

# 1648 Plus

## Asphalt Paver

Beginning with Serial Number 13101

# GEHL®

Form No.  
918218

Revision C  
04/07



# OPERATOR'S MANUAL



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## **GEHL COMPANY**

### **WARRANTY**

**GEHL COMPANY**, hereinafter referred to as Gehl, warrants new Gehl equipment to the Original Retail Purchaser to be free from defects in material and workmanship for a period of twelve (12) months from the Warranty Start Date.

#### **GEHL WARRANTY SERVICE INCLUDES:**

Genuine Gehl parts and labor costs required to repair or replace equipment at the selling dealer's business location.

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**GEHL MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED (INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE), EXCEPT AS EXPRESSLY STATED IN THIS WARRANTY STATEMENT.**

ANY OF THESE LIMITATIONS EXCLUDED BY LOCAL LAW SHALL BE DEEMED DELETED FROM THIS WARRANTY; ALL OTHER TERMS WILL CONTINUE TO APPLY.

SOME STATES DO NOT PERMIT THE EXCLUSION OR LIMITATION OF THESE WARRANTIES AND YOU MAY HAVE GREATER RIGHTS UNDER YOUR STATE LAW.

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#### **GEHL WARRANTY DOES NOT INCLUDE:**

1. Transportation to selling dealer's business location or, at the option of the Original Retail Purchaser, the cost of a service call.
2. Used equipment.
3. Components covered by their own non-Gehl warranties, such as tires, batteries, trade accessories and engines.
4. Normal maintenance service and expendable, high-wear items.
5. Repairs or adjustments caused by: improper use; failure to follow recommended maintenance procedures; use of unauthorized attachments; accident or other casualty.
6. Liability for incidental or consequential damages of any type, including, but not limited to lost profits or expenses of acquiring replacement equipment.






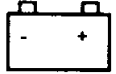




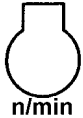



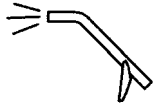





No agent, employee or representative of Gehl has any authority to bind Gehl to any warranty except as specifically set forth herein.

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# INDICATOR AND OPERATION SYMBOLS

				
Engine Start	Engine Stop	Electrical Power	Glow Plug	Glow Plug Indicator
				
Battery Charge	Engine Oil Pressure	Engine Coolant Temperature	Slow	Fast
				
Engine Rotational Speed	Diesel Fuel	Sprayer On	Sprayer Off	Sprayer Wand
				
Read Operator's Manual	Safety	Accessory	Hourmeter	Horn



## NOTES



# TABLE OF CONTENTS

## Chapter 1

<b>Introduction.....</b>	<b>5</b>
Model/Serial Number Information .....	6
Controls/Components Identification .....	7

## Chapter 2

<b>Specifications.....</b>	<b>9</b>
----------------------------	----------

## Chapter 3

<b>Checklists.....</b>	<b>13</b>
------------------------	-----------

## Chapter 4

<b>Safety .....</b>	<b>17</b>
Mandatory Safety Shutdown Procedure .....	17
Safety Reminders .....	17
Pre-operation Safety Reminders .....	18
Operation Safety Reminders .....	18
Service Safety Reminders .....	18
Screed Propane Heater Safety Reminders .....	19
Modifications .....	20
Guards and Warning Devices .....	20
Replacement Parts .....	20
Safety Decals .....	21

## Chapter 5

<b>Indicators and Controls .....</b>	<b>25</b>
Guards and Shields .....	26
Indicator and Control	
Descriptions .....	26
Ignition Keyswitch .....	26
Instrument Module .....	27
Engine Throttle .....	27
Horn .....	28
Fuel Level Indicator .....	28
Engine Coolant Temperature Indicator.....	28
Hourmeter .....	28
Washdown Sprayer System .....	29
Hydraulic Fluid Reservoir Fill .....	29
Paving Alignment Guide .....	29
Travel Controls .....	30
Hydraulic Pump Variable Speed Control Lever.....	30
Travel Control Levers.....	30
Steering Control .....	31
Hopper Controls .....	31
Hopper Floor Control Lever .....	31
Flow Gate Control Levers.....	31
Side Gate Control Levers .....	32



Feed Auger Control Levers . . . . .	32
Screed Platform Controls . . . . .	32
Screed Lift Control Lever . . . . .	32
Vibrator Control Lever . . . . .	32
Screed Extension Control Levers . . . . .	32
Screed Depth Adjustment . . . . .	33
Screed Extension Adjustment . . . . .	33
Side Shoe Plate Adjustment . . . . .	33
Mat Crown Adjustment . . . . .	33
Screed Propane Heater Controls . . . . .	34
Accessories . . . . .	34
 <b>Chapter 6</b>	
<b>Maintenance . . . . .</b>	<b>37</b>
Maintenance Interval Chart . . . . .	37
Maintenance Log . . . . .	38
 <b>Chapter 7</b>	
<b>Operation . . . . .</b>	<b>41</b>
General Information . . . . .	41
Engine Break-in . . . . .	41
Before Starting Engine . . . . .	41
Starting the Engine . . . . .	41
First Time Operation . . . . .	42
Stopping the Paver . . . . .	42
General Paver Operation . . . . .	42
Walk-around Inspection . . . . .	42
Hands-on Check . . . . .	42
Using the Screed Propane Heater . . . . .	43
Paving at the Jobsite . . . . .	44
Positioning the Paver . . . . .	44
Filling the Hopper . . . . .	44
Laying the Asphalt . . . . .	45
Precautions while Paving . . . . .	46
Handling Asphalt Spills . . . . .	46
Highway Travel . . . . .	47
Transporting Between Jobsites . . . . .	47
Unloading with Ramps . . . . .	48
Towing for More Than One Block . . . . .	49
Transporting for More Than One Day . . . . .	50
Theft Deterrents . . . . .	50



**Chapter 8**

<b>Lubrication</b>	<b>51</b>
General Information	51
Lubricants	51
Greasing and Lubrication	51
Hydraulic Reservoir	51
All Grease Fittings	51
Engine Crankcase Oil	51
Torque Hubs Gear Oil	51
Grease Fitting Locations	52

**Chapter 9**

<b>Schematics</b>	<b>53</b>
Hydraulic Schematic	54
Electrical Schematic	55

**Chapter 10**

<b>Service and Storage</b>	<b>57</b>
General Information	57
Precautions	57
Dealer Services	57
Engine Components	57
Hydraulic System Components	57
Electrical Components	57
Operator Services	58
Service Every 10 Hours or Daily	58
Spraying Asphalt Contact Areas	58
Check Fuel Tank Level	59
Check Engine Oil Level	59
Check Radiator Coolant Level	59
Check Instrument Operation	59
Check Paver Operation and Condition	59
Service Every 50 Hours or Weekly	60
Check Fan Belt	60
Check Hydraulic Oil Level	60
Check Battery Connections/Cables	60
Air Cleaner Element Maintenance	62
Lubricate Grease Points	62
Service at 50 Hours (New Paver Only)	63
Service Every 250 Hours	63
Check Screed Bottom Plate	63
Change Hydraulic Filters	63
Change Engine Oil and Filter	63
Check Torque Hub Oil Level	64
Service Every 500 Hours	65
Change Fuel Filter	65
Service Every 1000 Hours or Season	65
Change Radiator Coolant	65



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Replace Hydraulic Oil and Strainer . . . . .	66
Check Exhaust System . . . . .	66
Adjusting Variable Speed Control . . . . .	67
Storage . . . . .	67
Before Storage . . . . .	67
During Storage . . . . .	67
After Storage . . . . .	68
 <b>Chapter 11</b>	
<b>Troubleshooting . . . . .</b>	<b>69</b>
Engine . . . . .	69
General Operation Problem . . . . .	70
Paver-Related Mat Problems . . . . .	70
Material-Delivery, Compaction-Related Mat Problems . . . . .	71
Drive and Main Control Valves . . . . .	72
Hydraulic Pump and Motors System . . . . .	73
Hydraulic Cylinders . . . . .	73
Electrical System . . . . .	74
 <b>Chapter 12</b>	
<b>Decal Locations. . . . .</b>	<b>75</b>
General Information . . . . .	75
New Decal Application . . . . .	75
 <b>Index . . . . .</b>	<b>77</b>
 <b>Torque Specifications . . . . .</b>	<b>79</b>



# Chapter 1

## INTRODUCTION

The information in this Operator's Manual was written to give the owner/operator assistance in preparing, adjusting, maintaining and servicing of the paver. More important, this manual provides an operating plan for safe and proper use of the machine. Major points of safe operation are detailed in the **SAFETY** chapter of this manual.

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**GEHL Company asks that you read and understand the contents of this manual COMPLETELY and become familiar with the machine, before operating it.**

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The use of this asphalt paver (referred to as paver throughout the rest of the manual) is subject to certain hazards that cannot be eliminated by mechanical means, but only by the exercise of intelligence, care and common sense. It is therefore essential to have competent and careful operators, who are not physically or mentally impaired, and who are thoroughly trained in the safe operation of the equipment.

Throughout this manual information is provided that is set in *italic* type and introduced by the word **IMPORTANT** or **NOTE**. Be sure to read carefully and comply with the message or directive given. Following this information will improve operating and maintenance efficiency, help to avoid breakdowns and damage, and extend the machine's life. A chart of standard hardware torques is located in the back of this manual. "Right" and "left" are determined from a position standing on the screed and facing forward.

A storage compartment is provided on the unit for storing the Operator's Manual. After using the manual, please return it to the storage compartment and keep it with the unit at all times! If the machine is resold, GEHL Company recommends that this manual be given to the new owner.

If this machine was purchased "used," or if the owner's address has changed, please provide your GEHL dealer or GEHL Company Service Department with the owner's name and current address, along with the machine model and serial number. This will allow the registered owner information to be updated, so that the owner can be notified directly in case of an important product issue, such as a safety update program.

The wide GEHL dealership network stands ready to provide any assistance that may be required, including genuine GEHL service parts. All parts should be obtained from or ordered through your GEHL dealer. Give complete information about the part and include the model and serial number of the machine. Record the serial number in the space provided in "Model/Serial Number Information" on page 6, as a handy record for quick reference.

GEHL Company reserves the right to make changes or improvements in the design or construction of any part without incurring the obligation to install such changes on any unit previously delivered.

**GEHL Company, in cooperation with the Society of Automotive Engineers, has adopted this**

### **Safety Alert Symbol**

**to identify potential safety hazards, which, if not properly avoided, could result in injury. When you see this symbol in this manual or on the machine itself, you are reminded to BE ALERT! Your personal safety is involved!**





**Model/Serial Number Information**

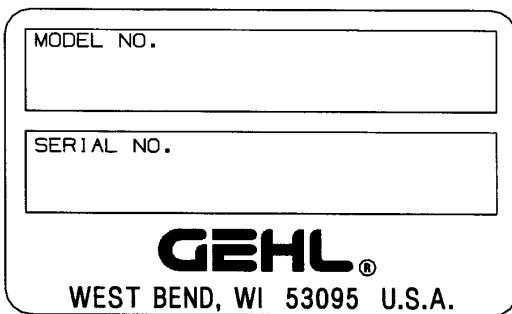
As a handy reference, record the purchase information, and the model and serial numbers in the following spaces.

Purchased from: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Model No.: \_\_\_\_\_

Serial No.: \_\_\_\_\_



A rectangular decal with rounded corners. It contains two horizontal rectangular boxes for writing. The top box is labeled "MODEL NO." and the bottom box is labeled "SERIAL NO.". Below these boxes, the word "GEHL" is printed in a large, bold, sans-serif font, followed by a registered trademark symbol (®). Below the logo, the text "WEST BEND, WI 53095 U.S.A." is printed in a smaller, sans-serif font.

**Fig. 1 - Serial Number Decal**



## Controls/Components Identification

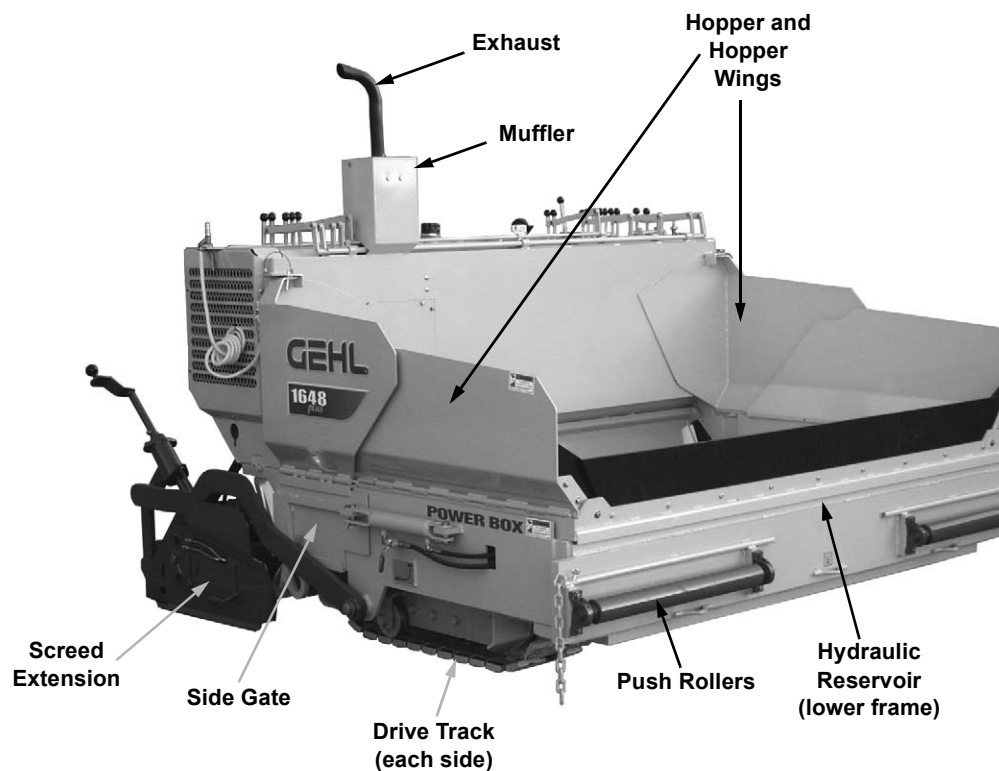
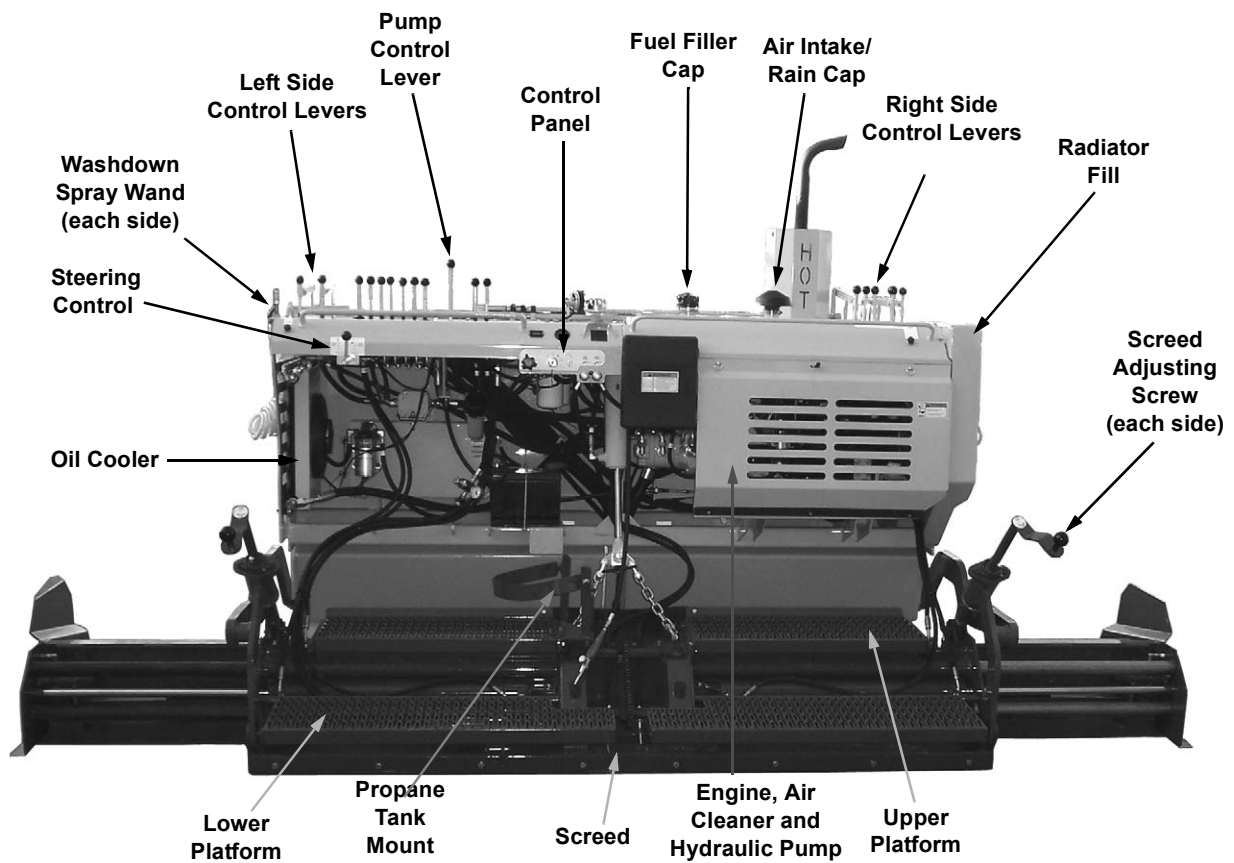


Fig. 2 - Paver Controls/Components



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**NOTES**



# Chapter 2

## SPECIFICATIONS

### DIMENSIONS, MEASURES AND WEIGHTS

Overall Height (top of exhaust pipe)	7'1" (2172 mm)
Minimum Width (transport)	8'6" (2591 mm)
Maximum Width (operating) (hopper wings down)	10'5" (3200 mm)
Length (augers on screed)	9'7" (2921 mm)
Length (augers on gates)	9'2" (2794 mm)
Truck Clearance (height from ground to asphalt hopper floor)	23" (584 mm)
Weight (approximate)	10,600 lbs. (4808 kg)

### ENGINE

Engine Model	Yanmar 4TNV88-XGP
Type	Vertical In-line 4-cylinder Water-cooled Diesel
Horsepower (net) @ Engine Speed	48 (35.8 kW) @ 3000 rpm
Displacement	134 cu. in. (2.19 L)
Aspiration	Natural
Bore and Stroke	3.46" x 3.54" (88 x 90 mm)
Weight	375 lbs. (170 kg)
Power Take Off Location	Flywheel side
Direction of Rotation	Counter-clockwise (viewed from flywheel side)
Dimensions (L x W x H)	25.9 x 19.6 x 24.3" (658 x 498.5 x 618 mm)
Max. Torque @ Engine Speed	103 lb.-ft. (140 Nm) @ 1200 rpm
Max. Engine Speed (with no load)	3210±25 rpm
Lubricating System	Forced lubrication with trochoid pump
Fuel Injection System	Direct Injection
Engine Cooling System	5.7 qts. (5.4 L)
Engine Oil Capacity	7.8 qts. (7.4 L)
Cooling Fan	17" (432 mm) dia., 8-blade, pusher type
Starting Aid	Intake Air Heater (preheating time: 15 seconds)

### SCREED

Main Width	8"-13" (2438-3962 mm)
Hydraulic Vibrator	3000 vpm - maximum
Heat Medium	Propane
Variable Hydraulic Screed Extension - Max. Extension Length	30" (762 mm) w/ 6" (152 mm) wear plate
Maximum Variable Crown/Invert	0"-3" (0-76 mm)
Extension Width	30" (762 mm)
Dual-Span Operator Platform Type	Isolated
Top Operator Platform Type	Stationary



**MATERIAL FLOW**

Independent Hydraulic Operated Gates	Standard
Gate Cut-Off Plates	Option, 6"-36" (152-915 mm)
Gravity-Flow Asphalt Hopper Capacity	6 Tons (5443 Kg)
Independent Hydraulic Operating Augers	Located on Gate or Screed Extension

**DRIVE CONFIGURATION**

Type	Hydrostatic
Track Type	Self-adjusting, Steel
Track Link Dimensions	12" x 3" (305 mm x 76 mm)
Counter-Rotating	Standard
Steering Valve	Fine-tune
Track Length	48" (1219 mm)

**OPERATOR STATION**

Platform	Isolated Dual-Span
Controls	Left and Right Sides
Wash-Down Stations	Dual, 5.5 gal. (21 L) Total

**HYDRAULIC SYSTEM**

Variable Hydrostatic Drive Pump - Maximum Flow	37 gpm (140 L/min)
Variable Hydrostatic Drive Pump - Maximum Relief Pressure	3500 psi (241 bar)
Hydraulic Auger Drive Pump - Maximum Flow	10.9 gpm (41.3 L/min)
Hydraulic Auger Drive Pump - Maximum Relief Pressure	2000 psi (138 bar)
Hydraulic Cylinder Pump - Maximum Flow	10.9 gpm (41.3 L/min)
Hydraulic Cylinder Pump - Maximum Relief Pressure	1800 psi (124 bar)
Track Relief Pressure	300-350 psi (21-24 bar)
Return Filter	5 Micron
Suction Strainer	100 Mesh
Hydraulic Oil Cooler Capacity	32.0 gpm (121.1 L/min)
Drive Loop Oil Cooler Capacity	20 gpm (76 L/min)

**ELECTRICAL SYSTEM**

Alternator	12-V, 40-A
Starter	12-V, 1.4-kW
Battery	12-V, Group Size 24, 675 CCA



**PERFORMANCE**

Minimum Paving Width	4' (1219 mm)
Standard Paving Width	8' (2438 mm)
Maximum Paving Width	13' (3962 mm)
Paving Depth	0-6" (0-152 mm)
Gravity Feed Hopper Capacity	6 Tons (5443 kg)
Hydraulic Feed Auger	2
Hydraulic Material Flow Gates	2
Operating Speed	0-130 fpm (0-40 m/min)
Left and Right Side Operator Controls	Standard

**SERVICE CAPACITIES**

Engine Cooling System	5.7 qts. (5.4 L)
Engine Oil Capacity (dipstick upper limit/lower limit)	7.8/4.2 qts. (7.4/4.0 L)
Hydraulic Reservoir	20 gal. (75.7 L)
Fuel Tank	12.5 gal. (47.3 L)
Washdown Tank w/Electric Pump	5.5 gal. (20.8 L)



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**NOTES**



# Chapter 3

## CHECKLISTS

### Pre-Delivery

The following Checklist is an important reminder of valuable information and inspections that **MUST** be made before delivering the machine to the customer. Check off each item after the prescribed action is taken.

