel filter specifications.
4. Both filters can be reached from the left side access door.
5. Remove fuel filter and fuel/water separator.
6. Add clean fuel to new filters.
7. Install each filter until seal contacts flange. Tighten an additional 1/2 to 3/4 turn by hand. Do not over tighten.

5.8.4 Change Engine Air Filter

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.

3. Refer to OEM engine manufacturers' manual for air filter specifications.
4. Open air filter housing and remove filter element.
5. Clean inside of housing and end cap with a damp rag.
6. Insert new filter element and install end cap.

5.8.5 Clean Engine Radiator Fins And Screen

1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Check engine radiator fins and intake screen and for dirt and debris. Clean with low pressure compressed air or spray wash if required.

5.8.6 Battery

⚠ WARNING

Batteries, battery posts, battery terminals, and related accessories can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm.

For more information go to www.P65Warnings.ca.gov

⚠ WARNING

Avoid injury. Battery electrolyte contains sulfuric acid. It is poisonous and can cause serious burns.

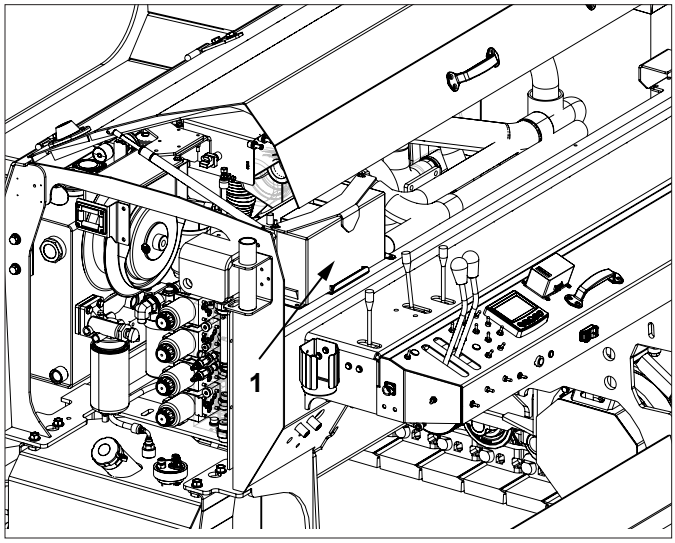
- **Wear eye protection and gloves.**
- **Keep skin protected.**
- **If electrolyte is swallowed, get medical attention immediately.**
- **If electrolyte is splashed into eyes, flush immediately with water for 15-30 minutes and get medical attention.**
- **If electrolyte is splashed onto skin, flush immediately with water and get medical attention if necessary.**

⚠ WARNING

The battery produces a flammable and explosive gas.

- **Do not smoke near battery.**
- **Do not allow direct metal contact across battery posts.**
- **Remove negative cable first when disconnecting.**
- **Install negative cable last when connecting.**

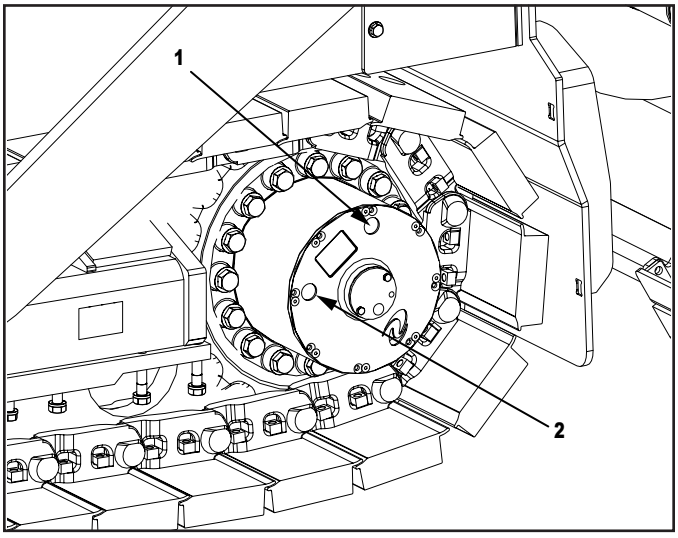
1. Prepare paver for inspections and maintenance. See Section 5.3 Prepare For Inspections And Maintenance.
2. Wear personal protective equipment appropriate for the task.
3. Disconnect negative (-) cable from battery terminal.
4. Disconnect positive (+) cable from battery terminal.
5. Thoroughly clean terminals with a battery cleaning tool.
6. Connect positive (+) cable to positive battery terminal.
7. Connect negative (-) cable to negative battery terminal.



