HL 360 LOADER

OPERATOR'S MANUAL

Form No.
902369

GEHL® COMPANY

Warranty

GEHL® COMPANY

HL360
SKID STEER LOADER & ATTACHMENTS

Gehl Company (Incorporated), hereinafter referred to as GEHL, as manufacturer of quality machinery since 1859, warrants new GEHL machinery and/or attachments at the time of delivery to the original purchaser, to be free from defects in material and workmanship if properly set up and operated in accordance with the recommendations set forth in the GEHL Operators Manual.

GEHL's liability for any defect with respect to accepted goods shall be limited to repairing the goods at an authorized dealer or other GEHL designated location, or replacing them, as GEHL shall elect. The above shall be in accordance with GEHL warranty adjustment policies. GEHL's obligation shall terminate twelve (12) months/or 500 hours (whichever occurs first) after the delivery of the goods to the original purchaser.

This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside the GEHL factory or authorized GEHL dealership or in any way so as in GEHL's judgement, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident, nor to any machine or attachment which shall not have been operated in accordance with GEHL's printed instructions or beyond the Company recommended machine rated capacity.

This warranty shall not be applicable to items which are subject to the warranties of their respective manufacturers. Such items would include but would not be limited to engines, clutches, universal joints, batteries, hydraulic components, bearings, tires, belts and other trade accessories.

EXCLUSION OF WARRANTIES

Except as otherwise expressly stated herein, GEHL makes no representation or warranty of any kind, expressed or implied, AND MAKES NO WARRANTY OF MERCHANTABILITY IN RESPECT TO ITS MACHINERY AND/OR ATTACHMENTS AND MAKES NO WARRANTY THAT ITS MACHINERY AND/OR ATTACHMENTS ARE FIT FOR ANY PARTICULAR PURPOSE. GEHL shall not be liable for incidental or consequential damages for any breach of warranty, including but not limited to inconvenience, rental or replacement equipment, loss of profits or other commercial loss. GEHL shall not be liable for, and the buyer assumes all liability for, all personal injury and property damage resulting from the handling, possession or use of the goods by the buyer.

No agent, employee or representative of GEHL has any authority to bind GEHL to any affirmation, representation or warranty concerning its machinery and/or attachments except as specifically set forth herein.

INTRODUCTION

Mr. Operator:

Your decision to purchase Gehl equipment is a wise one. You have made a sound and lasting investment. Gehl Company has been building quality equipment for well over a century. Our entire manufacturing and marketing philosophy is built upon quality. The quality built into Gehl products assure you the performance and reliability you need to make a profit. Your authorized Gehl Skid Steer Loader dealer is equipped to service your Gehl equipment. They maintain genuine Gehl service parts.

This manual was written for the operator so that he can find the information which he needs to know to correctly prepare, adjust, service and understand this unit.

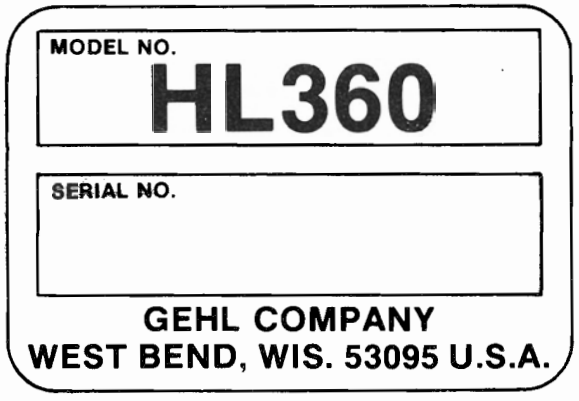
The operator should read this manual thoroughly so that the important facts about this unit and the contents of the manual are known. The safety of the operator and the reliability and performance of this unit will be determined by the knowledge of the contents of this manual.

Each section of this manual is clearly identified and is divided into smaller sections. The Table of Contents and Index can be used to find the information that is needed.

All service parts should be obtained from or ordered through your Gehl dealer. Give complete information when ordering service parts. The model number and serial number should always be given. Record numbers in the space provided as a handy record for quick reference.

Numbers for this unit are stamped on a plate which is located on the left Riser below the Cross Frame Support.

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.



"Right" and "Left" are determined from a position sitting on the seat and looking forward. From this position, the Traction T-bar is the left-hand Control and the Lift/Tilt T-bar is the right-hand Control.

This symbol used throughout this manual, means to read carefully and understand the message that follows.

WARNING: Some photographs, used herein, may show Door(s), Guard(s),or Shield(s) opened/removed. BE SURE that all Door(s), Guard(s) or Shield(s) are in their proper position, BEFORE machine is operated.

TABLE OF CONTENTS

SPECIFICATIONS

Model & Engine ..... HL360 with Onan 2 Cylinder (Gasoline) Engine, (SAE) 16 hp (12 kw) @ 3600 RPM, 27.5 ft-lb (3.8 kg-m) Torque @ 2400 RPM

Hydraulic System:
- Dual T-Bar Control ..... Traction & Load Arms
- Tandem Traction Pump ..... 9 gallons per minute (.57 liter per second)
- System Pump ..... 7.5 gallons per minute (.47 liter per second)
- Filtration ..... 10 microns
- Reservoir ..... 5 gallons (19 liters)

Electrical System:
- Battery ..... 12 volt
- Starter ..... 12 volt
- Alternator ..... 15 ampere Flywheel

Capacities:
- (SAE) Operating ..... 550 lb (250 kg)
- (IEMC) Tip-up ..... 1100 lb (500 kg)
- Hydraulic Lift ..... 1110+ lb (500+ kg)
- Gasoline Tank ..... 6 gallons (22.7 liters)

Operating Weight -
- Less Attachment ..... 1582 lb (720 kg)

Tires .. Standard 12 x 5.70 4-Ply on 12.00 x 5 Wheels
Optional 23 x 8.50-12 4-Ply Flotation on 12.00 x 7 Wheels

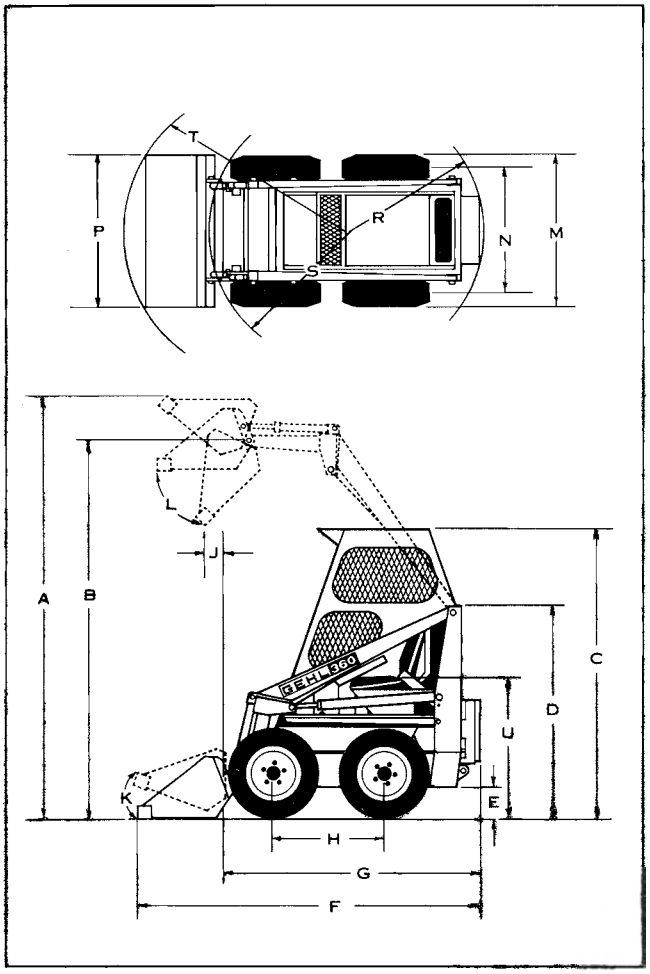
Travel Speed ..... 0 to 4 mph (6.4 kmh)

Engine Specifications ..... Refer to Engine Manual Provided

Attachments:

	Struck ft³ (m³)	Heaped ft³ (m³)
36″ Utility Bucket	3.6 (0.1)	4.6 (0.13)
42″ Utility Bucket	4.3 (0.12)	5.4 (0.15)
42″ Light Material Bucket	7.7 (0.215)	9.8 (0.275)
48″ Light Material Bucket	8.8 (0.245)	11.4 (0.32)
60″ Light Material Bucket	11.0 (0.31)	14.5 (0.41)
36″ Manure Fork		
42″ Manure Fork		
36″ Pallet Fork		

Accessory ..... Weld-on Grapple Attachment



KEY TO ILLUSTRATION
Dimensions in Inches (Millimeters)

A. Overall Maximum Height - Bucket* Fully Raised 120 (3048)
B. Height to Hinge Pin - Bucket* Fully Raised 92 (2336)
C. Overall Height to Top of Overhead Guard 75 (1905)
D. Overall Height Less Overhead Guard 56.5 (1435)
E. Ground Clearance 5.75 (146)
F. Overall Length With Bucket* 90 (2286)
G. Overall Length Less Bucket* 67.25 (1708)
H. Wheel Base 29 (736.5)
J. Dump Reach 23.75 (603)
K. Rollback at Ground Level ..... 16°
L. Dump Angle ..... 30°
M. Overall Width
  With Standard Tires 35.75 (908)
  With Flotation Tires 40.75 (1035)
N. Tread Width
  With Standard Tires 29.75 (755.5)
  With Flotation Tires 32.5 (825.5)
P. Bucket* Width 42 (1067)
R. Clearance Circle - Rear 43.25 (1098.5)
S. Clearance Circle - Front Less Bucket* 29.5 (749.5)
T. Clearance Circle - Front With Bucket* 54 (1371.5)
U. Height to Top of Seat Cushion 36.5 (927)

*Value based on measurement with 42″ Utility Bucket attached and optional Flotation Tires installed.

PRE-DELIVERY CHECK LIST

The following Check List is an important reminder of valuable information and inspections which **MUST** be made before delivering the unit to the Customer. Check off each item after prescribed action is taken.

Check that:

____ Unit is **NOT** damaged in shipment. Check for such things as dents and loose or missing parts; correct or replace components as required.
____ Fuel Tank, Fuel Lines and Fittings are **NOT** damaged, leaking or loosely secured.
____ Battery is securely mounted and **NOT** cracked. Also check that Cable connections are tight. Also check Electrolyte level and strength (in domestic shipment, Battery is filled at the factory).
____ Lift and Tilt Cylinders are **NOT** damaged, leaking or loosely attached.
____ Hydraulic Pump and Motor are **NOT** damaged, leaking or loosely attached.
____ Hydraulic Hoses and Fittings are **NOT** damaged, leaking or loosely attached.
____ Oil Filter is **NOT** damaged, leaking or loosely attached.
____ Wheels are securely attached and Tires are properly inflated.
____ Entire Loader is properly lubricated and that Hydraulic System, Engine Crankcase and Hydrostatic Transmission are filled to the proper oil levels.
____ All Guards, Shields and Decals are in place and properly attached.
____ Serial number for the unit is recorded in the spaces provided on this page and page 3.

Start the Loader engine and test-run the unit while checking that proper operation is exhibited by all controls.

Check that:

____ Traction T-bar and Lift/Tilt T-bar operate properly and are **NOT** damaged or binding.

I acknowledge that pre-delivery service was performed on this unit as outlined above.

_____
Dealer's Name

By _____
Dealer's Set-up Man's Signature

Date Set-up _____

Serial Number _____

DELIVERY CHECK LIST

The following Check List 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.

____ Give the Customer his Operator's Manual. Instruct him to be sure to read and completely understand its contents **BEFORE** attempting to operate the unit.
____ Explain and review with him the **WARNING** section of this Manual.
____ Explain and review with him the Controls & Safety Equipment section of this Manual.
____ Explain that regular lubrication is required for continued proper operation and long life. Review with him the Lubrication section of this manual.
____ Explain and review with him the Service section of this manual.
____ Explain the importance of his thorough understanding of and familiarity with the Loader Controls **BEFORE** attempting to operate the Loader.
____ Explain that he **MUST** consult the Engine Operator's Manual (provided) for related specifications, operation and maintenance instructions.
____ Complete Owner's Registration Card.

I acknowledge that above points were reviewed with me at the time of delivery.

_____
Customer's Signature

Date Delivered _____

(Dealer's File Copy)

(Remove Dealer's File Copy At Perforation)

PRE-DELIVERY CHECK LIST

The following Check List is an important reminder of valuable information and inspections which **MUST** be made before delivering the unit to the Customer. Check off each item after prescribed action is taken.

Check that:

____ Unit is **NOT** damaged in shipment. Check for such things as dents and loose or missing parts; correct or replace components as required.
____ Fuel Tank, Fuel Lines and Fittings are **NOT** damaged, leaking or loosely secured.
____ Battery is securely mounted and **NOT** cracked. Also check that Cable connections are tight. Also check Electrolyte level and strength (in domestic shipment, Battery is filled at the factory).
____ Lift and Tilt Cylinders are **NOT** damaged, leaking or loosely attached.
____ Hydraulic Pump and Motor are **NOT** damaged, leaking or loosely attached.
____ Hydraulic Hoses and Fittings are **NOT** damaged, leaking or loosely attached.
____ Oil Filter is **NOT** damaged, leaking or loosely attached.
____ Wheels are securely attached and Tires are properly inflated.
____ Entire Loader is properly lubricated and that Hydraulic System, Engine Crankcase and Hydrostatic Transmission are filled to the proper oil levels.
____ All Guards, Shields and Decals are in place and properly attached.
____ Serial number for the unit is recorded in the spaces provided on this page and page 3.

Start the Loader engine and test-run the unit while checking that proper operation is exhibited by all controls.

Check that:

____ Traction T-bar and Lift/Tilt T-bar operate properly and are **NOT** damaged or binding.

I acknowledge that pre-delivery service was performed on this unit as outlined above.

_____
Dealer's Name

By _____
Dealer's Set-up Man's Signature

Date Set-up _____

Serial Number _____

DELIVERY CHECK LIST

The following Check List 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.

____ Give the Customer his Operator's Manual. Instruct him to be sure to read and completely understand its contents **BEFORE** attempting to operate the unit.
____ Explain and review with him the **WARNING** section of this Manual.
____ Explain and review with him the Controls & Safety Equipment section of this Manual.
____ Explain that regular lubrication is required for continued proper operation and long life. Review with him the Lubrication section of this manual.
____ Explain and review with him the Service section of this manual.
____ Explain the importance of his thorough understanding of and familiarity with the Loader Controls **BEFORE** attempting to operate the Loader.
____ Explain that he **MUST** consult the Engine Operator's Manual (provided) for related specifications, operation and maintenance instructions.
____ Complete Owner's Registration Card.

I acknowledge that above points were reviewed with me at the time of delivery.

_____
Customer's Signature

Date Delivered _____

(Note: Pages 5 and 6 Have Been Removed at Perforation)

WARNING

BEFORE YOU ATTEMPT TO OPERATE THIS EQUIPMENT, READ AND STUDY THE FOLLOWING SAFETY INFORMATION. IN ADDITION, MAKE SURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT, WHETHER FAMILY MEMBER OR EMPLOYEE, IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.

Gehl Company always takes the operator and his safety into consideration when designing farm machinery and guards exposed moving parts for his protection; however, some areas cannot be guarded or shielded in order to assure proper operation. In addition, the operator's manual and decals on the machine itself warn you of further danger and should be read and observed closely.

This safety alert symbol  means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** It stresses an attitude of **"HEADS UP"** for safety and can be found throughout this operator's manual and on the unit itself.

Remember: The careful operator is the best operator. Most accidents are caused by human error. Certain precautions must be observed to prevent the possibility of injury or damage.

Please read the rules listed below for safe operation **BEFORE** you operate this equipment.

ALWAYS sit in the Seat and fasten your Seat Belt BEFORE starting the Loader Engine!

Read and observe ALL Warnings BEFORE operating this machine!

Know how to STOP the Loader BEFORE starting it!

Keep ALL Guards, Shields and Decals in place and properly secured!

Rest the Attachment (Bucket) on the ground when Loader is NOT in use!

ALWAYS use Lift Cylinder Lock when Load Arms are raised for servicing the Loader and remove Ignition Key!

When operating on inclines or ramps, ALWAYS travel with the heavier end of the Loader in the same direction as the top of the incline!

Travel slowly over rough terrain and NEVER make abrupt stops, quick starts or sharp turns with the Load Arms raised.

ALWAYS carry the load low, especially on side hills, inclines and/or when approaching an excavation!

Carefully inspect Hydraulic Hoses and connections on a regular routine basis; escaping fluid under pressure can cause serious injury!

ALWAYS wear a hard hat when operating the Skid Steer Loader!

Refuel in a safe place away from open flames and potential sparks, NEVER refuel the Loader when the engine is hot! NEVER refuel with Loader engine running!

The Hydrostatic Drive of a Skid Steer Loader operates with Oil Flow. When the Pump is NOT operating the Loader can move, especially if stopped on an incline. ALWAYS PARK Loader on level ground with the point of the Attachment in contact with the ground or park across the incline!

DO NOT attempt to clean, adjust, lubricate or service the Loader when any part is moving!

DO NOT mount or dismount the Loader with the engine running!

DO NOT allow minors to operate or be near the Loader unless properly supervised; Skid Steer Loaders are single Seat NO passenger machines!

DO NOT operate the Loader in a closed or confined area; if necessary, adequate ventillation MUST be provided!

DO NOT leave the Loader with the Load Arms raised unless the Lift Cylinder Lock is positively engaged!

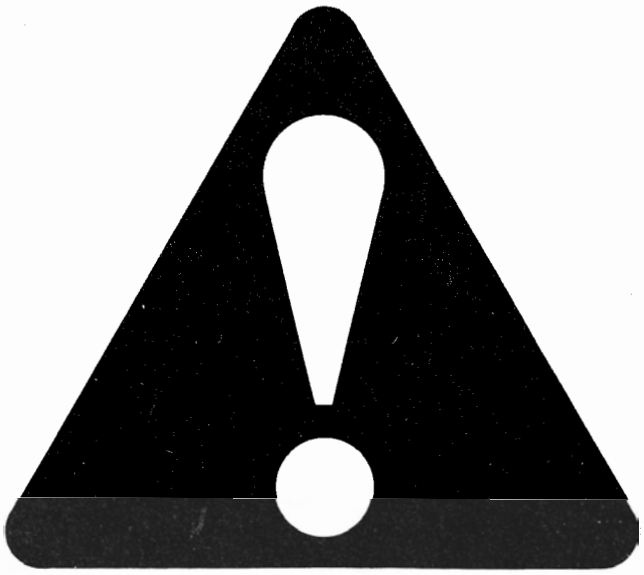
DO NOT push the Lift/Tilt T-Bar all the way forward (Into "Float" position) with the Bucket or Fork loaded and raised as this will cause the Load Arms to drop!

DO NOT extend your feet beyond the front edge of the Operator's Platform!

DO NOT drive too close to an excavation or ditch! BE SURE surrounding ground has adequate strength to support weight of the Loader and load!

DO NOT "HOT ROD" when starting, stopping, turning or reversing Loader directions!

DO NOT exceed Loader rated operating capacity!



Gehl Company, in compliance with the Farm and Industrial Equipment Institute and the American Society of Agricultural Engineers, has adopted

as a **SAFETY ALERT SYMBOL.** When you see this symbol, in this manual or on the unit itself, you are reminded to

BE ALERT! Your Safety is involved.

CONTROLS & SAFETY EQUIPMENT

Whenever and wherever possible and without affecting machine operation, Guards and Shields have been used on this equipment to protect potentially hazardous areas. In many places, Decals are also provided to warn of potential dangers as well as to display special operating procedures.

WARNING: Read and observe ALL Warnings on the unit BEFORE operating it. DO NOT operate this equipment unless ALL factory installed Guards and Shields are properly secured in place.

T-BARS (Fig. 1)

WARNING: BE SURE to Fasten and Adjust Seat Belts, to disengage the Hydrostatic Pump Drive Belt Idler and to return both T-bar Controls to their "Neutral" positions, BEFORE starting the Loader engine.

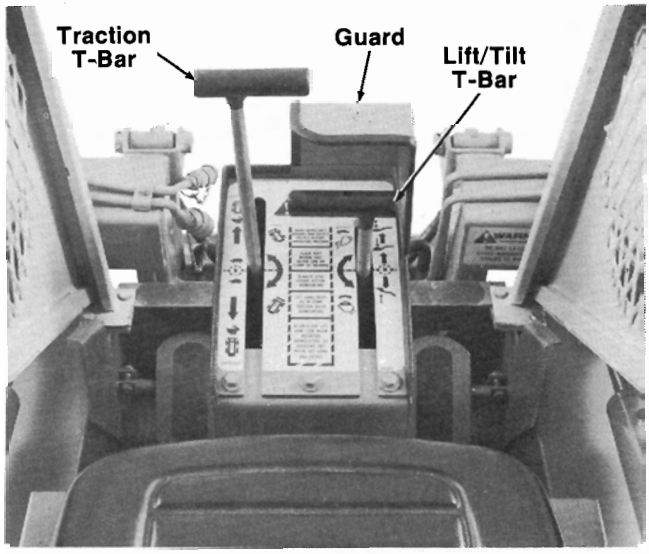


Fig. 1

NOTE: When seated on the Loader Seat, the Traction T-bar is the "left-hand" control and the Lift/Tilt T-bar is the "right-hand" control.

Traction T-bar

The Traction T-bar controls forward and reverse motion and turning the Skid Steer Loader. With the Hydrostatic Pump Drive Belt Idler engaged, a right turn in carried-out by twisting the Traction T-bar clockwise. A left turn is carried-out by twisting the Traction T-bar counter-clockwise. By design and for most efficient use of Loader power, turns in either direction should only be carried-out with the Traction T-bar in the "Neutral" position. The "Neutral" position of the Traction T-bar and T-bar movements for turning, forward travel and reverse travel are displayed on the "Operation" Decal on top of the Operator's Console.

Lift/Tilt T-bar

The Lift/Tilt T-bar controls raising and lowering the Load Arms and rolling the Bucket or Fork forward or back. Pushing the Lift/Tilt T-bar straight forward from the "Neutral" position lowers the Load Arms. Pulling the T-bar straight back raises the Load Arms. Twisting the T-bar clockwise extends the Tilt Cylinders to roll the Bucket or Fork forward. Twisting the T-bar counterclockwise retracts the Tilt Cylinders to roll the Bucket or Fork back.

NOTE: The Lift/Tilt T-bar on Loader models equipped with 3-Spool Control Valves and Auxiliary Hydraulics connections is also equipped with a Float position which is reached by pushing the T-bar all the way forward. Refer to the General Information topic in the Operation section of this manual for further explanation.

WARNING: On 3-Spool Control Valve Loader models, NEVER push the Lift/Tilt T-bar fully forward into the "Float" position when the Load Arms are raised.

LIFT CYLINDER LOCK (Figs. 2 & 3)

WARNING: When it becomes necessary to work on the Loader with the Load Arms raised, BE SURE to engage the Lift Cylinder Lock BEFORE shutting the engine off and leaving the Operator's Compartment.

The Lift Cylinder Lock is located on the right Lift Cylinder. Both the "engaged" and "storage" positions of the Lock are shown. Secure the Lock in the "storage" position with the Lockpin provided. Refer to Operation section of this manual for engage/disengage procedures.

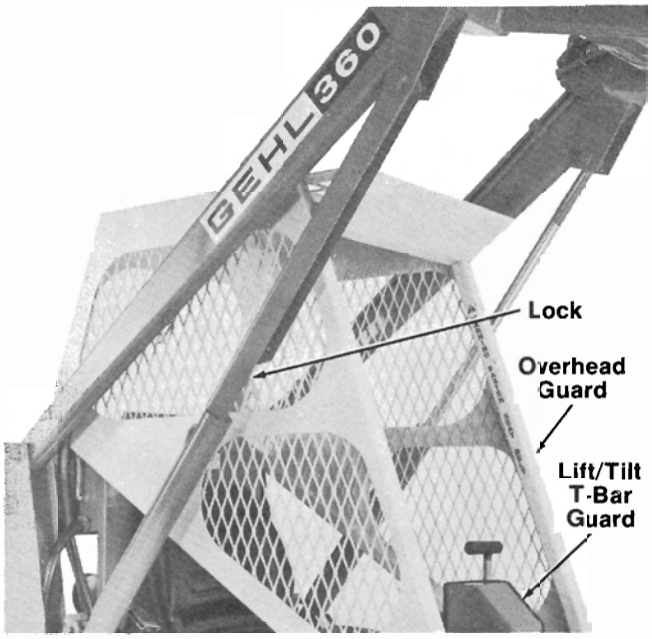


Fig. 2: Lift Cylinder Lock "Engaged"

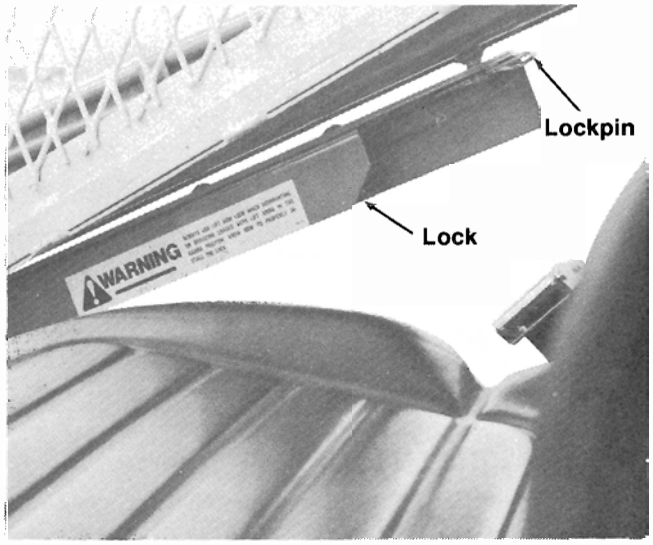


Fig. 3: Lift Cylinder Lock in "Storage"Position

SEAT BELT (Fig. 4)

WARNING BEFORE starting the Loader engine, BE SURE to fasten and properly adjust the Seat Belt for a correct snug fit.

The Seat Belt furnished on all Skid Steer Loaders is SAE J386 and J4C Regulation approved for construction and automotive equipment use. **BE SURE** to adjust both Belts to obtain the correct length to match your build and comfort. Correct Belt adjustment is only obtained when both ends of the Belt are completely extended, that is, completely unwound from the Belt retractors.

Fig. 4: Seat Belt (Retracted)

ROLL-OVER PROTECTION - OVERHEAD GUARD (See Fig. 2)

The Operator's compartment of the Skid Steer Loader is protected by a high-strength Roll-over Frame and Cage.

WARNING: NEVER operate the Loader with the Overhead Guard removed. In addition, avoid drilling into the Guard Frame Channels when mounting any kind of special equipment such as lights or mirrors.

LIFT/TILT T-BAR GUARD (See Figs. 1 & 2)

WARNING: NEVER remove the Lift/Tilt T-bar Guard.

A Guard is factory installed over the Lift/Tilt T-bar to protect from accidentally moving the T-bar while dismounting the Loader as well as to block-off access to the T-bar from outside the Operator's Compartment.

IGNITION/STARTER KEY (Fig. 5)

The Skid Steer Loader is furnished with a Key-type Ignition and Starter Switch. Switch operation and function is the same as on a car or truck.

WARNING: To prevent unexpected or unathorized engine starting, especially while performing service, BE SURE to remove the Key BEFORE leaving the Operator's Compartment.

THROTTLE (Fig. 5)

Engine RPM is varied with a hand-operated Throttle. As displayed by the Decal, pushing the Throttle down (toward the Rabbit Symbol) increases RPM and pulling the Throttle up (toward the Turtle Symbol) decreases RPM.

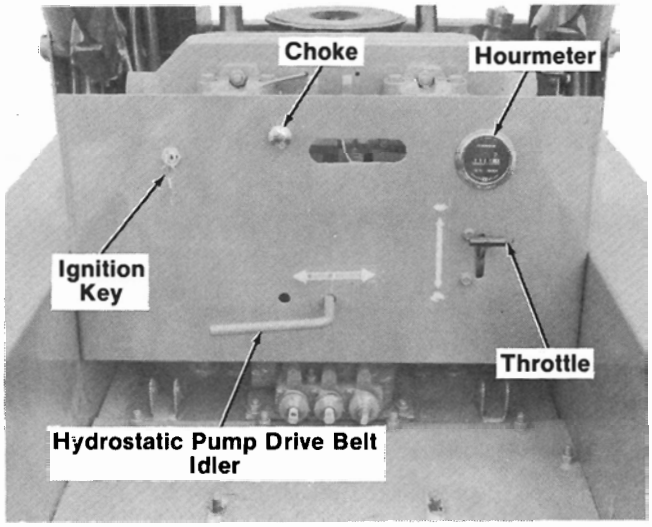


Fig. 5

CHOKE (Fig. 5)

A hand-operated mechanical Choke is furnished for cold engine starting assistance. Pull the Choke out to start the engine and push it in all the way after the engine has reached running temperature.

HOURMETER (Fig. 5)

For added convenience in proper routine maintenance performance, an Hourmeter is provided to automatically record engine running time. Refer to the Maintenance Schedule in the back of this manual for prescribed times and service routines to be performed.

HYDROSTATIC PUMP DRIVE BELT IDLER (Fig. 5)

A Handle is provided to engage/disengage the Hydrostatic Pump Drive Belt Idler.

WARNING: BE SURE to disengage the Idler Handle BEFORE starting the engine, after shutting the engine off and whenever the Lift Cylinder Lock is being engaged or disengaged.

HYDRAULIC/HYDROSTATIC OIL LEVEL INDICATOR (Fig. 6)

The Oil Level for the Loader Hydraulics system, serving both the Hydrostatic Drives and Lift and Tilt Cylinders, is visually displayed by a Level Indicator Tube on the right side behind the Seat Backrest. A Decal is placed next to the Indicator to mark the proper operating oil level.

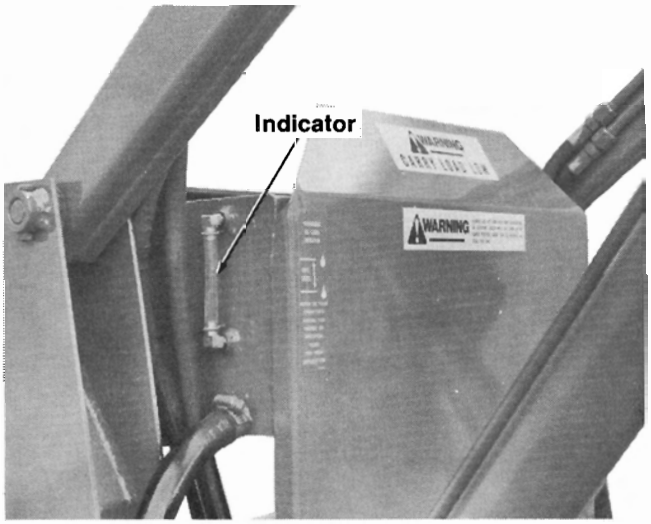


Fig. 6

OPERATION

WARNING: BEFORE starting the Loader engine and attempting to operate the Skid Steer Loader for the first time, review the WARNINGS section and the Controls & Safety Equipment section of this manual. Know how to STOP the Loader BEFORE starting it.

STOPPING THE LOADER

1. Move the Traction T-bar to the "Neutral" position.
2. LOWER THE LOAD ARMS to rest onto the Loader Frame.
3. Place the Lift/Tilt T-bar in "Neutral" and rest the Bucket or Fork onto the ground.

4. Move the Throttle to the Idle position.

5. Disengage the Hydrostatic Pump Drive Belt Idler.

6. Turn the Ignition Key to **"OFF"** and remove the Key.

7. Make sure that all movement and Loader motion has stopped, detach the Seat Belt and climb out of the Operator's Compartment.

BEFORE STARTING THE ENGINE

Before actually starting the engine and running the Loader, familiarize yourself with the T-bar operation to orient your mind and coordinate your hand movements. Grasp the T-bars and move them in the appropriate directions to simulate the various movements of the Loader, Load Arms and Tilt Cylinders.

STARTING THE ENGINE

1. Step up onto the back of the Bucket or Fork and climb backwards into the Operator's Compartment.

WARNING: FASTEN AND PROPERLY ADJUST the Seat Belt BEFORE proceeding.

2. Check that both T-bars are in their "Neutral" position and check that the Hydrostatic Pump Drive Belt Idler is disengaged.

3. Move the Throttle to the midway point of its travel.

4. For cold engine starts, pull the Choke all the way out.

5. Turn the Ignition Key to start the engine.

6. Make appropriate Choke readjustments and push the Choke all the way in after the engine reaches proper operating temperature.

7. Before attempting to engage the Hydrostatic Pump Drive Belt Idler, roll the Bucket or Fork back completely and hold this Lift/Tilt T-bar position for several seconds to speed-up oil heat-up process.

FIRST TIME PRACTICE RUNNING

WARNING: BE SURE that the area being used for test-running is clear of spectators and obstructions. Operate the Loader with an empty Bucket or Fork.

Smoothest and most efficient Loader opeation is achieved while the engine is being operated at half to full Throttle. After the engine is sufficiently warmed-up, engage the Hydrostatic Pump Drive Belt Idler and slowly and deliberately move the Traction T-bar straight forward, using a firm left-hand grip and left-arm extension. Attempt all forward, reverse and turning operations before proceeding to operate the Lift/Tilt T-bar. Leaving your left hand off the Traction T-bar, slowly and deliberately pull the Lift/Tilt T-bar straight back, using a firm right-hand grip and right-arm extension. Attempt all raise and lower operations, Bucket roll-forward and roll-back operations and combinations of the two functions before proceeding to operate both T-bars at the same time.

Skill in Skid Steer Loader operation is only obtained through proper coordination of the Loader's forward and reverse travel with raising and lowering the Load Arms and with rolling the Bucket or Fork forward or back. To gain proficiency, practice all T-bar operations until they happen naturally and without mistake or hesitation.

WARNING: Operation of the Skid Steer Loader at full Throttle should only be attempted after complete familiarity with all T-bar operations is known. ALWAYS exercise caution and good judgement while running this equipment.

NOTE: To prolong Loader component life, avoid "jackrabbit" starts, stops and forceful T-bar movements.

LIFT CYLINDER LOCK (Figs. 7 & 8)

WARNING: When it becomes neccessary to work on the Loader with the Load Arms raised, BE SURE to engage the Lift Cylinder Lock BEFORE shutting the engine off and leaving the Operator's Compartment. BE SURE also to remove the Ignition Key.

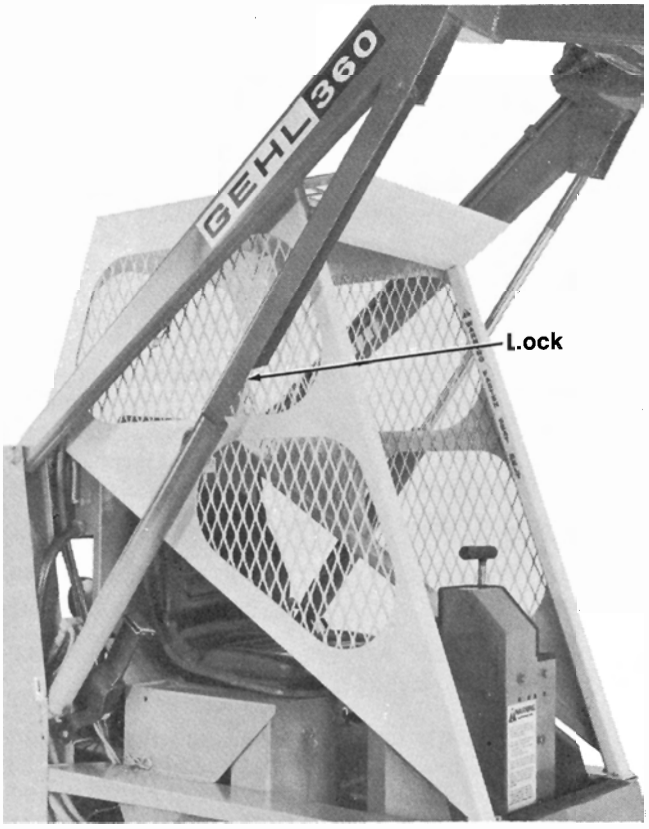


Fig. 7: Lift Cylinder Lock "Engaged"

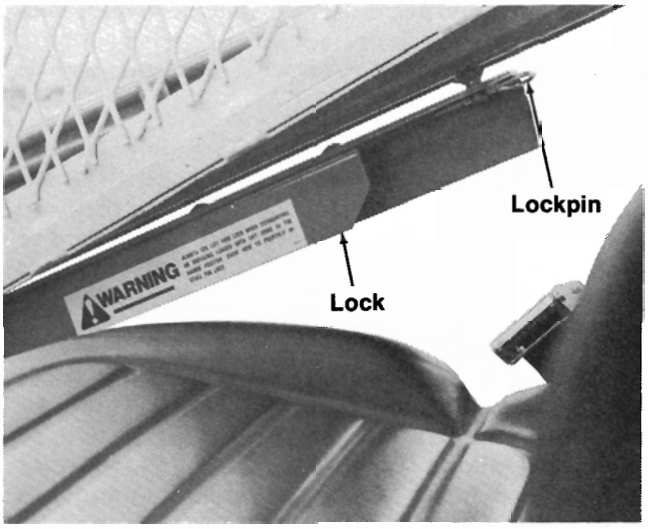


Fig. 8: Cylinder Lock in "Storage" Position

Engaging Lock

Before proceeding to engage the Lift Cylinder Lock and to prevent Loader movement, first disengage the Hydrostatic Pump Drive Belt Idler.

1. Remove the Lockpin from the Cylinder Lock.
2. Raise the Load Arms far enough to allow the Lock to drop down around the Cylinder Rod.
3. Lower the Load Arms slightly until the Lock firmly rests against the Cylinder.

NOTE: DO NOT drop the Load Arms onto the Lock NOR continue to lower the Load Arms after the Lock contacts the Cylinder to avoid damaging the Lock or the Cylinder.

Disengaging the Cylinder Lock

WARNING: BE SURE to disengage the Hydrostatic Pump Drive Belt Idler BEFORE proceeding.

Two methods can be followed to disengage and secure the Lock back into its "storage" position. The recommended method is to have a second person disengage the Lock while the Loader Operator raises the Load Arms. Then, after the Lock is released, the second person also locks it back into "storage".

An alternative method of disengaging the Lock is to do so as follows:

1. Raise the Load Arms slightly away from contact with the Lift Cylinder Lock.
2. Using the left hand, reach around the top right corner of the Overhead Guard and lift and hold the Lock up so that the Cylinder can be retracted and the Lock can be cleared by the Cylinder when the Load Arms are lowered.
3. After the Lock is cleared completely, release the Lock with the left hand and continue to lower the Load Arms down until they contact the Loader Frame. With the Load Arms down, shut the engine off and secure the Lockpin to place the Lift Cylinder Lock back into the "storage" position.

GENERAL INFORMATION

WARNING: Fasten and properly adjust the Seat Belt BEFORE starting the Loader engine. Know how to stop the Loader BEFORE starting it.

If the Loader engine kills while the Lift/Tilt T-bar is being operated to raise the Load Arms, the Load Arms will stop rising and hold at the level already reached. Lower the Load Arms and return the T-bar to "Neutral" before attempting to restart the engine. If the Loader engine kills while the Lift/Tilt T-bar is being operated to lower the Load Arms, the Arms will continue to lower until they rest against the Frame. Return the T-bar to "Neutral" before attempting to restart the engine.

Braking - Stopping Loader Motion

The Hydrostatic Drive Pumps of the Skid Steer Loader control braking and stopping Loader forward and reverse movement. When the Traction T-bar is moved to the straight "Neutral" position, all movement of the Wheels is stopped. By all means, **BE SURE** to move the Traction T-bar gradually and deliberately to slow-down and stop the Wheels.

Load Arm FLoat & auxiliary Hydraulics "Detent" Positions

HL360 Skid Steer Loaders are available in 2-Spool and 3-Spool Control Valve models. Models with 3-Spool Control Valves are factory equipped with Auxiliary Hydraulic connections and feature a Load Arm Float, "detent", on the Lift/Tilt T-bar as well as a "detent" position for the Auxiliary Hydraulics connections.

The "Float" position for the Lift/Tilt T-bar is reached by pushing the T-bar all the way forward. This T-bar position causes oil flow to effectively bypass the Lift Cylinders thus allowing the Load Arms to "float" while following the ground contour.

WARNING: NEVER push the Lift/Tilt T-bar, on a unit equipped with 3-Spool Control Valve (characterized by Foot Pedals and Auxiliary Hydraulics connections), all the way forward into the "Float" position when the Load Arms are raised.

The "detent" position for the Auxiliary Hydraulics connections is reached by pushing the "toe" end of the Foot Pedal all the way down. The Auxiliary Hydraulics "detent" position enables operations of special accessories, from outside the Operator's Compartment.

NOTE: HL360 Skid Steer Loader models with 2-Spool Control Valves do NOT have a Lift/Tilt T-bar Float Position NOR Auxiliary Hydraulics connections.

Digging & Loading (Figs. 9, 10, 11 & 12)

To dig with and load the Bucket, first lower the Load Arms down in contact with the Loader Frame and roll the Bucket Cutting Edge down in contact with the ground. Move the Loader into the material and, as the engine RPM loads-down, roll the Bucket back slowly and, at the same time, gradually pull back on the Traction T-bar to decrease travel speed while still maintaining Wheel torque.

NOTE: Loader working ability is increased when travel speed is decreased. For optimum working ability through maximum Wheel torque, move the Traction T-bar only a slight amount forward, from its "Neutral" position, while filling a Bucket.

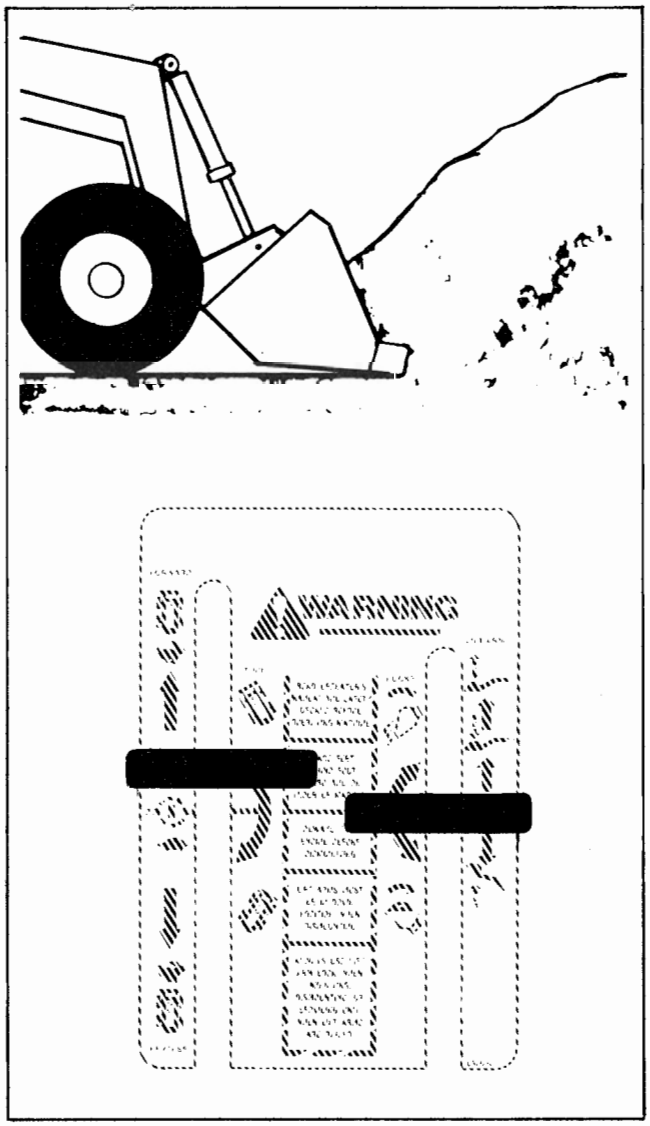


Fig. 9

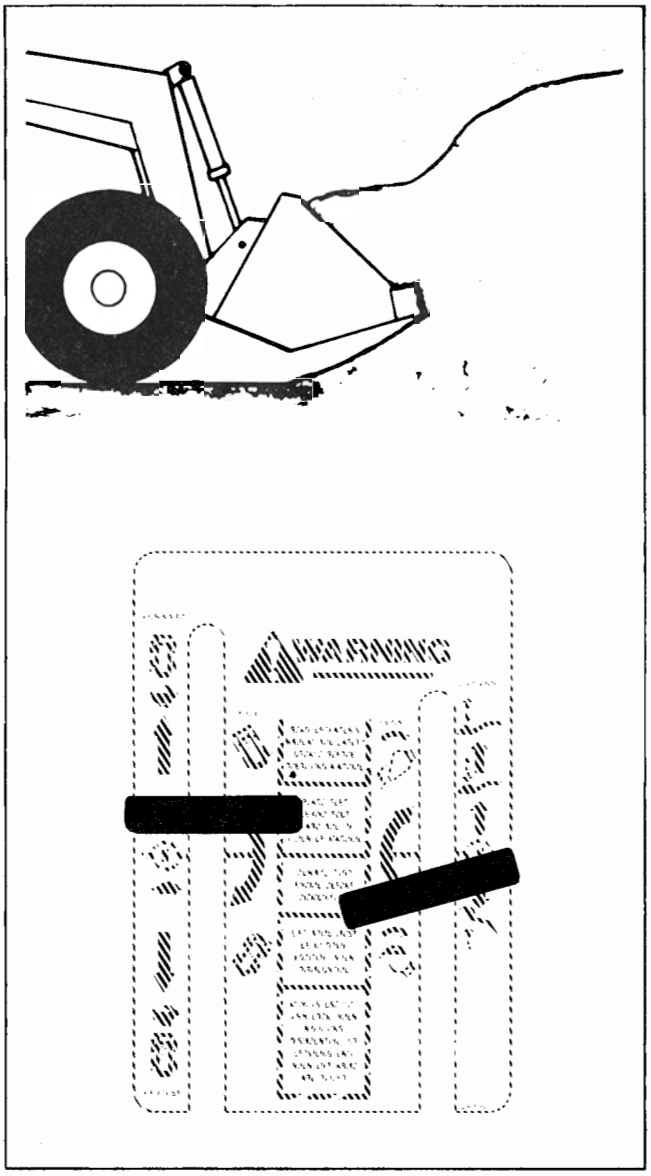


Fig. 10

In most hard-packed materials, to fill the Bucket it is also necessary to raise the Load Arms while rolling the Bucket back. Avoid driving onto the material if at all possible.

With the Bucket filled, back the Loader away from the material and rest the Load Arms down onto the Frame before proceeding to the dumping area.

WARNING: ALWAYS carry a loaded Bucket or Fork LOW with the Load Arms resting on the Loader Frame. When operating on an incline or ramp, ALWAYS travel with the heavier end (loaded Bucket end) toward the top of the incline.

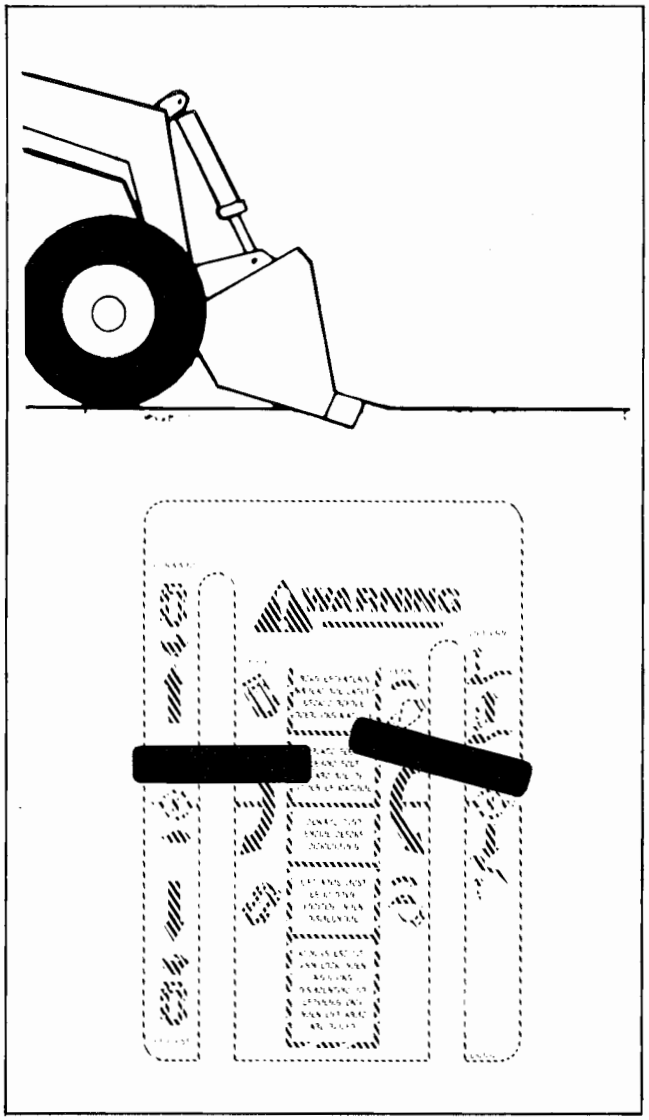


Fig. 11

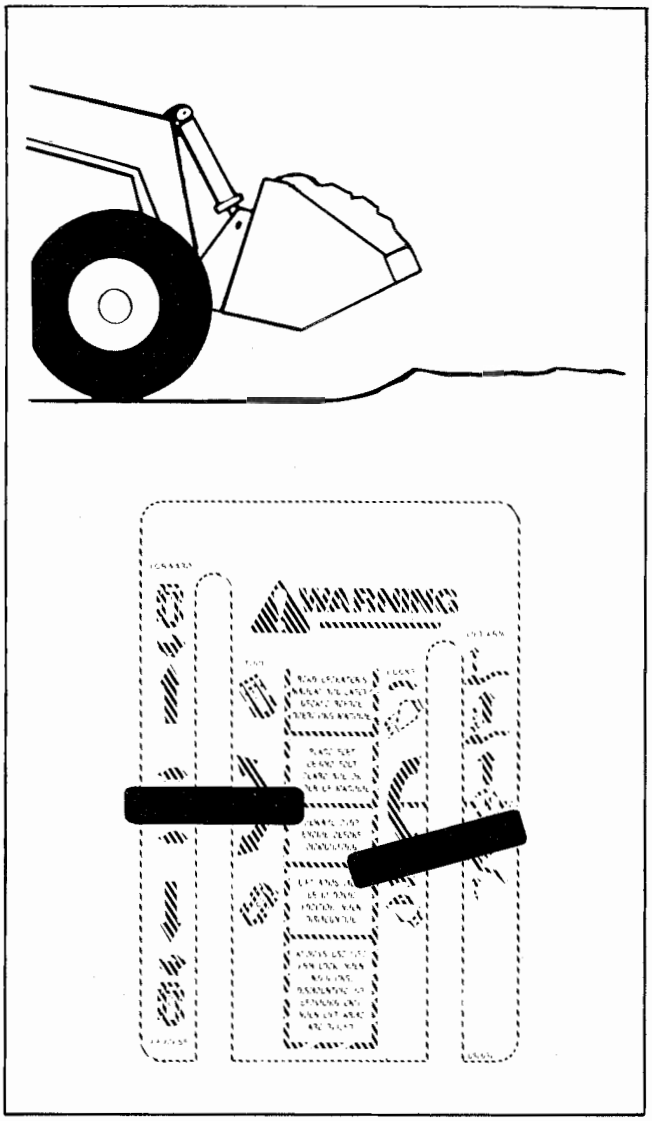


Fig. 12

Dumping the Bucket or Fork

Onto a Pile

Carry the loaded Bucket or Fork low until reaching the pile. Then, stop forward motion and raise the Load Arms high enough so that the Bucket or Fork clears the top of the pile. Then, slowly move the Loader ahead to position the Bucket or Fork to spill the material on top of the pile. Empty the Bucket or Fork and back the Loader away while lowering the Load Arms and rolling the Bucket or Fork back.

Into a Box

Carry the loaded Bucket or Fork low and approach the truck, trailer or spreader box squarely with the side of the box. Then, stop forward motion well away from the side of the box to raise the Load Arms and clear the side of the box. Slowly move the Loader ahead to position the Bucket or Fork over the inside of the box. After the material is dumped, back away from the box and lower the Load Arms while rolling the Bucket or Fork back.

NOTE: A Bucket can be conveniently used to spread the pile inside the box by positioning the Bucket Cutting Edge against the near side of the pile and rolling the Bucket back while slowly driving forward and pushing the top of the pile forward.

Over a Solid Embankment

WARNING: DO NOT drive too close to an excavation or ditch! BE SURE surrounding ground has adequate strength to support weight of the Loader and load!

Carry the loaded Bucket or Fork low while traveling toward the dumping area. Stop the Loader at the position where the Bucket or Fork extends half-way over the edge of the embankment. Then, roll the Bucket or Fork forward and raise the Load Arms to dump the material. After the material is dumped, back away from the embankment while lowering the Load Arms and rolling the Bucket or Fork back.

Scraping with a Bucket (Figs. 13 & 14)

Both HL360 Skid Steer Loader models, units with either 2-Spool or 3-Spool Control Valves, can be used for scraping with a Bucket attached to the Load Arms. For scraping, the Loader should be operated in the forward direction. First position the Load Arms at the appropriate level which allows the Bucket to be tipped to place the Bucket Cutting Edge at a slight angle to the surface being scraped. While traveling forward with the Bucket in this position, material can flow over the Cutting Edge and collect inside the Bucket.

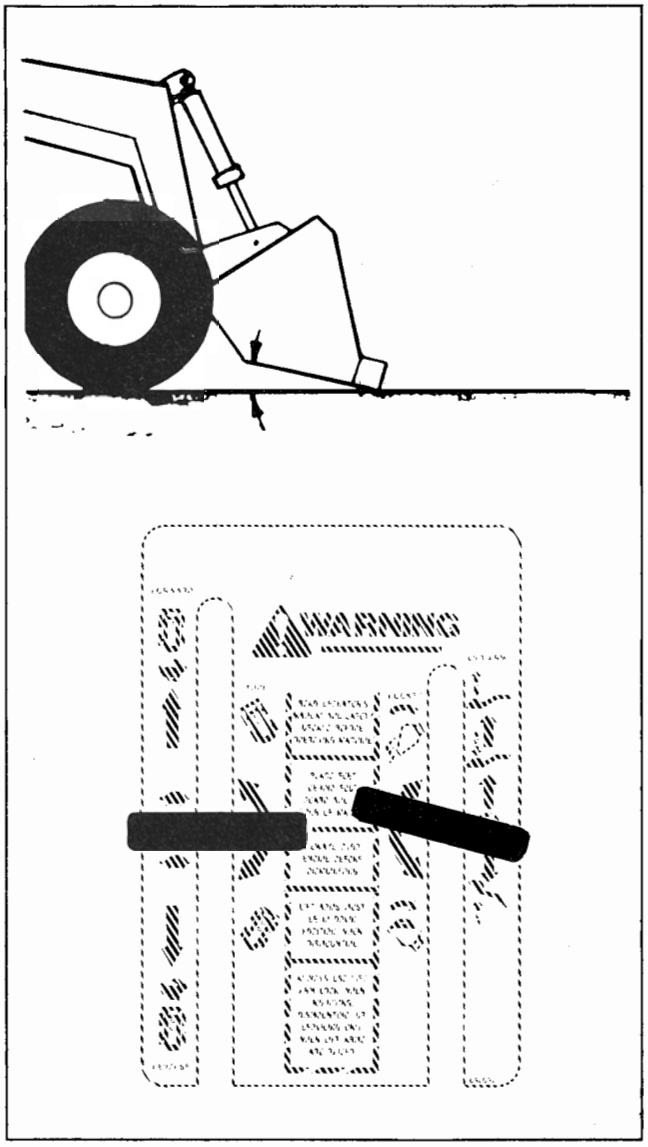


Fig. 13

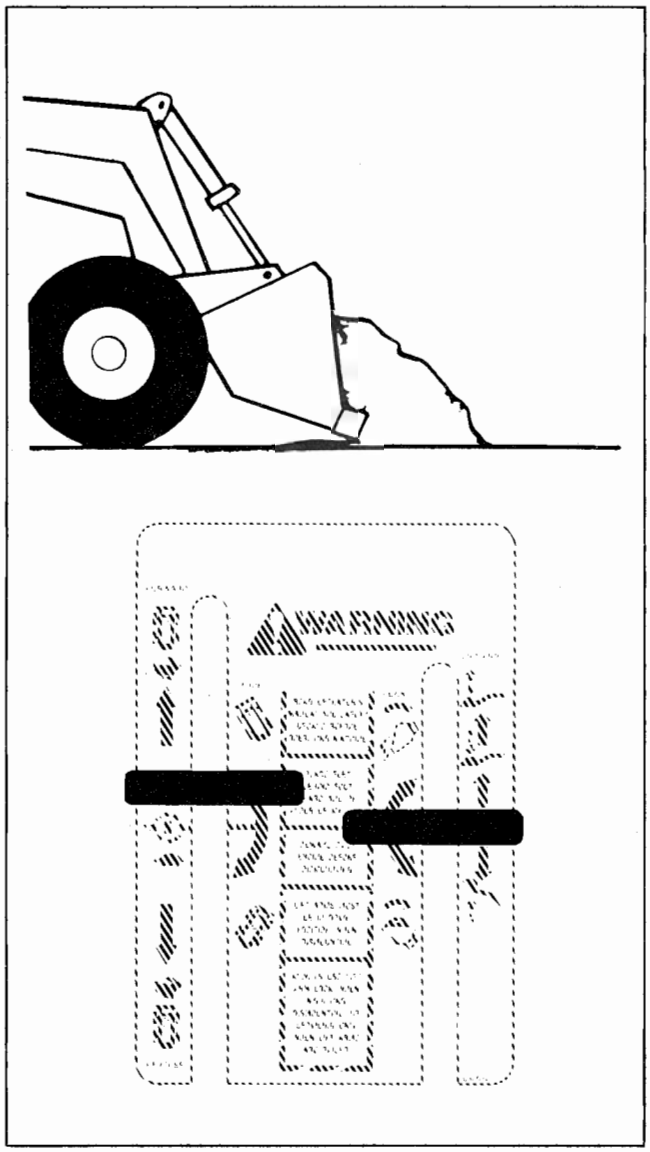


Fig. 14

Leveling with a Bucket (Fig. 15)

NOTE: Leveling with a Bucket attached to the Load Arms is best accomplished with a Loader equipped with the Float "detent" feature, that is, an HL360 with 3-Spool Control Valve and Auxiliary Hydraulics.

First drive the Loader to the outer edge of the area to be levelled. Then, with the Load Arms down against the Frame, push the Lift/Tilt T-bar into the Float position and roll the Bucket forward to place the Bucket Cutting Edge at a 30 to 45° angle to the surface to be levelled. Proceed to level the area by driving the Loader backward.

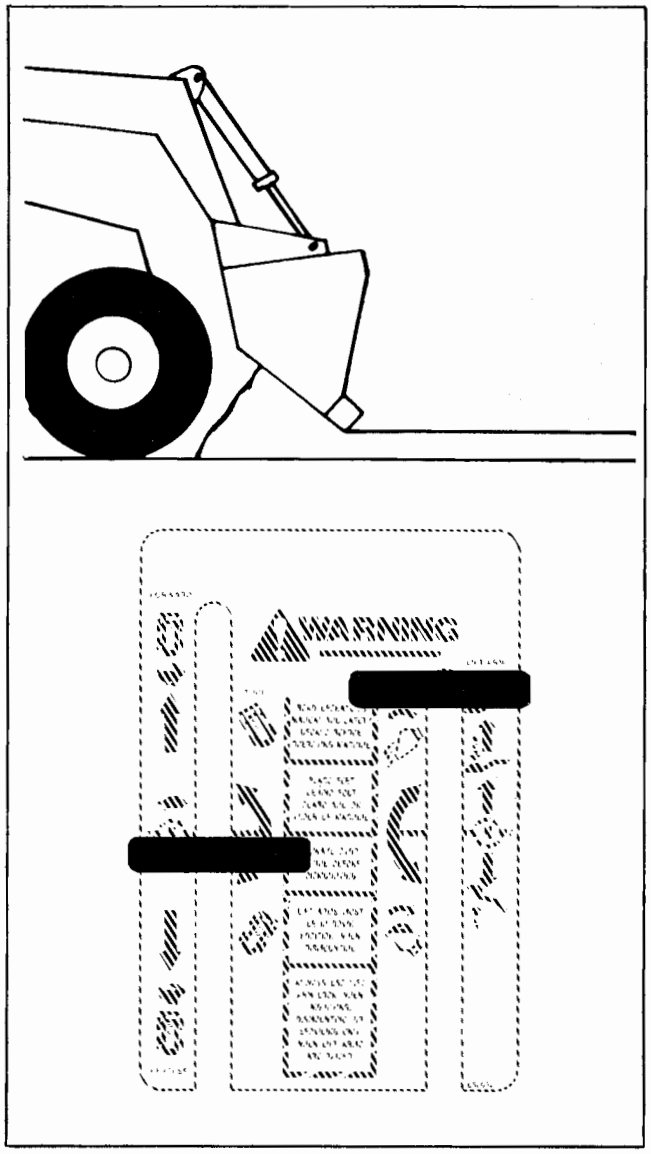


Fig. 15

Bucket and Fork Mounting (Figs. 16 & 17)

HL360 Buckets and Forks are designed for quick and convenient attachment and detachment. To attach a Bucket or Fork, approach it from the rear with the Load Arms resting against the Frame and the Tilt Cylinders partially extended. Drive the Loader against the back of the Bucket or Fork head-on and squarely so that the Attachment Plate in front of the Load Arms slides under the Attachment Lip on the back of the Bucket. With the Lip positively engaged, retract the Tilt Cylinders completely. Then, shut off the Loader engine, leave the Operator's Compartment and install the Attachment Pins and Lockpins in the position and direction shown. To detach the Bucket or Fork, reverse the process.

WARNING: ALWAYS install or remove the Attachment Pins and Lockpins with the engine shut OFF and the Load Arm LOWERED completely.

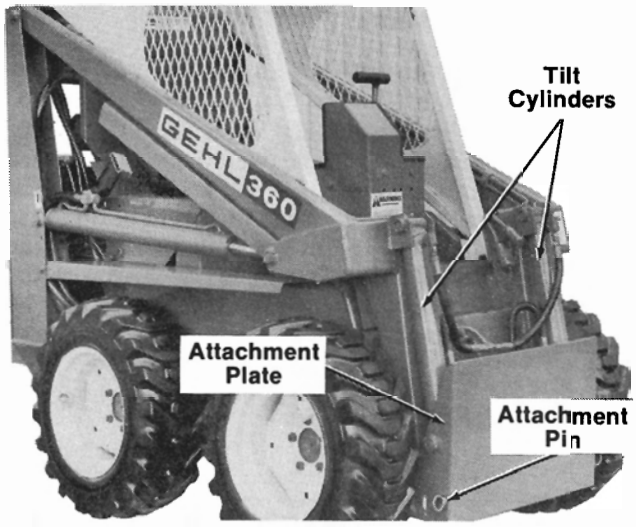


Fig. 16

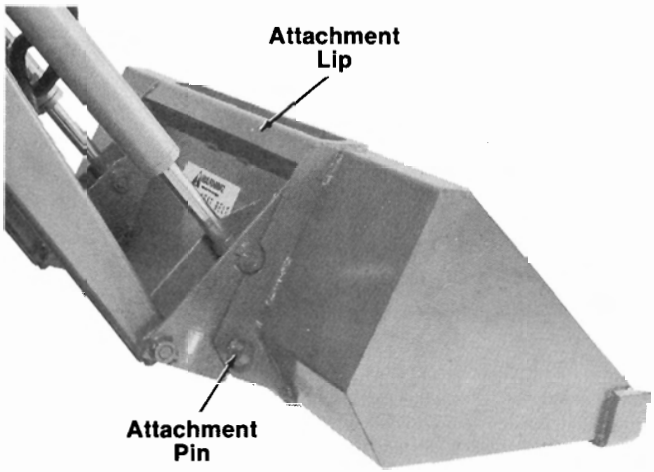


Fig. 17

Auxiliary Hydraulics (Fig. 18)

HL360 Loader models with 3-Spool Control Valve and Auxiliary Hydraulics connections have a Foot Pedal control mechanism to operate a secondary device, such as a Grapple Attachment. Pushing the Pedals with the toe closes the Grapple. Pushing the Pedals with the heel opens the Grapple. Both Pedals are welded onto a common Shaft.

NOTE: Pushing the Pedals all the way down with the toe engages the "detent" position enabling continuous oil flow.

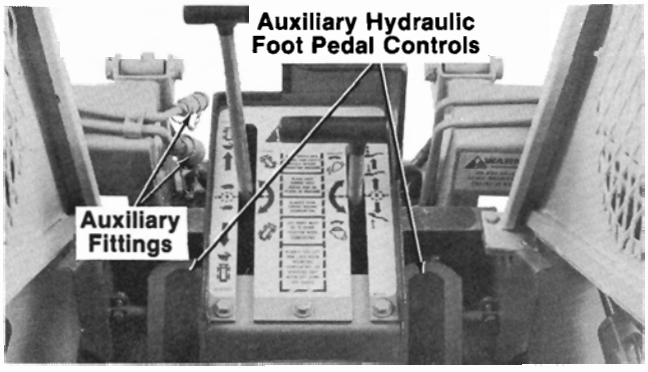


Fig. 18

ADJUSTMENTS

Simplicity of HL360 design and functions makes for a minimum amount of readjustment required to maintain proper Loader operation.

NOTE: If the Loader is operated on a "day-to-day" basis and since NO gasoline gauge is provided, it is advisable to refuel before starting the day.

WARNING: Refuel in a safe place away from open flames and potential sparks. NEVER refuel the Loader while the engine is running or when it is HOT.

ENGINE

All information related to engine adjustments and operating settings is detailed in the separate Engine Manual furnished with the Loader.

HYDROSTATIC PUMP DRIVE BELT (Fig. 19)

After break-in and through the course of normal operation, the Hydrostatic Pumps Drive Belt will wear and stretch.

NOTE: After the first 10 hours of operation and at regular 10 hour intervals thereafter, check and adjust Drive Belt tension as necessary. If excessive Belt wear is noted, BE SURE to realign the Sheaves using details provided in the Sheave Alignment topic in the Service section of this manual. If Belt tension is too tight, the Pumps will NOT disengage. If tension is too loose, the Belt will slip and wear faster. Improper Belt tension likewise causes excessive wear and early failure.

WARNING: Attempt Belt tension readjustment ONLY after the correct Traction T-bar "Neutral" position is established. To safely adjust Belt tension, the Loader Wheels MUST NOT rotate. Refer to Service section for "Neutral" adjustment.

To readjust the Pump Drive Belt tension, first carefully and properly block the Loader up so that all four Tires are **NOT** touching the ground.

Raising the Loader can be conveniently accomplished by first placing two equal height (approximately 5-1/2" tall) solid blocks of wood (at least 2 feet long) parallel with the rear Wheels and under the rear corners of the Loader Frame. Then, with the Hydrostatic Pump Drive Belt Idler disengaged and the Load Arms down against the Loader Frame, extend the Tilt Cylinders to roll the Bucket and pick the Loader off the ground; stop when all four Tires are off the ground.

WARNING: The above procedure for raising the Loader should only be used for just that. DO NOT leave the Operator's Compartment with the engine running and the Loader in this position. Shut the engine off and carefully leave the Loader to block it up BEFORE attempting to restart the engine or to perform any adjustment or service routines. DO NOT rely on the Loader Hydraulics to maintain this position without additional blocking or supporting.

With the Loader Tires off the ground, shut the engine off and remove the Ignition Key. Next, remove the Seat assembly for access to the Drive Belt. Then, loosen (but do **NOT** remove) the (4) bolts which secure the Idler and Pump Mounting Plate to the Frame. Then, pry the Plate up as far as possible and snug the (4) bolts enough to hold the Plate in this positions.

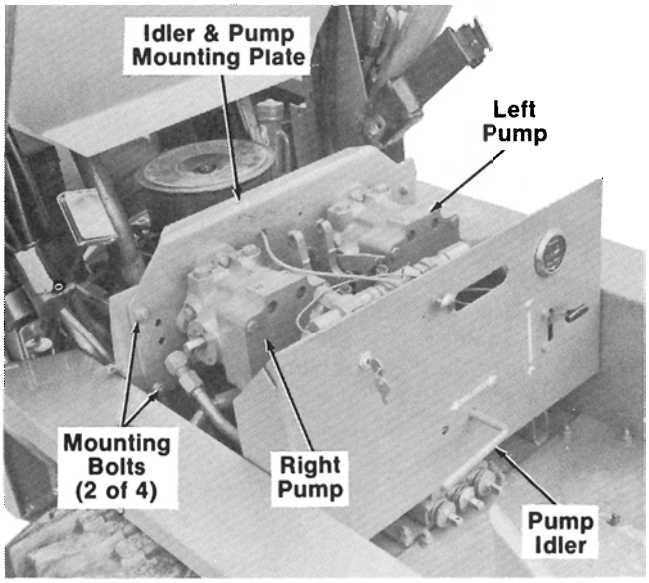


Fig. 19

Then, making sure that the Traction T-bar is in the "Neutral" position and with the Pump Idler disengaged, start the Loader engine and note that the Pump Sheaves are turning. Next, using a rubber malet or lead hammer, tap the corners of the Plate down slightly and in equal amounts until the Pump Sheaves stop turning. Then, shut the engine off and remove the Ignition Key and proceed to tightly secure the (4) bolts to fix the Idler and Pump Mounting Plate position.

LUBRICATION

WARNING: NEVER attempt to lubricate the Skid Steer Loader with the engine running. Remove the Ignition Key to prevent unauthorized or unexpected starting.

NOTE: Log the date of Lubrication in the Maintenance Schedule.

GENERAL INFORMATION

NOTE: Properly lubricate the entire Loader and replace engine oil after the first 25 hours of operation. Repeat lubrication and oil replacement at regular 50 hour intervals thereafter. Under more strenuous operation and/or in extremely cold weather conditions or dusty conditions, change oil and lubricate the Loader more often as necessary.

It is well to remember that a sufficient amount of oil and grease will prevent excessive component wear and early failure.

ENGINE OIL

Refer to Engine Manual provided for engine oil requirements and type recommendations. On a daily basis, check the Oil Dipstick for level indication and replenish as necessary.

HYDRAULIC & HYDROSTATIC OIL

The Hydraulic and Hydrostatic systems share the same fluid and Reservoir. Reservoir capacity is 5 U.S. gallons (19 liters). Maintain the oil level at approximately 2" from the top of the Reservoir; do **NOT** overfill as this will force oil out the Vent Cap.

NOTE: Replace the Hydrostatic/Hydraulic Oil and Filter after the first 10 hours of operation and at regular 100 hour intervals thereafter.

Check the Reservoir level on a routine basis every 10 hours of operation; add oil as required. An Oil Level Indicator is provided for continuous visual level monitoring. Add to or replace Hydraulic/Hydrostatic Oil with Rando brand HD-AZ Hydraulic Fluid (if available) or otherwise use Type F Automatic Transmission Fluid.

DRIVE CHAINS

HL360 Drive Chains run continuously in oil. The oil level should be checked after every 50 hours of operation and maintained at a level of approximately 1" deep. Remove the Plug in the floor of the Operator's Compartment for checking and adding oil. Use the engine Dipstick to check the oil level. Replace the Drive Chain oil every 500 hours of operation. Remove the Plug in the front of the Loader to drain the oil. Add to or replace Chain Case oil with 10W40 oil or equivalent.

OILING

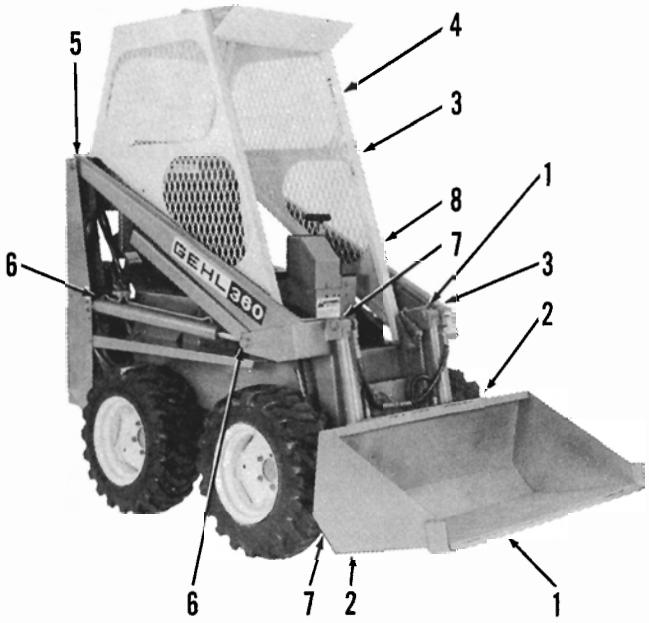
Apply 10 to 15 drops of oil to the T-bar Swivel Ball Joints (at the bases of the T-bars) and 2 or 3 drops of oil to the Linkage Ball Joints every 100 hours of operation.

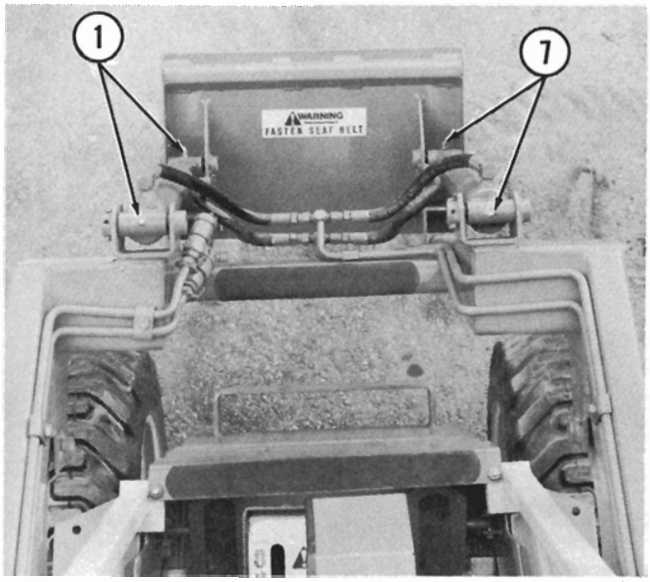
GREASE FITTINGS

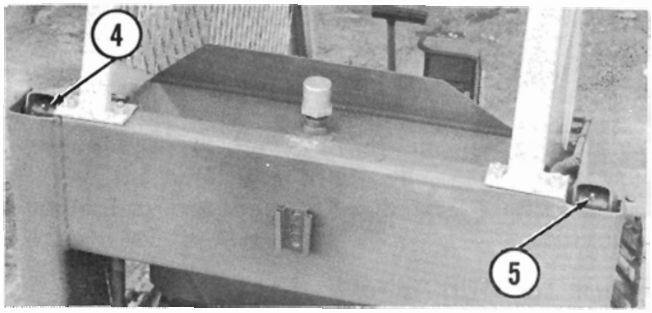
All Grease Fittings are of a standard style commonly found on farm implements and automotive equipment.

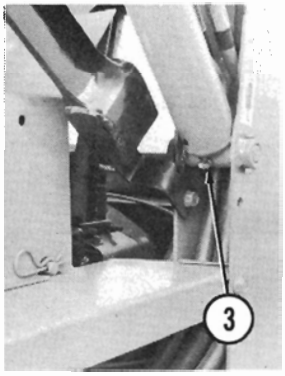
KEY TO LUBRICATION
(Grease each Fitting every 50 hours)

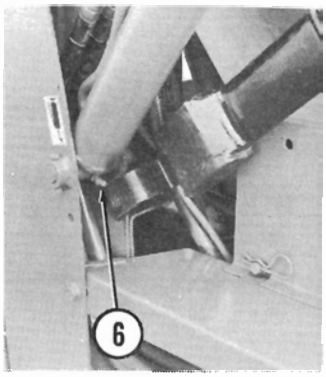
1. Left Tilt Cylinder Pivots (Two Places)
2. Attachment Plate Pivots (Two Places)
3. Left Lift Cylinder Pivots (Two Places)
4. Left Load Arm Pivot
5. Right Load Arm Pivot
6. Right Lift Cylinder Pivots (Two Places)
7. Right Tilt Cylinder Pivots (Two Places)
8. Hydrostatic Pump Idler Arm Pivot

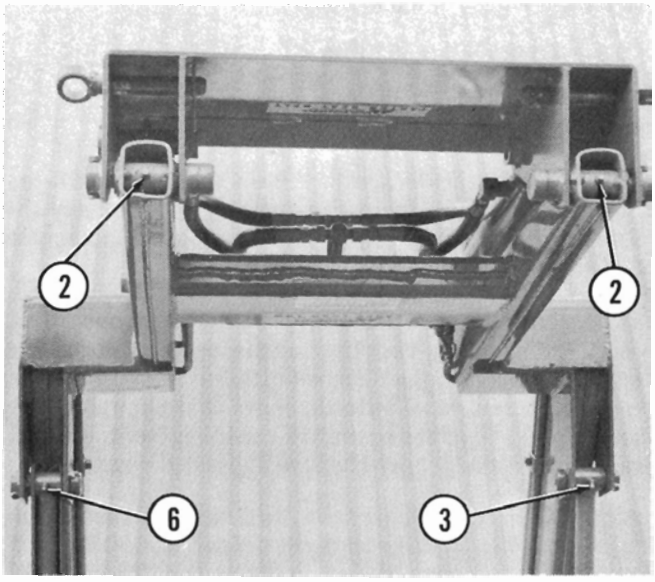


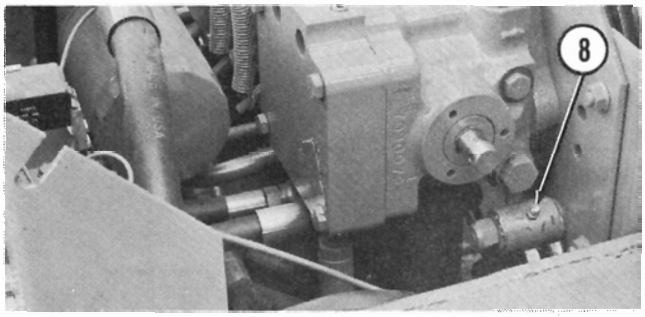












TRANSPORTING

All HL360 Skid Steer Loaders are equipped with a Bracket, for mounting a Slow-moving Vehicle Emblem on the rear of the unit.

Because of variation in safety laws for different states and localities, it may be necessary to change the emblem location. Your Gehl Dealer can aid you in relocating the Bracket as necessary.

SERVICE

WARNING: Perform all Loader Service routines with the engine shut off, except where noted within certain procedures outlined.

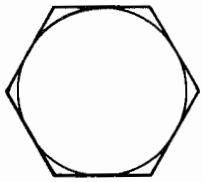
BOLT TORQUE DATA

The Chart provided contains information concerning standard hardware used on this machine. It is recommended that all fasteners be tightened to the torque valves specified. The Grade of the bolt is identified by the markings on the head of the bolt.

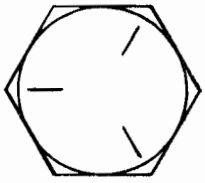
General Bolt Torque Data in Ft-Lb*

BOLT SIZE	SAE-GRADE 5 TORQUE		SAE-GRADE 2 TORQUE	
	DRY	LUB.	DRY	LUB.
1/4 - 20	8	6.25	5.5	4.17
1/4 - 28	10	7.16	6.33	4.66
5/16 - 18	17	13	11	8
5/16 - 24	19	14	12	9
3/8 - 16	30	23	20	15
3/8 - 24	35	25	23	17
7/16 - 14	50	35	32	24
7/16 - 20	55	40	36	27
1/2 - 13	75	55	50	35
1/2 - 20	90	65	55	40
5/8 - 11	150	110	100	75
5/8 - 18	180	130	110	85

***Multiply by (0.1383) for metric kg-m**



Grade 2 (Plain)



Grade 5 (3 Marks)

NOTE: The following information is referred to in both the Troubleshooting Guide and the Maintenance Schedule sections of this manual. It should also be understood that all services covered in this section are Owner-Operator responsibilities. Where indicated, certain service routines should only be carried-out by an authorized Gehl Dealer or Gehl Company representative.

BATTERY (Fig. 20)

The HL360 uses a 12 volt wet cell Battery. The Loader Electrical System has negative (-) ground.

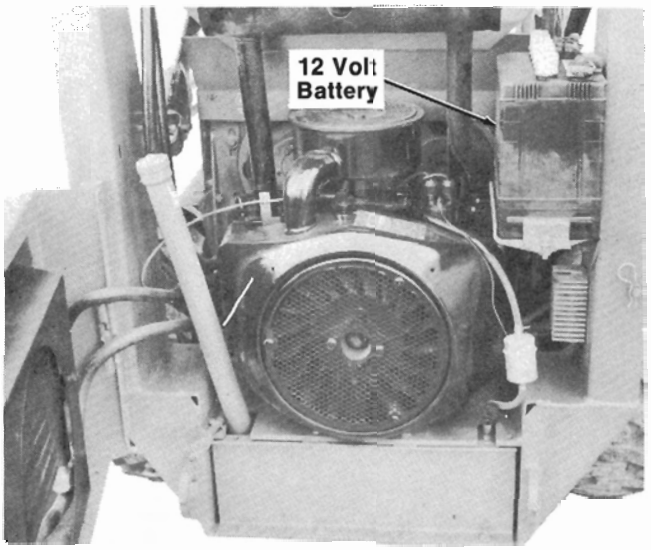


Fig. 20

Adding Water

NOTE: Loaders sold within the United States are shipped from the factory with Battery installed and filled with the proper Electrolyte Solution.

On a routine basis after every 50 hours of operation, remove the Battery Vent Caps and inspect the Electrolyte level. The water in the Electrolyte Solution evaporates at high temperatures or with excessive charging rates. The level should be to the bottom of the Filler Neck; if **NOT**, replenish to the proper level with distilled water.

NOTE: Do NOT allow the Electrolyte Solution specific gravity to drop below 1.2000 at 80 F (27 C).

Cleaning Terminals & Cable Connections

The top of the Battery **MUST** be kept clean. Tighten the Vent Caps and 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 Terminals and Cable Clamps are corroded, disconnect the Cables and clean them with the same alkaline solution.

Jumping a Discharged Battery

If Loader Battery becomes discharged and fails to have sufficient power to start the Loader engine, jumper cables can be used to obtain starting assistance.

WARNING: DO NOT attempt to jump-start the Loader Battery if it is frozen; this may cause it to rupture or explode. Follow these instruction in order and completely as stated to avoid personal injury.

NOTE: BE SURE that the jumper battery is also a 12 volt battery.

1. Turn off both ignition keys before making jumper cable connections.
2. Make sure that both vehicles are in neutral and **NOT** touching each other.
3. Remove the Filler Caps from both batteries and check and replenish the Electrolyte levels before proceeding.
4. Place a clean cloth over the uncapped Vent Holes of both batteries to prevent boil-over and acid splash.

WARNING: If acid contacts your skin, eyes or clothing, flush the area immediately with large amounts of water.

5. Interconnect the positive terminals (+) of both batteries with one jumper cable.
6. Interconnect the negative terminal of the booster battery to an unpainted portion of the Loader Frame or engine block.

NOTE: Twist the jumper cable clamps a couple of times to make a good electrical contact. DO NOT short the jumper cables or cross them. The negative (-) jumper cable connection should NOT be made directly to the Loader Battery to insure that potential sparks are kept well away from the open Filler Caps on the discharged Battery which will tend to produce hydrogen gas.

7. Proceed to start the Loader. If it does **NOT** start immediately, start the engine of the booster vehicle to avoid excessive drain on the booster battery.
8. After the Loader is started and running smoothly, remove the jumper cable from the Loader Frame member first. Then, detach the opposite end from the booster battery. Then, remove the other jumper cable from the booster battery and the Loader positive (+) Terminal.

Allow the Loader to recharge the Battery for approximately 10 minutes before attempting to operate the Loader. **BE SURE** to discard the cloths and replace the Vent Caps on both batteries.

NOTE: If Loader Battery discharging becomes a reoccurring problem, have Battery checked for possible dead cell and/or troubleshoot Electrical System for possible shorted wire or damaged insulation.

Recharging Weak Battery

If Loader Battery becomes run-down and weak, it may be desirable to recharge it with a plug-in 120 volt AC battery charger unit. Follow operating instructions given with recharger unit and exercise all prescribed precautions. **BE SURE** also to remove the Loader Battery Vent Caps and cover the uncapped Vent Holes and check the Electrolyte level before starting the charger.

WARNING: DO NOT attempt to recharge a frozen Battery; this may cause it to rupture or explode. DO NOT attempt to recharge the Battery in an area of sparks or near an open flame.

DRIVE CHAINS & MOTORS (Fig. 21)

Both Wheels on each side of the HL360 Skid Steer Loader are Chain-driven directly off of independent Hydraulic Motors. Double Sprockets on the Motor Output Shafts drive both Wheels through individual Drive Chains which are running continuously in oil. Drive Chain tension is **NOT** adjustable. After every 100 hours of operation, visually inspect the Drive Chains and Motors. Access to the Chains and Motors is obtained by removing the Operator's Console, T-bar Linkage Rods and Loader Floorplate. Hydraulic Motors can be conveniently removed by detaching the (4) mounting bolts.

NOTE: Motors MUST be returned to the Dealer for repair or replacement. BE SURE to check that the Motor mounting bolts are tightly secured at all times.

Chain Case oil should be checked after every 50 hours of operation and maintained at a level of 1" deep. To conveniently check the oil level, remove the Plug in the Floorplate and use the engine Dipstick for the 1" measurement. Chain Case oil should be replaced after every 500 hours of operation; a Plug is provided in the front of the Loader to drain the oil. Replace or replenish Chain Case oil with 10W40 or equivalent.

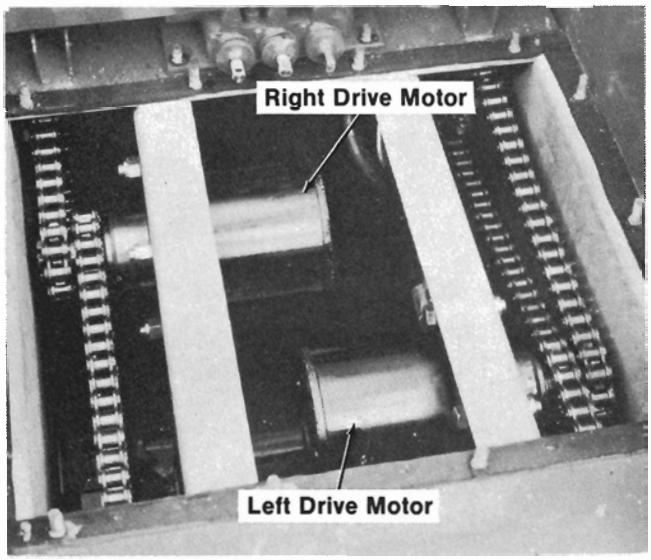


Fig. 21: Drive Chains & Motors

ELECTRICAL SYSTEM (Fig. 22)

Refer to the Wiring Diagram provided for details on troubleshooting the Loader Electrical System.

NOTE: The System is protected by a 20 ampere In-line Fuse. BE SURE to correct the cause of the Fuse blowing-out before attempting to replace the Fuse. Replace the Fuse with a BUSS SFE 20 or equivalent Fuse. Raise and block the Seat assembly up for access to the In-line Fuseholder.

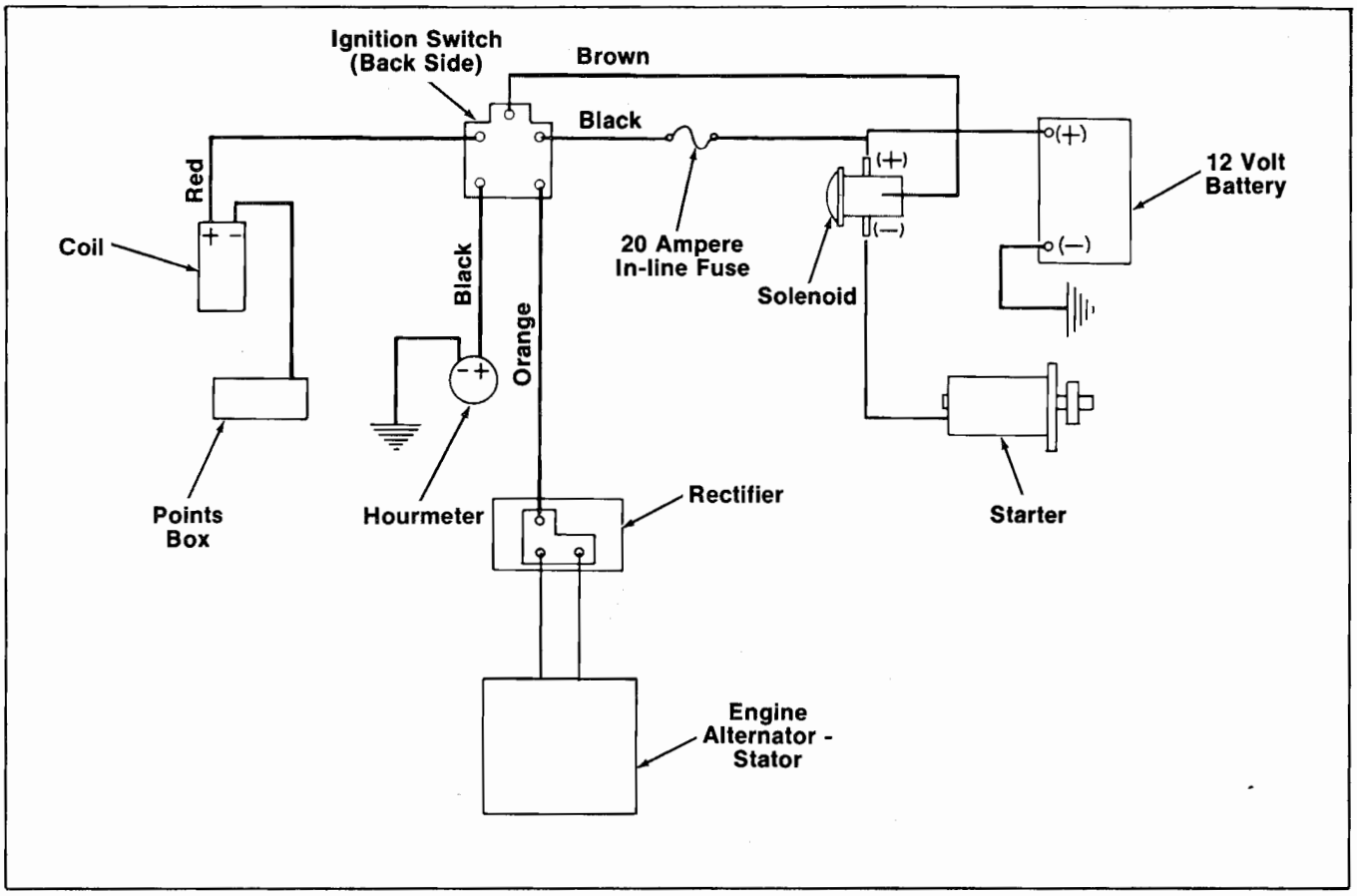


Fig. 22: Electrical Circuit Diagram

ENGINE (Fig. 23 & 24)

NOTE: Refer to the separate Engine Manual provided for maintenance, service and adjustment routines.

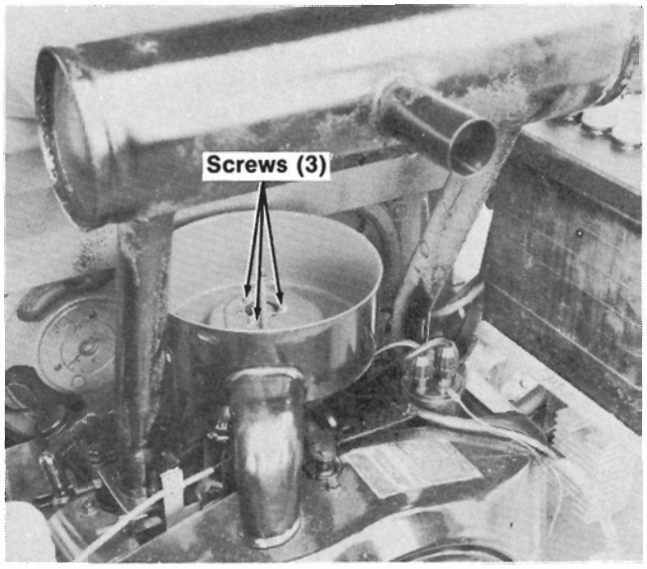


Fig. 23

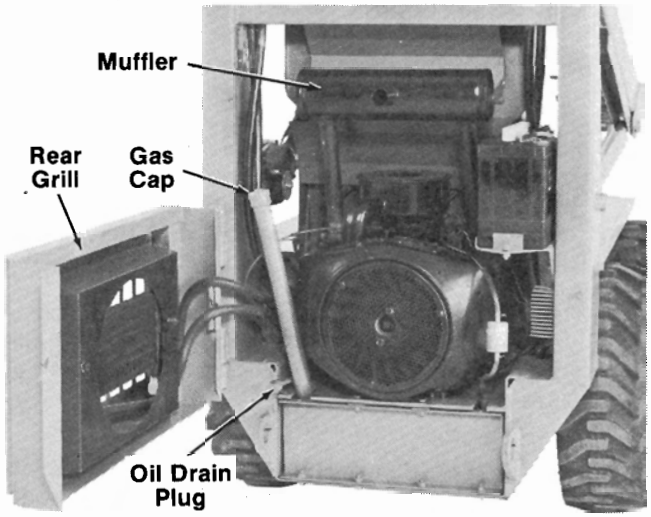


Fig. 24

Air Cleaner

Check the Air Cleaner on a routine basis every 10 hours of operation. Replace or wash the Filter Element as necessary. As part of the routine Air Cleaner inspection, **BE SURE** to observe that the (3) Screws, which fasten the Air Cleaner to the Carburetor, are tightly secured. If the screws vibrate loose and fall-out, they may drop into the Valves which would necessitate removing the Intake Manifold to recover them with a magnet.

Exhaust System

The Muffler for the HL360 is attached to the engine Manifold with appropriately-sized Exhaust Pipe Clamps. Inspect the Muffler and Clamps after every 50 hours of operation.

Oil

Crankcase oil should be drained and replaced after the first 20 hours of operation and at regular 50 hour intervals thereafter. Open the Rear Grill for access to the Drain Plug in the bottom left corner. Refer to the Engine Manual for oil type information.

HYDRAULIC CYLINDERS (Fig. 25)

HL360 Lift and Tilt Cylinders can be conveniently removed and taken to the Dealer for repair or replacement. Check Cylinders and connecting Hoses for leaks after every 10 hours of operation.

WARNING: Lower the Load Arms onto the Loader Frame BEFORE attempting to remove a Lift Cylinder. Allow the Hydraulic oil to cool sufficiently and relieve pressure BEFORE attempting to remove Hoses.

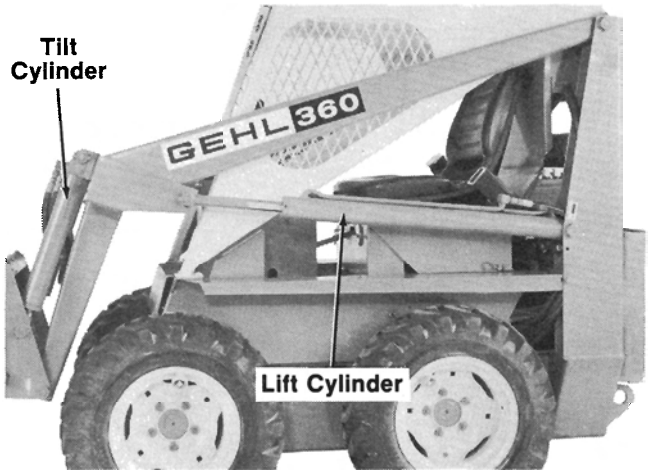


Fig. 25

HYDRAULIC & HYDROSTATIC RESERVOIR & FILTER (Figs. 26, 27, 28 & 29)

The Hydraulic & Hydrostatic Reservoir & Filter are shared by both the Hydraulic and the Hydrostatic Systems' components. The Reservoir fluid level should be constantly maintained at the proper operating level displayed by the Indicator Tube and Decal. The Filter is located underneath the Seat assembly and should be replaced initially after the first 10 hours of operation and on a routine basis after every 100 hours of operation. Reservoir oil should be drained and replaced after 500 hours of operation. To drain the oil, remove a bottom Hose connection. The Reservoir level, when properly filled will be approximately 2″ from the top.

NOTE: Avoid overfilling the Reservoir which results in blowing oil out the Vent/Filler Cap.

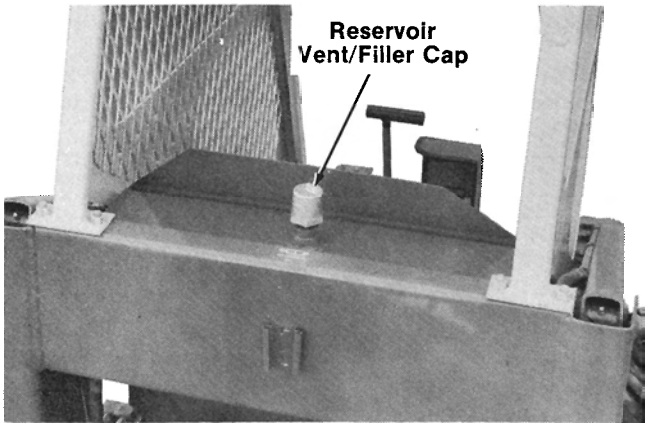


Fig. 26

Fig. 27

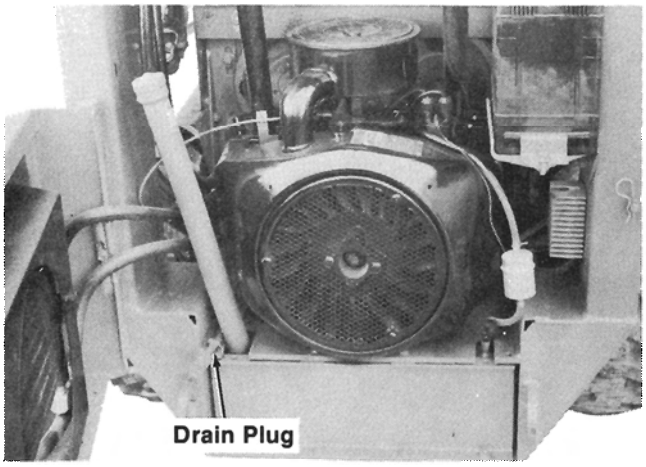


Fig. 28

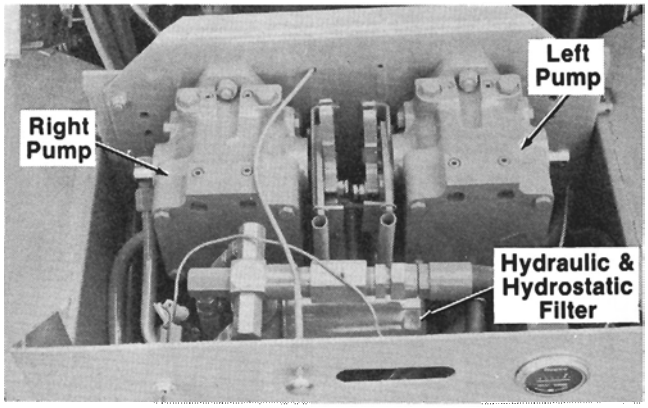


Fig. 29

HYDRAULIC SYSTEM (Fig. 30)

Refer to the Hydraulic System & Flow Diagrams for illustrated pressure and flow troubleshooting details. Individual Hydraulic and Hydrostatic Component service information is treated under appropriate topics within this Service section.

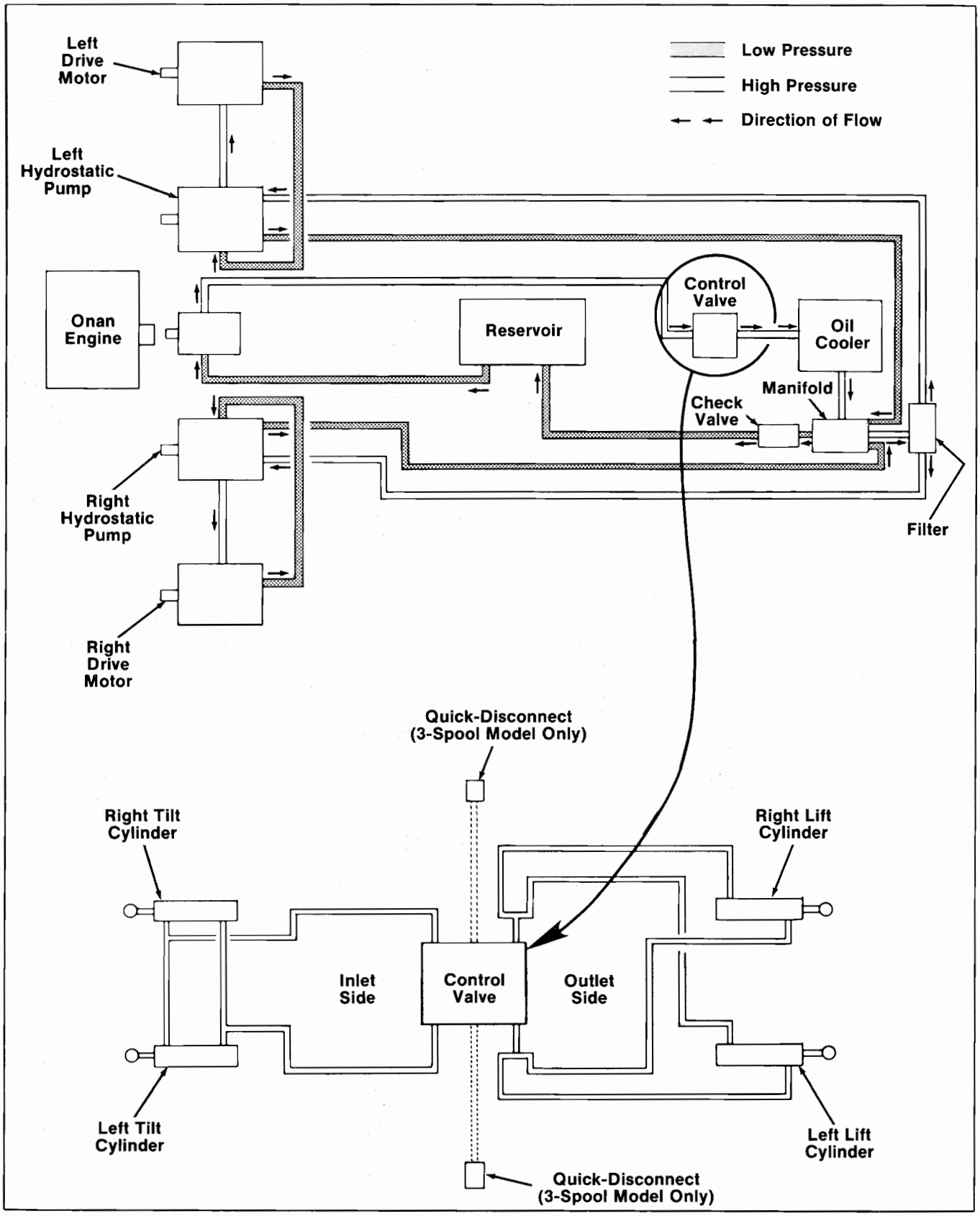


Fig. 30: Hydraulic Circuitry & Flow Diagrams

HYDROSTATIC PUMPS

Pumps (Fig. 29)

The Left Hydrostatic Pump, controlling the left Drive Motor for the left side Wheels, and the Right Hydrostatic Pump, controlling the right Drive Motor for the right side Wheels, are coupled to and driven by a common Drive Belt off of the engine Output Drive Sheave. An Idler is also provided to engage or disengage the Pumps, especially for cold weather starting and for lockout when the Hydraulic system is operated independently. Refer to the Belt Tension Readjustment topic in the Adjustment section for proper Drive Belt tensioning procedures.

Drive Sheave Realignment (Fig. 31)

Realignment of the Pump Drive Sheaves should only be required if excessive belt wear is occurring or if the Pumps are Dealer removed and repaired or replaced. With the Seat assembly removed, the engine off and the Ignition Key removed, and the Pump Drive Belt Idler disengaged, proceed to realign the Pump Drive Sheaves.

NOTE: Pump Sheaves are secured to the Pump Shafts with split and tapered Hubs. Sheave alignment is through a process of adjust, measure and readjust. Tapped holes in the Sheaves are used to draw the Sheaves toward the Hubs. Tapped holes in the Hubs are used to push the Sheaves away from the Hubs.

1. Through the process of adjust, measure and re-adjust, get the Left Pump Sheave to line-up with the Motor Drive Sheave.
2. In the same manner, after the Left Pump Sheave is lined-up with the Motor Sheave, get the Right Pump Sheave to line-up with the Left Pump Sheave.

NOTE: Use a straight-edge across the faces of the Sheaves to check for parallel alignment. Readjust Belt tension following details in the Adjustment section.

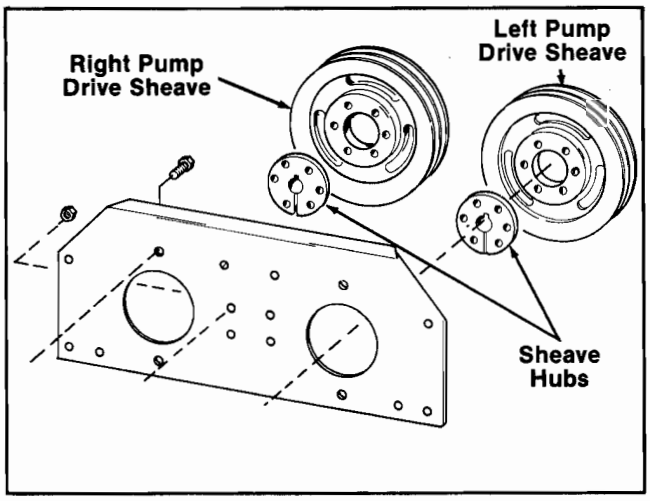


Fig. 31

OIL COOLER (Fig. 32)

The HL360 Oil Cooler is mounted in the Rear Grill and accessible by opening the Grill. Check the Oil Cooler for leakage and clean it of any dirt or debris build-up on a routine basis after every 10 hours of operation.

WARNING: Allow the Hydraulic Oil to cool-off BEFORE attempting to clean or service the Cooler.

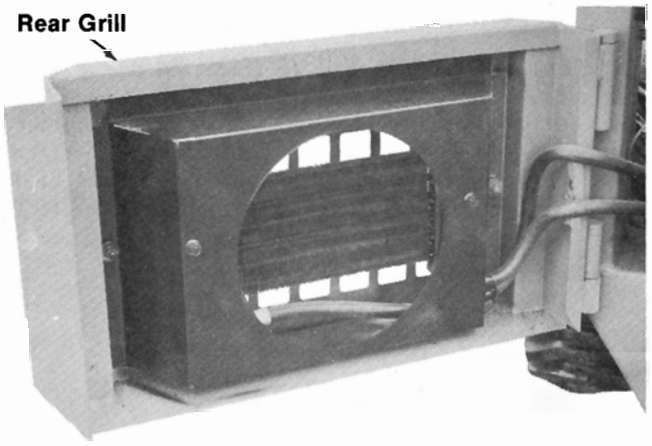


Fig. 32: Oil Cooler

OVERHEAD GUARD (Fig. 33)

The Overhead Guard can be conveniently detached and removed (by two men) from the Loader for additional clearance to perform service or adjustment in the areas of the Hydrostatic Pumps, engine or Traction T-bar Linkages to the Pumps. Loosen and remove the (2) bolts in each corner which secure the Guard to the Loader Frame. Then, carefully raise the Guard and lift it off the Loader.

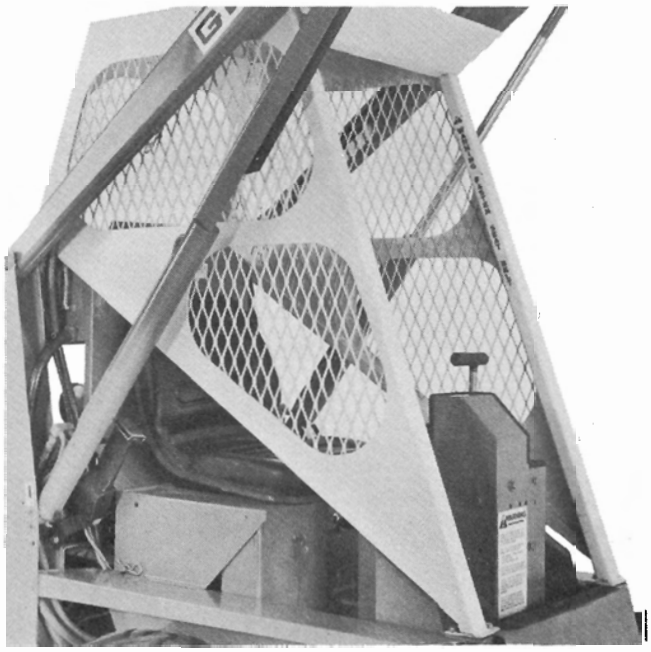


Fig. 33: Overhead Guard

WARNING: BE SURE to replace and tightly secure the Overhead Guard BEFORE operating the Loader.

SEAT ASSEMBLY (Fig. 33)

The Seat assembly can be removed for clearance to perform service or adjustment in the areas of the Hydrostatic Pumps, engine or Traction T-bar Linkages to the Pumps. Remove the Lockpins on each side at the base of the Seat assembly, raise and remove the Seat assembly.

SYSTEMS CONTROL VALVE (Figs. 34 & 35)

Depending on the model HL360, the Skid Steer Loader is equipped with either a basic 2-Spool or a 3-Spool Systems Control Valve. Both variation Valves have common Lift/Tilt T-bar Linkage arrangements. The 3-Spool Valve also has an Auxiliary Output Control Linkage connection.

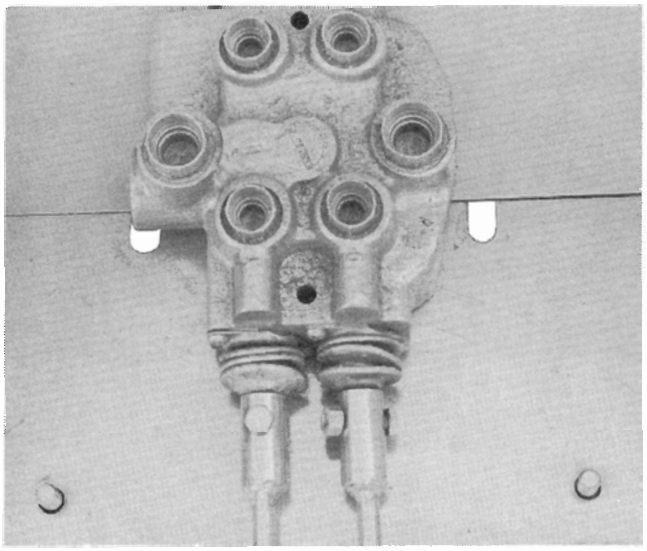


Fig. 34: 2-Spool Control Valve

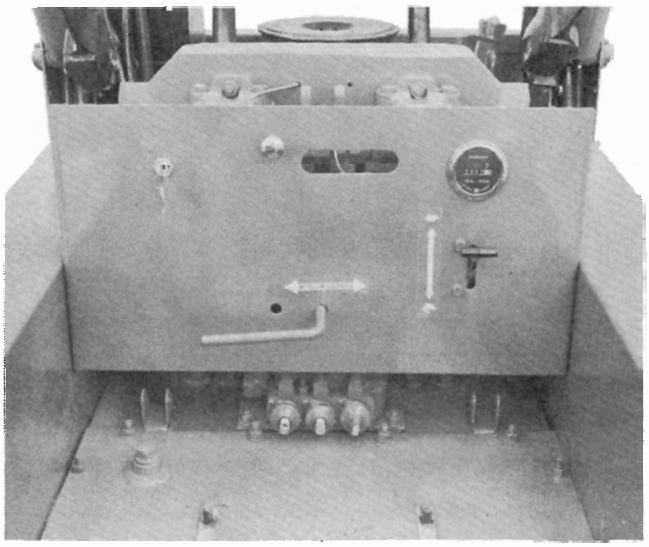


Fig. 35: 3-Spool Control Valve with Linkages Disconnected and Console & Seat Removed

Repair

NOTE: Systems Control Valve removal and service should only be carried-out by your Gehl dealer.

Maintenance

The Systems Control Valve is mechanically maintenance free requiring only that it be operated with properly filtered and routinely changed oil. Mechanical linkages should always be kept properly adjusted and tightly secured. Hydraulic Hose connections should also be checked frequently to insure leak-free condition.

SYSTEMS PUMP (Fig. 36)

The Systems Pump is driven directly by the engine and provides hydraulic pressure and oil flow to the Systems Control Valve.

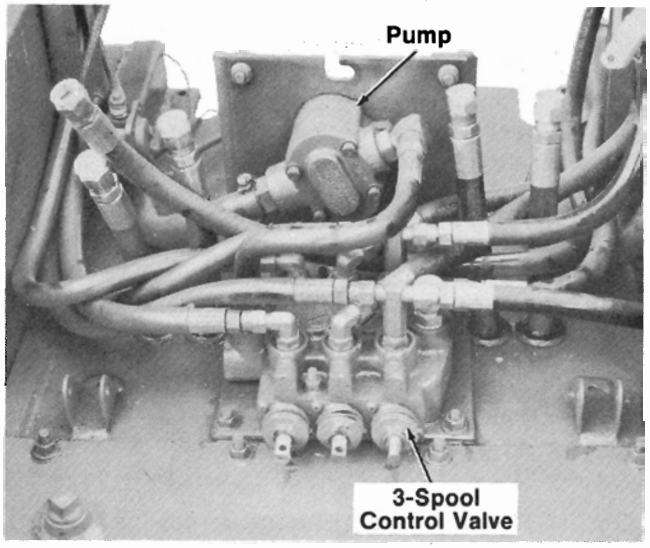


Fig. 36

Repair

NOTE: Systems Pump removal and service should only be carried-out by your Gehl dealer.

Maintenance

The Systems Pump is mechanically maintenance free requiring only that it be operated with properly filtered and routinely changed oil. Hydraulic Hose connections should be routinely inspected and kept tightly secured and leak-free.

T-BARS

T-bars are used on all Gehl Skid Steer Loaders. Right-hand and left-hand operations and functions are likewise the same for all Gehl Loaders. Several particular differences however, should be noted and understood, especially in regard to service routines.

Traction T-bar Neutral (Fig. 37)

"Neutral" position for the Traction T-bar and Hydrostatic Drive Pumps is the position at which Loader Wheel rotation stops on both sides of the Loader. To check the "Neutral" position, raise and carefully block the Loader up so that the Wheels are **NOT** touching the ground.

NOTE: Refer to the Adjustment section for proper raising procedure.

With all four Wheels off the ground, engage the Hydrostatic Pump Drive Belt Idler and note whether the Wheels on either (or both) sides of the Loader are turning. If turning, proceed to the Pump Arm Realignment topic.

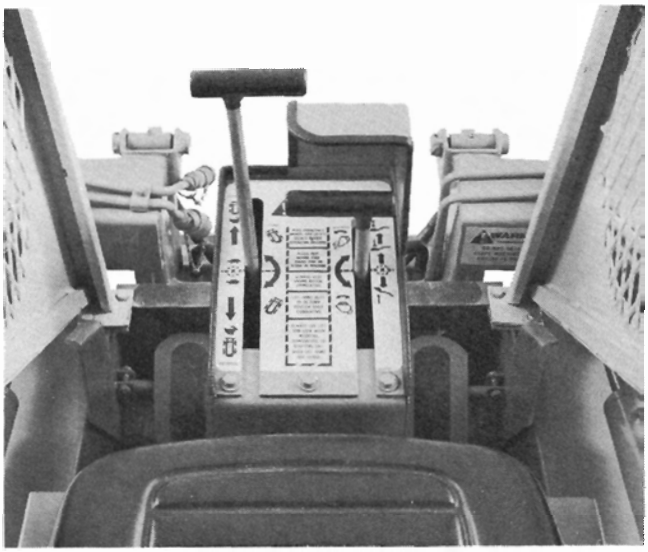


Fig. 37: T-bars in "Neutral" Positions

Pump Arm Realignment (Figs. 37 & 38)

If the Right Wheels are turning, the Right Pump "Neutral" setting is incorrect or if the Left Wheels are turning, the Left Pump "Neutral" setting is incorrect. If both Wheels are turning both Pump "Neutral" settings are incorrect. Readjust the Pump Arm positions as follows:

1. Shut the engine off and disengage the Pump Idler.
2. Remove the Seat assembly, start the engine and engage the Pump Idler.
3. Using two open-end wrenches, loosen the Locknut with one wrench and rotate the Cam with the other wrench until the Pump Arm reaches the point where Wheel movement stops; retighten the Locknut.
4. As necessary, repeat step 3 for the other Pump to reset the "Neutral" Arm position.

After the correct "Neutral" position has been obtained for both Pumps, readjust the T-bar (in Console slot) position to bring the T-bar into alignment with the "Neutral" mark on the Operation Decal. Refer to Traction Rods information under the following T-bar Linkage Rods topic. **BE SURE** also to check and reset the Positive Stops of the T-bar; refer to the Positive Stops topic within this section.

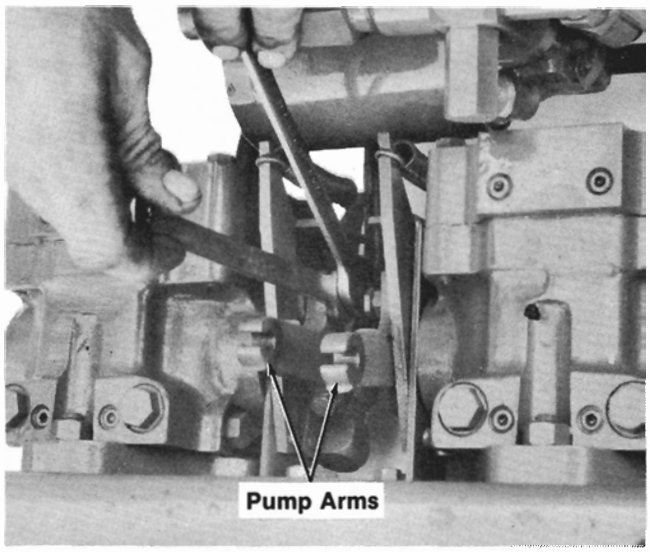


Fig. 38

T-bar Linkage Rods

Lift/Tilt T-bar

Lift/Tilt T-bar Linkage Rods can be conveniently disconnected from the Systems Control Valve by removing the bolts which secure the Rods to the Valve Spools. Rod lengths are factory set and should **NOT** require readjustment unless the Systems Control Valve and/or Operator's Console is removed for service.

Traction T-bar (Figs. 38 & 39)

Traction T-bar Linkage Rods are likewise factory adjusted to match the Hydrostatic Pump Arm positions. It may become necessary to readjust the Rod lengths if Pump Arm positions are changed or if the T-bar position indicated by the Operation Decal on top of the Console does **NOT** match the "Neutral" positions of the Pumps. To adjust the Traction T-bar Rod lengths, proceed as follows:

NOTE: Traction T-bar Linkage Rod lengths should only be changed after the correct "Neutral" positions of the Hydrostatic Pumps have been obtained.

1. With the engine off and the Hydrostatic Pump Drive Belt Idler disengaged, remove the Seat assembly for convenience and better access to the Pump Arms.
2. Remove the Cotter Pins and detach the Rods from the Pump Arms.

3. Loosen the Locknuts on the opposite ends of the Rods.

4. Position the T-bar at the "Neutral" mark and make sure that it is exactly parallel with the front of the Loader.

5. Without moving the T-bar from the position set in step 4, rotate the Rods out or in (as required) to align the right-angle ends of the Rods with the slotted holes in the Pump Arms.

6. After the correct lengths are adjusted, lock the Rod positions by tightening the Locknuts.

7. Replace and secure the Rods back into the Pump Arms and recheck the T-bar position.

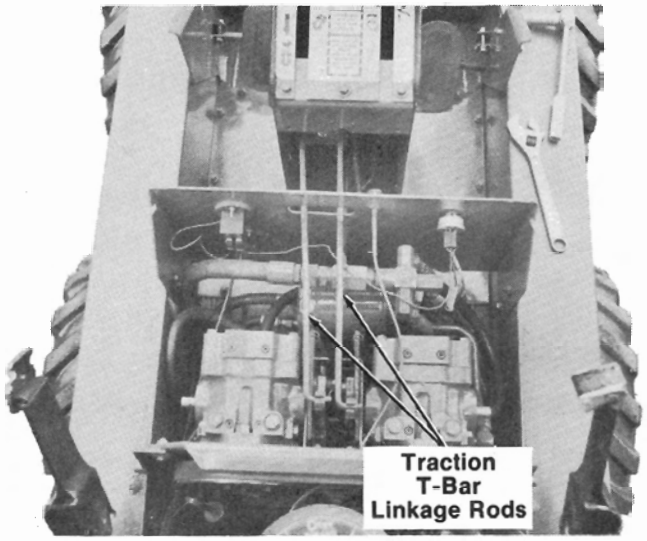


Fig. 39: Hydrostatic Pumps (Seat Removed)

Positive Stops (Fig. 40)

Positive Stops are provided for the Traction T-bar to prevent surpassing the rotational limits of the Hydrostatic Pump Arm Shafts. To check and adjust the Positive Stops, remove the Plate onto which the Operation Decal is mounted. Once the Plate is removed, the Locknuts on both Stops should be loosened. Then, each Stop Bolt should be turned all the way in and the T-bar moved all the way in both directions until the Arm movement forward and back stop naturally (without excessive force). The Stop Bolts should then be set up to the T-bar and given another turn to prevent bottoming-out. Retighten the Locknuts after the proper Stop Bolt positions are adjusted.

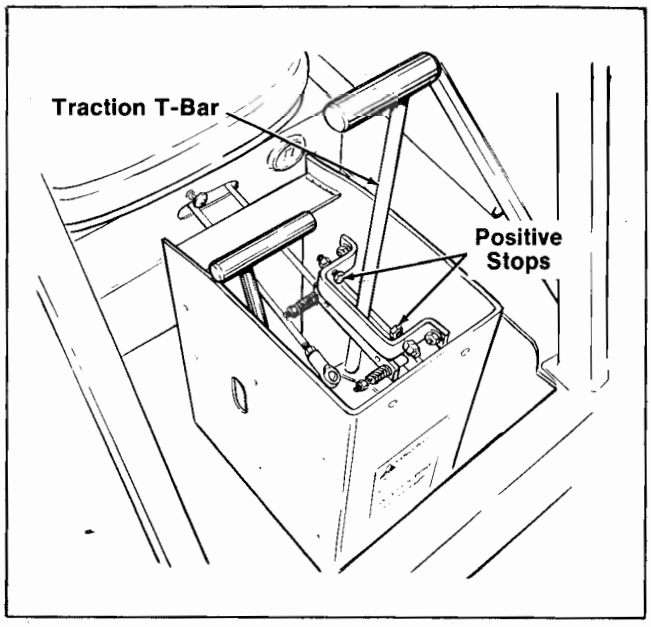


Fig. 40: Console Cover Removed

WHEELS & TIRES (Fig. 41)

HL360 Skid Steer Loaders are available with two variations of Wheels and Tubeless Tires sets: standard set is composed of 12 x 5.70 4-ply Tires on 12:00 x 5 Wheel Rims or, optional set is composed of 23 x 8.50-12 4-ply Flotation Tires on 12:00 x 7 Wheel Rims. Loader function and proper operation is dependent upon routine maintenance of the Wheels and Tires. Beyond repair of the Tires due to damage from operating hazards, such as nails, sharp rocks, etc., the following guidelines should be closely complied with.

Fig. 41: HL360 with Optional Flotation Tires (Installed)

Tire Pressure

Proper equal and maintained Tire pressure is essential to long life, even wear and operating stability. The standard 12 x 5.70 4-ply Tire pressure should be checked after every 10 hours of operation and maintained at 45 psig (315 kPa). The optional 23 x 8.50-12 4-ply Flotation Tire pressure should be checked after every 10 hours of operation and maintained at 35 psig (245 kPa).

Tire Wear & Rotation

Proper function of the Loader is greatly dependent upon the design and orientation of the Tire Tread and direction of rotation. Treads are angled toward the centers of the Tires and **MUST** be mounted on the Wheels and, in turn, on the Loader so that their angles and rotations are forward on all four Wheels. These important factors limit Tire rotation, without Wheel changing, to only interchanging the front Tire on one side with the rear Tire on the same side of the Loader. Without switching Tires with Wheels, **NO** Tire can be moved to the other side of the Loader.

NOTE: If the Loader is equipped with optional Flotation Tires, the front Tires are filled with liquid for additional stability. Thus, without removing and installing the liquid in another Tire, NO Tire position switching can be carried-out.

NOTE: To prevent damage to the Drive Motor and Drive Chains, it is highly recommended that both Tires on one side of the Loader are changed at the same time even though only one Tire's Tread is badly worn. This replacement of both Tires is necessary to equalize the loads on both Chains which are driven off the same Double Sprocket and Drive Motor.

Wheel Nuts

Wheel Nuts **MUST** be checked after the first 10 hours of operation and at regular 50 hour intervals thereafter. Check that all Nuts are torqued to 55 ft-lb (7.6 kg-m).

LT8500 Skid Steer Loader Trailer

TROUBLESHOOTING

NOTE: This Troubleshooting guide presents problems, causes and remedies beyond the extent of loose, worn or missing parts and is developed in consideration of the machine being in otherwise good operating condition. Refer to Index for section and topic page references.

ELECTRICAL SYSTEM

PROBLEM	CAUSE	REMEDY
Engine will **NOT** turn over.	Battery connections loose or corroded.	Clean Terminals or Cables and tighten them securely.
	Battery discharged or defective.	Recharge or replace Battery.
	Interconnection wires loose.	Troubleshoot and inspect all wiring.
	Ignition switch, regulator, solenoid and/or starting motor defective.	Refer to Engine manual or check with dealer for additional assistance.
Engine turns-over but will **NOT** start.	No fuel in Tank.	Refuel.
	Battery is weak.	Use Jumper Cables or recharge Battery.
	Fuel is **NOT** reaching Carburetor.	Inspect Fuel line for blockage and remove.
	Pump Idler engaged.	Disengage Idler to lessen the load on the engine.
Engine overheating.	Crankcase oil supply is too low or overfilled.	Add or drain oil as necessary.
	Engine is overloaded.	Increase engine RPM with Throttle.
	Engine cooling fins are dirty.	Backflush fins with compressed air.
	Air circulation is restricted.	Remove dust, dirt or blockage.
	Exhaust System is restricted.	Remove restriction.
	Dirty or improper grade oil.	Drain and replace with correct grade of oil.
	Incorrect engine timing adjusted.	Readjust timing per Engine Manual.
	Shrouding on engine is removed.	Replace Shrouding.

PROBLEM	CAUSE	REMEDY
Loader Traction or Lift/Tilt systems overheating.	Oil Cooler restricted or **NOT** functioning properly and restricting air flow.	Clean the Cooler and inspect it for damage, blockage or improper functioning and contact dealer for additional directives.
	Both Hydrostatic Pumps overloading.	Traction T-bar being improperly operated; refer to Operation section for correct procedures.
	Systems Pump overloading.	Lift/Tilt T-bar being improperly operated; refer to Operation section for correct procedures.
General operations sluggish.	Air in the Hydraulic system.	Purge air; check Oil Level Indicator and replenish (if necessary).
	Engine **NOT** responding to loads.	Reset engine characteristic; see Engine Manual.
	Oil leaking somewhere in the system (possibly internally).	Contact dealer for additional directives.
Lift/Tilt system **NOT** responding at all.	Engine/Systems Pump Drive Coupler defective.	Inspect and contact dealer for additional directives.

PROBLEM	CAUSE	REMEDY
Hydraulic cylinder action is slow.	Low engine RPM.	Increase engine RPM.
	Oil is too heavy.	Allow oil to warm-up by rolling the Bucket back and pushing the T-bar past Relief for several seconds.
	Oil is leaking past cylinder packing.	Check packing condition and O-rings and replace if worn excessively.
	Systems Valve Spools are **NOT** opening completely.	Adjust Linkage Rod lengths for a full 1/4" Spool travel.
	Systems Pump is malfunctioning.	Contact dealer for troubleshooting directive.
	Oil is leaking past Control Spools.	Valve Housing or Spools defective; contact dealer for repairs.
Load Arms do **NOT** maintain a raised position when the T-bar is moved to "Neutral", or Load Arm operations are occuring very slowly.	Leakage of oil past the Cylinder Seals.	Check and replace Seals.
	Spool **NOT** centered in Valve.	Adjust T-bar Linkage Rod length or repair Valve Spool with dealer's directive.
	Oil is leaking past Control Spools or Control Relief Valve.	Systems Control Valve Housing Spools or Relief Valve defective; contact dealer for repair.
	Leaking Fittings or Hoses.	Inspect, tighten or replace as necessary.
Bucket or Fork drifts downward (rolls slowly forward) with T-bar in "Neutral", or Bucket roll forward or roll back operation occurs very slowly.	(See immediate preceding causes and remedies)	
Load Arms will **NOT** lower.	Lift Arm Lock engaged.	Release Lock.
Jerky Load Arm or Bucket action.	Air in Hydraulic System.	Cycle the Cylinders and maintain full-pressure for a short time to purge the air.
	Low oil level in Reservoir.	Check Level Indicator and replenish.
	Sticking Systems Control Valve.	Contact dealer for further directive.

PROBLEM	CAUSE	REMEDY
Loader will **NOT** move in either direction.	Pump Idler disengaged.	Engage Idler after engine running temperature is reached.
	Oil level is too low.	Check and replenish if necessary.
	Linkage Rods are disconnected.	Check connections and reconnect if loose.
	Drive Belt too loose or broken.	Retension or replace; see Adjustment section.
Wheels on one side of Loader do **NOT** move at all while other side Wheels move correctly forward or back.	Side with Wheels **NOT** turning has either a Hydrostatic Pump, Drive Motor or Drive Chain/Sprocket breakdown.	Inspect Drive components for that side to determine problem and contact dealer for additional directives.
	Pump Arm for side of Loader with Wheels **NOT** moving is loose, broken or disconnected.	Correct Pump Arm problem; see T-bars topic in Service section.

OPTIONAL FEATURES & ACCESSORIES

Various Buckets and Forks are available which can be ordered separately to match particular application requirements. A weld-on Grapple Attachment (Fig. 42) is also available for use on an appropriate Bucket or Fork used on a Loader with Auxiliary Hydraulics (factory installed) and 3-Spool Systems Control Valve.

Order Number	Description
801740	36″ Utility Bucket
801741	42″ Utility Bucket
801747	42″ Light Material Bucket
801748	48″ Light Material Bucket
801742	60″ Light Material Bucket
801744	36″ Manure Fork
801743	42″ Manure Fork
801745	36″ Pallet Fork
801746	Weld-on Grapple Attachment (See separate instructions for mounting details)

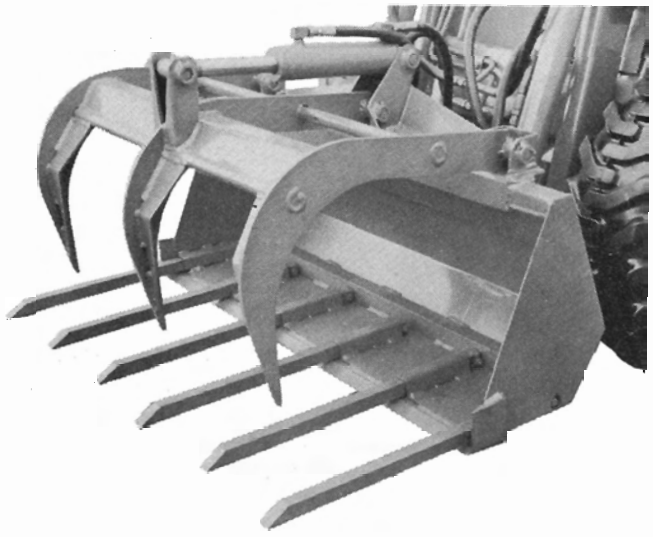


Fig. 42: Manure Fork with Accessory Grapple (Installed)

DECAL LOCATION

Decal Locations are shown to assist in application of new decals in the event of damage to the Decal or refinishing of the machine. Check listing for information and the illustrations for their location.

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. Peel the other portion of the backing paper off slowly while applying hand pressure to smooth out Decal surface.

NOTE: Always order Decals by set number. DO NOT order Decals separately.

WARNING: ALWAYS observe Safety Rules shown on the Decals. If Decals become damaged, or if unit is repainted, replace Decals.

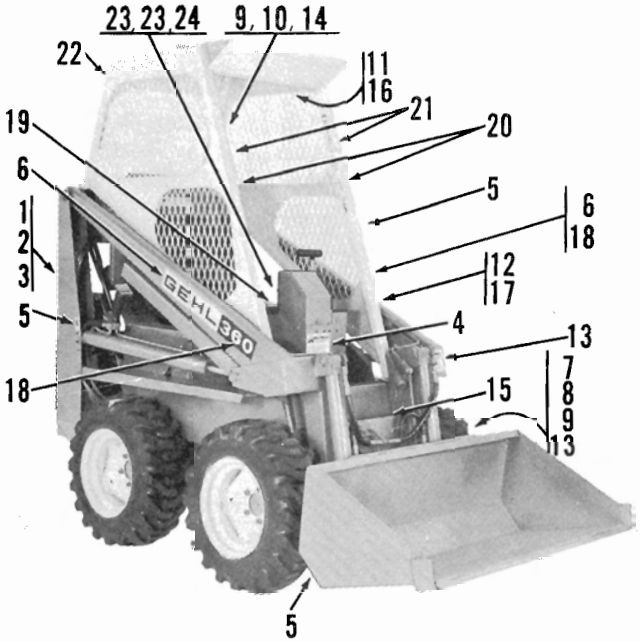
NOTICE

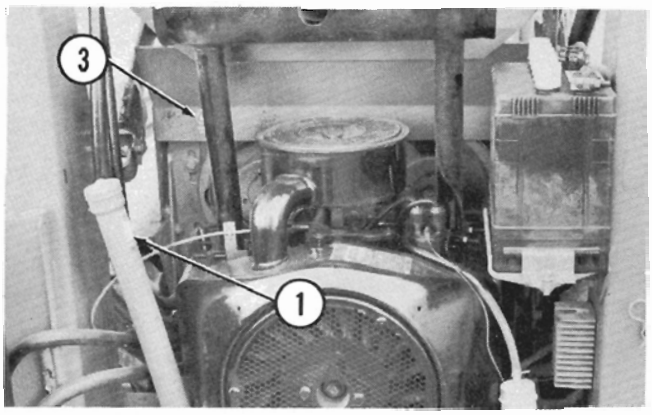
Order paint for refinishing machines from this list:

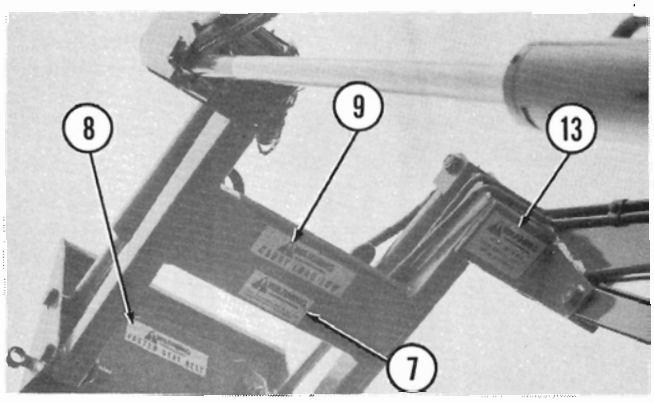
901225	One Gallon Blaze Paint
901226	One Gallon Maize Paint
901295	6 (12 oz.) Cans Blaze Spray Paint
901296	6 (12 oz.) Cans Maize Spray Paint

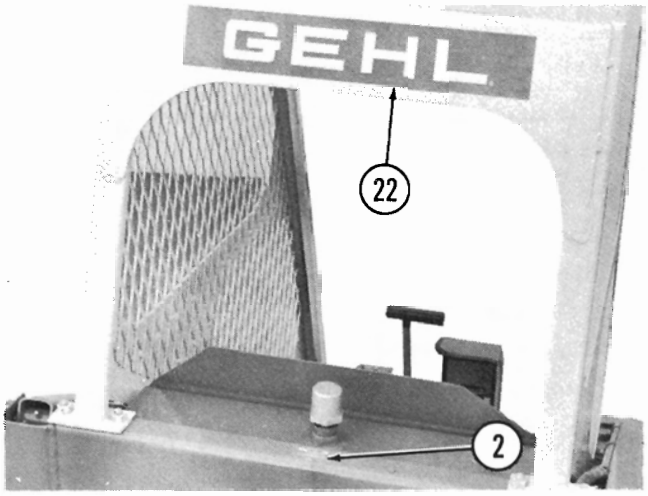
The Decal Set Number for the HL360 is 068402. The set includes the following:

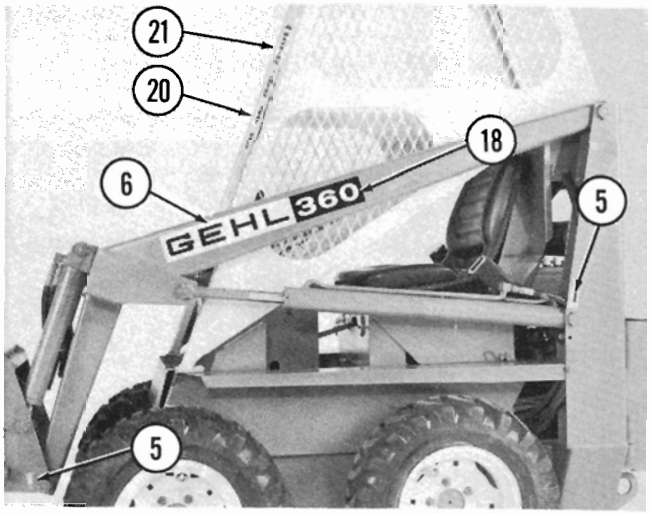
1 - 054952 Decal - Gasoline
2 - 054953 Decal - Hydraulic Oil
3 - 055634 Decal - Engine Oil
4 - 060144 WARNING - Read Operator's Manual
5 - 061187 Decal - Grease Fitting (Four Places)
6 - 061201 GEHL 3" x 16" (Two Places)
7 - 061268 WARNING - Electrical
8 - 061310 WARNING - Fasten Seat Belt
9 - 061311 WARNING - Carry Load Low (Two Places)
10 - 061312 WARNING - Lift Arm Lock (Two Places)
11 - 061313 WARNING - General
12 - 061327 Decal - Slow - Fast (Turtle - Rabbit)
13 - 061328 WARNING - DO NOT ENTER (Two Places)
14 - 061645 Decal - Oil Level
15 - 064874 Non-skid Friction Surface Strip (12 x 2)
16 - 068048 Decal - Bucket Densities
17 - 068049 Decal - Engage - Disengage
18 - 068050 360 (Two Places)
19 - 068052 Decal - T-bar Control Operation
20 - 068083 Decal - Fasten Seat Belt (Two Places)
21 - 068425 Decal - WARNING (Two Places)
22 - 068320 GEHL 3" x 17"
23 - 060514 Non-skid Friction Surface Strips (5-3/4 x 2) (Auxiliary Pedals - Two Places)
24 - 068312 Non-skid Friction Surface Strips (19 x 2) (Two Places - Pedal Guard & Bucket)

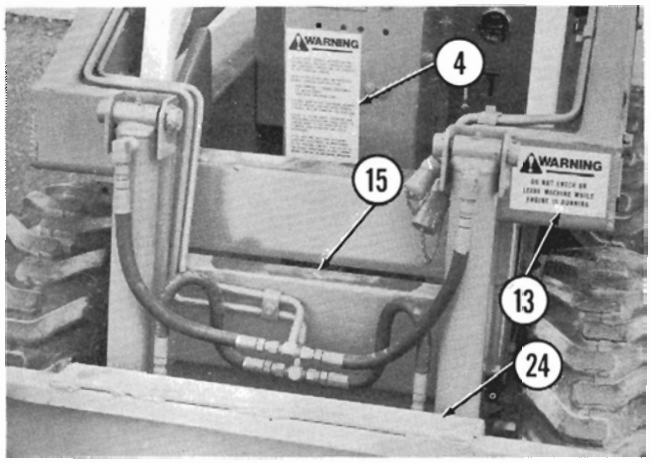


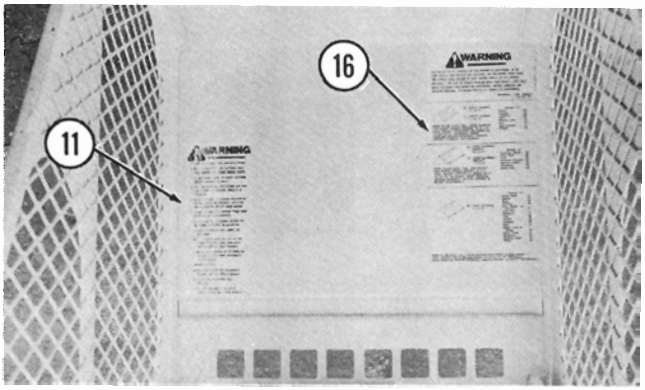


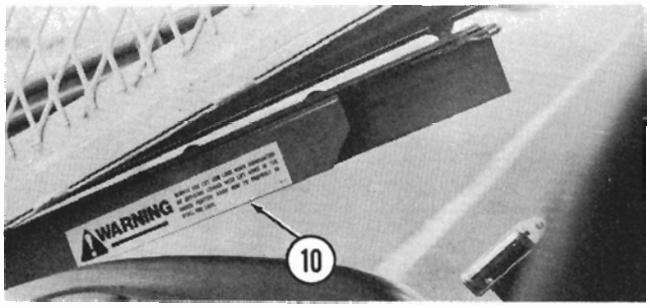


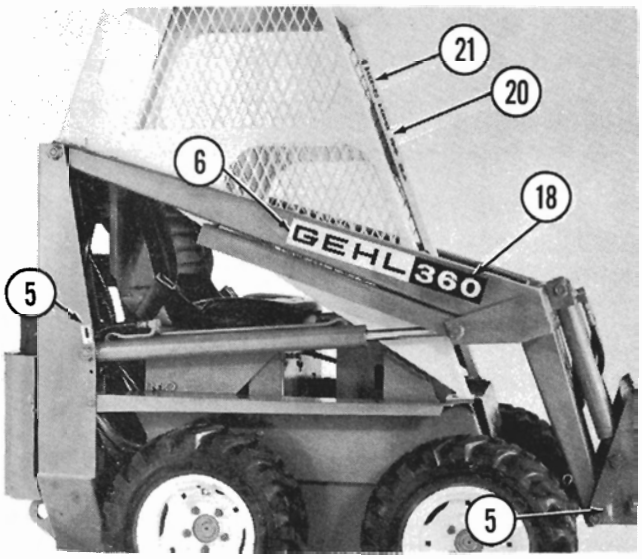

GEHL
22
2

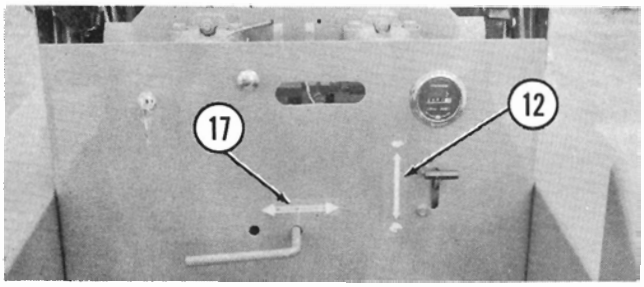

21
20
18
6
GEHL 360
5
5


WARNING
4
15
WARNING
13
24

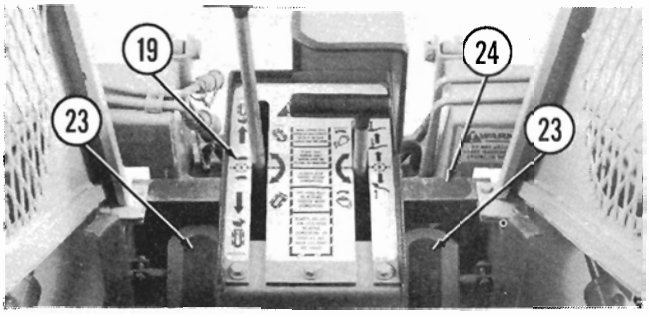

16
WARNING
11


WARNING
10


21
20
6
18
GEHL 360
5
5


17
12


14
9
WARNING
CARRY LOAD LOW
WARNING
10


19
24
23
23

MAINTENANCE SCHEDULE

COMPONENT & SERVICE REQUIRED	PROCEDURE AND/OR SECTION/TOPIC REFERENCE (Check Pg. # Index)
Service after 10 Hours of Use	
Check Engine Crankcase Oil*	Add if necessary - See Engine Manual
Change Hydraulic/Hydrostatic Oil Filter (1st time only)	See **Lubrication** section
Check Engine Air Cleaner Element	Wash or Replace if necessary - See Engine topic in **Service** section
Inspect Oil Cooler	Clean if necessary - See Oil Cooler topic in **Service** section
Check Wheel Nut Torque (1st time only)	See Tires & Wheel topic in **Service** section
Check Hydraulic/Hydrostatic Reservoir Fluid	Replenish if necessary - See **Lubrication** section
Check Hydrostatic Drive Pump Belt Idler Tension & Sheave Alignment	See Hydrostatic Pumps topic in **Service** section
Check Tire Pressure	See Tires & Wheels topic in **Service** section
Date after Each 10 Hour Servicing	
Service after 50 Hours of Use	
Change Engine Crankcase Oil	See Engine Manual
Clean & Inspect Battery & Terminals	See Battery topic in **Service** section
Lubricate all Fittings	See **Lubrication** section
Check that Wheel Nuts are tightly secured	See Tires & Wheels topic in **Service** section
Inspect Muffler & Exhaust System	See Engine topic in **Service** section
Check Chain Case Oil Level	Replenish if necessary - See **Lubrication** section
Date after Each 50 Hour Servicing	
Service after 100 Hours of Use	
Check & Adjust Engine Operating Characteristics	See Engine Manual
Replace Hydraulic/Hydrostatic Oil & Filter	See Hydraulic & Hydrostatic Reservoir & Filter topic in **Service** section
Inspect Drive Chains & Motors	See Drive Chains & Motors topic in **Service** section
Date after Each 100 Hour Servicing	
Service after 500 Hours of Use	
Change Drive Chain Case Oil	See Drive Chains & Motors topic in **Service** section
Date after Each 500 Hour Servicing	

*Replace for the first time only aftr 20 hours of operation.

INDEX

GEHL®

FARM EQUIPMENT

GEHL COMPANY WEST BEND, WISCONSIN 53095 U.S.A.

902369/1.5M1P179

Printed in U.S.A.