#### ✓ Check That:

- ☐ No parts of Paver have been damaged in shipment. Check for such things as dents and loose or missing parts; correct or replace components as required.
- ☐ Battery is securely mounted and not cracked. Cable connections are tight.
- ☐ Cylinders, hoses and fittings are not damaged, leaking or loosely secured.
- ☐ Oil, fuel and air filters are not damaged leaking or loosely secured.
- ☐ All grease fittings have been properly lubricated and no fittings are missing; see Lubrication chapter of this manual.
- ☐ Hydraulic system reservoir, engine crankcase, and engine coolant are filled to the proper operating levels.
- ☐ All adjustments have been made to comply with the settings given in this manual and in the separate engine manual.
- ☐ All guards, shields and decals are in place and securely attached.
- ☐ Model and serial number for this unit are recorded in space provided on this page and page 6.

**Start the engine and test run the unit while checking that all controls operate properly.**

#### ✓ Check That:

- ☐ All indicators (lamps, meters, etc.) function properly.
- ☐ Proper operation of all hopper and screed controls.
- ☐ Dynamic braking in effect with drive motors in neutral.
- ☐ No hydraulic system leaks when under pressure.
- ☐ Listen for abnormal noises or vibrations; if detected, determine their cause and repair as necessary.

I acknowledge that pre-delivery procedures were performed on this unit as outlined on this page.

---

Dealership's Name

---

Dealer Representative's Name

---

Date Checklist Filled Out

---

Paver Model #

Serial #

Engine Serial #

### Delivery

The following Checklist is an important reminder of valuable information that **MUST** be passed on to the customer at the time the unit is delivered. Check off each item as you explain it to the customer.

#### ✓ Check That:

Review with the customer the contents of this manual; especially:

- ☐ The index at the back, for quickly locating topics;
- ☐ The Safety, Indicators and Controls and Operation chapters for information regarding safe use of the machine.
- ☐ The Lubrication, Service and Storage and Troubleshooting chapters, for information regarding proper maintenance of the machine. Explain that regular lubrication and maintenance are required for continued safe operation and long life.
- ☐ Give this Operator's Manual and the AEM Safety Manual to the customer and instruct them to be sure to read and completely understand the contents before operating the unit.
- ☐ Explain that the customer must consult the engine manual (provided) for related specifications, operating adjustments and maintenance instructions.
- ☐ Completely fill out the Owner's Registration, including customer's signature, and return it to the Company.
- ☐ Explain that a copy of the product warranty is included on the inside front cover of this operator's manual.

---

Customer's Signature

---

Date Delivered



---

**NOTES**



# CHECKLISTS

## Pre-Delivery

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Dealership's Name

Dealer Representative's Name

Date Checklist Filled Out

Paver Model #

Serial #

Engine Serial #

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- ☐ Give this Operator's Manual and the AEM Safety Manual to the customer and instruct them to be sure to read and completely understand the contents before operating the unit.
- ☐ Explain that the customer must consult the engine manual (provided) for related specifications, operating adjustments and maintenance instructions.
- ☐ Explain that a copy of the product warranty is included on the inside front cover of this operator's manual.

Customer's Signature

Date Delivered

Remove dealer's file copy at this line.



---

**NOTES**





# Chapter 4

# SAFETY



The above safety alert symbol means **ATTENTION! BE ALERT! SAFETY IS INVOLVED!** It stresses an attitude of “safety awareness” and can be found throughout this operator’s manual and on the paver.

---

**Before operating the paver, read and study the following safety information. In addition, anyone who operates or works with the paver must be familiar with these safety precautions.**

---

Gehl Company always takes operator’s safety into consideration during the design process. Guards and shield are provided, protecting the operator and bystanders from moving parts or other hazards. Owners and operators must be alert, however, because some areas cannot be guarded or shielded without preventing or interfering with proper operation. Additionally, this operator’s manual and decals on the paver warn of additional hazards and should be read and observed closely.



“DANGER” indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

---



“WARNING” indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

---



“CAUTION” indicates a potentially hazardous situation that, if not avoided, may result in minor injury or property damage. It also alerts users to unsafe practices.

---

**REMEMBER:** It is the owner’s responsibility to communicate information about the safe use and proper maintenance of the paver! This includes providing understandable interpretations of these instructions for operators who are not fluent in reading English.

Pavers should be operated only by qualified operators. It is the responsibility of the operator to read and understand this operator’s manual and to follow correct operating procedures.

---

## MANDATORY SAFETY SHUTDOWN PROCEDURE

**BEFORE** cleaning, adjusting, lubricating or servicing the paver:

1. **Bring paver to full stop on a level surface. NEVER park on a slope or hillside, but if it is not possible to avoid, park across the slope and block the tracks at both ends.**
2. **Place all controls in neutral.**
3. **Move the throttle to low idle.**
4. **Shut off the engine and remove the key.**
5. **Lower the hopper and screed assembly to the “full down” position. Allow the screed to cool before lowering for transport.**

**ONLY** when you have taken these precautions can you be sure it is safe to proceed. Failure to follow the above procedure could lead to death or serious injury.

---

## Safety Reminders

- User/operator safety practices are included in this operator’s manual and are intended to promote the safe operation of the paver. These guidelines do not preclude the use of good judgment, care and common sense as indicated by the specific jobsite work conditions.
- It is essential that operators be physically and mentally fit and free of mind-altering drugs and chemicals.





# SAFETY

(Continued)



- It is essential that operators be thoroughly trained in the safe operation of the paver. Such training should be presented completely to all new operators and not condensed for those claiming previous experience.
- Some illustrations in this manual may show doors, guards and shields open or removed. This is for illustration purposes only. Be sure that all doors, guards and shields are in their proper operating positions before starting the engine to operate the paver.
- Do not operate the paver in an enclosed area without adequate ventilation. Internal combustion engines deplete the oxygen supply within enclosed spaces and may create a serious hazard unless the oxygen is replaced.
- Do not leave the paver unattended with the engine running. Always lower the hopper to “full down” position, shut off the engine, and place all controls in neutral before leaving the paver.
- Do not jump off the paver. Do not dismount from the paver while it is moving.
- Check paver for proper functioning of controls before operating. Observe all gauges and instruments, and correct any malfunctions before operating.
- Do not lift the hopper if pushing a dump truck with the paver. Damage to the paver/truck may result.

## Pre-operation Safety Reminders

- Always wear personal protective equipment appropriate for the job and working conditions. Hard hats, safety glasses, protective shoes, gloves, reflective vests, respirators and ear protection are examples of types of equipment that may be required. Do not wear loose-fitting clothing, long hair, jewelry or loose personal items while operating or servicing the paver.
- Always check the job site for obstructions and bystanders.
- Always perform a daily inspection of the paver before using it. Look for damage, loose or missing parts, leaks, etc.
- Walk around the paver and warn all nearby personnel before starting the paver.

## Operation Safety Reminders

- Do not use ether or other starting fluids to start the paver engine. Doing so may void the engine warranty.
- Do not attempt to move hot asphalt mix with your hands or feet. Contact with hot asphalt can cause serious skin burns.
- Do not allow minors or any unqualified personnel to operate or be near the paver unless properly supervised.

## Service Safety Reminders

- Never use your hands to search for hydraulic fluid leaks. Use a piece of paper or cardboard instead. Escaping fluid under pressure can be invisible and can penetrate the skin and cause serious injury. If any fluid is injected into your skin, see a doctor at once. Injected fluid must be surgically removed by a doctor familiar with this type of injury or gangrene may result.
- Never attempt to bypass the keyswitch to start the engine. Only use the jump starting procedure described in this manual. See “Jump-starting” on page 61.
- Never use fuel for cleaning purposes.
- Always position the safety props up when leaving the hopper raised for inspection, cleaning or service.





# SAFETY

(Continued)



- Always wear safety glasses with side shields when striking metal against metal. In addition, it is recommended that a softer (chip-resistant) material be used to cushion the blow, such as a brass drift. Failure to follow could lead to serious injury to the eyes or other parts of the body.
- Do not refill the fuel tank when the engine is hot. Allow engine to cool before refilling to prevent the hot engine from igniting any spilled or splashed fuel.
- Do not smoke while filling the fuel tank, while working on the fuel or hydraulic systems, or while working around the battery or propane heater.
- Do not attempt to loosen or disconnect any hydraulic lines, hoses or fittings without first relieving hydraulic circuit pressure. Also, be careful not to touch any hydraulic components that have been in recent operation, because they can be extremely hot and can cause burns.
- Before performing any service/maintenance on the paver, always disconnect the battery to prevent unintentional starting.
- Do not attempt to remove the radiator cap after the engine has reached operating temperature or if it is overheated. At operating temperatures, engine coolant is extremely hot and under pressure. Always wait for the engine to cool before attempting to relieve pressure and remove the radiator cap. Failure to heed this warning could result in severe burns.
- Dispose of all petroleum-based oils and fluids properly. Used motor oil may pose a health risk. Wipe oil from your hands promptly and wash off any residue. Used motor oil is an environmental contaminant and may only be disposed of at approved collection facilities. Never drain any petroleum-based product on the ground, dispose of in municipal waste collection containers, or in metropolitan sewer systems or landfills. Check state and local regulations for other requirements.

## Screed Propane Heater Safety Reminders



### WARNING

**Do not smoke in the area around a paver equipped with propane burners.**

**ALWAYS be sure a suitable fire extinguisher is readily available.**

**ALWAYS light ignitor with a striker. NEVER use a cigarette lighter or a match.**

**Ignitor flame may be invisible in sunlight. Do not place ignitor near your skin or clothing. Severe burns will result.**

**ALWAYS allow the screed to cool before lowering it for transport. Fires could result.**

- Only use propane gas with the screed propane heater.
- Wrench-tighten all fittings.
- Never use oil or grease for lubrication.
- Keep the propane supply cylinder upright at all times.
- Keep the paver free of dirt and oil.
- Use a regulator valve on the propane supply cylinder.
- Check the screed propane heater equipment carefully each time before lighting.
- Do not operate the screed propane heater in an enclosed area or near flammable material.
- Close all valves when not in use.
- Comply with all federal, state and local regulations during operation.





# SAFETY

## (Continued)



### **Modifications**

Modifications and additions that affect capacity or safe operation of the paver must not be performed without the prior written approval of the Gehl Company.

### **Guards and Warning Devices**

The paver is fitted with protective covers over the engine area in accordance with industry standards. They are intended to offer protection to the operator from physical injury.

A horn is provided, which can be activated from either side of the paver.

### **Replacement Parts**

To ensure continued safe operation, replace damaged or worn parts with genuine Gehl service parts before operating the paver. If there is a decal on a part that is to be replaced, be sure that the replacement part has the decal applied to it.



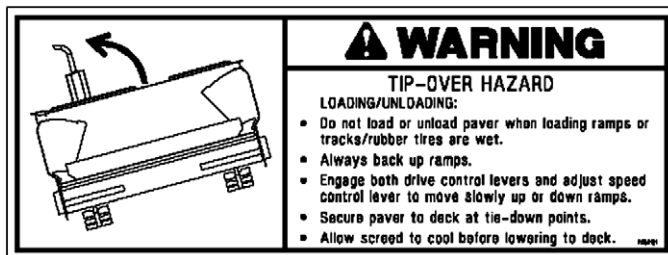


# SAFETY

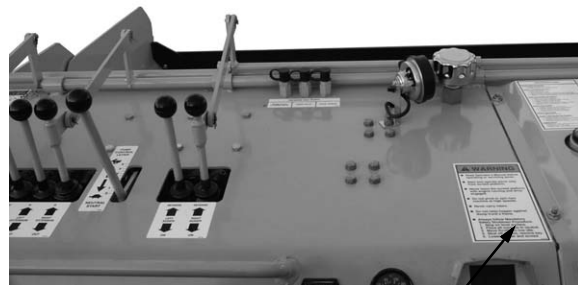
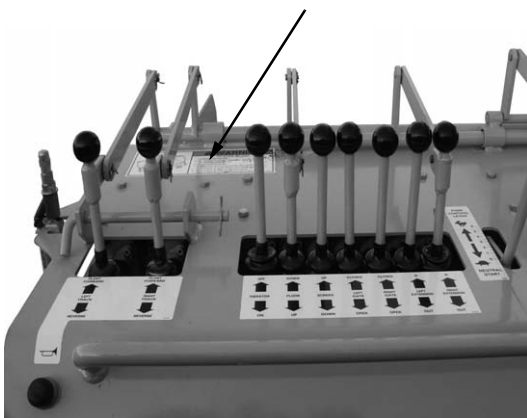
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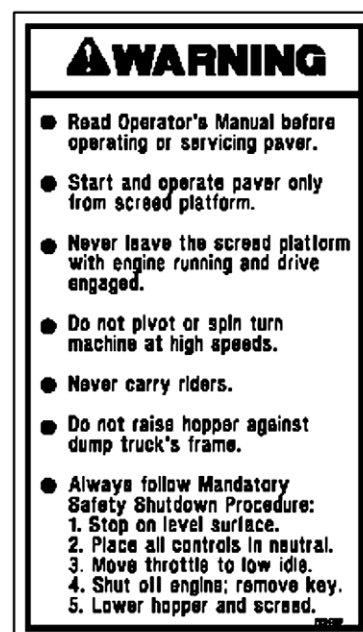
## Safety Decals



P204101



P204100







# SAFETY

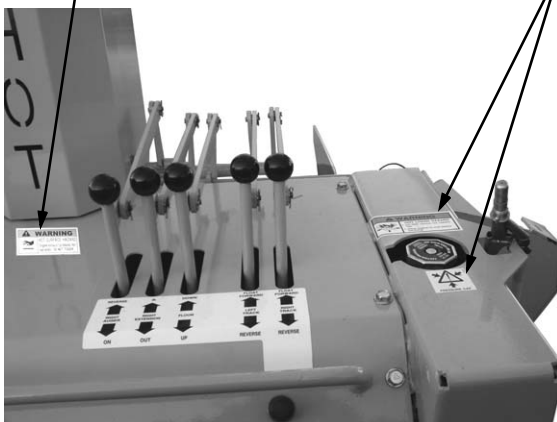
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# SAFETY

(Continued)



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# **SAFETY**

**(Continued)**

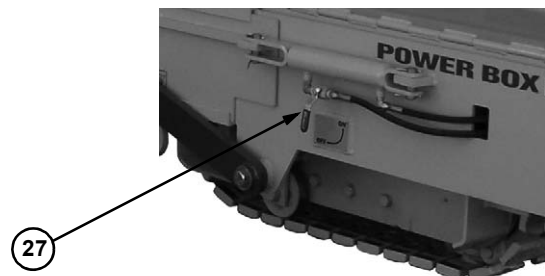
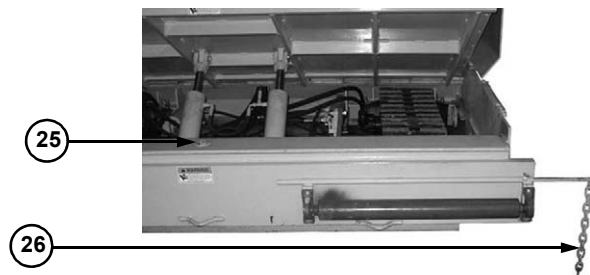
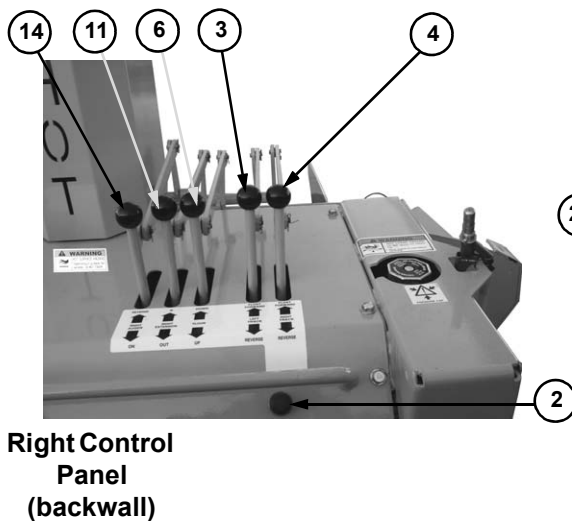
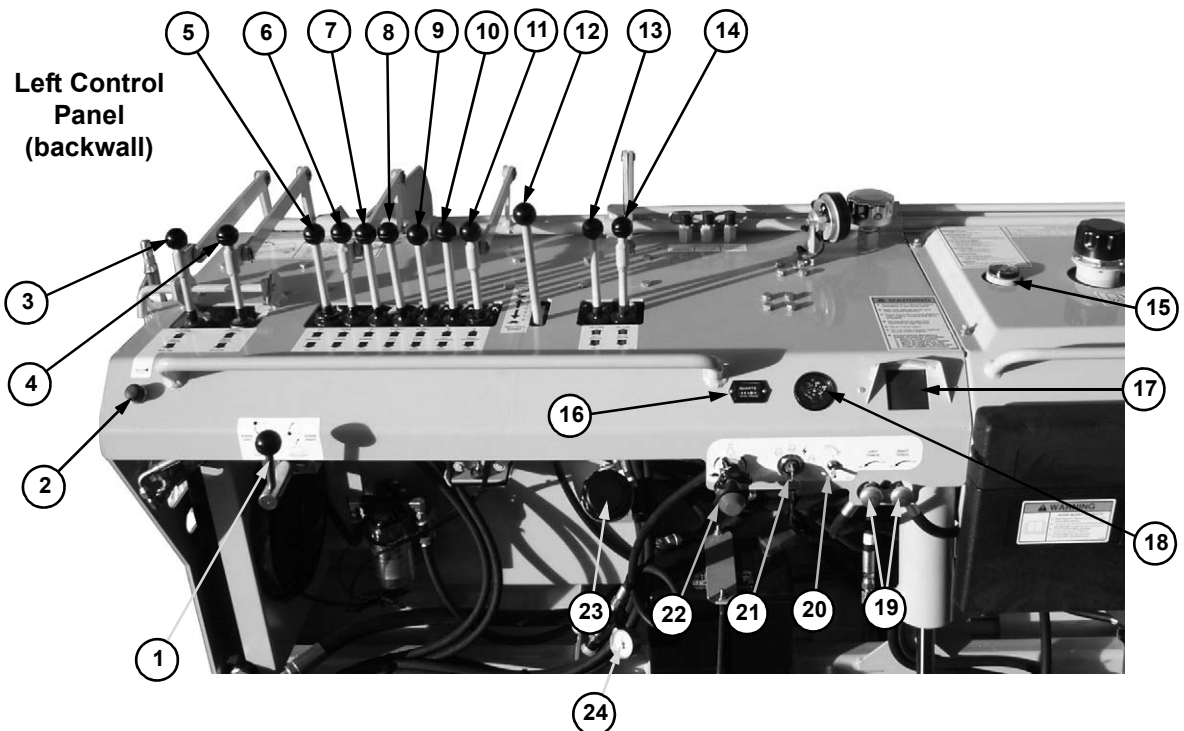


## **NOTES**



# Chapter 5

## INDICATORS AND CONTROLS



- |                           |                               |                                   |
|---------------------------|-------------------------------|-----------------------------------|
| 1 Steering Control        | 10 Left Screed Extension      | 19 Screed Burner Valves           |
| 2 Horn                    | 11 Right Screed Extension     | 20 Washdown Sprayer Switch        |
| 3 Left Travel Control     | 12 Variable Speed Control     | 21 Ignition Switch                |
| 4 Right Travel Control    | 13 Left Feed Auger Control    | 22 Engine Throttle                |
| 5 Screed Vibrator Control | 14 Right Feed Auger Control   | 23 Releasing Agent Reservoir Fill |
| 6 Hopper Floor Control    | 15 Fuel Level Indicator       | 24 Propane Tank Regulator         |
| 7 Screed Lift Control     | 16 Hourmeter                  | 25 Hydraulic Fluid Reservoir Fill |
| 8 Left Flow Gate Control  | 17 Instrument Module          | 26 Paving Alignment Guide         |
| 9 Right Flow Gate Control | 18 Engine Coolant Temperature | 27 Flow Gate Control              |

Fig. 3 - Indicators and Controls



## CAUTION

Before operating the paver, become familiar with, and know how to use, all safety devices and controls. Know how to stop the paver before starting it — refer to “Mandatory Safety Shutdown Procedure” on page 17.

