



# 4 x 4 SUPER TRACTOR

## Model 425

### Owner/Operator's Manual



## CAUTION

Avoid injuries. Read and understand Operator's manual  
before operating tractor or equipment.  
It contains instructions for safe operation.



# CAUTION

- READ AND UNDERSTAND OPERATORS MANUAL BEFORE OPERATING OR SERVICING.
- OBEY ALL SAFETY INSTRUCTIONS. FAILURE TO DO SO MAY RESULT IN INJURY TO YOU OR OTHERS.
- BE SURE MACHINE IS IN SAFE OPERATING CONDITION BEFORE USE.
- INSPECT MACHINE DAILY. REPLACE ALL WORN OR DAMAGED PARTS.
- KEEP ALL GUARDS AND SHIELDS IN PLACE.
- CHECK OPERATION OF ALL SAFETY INTERLOCK SWITCHES DAILY.
- DO NOT OVERRIDE INTERLOCK SYSTEM, IT IS FOR YOUR PROTECTION.
- DO NOT ALLOW MINORS OR THE INEXPERIENCED TO OPERATE MACHINE.
- KEEP PEOPLE AND PETS A SAFE DISTANCE AWAY FROM MACHINE USING POWER DRIVEN ATTACHMENTS. INJURY COULD RESULT FROM FLYING DEBRIS.

Date of Purchase: Month \_\_\_\_\_ Day \_\_\_\_\_ Year \_\_\_\_\_

Dealer Name \_\_\_\_\_ Phone \_\_\_\_\_

Serial Number \_\_\_\_\_

Model Number \_\_\_\_\_

*ALWAYS GIVE MODEL AND SERIAL NUMBER WHEN ORDERING SERVICE PARTS*

**STEINER**  
**TEXTRON**

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## Description

- » The Steiner 4 wheel drive tractor is designed with the user in mind. From the rugged industrial frame to the operator controls the tractor is ready for demanding turf and grounds care assignments.
- » Power steering and articulated frame, combined with a low center of gravity and high flotation tires, provide exceptional maneuverability.
- » Fully hydrostatic, single lever control lets you choose infinite ground travel speeds to match the task. No clutching, jerking or braking, just smooth power flow to the 4 full time drive wheels for added traction in tough areas. 2-speed transaxles allow a choice of "HIGH" or "LOW" range.
- » Front mounted attachments offer a wide range of working tools and all of them attach to the "Quick Hitch" that is a Steiner exclusive. The front hitch is standardized for all models of Steiner power units so your present attachments are not obsolete.
- » You can do many tasks with this one tractor, compared to higher priced single purpose machines, by simply changing attachments in less than 2 minutes.
- » Operator safety and comfort, power, performance and dependability will provide years of enjoyment with your Steiner tractor.



## SPECIFICATIONS

### Dimensions:

Overall Width	50"
Overall Length	74"
Overall Height	46"
Wheelbase	44"
Inside Turning Radius	45"
Weight, Kubota D950B	1260 lbs.
Weight, Onan P224	1150 lbs.

### Engine:

Standard	Onan P224 Performer 24 HP air-cooled
Optional	Kubota D950B Diesel liquid-cooled 21.5 HP

### Drive Train:

Transmission	Sundstrand Hydrostatic Series 15 Pump and 2 motors
Transaxles	Peerless 2500 2-speed
Forward Speed (Kubota engine)	0-9.1 MPH (high range) 0-4.7 MPH (low range)
Forward Speed (Onan engine)	0-10 MPH (high range) 0-5.2 MPH (low range)
Reverse Speed	0-5.7 MPH (high range) 0-2.9 MPH (low range)
Steering	Hydraulic power steering
Parking Brake	Foot Activated, dry disc type

### Tires:

Turf Type	24 x 13.00-12 4 ply
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### Electrical:

Starting	12 volt, Key switch
Battery	12 volt, Group 22F

### Fuel System:

Tank capacity	7 Gallons
Fuel Pump	Diaphragm (Onan) Electric (Kubota)

Specifications are subject to change without notice.

**ATTENTION:** This symbol identifies potential health and safety hazards. It marks safety precautions.



**ATTENTION:** Your safety and the safety of others is involved.

## BE ALERT!

### SIGNAL WORD DEFINITIONS



**DANGER-** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme cases.



**WARNING-** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



**CAUTION-** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or property damage. It may also be used to alert against unsafe practices.

### GENERAL SAFETY

1. Read and understand the owner's manual, before attempting to operate this machine.

2. Operate all controls from the operator's seat.  
**NO RIDERS.**

3. Keep all shields in place and safety switches adjusted properly.

4. Do not leave equipment unattended. STOP the engine and remove the key.

5. Do not allow minors or the inexperienced to operate this machine.

6. Keep people and pets a safe distance away from machine using power driven attachments. Injury could result from flying debris.

### OPERATING SAFETY

1. **STOP ENGINE** to install drive belts or make adjustments.

2. **WARNING!** The tractor may coast when the engine stops.

3. **DO NOT TOW!**...(See emergency moving stalled unit instructions in Section 5.)

4. **DO NOT** attempt to work on unit or any attachments with the engine running. **STOP ENGINE!**

•

• 5. Before leaving the tractor seat:

**1. Disengage mower drive**

**2. Set Parking Brake**

**3. Stop engine**

# PRE-START INSTRUCTIONS

## section 3.1

### BEFORE STARTING:

1. READ SAFETY DECALS
2. Check engine and transaxle oil levels.
3. Check coolant level.(Kubota)
4. Visually check tires.
5. Visually check for loose or missing parts or bolts.
6. Fill with clean fuel.



**CAUTION! NEVER USE ETHER AS A STARTING AID OR SEVERE DAMAGE TO ENGINE MAY OCCUR.**



**BE ALERT! STOP RUNNING THE UNIT AT THE FIRST SIGN OF ANY ABNORMAL HYDRAULIC FUNCTION. SERIOUS DAMAGE TO THE HYDRAULIC SYSTEM CAN RESULT!**

### STARTING INSTRUCTIONS:

1. Safety switch requires PTO to be OFF for engine to start.
2. Open throttle approximately one-fourth of its travel.
3. Turn key counter-clockwise to “preheat” until indicator light goes off. (diesel only). No preheat is required when engine is warm.  
  
Pull choke on gasoline engine.
4. Turn key to start engine.
5. Warm up engine at medium speed. Push choke in on gasoline engine as engine warms up.
6. In cold weather, allow the hydraulic oil to warm up a few minutes at medium engine speed before using tractor.



**DANGER! NEVER FILL FUEL TANK WITH ENGINE RUNNING!**

## SPECIFICATIONS FOR FUELS AND OILS

### ENGINE OIL (Kubota engines)

Fill the crankcase with oil that meets API service designation CC or CD for diesel engines and SF for gasoline engines. Do not mix brands or grades of oil. Recommended weights for expected temperatures are:

Above 77 F.(25 C.).....SAE 30

32 F.-77 F.(0 C.-25 C.).....SAE 20 or 10W-30

Below 77 F.(0 C.)..SAE 10W or 10W-30

### ENGINE OIL (Onan)

Fill the crankcase with oil that meets API service designation SE or SE/CC. Do not mix brands or grades of oil. Recommended weights for expected temperatures are:

Above 32 F.(0 C.).....SAE 30

Below 32 F.(0 C.).....SAE 5W-30

### COOLANT (Kubota)

Fill coolant system with a mixture of 1 part Permanent Anti-freeze and 1 part water.

### FUEL

On gasoline engines, use clean, fresh, regular or unleaded fuel. Use of unleaded fuel results in less maintenance.

On diesel engines, use clean, fresh, No. #2 diesel fuel. In extreme cold temperatures No. #1 diesel fuel may be used. **Do not use kerosene or damage to engine may result.** Refer to engine manual for fuel bleeding instructions.

### TRANSAXLE HYDRAULIC OIL

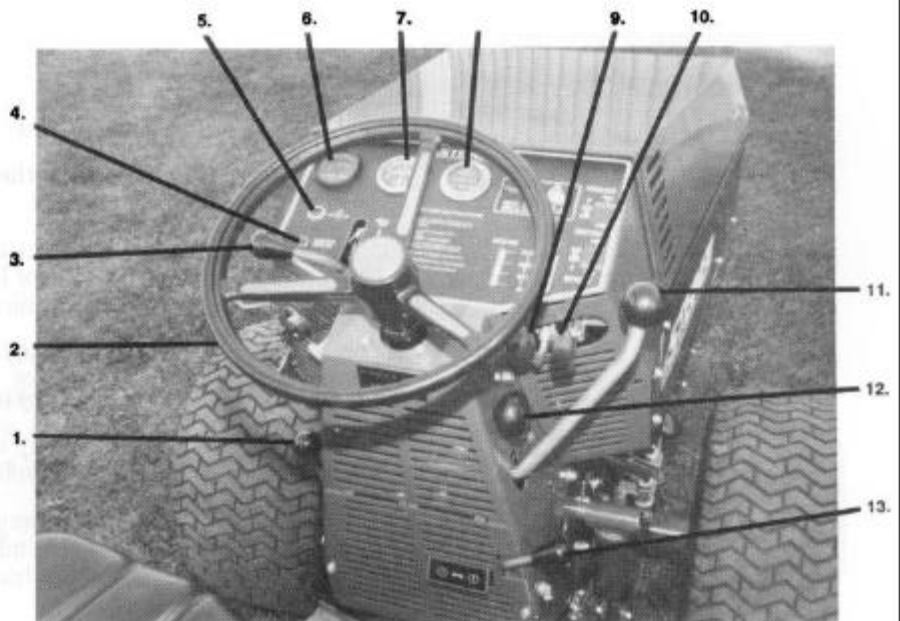
Fill transaxle to the safe range with Steiner Trans-Hydraulic Oil or Texas Refinery Corp. 6440 Universal Torque Fluid only. Do not use automatic transmission fluid, motor oil, or any other type of hydraulic oil.

