Bolens®

Front Loader Attachment

Model 1517

Safety and Operation Instructions

With Parts List

FORM NO. 553663-3 (2/85)
Supersedes 553663-2

Thank you for purchasing this piece of Bolens equipment. We feel you now own one of the finest pieces of equipment available.

This is a safety, operation and general maintenance manual which does not attempt to cover major repairs. Bolens equipment is carefully designed, engineered, and manufactured to give good performance if properly operated and maintained. Review this manual to familiarize yourself with the unit, its features and its operation.

This equipment is a product of Bolens Corporation, 215 South Park Street, Port Washington, Wisconsin 53074, telephone 414-284-5521. If you should have any questions or encounter any problems which you feel only the factory can solve, write to the above address or phone, attention the Service Department.

Your Warranty Statement is on the back cover of this manual. Please read it carefully. Also, please return the completed postpaid owner registration card which is included with this manual. The purpose of this card is to register each unit and owner at the factory for safety purposes.

IDENTIFICATION NUMBERS

To ensure prompt service when repairs or adjustments are required, your Bolens Dealer must have the Model Number, Serial Number and date of purchase. Fill in spaces provided below.

Model and Serial Numbers can be found on the L.H. Pedestal Ass'y.

Model Number

_____

Serial Number

_____

Date of Purchase

_____

Your Bolens Dealer has available a Parts List for your Unit. He can identify any parts you may require and furnish genuine factory replacements.

CAUTION

WE URGE USING ONLY GENUINE BOLENS FACTORY REPLACEMENT PARTS, WHICH MEET ALL OF THE LATEST SAFETY REQUIREMENTS. REPLACEMENT PARTS MANUFACTURED BY OTHERS COULD PRESENT SAFETY HAZARDS EVEN THOUGH THEY MAY FIT ON BOLENS PRODUCTS.

GENERAL SAFETY PRECAUTIONS



CAUTION

Preventing accidents is the responsibility of every equipment operator. The following general safety precautions must be fully understood and followed by every operator of this equipment. Review them frequently and NEVER TAKE CHANCES. BE CAREFUL BEFORE, DURING AND RIGHT AFTER USE OF ANY POWERED EQUIPMENT. ACCIDENTS CAN BE PREVENTED.

1. Know the controls and how to stop quickly. READ THE SAFETY AND OPERATION INSTRUCTION MANUAL.

2. The safety information presented in this manual is not intended to replace safety codes, insurance requirements, federal, state and local laws, rules and regulations. Know the regulations and laws that apply to your area and be sure that your loader is properly equipped to meet such laws and regulations.

3. We at Bolens are continuing to contribute to your safety by suppling loaders with an extra measure of protection and passing on these suggestions for safer operation.

IMPORTANT

Always replace any safety decals whenever the old decals are destroyed, lost, painted

GENERAL SAFETY PRECAUTIONS (continued)

over or illegible. Replace all safety decals when repainting.

4. Do not allow children to operate the vehicle. Do not allow adults to operate it without proper instruction.

5. Do not carry passengers. Keep children and pets a safe distance away.

6. Clear the work area of objects which might be picked up and thrown.

7. Disengage power to attachment(s) and stop the engine (motor) before making any repairs or adjustments.

8. Take all possible precautions when leaving the vehicle unattended, such as lowering the attachment (s), shifting into neutral, setting the parking brake, stopping the engine, and removing the key.

9. Do not stop or start suddenly when going uphill or downhill. Operate the loader down the face of steep slopes; never across the face.

10. Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.

11. Stay alert for holes in the terrain and other hidden hazards.

12. Watch out for traffic when crossing or near roadways.

13. Always follow manufacturer's operational suggestions for most efficient and safest operation of unit.

14. Keep the vehicle and attachments in good operating condition, and keep safety devices in place.

15. Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.

16. Always look back to be certain no one is in the way before using reverse. This will avoid the possibility of running over any children, persons or pets who might be in the area in back of the unit.

17. To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.

18. The vehicle and attachments should be stopped and inspected for damage after striking a foreign object, and the damage should be repaired before restarting and operating the equipment.

19. Do not change the engine governor settings or overspeed the engine.

20. Be alert at all times. Give complete and undivided attention to the job you are doing. This would minimize the possibility of getting into dangerous situations.

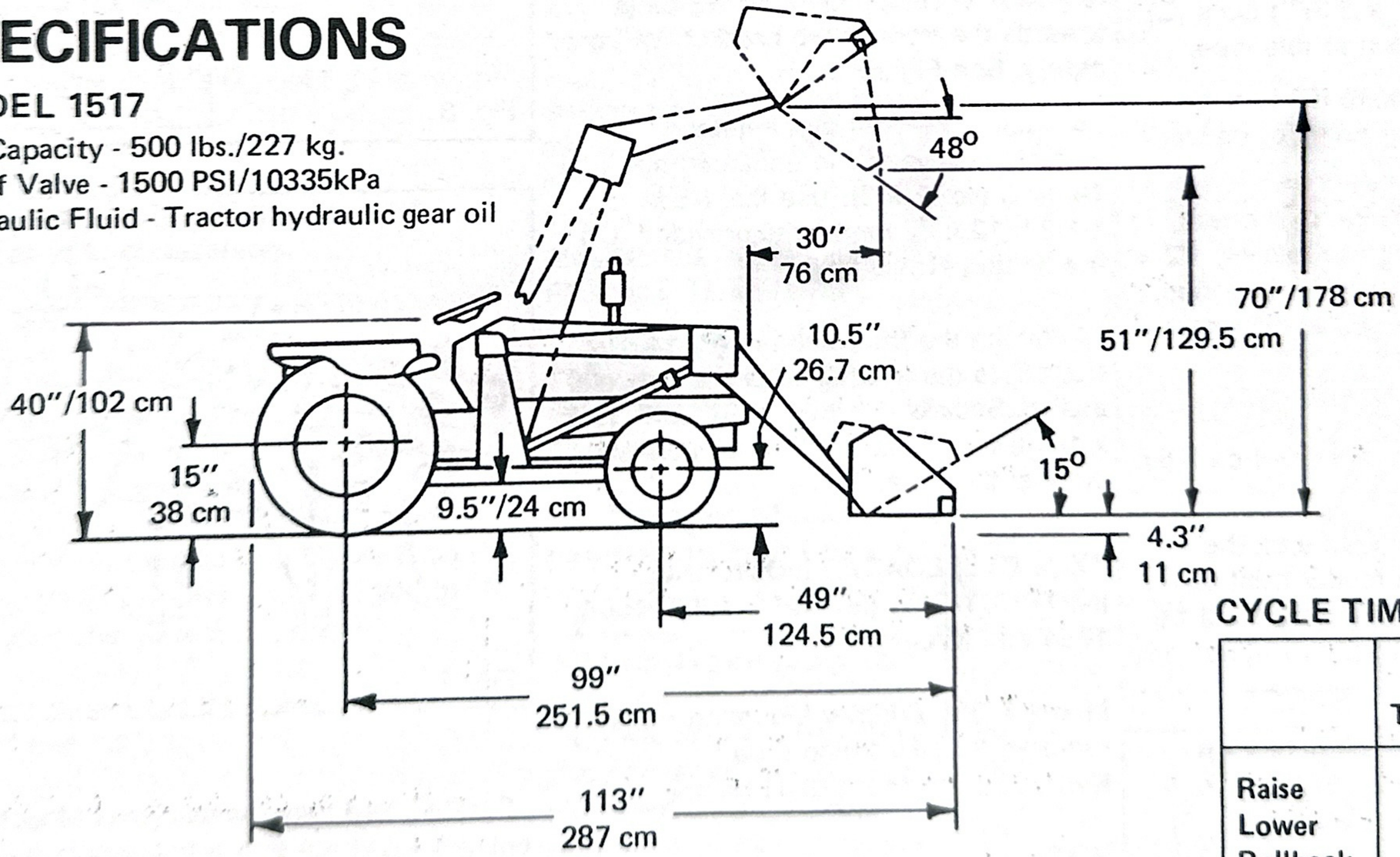
21. Never wear loose clothing when operating unit. It could become entanglec in moving parts causing injury to the wearer.

22. Always wear substantial footwear and clothing to provide as much protection as possible.

SPECIFICATIONS

MODEL 1517

Lift Capacity - 500 lbs./227 kg.
Relief Valve - 1500 PSI/10335kPa
Hydraulic Fluid - Tractor hydraulic gear oil



CYCLE TIMES:

	Tractor System
Raise	6 sec.
Lower	4 sec.
Rollback	4 sec.
Dump	5 sec.

INTRODUCTION

LOADER PREPARATION

In order to minimize your assembly and installation we have assembled your new loader as completely as possible at the factory. It is of UTMOST IMPORTANCE THAT YOU CAREFULLY READ AND FOLLOW THE STEP BY STEP INSTRUCTIONS OUTLINED IN THIS MANUAL.

The beginning installation instructions refer to both the 2 cylinder and 3 cylinder TX tractors. Locate the instructions that pertain to your model tractor.

INSTALLATION

TX (2 CYL) LOADER MOUNTING INSTRUCTIONS (INSTALLATION ON MODELS 1300, 1300F, 1500 & 1500F)

NOTE

All nuts and bolts require lock washers. Slotted holes require flat washers.

1. On each side of the tractor, Figure 1, there are (4) bolts that hold the engine to the front frame. Check the upper front bolt (C) on each side to be sure they are tight. Remove both rear bolts (B) and the lower front bolt (B) on each side.

2. Slide the undercarriage ass'y., (A) Figure 1, under the tractor and start the 12 x 35 mm (.47'' x 1.38'') bolts, (B). Do not tighten at this time.

3.Remove the (2) lower front bolts (C) Figure 2, from each side of the rear differential case. Attach the (2) rear mounting plates (D) to the axle housing using the 12 x 60 mm (.47'' x 2.37'') bolts (C) provided. Do not tighten at this time.

4. Drill (2) holes in plate (D) in relationship as Figure 4 using holes of undercarriage as pilot.

5. Bolt the undercarriage to the rear support brackets using the four (4) 1/2 x 1-1/2'' (13 x 38 mm) bolts (E) provided, Figure 2. Tighten all bolts at this time.

NOTE

Support bracket (D) is extended on later models.

6. (Later Model 1517 Loaders) The mounting holes of the loader front bracket assembly (C), Figure 6 must be revised to line up with the mounting holes of the tractor.

Cut out the template (E) Figure 6 on page 21 of this manual to aid you in locating the correct position.

Carefully cut out the holes indicated as "B" and "A".

Place the template on the FRONT side of the loader and scribe the holes that must be drilled or enlarged.

NOTE

Holes (G) Figure 3 in the front bracket assembly are toward the rear.

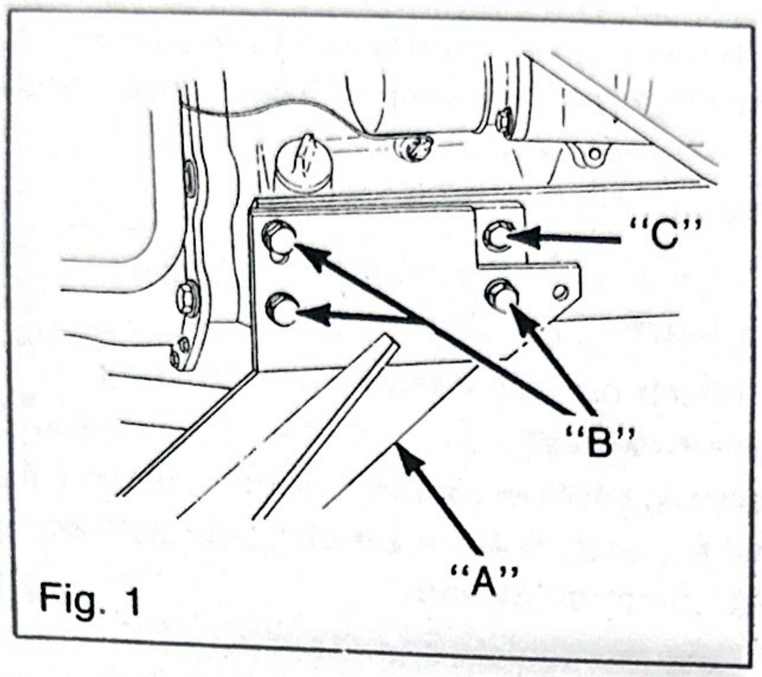


Fig. 1

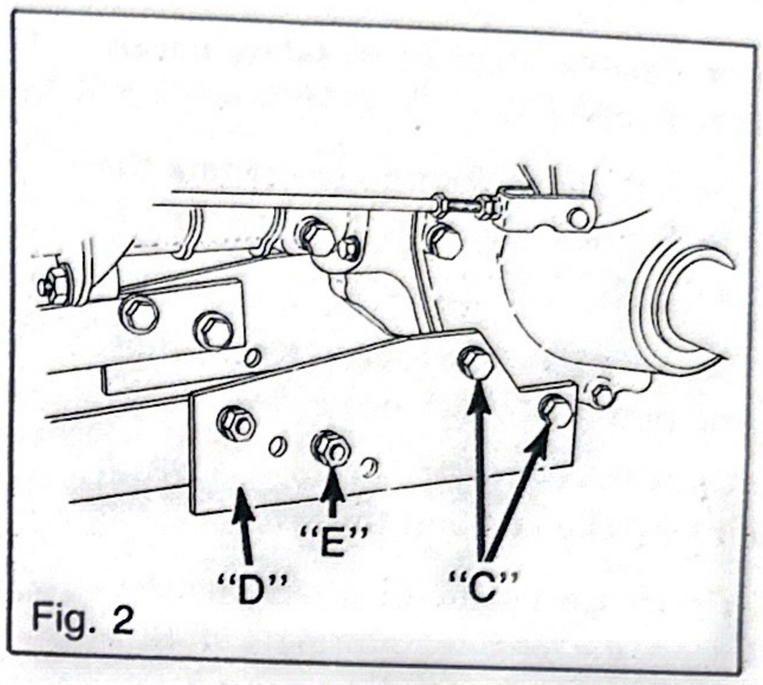


Fig. 2

Enlarge the four mounting holes in the front bracket.