## Guards and Shields

Whenever possible and without affecting paver operation, guards and shields are used to protect potentially hazardous areas. In many places, decals are also used to warn of potential dangers and to communicate special operating procedures.

## WARNING

Read and thoroughly understand all safety decals on the paver before operation. Do not operate the paver unless all factory-installed guards and shields are properly secured in place.

## Indicator and Control Descriptions

(Refer to Fig. 3, page 25 for locations)

### Ignition Keyswitch

(Item 21, Fig. 3)

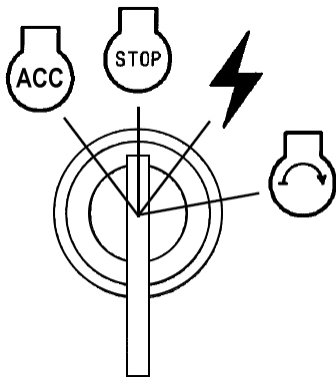


Fig. 4 - Keyswitch

**STOP Position** (⏹): When the key is vertical in the keyswitch, power from the battery is disconnected from the paver electrical circuits (except the horn).

**NOTE:** *This is the only position the ignition key can be inserted or removed from the keyswitch.*

**RUN Position** (⚡): When the key is rotated clockwise one position from vertical, power from the battery is connected to the paver electrical circuits.

**NOTE:** *The battery charge and engine oil pressure indicators activate when the key is in the RUN position. If the engine is below 40° F (5° C), engine pre-heating is activated (see item D in “Instrument Module” on page 27).*

**START Position** (↻): Rotating the key clockwise two positions from vertical activates the engine starter. The key automatically returns to the RUN position after the key is released.

**NOTE:** *If ambient temperature is below 40° F (5° C) or cold engine does not start, turn key to RUN position and wait 15 seconds or until preheat indicator light is off. Then start engine. See item D in “Instrument Module” on page 27.*

**ACC (Accessory) Position** (⌚): When the key is rotated counter-clockwise one position from vertical, the paver accessory electrical circuit activates.



## Instrument Module

(Item 17, Fig. 3)

The instrument module is a multi-function indicator monitoring four engine/system functions. During power-up, the instrument module performs a diagnostic self-test. During the self-test, the module beeps for 3 seconds and the indicator lights activate. When the self-test is complete, the lights deactivate unless an error condition is detected.

**NOTE:** *if the engine temperature is below 40° F (5° C), the engine preheat indicator may stay on for 15 seconds.*

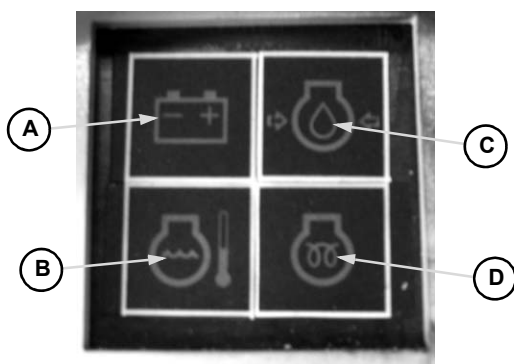


Fig. 5 - Instrument Module

Indicator	Description
A - Battery Charge	Indicator is activated if a charge system fault is detected. Activates if system voltage is below 12V or over 15V.
B - Engine Coolant Temperature	Indicator is activated if engine coolant temperature exceeds 220° F (104° C). Once activated, indicator deactivates when coolant temperature falls below 210° F (99° C).
C - Engine Oil Pressure	Indicator is activated if a significant loss in engine oil pressure is detected.
D - Engine Pre-Heat	Indicator is activated during pre-heat. Pre-heating is required under cold starting conditions.

**IMPORTANT:** *If the engine oil pressure indicator activates during normal operation, STOP*

*the engine immediately. Loss of engine oil pressure could be an indication of insufficient engine oil. See "Check Engine Oil Level" on page 59.*

## Engine Throttle

(Item 22, Fig. 3)

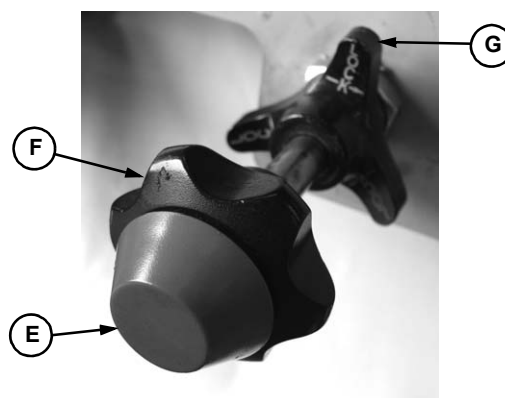


Fig. 6 - Engine Throttle

The throttle controls engine speed.

To place the throttle into idle position, loosen the throttle lock ring (G) by rotating it counter-clockwise, push the red throttle release button (E) and move the throttle control knob (F) all the way in against the lock ring (G).

To increase engine speed, loosen the throttle lock ring (G), press the red throttle release button (E) and pull the throttle control knob (F) out.

For fine adjustment of the throttle, rotate the throttle control knob (F) counter-clockwise to increase engine speed; clockwise to decrease engine speed.

To lock the throttle in position, rotate the throttle lock ring (G) clockwise until it is tightened/engaged.

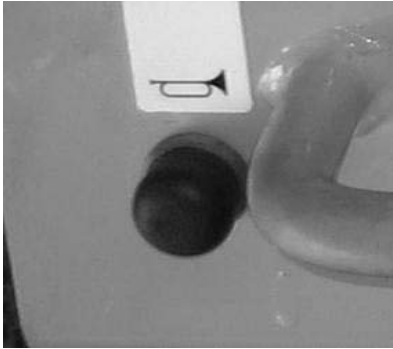
**NOTE:** *The throttle can be quickly placed into the idle position by firmly pushing against the throttle release button.*

For normal operation, move the throttle release button (E) and the throttle control knob (F) as a unit to prevent undue wear on the throttle mechanism.



## Horn

(Item 2, Fig. 3)

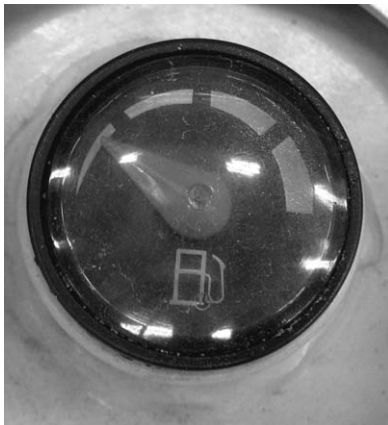


**Fig. 7 - Horn (Either Side of Control Panel)**

The horn is activated by pressing the button on either side of the control panel.

## Fuel Level Indicator

(Item 15, Fig. 3)



**Fig. 8 - Fuel Level Indicator**

The fuel level gauge shows the amount of fuel remaining in the fuel tank.

## Engine Coolant Temperature Indicator

(Item 18, Fig. 3)



**Fig. 9 - Engine Coolant Temperature Indicator**

The engine coolant temperature indicator shows engine coolant temperature. Normal operating temperature is 180-200° F (82-93° C).

**NOTE:** An engine coolant temperature warning is also included on the instrument module display. See "Instrument Module" on page 27.

## Hourmeter

(Item 16, Fig. 3)



**Fig. 10 - Hourmeter**

The hourmeter indicates total paver operating time and is activated when the paver is running. Use the hourmeter to determine paver maintenance intervals. See "Maintenance" on page 37.



### Washdown Sprayer System

(Items 20 & 23, Fig. 3)

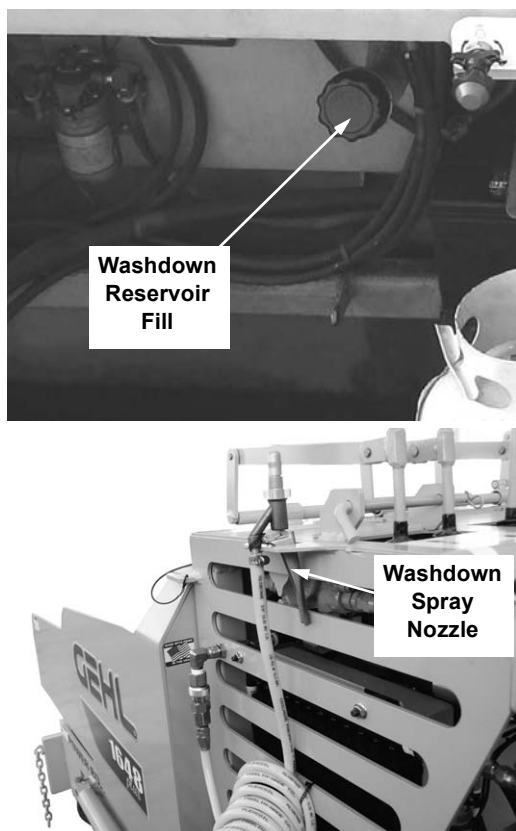


Fig. 11

The washdown sprayer system (a spray nozzle is located on each side of the paver, only the left side is shown) is used periodically each day to wash down parts of the paver with an asphalt releasing agent.

**IMPORTANT:** Only use releasing agents approved for use according to environmental laws and local regulations applicable to the area of paver operation.

### Hydraulic Fluid Reservoir Fill

(Item 25, Fig. 3)

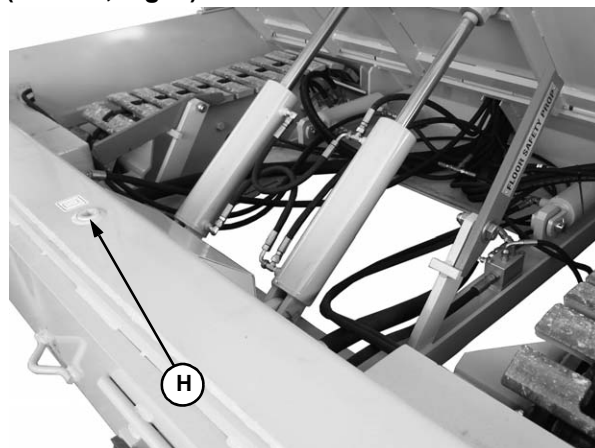


Fig. 12 - Hydraulic Fluid Fill

Remove the hydraulic reservoir fill plug to check the hydraulic fluid level or to add hydraulic fluid.

**NOTE:** Before removing the hydraulic reservoir fill cap, allow the fluid to cool for 10-15 minutes. Slowly loosen the breather cap on the backwall top console to release system pressure.

### Paving Alignment Guide

(Item 26, Fig. 3)

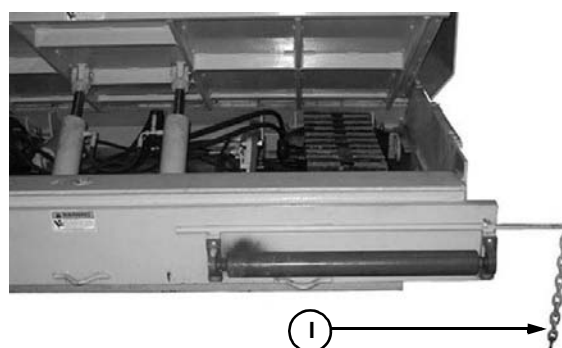


Fig. 13 - Paving Alignment Guide

The adjustable paving alignment guide is used to align the paver with a curb or the edge of a previously laid mat of asphalt.

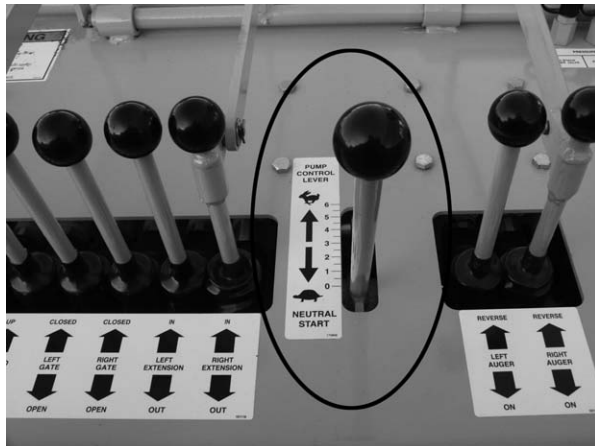


## Travel Controls

The travel controls are used to maneuver the paver around at the jobsite and for road travel. Decals on the backwall top console area provide graphic representation of the various control actions.

### Hydraulic Pump Variable Speed Control Lever

(Item 12, Fig. 3)



**NOTE:** Variable Speed Control Lever Shown in Neutral Position

**Fig. 14 - Variable Speed Control Lever**

This lever increases or decreases oil flow to the drive motors. Push the lever forward to increase speed; pull rearward to decrease speed. Place the lever in neutral when not operating to prevent creating excess heat in the hydraulic system.

**NOTE:** *Lever must be all the way back (neutral position) to start the engine.*

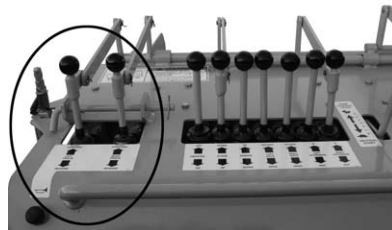
After placing the speed control lever into neutral, the paver should stop traveling when both travel control levers (Fig. 15) are in forward or reverse position.

If the paver does not completely stop traveling when the variable speed control lever is placed into the neutral position, adjustment is required. See "Adjusting Variable Speed Control" on page 67.

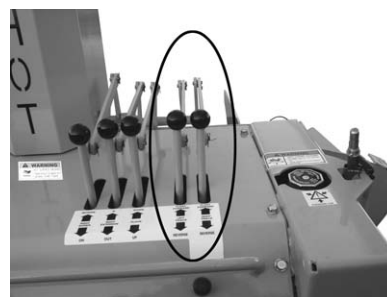
## Travel Control Levers

(Items 3 & 4, Fig. 3)

### TRAVEL CONTROLS — LEFT SIDE



### TRAVEL CONTROLS — RIGHT SIDE



**Fig. 15 - Travel Control Levers**

These two levers control forward, rearward and turning travel. The travel levers are mechanically linked together on both sides of the paver to provide control from either side.

Travel Type	Lever Position
Forward	Both levers forward
Reverse	Both levers back
Stop	Both levers returned to neutral
Left Turn	Right lever forward
Right Turn	Left lever forward
Spin (paver spins around its center)	Right/left levers in opposite directions

**NOTE:** *Turn and/or spin the paver at slow speeds only.*



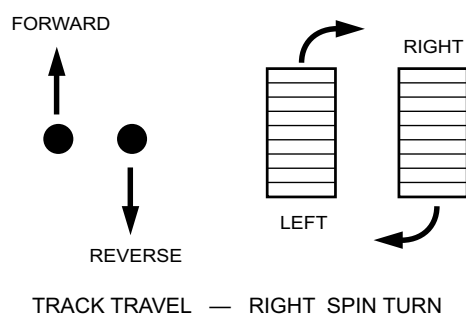
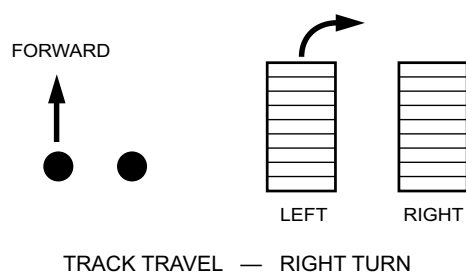
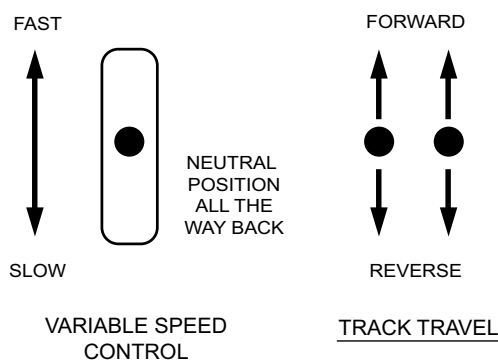


Fig. 16 - Travel Controls

**Steering Control**

(Item 1, Fig. 3)



Fig. 17 - Steering Control Lever

The steering control lever is used for making fine steering adjustments. With the travel control levers both either forward or rearward, set the pump speed lever to the desired position. Rotate the steering control counter-clockwise to turn left and clockwise to turn right. The paver travels in a straight line when the steering control lever is centered.

**NOTE:** *It may be necessary to move the steering control lever as paving conditions vary to adjust for straight-line travel.*

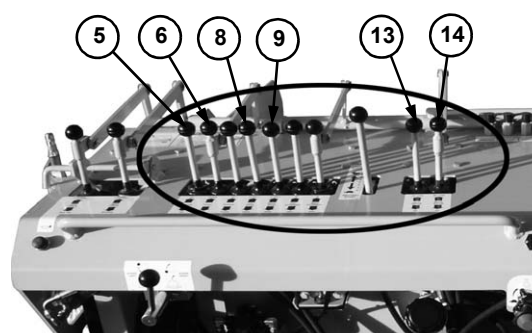
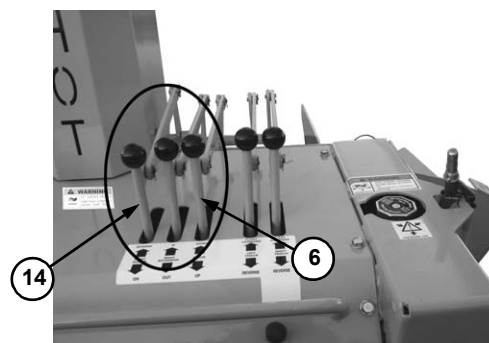
**Hopper Controls****HOPPER CONTROLS — LEFT SIDE****HOPPER CONTROLS — RIGHT SIDE**

Fig. 18 - Hopper Controls

**Hopper Floor Control Lever**

(Item 6, Fig. 3 and Fig. 18)

Move the hopper control lever rearward to raise hopper, forward to lower the hopper. These hopper control levers are mechanically linked together on both sides of the paver.

**Flow Gate Control Levers**

(Items 8 and 9, Fig. 3 and Fig. 18)

The right and left flow gate control levers control flow of asphalt out of the hopper. One lever controls each gate.



Move the levers rearward to open the gates, forward to close the gates.

## Side Gate Control Levers

(Item 27, Fig. 3)



**Fig. 19 - Side Gate Control Lever**

The flow gate control levers open and close the side gates. Move the flow gate control levers to ON to open or close the side gates. Move the flow gate control levers to OFF after the side gates are in the preferred position.

**NOTE:** *The side gates should be closed unless paving an area wider than eight feet.*

## Feed Auger Control Levers

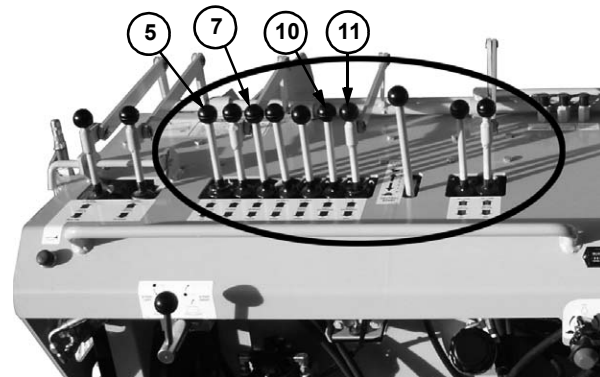
(Items 13 and 14, Fig. 3 and Fig. 18)

The feed auger controls are used only with screed extensions “out.” On the left side of the paver, one lever controls either the right or left auger with the right feed auger control lever mechanically linked to another lever on the right side of the paver. Move the levers rearward to activate the augers. Move the levers to “neutral” to deactivate the augers.

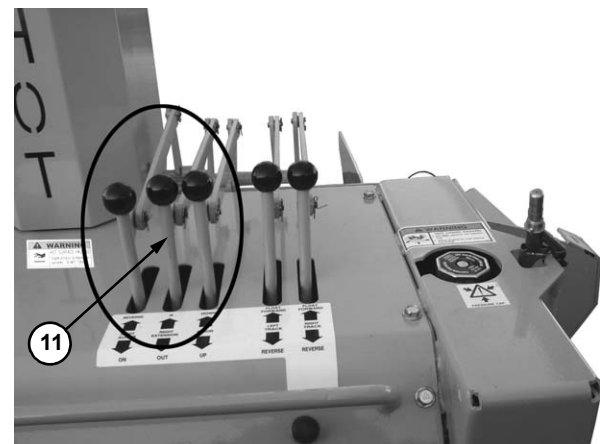
The right feed auger control levers are mechanically linked together on both sides of the paver.

## Screed Platform Controls

SCREED CONTROLS — LEFT SIDE



SCREED CONTROLS — RIGHT SIDE



**Fig. 20 - Screed Platform Controls**

## Screed Lift Control Lever

(Item 7, Fig. 3 and Fig. 20)

Move the screed lift control lever rearward to lower the screed into the paving position. Make sure the cylinder is fully extended. Move the lever forward to raise the screed.

## Vibrator Control Lever

(Item 5, Fig. 3 and Fig. 20)

The screed vibrator assists in compacting the asphalt mat passing under the screed. Move the vibrator control lever rearward to turn the vibrator on, forward to turn the vibrator off.

## Screed Extension Control Levers

(Items 10 and 11, Fig. 3 and Fig. 20)

The screed extensions allow paving an area wider than eight feet.



On the left side of the paver, one lever controls either the right or left screed extension with the right screed extension control lever mechanically linked to another lever on the right side of the paver.

Move the levers forward to move the extensions inward, rearward to move the extensions outward.

### Screed Depth Adjustment

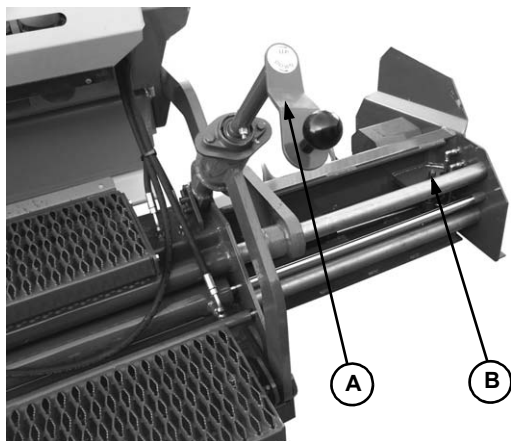


Fig. 21 - Screed Depth Adjustment

Screed depth adjustment is controlled with manually operated adjustment screws (A, Fig. 21) on both sides of the screed. The adjustment screws set the thickness of the asphalt mat. Rotate the screws clockwise to increase the depth, counter-clockwise to decrease the depth.

**NOTE:** *Indicators on the adjustment screws provide a reference for mat thickness, but actual mat thickness must be measured with a depth gauge.*

### Screed Extension Adjustment

In order to maintain a smooth mat transition from the main screed through the extension, the rear edge of the extension has to have the same amount of compaction as the main screed.

Adjust the compaction of the rear edge of the extension using the screed extension adjustment screw (B, Fig. 21). Rotating the adjustment screw counter-clockwise will move the rear edge of the extension down and increase compaction.

### Side Shoe Plate Adjustment

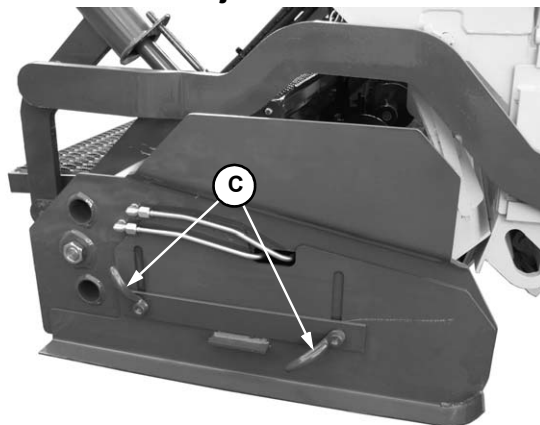


Fig. 22 - Side Shoe Plate

Wing nuts (C, Fig. 22) are used to adjust the side shoe plates on both sides of the screed. Loosen the wing nuts to adjust the side shoe plates and re-tighten when the adjustment is complete.

### Mat Crown Adjustment

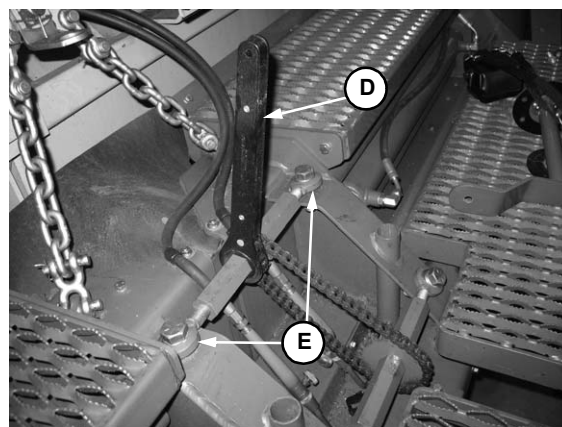


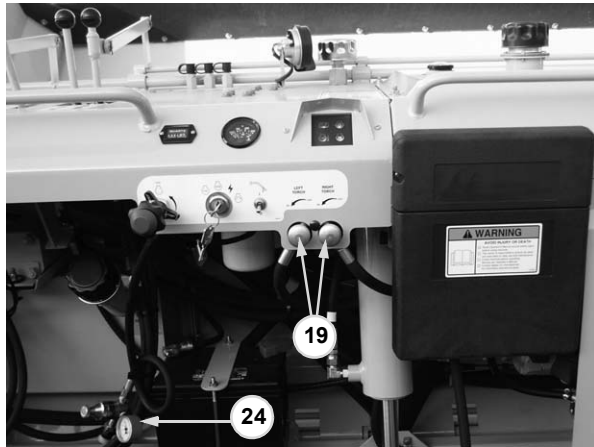
Fig. 23 - Mat Crown Adjustment

Mat crown adjustment is controlled by moving the rod ends (E, Fig. 23) inward or outward using ratchet handle (D). Mat crown is increased when the rod ends move outward. Mat crown is decreased when the rod ends move inward.



### Screed Propane Heater Controls

(Items 19 and 24, Fig. 3 and Fig. 24)



**Fig. 24 - Propane Heater Controls**

Two propane heaters are located one each in the left and right sides of the screed. They provide even heating across the bottom of the screed and the screed extensions.

The propane tank regulator (24, Fig. 24) controls and indicates the pressure of the propane gas flowing out of the propane tank. The screed burner valves (19) control the flow of propane gas to the right and left screed heaters.

For information about using the propane screed heating system, see “Using the Screed Propane Heater” on page 43.

### Accessories

Gehl offers special accessories such as hopper cut-off and block-off plates, and bolt-on screed extensions. Contact your area Gehl dealer for specifications and ordering information.

**NOTE:** *All accessories are field-installed unless otherwise noted. Information and parts for field installation of all accessories are provided by the factory or Gehl paver dealers.*



**NOTES**



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**NOTES**



# CHAPTER 6

## MAINTENANCE

The Maintenance Interval Chart contains the maintenance intervals for the service procedures located in “Service and Storage” on page 57. The “Maintenance Log” on page 38 is for recording the service procedures performed.

**IMPORTANT:** *Under extreme operating conditions, more frequent maintenance than the recommended intervals may be required.*

### MAINTENANCE INTERVAL CHART

SERVICE PROCEDURE	Every 10 Hours (or Daily)	Every 50 Hours (or Weekly)	First 50 Hours	Every 250 Hours	Every 500 Hours	Every 1000 Hours (or Yearly)
Check Fuel Tank Level	•					
Check Engine Oil	•					
Check Radiator Coolant Level	•					
Check Instruments Operation	•					
Clean Areas Contacting Asphalt	•					
Check General Machine Operation and Condition	•					
Check Air Cleaner Element		•				
Drain Fuel Water Separator		•				
Check Fan Belt Tension and Condition		•				
Check Battery and Connections		•				
Check Hydraulic Oil Level		•				
Lubricate Grease Points		•				
Change Hydraulic Filter Elements			•	•		
Change Engine Oil and Filter			•	•		
Check Torque Hubs Oil Level				•		
Check Track Adjustment				•		



**MAINTENANCE****1648 PLUS**

<b>SERVICE PROCEDURE</b>	<b>Every 10 Hours (or Daily)</b>	<b>Every 50 Hours (or Weekly)</b>	<b>First 50 Hours</b>	<b>Every 250 Hours</b>	<b>Every 500 Hours</b>	<b>Every 1000 Hours (or Yearly)</b>
Check Screed Bottom Plate Wear				•		
Change Engine Oil Filter				•		
Change Fuel Filter					•	
Change Radiator Coolant						•
Change Hydraulic Reservoir Oil and Strainer						•
Check Exhaust System						•
Refer to Engine manual for recommended checks						•
Change Air Cleaner Element						•

**NOTE:** Recording the 10-hour (or daily) service intervals in the Maintenance Log is not recommended.

**MAINTENANCE LOG**

<b>Date</b>	<b>Hours</b>	<b>Service Procedure</b>







## MAINTENANCE

## 1648 PLUS

[illegible]



# Chapter 7

## OPERATION

### GENERAL INFORMATION



### CAUTION

**BEFORE** starting the engine and operating the paver, review and comply with all safety recommendations in the **SAFETY** chapter of this manual. Know how to stop the paver before starting it.

### ENGINE BREAK-IN

**IMPORTANT:** *Do not suddenly change engine speed or carry heavy loads during the first 50 hours of operation because this may damage the engine and/or shorten engine life.*

The paver does not use a special engine "break-in" oil. Do not add special additives or "break-in" components to the crankcase. The oil in the engine crankcase is the same used for regular oil changes. Check the oil level frequently and refill as necessary. See "Check Engine Oil Level" on page 59. Change the oil and replace the oil filter. See "Service Every 250 Hours" on page 63.

### BEFORE STARTING ENGINE


Before starting the engine and running the paver, see "Indicators and Controls" on page 25.

### STARTING THE ENGINE



Before mounting the screed platform, walk completely around the paver to make sure no one is on or close to it. Let others near the paver know you are going to start the engine and do not start the engine until everyone has moved away from the paver.

Place all hydraulic function controls and the hydraulic pump speed control lever in the "neutral" positions.


Complete the following steps to start the engine:

1. Be sure that the keyswitch is in the STOP  position.
2. Set the throttle control to 1/3 open.

**NOTE:** *If starting a cold engine and the outside temperature is below 40° F (4° C), turn the keyswitch to the RUN position and leave it there for 15 seconds before starting the engine. See item D in "Instrument Module" on page 27.*

3. Turn the keyswitch to the START  position. If the engine does not start, turn the keyswitch to the STOP  position. Wait 30 seconds to allow battery voltage to recover and follow the cold start procedure noted above.

**IMPORTANT:** *Do not crank the starter for longer than 15 seconds or the starter motor may overheat. Do not crank the starter if the engine is either not completely stopped or in operation because the starter motor pinion or ring gear will be damaged.*

4. After the engine starts, release the keyswitch. The keyswitch moves to the RUN  position.
5. Run the engine at a low, consistent speed for five minutes before operating any controls. Listen for any abnormal sounds during this time.

**IMPORTANT:** *Do not run the engine with a load while the engine is cold/while black smoke emits from the exhaust because the life of the engine may be shortened.*

6. Check that indicators are in normal condition.
7. Check the color of the exhaust gas. It should be light blue or colorless.
8. Check that there are no fuel, oil, or engine coolant leaks.
9. Check that there are no abnormal noises or vibrations.



If the battery is discharged and cannot start the engine, either charge the battery or use jump-start the paver. See “Jump-starting” on page 61.



## CAUTION

**BEFORE starting the engine and operating the paver, review and comply with all safety recommendations in the SAFETY chapter of this manual. Know how to stop the paver before starting it.**

## FIRST TIME OPERATION

Complete the following steps if you are operating the paver for the first time:

1. Be sure the engine is warm.
2. Learn the control levers.
3. Raise the screed.
4. Move the paver travel control levers forward and rearward.
5. Make left and right turns using the travel control levers and modular steering control.
6. Stop the paver, lower the screed, and activate the vibrator.
7. Position the side gates and extensions in and out.
8. Raise and lower the hopper.
9. Turn the auger motors on and off.

## STOPPING THE PAVER

1. Bring paver to full stop on a level surface. NEVER park on a slope or hillside, but if it is not possible to avoid, park across the slope and block the tracks at both ends.
2. Place all controls in neutral.
3. Move the throttle to low idle.

4. Lower the hopper and screed assembly to the “full down” position. Allow the screed to cool before lowering for transport.
5. Run the engine at a low, consistent speed for five minutes. Listen for any abnormal sounds during this time.
6. Shut off the engine and remove the key. Refer to the “Mandatory Safety Shutdown Procedure” on page 17.



## WARNING

**Do not turn the keyswitch to “STOP” position before completing step 5. Turning the keyswitch to “STOP” position before completing step 5 causes the engine temperature to rise rapidly and this may cause fire, damage to the engine, and injury.**

**IMPORTANT:** *Do not stop the engine immediately after removing the load because the temperature of the engine rises suddenly when this occurs. If the coolant system is not allowed to cool the engine before it is shut down, the engine may be damaged.*

## GENERAL PAVER OPERATION

### Walk-around Inspection

1. Inspect hydraulic suction hose to be sure it is firm and not soft.
2. Check for hydraulic leaks.
3. Check hopper sides and floor clearance.
4. Inspect the screed.
5. Check that safety guards and covers are in place.

### Hands-on Check

1. Check the fuel gauge. Fill the tank before paving and when necessary.
2. Check the engine oil level and add oil if necessary.



**IMPORTANT:** Follow the manufacturer's recommendations regarding the use of fuel, lubricants and oil.

## WARNING

To prevent a fire or explosion, allow the engine to cool down before refilling the fuel tank. A hot engine could ignite spilled fuel and burn you. Also, do not smoke while refilling the fuel tank.

3. Check the cooling air intake on the radiator.
4. Check the air cleaner for cleanliness and make sure that components are tight to prevent intake of unfiltered air.
5. Check the pump speed control lever for full travel movement.

## WARNING

Do not spray releasing agent into tracks immediately before loading or unloading. Wet tracks can slip and lose traction.

6. Clean the external area of both tracks, and clean them three to four times during the work day.
7. Clean all asphalt buildup in the screed platform propane burner area and in the exhaust ports located on each end of the screed.
8. Clean all asphalt buildup inside the tracks.
9. Inspect the paver for loose hardware and components.
10. Be sure safety guards and covers are in place.

## WARNING

**NEVER** operate the paver with safety guards or covers removed.

If the paver needs repair, is unsafe, or contributes to an unsafe condition, inform the appropriate per-

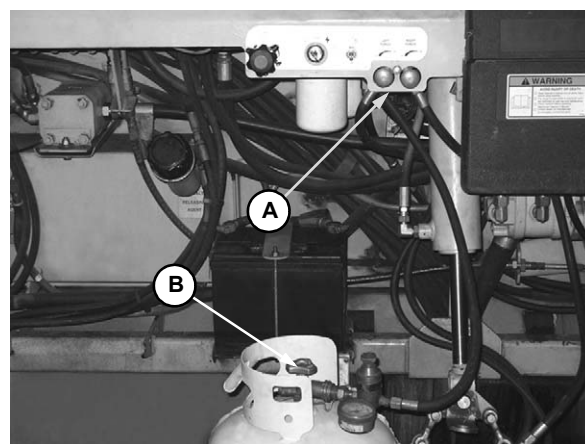
son immediately. Do not operate the machine until it is repaired or the unsafe condition is corrected.

### Using the Screed Propane Heater

1. Check the propane heating equipment carefully each time before lighting.
2. Do NOT operate the propane heater in enclosed areas or near flammable materials.

## WARNING

Do NOT smoke in the area around the paver when it is equipped with propane burners.



**Fig. 25 - Screed Propane Heater**

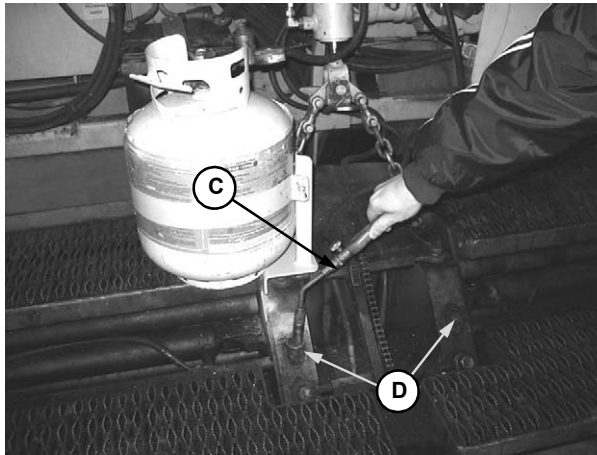
3. Close the tank valve (B, Fig. 25), the valves on the screed burner valves (A, Fig. 25), and the valve on the lighting torch (C, Fig. 26).
4. Slowly open the tank valve.
5. Adjust regulator to 15-20 psi (103-138 kPa).

## WARNING

**Always** light the burners with a striker. **NEVER** use a match.



6. Direct the lighting torch (C, Fig. 26) away from the battery, propane tank, fuel tank, and other people. Open the needle valve and light with a striker.



**Fig. 26 - Light Screed Torch Lighting Tubes**

7. Light the left and right screed torches with the lighting torch (C, Fig. 26) by directing the flame into the lighting tubes (D, Fig. 26) and opening the left and right screed burner valves (A, Fig. 25).
8. Re-adjust the regulator to 15-20 psi (103-138 kPa).



## WARNING

**The burner flame may be invisible in sunlight. Do NOT place the burner near your skin or clothing. Severe burns may result.**

**Screed surfaces will be HOT. Do NOT touch. Severe burns will result.**

9. Do NOT leave the paver unattended with the burners on. If the flame is extinguished, quickly close the valves. Wait five minutes before re-lighting the burners to allow fumes to dissipate.
10. When the burners are not in use, close valve on the tank, crack and close valves on the "Y" valve to release gas pressure in the hoses. Close the valve on the lighting torch.

## PAVING AT THE JOBSITE

The following areas should be "sprayed down" with asphalt releasing agent using the washdown hose before paving and four times or more during the work day. The following areas should also be cleaned thoroughly after every use of the paver:

- Hopper, augers, and underside of the screed
- Push rollers
- Hydraulic fluid reservoir
- External track and sprockets
- Any part of the paver that contacts asphalt

## Positioning the Paver

1. Warm-up the engine.
2. Use the propane burners to heat the screed. See "Using the Screed Propane Heater" on page 43.
3. Use the travel control levers to move the paver into position for laying asphalt.
4. Move the screed control lever to "down" and hold it until the screed lift cylinder fully extends (this allows the screed to float freely).
5. Lower the screed onto a starting pad of asphalt or blocks that are equal in height to the desired paving thickness.
6. Manually adjust the screed depth control screws to a neutral position.
7. Slowly turn the screws toward the "up" position until a slight amount of tension is felt. After the tension is felt, the screed is ready to lay asphalt that measures the approximate thickness of the starting pad or blocks.
8. Move the right and left flow gate control levers to the "closed" position and hold until both gates are fully closed.
9. Set the alignment guide on the left side of the lower front frame.

## Filling the Hopper

1. Have the dump truck back up to the front of the paver until the truck tires are one to two inches from the push rollers.



2. Move the paver forward until the push rollers contact the rear tires of the truck. Do not raise the screed.
3. Move the hopper control lever to the "up" position and hold it in this position until the hopper almost touches the dump body of the truck.
4. Have the dump truck driver slowly raise the dump body so that asphalt flows from the dump body into the hopper.

**IMPORTANT:** *Be prepared to lower the hopper to prevent the dump body from striking the hopper.*

5. Fill the hopper with asphalt.
6. Move the flow gate control levers to the "open" position and hold them in this position until the flow gates are completely open. Asphalt will then gravity feed and form a head of asphalt at the leading edge of the screed.

If the area to be paved is level and pushing the truck is desired, move the travel control levers forward. The engine throttle should be set at full power.

If using the paver by itself, without a dump truck, skip step 7 in "Filling the Hopper."

7. Have the dump truck driver leave the truck in neutral with the dump body raised to a sufficient height to allow asphalt to flow slowly but continuously into the hopper.

**IMPORTANT:** *Do not lift the hopper if pushing a dump truck with the paver. Damage to the paver/truck may result.*

### Laying the Asphalt

1. If the paving width is wider than eight feet, adjust the paving width by using the extension control levers.
2. Move the hydraulic pump speed control lever forward to the desired travel speed. Lay asphalt/push the truck approximately 36 to 48" (914 to 1219 mm).
3. Make the screed vibrate by moving the vibrator control lever to the "on" position while moving the hydraulic pump speed control lever "forward" to the desired travel speed.

4. Move the hydraulic pump speed control lever to the "neutral" position to stop the paver.

Move the vibrator control lever to the "off" position when stopping forward motion of the paver. If a truck is being pushed and is moving, have the dump truck driver stop.

**NOTE:** *When pushing a truck, the dump truck should not be in gear and the dump truck driver should not "ride" the brakes. Tell the dump truck driver about the procedure for pushing the truck with the paver.*

5. Check the thickness/depth of asphalt in the 36 to 48" (914 to 1219 mm) mat and make any necessary adjustments using the manual depth adjustment screws.

Slowly make adjustments up or down to avoid porpoising effect or ripples in the mat because of adjusting too much in either direction.

If the base that the asphalt is being laid on is graded and level, only make infrequent adjustments after setting the asphalt thickness/depth.

**NOTE:** *See "Troubleshooting" on page 69 for paver-related and/or material delivery and compaction-related paving mat application problems.*

6. Move the hydraulic pump speed control lever to "forward" and continue to pave until the truck is empty and the hopper is approximately 50% full.

**NOTE:** *Leave a small head of asphalt at the leading edge of the screed while waiting for the next load of asphalt. If the wait is longer than 10 to 15 minutes, pave 12 to 18" (305 to 457 mm) and leave a small head of asphalt at the leading edge of the screed. Repeat this every 10 to 15 minutes using asphalt remaining in the hopper until the next load arrives.*

7. After the hopper is fully loaded, have the truck driver lower the dump body to stop the flow of asphalt to the paver. At the same time, move the hopper control lever to the "up" position. This raises the hopper and avoids asphalt spills from the front of the hopper.



8. Have the truck driver move forward to the next reloading place to reload the paver. The next reloading place may be in front of the paver at a location where the paver operator expects the hopper to be emptied, or another location on the jobsite.

## PRECAUTIONS WHILE PAVING

The right side control levers for auger, extension, travel and hopper modes require a two-person operation. The two-person operation helps avoid making "blind" joints and reduces cycle time when paving in two directions.

Only operate the screed vibrator when the paver is moving to avoid compaction in the mat when the paver is stopped.

Do not raise the hopper against the truck frame or dump body.

When pushing a truck on level ground, the truck should not be in gear and the truck brakes should not be held. The paver cannot push a truck with the brakes on.

Only use the two independently-operated augers when the extensions are out, and then only occasionally. The augers are only used for keeping the extended area fully charged with asphalt.

**NOTE:** *DO NOT leave the augers operating continuously unless required!*

If the hopper is loaded and the operator wants to close the flow gates (to transport material to an area inaccessible to the truck, reposition the paver for the next pass, etc.), complete the following steps:

1. Lower the hopper as low as possible without spilling asphalt. This decreases the weight being lifted by each flow gate.
2. Close both flow gates.
3. Close the screed extensions.

When paving uphill, lower the hopper as needed. This places more weight directly over the tracks to increase traction.

## Handling Asphalt Spills

**IMPORTANT:** *Remove all asphalt spills from the path of the paver tracks to prevent loose asphalt from getting into the tracks or building up on the sprockets.*



## WARNING

**Do not attempt to move hot asphalt mix with your hands or feet. Contact can cause serious skin burns! Hot asphalt can exceed 350° F (177° C).**

Complete the following steps if the asphalt truck moves away from the paver and spills asphalt in front of the paver:

1. Stop the paver.
2. Lower the hopper as low as possible without spilling asphalt. This decreases the weight being lifted by the flow gates.
3. Close both flow gates.
4. Windrow spilled asphalt to the center and in front of the paver. Be sure that the asphalt is removed from the path of the paver tracks.
5. Move the hydraulic pump speed control lever to "forward," and continue to pave with asphalt gravity fed from the hopper. As the asphalt head from the hopper begins to run thin, the windrow asphalt should be at the leading edge of the screed.

If this is the case, continue to pave using the windrow asphalt and open both flow gates when the windrow asphalt begins to run thin. If this is not the case, open both flow gates about 1/3 and maintain a full head of asphalt at the leading edge of the screed until it strikes the windrow asphalt. Continue to pave.

**IMPORTANT:** *Failure to follow this procedure results in asphalt build-up and eventual damage to the flow gate cylinders and tracks.*



## HIGHWAY TRAVEL

For short distance highway travel, attach a Slow-Moving Vehicle (SMV) emblem (purchased locally) to the back of the paver.

**NOTE:** *Always follow all state and local regulations for operating equipment on or across public roads! If there is a long distance between jobsites or if operating on public roads is prohibited, transport the paver by using a vehicle.*

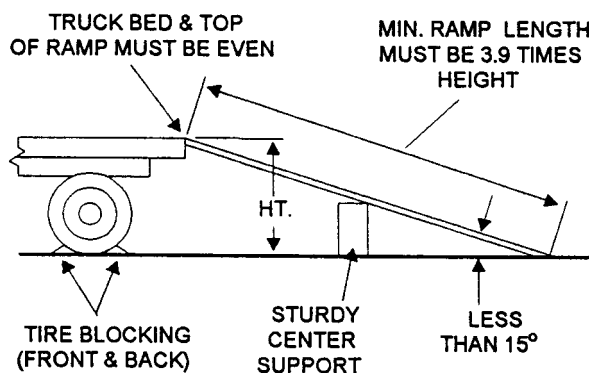
## TRANSPORTING BETWEEN JOBSITES

When transporting the paver, know the overall height to allow clearance of obstructions. Remove or tape over the Slow-Moving Vehicle (SMV) emblem if it is visible to traffic.

### WARNING

**Always follow the recommended procedures and guidelines when using ramps to load the paver onto (or unload it from) a truck or trailer. Failure to heed can result in damage to equipment and serious personal injury or death!**

1. Use a pair of matching ramps that can support the weight of the paver. The ramp width must be at least 1-1/2 times the track width, and the ramp length must be at least four times the ramp height. It is best to use strong wood-covered steel ramps and center supporting blocks (Fig. 27).



**Fig. 27 - Ramps and Center Supporting Blocks**

2. Firmly attach the ramps to the truck or trailer bed with no step between the truck or trailer bed and the ramps.
3. Position the incline of the ramps to be less than 15°.
4. Block the front and rear of the tires on the truck or trailer, and if equipped, engage the parking brake.

### WARNING

**NEVER attempt to adjust travel direction (even slightly) while traveling on the ramps. Instead, back off of the ramps, and re-align the paver with the ramps.**

**Do not walk beside, behind or in front of the paver during loading and unloading procedures.**

**ALWAYS place the pump speed control lever in "slow" position when operating the paver on the truck or trailer bed. ALWAYS load the paver in "reverse" and unload in "forward" direction.**

**Check for and remove oil, grease, fuel or other substance on the ramps that may cause the tracks to lose traction or slip.**

**Do not wash down the paver with asphalt releasing agent just before loading or unloading on the vehicle. The paver tracks may become wet and may slip on the ramps.**

Tie-down points are located at the front of the hydraulic reservoir section of the frame and at the lower rear corners of the main frame. Chains can be inserted through these brackets and slots while securing the paver for transporting.

## Loading with Ramps

1. Align the paver with the ramps so that the paver can load in reverse.
2. Stop the paver.
3. Place the throttle control at "full open" position.
4. Use the screed control lever to raise the screed to the "full up" position.



5. Turn the depth adjustment screws counter-clockwise seven or eight turns to avoid bumping the rear edge of the screed on the ramps (Fig. 29).
6. Move the travel control levers rearward.
7. Move the pump speed control lever forward so that the paver moves slowly up the ramps.

**NOTE:** *The operator should ride on the paver with both hands on the travel control levers to stop the paver if it is not traveling straight.*

8. Stop the paver immediately after it is on the vehicle bed.
9. Move the pump speed control lever to "slow" position and reduce the throttle to "idle" position.
10. Using the travel control levers, maneuver the paver while it is on the vehicle bed to obtain the best transporting and most balanced position.
11. If not rear loading, proceed to step 12. If rear loading, after the paver is on the vehicle bed, place one travel lever in "forward" and the other in "reverse." This rotates the paver to legal width for transporting.
12. Return the screed to flat position by turning the depth adjustment screws clockwise seven or eight turns.



## WARNING

**Allow the screed to cool before lowering for transport.**

13. Lower the screed and place chains through the two tie-down points at the rear of the paver. Drive the paver forward, allowing the chains to tighten slightly (Fig. 28).

**NOTE:** *Be sure that the chains do not damage the screed.*

14. Place a tie-down chain through the tie-down point(s) on the front of the paver and bind it to the vehicle bed (Fig. 28).

15. Turn the keyswitch to the "off" position and remove the key.



- 1 Rear tie-down points (each side)
- 2 Front tie-down points

**Fig. 28 - Front and Rear Tie-down Points**

## Unloading with Ramps



## WARNING

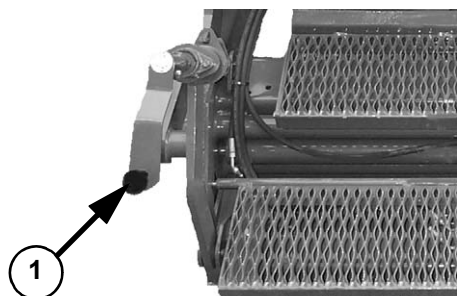
**ALWAYS place the pump speed control lever in "slow" position when operating the paver on the truck bed. ALWAYS unload the paver in "forward."**

**Do not walk beside, behind or in front of the paver during unloading procedures.**

1. Remove the chain binders from tie-down points on the front of the paver (Fig. 28).
2. Start the engine. See "Starting the Engine" on page 41.
3. Move the travel control levers to "reverse" and open the throttle approximately 1/4.
4. Move the pump speed control lever to "slow." The paver moves rearward, releasing tension from the two tie-down chains on the rear of the paver.
5. Stop the paver.



6. Remove the chains from both tie-down points on the rear of the paver (Fig. 28).
7. Move the screed control lever to "up" position and hold until screed is completely raised.
8. Turn the depth adjustment screws seven or eight turns counter-clockwise to avoid bumping the rear edge of the screed on the bottom of the ramps. This raises the rear edge of the screed approximately 1 inch (Fig. 29).



1. Adjustment screw

**Fig. 29 - Rear Edge of the Screed**

9. Align the paver with the ramps by using the travel control levers. If unloading from the rear, rotate and align the paver tracks. Rotate by placing one travel control lever in "forward" and the other in "reverse."
10. Move the paver forward to the ramps. Stop the paver by placing both travel control levers in "neutral."
11. Make sure the pump speed control lever is in the "slow" position. This prevents the machine from "freewheeling" down the ramps.
12. The throttle should be set between 1/2 and full open.
13. Clear the area at the bottom of the ramps of all personnel and obstructions.
14. Place both travel control levers in "forward." Move the pump speed control lever forward so that the paver travels to the ground.

**NOTE:** The operator should ride on the paver with one hand on the travel control levers and the other on the bar. Place both travel control levers in "neutral" to stop.

## Towing for More Than One Block

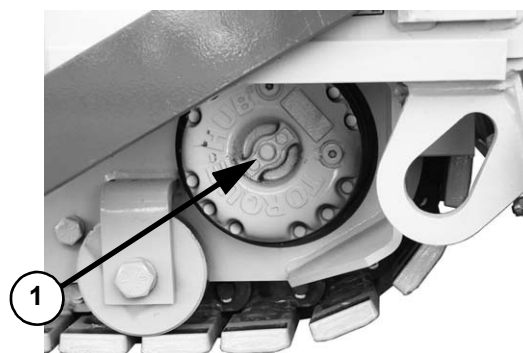
### CAUTION

Completing the steps in "Towing for More Than One Block" de-activates the drive system and places the paver into "neutral." Be sure to keep the power attached to the towing vehicle to prevent free-wheeling when the torque hub is in "neutral."

If towing the paver onto a truck, move the travel control levers to "forward" and lock them with a pin.

If towing the paver for more than one block:

1. Remove the cover plate and bolts (two bolts) (Fig. 30).



1. Cover Plate

**Fig. 30 - Torque Hub**

2. Turn the cover plate over.
3. Re-install the cover plate and bolts.

**NOTE:** The "bulb" in the center of the cover plate pushes in a pin inside the torque hub, placing it in neutral.

### CAUTION

Complete step 4 before operating the paver.

4. Repeat steps 1 through 3 after towing the paver to place the torque hub in the "drive" position.



**IMPORTANT:** *Do not tow the paver unless it is an emergency, such as loss of hydraulic power or engine failure. The travel control levers must be locked into the "float" position. Remove the lock lever, move the control levers all the way forward, and then replace the lock lever. Do not tow the paver rearward or at high speeds!*

### **Transporting for More Than One Day**

If transporting the paver for more than one day:

1. Disconnect the battery.
2. Clean all bright surfaces and coat them with heavy, very high flash-point grease to prevent rusting.

### **THEFT DETERRENTS**

Gehl Company has records of component and serial numbers. Complete the following to discourage vandalism, theft, and to help recovery if theft occurs:

1. Remove keys from unattended machines.
2. Attach, secure, and lock all anti-vandalism and anti-theft devices on the paver.
3. Inspect the gates and fences of the vehicle storage yard. If possible, keep machines in well-lighted areas. Ask local law enforcement to frequently inspect storage and work sites, especially at night, during weekends, and on holidays.
4. Report any theft to your dealer and insurance company. Provide the model and all serial numbers. Request that your dealer forward this information to Gehl Company.



# Chapter 8

## LUBRICATION

### GENERAL INFORMATION



## WARNING

**NEVER** lubricate or service the paver when any part of the machine is in motion. **ALWAYS** exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE** before lubricating or servicing this equipment. See "Mandatory Safety Shutdown Procedure" on page 17.

**NOTE:** See "Maintenance" on page 37 to record the dates and hourmeter readings after lubricating or other servicing. Lubrication prevents excessive part wear and early failure.





### LUBRICANTS

The "Greasing and Lubrication" chart on this page lists the locations, temperature ranges, and types of recommended lubricants. Refer to the engine manual for additional information about recommended engine lubricants, quantities required, and grades.

**NOTE:** See "Service and Storage" on page 57 for lubricant checking and refilling information.

### GREASING AND LUBRICATION

This section contains greasing location and frequency information. Wipe dirt from the grease fittings before greasing them to prevent contamination. Avoid excessive greasing to minimize dirt buildup. Replace any missing or damaged fittings.

<b>Hydraulic Fluid Reservoir</b> 	
Use SUNVIS 846, or equivalent that contains anti-rust, anti-foam and antioxidant additives and conforms to ISO VG46.	
Capacity: 20 Gallons (75.7 Liters)	
<b>All Grease Fittings</b> 	
Use No. 2 Lithium-based Grease	
<b>Engine Crankcase Oil</b> 	
<b>Grade*</b> SAE 10W-30 or 15W-40	
*Service Classification: API - CD or Higher	
Capacity: <b>7.8 Quarts (7.4 Liters) - Diesel Engine</b>	
<b>Torque Hubs Gear Oil</b> 	
Use API-GL-5 80W-90 Capacity (each hub): <b>17 ounces (500 cc)</b>	

**Fig. 31 - Greasing and Lubrication Chart**

**IMPORTANT:** Always dispose of waste lubricating oils, anti-freeze, and hydraulic fluids according to environmental laws or take them to a recycling center for disposal. **DO NOT** pour them onto the ground or into a drain.



## GREASE FITTING LOCATIONS

**NOTE:** See "Service and Storage" on page 57 for more information.

## Every 50 Hours (or weekly):

1. Grease depth adjustment screws (1 per screw)
2. Grease track adjuster yokes (8 per track)

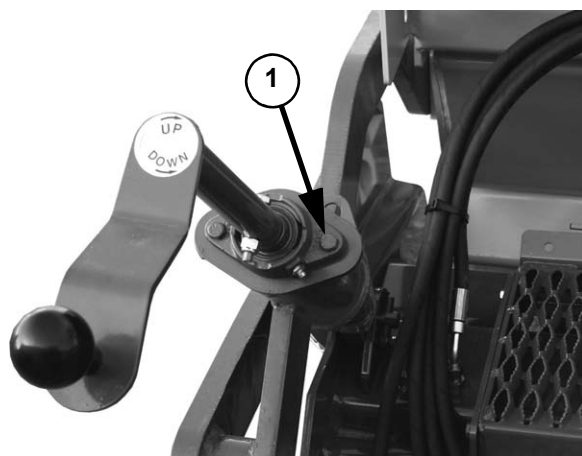


Fig. 32 - Grease Depth Adjustment Screws

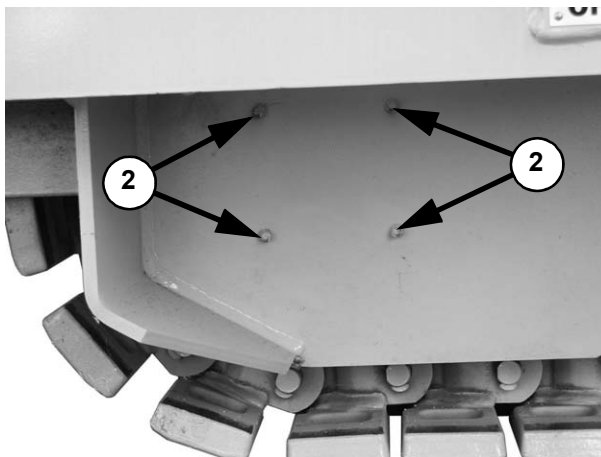


Fig. 33 - Grease Track Adjuster Yokes

Engine	
Oil Filter Element	Gehl P/N 137500
Fuel Filter Element	Gehl P/N 182130
Hydraulic System Filters	
Screw-On Filter Element	Gehl P/N 074830
Reservoir Sump Strainer	Gehl P/N 128299
Air Cleaner	
Dry Element	Gehl P/N 420-36075

Fig. 34 - Replacement Filters Chart



# Chapter 9

## SCHEMATICS

The Schematics chapter contains hydraulic and electrical schematics.

### **HYDRAULIC SCHEMATIC**

Use the hydraulic schematic for valves, pumps, motors, cylinders, and as a guide for troubleshooting and service reference. See “Hydraulic Schematic” on page 54.

### **ELECTRICAL SCHEMATIC**

Use the electrical schematic for instrumentation, components, switch connections, and as a guide for troubleshooting and service reference. See “Electrical Schematic” on page 55.



## Hydraulic Schematic

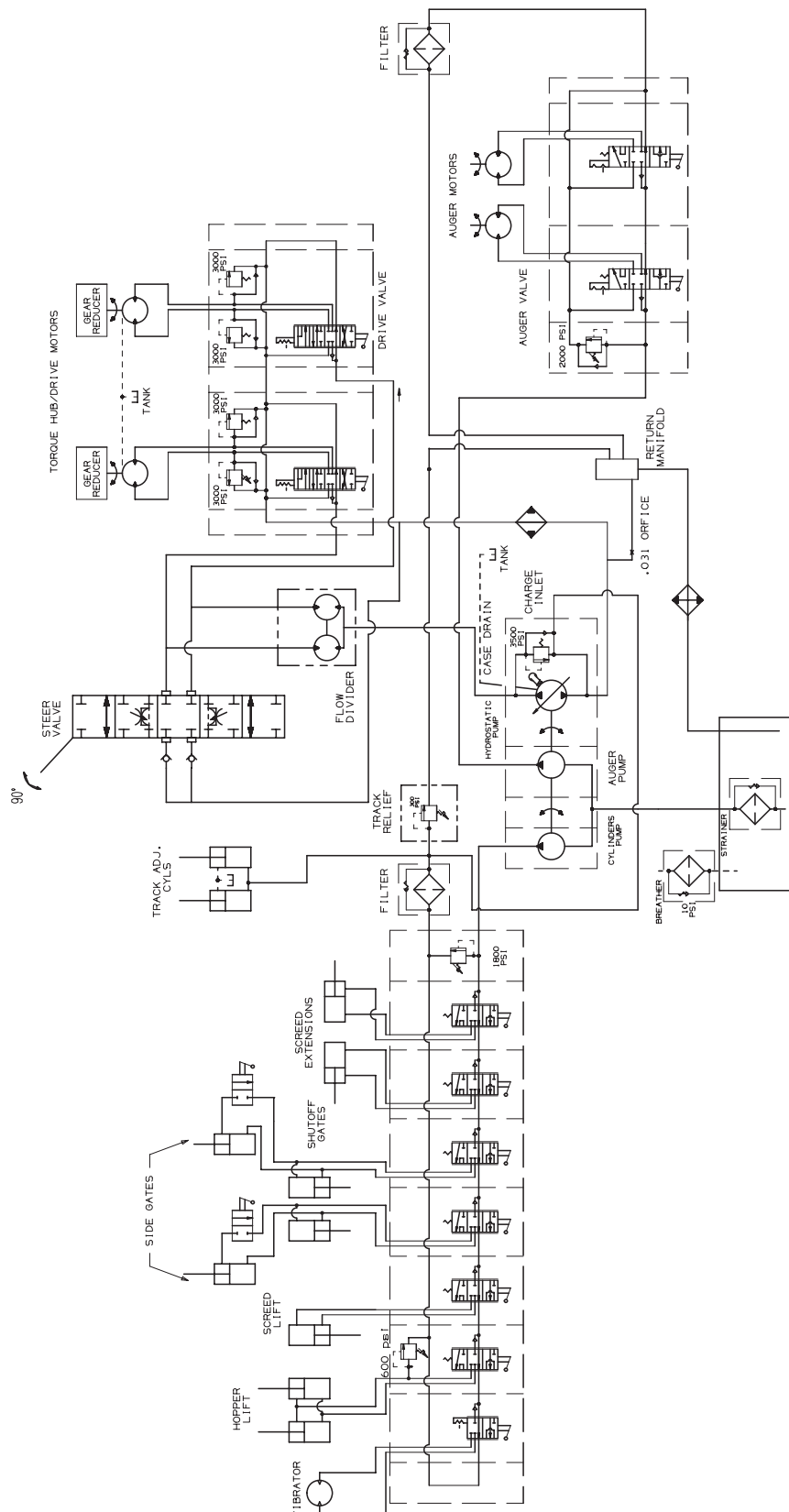
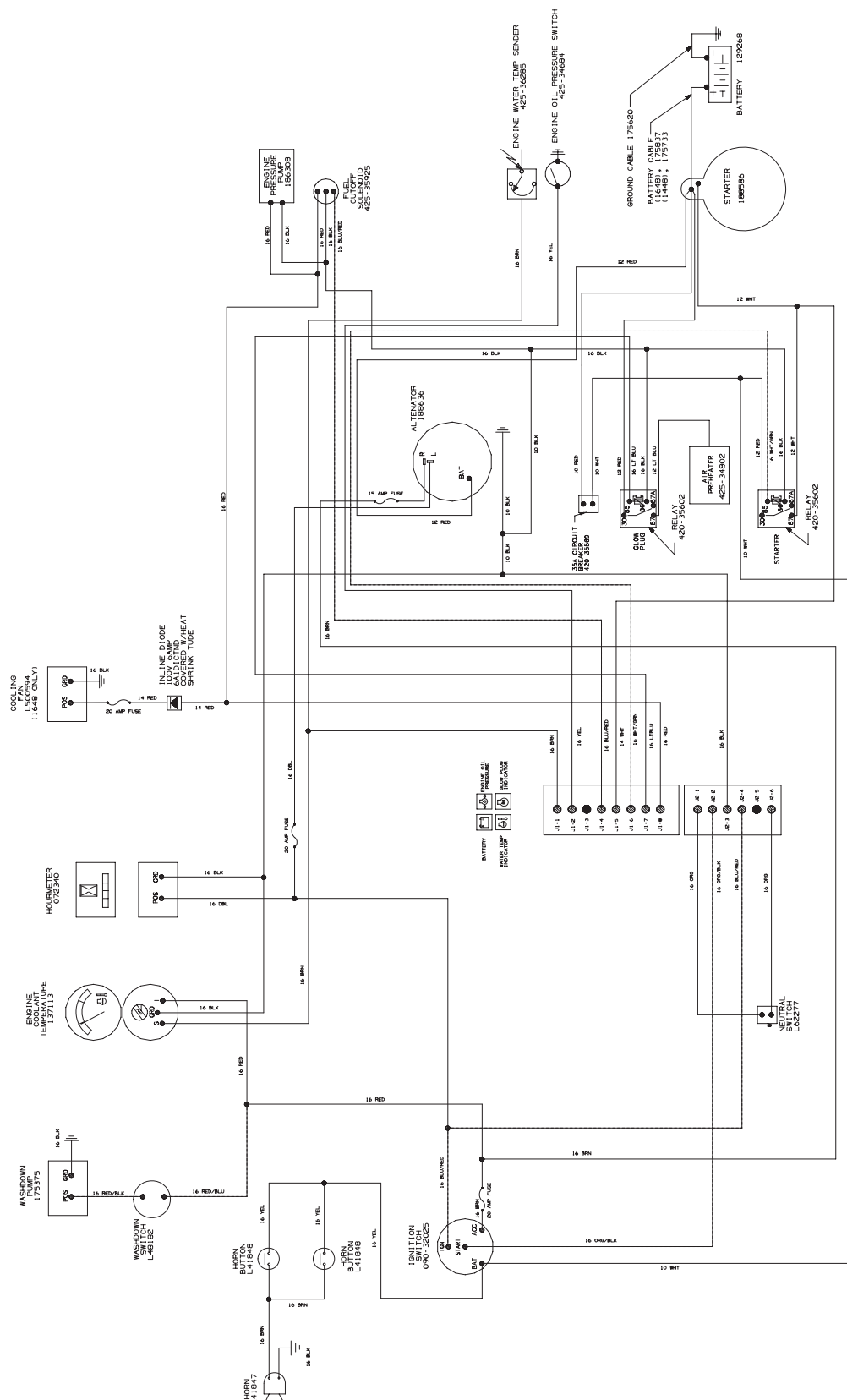


Fig. 35 - Hydraulic Schematic



## Electrical Schematic



### Fig. 36 - Electrical Schematic



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**NOTES**



# Chapter 10

## SERVICE AND STORAGE

### GENERAL INFORMATION

This chapter contains procedures to follow when performing routine maintenance checks, adjustments, and replacements. Many procedures are also referred to in “Troubleshooting” on page 69 and in “Maintenance” on page 37. For engine-related adjustments and servicing procedures, refer to the engine manual.



### WARNING

**BEFORE performing any service on the paver, exercise the MANDATORY SAFETY SHUT-DOWN PROCEDURE (SAFETY chapter). See “Mandatory Safety Shutdown Procedure” on page 17.**

**After service has been performed, BE SURE to replace all guards, shields and covers to their original positions BEFORE resuming paver operation.**

**NOTE:** *All service routines, except those described under “Dealer Services,” are owner-operator responsibilities. Refer to “Lubrication” on page 51 of this manual for lubrication information.*

### Precautions

Do not perform any maintenance or repair without the owner's prior authorization. Allow only trained personnel to service the paver.

Only Gehl dealers are authorized to perform warranty repairs. Dealers know the components covered under the terms of the Gehl Warranty and the components covered under the terms of vendor warranties.

**IMPORTANT:** *Always dispose of waste lubricating oils, anti-freeze, and hydraulic fluids according to environmental laws or take them to a recycling center for disposal. DO NOT pour them onto the ground or into a drain.*

### DEALER SERVICES

The following areas of internal components service replacement and operating adjustments should only be performed by (or under the direction of) an authorized Gehl dealer.

### Engine Components

All service procedures related to the internal components are precise and critical for proper engine operation. Special training and tools are required for servicing.

**NOTE:** *If the engine is not operating properly, contact your Gehl dealer.*

### Hydraulic System Components

Valves, pumps, motors and cylinders are assemblies that require special training and tools for servicing. All cylinders are designed with strokes, diameters, checks, and hose connections specifically for paver application requirements. Use the hydraulic schematic as a guide for troubleshooting and service reference. See “Hydraulic Schematic” on page 54.

Internal service on any of these components should only be performed by (or under the direction of) an authorized Gehl dealer.

### Electrical Components

Use the electrical schematic for instrumentation, components, switch connections, and as a guide for troubleshooting and service reference. See “Electrical Schematic” on page 55.



## OPERATOR SERVICES

Some of the operator services require access to components located underneath shields, hoods, covers, and other areas inside of the paver chassis.

Choose a clean, level work area. Make sure you have sufficient room, clearances, and ventilation.

Clean the walking and working surfaces. Remove oil, grease, and water to eliminate slippery areas. If necessary, use sand or oil-absorbing compounds while servicing the paver.

Before inspecting and repairing the paver, move it onto a level surface, shut down the engine, and release all hydraulic pressure. Refer to the Mandatory Safety Shutdown Procedure on page 17. Always lower the hopper to the "full down" position. If the area under the hopper requires service, raise the hopper to "full up" and swing up the two safety props. Place all controls in "neutral."

Disconnect the battery and then remove the ignition key and take it with you. Only remove guards or covers that prevent needed access to components located inside of the superstructure. Wipe away excess grease and oil. Replace any worn, cracked, or damaged parts, these parts can cause injury or death.

Use only genuine Gehl replacement service parts.

Be sure not to damage polished surfaces. Clean or replace all damaged or painted over plates and decals that cannot be read.

**NOTE:** *Never leave guards or access covers removed when the paver is unattended. Keep bystanders away if access covers are removed.*

Check the work performed after servicing. Re-install all guards, covers and reconnect the battery.



## WARNING

**Do not smoke or allow any open flames in the area while checking or servicing hydraulic, battery, fuel or propane systems; all contain highly flammable liquids or explosive gases, which can cause an explosion or fire if ignited.**

**Wear a face shield when disassembling spring-loaded components or work with battery acid. Wear a helmet or goggles with special lenses when welding or cutting with a torch.**

**When working beneath a raised machine, always use blocks, jack-stands or other rigid and stable supports. Wear appropriate protective clothing, gloves and shoes. Keep feet, clothing, hands and hair away from moving parts.**

**Always wear safety glasses or goggles for eye protection from electric arcs from shorts, fluids under pressure, and flying debris or loose material when the engine is running or tools are used for grinding or pounding.**

**NEVER weld on hopper, screed or frame without the consent of the manufacturer. Special metals may be used, which require special welding techniques or have a design that should not have weld repairs. NEVER cut or weld on fuel lines or tanks.**

**If repair welding is ever required, be sure to attach the ground (-) cable from the welder as close as possible to the area to be repaired.**

**Remove positive (+) battery terminal connection before proceeding to weld.**

## SERVICE EVERY 10 HOURS OR DAILY

### Spraying Asphalt Contact Areas

Spray the following areas with asphalt releasing agent before paving, at least four times while paving, and after each use of the paver.

- Hopper and augers
- Screed (bottom)
- Push roller assembly
- Hydraulic fluid reservoir
- Drive tracks
- Any other part of the machine that contacts asphalt



## ! WARNING

Do not spray releasing agent into tracks before loading or unloading the paver on a truck or trailer, because this could cause loss of traction.

Do not spray releasing agent on a hot engine.

Do not spray releasing agent while the screed propane heaters are in use.

### Check Fuel Tank Level

After daily operation, fill the fuel tank to prevent water from condensing in the tank. Remove the filler cap and add fuel.

**IMPORTANT:** *DO NOT discharge fuel onto the ground. Contain and dispose of fuel according to environmental laws and waste regulations.*

### Check Engine Oil Level

Complete the following steps to check the engine oil level:

1. Move the paver to level ground and stop the engine for at least ten minutes.
2. Remove the engine dipstick (1, Fig. 37), wipe it clean, re-insert it, and then remove it again. Read the oil level on the dipstick.

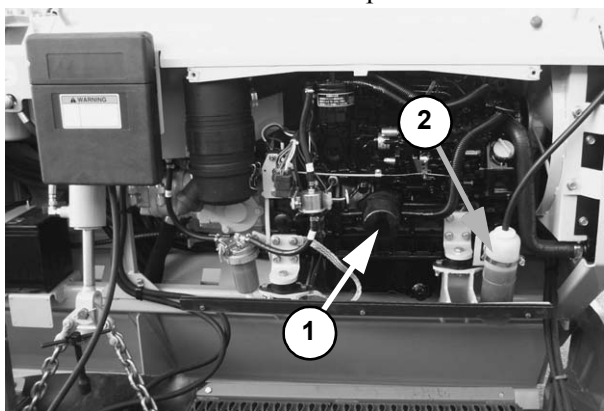


Fig. 37 - Crankcase Dipstick/Coolant Overflow

3. If the oil level is below the ADD mark, add oil until the level has reached the FULL mark. Refer to the engine operator's manual for engine oil type requirements.

### Check Radiator Coolant Level

## ! WARNING

**DO NOT** remove the radiator cap when the engine is running hot or overheated. Coolant is extremely hot and under pressure and it can burn your skin. Allow sufficient time for the radiator to cool before relieving the pressure and removing the radiator cap.

1. Check the radiator coolant level by viewing the coolant level in the overflow bottle (2, Fig. 37). If there is no coolant in the overflow bottle, proceed to step 2.
2. Move the paver to level ground and remove the radiator cap.
3. Add clean engine coolant as required. Refer to the engine operator's manual for coolant type requirements.
4. Re-install the radiator cap.

**IMPORTANT:** *Operating the engine with a loose or damaged radiator cap will defeat the pressure bypass and may damage the engine.*

### Check Instrument Operation

Allow the engine to warm up for about five minutes before beginning operation. Indicator lamps should not be lit and gauges should register normal readings.

### Check Paver Operation and Condition

Check the following:

- Are any decals missing or damaged?
- Are all guards, shields and covers in place?
- Do all controls function smoothly and properly?
- Are there any abnormal vibrations or noises?
- Are any hoses or fitting connections leaking?
- Is the engine exhaust color normal (normal color is light blue or colorless)?



## SERVICE EVERY 50 HOURS OR WEEKLY

Also complete the service checks in “Service Every 10 Hours or Daily” on page 58.

### Check Fan Belt

If the belt is worn, cut, cracked, or damaged, it should be replaced. Order a replacement belt from your Gehl dealer. Refer to the engine manual to learn proper belt replacement and tension adjustment procedures.

### Check Hydraulic Oil Level

The fluid must be cool when checking the reservoir level (Fig. 38) or changing the filter. This reduces the possibility of overfilling the hydraulic system and potential injury due to hot fluid.

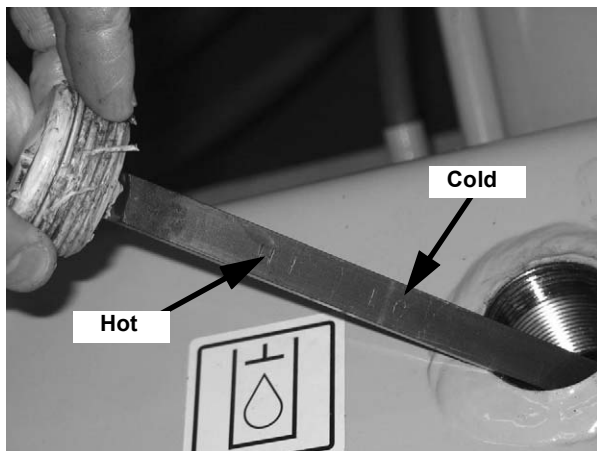


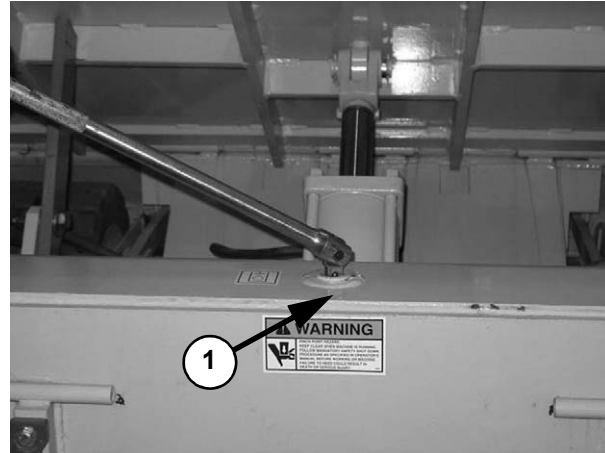
Fig. 38 - Checking Hydraulic Oil Level

## WARNING

**ALWAYS** protect face and eyes whenever a pressure plug or cap is removed. **NEVER** assume that no pressure exists in a pressure vessel or system.

Before removing the fill plug (Fig. 39), release hydraulic system pressure by loosening the fill plug or the breather cap on the top of the backwall console (shown in “Change Hydraulic Filters” on page 63).

**NOTE:** Use a 3/4” drive socket wrench handle to remove the fill plug.



1. Fill plug

Fig. 39 - Removing Fill Plug

**IMPORTANT:** Be sure that no dirt or other foreign matter enters the hydraulic system while the cap is removed. **DO NOT OVERFILL.**

See “Lubricants” on page 51 for recommended hydraulic oils.

### Check Battery Connections/Cables

Check cables for corrosion or loose connection.

**NOTE:** The battery on the paver is warranted by the supplier. See the label on the top of the battery for warranty information.



### Cleaning the Battery

Always keep the top of the battery clean. Clean the battery with a brush dipped in an alkaline solution (ammonia or baking soda and water). After the foaming has stopped, flush the top of the battery with clean water. If the terminals and cable connection clamps are corroded or dirty, disconnect the cables and clean the terminals and clamps with the same alkaline solution.

## WARNING

Explosive gas is produced while a battery is in use or being charged. Keep flames or sparks away from the battery area. Be sure battery is charged in a well-ventilated area.

**NEVER** lay a metal object on top of a battery as a short circuit can result.

Battery acid is harmful on contact with skin or fabrics. If acid spills, follow these first aid tips:

1. **IMMEDIATELY** remove any clothing on touched by acid spills.
2. If acid contacts the skin, rinse the affected area with running water for 10 to 15 minutes.
3. If acid comes in contact with the eyes, flood the eyes with running water for 10 to 15 minutes. See a doctor at once. **NEVER** use any medication or eye drops unless prescribed by the doctor.
4. To neutralize acid spilled on the floor, use one of the following mixtures:
  - 1 pound (0.5 kg) of baking soda in 1 U.S. gallon (4 liters) of water.
  - 1 pint (0.5 liters) of household ammonia in 1 U.S. gallon (4 liters) of water.

**Whenever the battery is removed from the paver, BE SURE to disconnect the negative (-) battery terminal connection cable first.**

### Jump-starting

If the battery becomes discharged or does not have enough power to start the engine, the paver can be jump-started. Complete the following steps to jump-start the engine.

**IMPORTANT:** *BE SURE that the jumper battery is 12-volt D.C. and that the vehicle used for jump starting has a negative-ground electrical system.*

## WARNING

The **ONLY** safe method for jump-starting a discharged battery is for **TWO PEOPLE** to perform the following procedure. The second person is needed for removing the jumper cables so that the operator does not have to leave the operator's position while the engine is running. **NEVER** make the jumper cable connections directly to the starter solenoid of either engine. **DO NOT** start the engine from any position other than the operator's position, and then **ONLY** after being sure all controls are in "neutral."

Closely follow the jump-start procedures, in the order listed, to avoid personal injury. In addition, wear safety glasses to protect your eyes and avoid leaning over the battery while jump-starting.

**DO NOT** attempt to jump-start the paver if the battery is frozen, because this may cause it to rupture or explode.

1. Turn the keyswitches on both vehicles to "OFF." Be sure that both vehicles are in "neutral" and are not touching.
2. Connect one end of the positive (+) jumper cable to the positive (+) battery terminal on the disabled vehicle.

