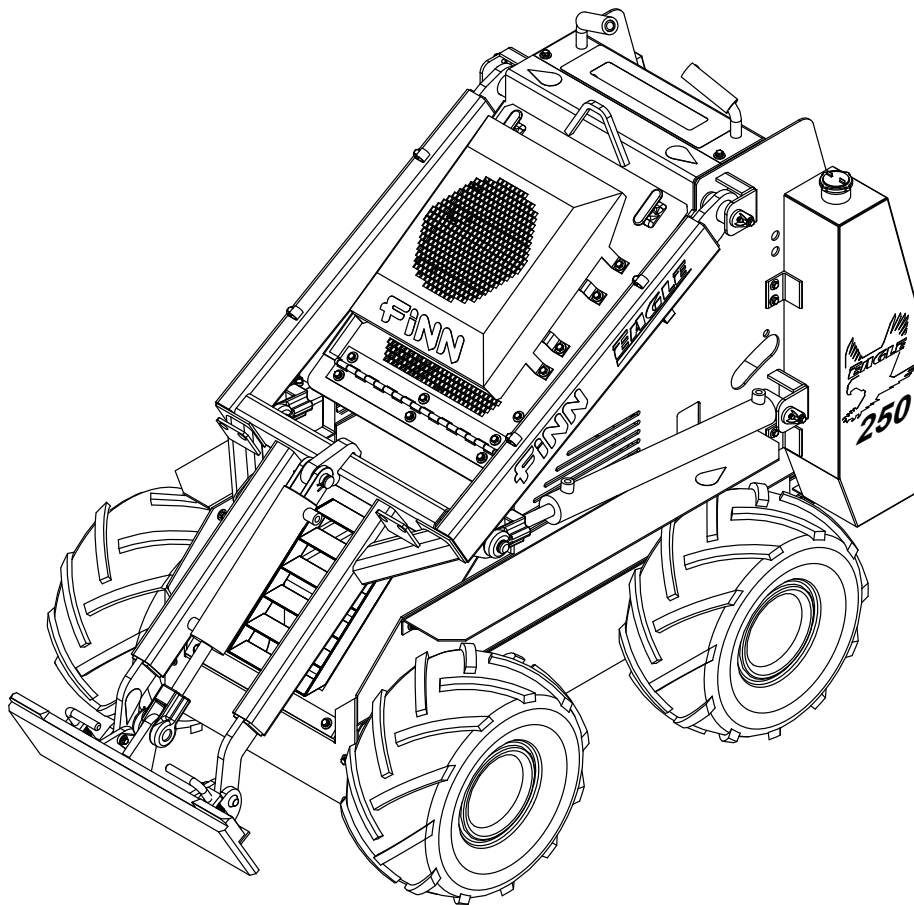


# **FINN** **CORPORATION®**

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## ***EAGLE* 250**

### **Skid Steer** **Parts and Operator's Manual**

Model **SM**      Serial No. \_\_\_\_\_

## NOTES

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## NOTES

# SAFETY FIRST

With any piece of equipment, new or used, the most important part of its operation is **SAFETY!**

Finn Corporation encourages you and your employees to familiarize yourselves with your new equipment and to stress safe operation.

The first four pages of this manual are a summary of all the main safety aspects associated with this unit. Be sure to read completely before operation of machine.



This symbol is used throughout the operation and maintenance sections of this manual to call attention to safety procedures.

**- Pay Attention -**



**DANGER:** Immediate hazards which **WILL** result in severe personal injury or death.



**WARNING:** Hazards or unsafe practices which **COULD** result in severe personal injury or death.



**CAUTION:** Hazards or unsafe practices which **COULD** result in minor personal injury or product or property damage.

**IMPORTANT:** Indicates that equipment or property damage could result if instructions are not followed.

**NOTE:** Gives helpful information.

## Finn Corporation

### CALIFORNIA

#### Proposition 65 Warning

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

### CALIFORNIA

#### Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

# SKID STEER SAFETY SUMMARY SECTION

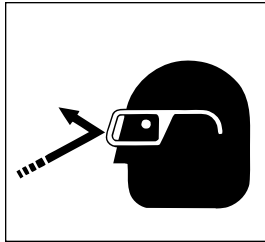
It is important that all operators of this machine are familiar with all the safety aspects mentioned below before operating the machine. Always keep a copy of this manual with the machine. It is the responsibility of the operator of the machine to fully understand this safety section. Remember that YOU are the key to safety. Good safety practices protect not only you but also the people working with and around you. Keep in mind that this safety sheet is written for this type of machine only. Practice all other usual and customary safe working precautions; and above all, remember that safety is up to you.

## I. PRE-START EQUIPMENT CHECK (equipment check is to be made with the engine off):

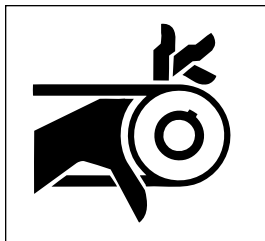
1. Verify that all guards are in place.
2. Check the tires for proper inflation.
3. Inspect all hydraulic hoses and tubes for cracks, bulges or damage. If hose or tube is bad, replace immediately.
4. Keep equipment and operator's platform clean of oil, fuel spillage, and any other dirt or debris build-up.
5. Remove obstacles such as rocks, tree limbs, etc. from the work area. Tall grass and weeds can hide obstacles.

## II. MACHINE OPERATION:

1. Always wear safety goggles when operating the machine. Other safety attire such as safety shoes, ear protection, gloves, hard hats, dust masks, etc., should be worn as required by warning decals on machine, operator's manuals, job requirements, or local ordinances and insurance regulations. Remove rings, watches, etc. Avoid loose fitting clothing, which may get caught in rotating machinery.



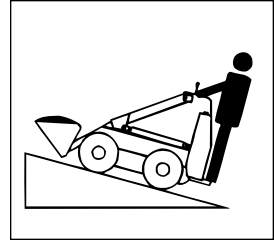
2. Do not operate the machine without all guards in place.



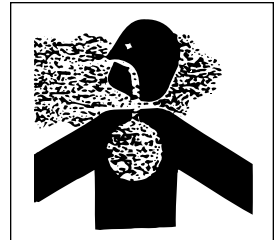
3. When operating on wet grass, reduced traction could cause sliding.
4. Make sure that no one is working on the machine. Make sure the work area is clear of all persons, animals, etc. Keep unauthorized personnel away from the machine and attachments at all times. Only responsible adults, who are familiar with the instructions, are to operate the machine. Never allow children to operate the machine.

5. Never attempt to connect or disconnect auxiliary couplers while operating any attachments.

6. Operate up and down slopes with the heavy end of the machine uphill. An empty bucket makes the rear the heavy end and a full bucket makes the front of the machine the heavy end. Most other attachments will make the front the heavy end.



7. Never operate machine in an enclosed area without venting the exhaust of the unit. Deadly carbon monoxide fumes can accumulate.

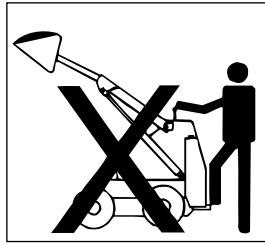


8. Keep all movement on slopes slow and gradual. Do not make sudden changes in speed or direction.
9. Avoid turning on slopes. If you must turn, turn slowly and keep the heavy end uphill.
10. Slow down when turning. Sharp turns on any terrain may cause loss of control.
11. Never operate this or any machinery when fatigued, tired, under the influence of alcohol, illegal drugs or medication. You must be in good physical condition and mentally alert to operate this machine. Always be aware of obstructions, which may cause injury to the operator or damage the machine.
12. Never modify the machine. Never remove any part of the machine (except for service and then reinstall before operating).
13. Use only FINN approved attachments. Other attachments can change stability of machine and may void warranty.
14. When leaving the equipment unattended for any reason, be sure to:
  - A. Lower loader arms.
  - B. Shut off engine.
  - C. Take keys with you.
  - D. If on a steep grade, block the wheels.

These actions are recommended to avoid unauthorized use, runaway, vandalism, theft and unexpected operation when the equipment is restarted.

15. Do not smoke, read, eat or otherwise lose or lessen your attention in any manner while operating the SkidSteer. Operating is a full time job.

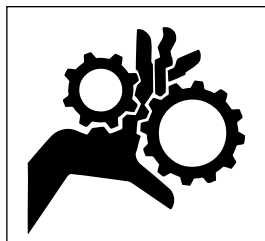
16. Do not carry arm in the raised position. Always carry loads close to the ground. Do not step off of the operating platform with the load raised.



17. Check carefully for overhead clearances before driving under them. Never contact any obstruction.
18. Stay clear of all electrical conductor lines.
19. Do not try to stabilize the machine with your hands or feet.
20. Do not exceed a slope of 15 degrees. Avoid starting or stopping on slopes.
21. Never carry passengers on equipment or attachments. This is not a toy and should not be used for recreation. Do NOT fool around: operate in a smooth controlled fashion.
22. Do not exceed the rated operating capacity, as machine may become unstable which may result in loss of control.
23. Operate only in daylight or sufficient artificial light.
24. Use extra care when loading or unloading the machine onto a trailer or truck. The unit should be lifted from the lift eye located on the top center frame member. When transporting the machine on a truck or trailer always properly secure using straps or chains in areas that will not damage equipment. Chain tie-down rings are provided on each side of machine.
25. Do not operate near drop-offs, ditches, or embankments. The machine could suddenly turn over if a wheel goes over the edge of a cliff or ditch, or if an edge caves in.

### III. MAINTENANCE:

1. Before servicing the machine, turn off engine and allow all moving parts to stop. Disconnect the battery cables to prevent accidental starting of the machine. Tag the engine operating area to show that the machine is being serviced. Use lockout/tagout procedure (29 CFR 1910.147).



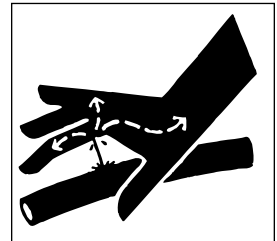
2. Battery maintenance. Lead-acid batteries contain sulfuric acid which may damage eyes or skin on contact. Always wear a face shield to avoid acid in the eyes. If acid contacts eyes, flush immediately with clean water and get medical attention. Wear rubber gloves and protective clothing to keep acid off skin. Lead-acid batteries produce flammable and explosive gasses. Keep arcs, sparks, flames, and lighted tobacco away.

3. Filling of fuel. Never fill the fuel tank with the engine running, or while smoking or when near an open flame. Never smoke while handling fuel or working on the fuel system. The fumes in an empty container are explosive. Never cut or weld on fuel lines, tanks, or containers. Wipe off any spilled fuel and let dry before starting engine.

**NOTE:** Be careful not to allow fuel, lubricant, hydraulic fluid, or cooling fluids to penetrate into the ground or be discharged into the water system. Collect all used fluids and dispose of them properly.

4. It is recommended that only authorized genuine FINN replacement parts be used on this machine.

5. Fuel or hydraulic fluid under pressure can penetrate the skin or eyes and cause injury, blindness or death. To check for such leaks, use a piece of cardboard or wood instead of your hand. Pressure may build up in the hydraulic system so use caution when removing the cap.