5.8.7 Fill/Drain Planetary Fluid

To Replace Planetary Fluid

1. Rotate the planetary so the Fill/Drain Hole (1) is in the 6 oclock position.
2. The fluid level hole (2) will be in the 9 oclock position.
3. Unscrew the plug from the Fill./Drain Hole (1), and drain all of the fluid.
4. Once the Planetary is completely drained rotate the planetary until the fluid level hole (2) is at the 3 oclock position, and Fill/drain hole (1) will be at the 12 oclock position.
5. Remove the plug from the Fluid level hole (2).
6. Pour Fluid into the Fill hole (1) until fluid starts to come out of the fluid level hole (2). Use only 80w90 Gear oil.
7. Replace both plugs and tighten.



5.8.9 Air Filters

IMPORTANT: Service the engine air filters only when the need is indicated by the air cleaner service indicator, (if equipped), or in accordance with
The preventative maintenance decal.
Excessive service will cause premature wear.

1. Engine Primary Element

a. Unbuckle clips to remove element container end cap.
b. Pull gently to remove main element.
c. Use compressed air with an element-cleaning nozzle

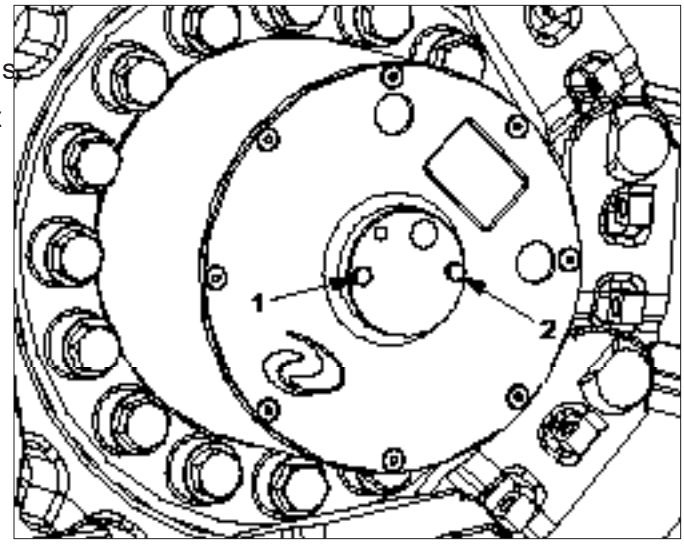
IMPORTANT: Main element should be replaced after six cleanings or 500 hours use.

IMPORTANT: Do not attempt to clean element using a standard air nozzle. Do not strike element on a hard surface. Either action will damage the element.