**IMPORTANT:** *Do NOT allow the positive (+) cable clamps to touch any metal other than the positive (+) battery terminal.*

3. Connect the other end of the positive (+) jumper cable to the jumper battery positive (+) terminal.



4. Connect one end of the negative (-) jumper cable to the jumper battery negative (-) terminal.
5. Connect the other end of the negative (-) jumper cable to the disabled paver's engine block or frame (ground), and not to the disabled battery negative post. If making the connection to the engine, keep the jumper clamp away from the battery, fuel lines, and moving parts.

**NOTE:** *Twist the jumper cable clamps on the battery terminals to ensure a good electrical connection.*

6. Start the paver. If it does not start immediately, start the jumper vehicle to avoid excessive drain on the booster battery.
7. After the paver is started and running smoothly, the second person should remove the jumper cables, negative (-) jumper cable first, from the jumper vehicle battery.
8. Remove the jumper cables from the paver, Do not short the cables by allowing them to come together.

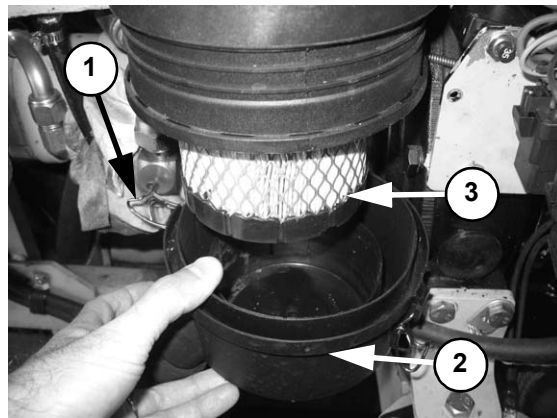
Allow time for the paver alternator to build up a charge in the battery before operating the paver or shutting off the engine.

**NOTE:** *If the battery frequently becomes discharged, check the battery for dead cell(s) and troubleshoot the electrical system for possible short circuits or damaged wire insulation.*

### Air Cleaner Element Maintenance

**IMPORTANT:** *NEVER use an air cleaner element that is damaged. Engine wear and failure can result if dirt enters the engine through a hole in the element.*

1. Open the latches (1, Fig. 40) securing the air cleaner cover (2).
2. Remove the cover and the air cleaner element (3).
3. Refer to the engine manual for air cleaner element servicing information, or replace the element with a new one.
4. Clean the inside of the air cleaner cover (2).
5. Re-install the air cleaner element (3) into the air cleaner housing.
6. Re-install the air cleaner cover (2) on the housing and secure with latches (1).



**Fig. 40 - Air Cleaner**

### Lubricate Grease Points

See "Grease Fitting Locations" on page 52 for fitting locations and details.



## SERVICE AT 50 HOURS (NEW PAVER ONLY)

The following oil and filter changes should be performed after 50 hours on a new paver.

- Engine oil and filter
- Hydraulic filter elements

After performing these changes for the first time, thereafter, perform them according to the regular maintenance schedule. Refer to “Service Every 250 Hours” on page 63.

## SERVICE EVERY 250 HOURS

Also complete the service checks in “Service Every 10 Hours or Daily” on page 58 and in “Service Every 50 Hours or Weekly” on page 60.

### Check Screed Bottom Plate

Inspect the bottom plate of the screed for wear.

### Change Hydraulic Filters

1. Perform the Mandatory Safety Shutdown Procedure on page 17.



## WARNING

**Hydraulic fluid is hot during operation. Allow the hydraulic system to cool before relieving system pressure by loosening breather cap on top of the backwall.**

2. Loosen the hydraulic breather cap (1, Fig. 41) to relieve hydraulic system pressure.

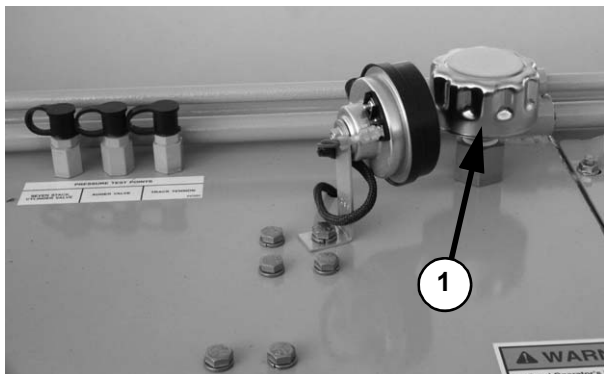


Fig. 41 - Hydraulic System Breather Cap

3. Unscrew and remove the two hydraulic filter elements (2, Fig. 42) and discard.

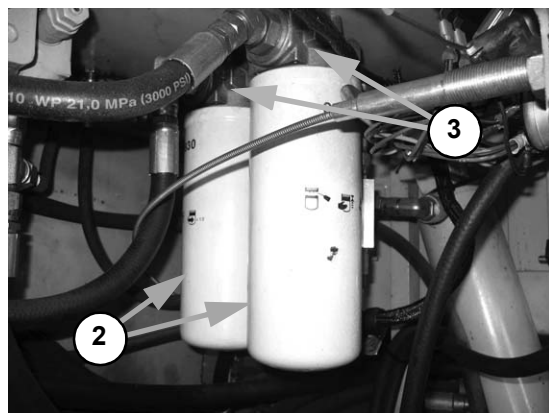


Fig. 42 - Hydraulic Filter Components

4. Wipe the sealing surface on the mounting heads (3) with a clean cloth.
5. Apply a thin coat of clean oil to the new oil filter gaskets.
6. Install the new hydraulic filter elements (2) on the filter heads and hand-tighten.

### Change Engine Oil and Filter

Replace the engine oil filter when changing the engine oil.

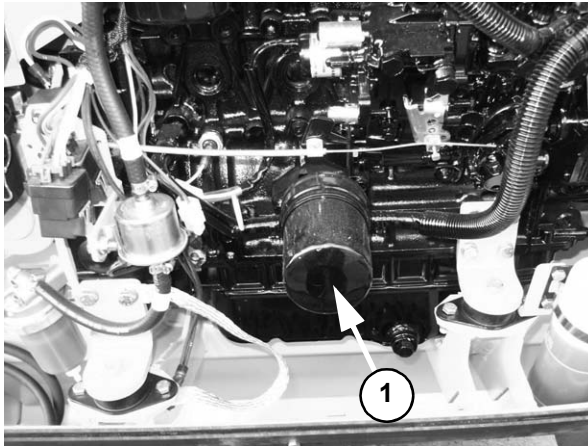
1. Run the engine until it reaches operating temperature.
2. Perform the Mandatory Safety Shutdown Procedure on page 17.
3. Prepare a waste oil container to collect the engine oil as it drains.
4. Remove the engine crankcase drain plug. Allow the oil to drain into the waste oil container.

**IMPORTANT:** *DO NOT discharge engine oil onto the ground. Contain and dispose of engine oil according to environmental laws and waste regulations.*

5. Remove all metallic filings from the drain plug. Re-install and tighten the drain plug.



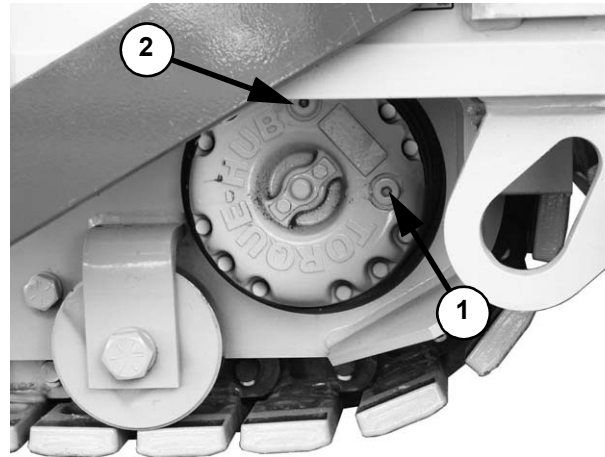
6. Remove and discard the engine oil filter (1, Fig. 43).



**Fig. 43 - Engine Oil Filter**

7. Wipe the oil filter gasket sealing area on the block with a clean cloth.
- NOTE:** Use only genuine OEM engine replacement filters.
8. Apply a thin coat of clean oil to the gasket on the new oil filter.
  9. Install and tighten the new filter on until its gasket contacts the engine sealing surface.
  10. Use a filter wrench to tighten the filter another 3/4 turn.
  11. Refill the crankcase with new oil. Follow specifications in "Lubrication" on page 51 for type and viscosity of new oil.
  12. Test run the engine at idle speed until the oil pressure lamp on the instrument module is OFF. Check the drain plug for leakage. If it is leaking, tighten the drain plug.

### Check Torque Hub Oil Level



**Fig. 44 - Fill and Check Plugs**

1. After raising the hopper, position the track so that one plug is in the 3 or 9 o'clock position and the other plug is in the 12 o'clock position.
2. Remove the check plug (1, Fig. 44) at the 3 or 9 o'clock position. If oil appears, replace the plug. If oil does not appear, remove the fill plug (2) and add oil until it flows from the check plug.
3. Replace both plugs. Repeat for the other torque hub.



**SERVICE EVERY 500 HOURS**

Along with all the service checks in this section, also complete the service checks in “Service Every 10 Hours or Daily” on page 58; in “Service Every 50 Hours or Weekly” on page 60; and in “Service Every 250 Hours” on page 63.

**Change Fuel Filter**

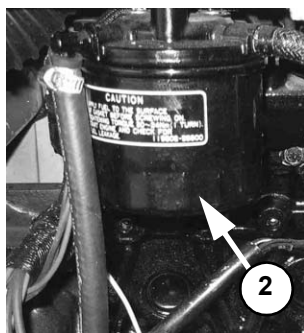
The cleanliness of available fuel, the care used in storing fuel supplies, and the operating conditions in which the paver is used may require more frequent fuel filter changing intervals.

1. Perform the Mandatory Safety Shutdown Procedure on page 17. Allow the engine to cool completely.

**WARNING**

**NEVER service the fuel system while smoking, while near an open flame, or when the engine is hot.**

2. Close the fuel shut-off valve (1, Fig. 45) on the oil/water separator.



**Fig. 45 - Fuel Shut-Off and Fuel Filter**

3. Using a filter wrench, unscrew the fuel filter (2). Hold the bottom of the fuel filter with a piece of rag to prevent the fuel from dripping. Wipe up any fuel spills completely.

**NOTE:** Fuel will flow from the filter head after the filter is removed. Contain and dispose of spilled fuel according to environmental laws and local waste disposal regulations.

4. Wipe the fuel filter gasket sealing area on filter mount with a clean cloth.
5. Apply a thin coat of oil to the gasket on a new fuel filter.
6. Install and tighten the new filter until its gasket contacts the mount sealing surface.
7. Use a filter wrench to tighten the filter another 3/4 turn.
8. Bleed the fuel system according to the engine manual.

**SERVICE EVERY 1000 HOURS OR SEASON**

Along with all the service checks in this section, also complete the service checks in “Service Every 10 Hours or Daily” on page 58; in “Service Every 50 Hours or Weekly” on page 60; in “Service Every 250 Hours” on page 63; and in “Service Every 500 Hours” on page 65.

**Change Radiator Coolant**

Drain, flush, and refill the cooling system as follows:

1. Perform the Mandatory Safety Shutdown Procedure on page 17. Allow the engine to cool completely.
2. Loosen the radiator cap to release any system pressure. Remove the cap after all pressure is bled off.

**WARNING**

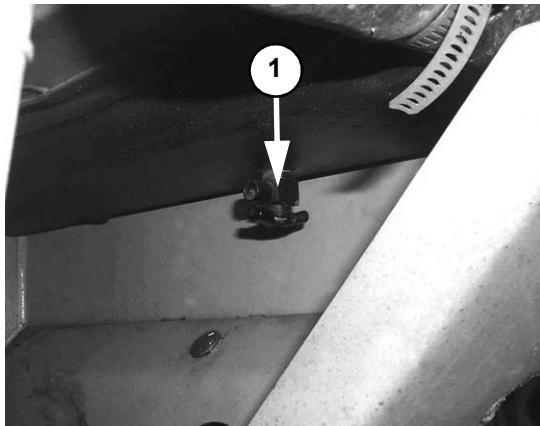
**Remove the radiator cap only when the engine is cool, or painful burns could result.**

3. Attach a hose to the radiator drain valve (1, Fig. 46), and run the hose out of the paver into a suitable collection container for the draining coolant.

**IMPORTANT:** DO NOT discharge coolant onto the ground. Contain and dispose of coolant according to environmental laws and waste regulations.



4. Remove the radiator drain plug. After all coolant is drained, flush the system with clean, fresh water.



**Fig. 46 - Radiator Drain Valve**

5. After the coolant is drained, replace and tighten the radiator drain plug. Clean the cooling fins in the radiator with water pressure or steam.

**IMPORTANT:** *When cold weather is expected, fill the cooling system with the proper coolant as directed in the engine manual.*

6. Inspect the radiator cap seal before installing it and replace it if it appears defective. The pressure cap and engine thermostat work in conjunction with each other to maintain proper engine cooling.

**NOTE:** *Check the coolant temperature indicator every minute or two after changing the coolant because air pockets may form. It may be necessary to add coolant after a short period of use due to air bleeding out of the system.*

### Replace Hydraulic Oil and Strainer

Clean all dirt and debris off of the area where the hydraulic system suction (large) hose connects to the inside wall of the hydraulic reservoir.

1. Remove the drain plug from the bottom of the reservoir. Allow all of the oil to drain out into a suitable container.

**IMPORTANT:** *DO NOT discharge hydraulic oil onto the ground. Contain and dispose of hydraulic oil according to environmental laws and waste regulations.*

2. Disconnect the suction hose and remove the sump strainer from inside of the reservoir. Inspect the sump strainer.
3. If the sump strainer shows any damage, holes, etc. it should be replaced. If it does not need to be replaced, wash it clean with an industrial solvent, dry with a towel, and coat it with fresh hydraulic oil.
4. Flush out the bottom of the reservoir with clean hydraulic oil. Install the sump strainer and drain plug and connect the suction hose.
5. Fill the reservoir with fresh hydraulic oil. Follow specifications in "Lubrication" on page 51.

**IMPORTANT:** *Hydraulic fluid and filters should be replaced any time contamination is detected.*

### Check Exhaust System

Check the muffler and pipes for leaks, holes, and loose clamps. Tighten all loose clamps and replace the pipes or muffler if they are leaking or have holes.



## ADJUSTING VARIABLE SPEED CONTROL

**IMPORTANT:** Perform the following steps only if the paver does not completely stop traveling after the variable speed control lever is placed into neutral.

### WARNING

Make all adjustments after placing the travel control levers into neutral and turning off the engine.

Closely follow the procedure in the order listed to avoid personal injury. In addition, wear safety glasses to protect your eyes and avoid leaning over the battery.

1. Place the travel and speed control levers into neutral and turn off the engine.
2. Locate cable connection (A) or (B) (Fig. 47).

**IMPORTANT:** Only perform step 4 at ONE cable connection (A) or (B). DO NOT perform step 4 at BOTH cable connections (A) and (B).

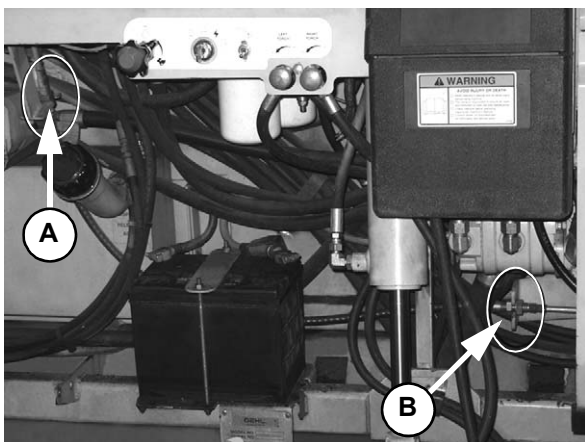


Fig. 47 - Cable Connections

3. Locate two nuts, one on each side of a bracket, as shown (Fig. 47).
4. Slightly loosen one of the nuts and tighten the other one.
5. Start the engine and run it at full throttle
6. Place the travel control levers into forward and the variable speed control lever into neutral.

7. If the paver still moves, stop the engine and repeat steps 3 through 7 as required.

## STORAGE

If the paver will not be operated for a long period of time, put it into storage by following the procedures below:

### Before Storage

1. Wash off the entire paver.
2. Lubricate all grease points as described in "Lubrication" on page 51.
3. Change engine oil. See "Check Engine Oil Level" on page 59.
4. Apply grease to all exposed hydraulic cylinder rod areas.
5. Add stabilizer to fuel per fuel supplier's recommendation.
6. Disconnect the battery cable clamps and cover or remove the battery from the paver and store it separately.
7. If the ambient temperature (at any time during the storage period) is expected to drop below freezing, make sure that the engine coolant is either completely drained from the radiator and engine block or that the amount of anti-freeze in it is adequate to keep the coolant from freezing. Refer to the engine manual for anti-freeze recommendations and quantities.

### During Storage

1. Once each month, connect the battery and check all fluid levels to make sure that they are at the proper level before starting the engine.
2. Start the engine, run it until it warms up, and then move the machine a short distance to help lubricate the internal parts.
3. Run the engine until the battery charges and then shut it off.

**IMPORTANT:** If operating the hydraulic cylinders, wipe the protective grease and any dirt from the hydraulic cylinder rods before starting the engine.



**After Storage**

After removing the paver from storage and before operating it, perform the following:

1. Refer to the engine manual for proper engine operation procedures following storage.
2. Change the engine oil and filter to remove condensation and any other contamination.
3. Wipe grease off the hydraulic cylinder rods.
4. Lubricate all grease fittings.
5. Read the Safety chapter on page 17.
6. Follow starting and warm-up procedures as directed in "First Time Operation" on page 42.



# Chapter 11

## TROUBLESHOOTING

This troubleshooting guide lists possible causes of problems and the corrective actions required to solve the problems.

If a problem occurs, do not overlook simple causes. For example, an engine failing to start could be caused by an empty fuel tank. After a mechanical

failure has been corrected, be sure to locate the root cause of the problem.