6. Perform all maintenance with the loader arms in the lowered position. If any maintenance requires the arms raised, secure the cylinder with locking device.
7. Some parts and assemblies are quite heavy. Before attempting to unfasten any heavy part or assembly, arrange to support it by means of a hoist, by blocking or by use of an adequate arrangement to prevent it from falling, tipping, swinging or moving in any manner which may damage it or injure someone. Allow all components on machine or attachments to cool before attempting to maintain, adjust or service, or before storing.
8. Stop and inspect the equipment if you strike an object. Repair if necessary.
9. If repairs require use of a torch or electric welder, be sure that all flammable and combustible materials are removed. Fuel or oil reservoirs must be emptied, steam cleaned and filled with clean water before any cutting or welding on them is attempted. Do NOT weld or cut on any tank containing oil, gasoline or their fumes or other flammable material, or any container whose contents or previous contents are unknown.

## CURRENT SET OF SAFETY DECALS



**! DANGER:** To minimize risk of accidents.

- Never jerk the control levers. Use a steady, smooth motion.
- Never operate the control levers unless you are standing on the operator platform and have a firm grasp on the grip handles.

**IMPORTANT:** For safe operation read and understand operator's manual before using unit.



OFF  
RUN  
START

**STOPPING INSTRUCTIONS**  
Engine is equipped with fuel shutdown solenoid. Move throttle to mid-range before stopping.



**IMPORTANT:** Be sure auxiliary power is off before starting unit.

**! DANGER**


- Operator must be skilled and trained in operation.
- Use safely, Machine is not a toy.
- Never use when under the influence of alcohol or drugs.
- Know the work area. Check for holes and overhead clearances. Avoid overhead power lines.
- Always place implement on ground when leaving machine.
- Use wheel chocks when parking on a slope.
- Never smoke while fueling. Stop engine before fueling
- Stop engine and remove key before leaving machine.
- Wear close fitting protective clothing and shoes.

**To Minimize the Risk of Accidents, Serious Injury or Death:**

- Keep hands and feet away from all moving parts.
- Go slow and avoid sharp turns on slopes.
- Know location of underground utilities before you dig.
- Never run engine without adequate ventilation.
- Firmly hold the grip handles when operating.
- Never place feet under the operating platform.
- Keep children and other people a safe distance away.
- Never let children operate the machine.
- Never carry children or passengers.

P/N 071115

**! WARNING**



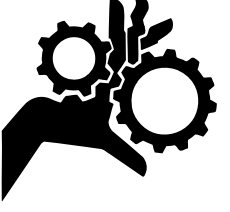
**Do not operate without guards in place.**

12179

**! DANGER**

**HOT EXHAUST**

012278

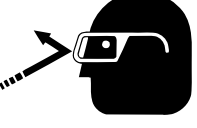


**! WARNING**

Turn engine off, disconnect battery, and allow all moving parts to stop before servicing equipment.

22357

**! CAUTION**



**Wear eye protection around operating equipment.**

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# OPERATION AND MAINTENANCE MANUAL FOR FINN SKID STEER 250

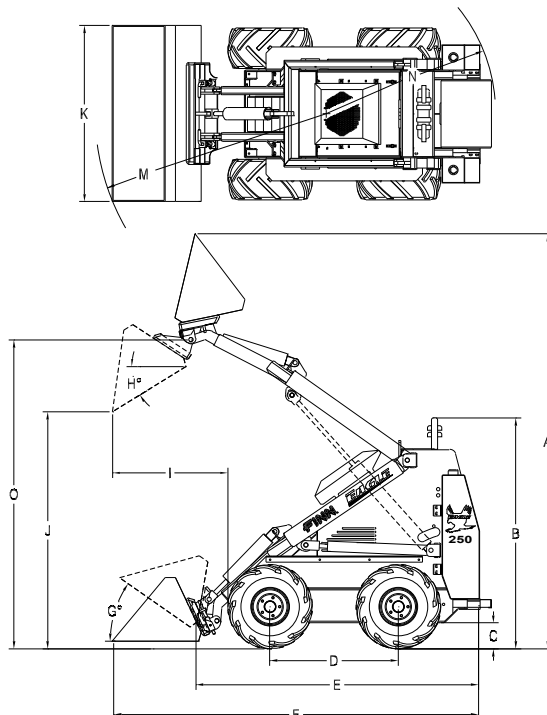
## INTRODUCTION:

The FINN Corporation would like to thank you for your latest FINN purchase. In our efforts to maintain a quality and growing relationship with each and every customer, we would like to encourage you to contact us for help with service, genuine replacement parts, or any other information you may require.

The Eagle Skid Steer 250 is a compact hydraulically driven power unit. It is intended to be used with a variety of attachments. This manual is intended to provide step-by-step instructions on the operation, care, and maintenance of the Eagle 250. For best results and to insure longer life of the equipment, please follow the instructions carefully. For your safety read the entire manual before operation of this unit, as well as all supplied manuals and safety instructions for any attachments. In addition, it contains illustrations and a complete list of parts and components for easy identification. The operational lifting capacity has been calculated using an operator weighing 200 pounds and with full fuel tanks. Variations in operator weight and fuel levels will alter the lifting capacity accordingly.

### FINN Skid Steer 250 Specifications

Engine .....	25hp Kohler Command Pro Gas
Fuel tank. ....	11 US Gallon capacity (41.5 liters)
Oil capacity. ....	2 quarts (1.9 liters)
Hydraulic system	
Pressure .....	3000 psi (211 kg/cm <sup>2</sup> )
Flow .....	13.25 gpm (50.3 lpm) @ 3600rpm
Reservoir .....	14.5 gallons (55 liters)
Filter .....	10 micron hydraulic filter
Electric system	
Battery .....	12 volt
Interlocks .....	Aux. valve neutral to start
Wheels & tires	
Standard rim. ....	9 x 7.00
Standard tires. ....	18 x 9.5-8
Controls .....	Key, throttle, choke
Steering .....	Zero-turning radius
Weight, no attachment . . . .	1515 lbs. 687 kg)
Weight with std. Bucket . . . .	1672 lbs. (758 kg)
Operating capacity	
With 200 lb. operator . . . . .	550 lbs. (250 kg)



### FINN Skid Steer 250 Dimensions

A Maximum operating height. ....	97.5" (248.6 cm)
B Overall height of loader .....	52" (132.1 cm)
C Ground clearance. ....	5" (12.7 cm)
D Wheel base .....	30.5" (77.4 cm)
E Overall length with no attachment .	65.5" (166.4 cm)
F Overall length with std. Bucket. . .	87.25" (221.6 cm)
G Maximum roll back (self leveling)..	30 degrees
H Maximum down tilt .....	36 degrees
I Reach with bucket .....	24.5" (69.9 cm)
J Dump height (std. Bucket) .....	51.75" (131.4 cm)
K Bucket width ( std. Bucket) .....	40.5" (102.9 cm)
L Loader width	
Minimum (w/opt. tires) .....	35.5" (90.2 cm)
Maximum (w/std. tires) .....	40.5" (102.9 cm)
M Turning radius with bucket .....	55" (139.7 cm)
N Turning radius without bucket . . . .	39.5" (100.3 cm)
O Hinge pin height .....	71.25" (180 cm)

## PRE-START EQUIPMENT CHECK:



**CAUTION:** Equipment check is made with the engine off and all rotating parts stopped.

Safety check to insure operator safety:

1. Make sure that all guards are in place.
2. Lubricate equipment (see lube chart, page 13).
3. Check engine oil - refer to engine operator's manual.
4. Check that the tires are properly inflated.
5. Inspect and clean the hydraulic oil cooler if dirt is present.
6. Inspect the engine air cleaner (refer to the engine operator's manual).
7. Check fuel level. When filling the fuel tanks leave approximately 3/4" air gap from the top of the tanks so that the fuel has room to expand as it warms up. Do not fill the tanks completely full.

**IMPORTANT:** Only use clean, fresh unleaded gasoline with an octane rating of 87 or higher. Do not use gasoline left over from the previous season do not add oil to the gasoline or use fuel additives containing methanol or ethanol.

**NOTE:** This engine is not equipped with a spark arrestor muffler. Use or operation of this machine in the State of California on any forest-covered or unimproved grass-covered land, without an approved spark arrestor muffler, is a violation of the law. Other states may have similar laws.

## STARTING PROCEDURE:



**CAUTION:** See safety section of the manual (pages 2-4) before operating the machine.

1. Stand on the operator's platform.
2. Make sure that the auxiliary attachment levers are off (center detent position).
3. Set throttle about 1/4 open.
4. Pull choke control out.
5. Turn key clockwise until the starter catches and engine fires. Keyswitch will automatically move to the run position.
6. Push choke control in for even running.

**NOTE:** This engine has a safety system which will shut the engine off if the oil pressure decreases below an acceptable level or if the engine temperature is too high.

## OPERATION:

Think safety first! Please carefully read the Skid Steer safety summary section on pages 2-4 and all supplied safety information on all attachments before attempting to operate the machine. Closely following these instructions will help you and any bystanders avoid bodily injury, as well as prevent damage to the machine.

## CONTROLS:

**NOTE:** It is very important to become familiar with all the controls in Figure 1 before you start the engine and operate the machine.



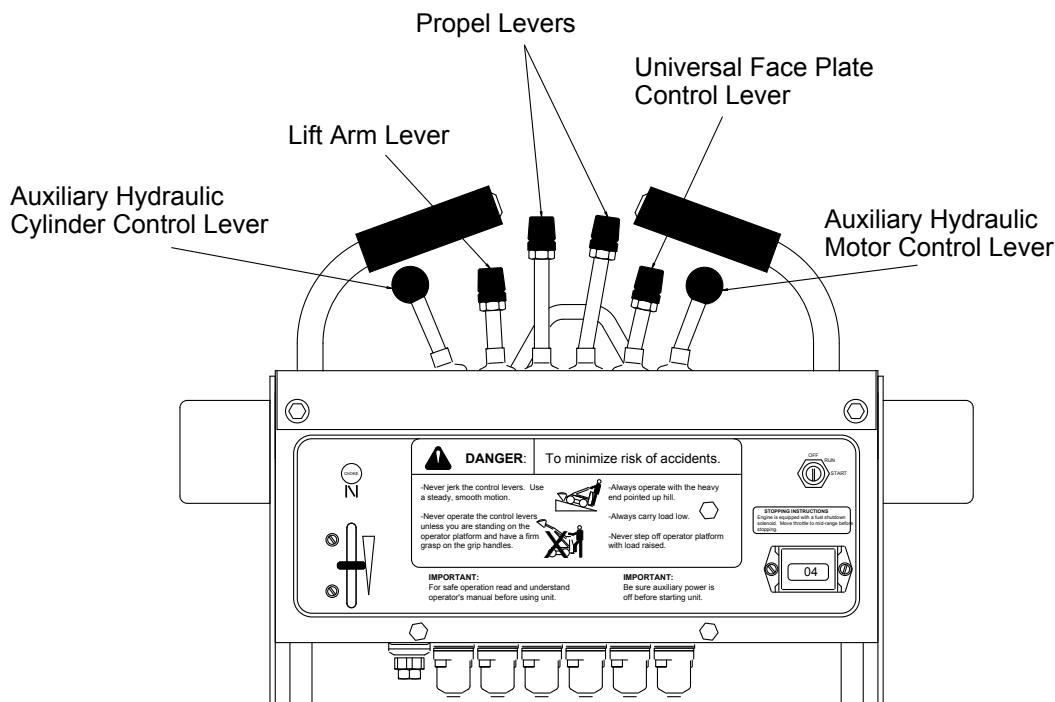
**WARNING:** Always keep both hands on the grip handles and both feet on the operator's platform whenever operating the machine.