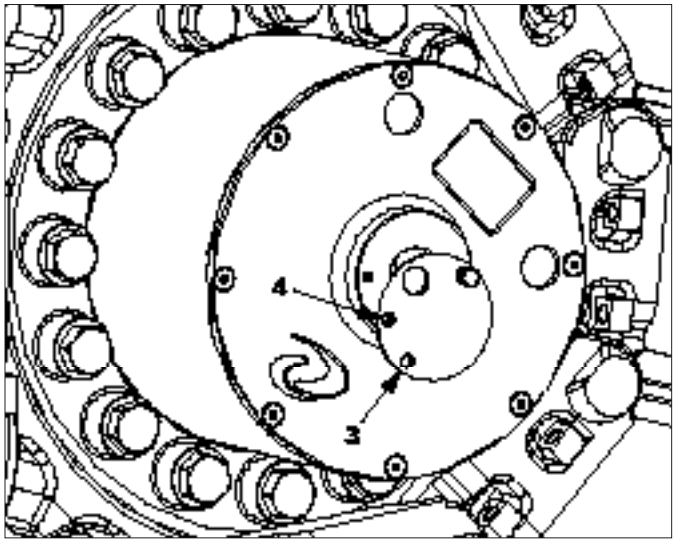
5.9 Drive Disconnect

If paver is disabled and must be towed to a safe location, us

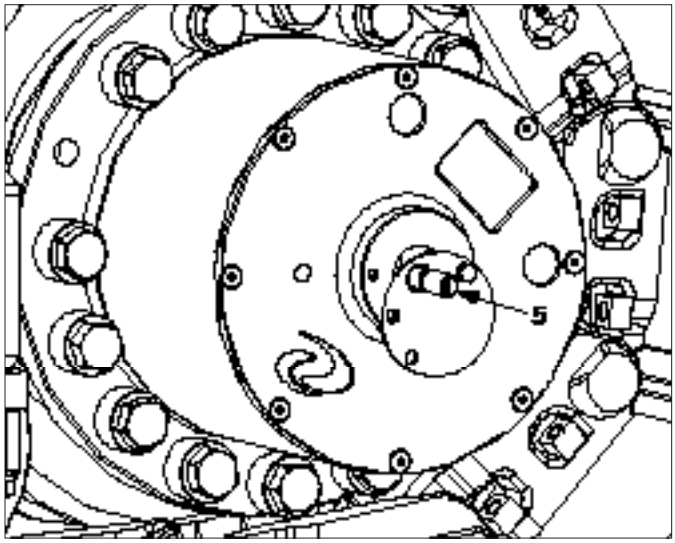
1. Turn engine off, remove ignition key and place a Do Not Operate tag on ignition switch.
2. Remove cap screw (1).
3. Loosen cap screw (2).



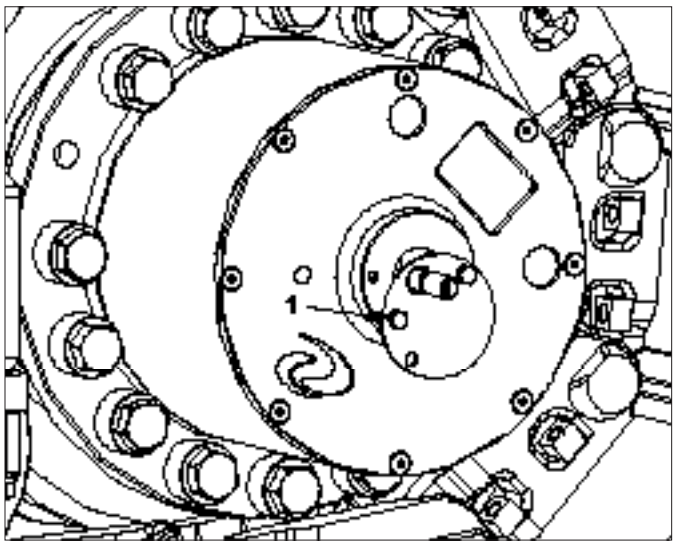
4. Rotate end cover (3) until large hole is over center of hub and hole (4) is over threaded hole.



5. Pull fast sun gear (5) out using and cap screw removed in step 1.



6. Remove cap screw (1) from sun gear and install into housing as shown.
7. Repeat procedure for planetary on other side.
8. Drive system is now disengaged.
9. Reverse procedure to engage drive system.



6 Troubleshooting

6.1 General

Proper troubleshooting begins with an organized approach to the problem at hand. Begin with investigation of the most probable cause, following the guidelines below.

Study the problem thoroughly before taking action:

Did warning signs precede the problem? If so, what were they? What would they indicate? Is scheduled maintenance current on all parts and systems involved?
Has similar trouble occurred before? What action was taken at that time? Can engine be operated without further damage?