**IMPORTANT:** *Do not attempt to service or repair major components unless authorized to do so by your Gehl dealer. Unauthorized repairs may void the Warranty.*

### ENGINE

Problem	Possible Cause	Corrective Action
Engine will not turn over	Fuse in control module is blown	Replace fuse
	Faulty relay	Replace relay
	Circuit breaker is tripped	Reset circuit breaker
	Starter motor defective	Repair/replace starter
	Faulty wiring connections	Repair wiring connections
Starter motor does not have enough power to turn the engine over	Battery defective	Charge battery
	Starter motor defective	Repair/replace starter
	Wiring connections are broken or loose	Repair/replace and/or tighten connections
Engine cranks over but will not start	Fuel tank is empty	Add fuel
	Engine crankcase oil is too heavy	Drain and replace crankcase oil with proper viscosity oil
	Engine is cold	Preheat engine
Engine cuts out abruptly	Fuel tank is empty	Add fuel
	Fuel filter is clogged	Clean/replace fuel filter
	Air is trapped in the fuel system	Bleed the fuel system. Refer to the engine manual
Engine runs rough	Fuel filter is clogged	Clean/replace fuel filter
	Air is trapped in the fuel system	Bleed the fuel system. Refer to the engine manual.
	Air cleaner is clogged	Clean/replace air cleaner
Engine overheats	Low radiator coolant	Add coolant
	Radiator clogged	Clean radiator
	Low crankcase oil level	Add oil as required
	Exhaust is restricted	After engine cools, remove restriction



**GENERAL OPERATION PROBLEM**

<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Engine operation erratic	See "Engine" on page 69	
Paver difficult to steer (normal lead off to one side may be as much as 1 to 2 ft. in 100 ft. of travel under low or no load conditions)	One forward/reverse lever not fully engaged	Engage lever
	Linkage for dual controls binding	Free up linkage
	Tracks not properly aligned	Align tracks
Soft or uneven terrain may cause lead off, which may indicate a steering problem (operating conditions cause the lead off to change)	Internal leakage in modular steer valve	Replace seals
Paver slowing down or excessive power loss (travel speed is 0-130 FPM)	Engine not running at rated speed	Disassemble drive valve and clean load checks
		Check fuel filter
	Failure of hydraulic system component (filter, motor, pump, etc.)	See "Hydraulic Pump and Motors System" on page 73
Hydraulic controls stall too freely or do not operate under a load	Hydraulic system leaks	Locate leaks and repair
		Repair faulty component
		See "Hydraulic Pump and Motors System" on page 73
Screed not hot enough	Ports at end of screed plugged	Clear ports
	Outside air too cold and/or windy	Use propane heater while paving

**PAVER-RELATED MAT PROBLEMS**

<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Wavy surface (ripples)	1. Fluctuating head of materials	Maintain full head of material
	2. Finisher speed too fast	Reduce speed with the fast-slow lever
	3. Excessive play in screed mechanical connection	Replace attaching bolts
	4. Screed riding on lift cylinder	Lower lift cylinder completely
Wavy surface (long waves)	See Causes 1, 3, 4	
	5. Overcorrecting thickness control screws	Make moderate corrections as seldom as possible
	6. Running hopper empty between loads	Stop paver before head of material reaches screed area
	7. Sitting long period between loads	Empty hopper completely if waiting period lets asphalt cool
Tearing of mat (full width)	See Causes 2	
	8. Screed plates worn or warped	Replace wear plate
	9. Cold screed	Check ports in screed
Tearing of mat (center streak)	See Causes 8, 9	
	10. Too little lead crown in screed	Increase lead crown



Problem	Possible Cause	Corrective Action
Tearing of mat (outside streak)	See Causes 8, 9	
	11. Too much lead crown in screed	Decrease lead crown
	12. Screed extensions adjusted incorrectly	Raise extension leading edge
Mat texture not uniform	See Causes 1, 2, 4, 7-9, 12	
Screed marks	See Causes 3	
Screed not responding to correction	See Causes 2-4	
Poor pre-compaction	See Causes 2, 4	
Poor longitudinal joint	13. Improper joint overlap	Limit overlap to 2" maximum
Poor transverse joint	See Causes 3, 4	
	14. Incorrect nulling of screed	Increase "pitch" of screed before starting

## MATERIAL-DELIVERY, COMPACTION-RELATED MAT PROBLEMS

Problem	Possible Cause	Corrective Action
Wavy surface (short waves - ripples)	1. Improper base preparation	Review base installation
	2. Improper rolling operation	Decrease speed
	3. Improper mix design (aggregate)	
	4. Improper mix design (asphalt)	
	5. Mix segregation	Asphalt plant mixing too long
	6. Variation of mix temperature	Asphalt plant burners not heating consistently
Wavy surface (long waves)	See Causes 1, 5, 6	
	7. Trucks bumping finisher	Stop truck short of paver and drive paver to truck
	8. Truck holding brakes	Driver must apply brakes only as required for the truck to stay "in Paver"
	9. Reversing or turning rollers too quickly	Cycle must be slow but deliberate
	10. Parking roller on hot mat	Move to cooler surface before parking Park at 45° angle
Tearing of mat (full width)	See Causes 3-7	
	11. Improper mat thickness	Check that the mat thickness is twice the size of the largest aggregate
	12. Cold mix temperature	Check with asphalt facility for hotter asphalt mix
Mat texture (center or outside streaks)	See Causes 12	
Mat texture (non uniform)	See Causes 1, 3-6, 11, 12	
Screed marks	See Causes 7, 8	
Screed not responding to correction	See Causes 6, 11, 12	
Auger shadows	See Causes 3, 4, 5	



Problem	Possible Cause	Corrective Action
Poor pre-compaction	See Causes 1, 11, 12	
Poor longitudinal or transverse joint	See Causes 2, 12	
Transverse cracking (checking)	See Causes 1-4, 6	
Mat shoving under roller	See Causes 1-4, 6, 9, 13	
Bleeding or fat spots in mat	See Cause 3, 4, 6, 13	
Roller marks	See Causes 1, 2, 6, 9, 10	
Poor mix compaction	See Causes 1-4, 6, 9, 10, 12, 13	

## DRIVE AND MAIN CONTROL VALVES

Problem	Possible Cause	Corrective Action
Incapable of maintaining the load	Internal oil leak at the spool	Replace entire valve housing and spool
	Oil leaking at relief valve port	Disassemble and clean or replace relief valve
	Load check poppet or seat damaged (located inside sections)	Replace poppet and seat assembly
Spool sticking or does not move	Hydraulic oil contaminated	Drain oil, replace with fresh oil
		Replace filters
	Valve clogged with dirt	Remove dirt and clean assembly
	Inside of plunger cap filled with oil	Replace seal on end of cap
	Restriction at spool internal stop	Remove restriction
		Replace entire valve section and spool assembly
	Pressure too high	Using pressure gauge, adjust pressure
	Lever or link bent	Remove and replace lever or link
	Spool bent	Replace entire valve assembly
	Return spring failing	Replace spring
	Return spring or cap misaligned	Loosen, align and tighten spring or cap
	System oil temperature distribution not uniform	Allow sufficient warm-up for entire system
Oil leaking at seals	Paint sticking at seal	Remove and clean the seal
	Back-pressure in valve	Replace hydraulic oil filter
	Dirt in seal	Remove and clean the seal
	Seal plate has loosened	Replace valve housing as assembly
	Seal broken or damaged	Remove and replace seal
Controls feel heavy	Foreign matter in control valve spool	Clean control valve
	Valve spool sticking	Replace entire valve housing
	Control linkage lacking lubrication	Properly lubricate linkage



**HYDRAULIC PUMP AND MOTORS SYSTEM**

<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
System will not operate in either direction	1. Oil supply low	Check oil level and fill
	2. Oil filters clogged	Replace filter
	3. Oil too heavy	Use proper viscosity oil
	4. Control linkage misadjusted	Check to see if control linkage is binding or unfastened
	5. Low charge pressure	See corrective action for Causes 6-9.
	6. Relief valve stuck open	Remove, clean or replace
	7. Damaged check valve	Dissassemble and check if valve is faulty or damaged
System is loud	8. Air in system	Low oil level in reservoir
	9. Loose suction line	Tighten fittings and/or hose
	10. Clogged suction filter	Replace suction filter
	11. Internal pump or motor damage	Dissassemble, inspect, repair, or replace
Slow response to acceleration or deceleration	See cause 8	See corrective action for Causes 1-3, 8, and 9
	See cause 11	See corrective action for Causes 1-3, 9, and 11
	12. Low charge pressure	See corrective action for Causes 6, 7, and 9
	13. Relief valve dirty or damaged	Remove, clean, or replace
Oil leaking from pump or motor	14. Defective seal	Replace seal and/or complete assembly

**HYDRAULIC CYLINDERS**

<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Insufficient hydraulic cylinder power	Relief valve pressure setting decreased	Readjust valve pressure setting
	Cylinder internal oil leakage	Replace seals
	Cylinder piston or seals defective	Replace piston or seals
	Control valve internal oil leakage	Replace entire valve housing
Hydraulic cylinder external oil leakage	Cylinder seals defective	Replace seals
	Cylinder rod damaged	Replace rod
Piston does not move smoothly	Oil temperature is abnormally high	Lower the oil temperature
	Air being taken into system	Replenish oil and tighten suction connections
	Seals defective	Replace seals



**ELECTRICAL SYSTEM**

<b>Problem</b>	<b>Possible Cause</b>	<b>Corrective Action</b>
Starter will not turn	Ignition is in OFF or RUN position	Turn ignition to START position
	Speed control not in OFF position	Move speed control to NEUTRAL position
	Faulty wiring	Troubleshoot circuit and repair
	Faulty terminations	
	Fuse open	
	Circuit breaker tripped	Reset circuit breaker
	Faulty starter switch	Replace switch
	Battery not charged	Recharge battery
Battery discharges and/or will not recharge	Terminals and/or cables are loose or corroded	Clean terminals and/or cables
	Battery defective	Retighten or replace battery
	Alternator defective	Contact authorized service center and have them check alternator
Horn does not function	Fuse blown	Replace fuse
Charge indicator does not activate before engine starts	Alternator defective	Replace alternator
	Battery not charged	Recharge battery



# Chapter 12

## DECAL LOCATIONS

### GENERAL INFORMATION

Decal location information is provided to assist in the proper selection and application of new decals, in the event the original decals become damaged or the machine is repainted. Refer to the listing for the illustration reference number, part number, description and quantity of each decal provided in the kit. Refer to the illustrations for appropriate replacement locations.

To ensure proper selection of the correct replacement decals, compare all of the various close-up location drawings to the machine before starting to refinish the unit. Then circle each decal shown (applicable to the machine) while checking off its part number in the listing. After verifying all the decals needed for replacement, place any extra unnecessary decals aside for disposal. If there is a decal on a part that is to be replaced, be sure that the replacement part has the decal applied to it.

**NOTE:** Refer to the *SAFETY* chapter of this *Operator's Manual* for the specific information provided on the various safety decals furnished in the decal kit.

### NEW DECAL APPLICATION

Surfaces **MUST** be free from dirt, dust, grease and other foreign material before applying the new decal. To apply, remove the smaller portion of the decal backing paper and apply this part of the exposed adhesive backing to the clean surface while maintaining proper position and alignment. Slowly peel off the other portion of the backing paper while applying hand pressure to smooth out the decal surface.



## CAUTION

**ALWAYS** follow safety precautions on decals. Replace the decals if they are damaged, or if the unit is repainted. If repainting, **BE SURE** all applicable decals are affixed to the unit.

#### PAINT NOTICE

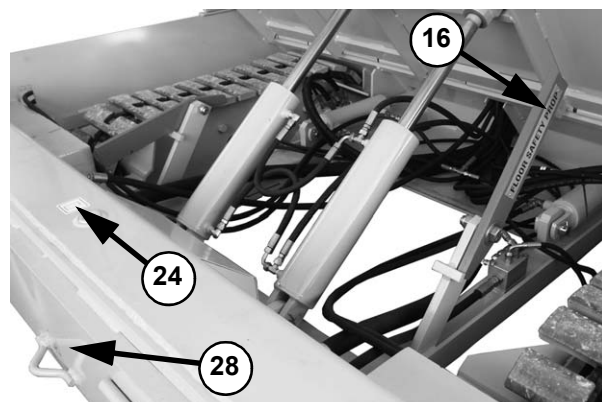
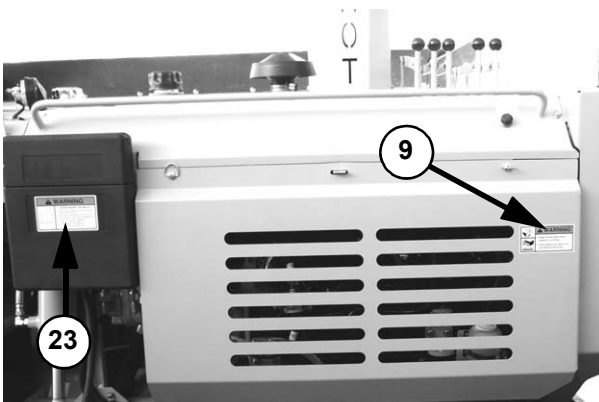
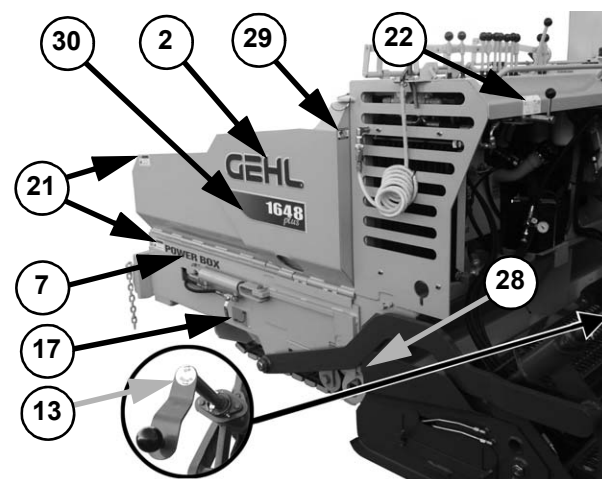
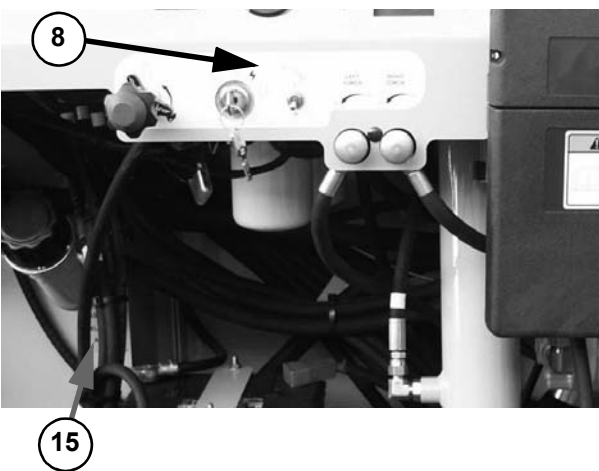
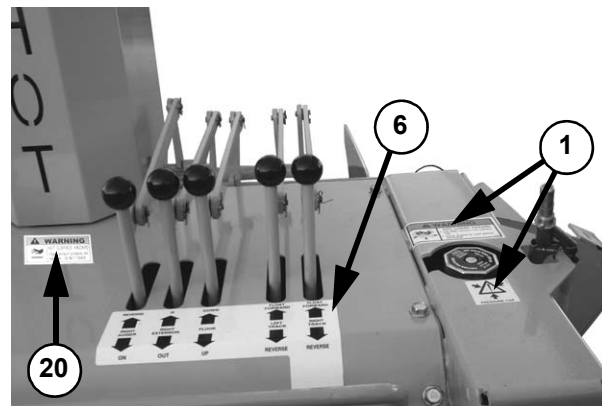
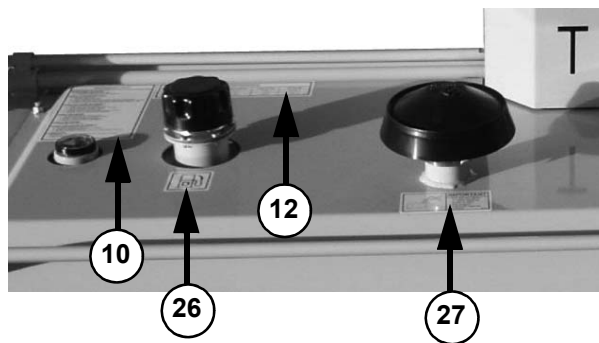
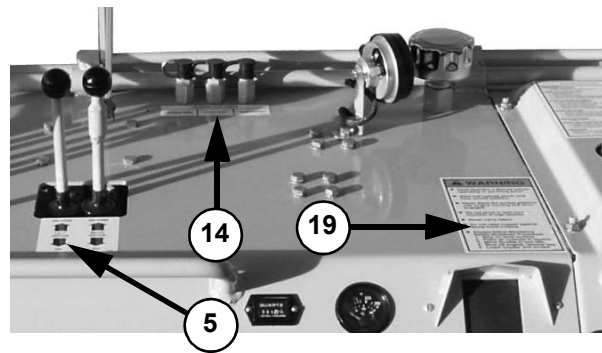
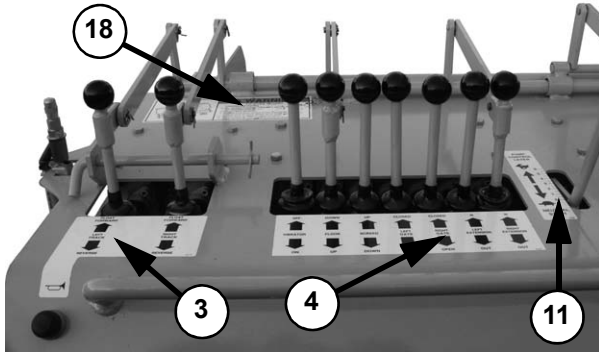
Use this list to order paint for refinishing:

167788	4 qts. Construction Yellow (GEHL)
167758	4 qts. Charcoal Gray (GEHL)
167789	6 (12.8 oz. Spray Cans) Yellow (GEHL)
167760	6 (12.8 oz. Spray Cans) Charcoal Gray (GEHL)

The decal kit for the model 1648 Plus Paver is listed below:

Ref. No.	Part No.	Description & Quantity
	176063	Decal Kit - 1648 Plus
1	072798	WARNING - Coolant Under Pressure
2	184306	Gehl 4.75 X 20.16 (2 Places)
3	101115	Drive Control
4	101116	7 Stack Valve
5	101118	Auger Control
6	101119	5 Position Rt
7	101481	"Powerbox" gray (2 Places)
8	175774	Gauge Panel
9	L65924	DANGER - Rotating Components
10	175862	Maintenance Chart
11	175806	Pump Control
12	175805	Filter Reference
13	P480087	Depth Adj (2 Places)
14	P473204	1648 Plus Pressure Test
15	P471816	Asphalt Release
16	P210200	Safety Prop (2 Places)
17	P207300	On/Off (2 Places)
18	P204101	WARNING - Tip-Over Hazard
19	P204100	WARNING
20	L65942	WARNING - Hot Surface
21	L65927	WARNING - Pinch Point (7 Places)
22	101986	Steer Valve
23	137628	WARNING - Read Manual
24	137632	Hydraulic Oil
26	137634	Diesel Fuel
27	137660	Ether
28	137661	Tie-Down (3 Places)
29	140516	Flag
30	175900	1648 Plus Right
	175932	1648 Plus Left (not shown)







# INDEX

## C

Checklists .....	13
Controls/Components Identification .....	7

## D

Decal Locations .....	75
Drive System Specifications .....	10

## H

Hydraulic System .....	10
------------------------	----

## I

Index .....	77
Indicator and Operation Symbols .....	ii
Indicators and Controls .....	25
Introduction .....	5

## L

Lubrication .....	51
-------------------	----

## M

Maintenance .....	37
Model/Serial Number Information .....	6

## O

Operation .....	41
-----------------	----

## P

Performance Specifications .....	11
----------------------------------	----

## S

Safety .....	17
Schematics .....	53
Service Capacities .....	11
Service, Adjustments and Storage .....	57
Specifications .....	9

## T

Torque Specifications .....	79
Troubleshooting .....	69









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**NOTES**



# TORQUE SPECIFICATIONS

Use these torque values when tightening hardware (excluding locknuts, and self-tapping, thread-forming, and sheet metal screws) unless otherwise specified.

UNIFIED NATIONAL THREAD	GRADE 2 		GRADE 5 		GRADE 8 	
	DRY	LUBED	DRY	LUBED	DRY	LUBED
8-32	19*	14*	30*	22*	41*	31*
8-36	20*	15*	31*	23*	43*	32*
10-24	27*	21*	43*	32*	60*	45*
10-32	31*	23*	49*	36*	68*	51*
1/4-20	66*	50*	9	75*	12	9
1/4-28	76*	56*	10	86*	14	10
5/16-18	11	9	17	13	25	18
5/16-24	12	9	19	14	25	20
3/8-16	20	15	30	23	45	35
3/8-24	23	17	35	25	50	35
7/16-14	32	24	50	35	70	55
7/16-20	36	27	55	40	80	60
1/2-13	50	35	75	55	110	80
1/2-20	55	40	90	65	120	90
9/16-12	70	55	110	80	150	110
9/16-18	80	60	120	90	170	130
5/8-11	100	75	150	110	220	170
5/8-18	110	85	180	130	240	180
3/4-10	175	130	260	200	380	280
3/4-16	200	150	300	220	420	320
7/8-9	170	125	430	320	600	460
7/8-14	180	140	470	360	660	500
1-8	250	190	640	480	900	680
1-12	270	210	710	530	1000	740
METRIC COARSE THREAD	GRADE 8.8 		GRADE 10.9 		GRADE 12.9 	
	DRY	LUBED	DRY	LUBED	DRY	LUBED
M6-1	8	6	11	8	13.5	10
M8-1.25	19	14	27	20	32.5	24
M10-1.5	37.5	28	53	39	64	47
M12-1.75	65	48	91.5	67.5	111.5	82
M14-2	103.5	76.5	145.5	108	176.5	131
M16-2	158.5	117.5	223.5	165.5	271	200

\*All torque values are in ft.-lbs. except those marked with an \*, which are in lbs.  
For metric torque value (N·m), multiply ft.-lbs. value by 1.355, or the in.-lbs. value by 0.113.





# WARNING



**THIS OPERATOR'S MANUAL IS  
PROVIDED FOR OPERATOR USE**

**DO NOT REMOVE  
FROM THIS MACHINE**

**Do not start, operate or work on the machine until you carefully read and thoroughly understand the contents of this Operator's Manual.**

**Failure to follow safety, operating and maintenance instructions can result in serious injury to the operator or bystanders, poor operation, and costly breakdowns.**

**If you have any questions on proper operation, adjustment or maintenance of the machine, contact your dealer or the Gehl Company Service Department before starting or continuing operation.**

**California Proposition 65 Warnings:**

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

Battery post, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects and other reproductive harm. **Wash hands after handling battery.**

# GEHL®

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