**WARNING:** Always use a smooth motion whenever moving any control lever. Never jerk any of the control levers; this will result in the machine jerking, which could throw the operator from the machine.

**IMPORTANT:** For an individual's initial introduction to the machine, a level and open area free of hazards should be chosen to learn and practice safe operation. Do not attempt to do work with the unit until you are proficient in its operation. When first learning to use the machine only run the throttle up to about 2400-2600rpm. This will limit the amount of hydraulic fluid to the wheel motors allowing for slower and smoother operation. As the operator becomes more proficient the throttle can be increased for maximum potential of the machine.

**NOTE:** The left and right-side of the machine is determined as the operator stands on the platform facing forward.



**Figure 1**

## **PROPEL:**

To go forward, slowly push the propel levers forward. To drive straight equal pressure on both the right and left lever is required. To go straight forward push both right and left levers the same amount forward; the farther the levers are pushed forward the faster the machine will propel. To go straight reverse simply pull the levers back towards you. Always use a slow and gradual motion whenever operating the machine. Both of these levers are spring centered to return to neutral when the lever is released.

The machine is steered by moving one of the drive levers further forward than the other. For a gradual turn, to the left for example, move the right drive lever farther ahead of the left lever. The machine also has the capability to do a true “pivot steer”, which allows the machine to pivot on its own radius. To accomplish this push one of the drive levers forward and pull the other drive lever an equal amount backwards. The farther the levers are pushed/pulled the faster this pivot turning will take place.

To slow or stop the machine, move the propel levers towards the center detent position to slow and allow to return to center position to stop machine

## **LIFT ARM:**

To raise the lift arm simply pull the lift arm lever back towards you. To lower the lift arm, push the same lever forward away from you. This lever is spring centered to return to neutral when the lever is released.

## **UNIVERSAL FACE PLATE CONTROL:**

To tilt the universal face plate and any connected attachment forward push the universal face plate control lever forward away from you. To curl the plate and attachment pull the lever back towards you. This lever is spring centered to return to neutral when the lever is released.

## AUXILIARY HYDRAULICS CONTROL:

This unit is equipped with two auxiliary controls. One is used for attachments that have a hydraulic motor controlling them and the other one is used for attachments that are controlled with a hydraulic cylinder.

The auxiliary control lever that is on the right side of the machine (when facing forward) is the one used to control attachments with a hydraulic motor. This lever is friction detented in both directions so as to control the amount of oil that actually goes to the attachment. One direction will turn the motor forward and one will turn the motor in reverse. This lever is not spring centered so it is necessary to manually move it back to the center detent position which will turn the hydraulic motor that it is controlling off.

**NOTE:** The engine will not start unless this lever is in the center detent position.

The auxiliary control lever on the left side of the machine is used to control attachments with a hydraulic cylinder. This lever is spring centered to return to neutral when the lever is released. Pushing the lever one direction will extend the cylinder while pulling the lever in the opposite direction will retract the cylinder.

## LEAVING THE MACHINE UNATTENDED:

Whenever leaving the machine unattended, even if it is only for a few minutes, it is important that the main lifting arms are returned to the ground as close as possible, depending on which attachment is on the machine. Turn the ignition key to the “OFF” position to stop the engine. Be sure to remove the key from the ignition switch and take it with you so that any unauthorized personnel cannot start the machine.

## ATTACHMENTS:

The universal faceplate is designed to allow quick interchange with a variety of attachments. The attachments are held onto the machine by two spring-loaded locking pins. These pins simply rotate 180 degrees to lock and unlock any attachment. The following steps are the proper way to install any attachment.

**IMPORTANT:** Use only Finn authorized attachments. Other attachments may change the stability and operating characteristics of the unit. The machine warranty may be voided if unauthorized attachments are used.

## CONNECTING ATTACHMENTS:

1. Insure that the locking pins are in the unlocked position (pins facing outwards).
2. Start the engine.
3. Slowly tilt the universal load plate forward.
4. Move the machine forward so that the universal faceplate lines up with the adapter plate on the attachment.
5. Once the universal faceplate is inside the adapter plate on the attachment curl the universal faceplate all the way back and raise the loader arms slightly. The attachment should roll back onto the universal faceplate.
6. Turn the ignition key to the “OFF” position to stop the engine. Carefully step off platform to engage the attachment lock pins.
7. Rotate the locking pins to the locked position (pins facing inwards). Make sure that the locking pins are fully engaged by observing the locking pins sticking through the bottom of the adapter plate on the attachment.

If the attachment that is being connected is hydraulically driven proceed with the following steps. If it is not the engine may be started and the unit operated.

8. Move the auxiliary control levers back and forth to relieve any pressure in the auxiliary attachment lines.
9. Remove the protective covers that are on the auxiliary attachment quick disconnects. Connect the covers together to prevent contamination.
10. With a clean rag, wipe the ends of the hoses and inside the quick disconnects to prevent dirt from entering the hydraulic system.
11. Connect the hoses coming from the attachment to the quick disconnects on the machine.
12. Give the hoses a tug to confirm that they are properly connect to the quick disconnects.
13. Start the engine and begin operation of the machine.

## **DISCONNECTING ATTACHMENTS:**

1. Lower the attachment onto the ground or onto a trailer.
2. Turn the ignition "OFF" to stop the engine.
3. Move the auxiliary control lever back and forth to relieve any pressure in the auxiliary attachment lines.
4. Remove the attachment hoses from the machine and couple the hoses together to prevent contamination to the hydraulics during storage.
5. Install the protective covers onto the auxiliary attachment quick disconnects to prevent dirt from contaminating the hydraulic system.
6. Rotate the locking pins to the unlock position (pins facing outwards).
7. Start the engine.
8. Tilt the universal faceplate forward, and back the machine away from the attachment.

## **HYDRAULIC SYSTEM:**

The hydraulic system on the Finn Eagle 250 is designed to give trouble free service, if properly maintained. The most important areas of maintenance are the hydraulic fluid and filtration. The hydraulic reservoir holds 14.5 gallons of Mobil DTE-13M hydraulic fluid. The reservoir is filled by removing the vent plug at the top front of the reservoir and filling the reservoir with hydraulic fluid until it begins to seep out of the vent plug. Do not over fill the hydraulic reservoir. The reservoir was designed with extra room to allow the hydraulic fluid to expand as the temperature of the fluid increases. It is important not to substitute automotive oil as severe hydraulic damage may result to the hydraulic system. The hydraulic fluid should be replaced per the lubrication schedule, if the oil becomes milky, or if it gives off a burnt odor. The hydraulic oil filter must be replaced on schedule with a 10 micron filter– Finn part number #021618. When replacing the hydraulic oil filter be sure to lubricate the rubber gasket on the replacement filter. The hydraulic system relief is factory set at 3000 psi.

## **USING CYLINDER LOCK:**



### **WARNING:**

**Normal maintenance should be done with the lift arms lowered. If any maintenance or repairs have to be done that require the lift arms to be in the raised position, the cylinder lock must be used.**

Installing the cylinder lock:

1. Start the engine and remove any attachment, which may be on the unit.
2. Raise the lift arm to the fully raised position.
3. Turn the ignition key off to stop the engine.
4. Remove the cylinder lock and the two snapper pins from the right fender.
5. Position the cylinder lock around the exposed rod of the right hand side cylinder and install the two snapper pins through the provided holes.
6. Start the engine.
7. Slowly lower the arms until the clevis on the cylinder comes in contact with the cylinder lock. This should sandwich the cylinder lock between the cylinder clevis and the cylinder body.
8. Turn the ignition key off to stop the engine.

Removing the cylinder lock:

1. Start the engine.
2. Raise the lift arms to the fully raised position.
3. Turn the ignition key off to stop the engine.
4. Remove the cylinder lock and two snapper pins from the cylinder and replace onto the holes provided on the right fender.
5. Start the engine and lower the lift arms to the ground.
6. Turn the ignition key to the off position to stop the engine.

## CLEANING AND MAINTENANCE



**CAUTION:** Cleaning and maintenance is done with the engine off and all rotating parts stopped.

### AFTER FIRST 4-8 HOURS OF OPERATION:

1. Retorque the wheel lug nuts (100 ft-lbs. (14 kg-m)).

### DAILY:

1. Remove any loose dirt from the machine. Be sure that the hydraulic oil cooler, the engine fan guard, and the engine oil cooler fins are free from dirt that will cause the hydraulic system and engine itself to run excessively hot.
2. Lubricate the Skid Steer per the lubrication chart on page 13.
3. Check the engine oil level. See engine manual.
4. Check the engine air filter. See engine manual.
5. Check tire pressure and condition – refer to inflation recommendation on tires.

## **MONTHLY:**

1. Lightly lubricate the drive chain on each side of the machine. Remove chain access panel on side of chain guard. Apply a general-purpose oil onto the drive chain. Replace chain access panel. Repeat on other side.
2. Lubricate the Skid Steer per the lubrication chart on page 13.
3. Check the hydraulic oil level and top off as necessary.
4. Clean the engine air filter. See engine manual.
4. Visually inspect pivot pins for wear. Replace if necessary.
6. Check hydraulic lines and hoses for leaks, loose fittings, wear and deterioration. Immediately tighten any leaks or make any necessary repairs before operating.
7. Perform a good general inspection of machine and attachments. Repair or replace any worn or damaged parts. Keep equipment in good operating condition.

## **ANNUALLY:**

1. Change the hydraulic oil and filter.
2. Paint any bare or scratched metal surfaces.
3. Check and tighten all fasteners.
4. Check chain drive assembly. Jack up one side of the machine. Remove the tires and the chain guard. Check that the chain tensioners (white plastic pieces) are pivoting freely and show no signs of abnormal wear. Replace the chain guard and the tires. Be sure to properly torque the lug nuts. Lower the machine back to the ground. Repeat on the other side.



# LUBRICATION CHART

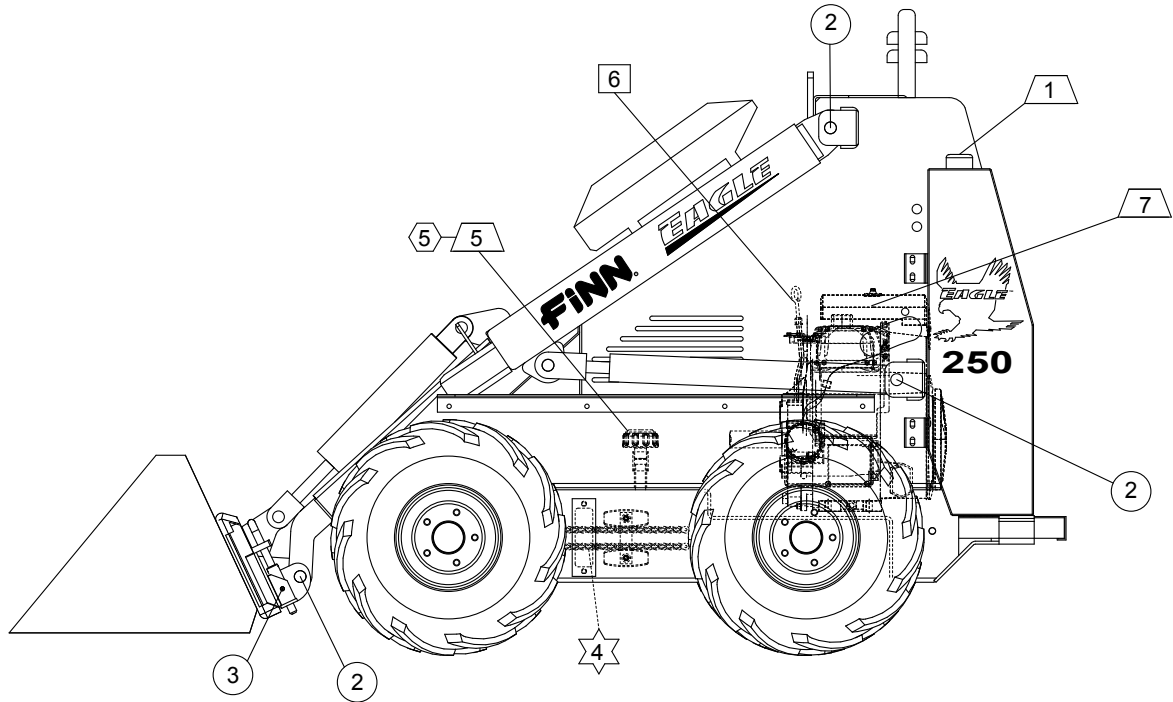


Figure 2

Ref. No.	Location	Lubricant	Frequency	Number
1	Check Fuel Level	FU	Daily	2
2	Lubricate Pivot Pins	CL	Weekly	6
3	Lubricate Quick Attach Pins	CL	Weekly	2
4	Lubricate Drive Chains	MO	Monthly	2
5	Check Hydraulic Oil Level	HO	Daily	1
	Change Hydraulic Oil and Filter	HO	Annually	1
6	Change Engine Oil and Filter	MO	See Engine Manual	1
	Check Engine Oil Level	MO	Daily	1
7	Check Engine Air Filter		Daily	1

## LUBRICANT OR FLUID USED

CL	Chassis Lubricant
MO	Motor Oil SAE 15W-40
HO	Hydraulic Oil Mobil DTE-13M
FU	Gasoline

## TIME KEY

DAILY (8 hours)	▤
WEEKLY (40 hours)	◯
MONTHLY (100 hours)	☆
ANNUALLY (1000 hours)	◩
SEE ENGINE MANUAL	◻

## FLUID CAPACITIES

Fuel – 11 Gallons (42L)
Hydraulic Oil – 14.5 Gallons (55L)
Engine Oil – See Engine Manual

## TROUBLE SHOOTING YOUR SKID STEER:

Problem	Probable Causes	Suggested Solutions
<b>ENGINE:</b>		
Starter does not crank.	Battery is dead.	Charge or jump-start the battery.
	Loose battery cable.	Tighten cable.
Engine will not start, starts hard, or fails to stay running.	Auxiliary control lever is not in neutral position.	Move lever to neutral.
	Fuel tanks empty.	Fill fuel tanks with gas.
	Choke is not on.	Pull choke cable out.
	Air cleaner is dirty.	Clean or replace.
	Dirt in fuel filter.	Replace fuel filter.
Engine loses power or overheats.	Spark plugs fouled or incorrectly gapped.	Install new spark plugs.
	Engine overloaded.	Reduce engine load.
	Engine oil level low.	Add oil to crankcase.
	Debris blocking air flow.	Remove debris.
<b>HYDRAULIC SYSTEM:</b>		
Machine will not drive.	Hydraulic oil level low.	Add hydraulic oil.
	Drive chain worn or broken.	Repair or replace.
	Over center valves clogged.	Contact service dealer.

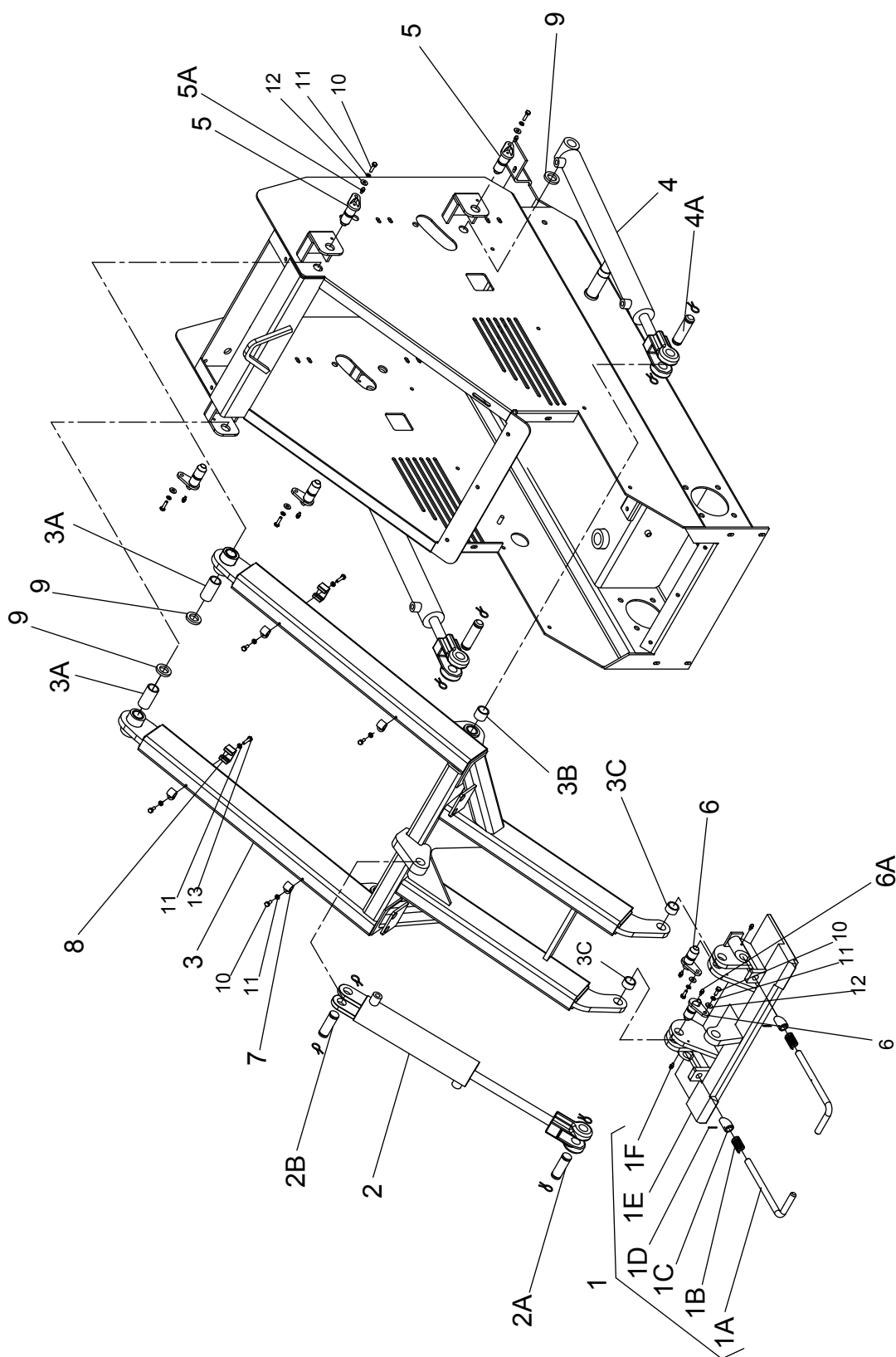
## NOTES

## NOTES

# **Eagle 250 Skid Steer**

## **Parts Manual**

**Model SM**

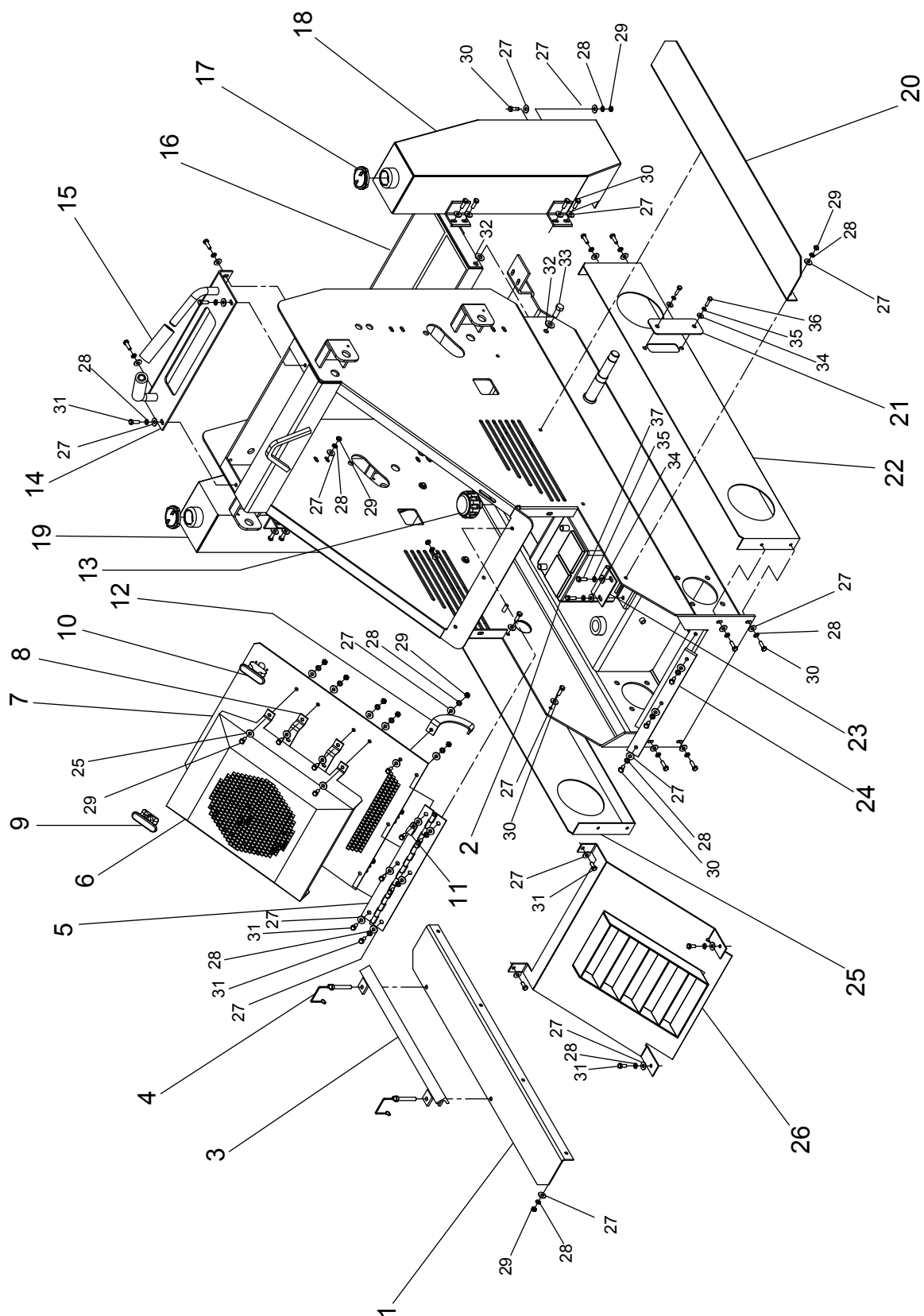


**WHEN ORDERING PARTS, BE SURE TO STATE  
SERIAL NUMBER OF MACHINE**

## MAIN ARM ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	071111	Universal Face Plate Assembly	1
1A	071037-01	Locking Pin	2
1B	071114	Compression Spring	2
1C	071037-05	Locking Pin Boss	2
1D	071040	Roll Pin	2
1E	071050	Universal Face Plate	1
1F	021823	Grease Fitting	2
2	071127*	Dump Cylinder	1
2A	071126P	Cylinder Pin – Long	1
2B	071127P	Cylinder Pin – Short	1
3	071177	Main Arm	1
3A	071122	Bronze Bushing	2
3B	071123	Bronze Bushing	2
3C	071118-05	Bronze Bushing	2
4	071126*	Main Arm Cylinder	2
4A	071126P	Cylinder Pin – Long	2
5	071113-01	Long Pivot Pin	4
5A	080653	Grease Fitting	4
6	071113-02	Short Pivot Pin	2
6A	080653	Grease Fitting	2
7	008422	Hose Clamp	4
8	071106-08	Tubing Clamp	2
9	071146	Bronze Thrust Washer	4
10	X0412	1/4-20 UNC Hex Head Bolt x 3/4"Lg.	10
11	W04L	1/4" Lock Washer	12
12	W04F	1/4" Flat Washer	10
13	X0420	1/4-20 UNC Hex Head Bolt x 1-1/4" Lg.	2
	* 071215	Cylinder Repair Kit	

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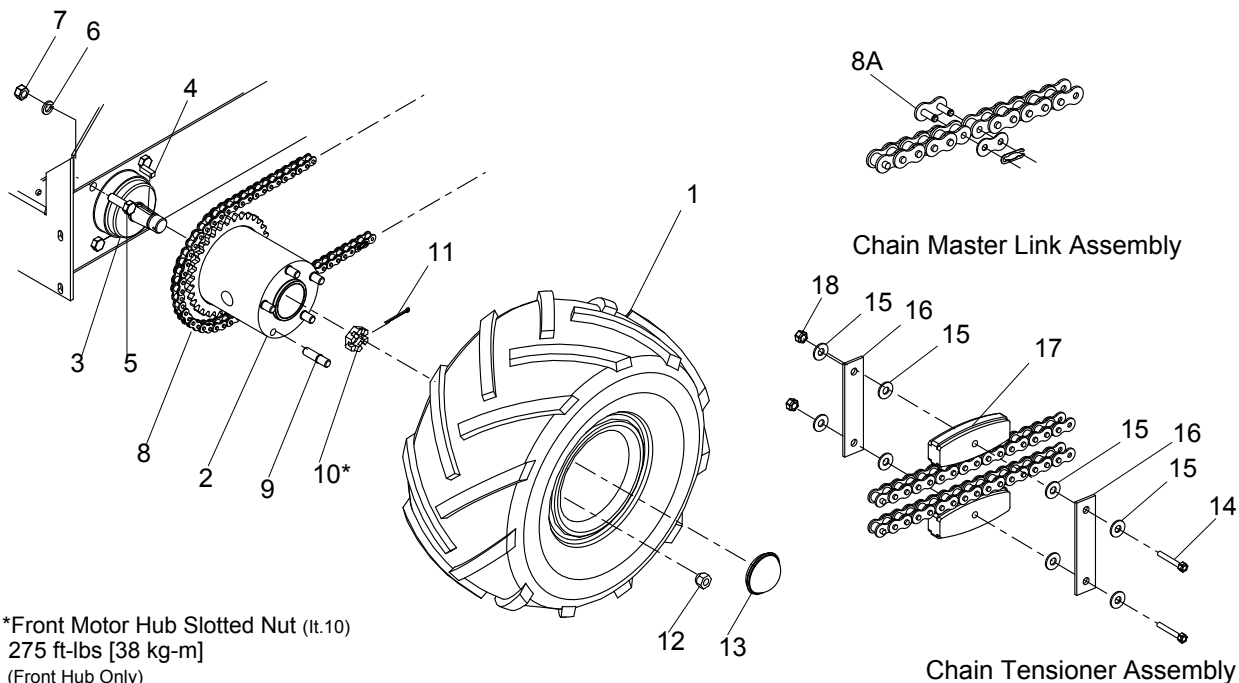
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## LOOSE PARTS ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	F250-0015-03	Fender-Right Hand Side	1
2	071181	Battery	1
3	071155	Cylinder Lock	1
4	FW71225	Snapper Pin	2
5	071106-05	Door Hinge	1
6	F250-0028	Oil Cooler Guard	1
7	F250-0027	Oil Cooler Panel	1
	190044	1/8 x 1 Foam Gasket	36"
8	F250-0014-02	Oil Cooler Mount	2
9	071048	Cooler Panel Latch – Right Hand Side	1
10	071049	Cooler Panel Latch – Left Hand Side	1
11	060281	Wiring Clamp	1
12	F250-0014	Cooler Panel Stop Piece	1
13	071188	Filler Breather Cap w/Dipstick	1
14	071008	Control Valve Cover Plate	1
15	071102	Foam Handle Grip	2x6"
16	071167	Step	1
	190017	6" Safety Walk	2x16"
17	007914	Fuel Tank Cap	2
18	071104	Fuel Tank – Left Hand Side	1
19	071105	Fuel Tank – Right Hand Side	1
20	F250-0015-01	Fender-Left Hand Side	1
21	F250-0019-03	Chain Guard – Access Panel	2
22	F250-0019-01	Chain Guard – Left Hand Side	1
23	071189	Battery Holddown Clamp	1
24	071121	Main Arm Cushion Strap	1
25	F250-0019-02	Chain Guard – Right Hand Side	1
26	071129	Lower Louver Guard	1
27	W05F	5/16" Flat Washer	
28	W05L	5/16" Lock Washer	
29	Y05	5/16-18 UNC Hex Nut	
30	X0516	5/16-18 UNC Hex Head Bolt x 1" Lg.	
31	X0512	5/16-18 UNC Hex Head Bolt x 3/4" Lg.	
32	W08F	1/2" Flat Washer	
33	X0820	1/2-13 UNC Hex Head Bolt x 1-1/4" Lg.	
34	W04F	1/4" Flat Washer	
35	W04L	1/4" Lock Washer	
36	X0408	1/4-20 UNC Hex Head Bolt x 1/2" Lg.	

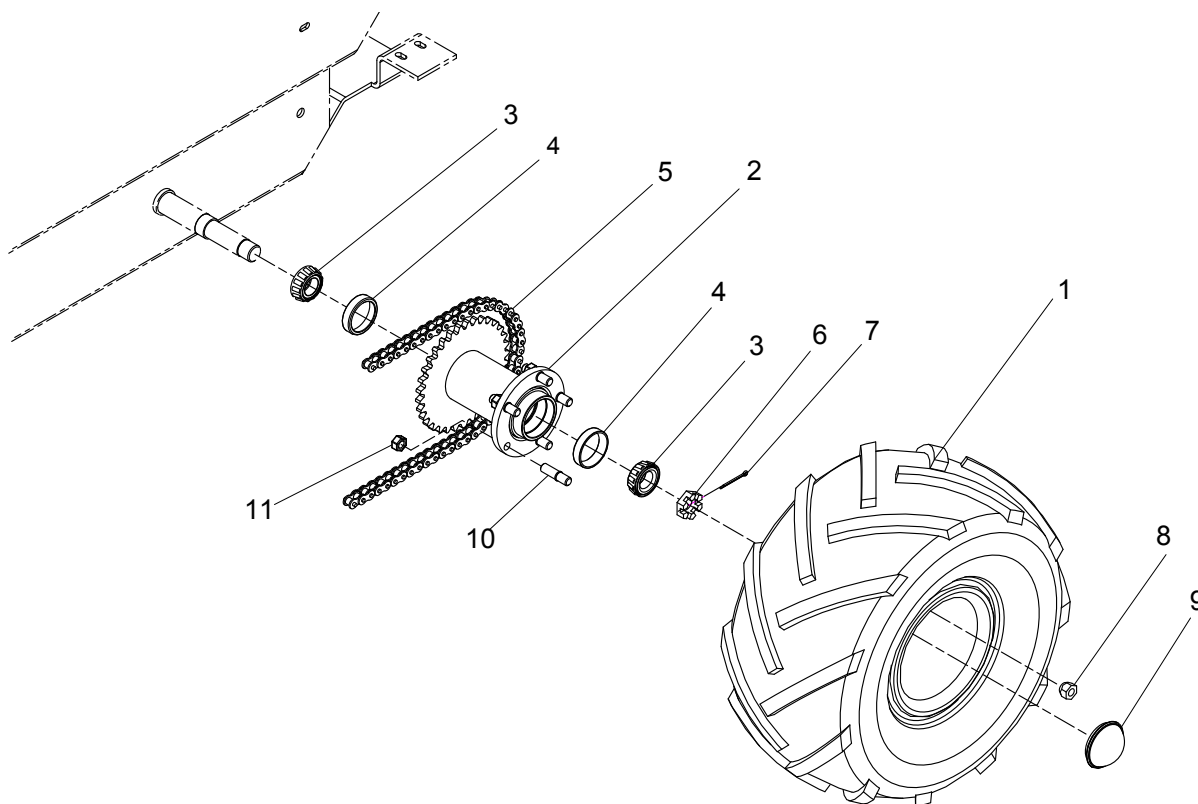
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## FRONT WHEEL ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	071161	Tire Assembly	2
	071130	Tire	2
	071162	Wheel	2
2	071027	Front Hub	2
3	071002	Hydraulic Wheel Motor	2
4	071002K	Wheel Motor Key	2
5	X0828	1/2-13 Hex Head Bolt x 1-3/4" Lg.	8
6	W06L	1/2" Lock Washer	8
7	Y06	1/2-13 Nut	8
8	071100	Drive Chain	2
8A	023751	Master Link	2
9	WL25-53	Wheel Stud	10
10	071002N	Slotted Nut	2
11	071014	Cotter Pin	2
12	WL6-80	Lug Nut	10
13	071019	Dust Cap	2
14	X0424	1/4-20 Hex Head Bolt x 1-1/2" Lg.	4
15	W04F	1/4" Flat Washer	16
16	071106-07	Chain Tensioner Strap	4
17	071011	Chain Tensioner	4
18	Y04L	1/4-20 Lock Nut	4
	F250-0019-01	Chain Guard – Left Hand Side	1
	F250-0019-02	Chain Guard – Right Hand Side	1
	F250-0019-03	Chain Guard – Access Panel	2

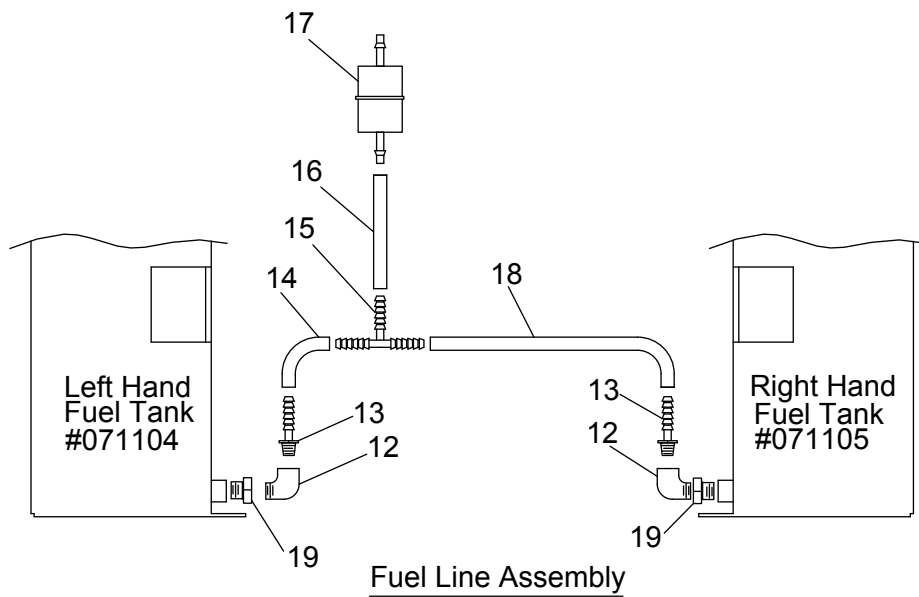
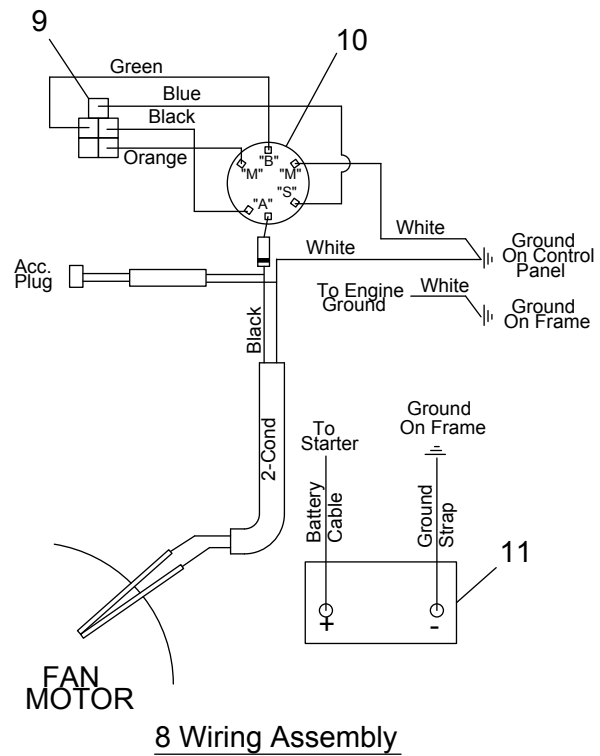
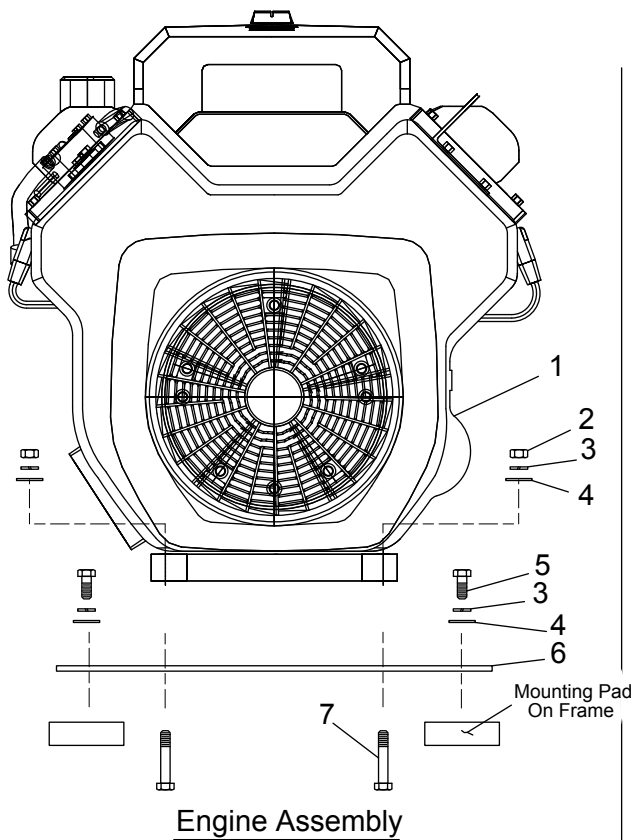
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## REAR WHEEL ASSEMBLY

Ref. No.	Part Number	Description	No. Req'd
1	071161	Tire Assembly	2
	071130	Tire	2
	071162	Wheel	2
2	071023	Rear Hub	2
3	071018	Bearing Cone	4
4	071017	Bearing Cup	4
5	071100	Drive Chain	2
6	071013	Slotted Nut	2
7	071014	Cotter Pin	2
8	WL6-80	Lug Nut	10
9	071019	Dust Cap	2
10	WL25-53	Wheel Stud	10
11	YF08J	1/2"-20 Jam Nut	10
	F250-0019-01	Chain Guard – Left Hand Side	1
	F250-0019-02	Chain Guard – Right Hand Side	1
	F250-0019-03	Chain Guard – Access Panel	2

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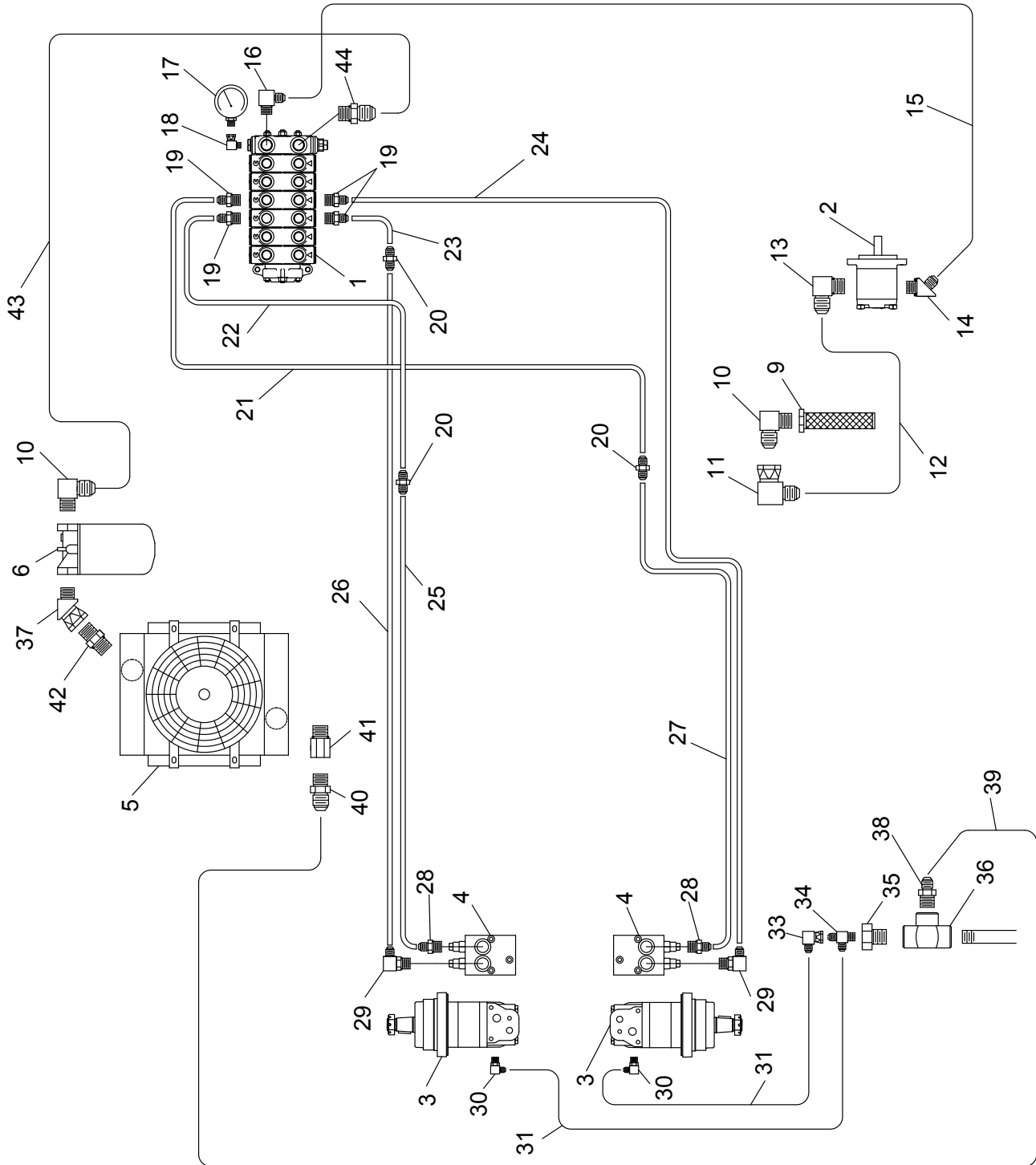


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## POWER SYSTEM

Ref. No.	Part Number	Description	No. Req'd
1	071007	25 HP Kohler Engine	1
	KL1205001	Oil Filter	1
	KL2408303	Air Cleaner Element	1
	KL2408305	Pre-Cleaner Element	1
	KL2406807	Muffler	1
	071209-01	Upper Tail Pipe	1
	071209-02	Lower Tail Pipe	1
	031421	Exhaust Pipe Clamp	2
	F250-0032	Tail Pipe Bracket	1
	035026	Tini Tachometer	1
	071099	Throttle Cable	1
	071098	Choke Cable	1
	071181	Battery	1
	031031	Positive "+" Battery Cable	1
	000241	Ground Strap	1
2	Y05	5/16-18 Hex Nut	8
3	W05L	5/16 Lock Washer	8
4	W05F	5/16 Flat Washer	8
5	X0512	5/16-18 Hex Head Bolt x 3/4 Lg.	4
6	F250-0034	Engine Mounting Plate	1
7	X0528	5/16-18 Hex Head Bolt x 1-3/4 lg.	4
8	071144	Engine Wiring Assembly	1
9	KL2515506	Female Engine Plug	1
	KL4815501	Male Engine Plug	1
	170077	Male Terminals	4
	170078	Female Terminals	4
10	080654	Ignition Switch	1
11	071181	Battery	1
12	007470	Street Elbow- 1/4	2
13	007476	Hose Barb Adapter- 1/4	2
14	190034	1/4 Fuel Line Hose	5"
	010321	Fuel Line Clamp	2
15	071090	Hose Barb Tee- 1/4	1
16	190034	1/4 Fuel Line Hose	12"
	010321	Fuel Line Clamp	2
17	KL2505002	In-line Fuel Filter	1
18	190334	1/4 Fuel Line Hose	29"
	010321	Fuel Line Clamp	2
19	071220	Connector- 1/4	2

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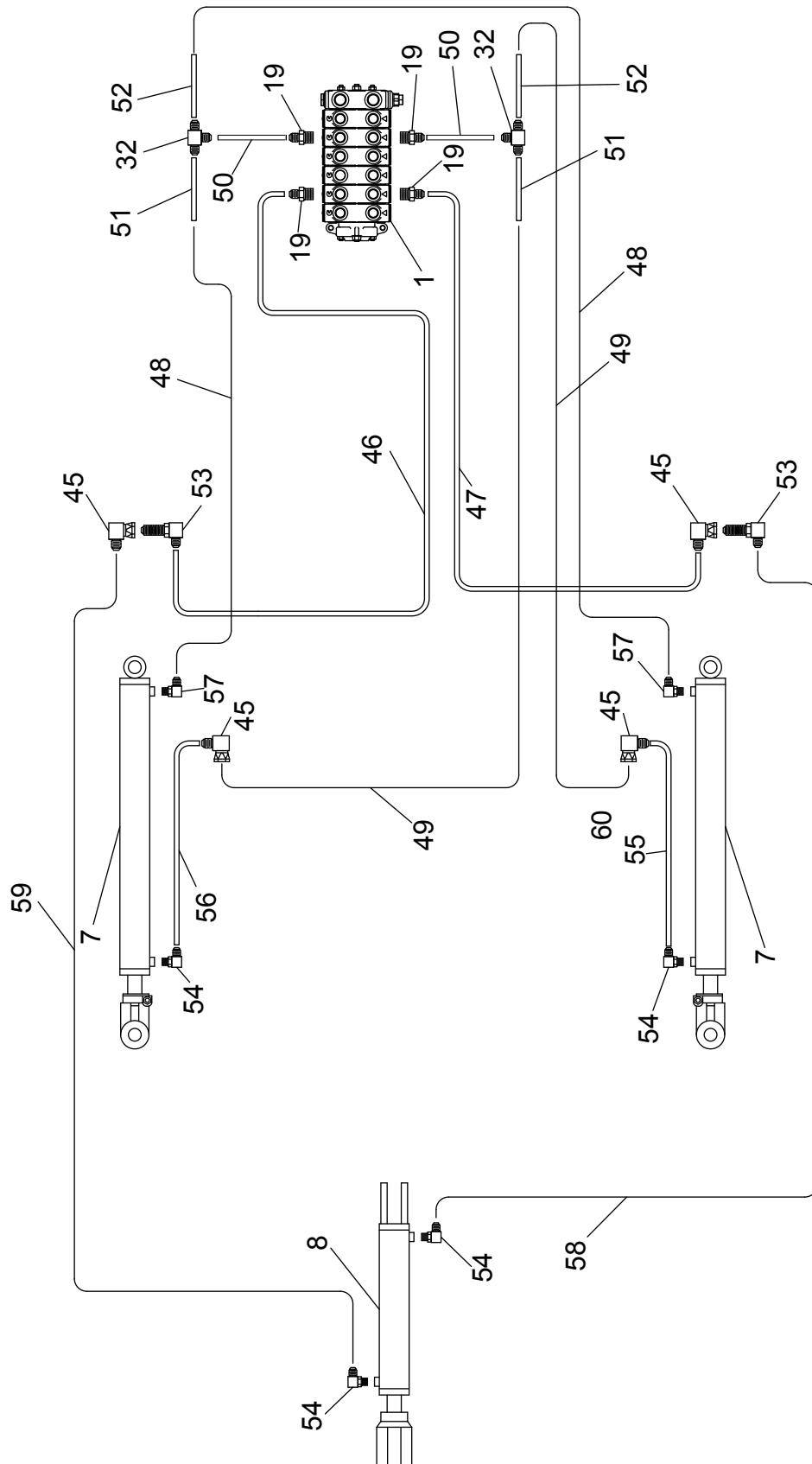


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## HYDRAULIC SCHEMATIC: Suction, Return & Propel

Ref. No.	Part Number	Description	No. Req'd
1	071000	Main Control Valve	1
	071166-01	Propel "T" Handles	2
	071166-02	Cylinder Control "T" Handles	2
2	071001	Hydraulic Pump	1
3	071002	Hydraulic Wheel Motor	2
4	071047	Over Center Valve	2
5	071132	Hydraulic Oil Cooler	1
6	021617	Return Filter Assembly	1
	021618	Return Filter Element	1
9	004618	Suction Strainer	1
10	FW71591	90° Adapter Elbow	2
11	FW71492	90° Swivel Adapter Elbow	1
12	071199	Suction Hose	1
13	012091	90° Adapter Elbow	1
14	071125	45° Adapter Elbow	1
15	071075	Valve Inlet Hose	1
16	023621	90° Adapter Elbow	1
17	012044	Pressure Gauge	1
18	011929	90° Adapter Elbow Union	1
19	055231	Straight Adapter	4
20	071096	Straight Adapter	3
21	071059	Left "A" Motor Top Tube	1
22	071196	Right "B" Motor Top Tube	1
23	071057	Right "A" Motor Top Tube	1
24	071061	Left "B" Motor Tube	1
25	071197	Right "B" Motor Bottom Tube	1
26	071198	Right "A" Motor Bottom Tube	1
27	071060	Left "A" Motor Bottom Tube	1
28	085014	Straight Adapter	2
29	055309	90° Adapter Elbow	2
30	055274	90° Adapter Elbow	2
31	071219	Motor Case Drain Hose	2
33	FW71909	90° Swivel Adapter Elbow	1
34	071202	Tee	1
35	011936	Reducer Bushing	1
36	041077	Tee	1
37	080234	45° Swivel Adapter Elbow	1
38	023616	Straight Adapter	1
39	071156	Cooler Outlet Hose	1
40	023616	Straight Adapter	2
41	052175	Straight Connector	1
42	071152	Straight Adapter	1
43	071157	Cooler Inlet Hose	1
44	FW75148	Straight Adapter	1
	071006	Hydraulic Reservoir Drain Plug	1
	071218	Hydraulic Fill Level Plug	1

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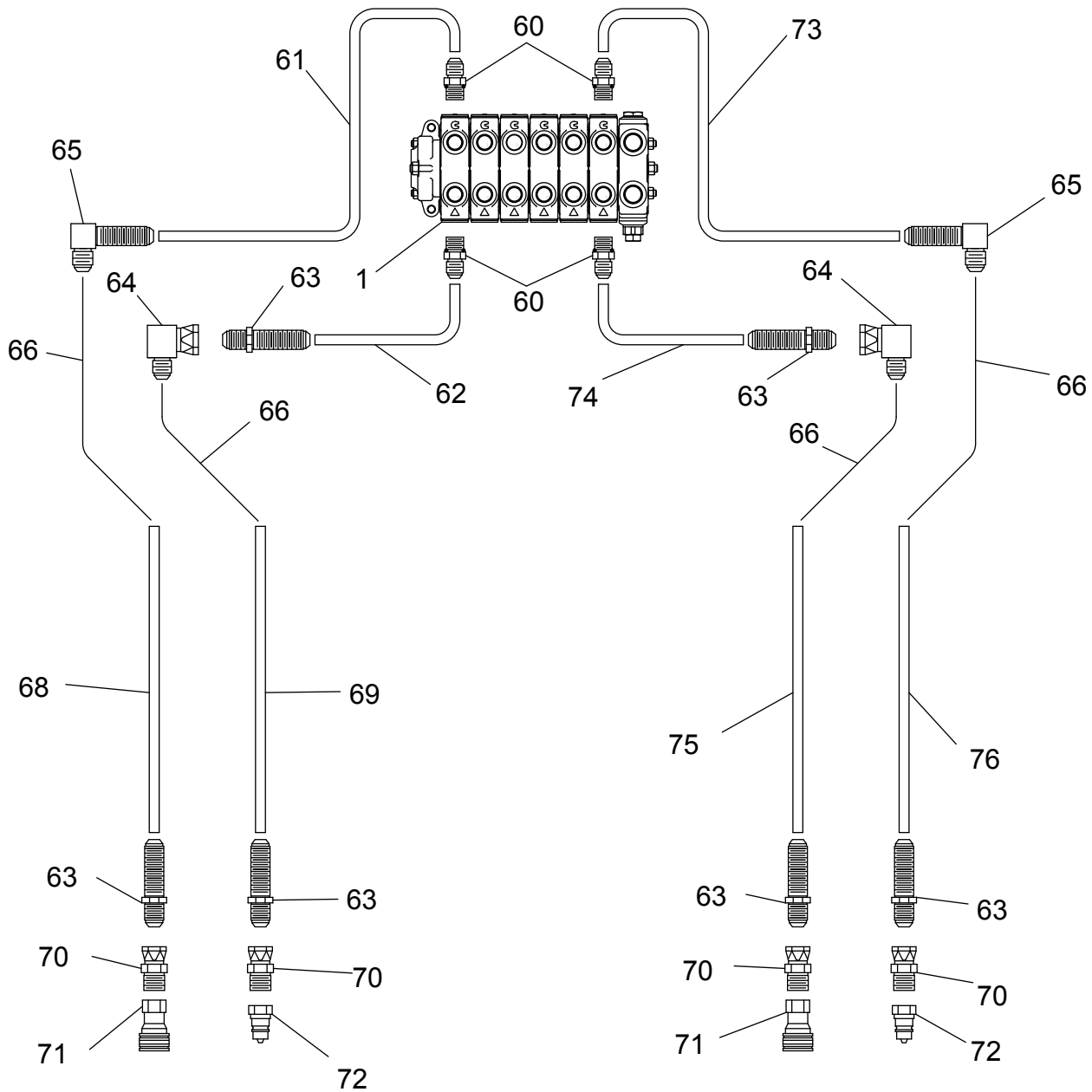
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## HYDRAULIC SCHEMATIC: Cylinders

Ref. No.	Part Number	Description	No. Req'd
1	071000	Main Control Valve	1
	071166-01	Propel "T" Handles	2
	071166-02	Cylinder Control "T" Handles	2
7	071126*	Main Arm Lift Cylinder	2
8	071127*	Bucket Dump/Curl Cylinder	1
19	055231	Straight Adapter	4
32	FW71619	Tee	2
45	FW71636	90° Swivel Adapter Elbow	6
46	071194	Bucket Curl Tube – Valve	1
47	071195	Bucket Dump Tube – Valve	1
48	071201	Main Arm Raise Hose	2
49	071200	Main Arm Lower Hose	2
50	071191	Arm Raise/Lower Extension Tube	2
51	071193	Right-Hand Raise Lower Tube	2
52	071192	Left-Hand Raise Lower Tube	2
53	071094	90° Bulkhead Fitting	2
54	FW71448	90° Swivel Adapter Elbow	6
55	071068	Left Cylinder Tube	1
56	071069	Right Cylinder Tube	1
57	071169	90° Adapter Elbow	2
58	071083	Bucket Dump Hose	1
59	071084	Bucket Curl Hose	1
	* 071215	Cylinder Repair Kit	

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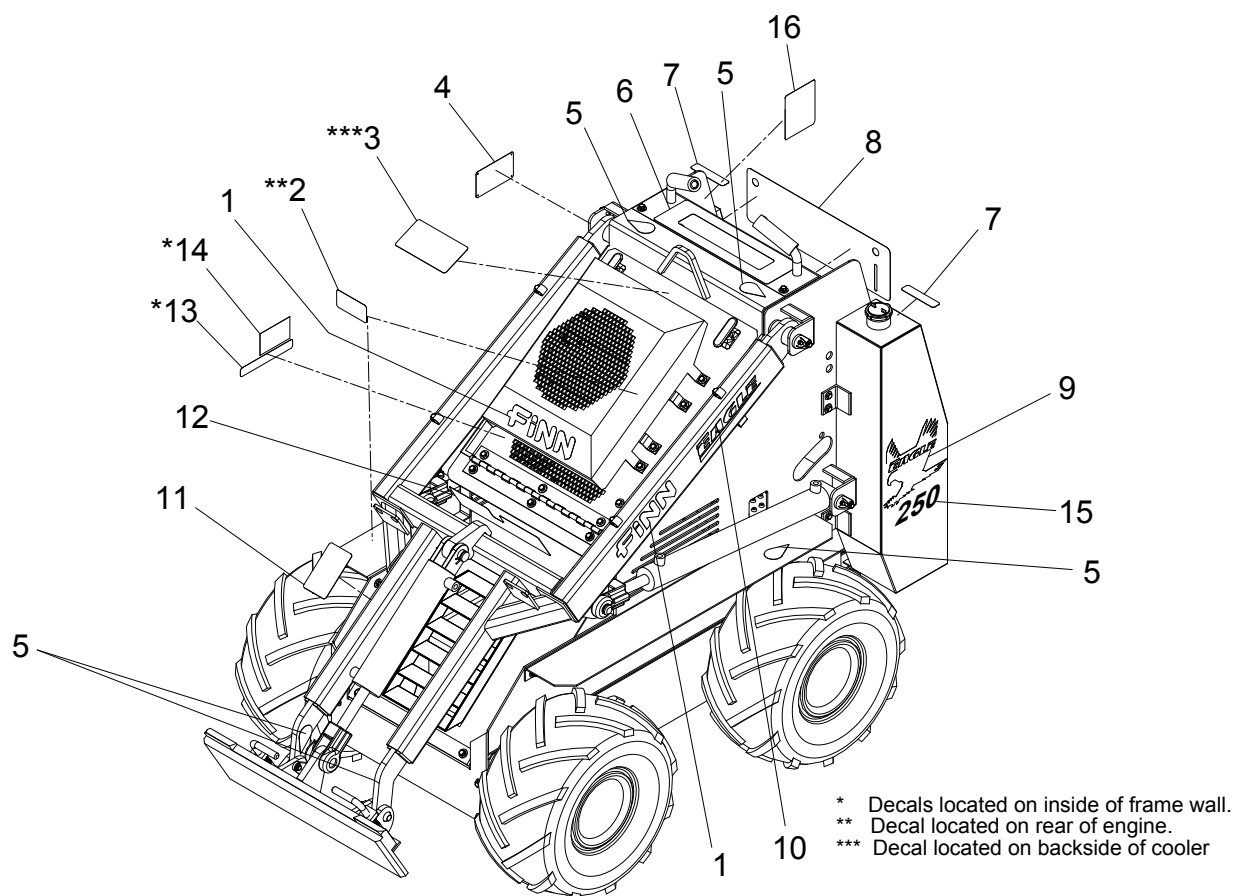


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## HYDRAULIC SCHEMATIC: Attachments

Ref. No.	Part Number	Description	No. Req'd
1	071000	Main Control Valve	1
	071166-01	Propel "T" Handles	2
	071166-02	Cylinder Control "T" Handles	2
60	055232	Straight Adapter	4
61	071051	Right Top Attachment Tube	1
62	071052	Right Bottom Attachment Tube	1
63	031411	Straight Bulkhead Fitting	6
64	FW71870	90° Swivel Adapter Elbow	2
65	071093	90° Bulkhead Fitting	2
66	071082	Attachment Hose	4
68	071072	Right Outer Attachment Tube	1
69	071070	Right Inner Attachment Tube	1
70	071092	Straight Swivel Adapter	4
71	071088	Female Quick Disconnect	2
	071135	Quick Disconnect Plug	2
72	071089	Male Quick Disconnect	2
	071134	Quick Disconnect Cap	2
73	071064	Left Top Attachment Tube	1
74	071065	Left Bottom Attachment Tube	1
75	071071	Left Inner Attachment Tube	1
76	071073	Left Outer Attachment Tube	1

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## DECALS

Ref. No.	Part Number	Description	No. Req'd
1	031235	Small "FINN" Decal	3
2	012278	Decal "DANGER! Hot Exhaust"	2
3	022357	Decal "WARNING! Turn Off Engine..."	1
4	011690	FINN Nameplate	1
5	007231	Decal "Service Weekly"	6
6	071142	Control Valve Operation Decal	1
7	031331	Decal "Gasoline"	2
8	071141	SkidSteer Operation Decal	1
9	071150	Decal Eagle Logo	2
10	071213	Decal "Eagle"	2
11	012179	Decal "WARNING! Do Not Operate..."	1
12	071115	Decal "DANGER! Operating Instructions..."	1
13	012272	Decal "Hydraulic Fluid"	1
14	071145	Lubrication Plate	1
15	071212	Decal "250"	2
16	023519	Decal "CAUTION! Wear Eye Pro..."	1

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## NOTES

## WARRANTY

Finn warrants to the original Purchaser for use (or rental to others for use) all new construction machinery and attachments therefore manufactured by Finn to be free from defects in material and workmanship for a period of 12 months from date of purchase or 1200 hours of use, whichever comes first. Replacement parts provided under the terms of this warranty are warranted for the remainder of the warranty period applicable to the product in which installed, as if such parts were original components of that product. Finn makes no warranty with respect to (a) allied equipment or trade accessories not manufactured by it (such as, but not limited to tires, ignitions, starters, hose, batteries, magnetos, carburetors, engines or like or unlike equipment or accessories), such being subject to the warranty, if any, provided by their respective manufactures; or (b) secondhand, used, altered, or rebuilt machines. Further, the warranty herein expressed shall be rendered null and void to the extent any defect or failure of the products warranted hereby arises out of or is caused by accessories or component parts not manufactured or supplied by Finn, whether same are supplied by Purchaser, dealers or any other party. THE WARRANTY DESCRIBED IN THIS PARAGRAPH SHALL BE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Upon notification of Finn during the above-stated warranty period of any failure to conform to this warranty, and upon inspection by Finn to verify said nonconformity and verify the continuing existence of the warranty period, Finn will provide a new part or a repaired part, whichever Finn elects, to replace the part found to be defective. Such parts will be provided without charge to the Purchaser during normal working hours at a place of business of a Finn dealer or other establishment authorized by Finn to effect said repairs or replacements, but Purchaser shall bear all costs of transporting the product to and from such place of business or establishment. Correction of nonconformities, in the manner and for the period time provided above, shall constitute fulfillment of all liabilities of Finn under this contract.

THE REMEDIES OF THE USER SET FORTH HEREIN ARE EXCLUSIVE, WITHOUT REGARD TO WHETHER ANY DEFECT WAS DISCOVERABLE OR LATENT AT THE TIME OF DELIVERY OF THE PRODUCT TO THE PURCHASER.

The essential purpose of this exclusive remedy shall be to provide the Purchaser with repair or replacement of parts that prove to be defective within the period and under the conditions previously set forth. This exclusive remedy shall not have failed of its essential purpose (as that term is used in the Uniform Commercial Code) provided Finn remains willing to repair or replace defective parts within a commercially reasonable time after it obtains actual knowledge of the existence of a particular defect.

IN NO EVENT SHALL FINN BE LIABLE FOR ANY SPECIAL, CONSEQUENTIAL, INCIDENTAL OR INDIRECT DAMAGES, INCLUDING LOST PROFITS OR LOST COMMERCIAL OPPORTUNITIES, WITH RESPECT TO THE SALE OF THE ABOVE WARRANTED PRODUCT OR ANYTHING DONE IN CONNECTION THEREWITH, OR FOR PROPERTY DAMAGE SUSTAINED BY A PERSON CLAIMING TO BE A THIRD PARTY BENEFICIARY OF A SURVIVING WARRANTY UNDER THE LAW OF ANY JURISDICTION.

### NOTICE

FINN CORPORATION URGES THE USE OF ONLY FINN CORPORATION SUPPLIED PARTS AND ATTACHMENTS TO ASSURE PROPER PERFORMANCE AND SAFE OPERATION OF FINN CORPORATION EQUIPMENT. INSIST ON PARTS AND ATTACHMENTS MANUFACTURED OR SUPPLIED BY FINN CORPORATION WHEN YOU PURCHASE, REPAIR OR REPLACE YOUR FINN EQUIPMENT AND ATTACHMENTS. BECAUSE FINN CORPORATION CANNOT ASSURE THAT PARTS AND ATTACHMENTS NOT MANUFACTURED OR SUPPLIED BY FINN MEET FINN CORPORATION'S QUALITY STANDARDS, SPECIFICATIONS, OR OPERATING REQUIREMENTS, OUR WARRANTY IS NOT EFFECTIVE TO THE EXTENT ANY FAILURE OF OR DEFECT IN A FINN CORPORATION PRODUCT ARISES FROM OR IS CAUSED BY PARTS, ATTACHMENTS OR COMPONENTS NOT ORIGINATING WITH FINN CORPORATION. USE OF FINN CORPORATION EQUIPMENT WITH PARTS AND ATTACHMENTS NOT MANUFACTURED OR SUPPLIED BY FINN COULD RESULT IN PERSONAL INJURY.

Effective December 8, 1995

#### CALIFORNIA

##### Proposition 65 Warning

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

#### CALIFORNIA

##### Proposition 65 Warning

Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.