⚠WARNING

IF RUNNING INSPECTION MUST BE MADE, GET ASSISTANCE. OPERATOR SHOULD REMAIN ON PAVER THROUGHOUT INSPECTION. MAKE SURE TRANSMISSION IS IN NEUTRAL POSITION.

Check the most convenient things first.

Don’t begin major work before checking all other possibilities.

Reconsider all known facts and clues before proceeding to more in-depth work. Correct the basic cause. Remember, failure of a certain part may be caused by malfunction of another part or system.

6.1.1 Use of Schematics

The Parts & Service manual incorporates electrical and hydraulic diagrams formatted for ease of use by maintenance and for the training of personnel.

6.1.2 Troubleshooting chart

The troubleshooting chart lists problems that might be encountered in the operation of the vehicle. The remedies listed may direct the repairman to a possible faulty component.

⚠ WARNING

THE TROUBLESHOOTING CHART AND PROCEDURES OUTLINED IN THIS SECTION SHOULD NOT BE ATTEMPTED BY OTHER THAN EXPERIENCED MECHANICS OR PERSONNEL UNDER THE DIRECT SUPERVISION OF AN EXPERIENCED MECHANIC. FAILURE TO COMPLY MAY RESULT IN DAMAGE TO EQUIPMENT AND/OR INJURY OR DEATH TO PERSONNEL.

⚠ DANGER

RELEASE, RESTRAIN, OR OTHERWISE RENDER SAFE ALL POTENTIAL HAZARDOUS STORED OR RESIDUAL ENERGY. IF A POSSIBILITY EXISTS FOR RE-ACCUMULATION OF HAZARDOUS ENERGY, REGULARLY VERIFY DURING THE SERVICE AND MAINTENANCE THAT SUCH ENERGY HAS NOT RE-ACCUMULATED TO HAZARDOUS LEVELS.

⚠ DANGER

DO NOT RELEASE OR OPEN ANY HOSE OR HYDRAULIC CIRCUIT WHILE ANY IMPLEMENT IS SUSPENDED IN THE AIR. ENSURE ALL IMPLEMENTS ARE PROPERLY SUPPORTED AND/OR IN THEIR DOWN MOST LOWEST POSITION.

Issue	Probable Cause	Corrective Action
No power or inadequate power.	Worn or malfunctioning pump or motor.	Repair or replace pump or motor.
	Stuck relief valve cartridge.	Repair or replace.
	Low system pressure caused by worn pump.	Repair or replace pump.
Surging of hydraulic items.	Air in system due to low level of oil, cavitating pump, leaky fittings, pinched hose, etc.	Investigate possible issues and correct as needed.
Screed overfeeds with material.	Head of material set too high.	Reset head of material to 12 inches and adjust as needed
	Sonic sensor is installed on incorrect side of paver.	Move sensors side to side.
	Asphalt is too close to sensor.	Remove asphalt away from sensor bottom, clean with dry rag if necessary. This can occur while retracting extensions.
Auto augers will not stop.	Sensor is out of range – asphalt is too close to sensor.	Turn switch from auto to off and back to auto. Auger will stop until asphalt level drops back into range.
Vibrator is on but not working.	Vibrator only runs during forward travel.	Come out of pause and begin forward motion.
Extensions are diving.	Improper screed slope setting.	Follow screed setting procedure. See section 5.3 Setting Screed To Pave.
	Material build-up inside extension.	Clean out material above extension heating chamber.
Loose or streaking mat	Screed plate is worn.	Change screed plate
	Crown setting is incorrect.	Adjust crown setting. See section 5 Screed Setup.
Engine stops.	Smart shut down activated.	See engine OEM manual.
	Manual shut down button activated.	Reset e-stop when it is safe to do so.
No steering control.	Pause light.	Toggle pause switch.
	Pause light is solid.	Position steer levers in neutral.
	Other operators station is selected	Match active station selector switch to your needs.
Screed automation will not power up.	Cables were connected with key switch on or paver running - 10 amp fuse blown.	Replace blown fuse in electrical panel.