7. Bolt the front bracket ass'y., (C) Figure 3, to the front bumper using the 1/2 x 1-1/2'' (13 x 38 mm) bolts provided.

NOTE

Holes (G) in the front bracket ass'y are towards the rear. Drill two new holes towards the front of the bracket 3/4'' on center. See Figure 3.

8. Attach the right and left-hand pedestal ass'ys to the undercarriage (P. 14, Ref. No. 2 & 3). Use the 1/2 x 1-1/2'' (13 x 38 mm) bolts provided. Do not tighten at this time.

9. Attach the front bumper (P. 14, Ref. No. 16) to the front ends of the pedestal ass'ys. Secure with two (2) 3/8 x 4'' (9.5 x 101.6 mm) bolts. Tighten all pedestal bolts at this time.

TX (3 CYL) LOADER MOUNTING INSTRUCTIONS (MODELS 1502, 1504, 1704 and 1704H)

Model 17356 Adapter Mounting Kit is required for installation on a Hydrostatic, Model 1704H tractor.

NOTE

All nuts and bolts require lock washers. Slotted holes require flat washers.

1. Remove the (2) lower front bolts (G), Figure 4, from each side of the rear axle housing. Attach the (2) rear mounting plates (H) to the axle housing using the 12 x 60 mm (.47'' x 2.37'') bolts provided.

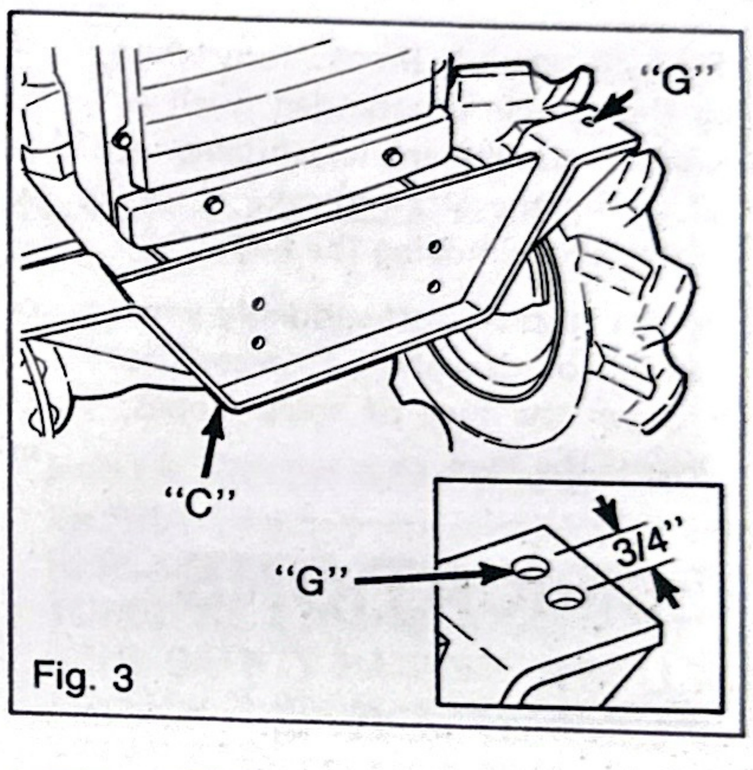


Fig. 3

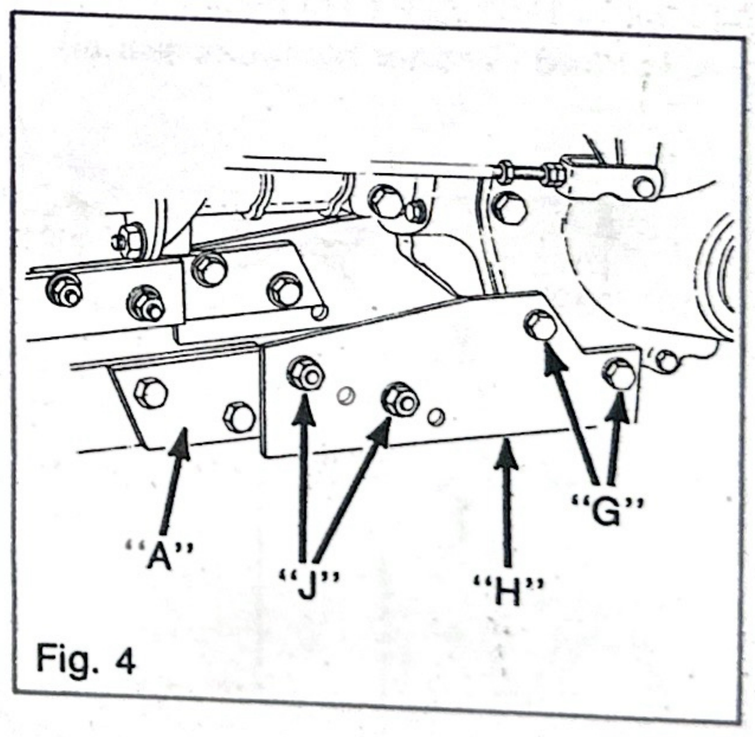


Fig. 4

2. (This step pertains to 1704H Models only.)

If mounting plate (H) Figure 4 is not extended to eliminate the need for adapter plate (A) Figure 4, secure plate (A) as follows.

Secure adapter plate (A) Figure 4 of adapter kit 17356 to front holes (J) of mounting plate (H) using (4) 1/2 x 1-1/2'' bolts, flat washers, lock washers and hex nuts.

INSTALLATION (continued)

Locate L.H. oil line (A) Figure 8 at front of tractor and cut off leg of bracket (B). Leave line disassembled for loader installation.

Loosen R.H. oil (B) Figure 9 for loader installation.

Locate loader undercarriage (A) Figure 5. Cut off a section of gusset (C) as called out. This will avoid an interference problem later.

3. On each side of tractor there are (6) bolts that hold the engine to the front frame. Check upper front bolt (D) Figure 5 on each side to be sure that they are tight. Remove rear bolts (F) and lower front bolt (G) on each side. Remove bolts (H) of side panel.

4. Slide the undercarriage ass'y (A) Figure 5 under the tractor. As the undercarriage is raised into position insert spacer bar (B) between the undercarriage and tractor frame. Secure using (6) 12 x 50 mm (.43'' x 1.97'') bolts and lock washers. Do not tighten at this time.

NOTE

Side panel bolts (H) should be left out for ease in disassembly.

5. (Early Model 1517 Loaders)

The mounting holes of the loader front bracket assembly (C), Figure 6 must be revised to line up with the mounting holes of the tractor.

Cut out the template (E) Figure 6 on page 21 of this manual to aid you in locating the correct position.

Carefully cut out the holes indicated as "A" and "B".

Place the template on the FRONT side of the loader and scribe the holes that must be drilled or enlarged.

NOTE

Holes (D) Figure 6 in the front bracket assembly are toward the rear.

Enlarge the four mounting holes in the front bracket.

6. Bolt the front bracket assembly (C) Figure 6 to the front bumper using the 1/2 x 1-1/2 bolts provided.

7. Attach the right and left hand pedestal ass'ys to the undercarriage (P. 14, Ref. 2 & 3). Use the 1/2 x 1-1/2'' bolts provided. Do not tighten at this time.

8. Attach the front bumper (P. 14, Ref. 16) to the front ends of the pedestal ass'ys. Secure with (2) 3/8 x 4'' bolts. Tighten all pedestal bolts at this time.

9. Bolt the undercarriage to adapter plate (A) Figure 4 or extended mounting plate (H) using (4) 1/2 x 2'' hex screws, lock washer, flat washer and hex nuts.

10. Tighten all undercarriage bolts (F) Figure 5 at this time.

11. (This step pertains to 1704H Models only). Secure R.H. oil line (B) Figure 9 to tractor frame using new hardware of adapter kit 17356. Use (1) M8 - 1.25 x 30 (.31'' x 1.18'') hex screw, flat washer and lock washer. Place (1) 1/2'' hex nut (C) Figure 9 between frame and clamp before securing.

Secure L.H. oil line (A) Figure 8 to tractor side frame using hook (D) flat washer and lock nut from adapter kit 17356.

MOUNTING INSTRUCTIONS FOR ALL TRACTORS

1. Attach the loader mainframe (P. 14, Ref. No. 1) to the pedestals and secure with the pins provided (P. 14, Ref. No. 14 & 15).

2. Attach the lift cylinders to the pedestals using the pins provided.

3. Attach front bucket to loader using the four (4) pins provided.

4. Assemble the control valve mounting plates, control valve and handles as shown on page 18.

Attach decal plate (K) Figure 7 to the control valve as shown.

5. Assemble the four (4) 20'' (508 mm) hoses (with O-rings) to the control valve. Page 18 shows the four (4) steel tubes lettered A, B, C & D from the bottom to the top. The same letters are cast into the top of the control valve. Connect the four (4) hoses from the valve to the corresponding steel tube.

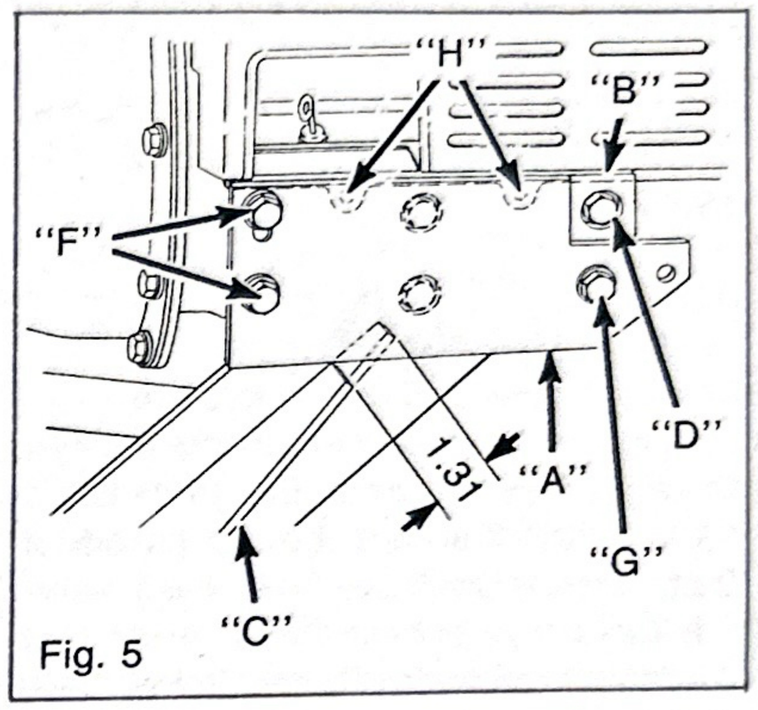


Fig. 5

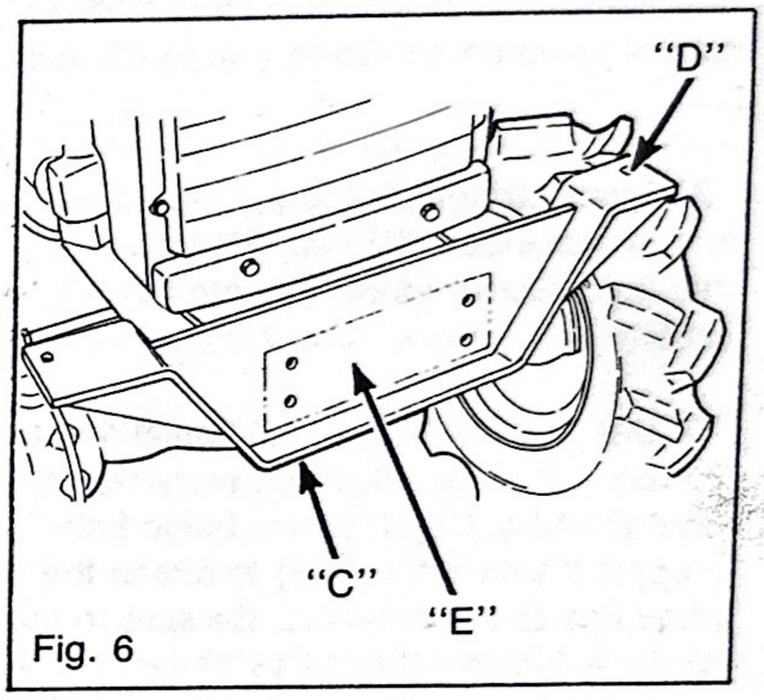


Fig. 6

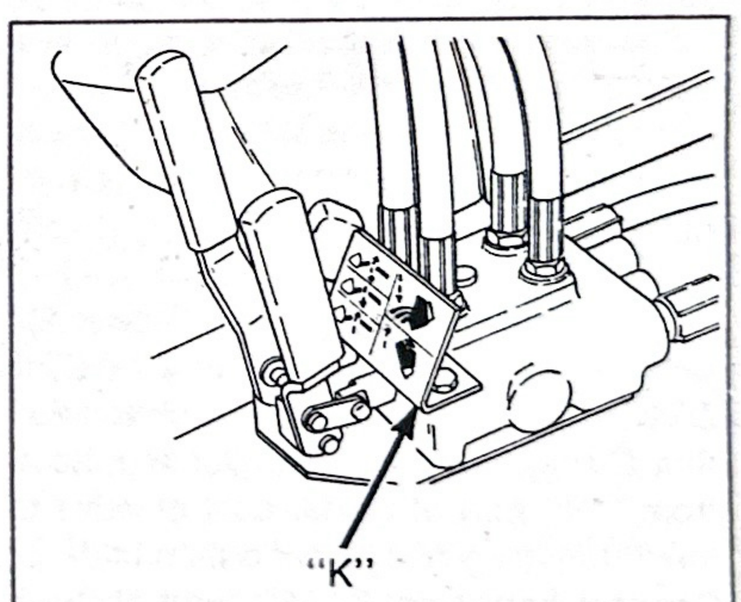


Fig. 7

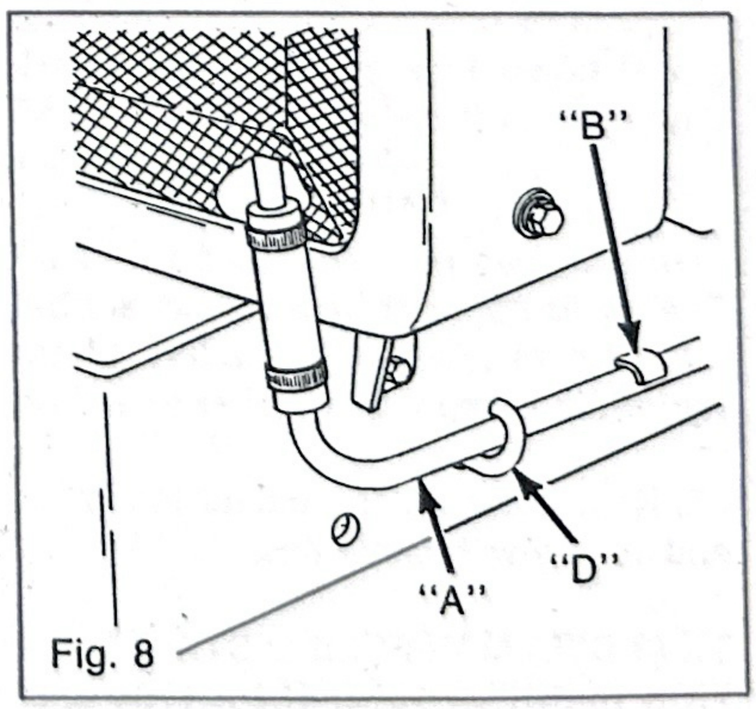


Fig. 8

INSTALLATION (continued)

TX(2 CYL) MAINFOLD CONNECTIONS (MODELS 1300, 1300F, 1500 and 1500F)

NOTE

The later Model 1517 Loaders are equipped with a manifold that will only fit on TX 3-cyl. tractors. See parts list for the parts that must be purchased for 2 cyl. installation.

1. Install the hydraulic manifold (P. 17, Ref. No. 1) to the tractor 3-point hitch control valve as shown in Figure 10 and II.

2. Screw straight fitting (A) Figure 12 and swivel elbow (B) into "IN" port of manifold. Screw elbow (C) into "OUT" port.

3. Use the banjo (that held steel line to the control valve) to attach manifold to control valve. Use the new banjo bolt (supplied with the loader) to attach the steel line to the manifold. Be sure to install the four (4) O-rings as shown on page 17. Do not overtighten banjo bolts.

NOTE

The removal of the right fender will make this installation easier.

4. IMPORTANT: Assemble the two (2) 48" (1219 mm) to the "IN" and "OUT" ports of the control valve (check to see that O-rings are in place). Connect hose from "IN" port of loader control valve to the TOP fitting of hydraulic manifold. Connect hose from "OUT" port of loader control valve to the BOTTOM fitting of hydraulic manifold.

CAUTION

Failure to connect hoses as described will cause immediate failure of hydraulic pump.

5. Route hoses along tractor tunnel and secure with cable ties.

TX (3 CYL) MANIFOLD INSTALLATION (MODELS 1502, 1504,.1704 and 1704H)

1. If not previously assembled, screw straight fitting (A) Figure 12 and swivel elbow (B) into "IN" port of manifold (C). Screw remaining elbow (D) into "OUT" port.

2. Remove subcontrol cover (E) from R.H. side cylinder case. Secure hydraulic manifold (C) with O-rings (F) to cylinder case using (3) 8 mm (.31") cap screws and lock washers (G).

3. Connect hydraulic hose from valve "IN" port to out "O" port of manifold. Connect hose from valve out port to in port "I" of manifold.

CAUTION

Failure to connect hoses as described will cause immediate failure of hydraulic pump.

4. Route hoses along tractor tunnel and secure with cable ties.

SYSTEM CHECK OUT

1. Check level of hydraulic gear oil using the dipstick located next to main gear shift lever. Add SAE 80W gear oil through the rubber plug opening under the seat if necessary.

2. Start up tractor and run at a low speed for a few minutes. Operate the loader at "idle" through several cycles of operation to purge the air from system. Check all fittings for leaks.

3. With loader bucket on the ground and tractor shut off, add enough 80W gear oil to bring level up to "FULL" mark on dipstick.

4. Review this owner's manual with customer and instruct him on the safe and proper use of the Bolens tractor and front end loader.

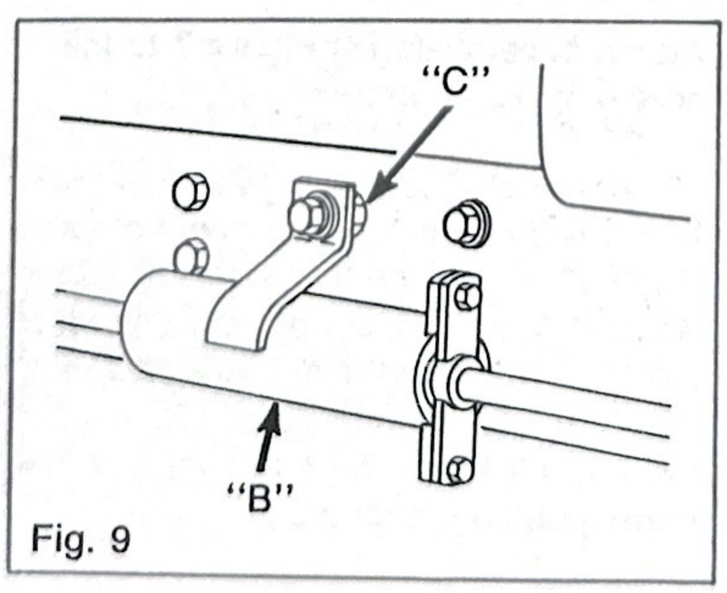


Fig. 9

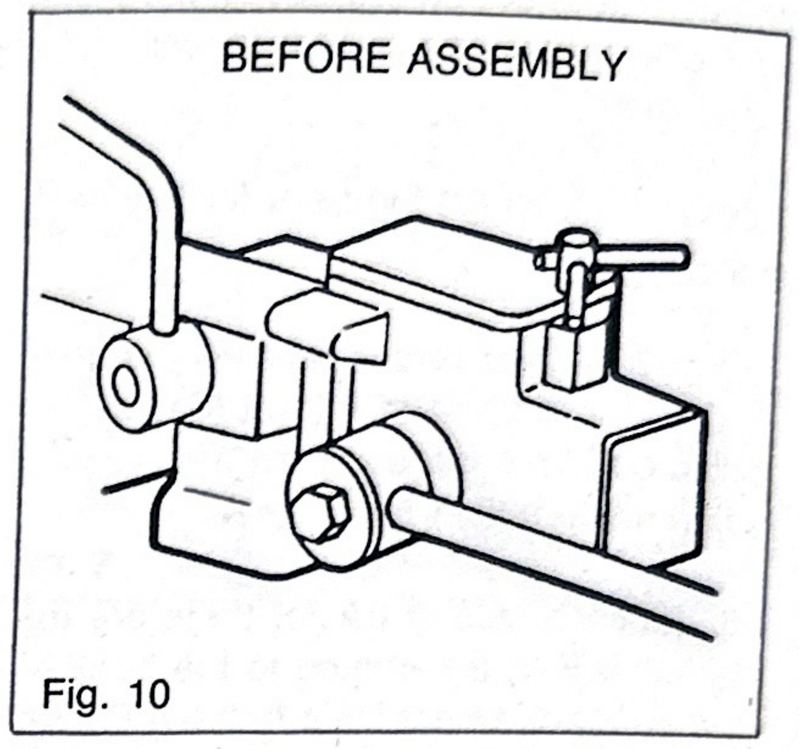


Fig. 10

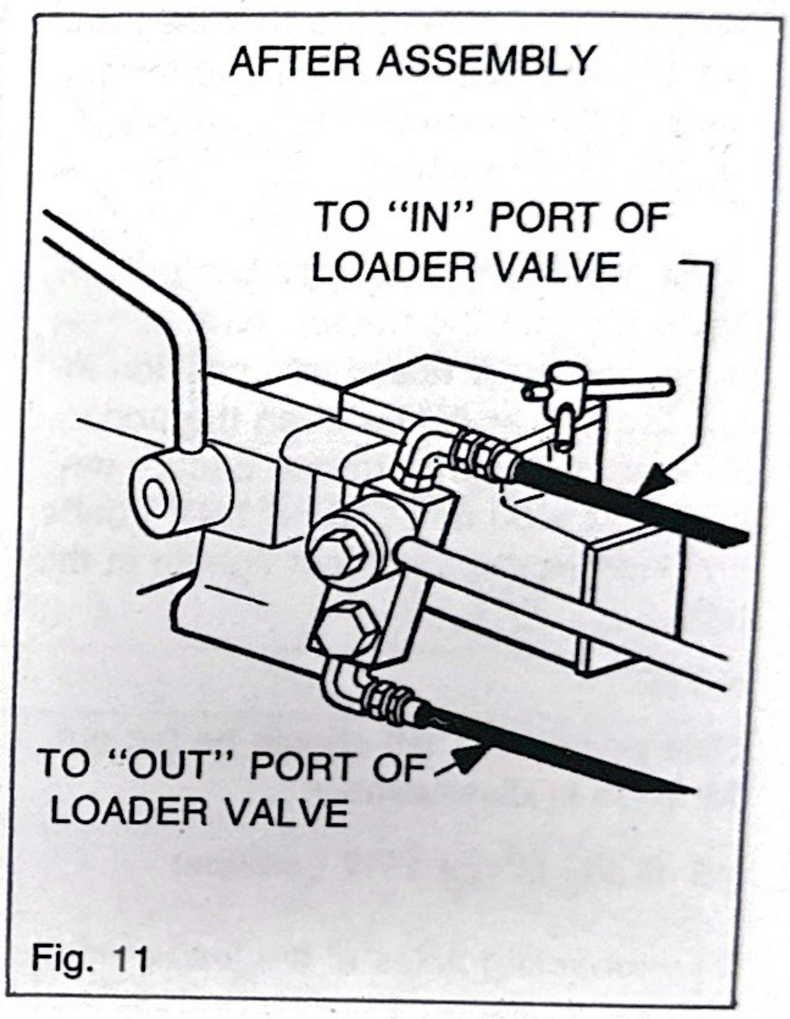


Fig. 11

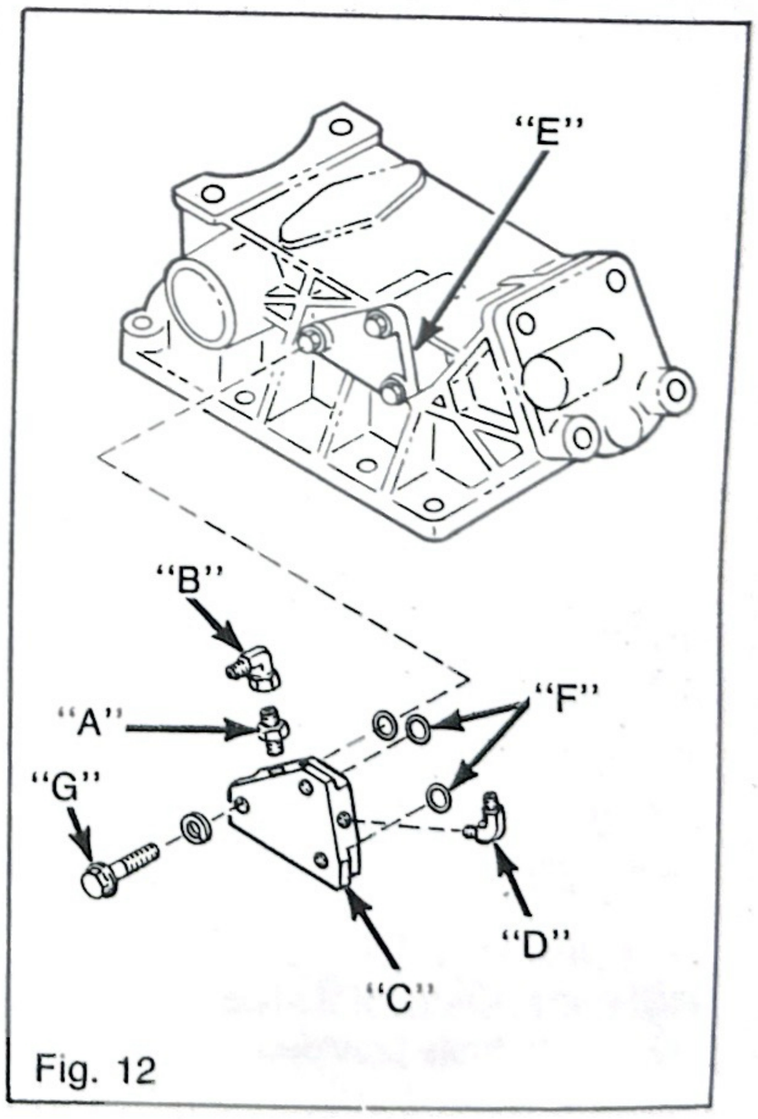


Fig. 12

WARNINGS & CAUTIONS

OPERATION



CAUTION

Before starting tractor engine study Operator's Manual safety messages. Read all safety signs. Clear the area of other persons. Learn and practice safe use of controls before operating. It is your responsibility to understand and follow manufacturer's instructions on machine operation, service, and to observe pertinent laws and regulations. Operator Manuals may be obtained from your equipment dealer.

Improper use of a loader can cause serious injury or death.

Operate the loader from the tractor seat only.

Move rear wheels to widest recommended settings to increase stability.

Move, turn and operate tractor at slow ground speeds, especially on irregular ground to avoid tipping.

Add recommended rear tire liquid weight, rear wheel or rear ballast for increased stability.

Do not stand, walk or work under a raised loader or attachment unless it is securely blocked or held in position. Accidental movement of control lever or leak in hydraulic system could cause mainframe to drop, causing severe injury.

Do not lift or carry personnel on a loader or attachment, a slip or fall could cause bodily injury.

Visually check for hydraulic leaks and broken, missing or malfunctioning parts and make necessary repairs.

Do not operate the loader if the fittings are leaking or if the hoses are damaged. A sudden line burst would cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.

If the tractor is equipped with a Rollover-Protective Structure (ROPS), fasten seat belt prior to starting engine.

Avoid loose fill, rocks and holes; they can be dangerous for loader operation or movement.

It is the loader owner's responsibility to be certain anyone operating the loader is aware of safe operating practices and potential hazards.

Increased rear wheel weight is recommended when using the boom to provide more traction and better tractor stability.

Stop the tractor engine before checking oil level in tractor oil reservoir.

Operating sideways on a hill tends to tip the unit.

Be extra careful when working on inclines.

If tractor is ROPS equipped, do not exceed the manufacturers rating for maximum gross vehicle weight. When adding counter weight to the rear refer to ROPS serial number plate.

Stop the loader arms gradually when lowering or lifting.

Use caution when handling loose or shiftable loads.

Load on raised bucket or fork can roll back onto operator area, causing serious injury or death. Use recommended clamping attachments for handling large objects such as bales, posts, etc. Carry load as low as possible.

TRANSPORT



CAUTION

A loaded bucket should be transported in a low position at slow ground speeds, especially if the ground is irregular. Make turns slowly and use the tractor brakes cautiously. A full bucket in the raised position significantly alters the center of gravity location of the unit and increases the possibility of mishaps.

Avoid overhead wires or obstacles when loaders is raised, to avoid damage or possible shock.

Allow for the loader length when making turns.

STORAGE



CAUTION

Lower mainframe when parking or servicing. Accidental movement of control lever or leak in hydraulic system could cause mainframe to drop, causing damage to loader or tractor or injury to personnel.

Before disconnecting hydraulic lines, relieve all hydraulic pressure. Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin causing serious personal injury.

If injured by escaping fluid, obtain medical treatment immediately.

Make sure all parked loaders on stands are on a hard level surface with all safety devices engaged to prevent loader from falling and being damaged or injuring someone.

Lower or block elevated components before servicing or when leaving the machine. Elevated components can fall and cause serious injury.

OPERATION

CAUTION

Before starting the tractor be sure 3 point hitch control lever is in Neutral. DO NOT operate 3 point hitch and loader at the same time. Failure to have 3 point hitch in Neutral will cause pump failure.

IMPORTANT

If this machine is used by an employee or is loaned or rented, make certain that the operator(s), prior to operating:

1. Is instructed in safe and proper use.

2. Reviews and understands the manual(s), pertaining to the machine.

TRACTOR PREPARATION

FRONT TIRES AND WHEELS

Use front tires of equal size and maintain equal pressure in each tire. The pressure of the front tractor tires must be increased to the maximum approved pressure recommended by the tire manufacturer. See your Tractor Operators Manual. DO NOT reverse front wheel rims. Front end weights are not recommended.

CAUTION

For safe and satisfactory loader operation, the tractor's front tires, wheels, spindles and axles must be adequate to carry load!

REAR TIRES AND WHEELS

Maintain equal pressure in each of the rear tires and do not vary the size of the rear tires. Use the widest rear wheel setting possible for maximum stability.

REAR BALLAST

Rear end weight is necessary to counterbalance the loader and its loads. 3 pieces of Bolens rear wheel weights must be installed to each of the rear wheels and/or liquid weight added to both rear tires. In addition, approx. 300 lbs. of implement or equivalent counter-balance weight should be installed on the tractor 3-point hitch.

NOTE

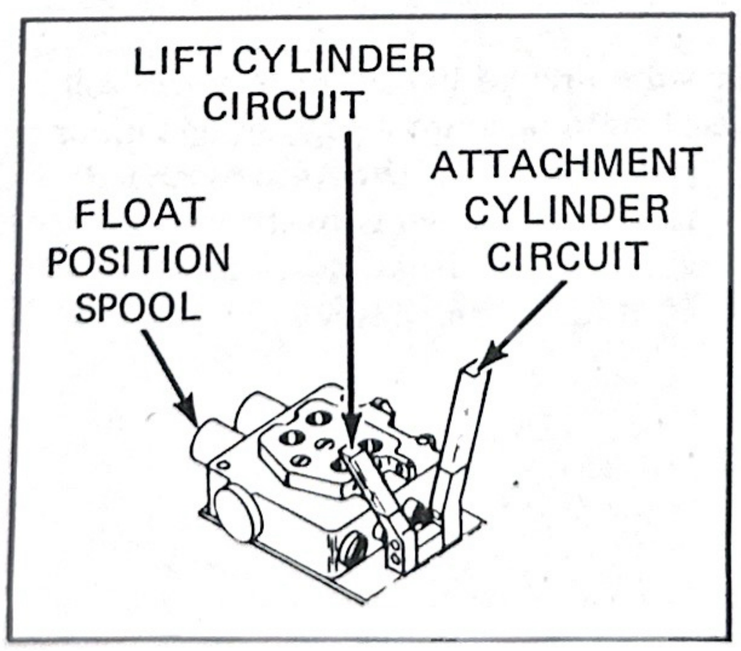
Failure to add rear ballast may cause damage to the front drive mechanism due to the power being transmitted to the front wheels. The addition of rear ballast will add traction to the rear wheels and reduce load being applied to front wheels.

CAUTION

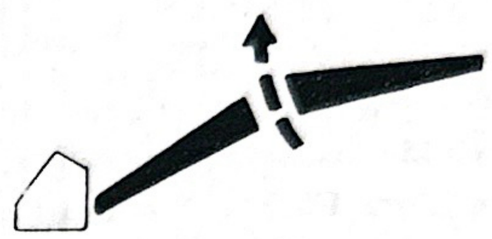
Always ease the clutch out when backing up with a loaded bucket.

2 SPOOL CONTROL VALVE

A 2 spool control valve is provided as standard equipment with the loader and provides several benefits which are convenient for the operator. The valve is normally located in front of and to the right of the operator so his line of vision to his work is not impaired and his attention is not distracted by having to turn his head or look down. This is for the operators safety. The control valve contains a spring loaded Neutral position on both spools and a Float position on the first spool. The valve also contains a preset hydraulic safety relief valve for the added protection of your tractor system. NEVER REMOVE, DISASSEMBLE OR ATTEMPT TO ADJUST THE RELIEF VALVE MECHANISM, SERIOUS DAMAGE OR INJURY COULD RESULT!



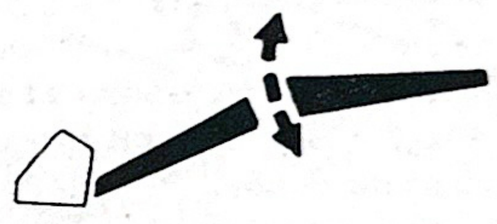
LIFT CYLINDER CIRCUIT
(LEFT HANDLE)



Pull the handle back to raise unit.



Push the handle forward to lower unit.



Push handle full forward to activate float position

NEUTRAL POSITION

The control valve has a "neutral position" which prevents movement of the loader or attachment. When the handle is released from the work positions, except when the spool is in float position, the valve spool will automatically return to neutral.

FLOAT POSITION

The control valve has a "float position" incorporated in the first spool. This float feature is important for satisfactory opera-

OPERATION (continued)

tion when scraping, sweeping, leveling, or any job where it is necessary to follow the contour of the surface.

To activate the float position lower the attachment and push the control handle all the way forward into detent. The valve will stay in float detent until the operator manually pulls the control handle out of detent to deactivate float.

VALVE CIRCUITS

When properly installed, the control valve handles will control the loader hydraulic circuits in the following manner: The hydraulic hose from valve to lift and attachment cylinders must be installed as shown in the illustration.

NOTE

Lubricate all moving parts and grease points before operating the loader (see daily maintenance section).

Before operating the loader, raise and lower the mainframe, then raise the attachment approximately 4 feet (1 meter) above the ground and activate the bucket cylinders two or three cycles, by means of the R.H. control lever.

IMPORTANT

Operate only one circuit at a time. Simultaneous operation can result in hydraulic component damage when handles are quickly released to neutral position.

IMPORTANT

Always keep the cylinders in a retracted position when the loader is not in use to guard against rust and contamination which may cause damage to the cylinder rods, seals, or hydraulic system.

CAUTION

Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin. See a doctor at once.

COLD WEATHER OPERATION

To assure smooth operation in cold weather, allow tractor to warm up. SLOWLY cycle the loader and attachment several times to warm the oil in the hydraulic system. The loader may operate erratically until the hydraulic oil has warmed to operating temperatures.

If the loader is to be used frequently in cold weather, it is suggested that the 80W gear oil used in the hydraulic system and transmission be replaced with hydraulic gear oil no. 1738157 (available from your Bolens Dealer).

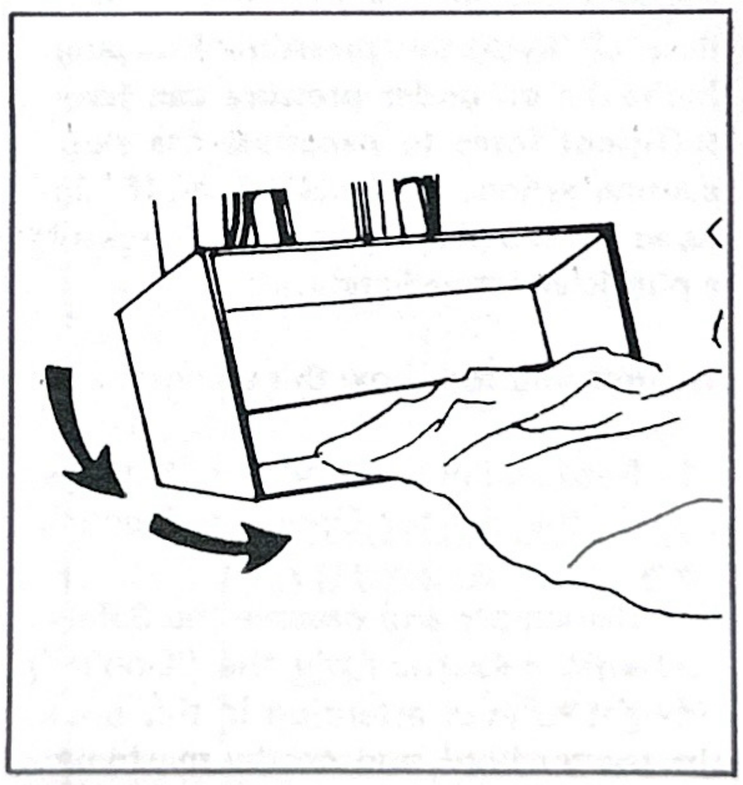
CAUTION

Never use straight hydraulic oil. Damage to the transmission will occur.

LOADING THE ATTACHMENT

For the most effective loading, slowly drive the tractor straight into the material to be loaded and accelerate only after contact has been made. Slightly roll the attachment back and slowly lift to break away the material. As the load increases, continue rolling the attachment back so as to accumulate the maximum load. Repeat this cycle as necessary until the attachment is full.

When material is piled on a slope, approach the pile uphill, and back away downhill.



CAUTION

Operating sideways on a hill is dangerous and could tip the unit.

When loading material from a large pile, remove the top level first.

Do not roll buckets or forks forward and use for dozing purposes. This applies to both forward and reverse directions. Failure to comply with this instruction will cause hydraulic pressures to exceed design limits and cause possible damage or injury.

UNLOADING THE ATTACHMENT

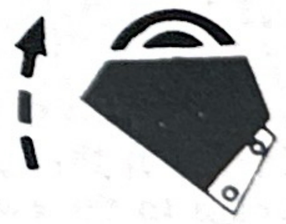
Approach the vehicle, stack or pile with the loaded attachment in transport position. Before reaching the unloading area reduce speed and raise the load only high enough to clear the top of the equipment or stack. Drive tractor slowly forward until load is over the intended unloading point and slowly empty attachment.

HANDLING THE LOAD

Transport the load in the lowest possible position to prevent tipping. As the load is raised the center of gravity of the unit moves forward and higher. These factors increase the possibility of tipping.

When transporting in this position avoid bouncing the tractor as this can cause instantaneous pressure peaks beyond the hydraulic systems capability. This sudden shock can induce undesirable stresses and strains on the tractor, loader, and hydraulic system resulting in failure, damage, or worse; PERSONNEL INJURY.

ATTACHMENT CYLINDER CIRCUIT
(RIGHT HANDLE)



Pull the handle back to roll back attachment.



Push the handle forward to dump attachment.

OPERATION (continued)

Observe the following safety messages when transporting a loaded bucket or attachment.



CAUTION

A loaded bucket should be transported in a low position at slow ground speeds, especially if the ground is irregular. Make turns slowly and use the tractor brakes cautiously. A full bucket in the raised position significantly alters the center of gravity location of the unit and increases the possibility of mishaps.

Operate at slow ground speeds, especially on irregular gound to avoid tipping.

Avoid overhead wires or obstacles when loader is raised, to avoid damage or possible shock.

Do not lift or carry personnel on an attachment, a slip or fall could cause bodily injury.

The attachment should be eased down slowly to avoid sudden shock force on hydraulic system and frame.

GENERAL LOADER OPERATION HINTS

Do not drop the edge of an attachment too low for loading. Keep the bottom of the attachment level with the ground when loading.

IMPORTANT

Do not use an attachment for pushing down material with the cylinders extended. Damage to the cylinders may result.

Operation with the front tractor wheels off the ground is not recommended and should be held to a minimum.

Position vehicles to be loaded as near the pile as possible and in such a direction as to minimize the amount of tractor turning required to dump.

Always block up a tractor front end if loader cylinders are used to raise front wheels for servicing.

Do not lower the loader with the tractor engine shut off.

Keep the unit clean and perform regular service. Observe safety pointers whenever cleaning, servicing, or lubricating.



CAUTION

When lowering a heavy load, ease it downward slowly. Never drop a loaded attachment and "catch" hydraulically. Stopping a load after it has gained downward momentum places undue strain on the unit and may cause unnecessary damage to the loader or tractor or even worse; personnel injury.

Do not operate the loader if the fittings are leaking or if the hoses are damaged. A sudden line burst would cause the mainframe to drop suddenly causing damage to the tractor or loader or injury to personnel.

Before disconnecting hydraulic lines relieve all hydraulic pressure. Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin causing serious personal injury. If injured by escaping hydraulic oil, consult a physician immediately.

We urge you to follow this advice:

1. Read and understand this Manual as well as the Tractor Operators Manual.

2. Remember and observe the Safety Precautions (particularly the "Don'ts") brought to your attention in this book, the tractor book and on the machinery itself.

3. Use good common sense in the everyday operation of this unit. Safety recommendations can never be all-inclusive and you are responsible for watching out for and avoiding unsafe conditions.

4. Never exceed the limits of a piece of machinery. If its ability to do a job or to do so safely is in question - Don't Try It.

5. Don't hurry the learning process or take the unit for granted. Ease into it and become familiar with your new loader and tractor.

SERVICE

PUMP AND VALVE

Service on the pump and valve should be performed by an authorized Bolens Dealer. To insure long hydraulic component life throughout the system, keep the hydraulic oil clean by observing recommended oil and filter change procedures in either this or your Tractor Operators Manual.



CAUTION

Before disconnecting hydraulic lines, relieve all hydraulic pressure. Escaping hydraulic oil under pressure can have sufficient force to penetrate the skin, causing serious personal injury.

PUMP

Power is supplied to loader from the tractor's hydraulic pump. This same pump operates the 3 point hitch. If the pump should become damaged, it MUST be replaced. The pump is not repairable.

The oil supply for the pump is the 14 quarts (13 liters) of gear oil used to lubricate the transmission and differential.

The only maintenance that must be performed is cleaning the suction filter located behind the suction line in the bottom of the transmission case. At the first sign of slow or erratic loader operation, drain the transmission and check the filter. If the filter is plugged replace the gear oil.

SERVICE (continued)

VALVE

The loader control valve is equipped with hard chrome plated spools for maximum wear that have been select-fit honed for maximum load holding ability. The 1500 PSI relief cartridge is a differential poppet-type that is non-adjustable. The float position built into the first spool has a detent feature to hold it in position.

None of these features require unusual maintenance other than normal oil and filter changes to assure their continued service. NEVER tamper with the relief.

Dealer service that may eventually be required will consist of replacing the external spool seals (located each end of spool) to correct external oil leakage.

After the valve is removed and cleaned with good solvent, the end caps, spool components, handles and cover plates must be removed to gain access to the seal area. Care should be exercised in covering the float components during disassembly to prevent loss of springs and detent balls and in reassembly of spool components to prevent pinching or cutting the new seals.

DAILY MAINTENANCE

LUBRICATION

CAUTION

Always lower loader arms to ground, stop engine and lock brakes before leaving operator seat.

Careful and regular attention to lubrication will greatly increase the life of the loader. For economical and efficient operation, the proper lubrication of the mainframe and cylinders is essential.

Be sure the pressure fittings are clean of dirt or paint before using the pressure gun. Replace missing or damaged fittings. Use a good grade of No. 2 non-fluid or S.A.E. multi-purpose pressure gun grease.

Lubricate the two pressure fittings in each cylinder, and the four pressure fittings in the mainframe (12 points total) either DAILY or EVERY 10 HOURS. Refer to Lubrication Chart, Figure 1.

OIL LEVEL CHECK

CAUTION

Stop the tractor engine before checking oil level in oil reservoir.

Check, DAILY, the hydraulic oil level of the tractor or the external reservoir, whichever applies to your loader.

(Loader should be operated to ensure that the entire hydraulic system is full and at a normal operating temperature.) Park the tractor in a level position, LOWER ATTACHMENT TO GROUND and SHUT OFF TRACTOR ENGINE. Then check oil level.

If the loader is connected to the tractor hydraulic system, check the reservoir

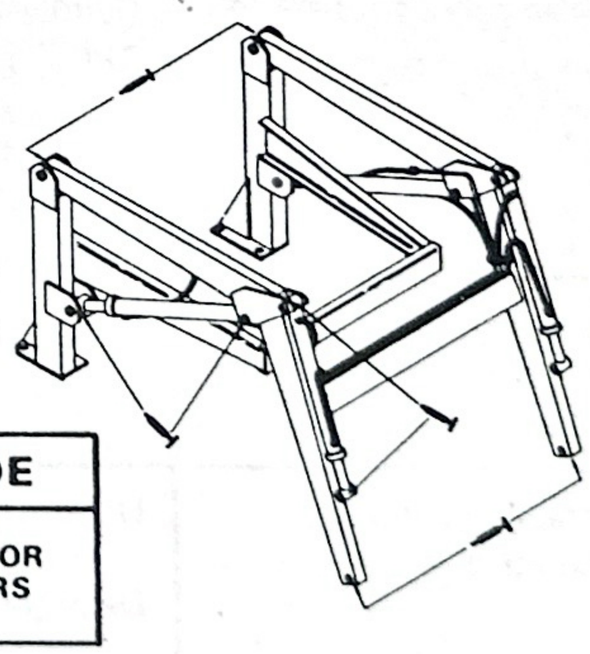
LOOK FOR TROUBLE

On a regular basis you should give the loader a general inspection, looking for leaks, damages, and severely worn parts. Pay particular attention to checking all hardware for tightness.

CAUTION

Do not operate the loader if the fittings are leaking or if the hoses are damaged.

A sudden line burst would cause the mainframe to drop suddenly, causing damage to the tractor or loader or injury to personnel.



LUBRICATION CODE	
	GREASE DAILY OR EVERY 10 HOURS

TROUBLESHOOTING

This section is a condensed chart to help you if unsatisfactory operation of the Bolens Model 1517 Loader occurs.

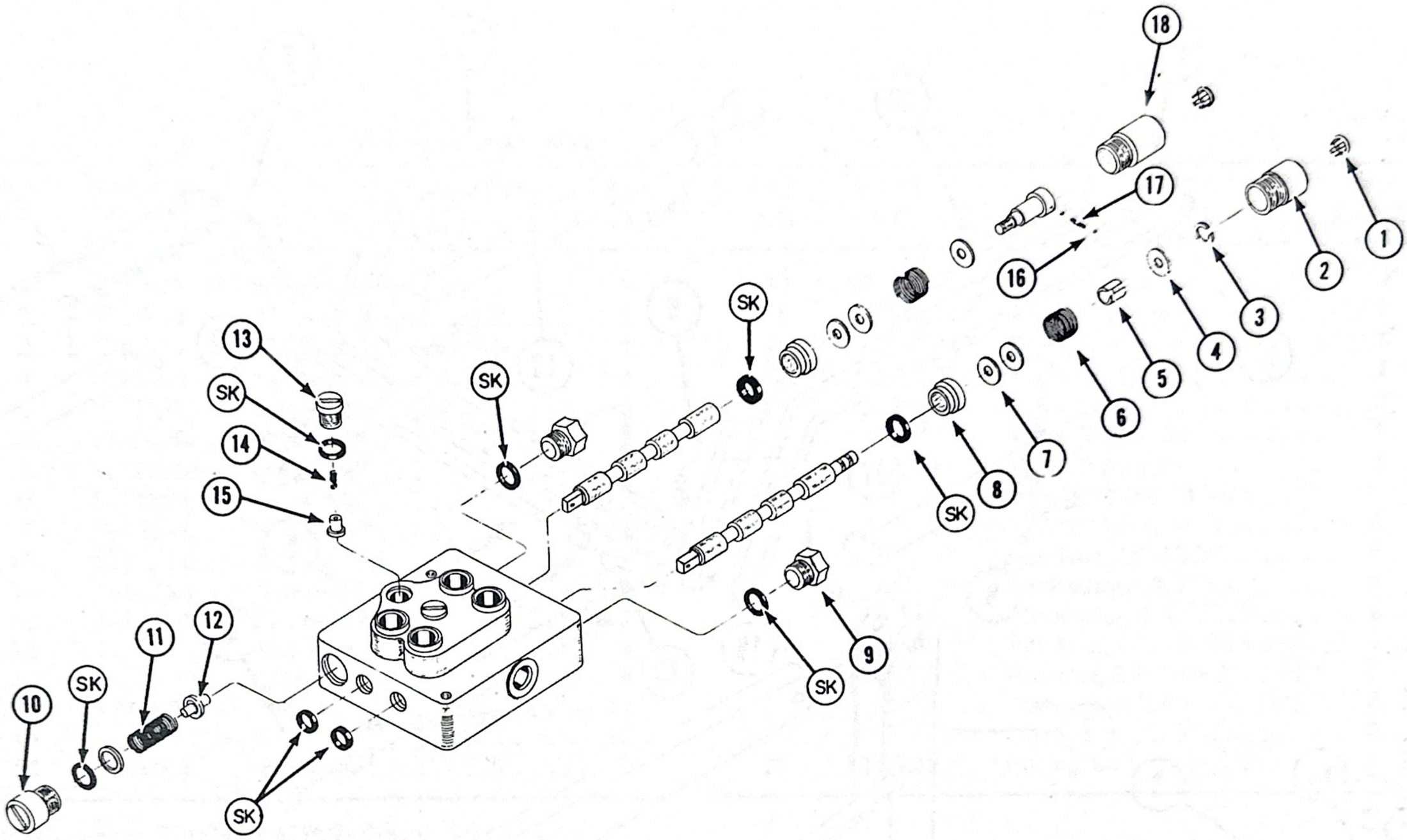
1. Identify the "Sympton" that best applies.

2. Check the "Possible Causes".

3. Perform the recommended "Remedy".

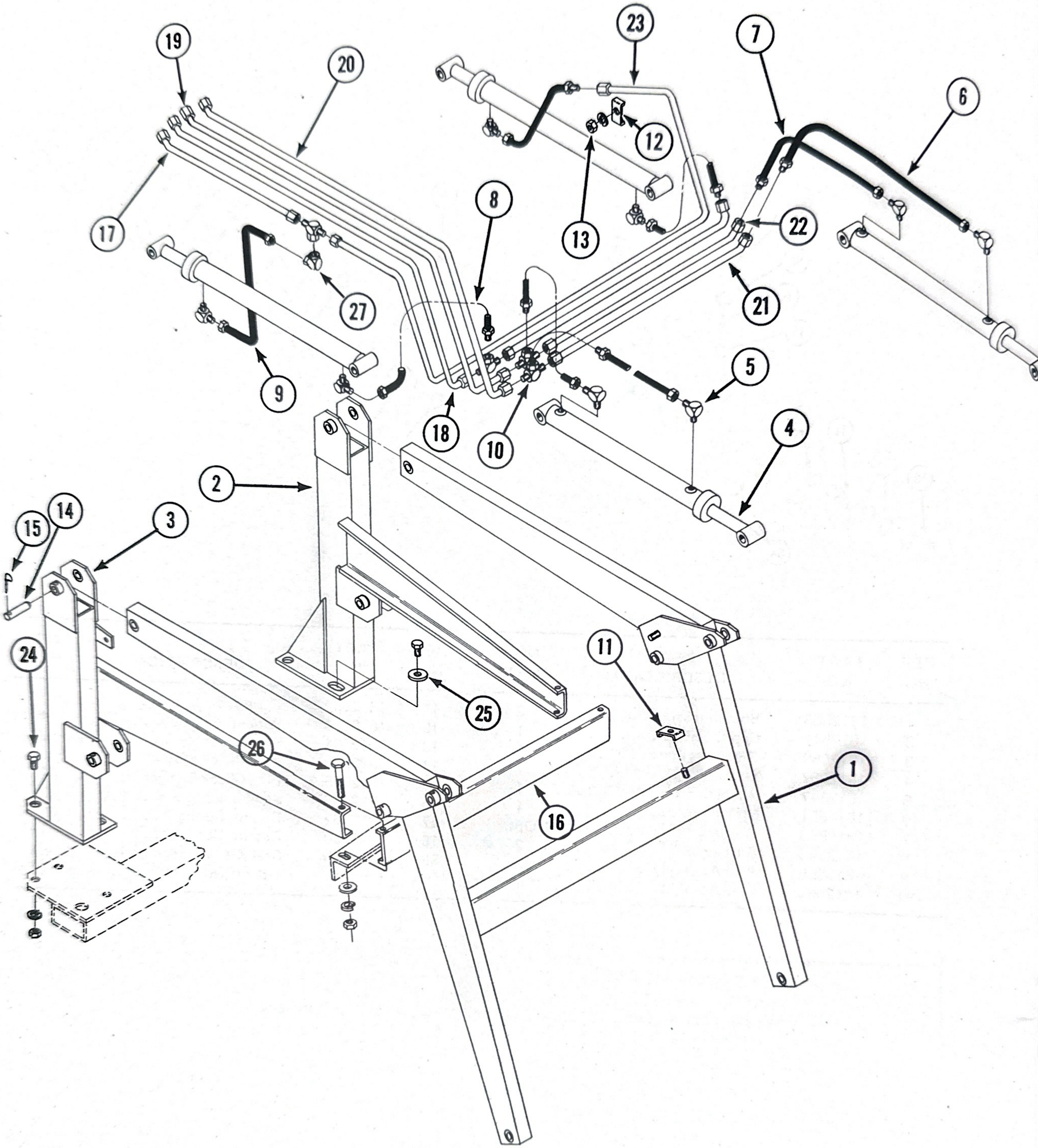
A. LOADER OPERATION

SYMPTOM	POSSIBLE CAUSE	REMEDY
Jerky	Cold oil or air in system	Operate loader several times with tractor at half throttle.
	Low oil supply	Add oil.
	Poor oil circulation	Check oil filter in tractor or loader hydraulic system. Clean or replace as required.
	Hydraulic Pump starvation	Check to see if suction hose filter is plugged.
Slow	Defective or worn lift cylinder seals	Replace lift cylinder seal kits.
	Worn, damaged or insufficient hydraulic pump	See Bolens dealer. Request flow (GPM) and pressure (PSI) check.
	Dirty or clogged oil filter	Check oil filter in tractor. Clean or replace as required.
	Defective or worn control valve spool out of phase.	Replace control valve.
Erratic cylinder operation	Cylinder piston loose or stripped off rod.	Replace damaged parts. Review and observe operational practices. (1) Avoid dragging operation with cylinders fully extended. (2) Avoid extending cylinders to end of stroke at maximum speed and high engine R.P.M.
Cylinders extend or settle with valve in neutral position.	Defective or worn cylinder seals	Replace cylinder seal kits.
Hydraulic cylinders inoperative	Hoses improperly installed	Re-install hose connections properly.
	Damaged or defective cylinder	Inspect internal parts. Replace necessary parts.
	Insufficient oil in system	Add oil.
	Cylinder piston loose or stripped off rod.	(See erratic cylinder operation above.)



REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D.
1	1812563	Button Insert	2
2	1812549	Cap	1
3	1812559	Retainer Ring	1
4	1812557	Washer	1
5	1812547	Spool Spacer	1
6	1812551	Spring	1
7	1812558	Washer	1/Opt.
8	1812548	Bushing	2
9	1812560	Plug Assembly	2
10	1812562	Plug Assembly	1
11	1812553	Spring	1
12	1812554	Poppet	1
13	1812561	Plug Assembly	2
14	1812546	Lift, Check Spring	2
15	1812545	Lift, Check Plunger	2
16	1812556	Steel Ball	2
17	1812552	Detent, Spring	1
18	1812550	Detent, Cap	1
SK	1812555	Seal Kit (Included parts are identified by SK)	1

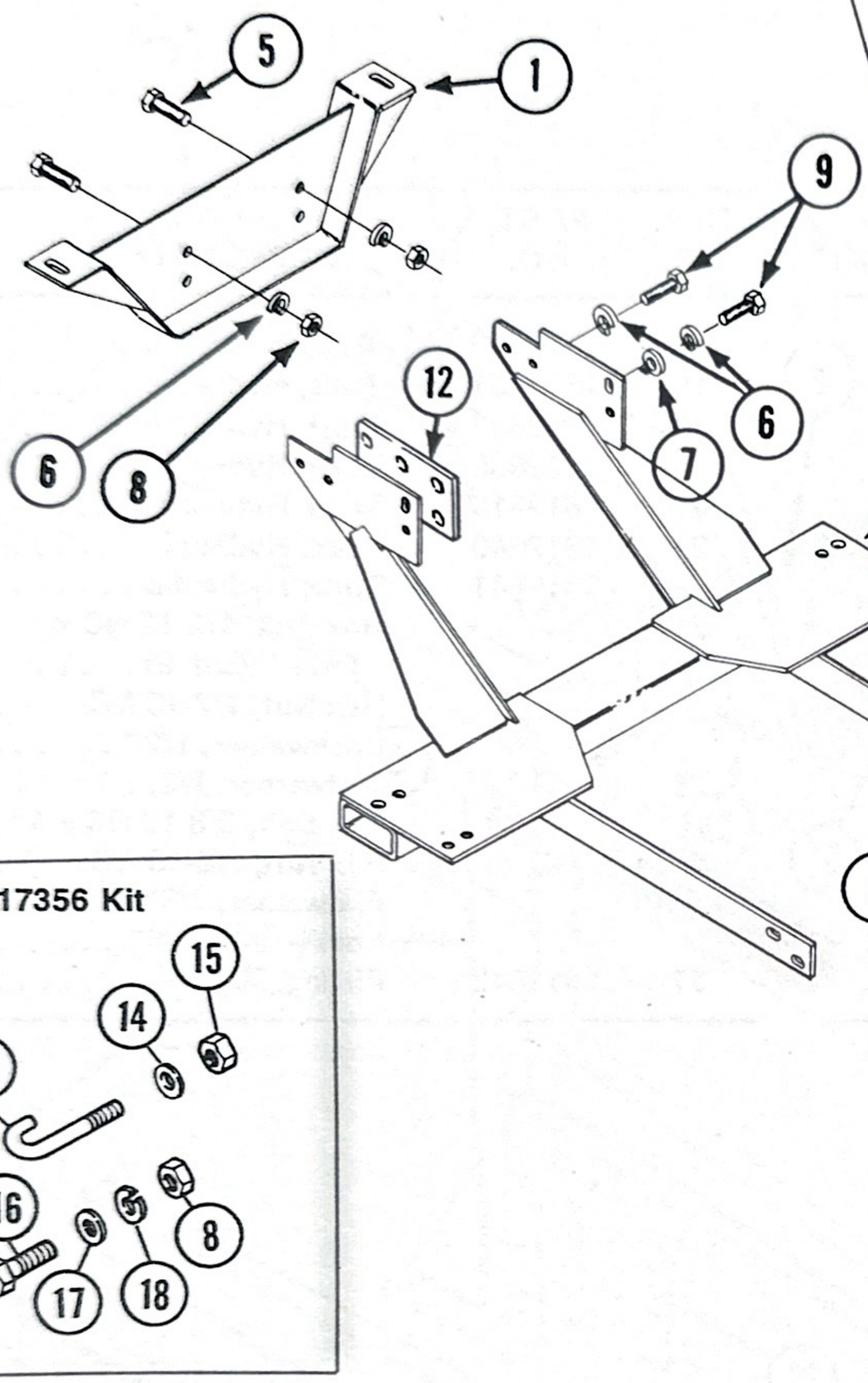
BOLENS FRONT END LOADER



REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D.
1	1812645	Mainframe Assembly	1
2	1812646	Pedestal Assembly, LH	1
3	1812632	Pedestal Assembly, RH	1
4	1812611	Cylinder Assembly	4
5	1812511	Fitting, 90°	8
6	1812529	Hose, 28"	2
7	1812528	Hose, 16"	2
8	1812633	Hose, 12"	2
9	1812634	Hose, 19"	2
10	1812512	Fitting, Tee	4
11	1812635	Clamp, Tube	1
12	1812527	Clamp, Tube	3
13	*	Hex Nut, 3/8-16 NC	4
	*	Lockwasher, 3/8"	4
14	1812526	Pin	12
15	*	Pin, Cotter	12
16	1812636	Bumper	1
17	1812509	Tube, Hydraulic	1
18	1812637	Tube, Hydraulic	1
19	1812638	Tube, Hydraulic	1
20	1812639	Tube, Hydraulic	1
21	1812510	Tube, Hydraulic	2
22	1812640	Tube, Hydraulic	1
23	1812641	Tube, Hydraulic	1
24	*	Hex Bolt, 1/2-13 NC x 1-1/2" (Grd. 5)	6
	*	Hex Nut, 1/2-13 NC	6
	*	Lockwasher, 1/2"	6
25	*	Flatwasher, 1/2	2
26	*	Hex Bolt, 3/8-16 NC x 4"	2
	*	Hex Nut, 3/8-16 NC	2
	*	Flatwasher, 3/8"	2
	*	Lockwasher, 3/8"	2
27	1812642	Fitting, 90°	1

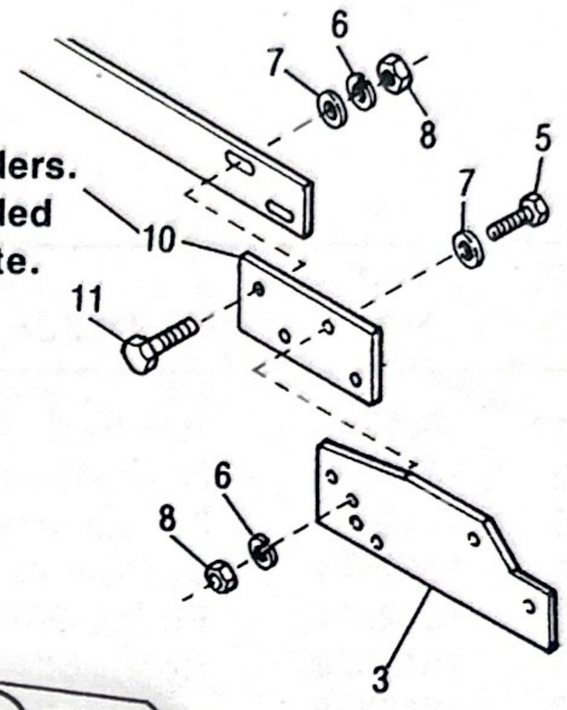
*Common Hardware Purchase Locally

BOLENS FRONT END LOADER



Model 17356 Kit for Model 1704H Installation.

Not required on later model loaders. Item 3 is extended to eliminate plate.

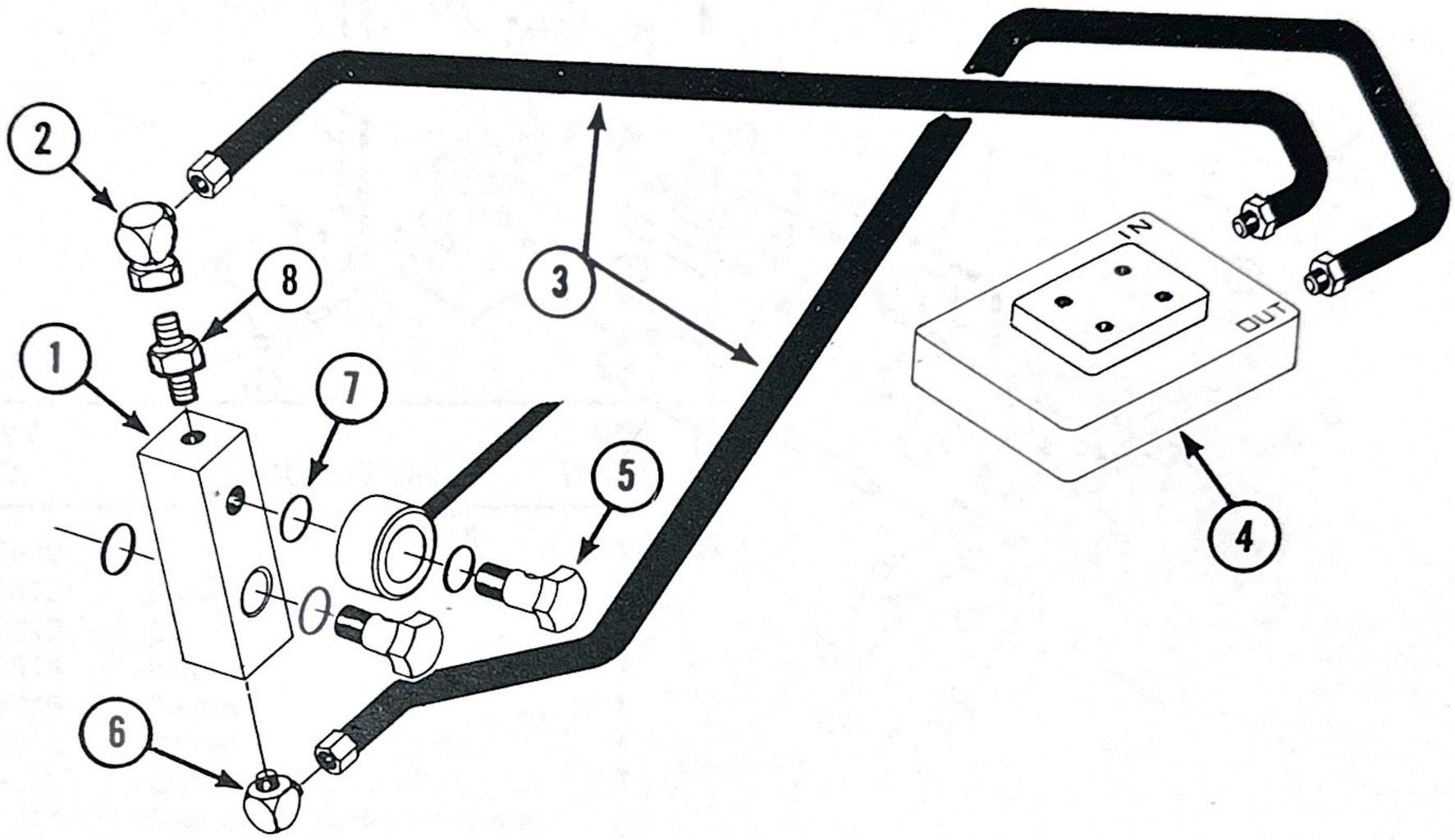


Model 17356 Kit

REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D
1	1812624	Front Bucket Assembly ..	1
2	1812625	Bracket Undercarriage Assembly	1
3	1812654	Bar Bracket Mounting ...	2
4	1812629	Bolt, 12 mm x 1.75 Pitch x 60 mm	4
5	*	Bolt, 1/2-13 NC x 1-1/2" (Grd. 5)	8
6	*	Lockwasher, 1/2"	22
7	*	Flatwasher, 1/2"	10
8	*	Nut, 1/2-13 NC	12
9	1812651	Bolt, 12 mm x 1.25 Pitch x 50 mm	6
** 10	1864405	Adaptor Plate	1
11	*	Bolt 1/2-13 x 2	4
12	1812594	Spacer	2
** 13	1864406	Bolt Hook	1
14	*	Flat Washer, 3/8	1
15	*	Lock Washer, 3/8-16	1
** 16	1860218	Hex Screw M8-1.25 x 30 .	1
17	*	Lock Washer 5/16	1
18	*	Flat Washer 5/16	1

*Common Hardware - Purchase Locally
**Part of Kit 17356 for 1704H Installation

TX (2 CYL) MANIFOLD CONNECTION

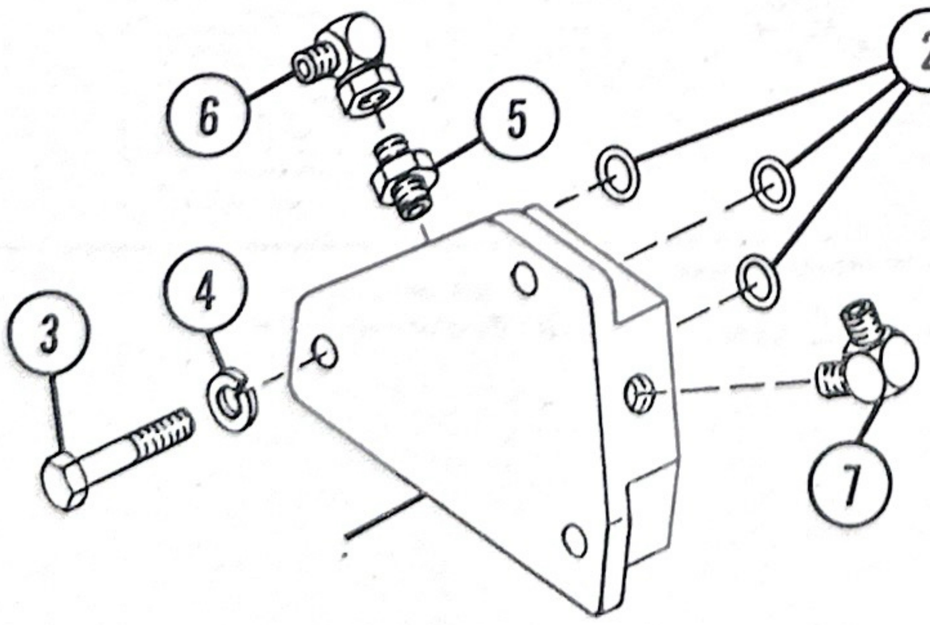


REF. NO.		PART NO.	DESCRIPTION	NO. REQ'D.
1	*	1862088	Body Manifold	1
2		1812642	Fitting, 90° Elbow	1
3		1812622	Hose, 48''	2
4		1812544	Valve, 2 Spool (Cessna) ..	1

REF. NO.		PART NO.	DESCRIPTION	NO. REQ'D
5	*	1862078	Fitting Manifold	2
6		1812623	Fitting, 90° Elbow	1
7	*	1185773	O-Ring	4
8		1812650	Straight Fitting	1

*Parts not included in later Model Loaders for TX 2-Cyl. installation.

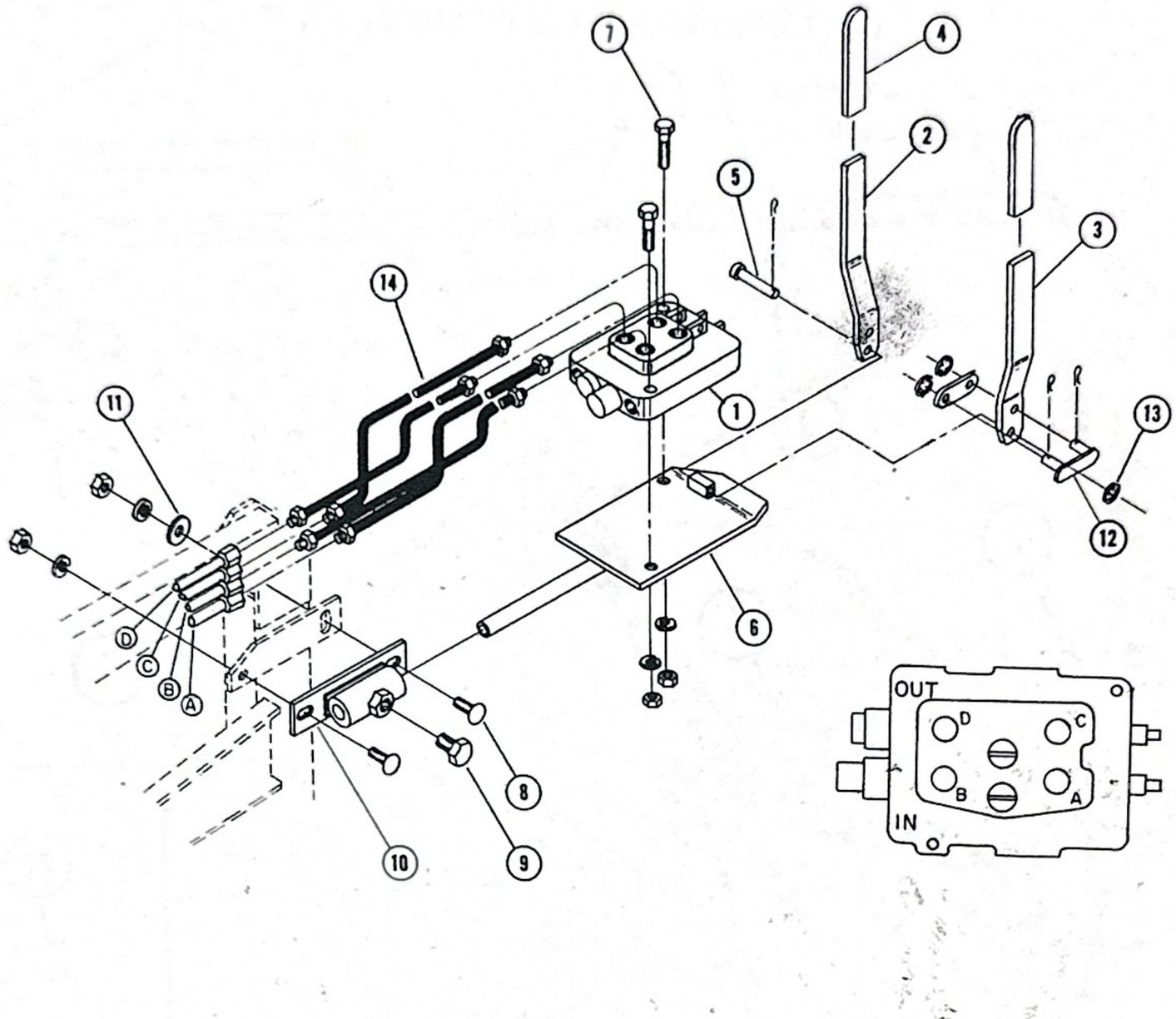
TX (3 CYL) MANIFOLD CONNECTION



REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D.
1	1863343	Hydraulic Manifold	1
2	1812648	O-Ring	3
3	1812649	Cap Screw 8 mm x 1-1/4 x 35 mm	3
4	•	Lock Washer 3/8	3
5	1812650	Straight Fitting	1
6	1812642	Elbow, 90° Swivel	1
7	1812623	Elbow, 90°	1

• Purchase Locally

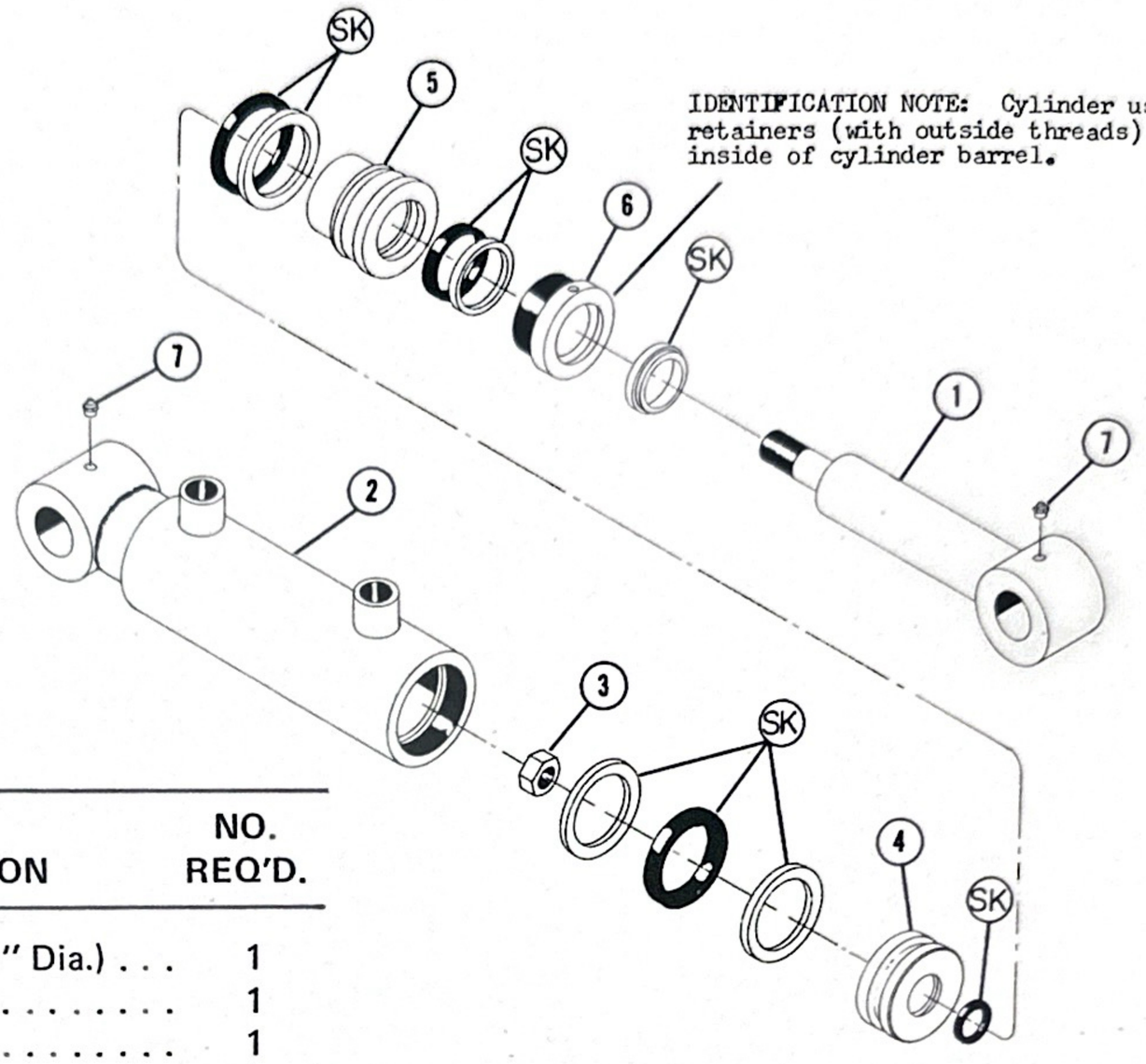
BOLENS FRONT END LOADER



REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D.
1	1812544	Valve Assembly (Cessna)	1
2	1812524	Bar, Handle, R.H.	1
3	1812525	Bar, Handle, L.H.	1
4	1812537	Cover, Handle Valve	2
5	1812535	Pin, Clevis	1
6	1812522	Mount, Valve Assembly	1
7	*	Hex Bolt, 1/4-20 NC x 2-1/4" (Grd. 5)	2
	*	Hex Nut, 1/4-20 NC	2
	*	Lockwasher, 1/4"	2
8	*	Bolt, Carriage 3/8-16 NC x 1-1/2" (Grd. 5)	2
	*	Hex Nut, 3/8-16 NC	2
	*	Lockwasher, 3/8"	2
9	*	Hex Bolt, 1/2-13 NC x 1" (Grd. 5)	1
10	1812619	Mount, Valve Assembly	1
11	*	Flatwasher, 3/8"	1
12	1812497	Pin Kit	2
13	1812592	Washer, Detent	5
	1812536	Decal, Valve	1
14	1812643	Hose, 24"	4

*Common Hardware Purchase Locally

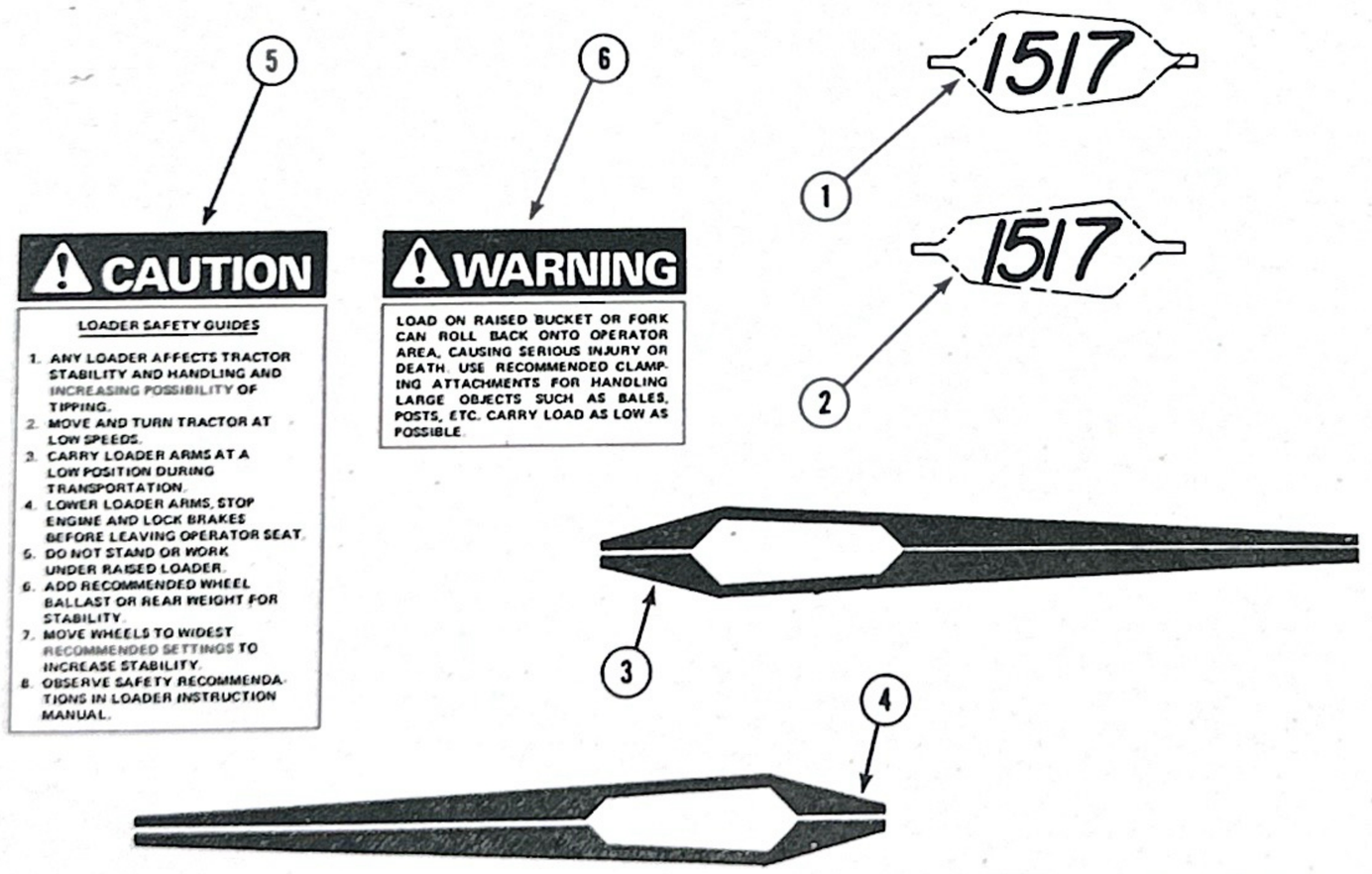
BOLENS FRONT END LOADER



IDENTIFICATION NOTE: Cylinder uses smaller retainers (with outside threads) that screws inside of cylinder barrel.

REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D.
1	1812610	Rod Assembly (1" Dia.) . . .	1
2	1812612	Barrel Assembly	1
3	1812613	Locknut	1
4	1812614	Piston	1
5	1812615	Bearing	1
6	1812616	Retainer	1
7	*	Zerk, Grease	2
SK	1812647	Seal Kit (Included parts are identified by SK)	1

*Buy locally



REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D.
1	1812617	Decal, 1517 LH.	1
2	1812618	Decal, 1517 RH	1
3	1812539	Decal, Arrow	1
4	1812538	Decal, Arrow	1
5	1812501	Decal, Caution	1
6	1812502	Decal, Warning	1