**NOTE: THE USE OF ANY OIL OTHER THAN STEINER APPROVED OIL MAY VOID WARRANTY AND IS NOT RECOMMENDED.**

### CONTROLS

**Photo 2**

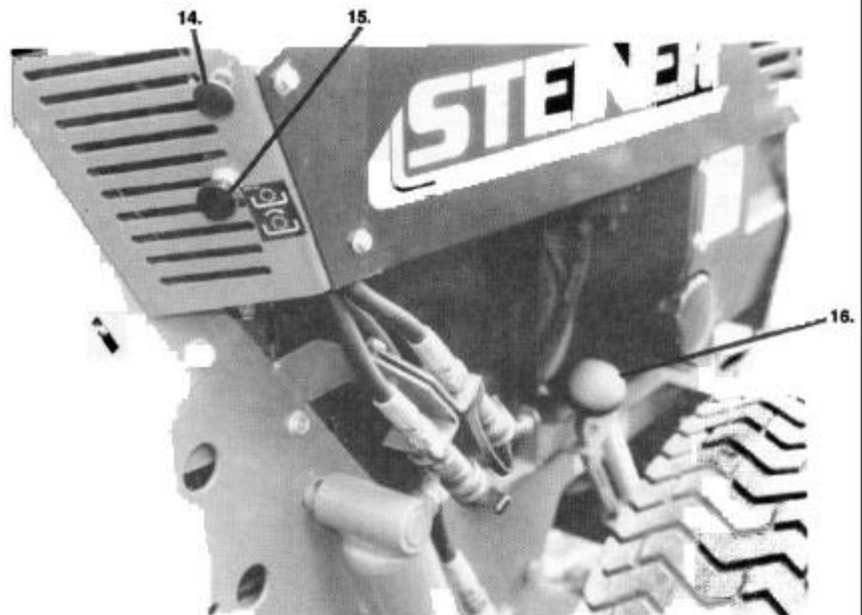
1. **PTO Lever** - (Serial No. 1001 - 1641) Controls Power Take Off front belt drive for attachments.
  2. **Steering Wheel** - Full power steering for easy handling.
  3. **Throttle Lever** - Throttle controls engine speed.
  4. **Glow Plug Indicator Light** - (Diesel Only) Shows when glow plugs are warmed.
  5. **Oil Light** - Warning light for low engine oil pressure.
  6. **Water Temperature Gauge** - (Diesel Only) Shows coolant temperature.
  7. **Ammeter** - Ammeter shows charging or discharging of battery.
  8. **Hour Meter** - Records total running time.
  9. **Auxiliary Hydraulic lever** - Auxiliary lever controls the attachments which are connected to the auxiliary couplers. Float position is provided for those attachments which require float.
  10. **Hydraulic Front Lift Lever** - Lift lever controls front mounted implements. Float position is provided for those attachments which require float.
  11. **Forward - Reverse Lever** - Single lever controls forward and reverse infinitely variable speeds.
  12. **Lever Tension Knob** - Controls tension on the Forward - Reverse lever.
  13. **Front Transaxle Shift Lever** - Shifts transaxle into "HIGH"(2) or "LOW"(1) range.
- Note:** Always shift front and rear transaxles to the same range.



**Photo 2 - Front Controls**

**Photo 2A**

14. **Choke** - (Gas Only) Pull when starting gasoline engine.
15. **PTO Switch** - (Serial No. 1642 - ) Engages or disengages electric clutch.
16. **Front Hitch Release Lever** - Releases quick hitch latch for attachments.



**Photo 2A - Front Controls**



Photo 2B

17. Key Switch - Starting and ignition

18. Light Switch - Lights

19. Fuel Shut-off Knob - (Diesel Only) (Serial No. 1642 - ) Pull the knob out to stop engine.

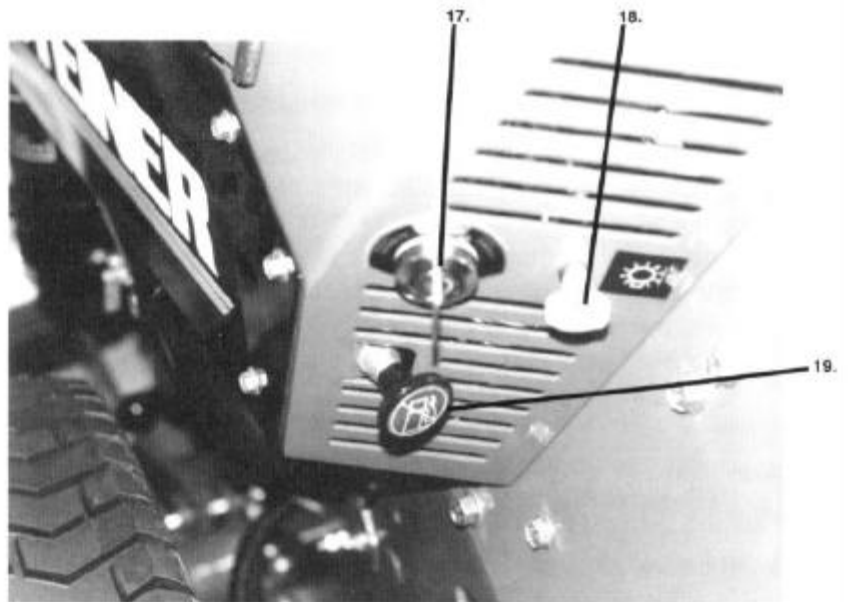


Photo 2B - Controls

Photo 3

20. Rear Transaxle Shift Lever - Shifts transaxle into "HIGH"(2) or "LOW"(1) range.

Note: Always shift front and rear transaxles to the same range.

21. Seat Adjust Lever - Adjusts seat front or back.

22. Parking Brake Lever - Set parking brake before dismounting.

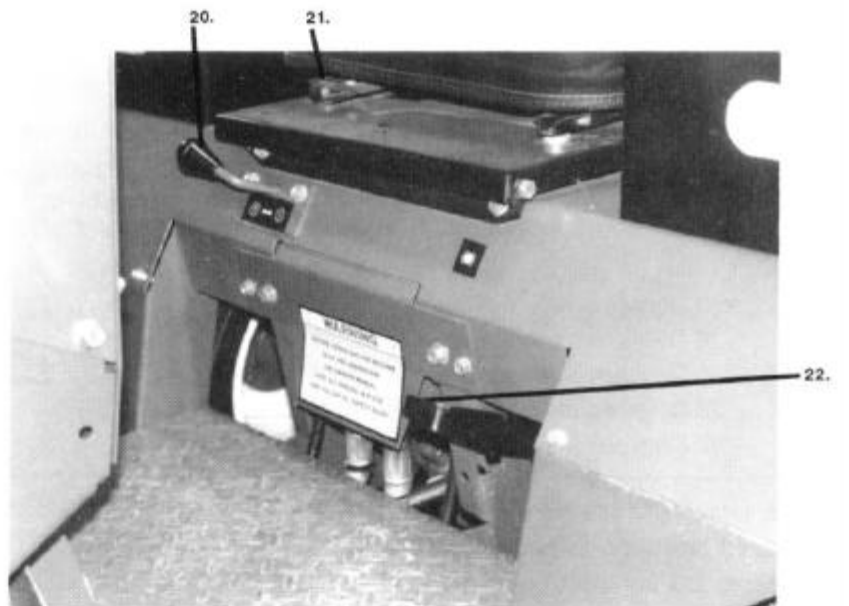


Photo 3 - Controls

### OPERATING PRECAUTIONS

- Observe all Safety Decals.
- Keep all Shields in place.
- Do not allow minors or the inexperienced to operate machine. NO RIDERS!
- Do not operate mower with other persons in the area. Irregularities in ground surface can permit foreign material to be propelled from beneath deck to cause serious injury or death.
- Before leaving operator's seat, disengage PTO, move FORWARD -- REVERSE lever to NEUTRAL, set PARKING BRAKE and STOP ENGINE.
- Remove key from ignition if maintenance procedures are to be performed or tractor is to be left unattended.
- Counter balance weights are required for some attachments. See the Owner/Operator's Manual for each attachment to determine proper counter weights.
- Tire pressures are very important! Check tire pressures according to Service Schedule (Section 5.1)



### OPERATING ON SLOPES

**USE EXTRA CARE WHEN WORKING ON SLOPES.** The operator must be experienced with the Steiner tractor and its unique operational responses. A ROPS roll bar and seat belt is essential. Be alert to dips and rises which change the general slope. Watch for holes, rocks, and roots in the terrain and other hidden hazards. Keep away from drop offs. Avoid ground conditions which will cause the machine to slide. Maintain engine RPM and control ground speed with the Forward -- Reverse lever.

The following recommendations for slopes are only a guide, based on normal turf conditions. If the operator is uncomfortable or unsure of the machine's stability, he should cease operation on the slope immediately.

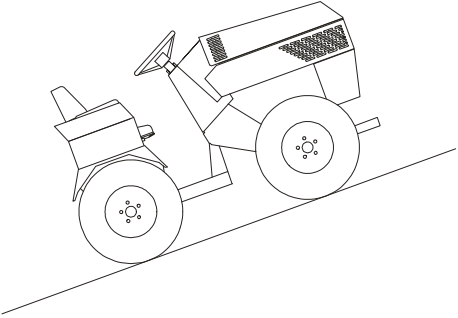
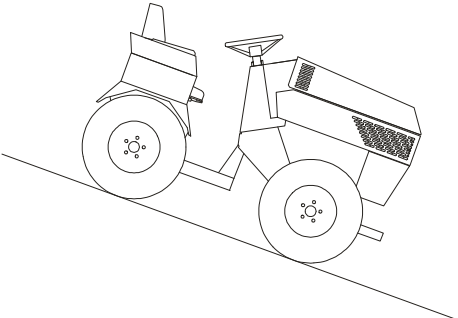
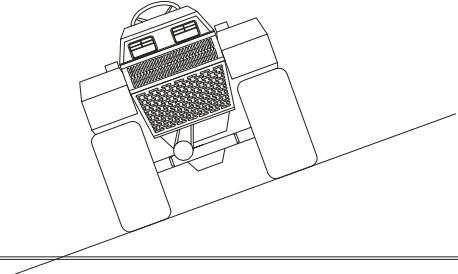
- 30 Degrees max. down slope in forward.
- 25 Degrees max. across slope.
- 30 Degrees max. up slope in forward.
- 25 Degrees max. backing up slope in reverse.
- 30 Degrees max. backing down slope in reverse.

On uneven, loose or wet ground, the angles should be reduced. Only smooth maneuvers (not erratic) should be made to help maintain stability. Use LOW RANGE (1), avoid high speeds and sharp turns on slopes. Do not start or stop suddenly when going uphill or downhill. **THE ULTIMATE RESPONSIBILITY FOR SAFE OPERATION ON SLOPES RESTS WITH THE OPERATOR.**

## MAXIMUM ENGINE INCLINATION RECOMMENDATIONS

When using an engine in an inclined position continuously, the following points must be remembered:

- 1. On water cooled engines there is a possibility of an air pocket forming in the cylinder head due to inadequate circulation and/or coolant vaporization.
- 2. The effective volume of the fuel tank becomes less, so air suction must be prevented.

	Position	Less than 10 minutes continuous operation	Continuous operation
	Front up	30°	25°
	Front down	30°	25°
	Left or right side down	30°	25°



### CAUTION!

Continuous operation on slopes exceeding 25° is not recommended.

## OPERATING INSTRUCTIONS

1. Read and understand this manual before attempting to operate this machine
2. Check all fluid levels before starting unit.
3. Become familiar with all controls and their functions.
4. Safety switch requires the PTO lever in the "OFF" position to start engine.
5. Select desired engine speed with the throttle.
6. Vary vehicle speed with the Forward - Reverse lever.
7. ALWAYS OPERATE WITH BOTH TRANSAXLES IN THE SAME RANGE. BOTH IN HIGH (2) OR BOTH IN LOW (1). Select "LOW" (1) range with the transaxle shifters for operating front mounted equipment.
8. Operate mower and other similar front mounted equipment with the front lift lever in "FLOAT" position.
9. Safety seat switch requires operator to be seated when PTO is "ON" or engine will stop. On units equipped with electric clutch, the seat switch requires the operator to be seated when the PTO is "ON" or the clutch will disengage and the PTO will stop.
10. The hydrostatic transmission provides a braking action when the Forward - Reverse lever is returned to neutral.
11. Set parking brake and stop engine before dismounting.
12. DO NOT TOW! ... Transaxle shifters must be in "NEUTRAL" position before moving a stalled unit. Neutral detent is between "HIGH" (2) and "LOW" (1) position.
13. Be alert for loose bolts and nuts. It is the operator's responsibility to keep bolts tight.
14. See the following pages for more information on specific operator controls and adjustments.

### OPERATING TIPS

- A. Take some time and get used to the handling characteristics of your new tractor.
- B. Always look before backing.
- C. Tractor must be equipped with ROPS roll bar when operated on slopes.
- D. Slow down... Use "LOW RANGE" (1) over rough, uneven or steep terrain.
- E. Do not make sharp turns at high speeds.
- F. When going down hill with mower on, be sure mower is in "FLOAT" position.
- G. When front mounted attachment cannot be lowered, BACK down the hill.
- H. Do not expect your tractor to think for you! USE COMMON SENSE!



## CAUTION



**BE ALERT! STOP RUNNING THE UNIT AT THE FIRST SIGN OF ANY ABNORMAL HYDRAULIC FUNCTION. SERIOUS DAMAGE TO THE HYDRAULIC SYSTEM CAN RESULT!**



## CAUTION



**DO NOT TOW! SERIOUS DAMAGE TO HYDRAULIC SYSTEM WILL RESULT. ALWAYS OPERATE WITH BOTH TRANSAXLES IN THE SAME RANGE. BOTH IN "HIGH" (2) OR BOTH IN "LOW" (1).**

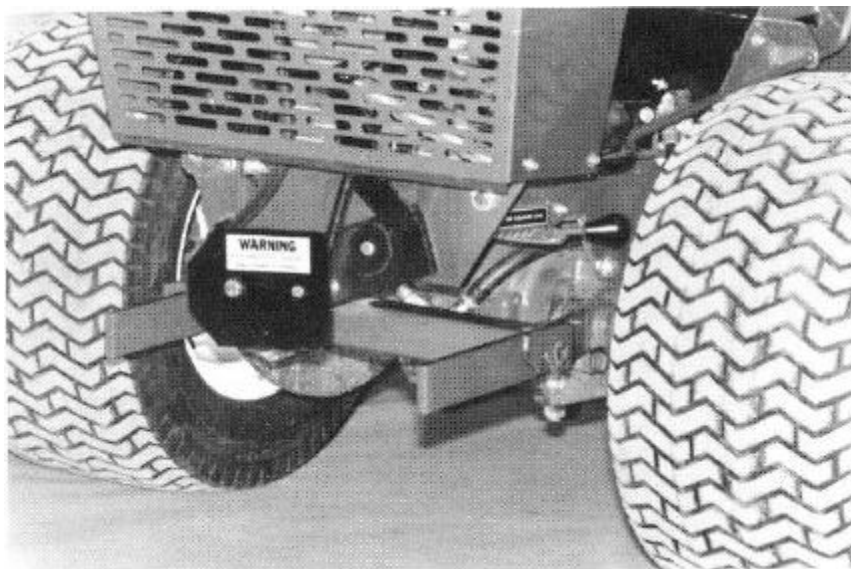


Photo 4 - PTO Drive and Front Lift

### **ATTACHING PTO BELT DRIVE (Serial No. 1001 -- 1641)**


- The attachment drive belt is installed around the left hitch arm before the attachment is connected to the front lift Quick Hitch. Attach the implement.

STOP ENGINE!

- Release the belt tension adjustment lever on the left front frame. Place the drive belt on the pulleys.

#### **Follow these steps to assure proper belt tension:**

1. With the implement and drive belt attached, move the belt tension adjustment lever forward a notch at a time and observe the double pulley as it moves toward the left and downward. The pulley must move down approximately 3/4 inch. This assures the implement belt is tightened.
2. Start engine and engage the PTO lever carefully. The implement should start to run immediately. (ON position)
3. Raise the implement to the highest position and check for proper release (implement stops running) when the PTO is disengaged. (OFF position)
4. If the implement continues to run with the PTO in the "OFF" position, STOP ENGINE, release the belt tension adjustment lever one notch and repeat steps 2, 3 & 4. If the PTO does not release, check for a wrong size implement belt.



**CAUTION!**  
**Do Not Operate Implements With Improper  
Belt Tension Settings.**  
**Always Engage and Disengage PTO at Low Engine RPM.**

### **FRONT LIFT**

- The front lift control valve is equipped with a detent float position. Always use "FLOAT" position when mowing, sweeping, etc.
- The QUICK HITCH allows fast interchange of attachments. Push down on hitch control handle to open latches. Pull up to close and lock latches.

### **AUXILIARY HYDRAULICS**

- The auxiliary valve and quick couplers are standard equipment. Keep dust covers in place when couplers are not in use. Be sure hose end couplers are clean before engaging couplers.

### **Operating Instructions for Electric PTO Clutch (Serial No. 1642 - )** **follow these steps for implement drive belt installation:**

1. Place the correct size implement drive belt around the left hitch arm of the implement before attaching to the quick hitch front lift. See the belt size chart (section 4.7) for belt sizes.
2. Attach the implement to the front lift. Push down on the latch handle to open latches. Pull up to lock latches.
3. Stop engine and release the belt tension adjustment lever by moving it as far as it will go toward the rear.
4. Install the implement drive belt on the double idler pulley.
5. Each time a PTO belt driven attachment is installed, it is necessary to adjust the drive belt tension. This is done by moving the belt tension adjustment lever on the left side of the front tractor frame. (See Photo 4A) Proper tension is very important! The proper setting is obtained by moving the lever two notches after all slack is taken up on the drive belts. If drive belt slips, tighten one additional notch.



**Photo 4A - Belt Tension Adjustment Lever**

6. The PTO clutch is engaged or disengaged with the PTO push-pull switch. Engage the clutch with the engine at approximately 1/2 throttle.
7. NOTE: The operator must be seated for the PTO electric clutch to operate. Do not attempt to by-pass this safety device.
8. SPECIAL INSTRUCTION FOR DIESEL ENGINES: To stop the engine... Pull the knob on the fuel shut-off cable and hold it until the engine stops. Push it in after the engine stops so the engine is ready to start the next time. Engine will not start with the fuel shut-off knob pulled out.



**CAUTION!**  
**DO NOT ENGAGE CLUTCH WITH ENGINE AT FULL THROTTLE.**  
**STARTING HEAVY LOADS AT FULL THROTTLE WILL SHORTEN**  
**CLUTCH AND/OR BELT LIFE.**





Photo 4B - Electric Clutch Access Door

## Belt Size Chart for Steiner Tractors and Attachments

Model	Description	425 without electric clutch *Part No.	425 with electric clutch *Part No.
Engine Drive Pulley to Idler		81-B042	81-B041
BM425	Boom Mower	81-B041 or 81-A040	81-B040
All	Rotary Mowers	81-B041 or 81-A040	81-B040
PB100	Power Blower	81-B041 or 81-A040	81-B040
RM674	Reel Mower	81-B044 or 81-A043	81-B043
RS350	Rotary Sweeper	81-B041 or 81-A040	81-B040
SB348	Snowblower	81-B054 or 81-A053	81-B053
SC101	Stump Cutter	81-B045 or 81-A044	81-B044
TL348	Tiller	81-B041 or 81-A040	81-B040

\* See attachment Parts Manual for correct belt part numbers.  
Use only Steiner approved belts.

## TIRE BALLAST

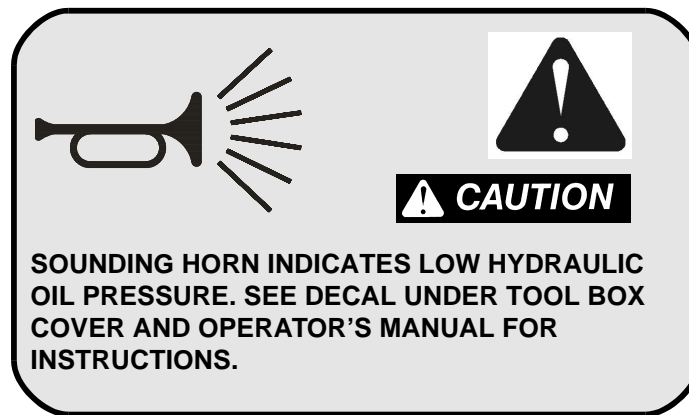
Liquid, foam, rubber or powder ballast in tires causes excess loads on the drive train and WILL VOID WARRANTY ON THE DRIVE TRAIN COMPONENTS of the power unit. Modified or makeshift weights are not acceptable.

## CAUTION

Rear weights must be used with attachments over 120 pounds for stability. See attachment operator's manual for weight requirements.

Always remove all rear weights when front mounted attachments are removed, or when using attachments less than 120 pounds, to reduce the danger of unit tipping over backward while climbing steep slopes or loading ramps.

## Hydraulic System Warning Horn



## CAUTION!

This unit is equipped with a warning horn to signal low hydraulic oil pressure.

A hydraulic oil pressure switch monitors the charge pressure of the hydrostatic system, and gives a warning signal if the charge pressure drops to an unsafe level. Continued operation with low charge pressure will result in severe damage to the hydraulic pump and motors.

### IF HORN SOUNDS, CHECK THE FOLLOWING:

**1. Is unit operating under heavy load in “HIGH”(2) range?**

Shift both transaxles to “LOW”(1) range and proceed.

**2. Low hydraulic oil level or wrong type of oil.**

Check oil level and fill with approved hydraulic oil.

**3. Dirty or plugged hydraulic filter.**

Replace with an approved filter.


**4. Check for air leaks in filter base, suction lines or fittings.**

Repair or replace damaged parts.

**5. If horn signal continues after checking steps 1 to 4, there may be internal damage to the hydrostatic pump and motors.**

Contact dealer for service.



SERVICE SCHEDULE				
SERVICE INTERVAL	DAILY PRESTART	50 HOUR	100 HOUR	500 HR ANNUAL
<b>SERVICE INSTRUCTIONS</b> Read safety decals. Check fuel level. Check engine oil level. Check transaxle oil level. Check air cleaner.	X X X X X			
<b>Visual inspection of:</b> 1. Bolts and fittings for signs of loosening. 2. Accumulation of dirt or foreign matter around engine restricting engine cooling. 3. Oil leaks or belts and hoses showing signs of wear. 4. Tires for low pressure or signs of abnormal wear.	X  X  X  X			
<b>Change engine oil and filter:</b> 1. <b>ONAN</b> engines: initial change at 25 hours and 50 hours thereafter. 2. <b>KUBOTA</b> engines: initial change at 35 hours and 100 hours thereafter.		X		
<b>Check air cleaner:</b> Clean or replace.	X	X	X	X
<b>Check battery water level:</b> Fill to cover plates 1/4".		X	X	X
<b>Transaxles:</b> Check transaxle oil level. <b>Refill with Steiner Trans-Hydraulic Fluid or TRC 6440 Universal Torque Fluid. Do not use automatic transmission fluid or motor oil.</b> Initial hydraulic oil change 100 hours. Initial filter change 50 hours. Change hydraulic oil every 500 hours. Replace hydraulic oil filter every 500 hours or at the first sign of any abnormal hydraulic function.	X	X	X	X
 <b>BE ALERT!</b> <b>Stop running the unit at the first sign of any abnormal hydraulic function. Serious damage to the hydraulic system can result.</b>		X	X	X

SERVICE SCHEDULE				
SERVICE INTERVAL	DAILY PRESTART	50 HOUR	100 HOUR	500 HR ANNUAL
<b>Fuel system:</b> Check or replace fuel filter.			X	
<b>Lubrication:</b> Grease center pivot.		X		
<b>Check tire pressure:</b> Front - 16 lbs. max. Rear - 16 lbs. max.		X X		
<b>Storage:</b> Drain fuel tank. Maintain proper tire pressures. Remove battery and maintain charge. Grease exposed cylinder shafts.				X X X X

## ENGINE OIL CHANGE PROCEDURE

### Onan:

25 hours initial;  
50 hours thereafter.

### Kubota:

35 hours initial;  
100 hours thereafter.

1. Run engine until engine is warm for complete draining.
2. Remove oil drain plug (Onan).  
Open drain cock (Kubota).
3. Remove oil filter and wipe filter base clean.
4. Lube filter gasket with oil and install new filter.  
Tighten 1/2 turn after seal contacts base. Do not over tighten.
5. Re-install drain plug (Onan).  
Close drain cock (Kubota).
6. Add 3 U.S. Quarts (2.9 liter) engine oil for **Onan** engines. Add 4 U.S. Quarts (3.8 liter) for **Kubota** engines. Refer to engine manual for oil specifications.
7. Run engine and check filter and drain plug or cock for leaks.
8. Stop engine and refill to proper oil level.

### NOTE:

**THE USE OF ANY AIR FILTER OR OIL FILTER OTHER THAN THOSE SPECIFIED BY THE ENGINE MANUFACTURER MAY VOID WARRANTY AND IS NOT RECOMMENDED.**

## TRANSAXLE OIL LEVELS

After a period of time the level on the front transaxle dipstick may show to be low even though there are no apparent oil leaks. This condition could be caused by a transfer of oil from the front transaxle to the non-vented rear transaxle replacing the air cavity in the rear transaxle.

Before refilling front transaxle to the top mark on the dipstick, remove the "top plug" on the rear transaxle and allow air to enter to equalize the oil levels in the transaxles. After oil level is stabilized, replace the plug and refill the front transaxle as needed.

Equalize oil levels any time an excessive amount of oil, more than a quart (liter), needs to be added to the front transaxle.

## TRANSAXLE OIL CHANGE PROCEDURE

Change hydraulic filter after first 50 hours. Change hydraulic oil and filter at 100 hours initially, and annually or at 500 hour intervals thereafter, whichever occurs first. Change oil and filter at any time contamination is suspected.

1. It is best to drain transaxles after the tractor has been thoroughly warm to assure maximum drain.
2. Remove dipstick and drain plugs from transaxles.
3. Remove hydraulic filter and wipe filter base clean.
4. Lube filter gasket with oil and install new filter. Tighten 3/4 turn after gasket contacts filter base. Do not over tighten.
5. Re-install drain plugs in transaxles.
6. Add 5 quarts (4.6 liters) to the rear transaxle. Fill front transaxle to full mark on dipstick with approved hydraulic oil. Use only Steiner Trans-Hydraulic Oil or Texas Refinery Corp 6440 Universal Torque Fluid.
7. Run engine, and turn steering wheel extreme right to extreme left several times to purge all air from the circuit.
8. Shift both transaxles to neutral (neutral detent is halfway between LOW and HIGH) and move the Forward -Reverse lever back and forth to purge air from the drive circuit.
9. Re-check oil level to be sure it is in the safe operating range.

### NOTE:

**THE USE OF ANY OIL OTHER THAN STEINER TRANS-HYDRAULIC OIL OR TRC 6440 UNIVERSAL TORQUE FLUID MAY VOID WARRANTY AND IS NOT RECOMMENDED.**

**THE USE OF ANY HYDRAULIC OIL FILTER OTHER THAN A STEINER HYDRAULIC OIL FILTER MAY VOID WARRANTY AND IS NOT RECOMMENDED.**

### ADJUSTMENTS

#### Throttle Adjustment

Tension adjustment is made by simply tightening the spring loaded friction washers on the throttle lever. High and low idle speeds are obtained by adjusting the linkage at the engine.



**CAUTION! DO NOT TOW!**  
**SERIOUS DAMAGE TO HYDRAULIC SYSTEM WILL RESULT.**

### HYDROSTATIC TRANSMISSION

#### Forward - Reverse Lever Tension Adjustment

A large knob is located near the Forward - Reverse lever. Turn clockwise to tighten tension and counter clockwise to reduce tension. Additional tension may be needed whenever the lever does not stay in the desired position.

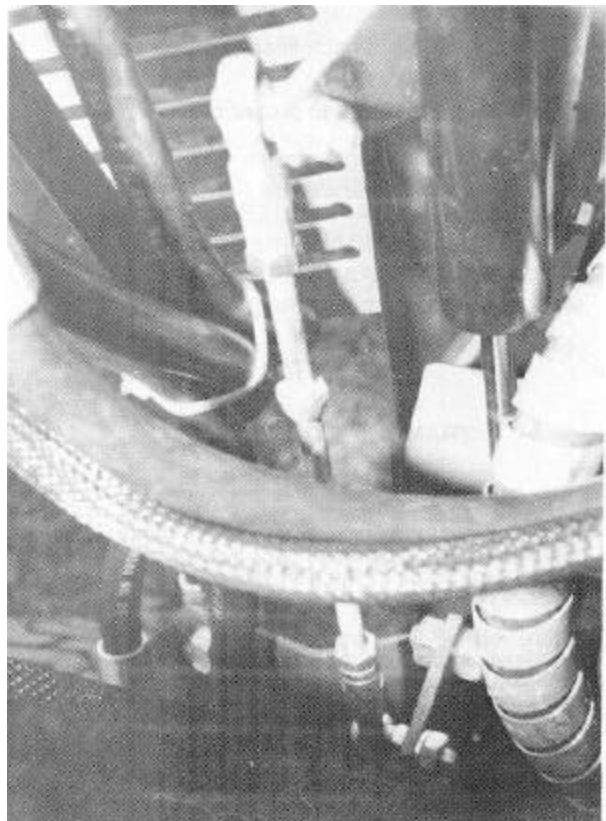
#### EMERGENCY MOVING A STALLED UNIT

##### **DO NOT TOW!**

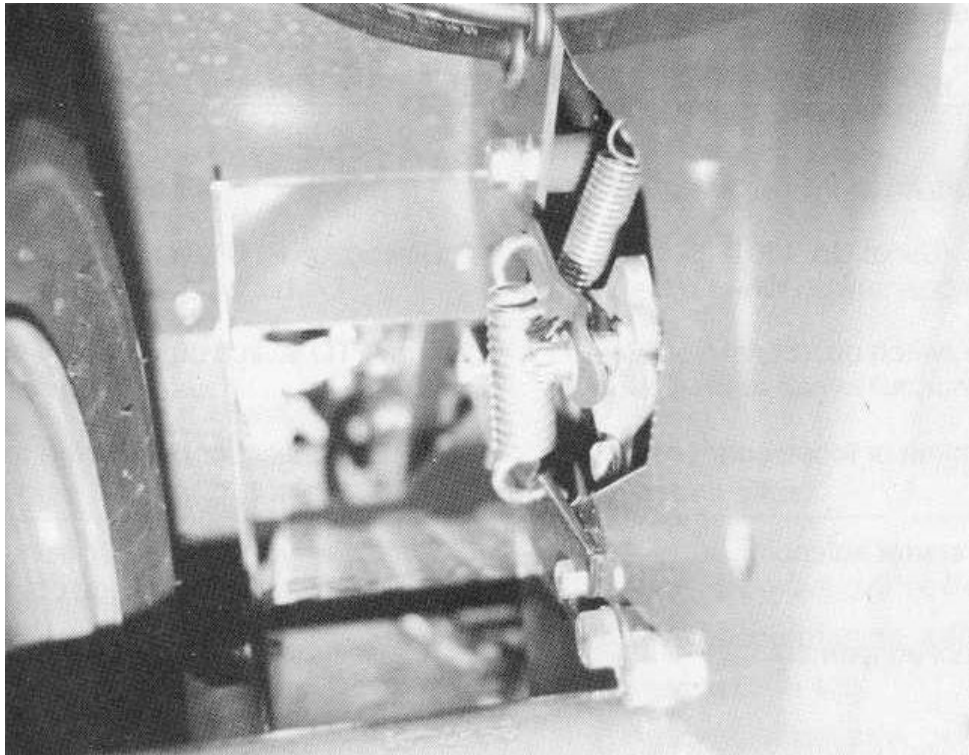
Transaxle shifters must be in neutral before moving a stalled unit. Neutral detent is between "HIGH" and "LOW" position.

#### Neutral Linkage Adjustment:

Absolute neutral is when the tractor will not creep on a level smooth surface with the engine running and the Forward - Reverse lever in neutral position. If the unit creeps it is necessary to adjust the control linkage. Adjust the linkage by loosening the locking nuts at both ends of the rod and rotate the rod to shorten or lengthen the desired amount. Shorten the rod if the unit creeps forward or lengthen the rod if the unit creeps backward. Tighten locking nuts when neutral setting is correct. (see Photo 5)



**Photo 5 - Hydrostatic Adjustments**



**Photo 6 - Parking Brake**

### **Parking Brake Adjustment**

The parking brake is a dry disc type located on the rear transaxle. As the friction pads wear, it will be necessary to adjust the brake. (see Photo 6)

#### **TO ADJUST THE BRAKE:**

1. Release the brake and remove the cotter pin from the adjusting nut.
2. Tighten the adjusting nut carefully until the disc cannot be moved freely by trying to rotate the disk by hand, then back off just far enough to allow the disk to move freely.
3. Align nut and re-install cotter pin.

#### **TO REPLACE BRAKE PADS:**

1. Remove the two bolts which fasten the brake assembly to the transaxle. Caution: There are two loose pins and a backing plate which may fall out upon dis-assembly. Be sure these are in place before assembling the brake.
2. Slide the disk off the brake shaft. Note: A woodruff key in the shaft must stay in place.
3. Replace inner pad and install disk on the brake shaft. It must slide freely on the shaft.
4. Back off brake adjustment nut, replace outer pad in housing and reinstall the assembly to the transaxle.
5. Adjust brake.

## TROUBLE SHOOTING CHART

POSSIBLE CAUSE	REMEDY
----------------	--------

### SYMPTOM: Engine won't turn over

1. Battery dead	1. Check battery, charge or replace.
2. PTO lever engaged. (Serial No. 1001-1641)	2. Disengage PTO lever.
3. PTO Electric Clutch switch on. (Serial No. 1642-)	3. Turn PTO switch off.
4. Defective wiring, broken or loose connections.	4. Visually check, or check with test light for continuity on the circuits.
5. Defective starter or starter solenoid.	5. Check by using a jumper from the battery terminal to the solenoid terminal.
6. Safety switches out of adjustment.	6. Adjust switches so they are fully depressed.

### SYMPTOM: Engine difficult to start, or runs poorly.

1. Fuel valve partly closed	1. Open fuel valve all the way.
2. Fuel filter dirty.	2. Replace fuel filter.
3. Ignition system, defective wires, plugs, etc. (Gas engine only.)	3. Check plugs, wires etc.(Gas engine only.)
4. Air cleaner dirty.	4. Replace air cleaner element.
5. Water or dirt in the fuel.	5. Drain and refill with fresh clean fuel.
6. Engine running too hot.	6. Clean engine screen and fins on air cooled engine. Check coolant level on water cooled engine and clean radiator screen.
7. Choke out of adjustment.(Gas engine only.)	7. Adjust choke to close properly.
8. Air in fuel system. (Diesel only)	8. Bleed air out of fuel system.
9. Defective fuel pump.	9. Check fuel pump.
10. Fuel shut-off knob pulled out. (Diesel with electric clutch only)	10. Push fuel shut-off knob in.

## TROUBLE SHOOTING CHART

POSSIBLE CAUSE	REMEDY
<b>SYMPTOM: Power steering slow and/or front lift will not lift.</b>	
1. Oil level too low in transaxle.	1. Fill transaxle to level on dipstick between the two marks.
2. Hydraulic oil filter dirty or plugged.	2. Replace with Steiner approved filter.
3. Low charge pump pressure.	3. See Steiner dealer for pump service.
<b>SYMPTOM: Implement drive belt slips.</b>	
1. Drive belt tension needs adjusting.	1. Adjust by moving drive belt tension adjustment lever according to adjustment instructions. (see section 4.3)
2. Wrong size drive belt.	2. Use correct belt size.
3. Excessive load on attachment drive system.	3. Check implement attachment for worn or damaged drive parts, blades, bearings, or excessive foreign material buildup.
<b>SYMPTOM: Tractor will not move with engine running and Forward - Reverse lever in forward or reverse position.</b>	
1. Parking brake set.	1. Release parking brake.
2. Oil level too low in transaxles.	2. Check transaxle oil level and refill to between marks on dipstick.
3. Hydraulic oil filter dirty or plugged.	3. Replace hydraulic oil filter with Steiner approved filter.
4. Air leak in suction line.	4. Check for loose fittings or damaged suction line.
5. Drive coupling failure.	5. Check drive coupling to determine if pump input shaft is turning.
6. Pump control linkage failure.	6. Check pump control linkage and repair.
7. Transaxle shifters in neutral.	7. Shift both transaxles into LOW range.
8. Low charge pump pressure or faulty hydrostatic system.	8. See Steiner dealer for pump service.

## Mounting Instructions

- 1. Install roll bar through square holes in rear fender. The roll bar is bent to allow the square tubing to be placed in front of the axle tube.
- 2. Remove upper rear frame to axle bolt and install a support bracket on the right and left sides. Do not tighten bolts. See Parts Drawing, Ref. 10)
- 3. Install the U bolts around the axle tube, through the support bracket and through the holes in the roll bar. Secure with lock washers and nuts.
- 4. Tighten all bolts and U bolts. Caution! Do not overtighten the U bolts. Cracked housing may occur.
- 5. Install the seat belts to the outside of the mounting holes using 7/16 bolts, washers, and lock washers as shown in the parts drawing.



## SAFETY INSTRUCTIONS



**ALWAYS BUCKLE SAFETY BELT WHILE OPERATING TRACTOR.**

**NEVER ALLOW ANY RIDERS.**

**USE EXTREME CARE WHEN WORKING CLOSE TO FENCES, DITCHES, OR ON HILLSIDES.**

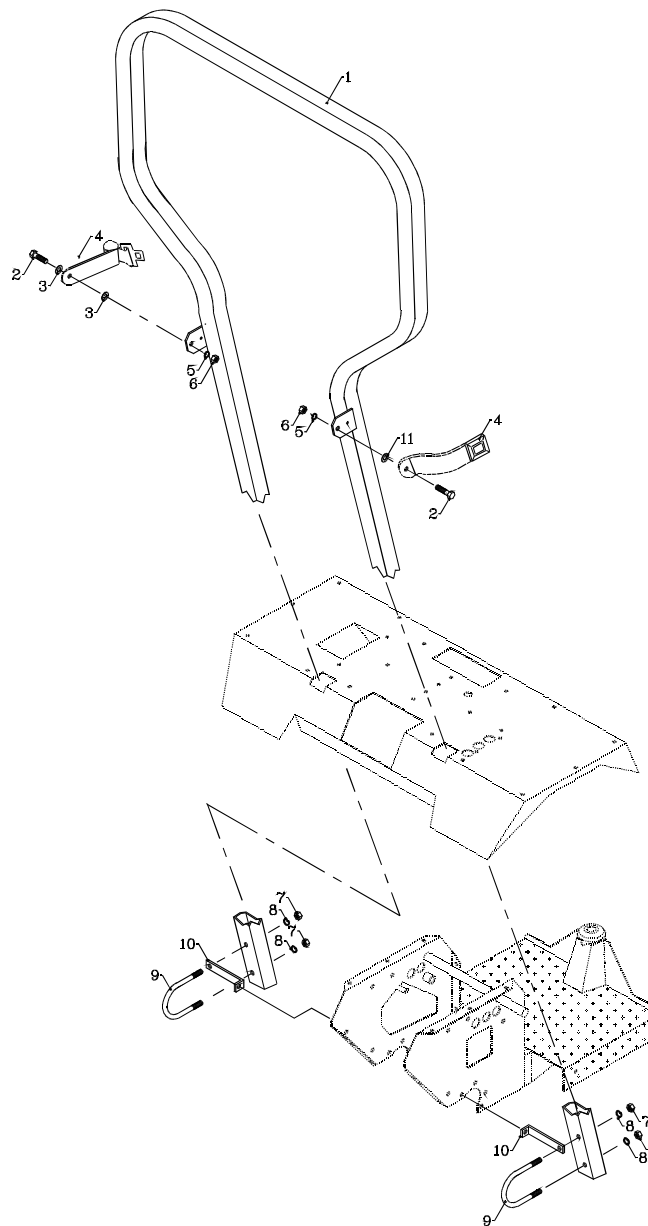
**STAY ALERT FOR HIDDEN HAZARDS AND TRAFFIC.**

**AVOID SUDDEN STARTS, EXCESSIVE SPEEDS, AND SUDDEN STOPS.**

**CHECK CLEARANCE CAREFULLY BEFORE DRIVING UNDER ANY OBJECTS.**

**DO NOT WELD, CUT, DRILL OR MODIFY ROPS IN ANY MANNER.**





Roll Bar Parts  
Figure 18

**Parts List for Figure 18**

Ref	Part No	Description	Quan
1	62-635	Roll Bar Assembly (Not Available as a Service Part)	1
2	90-0710	Bolt, 7/16 x 1-1/4	2
3	94-07	Flat Washer, 7/16	2
4	47-059	Seat Belt Set	1
5	96-07	Lock Washer, 7/16	2
6	92-07	Nut, 7/16	2
7	92-08	Nut, 1/2	4
8	96-08	Lock Washer, 1/2	4
9	99-K34	U Bolt	2
10	64-494	Support Bracket	2
11	99-B12	Spacer	1

## **INTRODUCTION**

Weights are added by using a weight bar attachment to counter balance front mounted equipment. Refer to Appendix B figure 17 for parts identification.

Suggested minimum weights for attachments:

72" Mower                                      2 weights = 110 lbs.

Boom Mower                                   4 weights = 220 lbs.

Snowblower                                   4 weights = 220 lbs.

Reel Mower                                   4 weights = 220 lbs.

Always mount equal number of weights to each side of tractor.

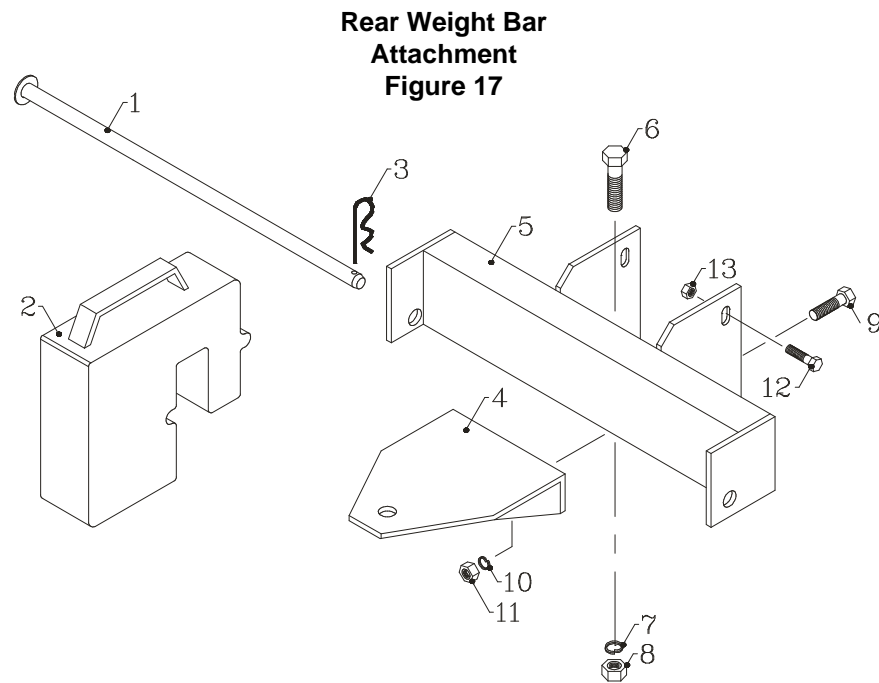
## **SAFETY**



**Weights must be used with some front mounted attachments for stability.  
Weights must be removed when front mounted attachments are removed.  
Always use security rod to hold weights in position.**

## **INSTALLATION INSTRUCTIONS FOR 425**

1. Remove rear access cover.
2. Remove top 2 bolts mounting hitch to frame.
3. Attach mounting bracket with 1/2 x 1--1/4 bolts.
4. Install weight bar to mounting bracket with 3/8 x 1 flange bolts.
5. Install drawbar attaching plate above tractor hitch and under weight bar with 5/8 x 1--1/2 bolts. (Note: the holes in the plate are offset for alignment.)
6. Install drawbar hitch extension to weight bar frame.
7. Tighten all bolts and replace access cover.
8. Add weights to weight bar.
9. Install security rod and clip pin.

**Parts List for Figure 17**

Ref	Part no.	Description	Quantity
1	42-467	Weight Security Rod	1
2	62-540	Weight 55#	4
3	02-PP0524	Presto Pin, 5/32	1
4	62-542	Drawbar Hitch Extension	1
5	62-541	Tractor Weight Bar	1
6	64-474	Mounting Bracket (425 only)	1
7	64-473	Drawbar Attaching Plate (425 only)	1
8	90-1012	Bolt, 5/8 x 1-1/2	2
9	96-10	Lock Washer, 5/8	2
10	92-10	Nut, 5/8	2
11	90-0810	Bolt, 1/2 x 1-1/4	4
12	96-08	Lock Washer, 1/2	4
13	92-08	Nut, 1/2	4
14	90-0608	Bolt, 3/8 x 1	2
15	99-E13	Flange Nut, 3/8	2

### FRONT WEIGHT INSTRUCTIONS

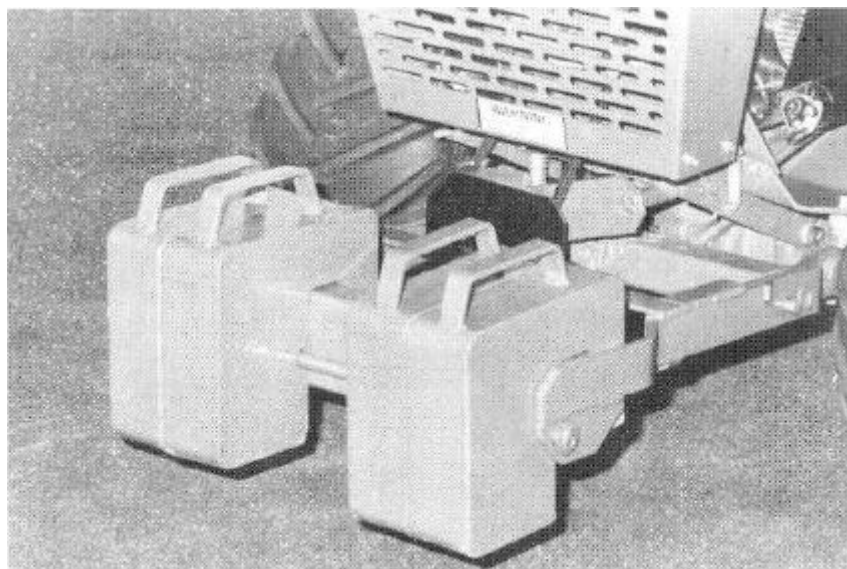
Weights are added to the front of the tractor to provide counter balance for 3-point hitch mounted equipment. Always add enough weight to provide stability. This will vary with the weight of the rear mounted implement.

1. Attach the front weight frame to the front lift quick hitch in the usual manner.
2. Add weights to the weight bar.
3. Install security rod and clip pin.
4. Remove weights when the rear mounted implement is removed.

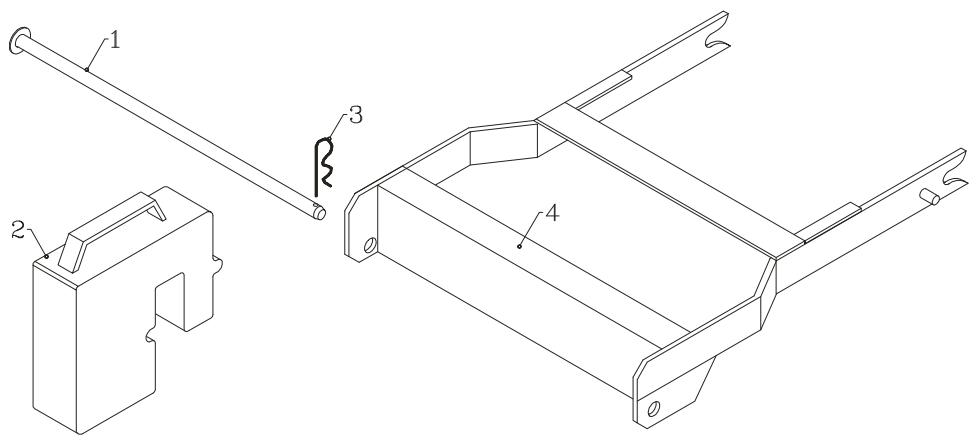
### SAFETY



**Weights must be used with some rear mounted attachments for stability.  
Weights must be removed when rear mounted attachments are removed.  
Always use security rod to hold weights in position.**



Front Weight Bar  
Attachment  
Figure 25



Parts List for Figure 25

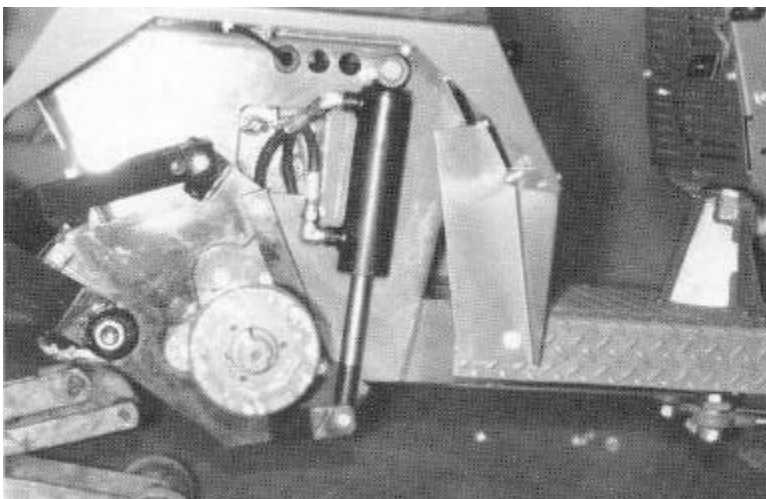
Ref	Part no.	Description	Quantity
1	42-416	Security Rod	1
2	62-540	Weight 55#	4
3	02-PP0524	Presto Pin	1
4	62-665	Frame, Front Weight Hitch	1

## 3-POINT HITCH INSTALLATION INSTRUCTIONS

*NOTE: See the parts drawing for parts identification and proper location.*

1. Remove the hitch cover plate from center of the rear fender area. (See Photo C--6)

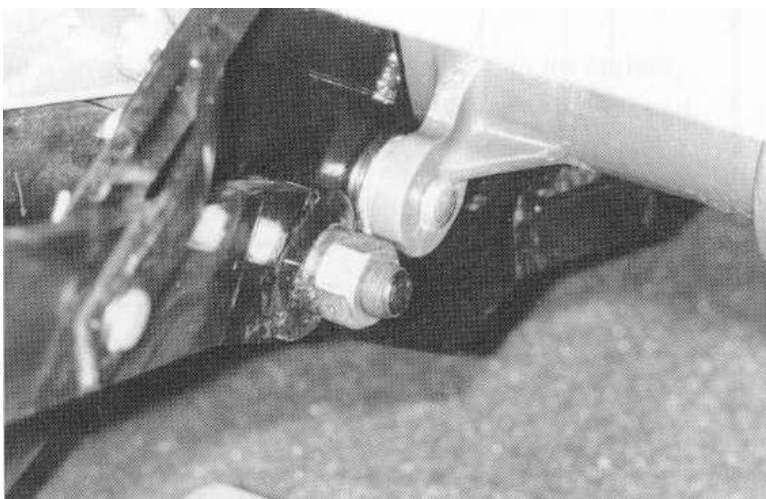
2. Jack the right rear wheel and remove the wheel.



**Photo C-1**

3. Position the lift cylinder on the 1" shaft at the right side of the rear frame with the ports toward the rear. Secure with 1" flat washer and cotter pin. (See Photo C--1)

4. Install the hoses through the center of the rear frame beneath the tread plate. Route the hoses to the auxiliary couplers and connect the hoses to the cylinders.

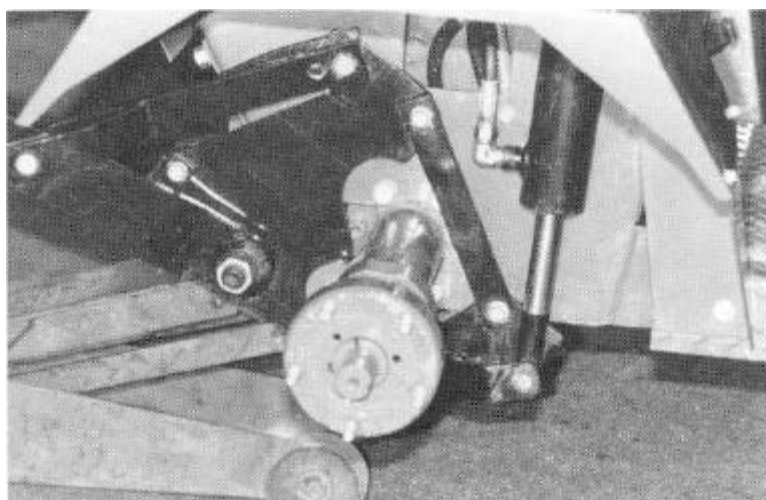


**Photo C-2**

5. Install the 3--point main frame to the transaxle mounting ears with 5/8 x 2--3/4 clevis pins and cotter pins. Use two 5/8 flat washers as spacers to the outside of the 3--point main frame. (See Photo C--2)

6. Fasten the brace at the right side of 3--point main frame above the axle with 3/8 x 1--1/4 flange bolts and flange nuts. (See Photo C--3)

7. Attach the rod end of the lift cylinder to the 3--point main frame with 3/8 x 2 bolt and 3/8 locknut.



**Photo C-3**

## 3-POINT HITCH INSTALLATION INSTRUCTIONS (continued)

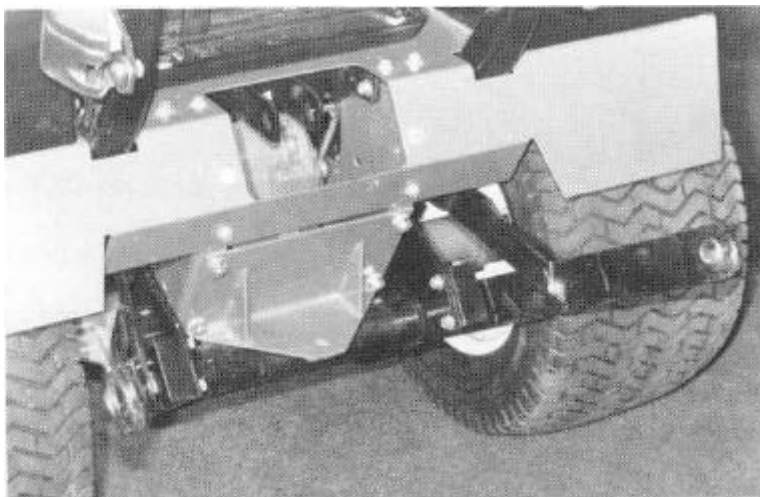
8. Attach sway bumper angles to the frame as shown in Photo C-4 with 3/8 x 1 flange bolts and flange nuts.

9. Install the draft links to the 3-point main frame with 7/8 locknuts. Both draft links are identical.

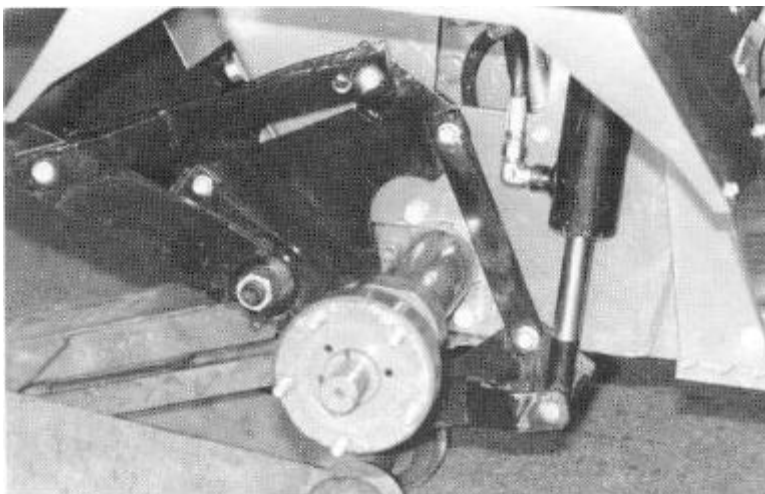
10. Attach the lift links to the draft links and the 3-point main frame with 5/8 x 1-1/2 clevis pins and cotter pins. The end with 2 holes goes to the top. (See Photo C-5)

11. The top link mounting is installed through the center fender opening. Position the mount with the mounting holes down and attaching links to the rear. (See Photo C-6) Insert the right end first and carefully move it into position inside the frame. Spacer plates are used between the mount and the frame at both ends. Fasten with 3/8 x 1-1/4 flange bolts and flange nuts.

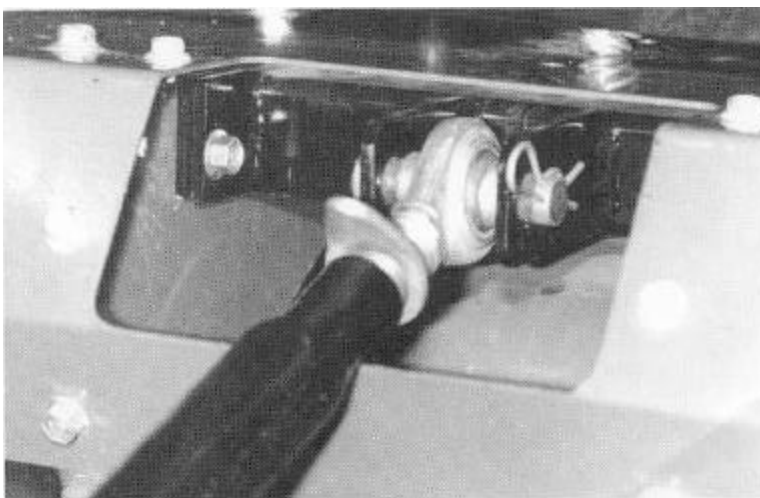
12. The top link is attached with 3/4 x 3 clevis pin and presto pin.



**Photo C-4**

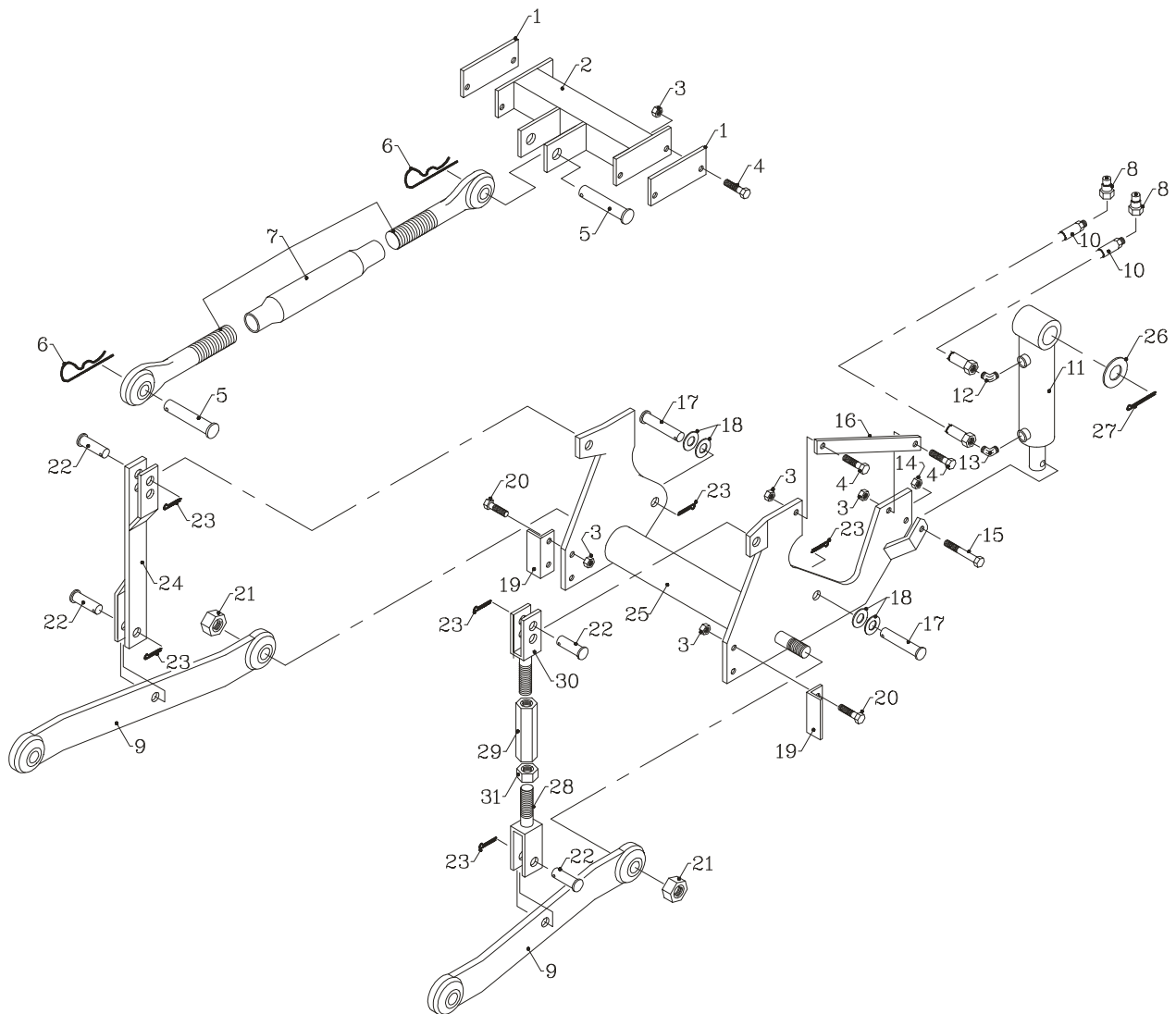


**Photo C-5**



**Photo C-6**

3-Point Hitch  
Parts  
Figure 20





Parts List for Figure 20

Ref	Part no.	Description	Quantity
1	64-524	Spacer	2
2	62-644	Mount, Top Link	1
3	99-E13	Flange Nut, 3/8	10
4	99-K22	Flange Bolt, 3/8 X 1-1/4	6
5	03-1224	Clevis Pin, 3/4 x 3	2
6	02-PP0524	Presto Pin, 5/32 x 2-15/16	2
7	42-410	Top Link	1
8	23-004	Quick Coupler, Male	2
9	62-645	Draft Link	2
10	20-071	Hose, 1/4 x 60	2
11	23-005	Lift Cylinder	1
	21-13909X	Seal Kit, Lift Cylinder	1
12	25-3103-6-6	Fitting, 45 Degree	1
13	25-2103-6-6	Fitting	1
14	99-A06	Locknut, 3/8	1
15	90-0616	Bolt, 3/8 X 2	1
16	64-523	Brace	1
17	03-1022	Clevis Pin, 5/8 x 2-3/4	2
18	94-10	Flat Washer, 5/8	4
19	64-525	Sway Bumper	2
20	99-K13	Flange Bolt, 3/8 X 1	4
21	99-A14NF	Locknut, 7/8 NF	2
22	03-1012	Clevis Pin, 5/8 x 1-1/2	4
23	02-CP0510	Cotter Pin, 5/32 x 1-1/4	6
24	42-411	Lift Link	1
25	62-643	Main Frame, 3-Point	1
26	99-B13	Flat Washer, 1" x 14 ga.	1
27	02-CP0512	Cotter Pin, 5/32 x 1-1/2	1
28	42-436	Adjustable Lift Link, Bottom	1
29	99-F38	Adjustment Nut	1
30	42-437	Adjustable Lift Link, Top	1
31	99-E30	Jam Nut, 3/4 NC	1

### OPTIONAL SELECTOR VALVE INSTALLATION INSTRUCTIONS

1. Remove 5/16 x 3/4 flange bolts holding the auxiliary hydraulic quick connectors. Remove quick couplings and hoses from brackets.  
(See Photo C--7)

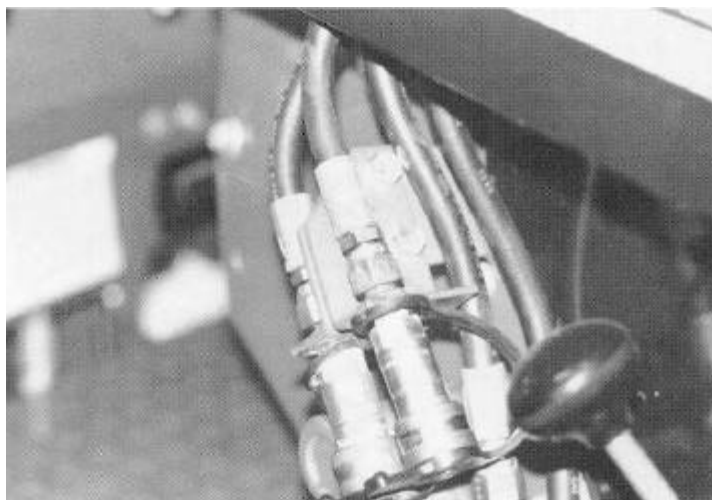


Photo C-7

2. Using the 5/16 flange bolts removed in step 1, bolt the selector valve mounting bracket to the tab that held the quick connectors. Place the bracket on the rear side of the tab.  
(See Photo C--8)

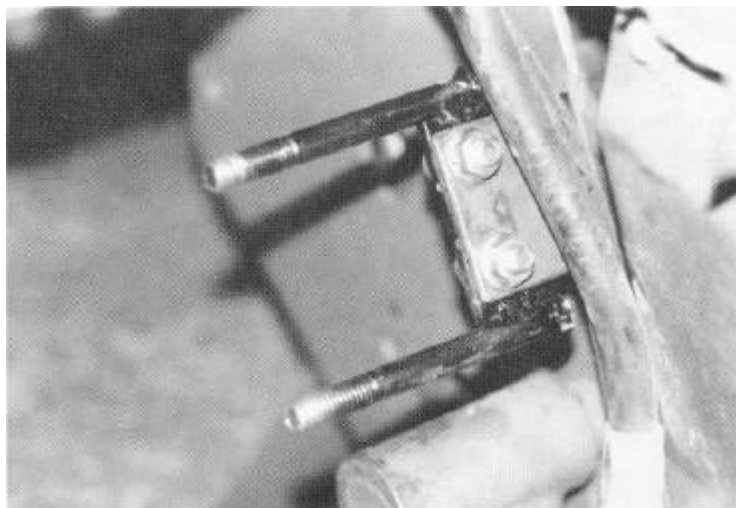
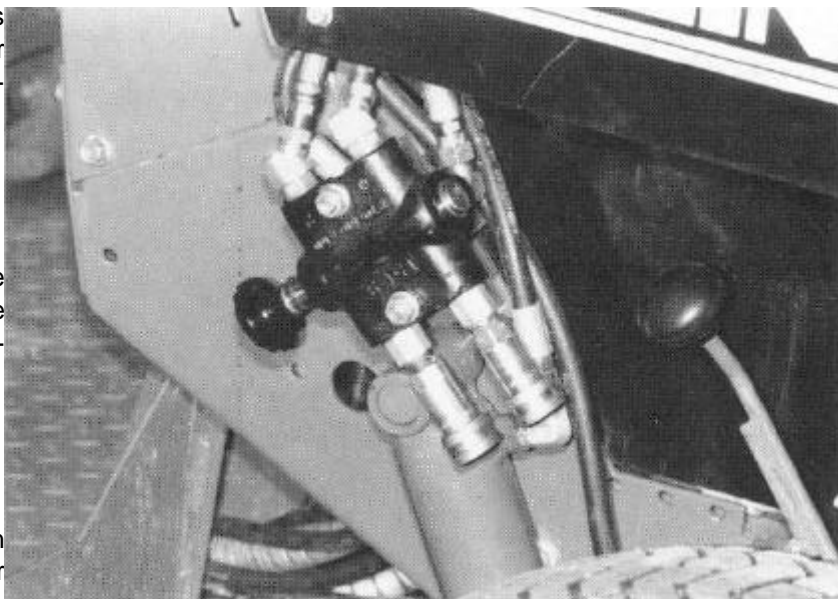


Photo C-8

3. Install the two 90 degree fittings in the side ports of the selector valve with the hose connections facing up.  
(See Photo C--9)

4. Install the straight fittings in the bottom of the selector valve with the with the 1/4" pipe nipples and quick connectors.  
(See Photo C--9)

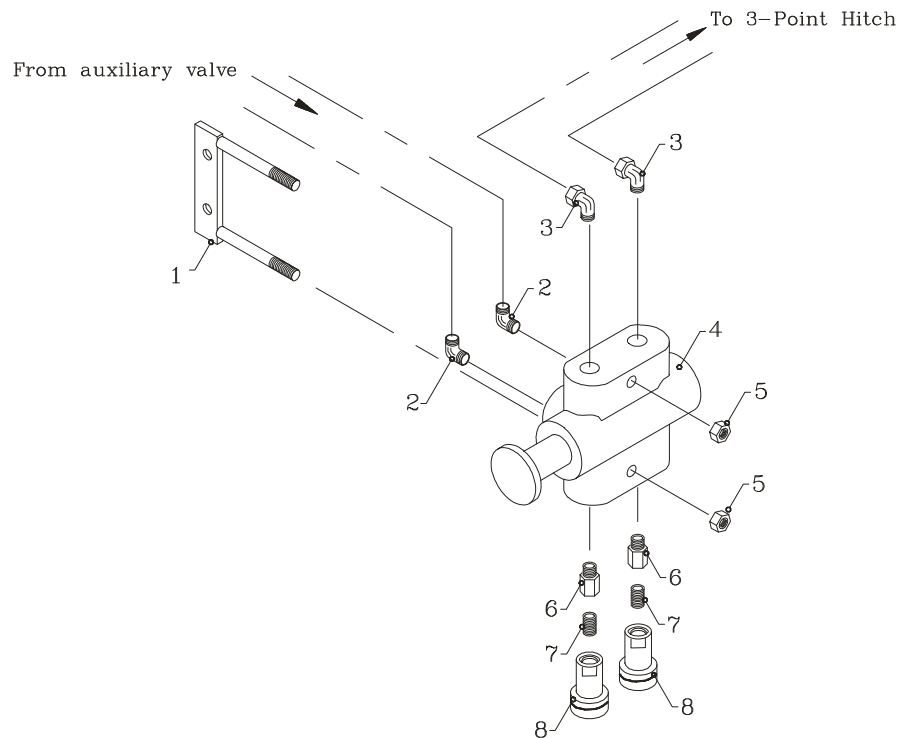
5. Install the 45 degree fittings in the top ports of the selector valve with the angles pointing in towards the tractor.  
(See Photo C--9)



**Photo C-9**

6. Secure the valve on the mounting bracket using the 3/8 locknuts. The side ports of the valve should be on the inside, toward the tractor, with the selector knob toward the rear. (See Photo C--9)
7. Locate the two hoses that were mounted to the quick connectors. Connect the one from the front of the auxiliary valve to the front side port of the selector valve. Connect the hose from the rear of the auxiliary valve to the rear side port.
8. Connect the hoses from the 3 point hitch to the top ports, placing the hose from the rod end of the the lift cylinder on the top rear port, and the remaining hose on the top front port. When properly connected the 3 point hitch will drop and float when the auxiliary lever is pushed to the full forward "FLOAT" position.

Optional Selector  
Valve Parts  
Figure 21



Parts List for Figure 21

Ref	Part no.	Description	Quantity
1	64-581	Bracket, Selector Valve Mount	1
2	25-2503-6-6	Fitting, 90 Degree, O-Ring	2
3	25-3507-6-4	Fitting, 45 Degree, Swivel	2
4	23-057	Valve, Manual Selector	1
5	99-A06	Locknut, 3/8	2
6	25-0502-6-4	Adapter Fitting	2
7	29-026	Close Nipple, 1/4 Pipe	2
8	23-003	Coupler, Female	2
*	70-053	Kit, Selector Valve (includes Ref. 1 - 7)	1

\*Not Illustrated



## **STATEMENT OF LIMITED WARRANTY**

**STEINER TURF EQUIPMENT INC.** warrants its line of equipment to be free from defects in material and factory workmanship for a period of 12 months. This statement does not limit engine warranties in which the engine manufacturers carry extended time periods beyond the 12 months. Engine warranty claims will be subject to the engine manufacturer's approval.

**Exception to this warranty period** will be the Chipper/Shredder, Trencher and Generator, which carry a 90 day warranty. Homeowner warranties will be extended to a 24 month warranty on power units only.

**Replacement Parts** carry a 90 day replacement warranty and are reimbursed to the dealer, net of the prompt payment. All electrical and hydraulic parts are limited by this policy and will only be covered upon approval by the service department after the inspection of the part. The installation and removal of a part will automatically place that part under the replacement parts warranty.

This guarantee is limited exclusively to equipment manufactured or supplied by STEINER TURF and is subject to the inspection and analysis by the company to conclusively identify or confirm the nature and cause of failure.

**PRODUCT REGISTRATION FORM** must be completely filled out, signed by the customer, and returned to STEINER TURF before any warranty claims will be considered.

STEINER TURF reserves the right to incorporate improvements in material and design of its products without notice and is not obligated to make the same improvements to equipment previously manufactured.

STEINER TURF is not obligated under any warranty different from the warranty as published above.

### **STEINER TURF'S RESPONSIBILITIES**

STEINER TURF'S obligation under the terms of this warranty is limited to the repair, replacement or credit, at its option, of the equipment, parts or supply items that conform to this warranty.

STEINER TURF will pay for the parts and the cost of surface transportation for the parts that conform to this warranty.

### **DEALER'S RESPONSIBILITIES**

1. Only factory-trained service personnel will be permitted to perform warranty service on STEINER TURF equipment.
2. All major warranty claims such as overhauls - rebuilds must be authorized by STEINER TURF before work is performed.
3. All replacement parts used in warranty situations must be furnished by STEINER TURF or approved by STEINER TURF service personnel. The use of non-recommended oil or parts may void the warranty.

### **OWNER'S RESPONSIBILITIES**

The owner is obligated to operate and maintain the equipment in accordance with the recommendations published by STEINER TURF in the owner/operator's manual for the unit. The owner is responsible for the costs associated with such maintenance and operating adjustments which may be required on a regularly scheduled basis. The owner is responsible for transportation to and from the dealership or service calls made by the dealer.

### **CONDITIONS WHICH VOID WARRANTY**

This warranty shall not apply to equipment which:

1. Has had repairs or modifications not authorized by STEINER TURF.
2. Has been subject to abuse, improper maintenance, or improper application.

Attachments are intended for use only on tractors manufactured by Steiner Turf Equipment, Inc. Use in any other application may void the attachment warranty.

### **WARRANTY EXCEPTIONS**

This warranty does not apply to the following items:

1. Wear items including blades, cutting edges, spark plugs, points and condensers, belts, filters, bearings, sprockets, chains, tires, light bulbs, lubricants and fluids.
2. Damages to engine/drive systems caused by a lack of/improper lubricants and/or fluids.
3. Damages to engine/drive systems caused by improper operation and/or maintenance.

### **FREIGHT CARRIER DAMAGE**

Claims for equipment damaged in transit should be referred to the freight carrier. Visible damage should be reported immediately, and concealed damage as soon as possible, in accordance with freight carrier regulations.



## **WARNING**



The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

### **CALIFORNIA Proposition 65 Warning**

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

### **CALIFORNIA PROPOSITION 65 Battery 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!**