6.2 Engine

For engine troubleshooting see charts indicating faults and recommended repair procedures, refer to Manufacturer's Operation and Maintenance Manual.

If your particular problem is not covered or you are unsure of what steps to take, contact your dealer for assistance.

6.2.1 Transmission

1.Vehicle fails to move under power. Inadequate oil level in hydraulic reservoir.
- Drive line mechanical failure

2. Vehicle moves in neutral.
- Steering levers are actually engaged
- Steering calibration adjustment required

For detailed troubleshooting information on hydrostatic transmission, refer to Trouble Shooting Manual, Rexroth Hydrostatic Transmissions, available from a Rexroth representative or dealer.

6.3 Electrical System

Engine Status	Voltmeter Reading	Indicates	To Correct
Running	13.5v - 14v	Normal Condition	
Running	Less than 13.5v or more than 14v	Alternator or Regulator Malfunction	Contact Dealer
Won't Start	12-12.5v	Weak Battery	Charge
Won't Start	Less than 12 Volts	Weak Battery or Defective Cell	Charge or Replace

6.4 Hydraulic System

Thoroughly review description of hydraulic system. Use logical steps to determine cause of malfunction. Identify the function or functions that require troubleshooting.

If possible, trace malfunction to source; pump, control, motor or cylinder. Determine pressure operating the function as specified:

6.4.1 Hydraulic System Pressures

Priority circuit, triple gear pump	2,500 – 2,800 p.s.i.
Neutral Position Main circuit, Rexroth tandem pump	up to 4,500 p.s.i.
Relief Pressure Charge circuit, Rexroth tandem pump	300 – 400 p.s.i.

Problem	Possible Cause	Correction
No power or Inadequate Power	Worn or Malfunctioning Pump or Motor Stuck Relief Valve Cartridge Low System Pressure Caused by Worn Pump	Repair or Replace Pump or Motor Repair or Replace Pump
Surging of Hydraulic Items	Air in System Due to Low level of oil, Cavitating pump, leaky fittings, pinched hoses, etc	Correct

MAULDIN
PAVING PRODUCTS

CALDER BROTHERS CORPORATION

(LIMITED) PRODUCT WARRANTY

Calder Brothers Corporation warrants that the Paver, Roller, Tank or Grader under this program will be free from defects in material and workmanship for a period of(12) twelve months from the date of installation. Written notice of any claimed defect must be given to Calder Brothers Corporation within the warranty period and within (30) thirty days after such defect is discovered. Liability under this warranty is limited to replacing or repairing at Calder Brothers Corporation election, any part or parts deemed defective after examination by Calder Brothers Corporation or an Authorized Service Representative via prepaid transportation for which is found to be defective, will be repaired or replaced and returned to the customer via prepaid surface transportation within the United States. Should any part be found not defective, inspection and handling may be charged to the customer by Mauldin or an Authorized Service Representative.

EXCLUSIONS:
This warranty does not apply to routine wearable parts of the Mauldin machine such as seals, points, plugs, hoses or similar items. This warranty does not extend to any machine or part replaced or repaired under this warranty. This warranty does not cover any repair or replacement labor or any part of parts found defective after examination by Mauldin or an Authorized Service Representative. This warranty does not apply to defects caused by casualty or unreasonable use, including faulty repairs by others and failure to provide reasonable and necessary maintenance.

THIS WARRANTY SET FORTH HEREIN IS IN LIEU OF AND EXCLUDES ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND CUSTOMER WAIVES ANY OBLIGATION OF LIABILTY OF MAULDIN ARISING IN TORT OR STRICT LIABILITY IN TORT, OR FOR LOSS OR USE, REVENUE OR PROFIT WITH RESPECT TO MAULDIN MACHINE AND/OR PARTS FOR ANY LIABILTY OF CUSTOMER TO ANY THIRD PARTY, OR FOR OTHER DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES.