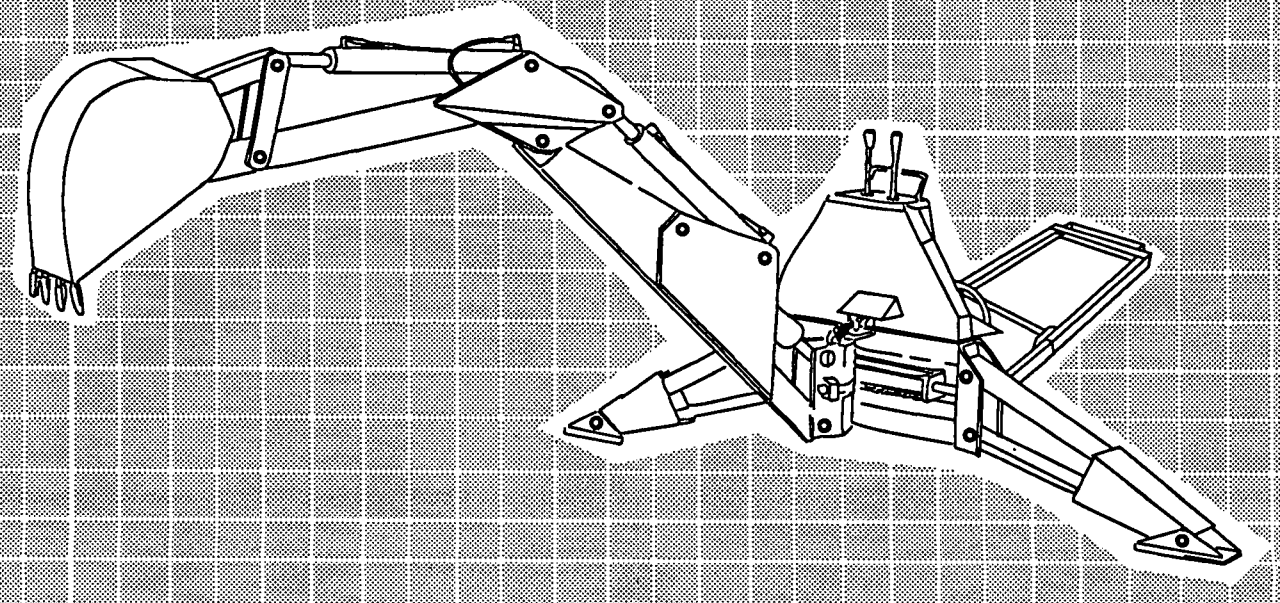
HONDA
Power
Equipment

OPERATOR'S MANUAL

MODEL BH6575
BACKHOE
for
HONDA H6522 (A4)
COMPACT TRACTOR



HONDA DEALER: PLEASE GIVE THIS PUBLICATION TO YOUR CUSTOMER

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POP50366 (9104)

INTRODUCTION

Thank you for purchasing a BH6575 Backhoe attachment for your Honda H6522 A4 Compact Tractor equipped with a H6555 Front Loader. We want to help you get the best results from your new backhoe and to operate it safely.

This manual covers the assembly, operation, and maintenance of the BH6575 Backhoe. For your convenience, a parts guide and warranty information are also included in this publication.

The illustrations in this manual are intended to serve as a reference and may not necessarily depict the actual model listed above. The information in this publication is based on the latest product information available at the time of printing. American Honda Motor Co., Inc. reserves the right to make changes at any time without notice and without incurring any obligation.

This manual is a permanent part of the backhoe and must remain with the backhoe if resold.

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SAFETY MESSAGES

Your safety and the safety of others are very important. We have provided important safety messages in this manual and on the backhoe. Please read these messages carefully.

A safety message alerts you to potential hazards that could hurt you or others. Each safety message is preceded by a safety alert symbol  and one of three words: DANGER, WARNING, or CAUTION.

These mean:

DANGER You **WILL** be KILLED or SERIOUSLY HURT if you don't follow instructions.

WARNING You can be KILLED or SERIOUSLY HURT if you don't follow instructions.

CAUTION You can be HURT if you don't follow instructions.

Each message tells you what the hazard is, what can happen, and what you can do to avoid or reduce injury.

DAMAGE PREVENTION MESSAGES

You will also see other important messages that are preceded by the word NOTICE.

This word means:

Notice Your backhoe or other property can be damaged if you don't follow instructions.

The purpose of these messages is to help prevent damage to your backhoe, other property, or the environment.

The Honda BH6575 Backhoe attachment is designed to give safe and dependable service if assembled and operated according to instructions.

If a problem should arise, or if you have any questions about your backhoe, consult an authorized Honda compact tractor dealer.

The chart below lists common abbreviations used throughout this manual.

ABBREVIATIONS

ATF ....AutomaticTransmission Fluid	**P** ..... Pitch	mm .....Millimeter
CV .....Constant Velocity	M ..... Male	psi ..... Pounds per Square Inch
F ..... Female	MPa .....Mega Pascal	SAE .....Society of Automotive Engineers
GA .....Gauge	N .....Newton	UNC .....Unified Coarse
GR *(5,* etc.) ..... Grade *(5,* etc.)	NC .....National Coarse	NPSM ....National Pipe Straight Mechanical
NF .....National Fine	HT .....Heat Treated	UNS .....Unified Special
UNF .....Unified Fine	m ..... Meter	NPT .....National Pipe Thread
PTO .....Power Take Off	ASTM .....American Society fo Testing & Materials	**lb.** .....Pound
kg .....Kilogram	R ..... .Right	**L** ..... left
ID .....Inside Dimension	OD .....Outside Dimension	

NOTES

TABLE OF CONTENTS

GENERAL SAFETY INFORMATION

TO THE OWNER:

Read this manual before using your backhoe. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Study this manual carefully and become acquainted with all the adjustments and operating procedures before attempting to operate your new equipment.

The Honda BH6575 Backhoe attachment is designed only for sub-frame mounting to a Honda H6522 Compact Tractor equipped with a H6555 Front Loader. It is not to be modified or mounted in any other configuration.

The backhoe you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the backhoe as specified. Observe all safety information in this manual and safety labels on the backhoe and tractor.

For service, your authorized Honda compact tractor dealer has trained mechanics, genuine Honda service parts, and the necessary tools and equipment to handle all your needs.

Use only genuine Honda service parts. Substitute parts may not meet standards required for safe and satisfactory operation. Record the model and serial number of your backhoe (Figure **1):**

Model: _____

Serial Number: _____

Provide this information to your dealer to obtain correct repair parts.

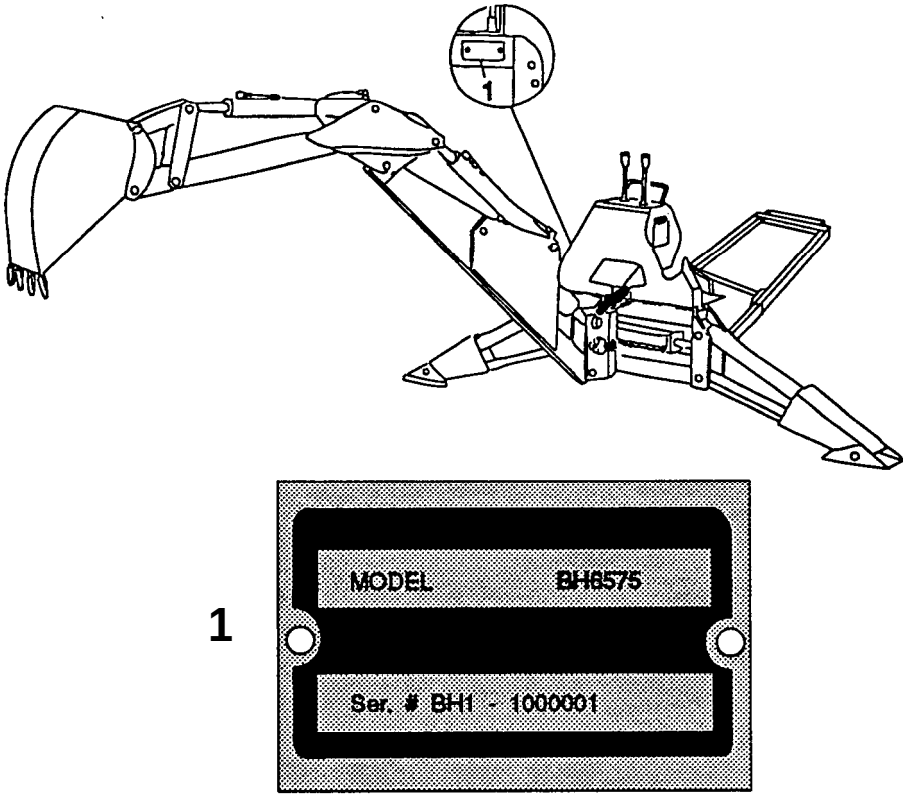


Figure 1. Model and Serial Number Location

ACCIDENT PREVENTION

Accidents Can Be Prevented With Your Help

No accident prevention program can be successful without the wholehearted cooperation of the person who is directly responsible for the operation of equipment.

A large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the harvest field or in the industrial plant, can be safer than the person who is at the controls. Accidents can be prevented by operators who accept a full measure of their responsibility.

It is true that the designer, the manufacturer, the safety engineer can help, but their combined efforts can be erased by a single careless act of the operator.

The best kind of a safety device is a careful operator. We ask you to be that kind of an operator.

GENERAL INFORMATION

The purpose of this manual is to assist in setting up, operating and maintaining your backhoe. Read it carefully. It furnishes information and instructions that will help you achieve years of dependable performance.

These instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature due to unknown and varying conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

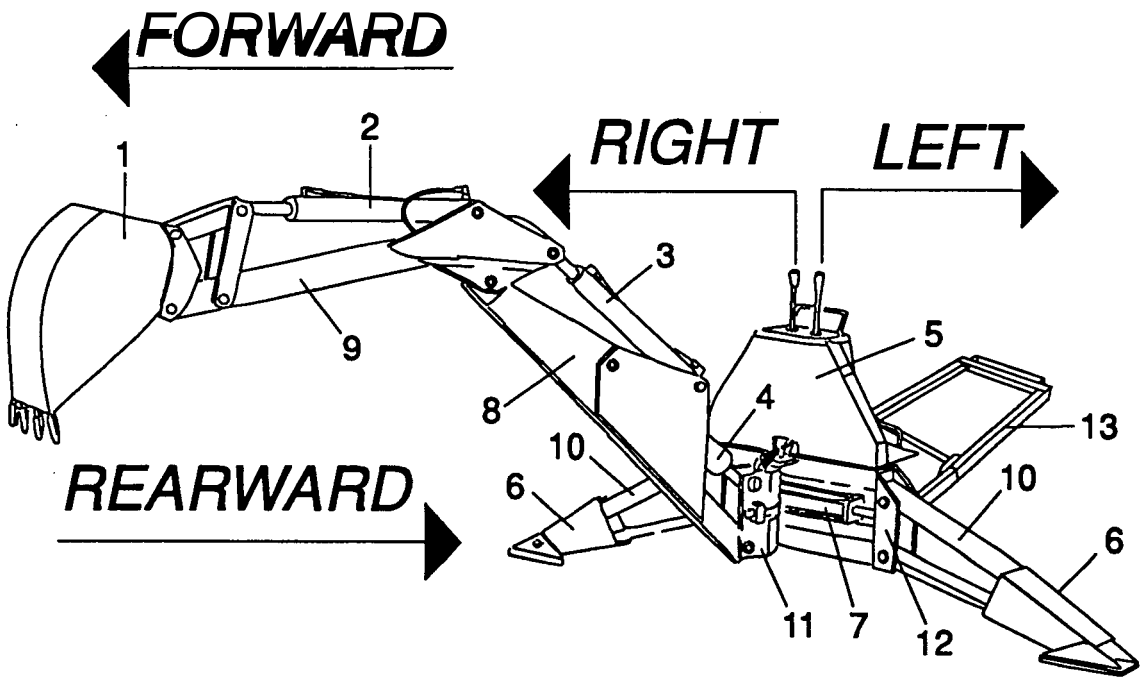
The illustrations and data used in this manuatwere current at the time of printing, but due to possible in line production changes, your machine may vary slightly in detail. We reserve the right to redesign and change the machines as may be necessary without notification.

Some illustrations in this manual show the backhoe with safety shields or other components removed to provide a better view.

⚠ WARNING **Operating the backhoe with safety shields or any components removed could cause serious injury. The backhoe should never be operated with any safety shielding or components removed.**

Throughout this manual, references are made to right, left, forward and rearward directions. These are determined from the backhoe operator seat position facing forward as shown in .Figure 2.

Nomenclature for backhoe components have some variations throughout the industry. We use **SAE** designations as shown in Figure **2.**



1. Bucket
2. Bucket cylinder
3. Dipperstick cylinder
4. Boom cylinder
5. Console
6. Stabilizer
7. Swing cylinder
8. Boom
9. Dipperstick
10. Stabilizer cylinder
11. Swing Frame
12. Main Frame
13. Sub-frame assembly

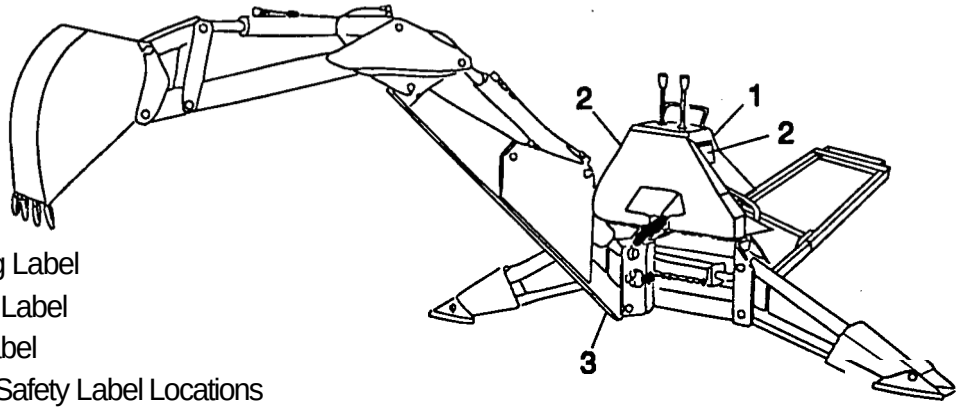
Figure 2. Backhoe Nomenclature

SAFETY ,

SAFETY LABEL LOCATIONS (Figure 3)

Read all safety instructions before operating the BH6575 Backhoe. Anyone who uses the backhoe should read and understand this information before operating the backhoe. Refer to the H6522 Owner's Manual and H6555 Front Loader Operator's Manual for additional safety label information before operating the backhoe.

The safety labels should be considered as permanent parts of the backhoe. If a safety label comes off or becomes hard to read, contact an authorized Honda compact tractor dealer for replacements.



1. Warning Label
2. Danger Label
3. Lock Label

Figure 3. Safety Label Locations

1

⚠ WARNING

TO AVOID SERIOUS INJURY OR DEATH,

READ OPERATOR'S MANUAL AND FOLLOW ALL SAFETY, OPERATING AND SERVICE INSTRUCTIONS (CONTACT DEALER FOR MANUAL.)

ENSURE ALL SAFETY SHIELDS AND DECALS ARE INSTALLEDAND IN GOOD CONDITION.

DO NOT ALLOW CHILDREN OR UNQUALIFIED PERSONSTOOPERATE EQUIPMENT.

A MINIMUM 25% OF TRACTOR AND EQUIPMENT WEIGHT MUST BE ON TRACTOR FRONT WHEELS WITH BACKHOE IN TRANSPORT POSITION.

WHEN OPERATING, ALWAYS SIT IN BACKHOE SEAT; KEEP BYSTANDERS AWAY FROM OPERATOR, STABILIZER AND MAXIMUM BUCKET SWING AREAS.

OPERATE PTO AT 540 RPM MAX.

BACKHOE DIGGING FORCES CAN LIFT AND TURN TRACTOR OVER. MAKE SURE STABILIZER PADS ARE ON FIRM GROUND AND AVOID SOFT OR STEEP BANKS.

KEEP HANDS AND BODY AWAY FROM HIGH-PRESSURE LINES. IF OIL, UNDER PRESSURE, PENETRATES THE SKIN, IT MUST BE SURGICALLY REMOVED WITHIN A FEW HOURS BY A DOCTOR FAMILIAR WITH THIS FORM OF INJURY OR GANGRENE MAY RESULT.

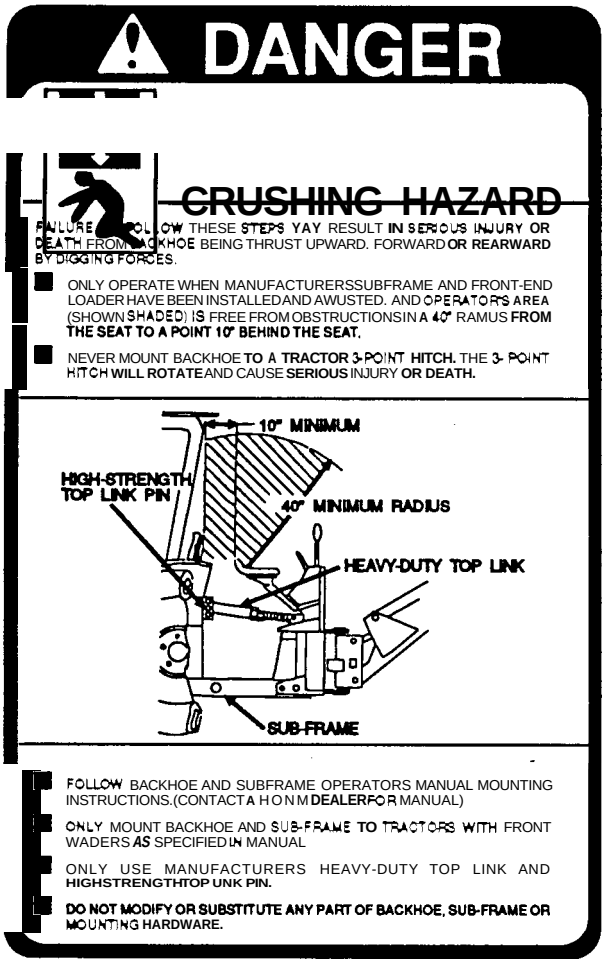
CONSULT LOCAL UTILITIES BEFORE DIGGING. KNOW LOCATION OF AND AVOID CONTACTING ALL UNDERGROUND CABLES, PIPELINES, OVERHEAD WIRES AND OTHER HAZARDS IN DIGGING AREA.

NO RIDERS ARE ALLOWED ON TRACTOR OR BACKHOE.

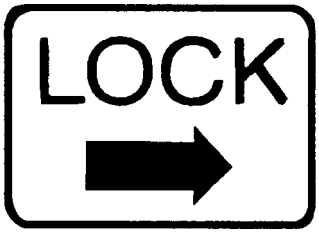
BEFORE TRANSPORTING, ATTACH SLOW MOVING VEHICLE (SMV) SIGN AND ENGAGE TRANSPORT LOCKS.

BEFORE LEAVING EQUIPMENT UNATTENDED. RAISE BOOM AND INSTALL TRANSPORT LOCKS. DISENGAGE PTO, RELIEVE PRESSURE ON DIPPERSTICK AND BUCKET. SHUT ENGINE OFF AND REMOVE KEY.

2


DANGER
CRUSHING HAZARD
FAILURE TO FOLLOW THESE STEPS MAY RESULT IN SERIOUS INJURY OR DEATH FROM BACKHOE BEING THRUST UPWARD. FORWARD OR REARWARD BY DIGGING FORCES.
ONLY OPERATE WHEN MANUFACTURERS SUBFRAME AND FRONT-END LOADER HAVE BEEN INSTALLED AND AWUSTED. AND OPERATOR'S AREA (SHOWN SHADED) IS FREE FROM OBSTRUCTIONS IN A 40" RAMUS FROM THE SEAT TO A POINT 10" BEHIND THE SEAT.
NEVER MOUNT BACKHOE TO A TRACTOR 3-POINT HITCH. THE 3- POINT HITCH WILL ROTATE AND CAUSE SERIOUS INJURY OR DEATH.
10" MINIMUM
HIGH-STRENGTH TOP LINK PIN
40" MINIMUM RADIUS
HEAVY-DUTY TOP LINK
SUB-FRAME
FOLLOW BACKHOE AND SUBFRAME OPERATORS MANUAL MOUNTING INSTRUCTIONS.(CONTACT A HONM DEALER FOR MANUAL)
ONLY MOUNT BACKHOE AND SUB-FRAME TO TRACTORS WITH FRONT WADERS AS SPECIFIED IN MANUAL
ONLY USE MANUFACTURERS HEAVY-DUTY TOP LINK AND HIGHSTRENGTHTOP UNK PIN.
DO NOT MODIFY OR SUBSTITUTE ANY PART OF BACKHOE, SUB-FRAME OR MOUNTING HARDWARE.

3


LOCK

SAFETY INFORMATION

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be erased by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage *of* equipment.

The best safety device is an informed, careful operator. We ask you to be that kind of an operator.

The designed and tested safety of this equipment depends on it being operated within the limitations as explained in this manual.

TRAINING

- ☐ Safety instructions are important! Read this manual, the tractor manual and all safety rules.
- ☐ Know your controls and how to stop tractor engine and backhoe quickly in an emergency.
- ☐ Operators must be instructed in and be capable of the safe operation of the equipment, its attachments and all controls. **Do** not allow anyone to operate this equipment without proper instructions.
- ☐ Keep hands and body away from pressurized lines. Use paper or cardboard, not body parts to check for leaks. Hydraulic fluid (oil) under pressure will penetrate skin causing serious injury.
- ☐ Make sure that ail operating and service personnel know that in the event hydraulic fluid penetrates skin, It must be surgically removed within a few hours by a doctor familiar with this form of injury, or gangrene may result.
- ☐ Do not allow children or unqualified persons to operate equipment.

PREPARATION

- ☐ The BH6575 Backhoe should only be used with the Honda H6522 A4 (4-wheel drive) Compact Tractor.
- ☐ Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hands, hearing and head.
- ☐ Never operate unless backhoe's sub-frame has been installed and properly mounted to a Honda H6522 A4 Compact Tractor equipped with a FL6555 Front Loader.
- ☐ Do not operate backhoe unless there is adequate operator clearance as shown on safety label. (Refer to Danger Label on page **8.)**
- ☐ Always use special heavy-duty top link (provided with backhoe) and original equipment high-strength top link pin (provided with tractor) to mount top link to tractor. Use pin provided with backhoe to mount top link to backhoe.
- ☐ Ensure that backhoe is properly mounted, adjusted and in good operating condition.
- ☐ Ensure all safety labels are installed and in good condition. (See page *7* illustrations.)
- ☐ Ensure shields and guards are properly installed and in good condition.
- ☐ A minimum 25% of tractor and equipment weight must be on tractor front wheels with backhoe in transport position. Without this weight, the tractor could tip over causing personal Injury or death. The weight must be attained with a FL6555 Front Loader, fluid In the rear wheels and possibly rear wheel weights depending on the type of rear tire.

  Ag tires - **99** lb (45 kg) ballast In each rear tire and 75 lb **(31.8** kg) wheel weight on each rear wheel.
  Turf or High Flotation Tires - **170** lb **(77** kg) ballast in each rear tire.

  Weigh the tractor and equipment. **Do not** estimate.

- ☐ Make sure that the hydraulic pump **PTO** spring activated locking pin slides freely and is seated firmly in the tractor **PTO** spline groove.
- ☐ Before working on backhoe, extend boom and dipperstick and place bucket on ground. Make sure that ail system pressure has been relieved by operating controls before maintenance, service or disconnecting any hydraulic lines. Hydraulic system leak down and failure of mechanical or hydraulic system can cause equipment to drop.
- ☐ Clean all dirt, trash and grease from operator's platform and steps.

OPERATIONAL SAFETY

- ☐ Consult local utilities before digging. Know location of and avoid contacting all underground cables, pipelines, overhead wires and other hazards in digging area.
- ☐ Keep bystanders away from operator, stabilizer and maximum bucket swing areas.
- ☐ Operate only In daylight or good artificial light.
- ☐ When transporting, you must wear a seat belt if your tractor is equipped with a **ROPS.**
- ☐ Always comply with all state and local lighting and marking requirements.
- ☐ **No** riders are allowed on tractor or backhoe.
- ☐ When Operating controls, always sit in backhoe seat.
- ☐ Disengage Power Take **Off (PTO),** shift tractor into neutral or park, and place all controls In neutral before starting tractor engine.
- ☐ Operate tractor **PTO** at **540** rpm.
- ☐ Always dump spoll at least **two** feet away from opening.
- ☐ Always provide a means to exit from trench If It is 25 feet or longer.
- ☐ Use extreme care when working close to fences, ditches or on hillsides.
- ☐ Be careful when swinging loaded bucket on a hillside; always dump spoll on uphill side of backhoe to minimize upset possibility.
- ☐ Always engage swing and boom transport locks and attach Slow Moving Vehicle **(SMV)** sign before transporting backhoe.
- ☐ Never leave equipment unattended with engine running or with bucket In raised position. Always rest bucket on ground and remove ignition key before leaving tractor.
- ☐ **Do** not use backhoe for craning; It is designed for digging.

MAINTENANCE SAFETY

- ☐ Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hands, hearing and head.
- ☐ Never perform service or maintenance with tractor engine running.
- ☐ Before working on backhoe, extend boom and dipperstick and place bucket on ground. Make sure that all system pressure has been relieved by Operating controls before maintenance, service or disconnecting any hydraulic lines. Hydraulic system leak down and failure of mechanical or hydraulic system can cause equipment to drop.
- ☐ Keep all persons away from operator control area while performing adjustments, service or maintenance.
- ☐ Tighten all bolts, nuts and screws, and check that all cotter pins are Installed securely to ensure backhoe is in a safe condition before operating.
- ☐ Ensure all safety labels are installed and in good condition. (See page *7* Illustration.)
- ☐ Ensure shields and guards are properly installed and in good condition.

STORAGE

- ☐ Refer to Removing and Storing Backhoe on page **33.**

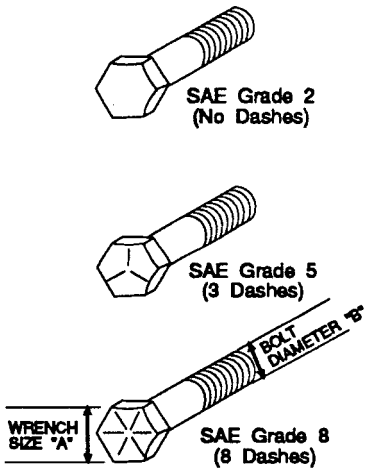
ASSEMBLY INSTRUCTIONS

PROPER TORQUE FOR FASTENERS

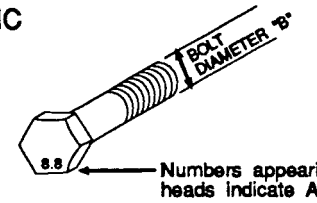
The chart lists the correct tightening torque for fasteners used on the Honda BH6575 backhoe. When **bolts** are to be tightened or replaced, refer to this chart to determine the grade of **bolts** and the proper torque except when specific torque values are assigned in manual text.

Bolt Head Markings

AMERICAN



METRIC



TORQUE SPECIFICATIONS (AMERICAN)

Proper torque for American fasteners used on Honda equipment. Recommended Torque in Foot Pounds (Newton Meters). *

WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4-20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4-28 UNF	6 (8)	8 (13)	14 (18)
1/2	5/16-18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16-24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8-20 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8-24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16-14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16-20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2-13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2-20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16-12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16-18 UNF	79 (107)	122 (165)	172 (233)
1	5/8-11 UNC	97 (131)	150 (203)	212 (287)
1	5/8-14 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4-10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4-16 UNF	192 (260)	297 (402)	420 (569)
1-5/16	7/8-9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8-14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1-12 UNF	274 (371)	705 (955)	1019 (1381)
1-1/2	1 - 14 UNF	280 (379)	721 (977)	1288 (1745)
1-11/16	1-1/8-7 UNC	354 (480)	795 (1077)	1444 (1957)
1-11/16	1-1/8-12 UNF	397 (538)	890 (1077)	1817 (2462)
1-7/8	1-1/4-7 UNC	500 (678)	1120 (1518)	2013 (2728)
1-7/8	1-1/4-12 UNF	553 (749)	1241 (1682)	2382 (3228)

* Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.

TORQUE SPECIFICATIONS (METRIC)

Proper torque for Metric fasteners used on Honda equipment. Recommended Torque in **Foot** Pounds (Newton Meter).

WRENCH SIZE (mm) "A"	BOLT DIAMETER (mm) "B"	ASTM CLASS 4.6	ASTM CLASS *8.8*	ASTM CLASS 9.8	ASTM CLASS 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
12	8	7.3 (10)		21.1 (29)	27 (37)
14	10	14.5 (20)		42 (57)	53 (72)

GENERAL ASSEMBLY INSTRUCTIONS

Backhoe assembly is the responsibility of the Honda Power Equipment Compact Tractor Dealer. The backhoe should be delivered to the owner completely assembled, lubricated and adjusted for normal operating conditions.

Set up with these instructions and illustrations.

⚠ DANGER When finished with assembly, complete the following check lists. Failure to complete all checklists could cause serious injury **or** death to the operator.

Pre-Delivery Check List

Inspect the backhoe thoroughly after assembly to be certain it is set up properly before delivering it to the customer. The check lists are a reminder of points to inspect. Check off each item as it is found satisfactory or after proper adjustments are made.

- ☐ Check all bolts to be sure they are tight.
- ☐ Check that all lubrication points have been lubricated.
- ☐ Check that all cotter pins and safety pins are properly installed.
- ☐ Check that the 'backhoe and sub-frame are properly attached to tractor and front end loader sub-frame.
- ☐ Check that all adjustments have been made.
- ☐ Check that hydraulic reservoir has been serviced and that hydraulic system and all functions have been operated through full cylinder stroke to purge air from system.
- ☐ Make sure all hydraulic fittings are tight and there are no leaks in hydraulic system.
- ☐ Refer to the safety instructions on pages **9** and **10** before checking for hydraulic leaks.

Delivery Check List

- ☐ Show customer how to make adjustments.
- ☐ Explain importance of lubrication and show lubrication points to customer.
- ☐ Give Operator's Manual to customer and recommend that all operators become familiar with all sections and especially the safety information.

Daily Check List

- ☐ Check that the backhoe and sub-frame are properly and securely attached to the tractor and front end loader sub-frame.
- ☐ During inspection, check that all nuts and bolts are secure and clevis pins are properly cotter pinned.
- ☐ Check for hydraulic leaks, frayed or worn hoses and general safety of hydraulic system.

⚠ WARNING Refer to the safety Instructions on page **9** and **10** before checking for hydraulic leaks.

DEALER SET-UP INSTRUCTIONS

The backhoe is shipped partially assembled. Assembly will be easier if components are aligned and loosely assembled before tightening hardware.

Recommended torque values for hardware are given on page 11.

⚠ CAUTION Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hands, hearing and head.

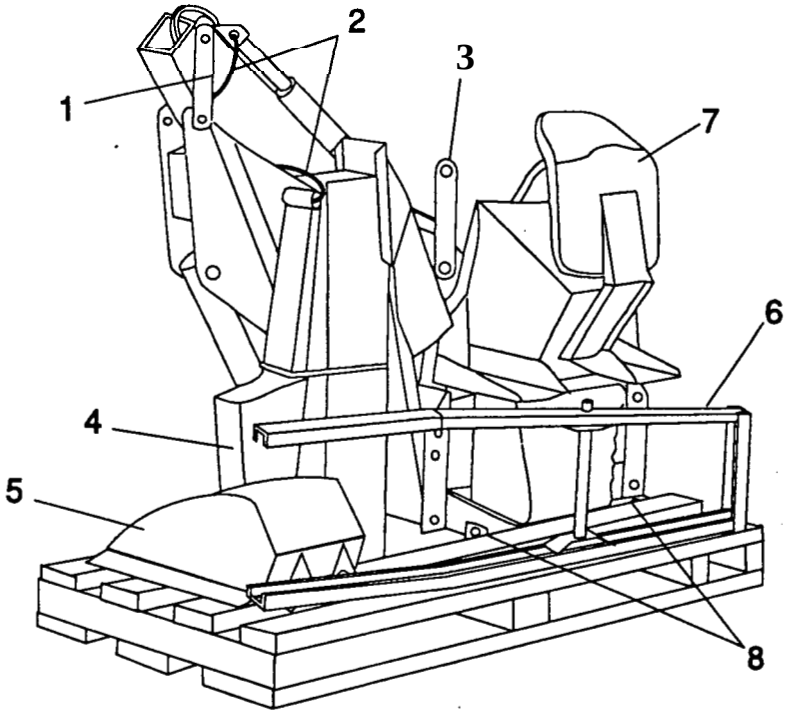
⚠ WARNING Keep all persons away from operator control area while performing adjustments, service or maintenance.

⚠ WARNING Keep hands and body away from pressurized lines. Use paper or cardboard, not body parts to check for leaks. Hydraulic fluid (oil) under pressure will penetrate skin causing serious Injury.

⚠ WARNING Make sure that all operating and service personnel know that In the event hydraulic fluid penetrates skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury, or gangrene may result.

SHIPPING PALLET PREPARATION

1. Position backhoe on pallet in an assembly area. Support unit with a chain hoist from lift lug (3), Figure 4, to provide stability.
2. Remove the seat assembly from the backhoe.
3. Remove all bands, tie straps and steel wire (2) from backhoe components. Set the following components off the pallet for installation later.
   - Sub-frame assembly (set plate assembly, cross member and upper link are attached to the sub-frame).
   - **Bucket**
   - Right Stabilizer assembly

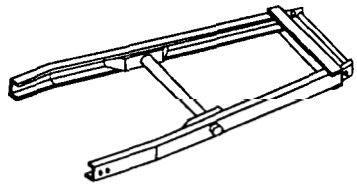


1. Shipping bar
2. Shipping bands
3. Lift lug
4. Right stabilizer
5. Bucket
6. Sub-frame assembly
7. Seat assembly
8. Shipping angles

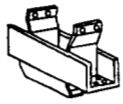
Figure 4. Backhoe in Shipping Configuration

Pallet Parts

1 Sub-Frame **assy.**



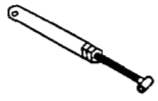
1 Crossmember **Assy.**



1 Pin, 19 x 397 mm

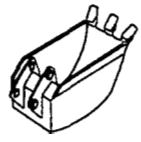
1 Klik Pin, 1/4 x 1-3/4"

1 Upper Link **Assy.**



1 Right Stabilizer **Assy.**

1 Bucket



4. Open the parts box and lay parts out to make location easy. Refer to parts list and the illustrationsbelow.

14" x 18" Double Burlap Bag

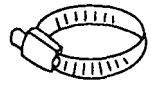
1 Breather Cap/dipstick

1 Elbow, 3/4" Hose 90°

1 Elbow, 7/8"-14 x 9/16"-18 90°

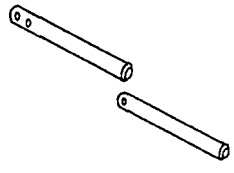
1 Fitting, 90°

2 Screw Hose Clamps

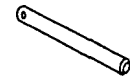


1 Pin, 1.00" x 6.19" HT

1 Pivot Pin (boom)



1 Pivot Pin



2 Pivot Pins, 1.0 x 7.25" **WA**

2 Clevis Pins, 1/4 x 1-7/8"

2 Clevis Pins, 1/16 x 1/2"

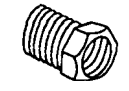
2 Control Handles

2 Grips (black)

2 Hex Lock Nuts, 1/2" NC

2 Bolts, 1/2NC x 1-1/2" HHCS GR **5**

1 Reducer w/O-ring, 1.31 x .88"



1 Reducer O-ring Boss

2 Pivot Pins Retaining Sleeve

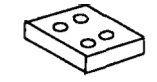
2 Spiral Pins, 5/16 x 1-3/4"

1 Swing Lock Pin

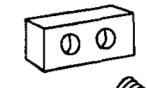
1 Safety Pin, 3/16"

Burlap Bag

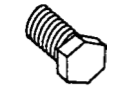
2 4-hole Backing Plates



2 2-hole Backing Plates



4 Bolts, 7/8 x 2-1/2" NC GR **5**



8 Bolts, 1/2 x 1-3/4" NC

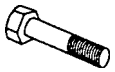
8 Bolts, 1/2 x 1-1/2" NC

4 Bolts, 12 x 80 mm

4 Bolts, 12 x 1.25P x 35 mm

ASSEMBLY INSTRUCTIONS

4 Bolts, 1/2 x 2" NC



4 Lock Nuts, 7/8" NC

8 Lock Nuts, 1/2" NC

4 Lock Washers, 7/8"

32 Flat Washers, 1/2"

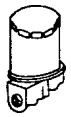
1 High strength Clevis Pin, 3/4 x **3-1**/4"

1 Safety Pin, 3/16"

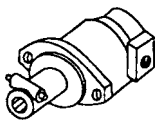
1 Backhoe Top Link Bolt, 3/4 x 3-1/2" NC GR5

Loose Parts (Box)

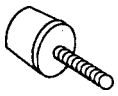
1 Oil Filter Assy. (in **box)**



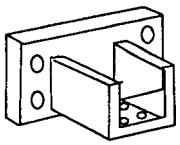
1 Pump Assy.



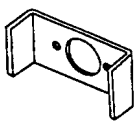
2 Bumper Pads



2 Crossmember Mounting Brackets



1 Pump Mounting Bracket



1 Hose, 3/4 ID x **40"**

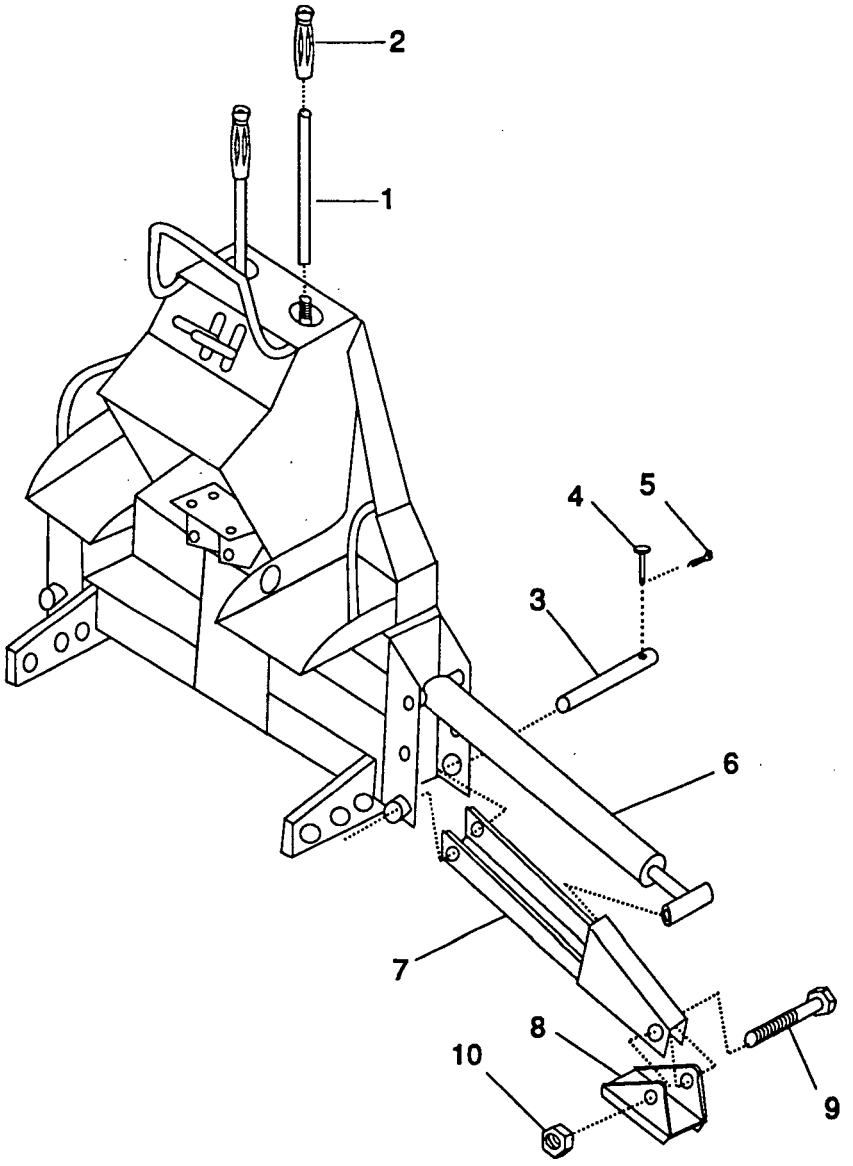
Control Handle Installation (Figure 5)

1. Install both control handles.
2. Slide a rubber grip over each control handle.

Stabilizer Installation (Figure 5)

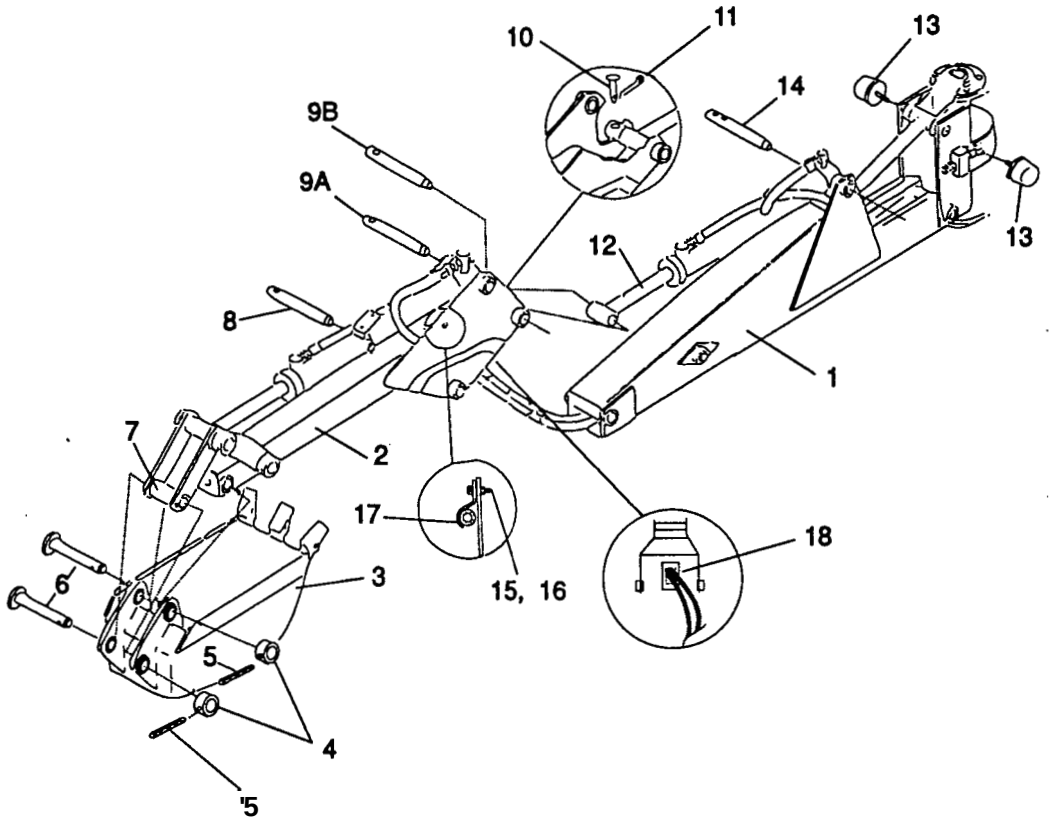
Right stabilizer (reference **7,** Figure ***5)*** on the BH6575 backhoe is shipped banded.

1. Remove right stabilizer pin (3) and attach stabilizer (7).
2. Remove bolt (9) from right stabilizer pad and assemble cylinder rod end and pad to right stabilizer.



1. Control handle
2. Rubber grip
3. Right stabilizer pin
4. Clevis pin
5. Cotter pin
6. Stabilizer cylinder
7. Stabilizer frame
8. Stabilizer pad
9. Stabilizer bolt, 3/4 NC x 6
10. Stabilizer pad nut, 3/4" NC locknut

Figure 5. Stabilizer Installation



1. Boom
2. Dipperstick
3. Bucket
4. Retaining sleeve
5. 5/16 x 1-3/4" Spiral pin
6. Rotating pivot pin
7. Bucket arm
8. 1 x 7-1/2" Pivot pin
9. 1 x 4-7/8 Pivot pin
10. 1/4 x 1-7/8" Clevis pin
11. 1/1 6 x 1/2" Cotter pin
12. Dipperstick cylinder
13. Bumper pad
14. 1 x 6-1/4" Pivot pin
15. 1/4" Flange locknut
16. 1/4 x 3/4" Bolt
17. Hose clamp
18. Hydraulic hose routing

Figure 6. Dipperstick & Bucket Assembly

Bucket & Dipperstick Installation (Figure 6)

1. Remove shipping bar and attaching hardware (Figure **4,** reference 1).
2. Align dipperstick **(2)** with boom (1). Join them with pivot pin ***(8).*** Line up the pivot pin hole with hole in pivot bushing and secure with clevis pin (1**0)** and cotter pin (11).
3. Disconnect bucket hydraulic cylinder base end where it attaches to the dipperstick. Route bucket cylinder hoses through dipperstick openings (1**8).** Make sure hoses are not twisted. Install pivot pin (9A) and secure with **clevis** pin (10) and cotter pin **(11).**
4. Fasten the bucket rod end hose (orange mark) with the clamp (17) on the right side of the dipperstick as shown. Leave 16" of hose toward the rod end fitting past the clamp. Snug bolt (16) and locknut (15) but do not torque down. Fasten bucket base end hose (white mark) with clamp on left side of the dipperstick, leaving 16" of hose extending toward the base end fitting past the clamp. Snug bolt (16) and locknut (15) but do not torque down. When backhoe is installed on tractor, operate dipperstick through the entire range of movement and check that hose length beyond the clamp is sufficient. After completing check, tighten both hose clamps.
5. Align dipperstick cylinder **(12)** with dipperstick and install pivot pin (9B). Line up pivot pin hole with hole in pivot bushing. Secure with clevis pin (10) and cotter pin (11).

6. Actuate swing control handle and move boom and dipperstick to the centered position. Lower dipperstick and align bucket and bucket arm (7) and install rotating pivot pin (6). Secure with retaining sleeve (4) and spiral pin **(5).** Align bucket with dipperstick and secure with retaining sleeve (4) and spiral pin **(5).** Lower boom and dipperstick, resting bucket on ground.
7. Remove lifting lug (3), Figure 4, from boom and install pivot pin (14), Figure **6.** Line up pivot pin hole with hole in pivot bushing. Secure with clevis pin (10) and cotter pin (11).
8. Install rotating pivot pins (6) and secure with retaining sleeves (4) and spiral pins **(5).**
9. Install bumper pads **(13)** to kingpost as shown.

Plumbing Installation (Figure *7.)*

Keep hands and body from pressurized lines. Use paper or cardboard, not body parts, to check for leaks.

⚠ WARNING Hydraulic oil under pressure will penetrate the skin causing serious injury.

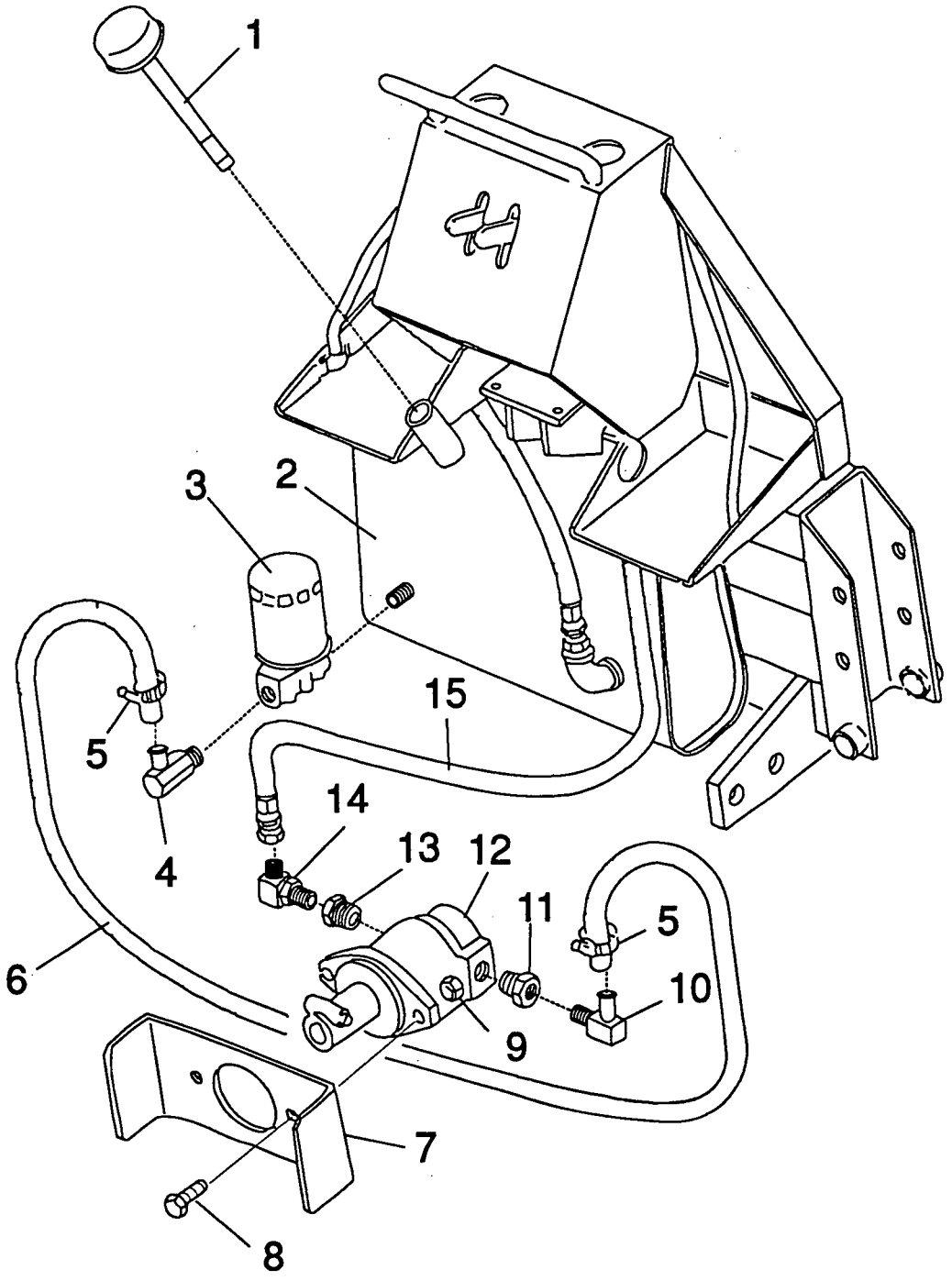
Make sure that all operating and service personnel know that In the event hydraulic fluid penetrates skin, It must be surgically removed within a few hours by a doctor familiar with this form of injury, or gangrene may result.

Notice To prevent damage to the hydraulic system:

- Clean all fittings and use care to prevent foreign material from entering hydraulic system.
- Additional sealant such as pipe dope or Teflon thread tape is not required on O-ring fittings.
- Teflon thread tape Is recommended for pipe threads. Use care when applying to prevent excess tape from entering hydraulic system.
- Make sure all hydraulic connections are tight and all hydraulic lines and hoses are In good condition before engaging the tractor PTO.

1. Apply Teflon tape to the reservoir filter fitting.
2. Install filter base inlet port to reservoir fitting. Install elbow (4) in outlet port of filter base. Ideal orientation of the filter is vertical; position filter base to accommodate this location. The filter may be moved to provide clearance when attaching backhoe to tractor if necessary. Install filter in filter base.
3. **To** properly install hydraulic fittings with O-rings, completely loosen locknut, screw fitting completely in, hold in position and tighten locknut using two wrenches.
4. Check pump reducers and elbows for O-rings before installing them.
5. Install reducer (11) in pump suction port.
6. Install 90° elbow (10) into reducer **(1** 1).
7. Install reducer (13) into pump pressure port. Install elbow (14) into reducer (13).
8. Attach one end of suction hose **(6)** to elbow (4) at the filter and the other end to elbow (10) at the pump and secure with hose clamps **(5).**
9. Attach hose (15) to elbow (14).
10. When backhoe is attached to tractor, it may be necessary to reposition filter and hoses to eliminate interference.
11. Service hydraulic reservoir by filling to **"full"** mark on dipstick (approximately **5** to 5-1/2 US gallons) with Dexron II ATF. When backhoe is mounted and operated, filling cylinders, it will be necessary to add fluid to the reservoir.

Notice Fill with clean oil. **Do** not **mix** oil types or grades. **Using** unsuitable hydraulic oil can damage the hydraulic system.

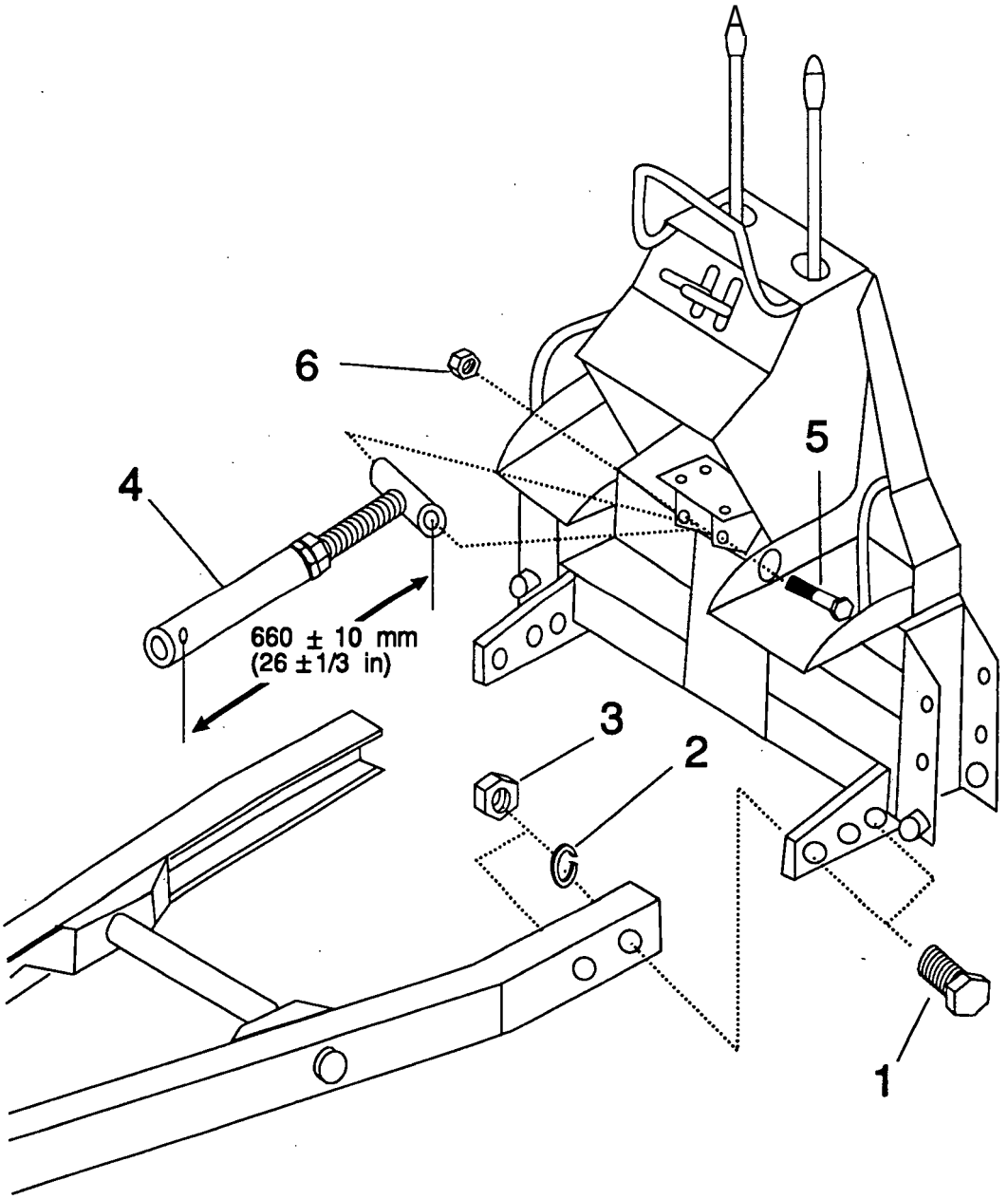


1. Dipperstick and breather
2. Reservoir
3. Fitter and housing
4. 3/4" Hose x 3/4" pipe, 90° elbow
5. Hose clamp
6. 3/4 x 36" Low-pressure hose
7. Pump mounting plate
8. 1/2 x 1" Bolt
9. 1-1/2" Locknut
10. 1-1/16 - 12 x 3/4" Hose, 90° elbow
11. 1-5/8" - 12 x 1-1/16" - 12 Reducer
12. Pump
13. 1-5/16" - 12 x 7/8- 14 Reducer
14. 7/8" - 14 x 9/16 - 18 Flare Elbow
15. 9/16" - 18 Flare 34" High-pressure hose assembly

Figure 7. Pump Installation

Sub-frame Installation (Figure 8)

1. Remove the hardware securing the backhoe to the pallet (reference **8,** Figure **4).**
2. Install the sub-frame to the backhoe as shown using the. four 7/8 x 2-1/2" bolts (1), lock washers **(2)** and nuts **(3).** Tighten to the specified torque.
3. Install the threaded end of the upper link **(4)** using the **3/4 NC** x 3-1/2" bolt *(5)* and 3/4" locknut **(6).** Loosen the threaded end jam nut and adjust to the dimension shown for easier installation during backhoe-to-tractor installation.



1. 718 x 2-1/2" **Bolt GR** *5*
2.718" Lockwasher
3. 718" **nut**
4. **Top** link assembly
5.314 NC x 3-1/2" **Bolt GR** *5*
6.314" Locknut

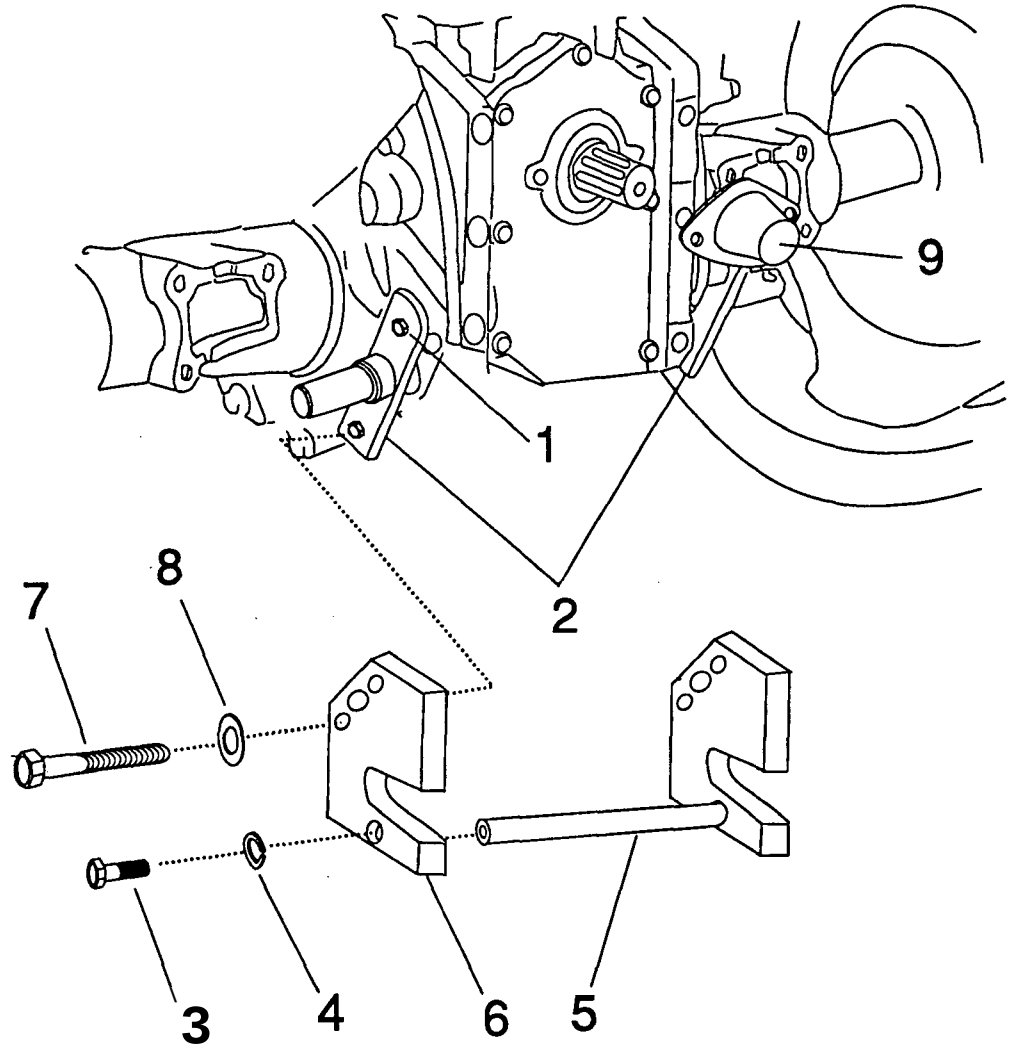
Figure *8.* **Sub-frame Installation**

ASSEMBLY INSTRUCTIONS

4. Remove and retain the four **12 x 75** mm flange bolts **(1)** holding the left and right rolling pins (2) to the transmission (Figure **9).** The **12 x 75** mm bolts and rolling pins must be retained for 3-point hitch installation.

5. Remove one of the **two 1/2 NC x 1-1/4"** bolts (3) and **1/2"** lock washer **(4)** holding the cross shaft (5) to the two set plates (6). Install the set plates in place of the rolling pins as shown with the four **12 x 80** mm bolts **(7)** and four **1/2"** flat washers *(8).* Install the **1/2 NC x 1-1/4"** bolt **(3)** and **1/2"** lock washer **(4)** removed from the set plate and tighten to the specified torque. Tighten the **12 x 80** mm bolts (7) to the specified torque.

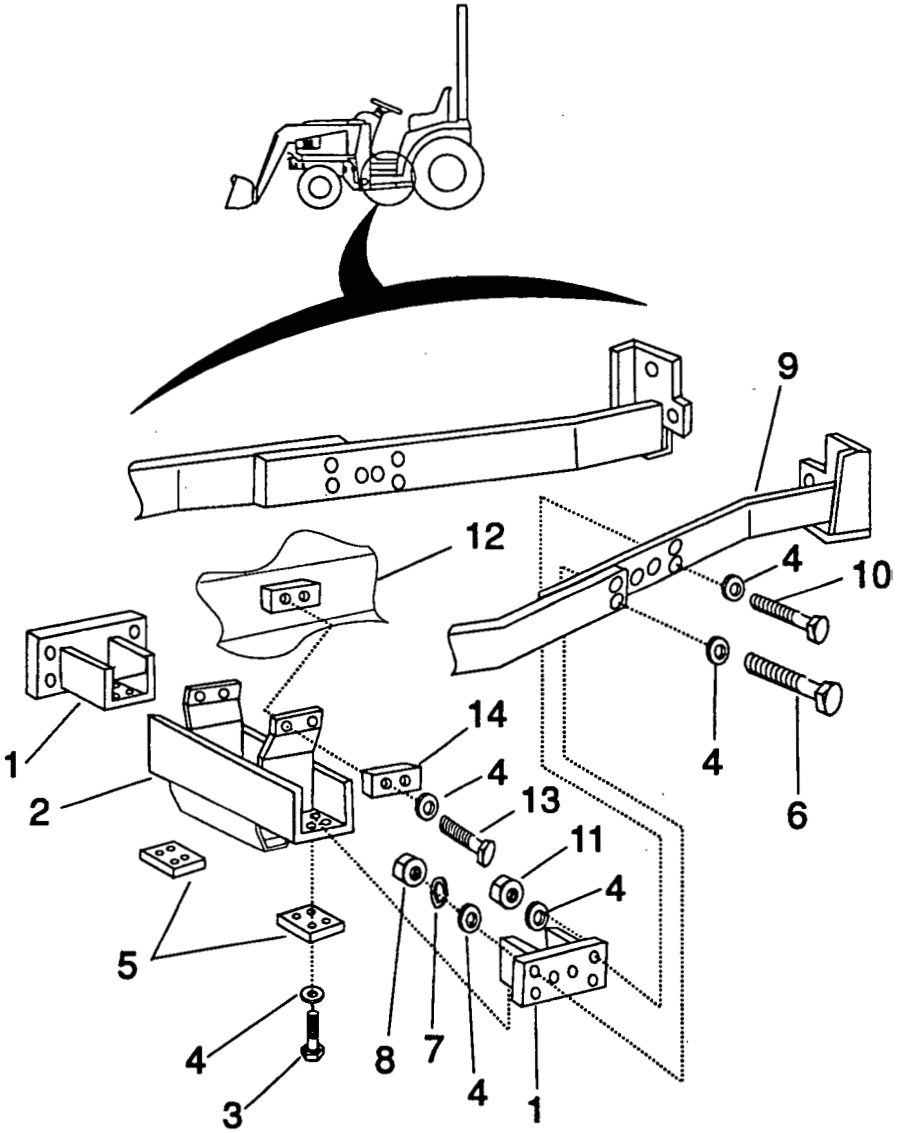
6. Remove the two **6 x 12** mm flange bolts and the rear PTO cover (9).



1. 12 x 75 mm bolt
2. Rear Rolling Pin **(R)**
3. 1/2 NC x 1-1/4" bolt **GR 5**
4. 1/2" Lock washer
5. Cross shaft
6. Set plate (R)
7. 12 x 80 mm Bolt
***8.* 1/2" Flat washer**
***9.* PTO cover**

Figure 9. Set Plate Assembly Installation

7. Loosely install the left and right crossmember brackets (1) to the crossmember (2) using the eight 1/2 NC x 1-1/2" bolts **(3)** and 1/2" flat washers (4). Set the two 4-hole crossmember set plates **(5)** against the crossmember as shown (Figure 10).
8. Remove and retain the four 1/2 NC x 2" bolts (6), eight 1/2" flat washers (4); four lock washers (7) and four nuts (8) from front end loader sub-frame. This hardware will be reinstalled in the same location in step 9.
9. Loosely bolt the crossmember brackets to the front end loader sub-frame assembly (9) using the four 1/2 NC x 2" bolts (6), eight 1/2 NC x 1-3/4" bolts (10), 1/2" flat washers (4), 1/2" nuts **(8)** and 1/2" lock nuts (11) as shown.
10. Install the crossmember to the tractor's frame (12) using the four 12 x 35 mm bolts (13) and 1/2" flat washers **(4).** Install a 2-hole set plate **(14)** on each side against the crossmember. Tighten all hardware to the specified torque.



1. Bracket, cross member (L & R)
2. Crossmember
3. 1/2 NC x 1-1/2" **Bolt GR *5***
4. 1/2" Fiat washer
5. 4-Hole **set** plate
6. 1/2 NC x 2 Bolt **GR 5**
7. 1/2" Lock washer
8. 1 / 2 NC Nut
9. Front end loader sub-frame
10. 1/2 NC x 1-3/4" Bolt **GR *5***
11. 1/2" NC Lock nut
12. Tractor frame mounting holes
13. 12 x 35 mm Bolt
14. 2-Hole set plate

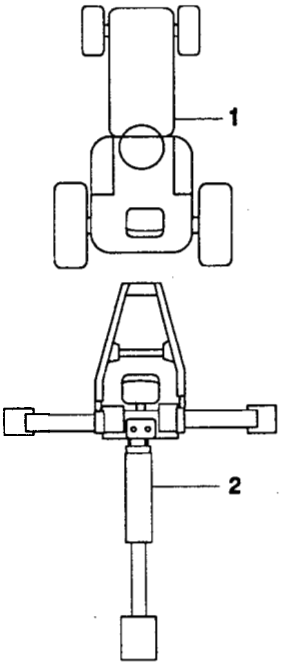
Figure 10. Crossmember installation

Hydraulic Pump Installation (Figure 11 and Figure 12)

1. Check all hydraulic fittings and lines to be sure they are tight and free of kinks and twists.
2. Back the tractor as near as possible and center on backhoe. See Figure 12.
3. The pump mounting bracket (3) is designed to slip inside tractor's PTO shield **(4).** Install the bracket so its "off-set" is towards the tractor and PTO.
4. Grease the drive line sliding surfaces and slide the female tube of the pump mounting coupler over the male PTO shaft. See Figure 11.
5. Check that the hydraulic pump spring activated locking pin (2) slides freely and is seated firmly in the tractor PTO shaft spline groove.

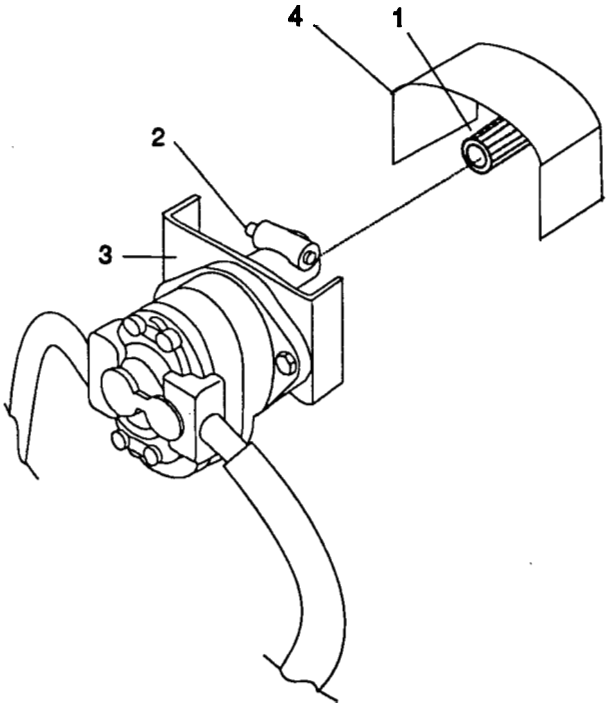
⚠ WARNING **The PTO turns at 540 RPM. If the coupler is not locked to the PTO shaft at the tractor end, the pump assembly can fly loose with great force, and is capable of causing serious injury**

6. Before installing the sub-frame to the tractor, it may be necessary to reposition the hydraulic hoses to remove kinks, bends or hose rubbing on frame components. Loosen the hydraulic fittings at the pump or oil filter assembly and hose connections. Do this quickly to minimize hydraulic fluid leakage. Adjust the hydraulic hose to obtain a suitable direction. Tighten all hydraulic fittings and hose connections.



1. Tractor
2. Backhoe

Figure 11. Tractor-Backhoe Alignment



1. PTO
2. **PTO locking pin**
3. Pump mounting bracket
4. **PTO** shield

Figure 12. Pump Installation

Attaching Backhoe To Tractor

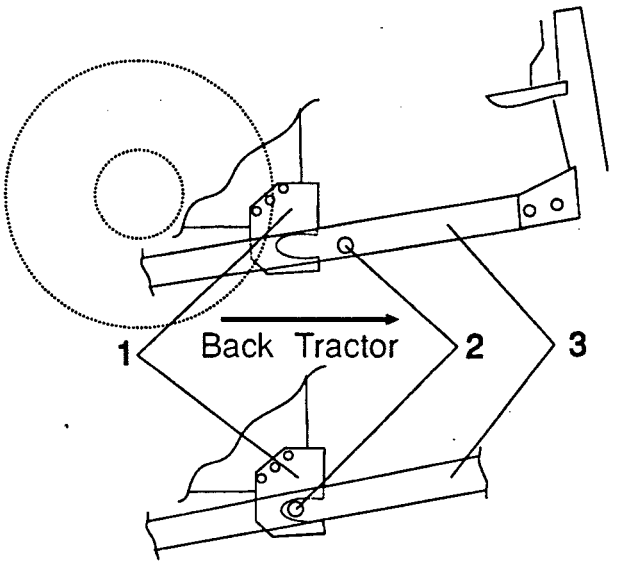
The backhoe hydraulic system will be used to make mounting on tractor easier. It is necessary this be done with tractor engine running at idle.

⚠ WARNING The operator or service person must be competent and use extreme care during this operation to prevent equipment damage and personal Injury. Always stand on the tractor side or rearward of backhoe to avoid the possIbliity of being trapped should the boom swing control be accidentally activated.

1. Be sure backhoe controls are in centered and neutral position.
2. With the backhoe hydraulic pump securely mounted, and tractor PTO and transmission in neutral, start tractor engine idling. Engage PTO very carefully and allow pump to start smoothly. Refer to the H6522 Owner's Manual for rear PTO engagement.

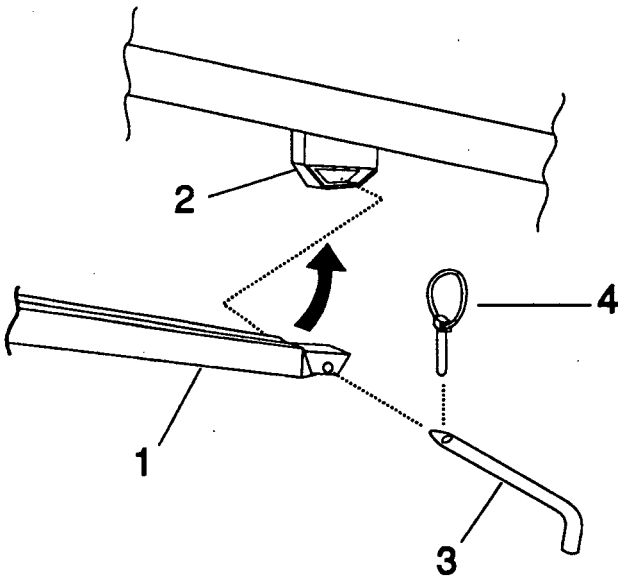
Notice Very little engine power is required to power hydraulic system in this mode. Should engine pull down excessively, check plumbing hook-up for reversed lines or a control lever stuck in an operating position.

3. Raise backhoe with stabilizer controls to align grooves in the right and left set plates (1) with the cross shaft (2) of the sub-frame assembly. Level backhoe from side to side with stabilizer controls. See Figure 13.
4. Use the right control lever and position the backhoe so that the sub-frame is lowest at the crossmember end.
5. Position the backhoe so that the sub-frame, cross shaft locks completely into the grooves of the right and left plate assemblies.
6. Use the right control lever to bring the crossmember end of the sub-frame into the crossmember. Lock the sub-frame (1) into the crossmember (2) with the 19 x 397 mm pin (3) and Klik pin (4). See figure 14.
7. Turn the upper link (1) threaded end until the hole aligns with the center hole of the top link bracket (2). Install the top link pin (3) and the Klik pin (4). See Figure 15.



1. Set plate
2. Subframe cross shaft
3. Bachoe sub-frame

Figure 13. Sub-frame-to-Set Plate Installation



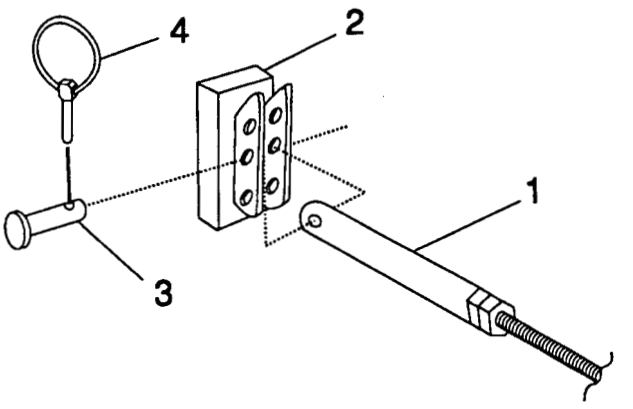
1. Sub-frame end
2. Crossrnernber assembly
3. Pin
4. Klik pin

Figure 14. Sub-frame-to-Crossmember Installation

8. Check that the main console is perpendicular with the tractor on a flat surface.
9. ENGAGE PTO AND RUN AT IDLE FOR **5** MINUTES, THEN CHECK OIL LEVEL. Add fluid as necessary.
10. Operate all functions through full cylinder stroke to purge air from system. CHECK OIL LEVEL again and add.fluid as necessary.

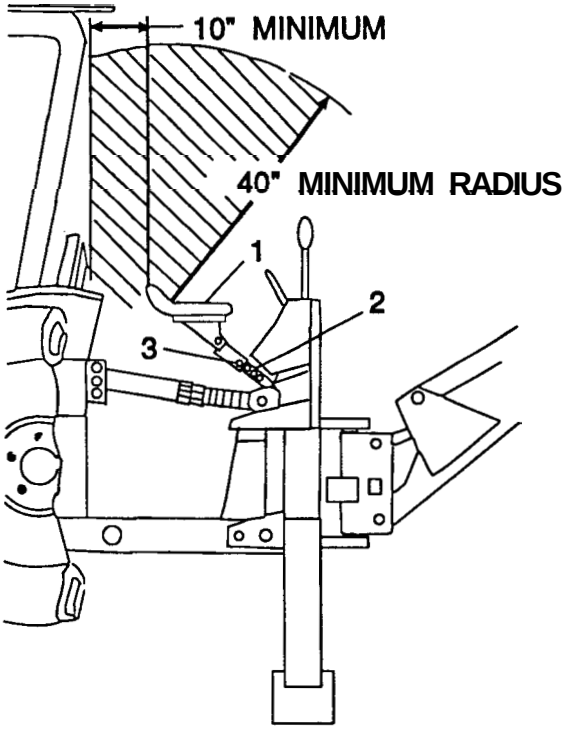
Seat Installation and Adjustment (Figure 16)

1. Install seat and upper seat support.
2. The seat may be adjusted fore, aft, up and down for operator comfort. It is necessary to use the two adjustments together. Moving the seat down also moves it forward, moving it up also moves it rearward. The fore and aft adjustment may be used with the up and down adjustment to obtain desired position. Never operate the backhoe unless the sub-frame has been installed, adjusted and operator's area (shown shaded in Figure 16) is free from obstructions in a **40**" radius from the seat to a point 10" behind the seat back.
3. Seat adjustment may be used to obtain adequate head clearance.



1. Top link assembly
2. Top link bracket (tractor)
3. Top link pin,3/4 X 3-1/4" High Strength
4. Klik pin

Figure 15. Top Link-to-Tractor Installation



1. Seat assembly
2. Seat adjusting holes
3. Seat clevis pin and Klik pin

Figure 16. Seat Installation

OPERATION

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be erased by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

The best safety device is an informed, careful operator. We ask you to be that kind of an operator.

⚠ WARNING Operating the backhoe without adequate operator clearance may cause the backhoe boom to pin the operator against the tractor causing serious Injury. (Refer to Danger Label on page ***8.)***

The safe operation of this machine is the responsibility of the operator. The operator should be familiar with the backhoe, tractor and all safety practices before starting operation. Read the Safety Rules on page **9** and **10.**

Before working on backhoe, extend boom and dipperstick and place bucket on ground. Make sure that all system pressure has been relieved by operating controls before maintenance, service or disconnecting any hydraulic lines.

⚠ WARNING Hydraulic system leak down and failure of mechanical or hydraulic system can cause equipment to drop causing serious injury.

PRE-OPERATION CHECK LIST

☐ Check that backhoe and sub-frame are properly and securely attached to tractor and front end loader sub-frame.

⚠ DANGER operating the backhoe without the sub-frame Installed will make the backhoe unstable which will cause serious injury or death to the operator.

☐ Check for hydraulic leaks. Use paper or cardboard, not body parts to check for leaks. Make sure all hydraulic connections are tight and all hydraulic lines and hoses are in good condition before engaging tractor PTO.

⚠ WARNING Hydraulic fluid (oil) under pressure will penetrate skin causing serious injury. Keep hands and body away from pressurized lines.

Make sure that all operating and service personnel know that in the event hydraulic fluid penetrates skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury, or gangrene may result.

☐ During inspection, check that all nuts and bolts are secure and clevis pins are properly cotter pinned.

☐ Be sure special heavy-duty top link, provided with backhoe, is installed.

☐ Make sure only original equipment high-strength top link pin, provided with tractor, is used to attach top link to tractor.

☐ Use the high-strength pin provided with the backhoe to mount the top link to the tractor bracket.

☐ Place all backhoe controls in neutral position before starting tractor engine.

☐ Check hydraulic reservoir level.

☐ Remove transport lock bar from the boom. Push transport lock bar down fully to prevent damage.

☐ Pull swing lock pin up and secure in storage position with safety pin.

☐ The front-end loader must be installed to provide proper counterweight and for backhoe operation.

⚠ DANGER Using the backhoe with improper counterweight will cause the tractor to tip over causing Injury or death. Read the safety information on page **9** and **10** before beginning.

Starting and Stopping

A tractor-driven PTO pump supplies hydraulic pressure for backhoe operation. Instructions for engaging and disengaging the PTO are in the H6522 Owner's Manual. Learn how to disengage PTO quickly should an emergency occur.

Notice Operate tractor **PTO** at **540** rpm. Operating the pump in excess of **540** rpm will cause overheating and equipment damage.

Commencing Operation

1. Consult local utilities before digging. Know location of and avoid contacting all undergroundcables, pipelines, overhead wires and other hazards In digging area.
2. Keep bystanders away from operator, stabilizer and maximum bucket swing areas (see Figure 17).
3. Place and keep 3-point lift quadrant lever in lowered position at all times.
4. Do not use backhoe for craning; It is designed for digging.

⚠ WARNING **Do** not use the backhoe for craning. Using the backhoe for craning can cause serious injury in the event of a mechanical failure or hydraulic leak which would cause the load **to** drop on the person within the **"SWING AREA"** (see Figure **17).**

5. Do not dig with backhoe unless stabilizers are down and on a firm surface. Stay clear of steep areas or excavation banks that are soft or could give away.
6. Do not allow children or unqualified persons to operate equipment.
7. When operating controls, always sit in the backhoe seat.

⚠ WARNING Operating the backhoe without adequate operator clearance may cause the backhoe boom to pin the operator against the tractor causing serious injury. (Refer to Safety Label on page *8).*

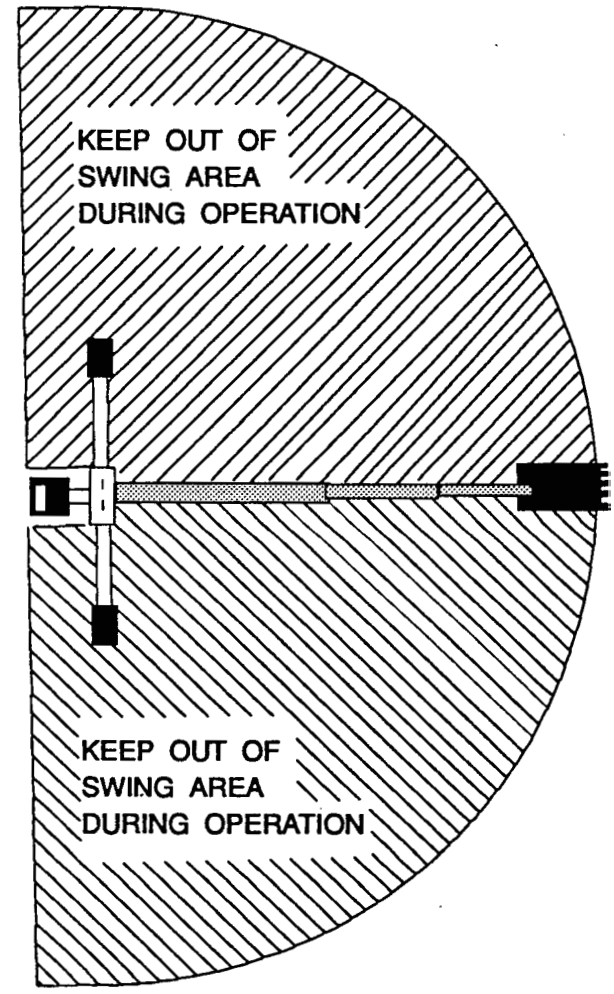


Figure **17. Backhoe Swing Area**

Positioning the Machine

1. Before operating in a unfamiliar area, walk around the full length of the proposed site and check for hidden holes,. drop-offs or obstacles that could cause an accident.
2. Lower stabilizers until they carry the weight of the backhoe. Place the front end loader bucket flat on the ground. Lower the loader's lift arms until weight is removed from front tractor tires.
3. Level the machine using stabilizers and front loader before starting to dig.
4. Stability is very important when operating backhoe in the extreme swing positions as this causes weight transfer.

Control Handle Operation (Figure 18)

1. Assume your position in the operator's seat.
2. When engaging PTO, engine rpm should always be low. Once engaged, engine rpm may be increased to desirable operation speed (not to exceed 540 rpm).
3. When becoming familiar with backhoe controls, start with a lower rpm.
4. Before operating, perform a functional test by placing control handles in their various positions and making certain correct operation occurs, matching labels on operator's console. Pay specific attention to float position of boom.

⚠ DANGER **Do not operate the backhoe if functions differ from label; serious injury or death could occur.**

5. It is not difficult to become a successful operator. Control lever operating labels (shown in Figure 18) are next to the operating control levers. Study these labels; they will assist you in becoming familiar with the controls.

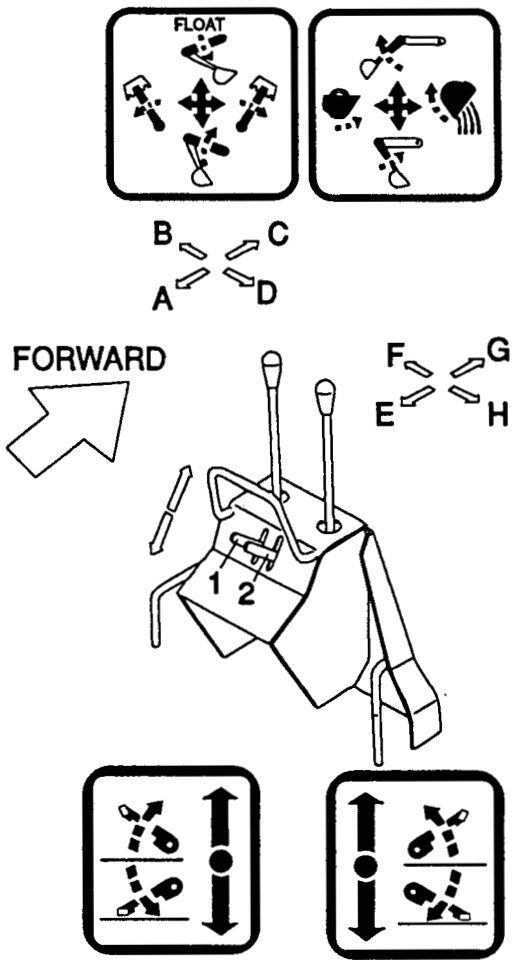


Figure 18. Operator's Console

- Pulling handle 1 up will raise left stabilizer; pushing down lowers it.
- Pulling handle 2 up will raise right stabilizer; pushing down lowers it.
- Pulling left control handle back (toward A) raises boom; pushing it forward (toward C) lowers it. Full forward (toward C) is the float position.
- Moving left control handle left (toward B) swings boom left; moving it right (toward D) swings boom right.
- Pulling right control handle back (toward E) moves dipperstick down and toward operator; pushing it forward (toward G) moves it up and away from operator.
- Pushing right control handle left (toward F) curls bucket toward operator; pushing it right (toward H) extends bucket out away from operator.

6. Operate control levers, swinging boom several times to practice control. **Do** not operate swing more than 45° each way the first few times. Gradually increase arc.
7. After becoming familiar with the backhoe operation, practice coordinated use of the controls in a safe open area at reduced engine speed. Gradually increase engine speed as the technique is mastered.
8. Operate backhoe gently and smoothly. Avoid swinging boom into mainframe. Sudden stopping or jerking could result in serious damage to tractor and backhoe.
9. Strive to develop a smooth digging cycle. Avoid abrupt or jerky movements. This is accomplished by operating two or more controls at the same time and not allowing the cylinders to reach the limit of travel.
10. Should **you** become confused or lose your control orientation during operation, simply turn loose of the controls and reorient yourself.

Starting the Excavation (Figure 19)

⚠ WARNING Consult local utilities before digging. Know location **of** and avoid contacting all underground cables, pipelines, overhead wires and other hazards **in** digging area.

1. To start the excavation, position backhoe as shown for maximum breakout force.
2. Actuate the dipperstick cylinder to start digging. Approximately halfway through digging cycle, start bucket curl while continuing crowding dipperstick in. Should bucket stall, raise boom slightly.
3. **Do** not use down pressure on the boom when starting to dig, as this will lift machine and move it out of alignment with the work.

Filling the Bucket (Figure 20)

1. Control bucket attitude throughout digging cycle to keep teeth parallel to bottom of excavation. This will provide best penetration angle and minimize dragging and scraping bucket through the ground.
2. Penetration depth is determined by soil condition and type.

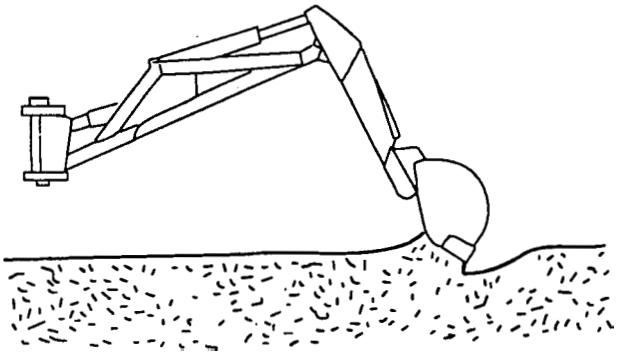


Figure **19.** Starting Excavation

3. Only use dipperstick and bucket during the digging cycle. As the dipperstick moves the bucket through the soil, curl bucket to maintain proper bucket position.
4. At the end of the pass, or when bucket is full, curl bucket completely, lift bucket from excavation and swing boom to dump site at least two feet away from opening.
5. To obtain a cleaner trench and avoid material buildup directly in front of backhoe, extend dipperstick and curl bucket completely while starting to lift it out of the excavation. This will allow excess material to fall back into the excavation.

Figure **20.** Filling **Bucket**

Dump and Return Cycle

Keep the swing-dump-return cycle as brief as possible. Keep dipperstick moving outward and start boom swing as soon as the bucket clears the excavation. Continue extending dipperstick and, as you approach the spoil pile, start to dump bucket. When bucket is empty, dipperstick and bucket are in position to resume digging upon return to the excavation.

Trenching and Excavating Procedures (Figure 21)

Trenching is the most basic backhoe digging operation. Other operations are variations of this basic function.

1. To maintain a level trench bottom, set bucket at proper approach angle and while crowding dipperstick in, continually move bucket curl lever to maintain correct cutting angle. At the same time, place boom control in the full forward (float) position and keep the bucket in the same plane.
2. When handle **is** placed in the float position, pressure on both sides of boom cylinder is released.
3. Digging near center of swing so material may be dumped on either side will produce good results. Never dig near stabilizers.
4. Continue the trench by moving machine along trench centerline away from existing excavation. Move machine approximately one-half the effective backhoe reach. Moving too far will require excessive down pressure for digging and hand clean-up of trench bottom.

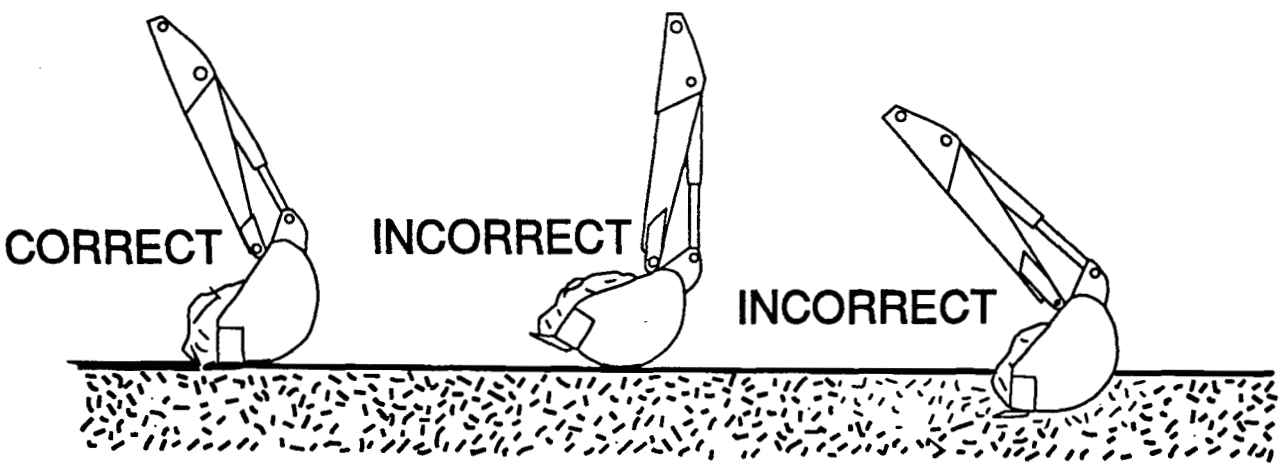


Figure 21. Trenching

Side Slope Trenching or Excavating (Figure 22)

1. When operating on a side slope, the backhoe must be positioned using the method shown in Figure 22.
2. Cut a level spot for the uphill side of the machine and place the spoil from the level spot on the downhill side.
3. Be careful when swinging loaded bucket on a hillside. When operating on a side slope, always place the trench spoil on the "UPHILL" side of backhoe to minimize the possibility of upsetting the tractor.

⚠ WARNING Dumping the spoil on the **"DOWNHILL"** side of the tractor will cause the tractor to upset causing serious injury. Dump the spoil on the **"UPHILL"** side.

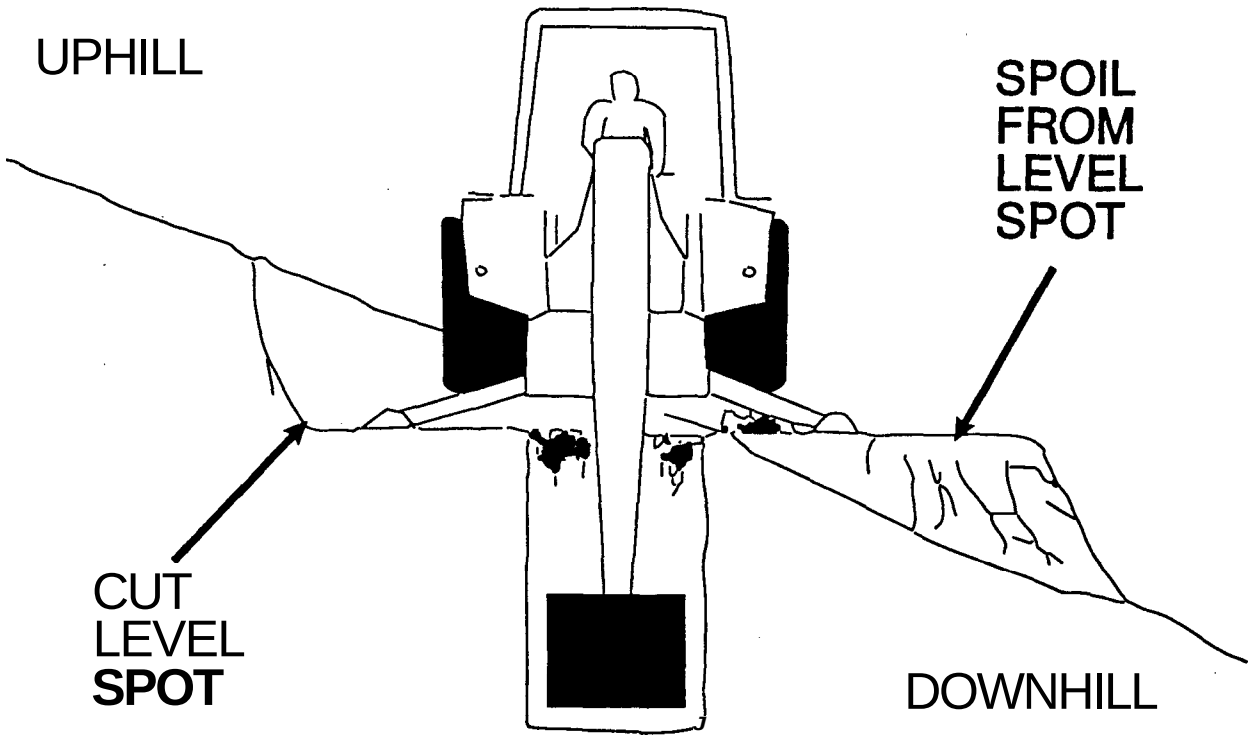


Figure 22. Cutting a Level Slot for Uphill Side

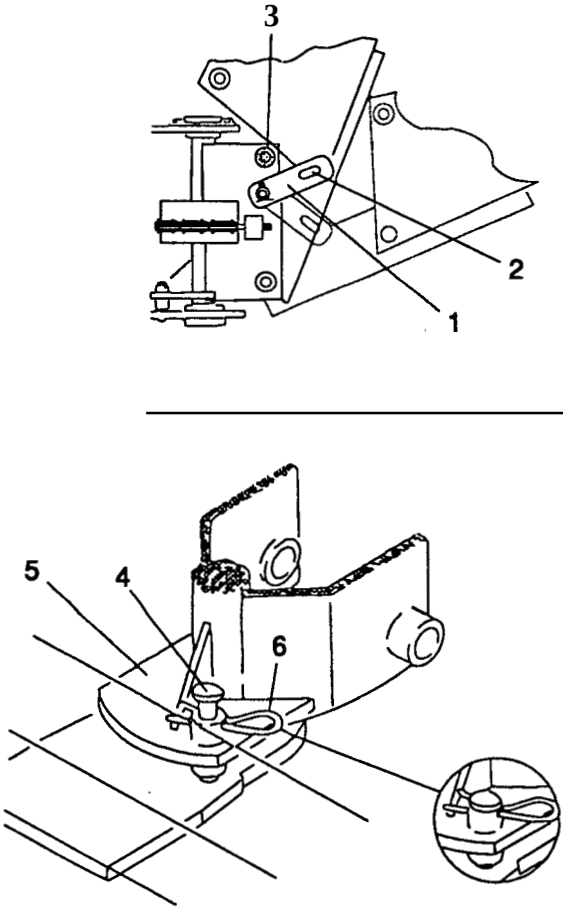
Transporting

1. Engage the swing and boom transport locks and attach Slow Moving Vehicle (SMV) sign before transporting backhoe. When transporting, you must wear a seat belt if your tractor has ROPS installed.
2. Lower the bucket to the ground, shut the engine OFF and remove the ignition key before leaving the equipment unattended. Never leave equipment unattended with engine running or with bucket in raised position.

Transport and Swing Lock Installation (Figure 23)

1. Engage transport lock by fully retracting boom and dipperstick.
2. Position transport lock bar (1), located on right side of swing frame, over transport lock pin **(2).**
3. Center boom from side to side and install swing lock pin **(4)** through kingpost plate ***(5)*** and boom. Secure swing lock pin **(4)** with a safety pin **(6)** as shown.
4. Always raise stabilizers before transporting backhoe.
5. Before operating backhoe, disengage transport lock bar and store swing lock pin.

Notice **Operating the backhoe with the lock bar installed can damage the equipment.**



1. Transport **lock bar**
2. Transport **lock** pin
3. Bumper pad
4. Swing **lock** pin
5. Kingpost plate
6. **Safety** pin

Figure 23. Transport & Swing Lock **Installation**

Removing and Storing Backhoe

⚠ WARNING **Keep all persons away from operator control area while removing or Installing backhoe or performing adjustments, service or maintenance.**

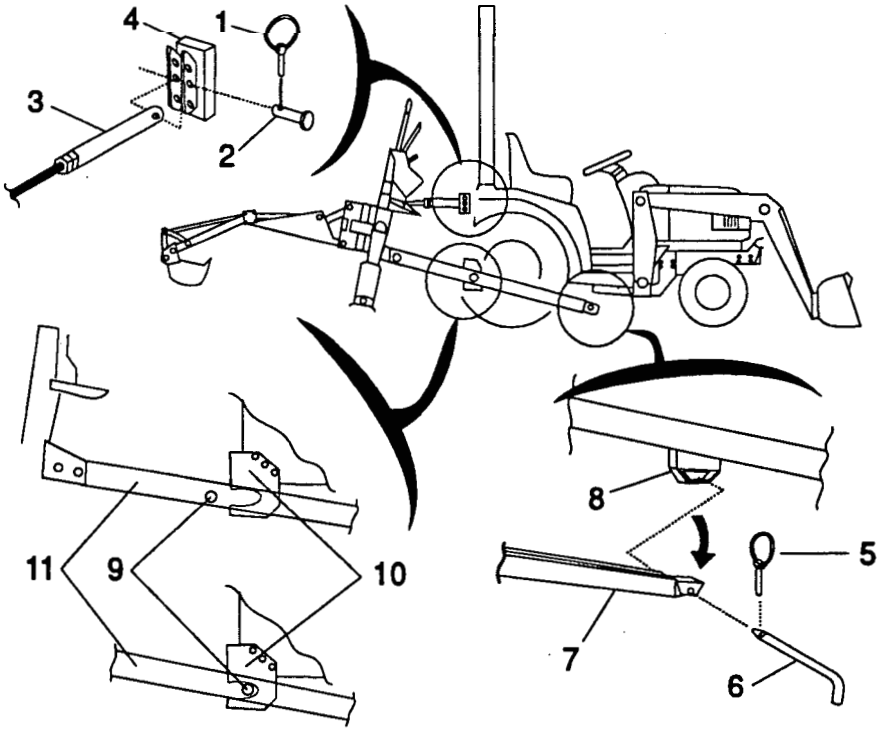
1. The hydraulic system will be used to remove the backhoe. It is necessary this be done with tractor engine running at Idle. The operator or serviceman must be competent and use extreme care during this operation. Always stand on the tractor side or rearward of backhoe.

⚠ WARNING **The boom swing control can be activated by accident trapping you and causing severe Injury. Stand to the side when removing the backhoe to prevent equipment damage and personal injury.**

2. Remove seat and upper support assembly before installing or removing backhoe from tractor.

Sub-frame Mounting Removal (Figure 24)

1. Center the boom and install swing lockpin, then extend boom and dipperstick. Rest bucket on the ground. Lower the stabilizers to take backhoe weight off of the tractor. Remove pin that attaches the top link to the tractor.
2. Remove the pin that secures the sub-frame to the crossmember. Raise the rear of the backhoe with stabilizers to pivot the front of the sub-frame down. Roll the tractor forward to dislodge the sub-frame's cross shaft from the set plate assembly.
3. Place blocks under the main frame and raise the stabilizers to lower the backhoe mainframe onto the blocks. Block the backhoe as necessary to make it stable. Lower the backhoe to a stable position relieving all hydraulic pressure.
4. Disengage the PTO, stop tractor engine and remove key. Remove pump from the PTO and secure it to the backhoe.



1. klik pin
2. clevis pin
3. Upper link
4. Upper link bracket
5. Klik pin
6. Pin
7. Sub-frame
8. Crossmember
9. Sub-frame cross shaft
10. Set plate
11. Sub-frame

Figure 24 Removing Backhoe

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
1. Noisy pump caused by cavitation	a. Oil too heavy	a. Change to proper viscosity.
	b. Oil filter plugged	b. Replace filter.
	c. Suction line plugged or too small	c. Clean line and check for size.
2. Oil heating	a. Oil supply low	a. Fill reservoir.
	b. Contaminated oil	b. Drain reservoir, change filter and refill with clean oil.
	c. Setting of relief valve too high or too low	c. Set to correct pressure.
	d. Oil in system too light	d. Drain reservoir and refill with proper viscosity oil.
	e. Pump operating too fast	e. Do not exceed **540** rpm PTO speed.
3. Shaft seal leakage	a. Worn shaft seal	a. Replace shaft seal.
	b. Broken diaphragm seal or back-up gasket	b, c & d. If replacing the shaft seal does not stop leakage, the pump should be disassembled and checked for items b, c & d.
	c. Bearings out of position	
	d. Excessive internal wear	
4. Foaming oil	a. Low oil level	a. Fill reservoir.
	b. Air leaking into suction line	b. Tighten fittings.
	c. Wrong kind of oil	c. Drain and fill reservoir with non-foaming oil.
	d. Moisture in oil	d. Keep oil temperature below **180°** F and continue to operate as oil dries out, or replace oil and purge system if foaming is excessive.
5. Boom drops as dipperstick or bucket cylinder lever is activated while boom control is in raised position	a. Check valve leaking	a. Clean or replace check valve assembly.

SERVICE & MAINTENANCE INSTRUCTIONS

Keep hands and body away from pressurized lines. Use paper or cardboard, not body parts to check for leaks.

⚠ WARNING **Hydraulic fluid (oil) under pressure will penetrate skin causing serious injury.**

Make sure that all operating and service personnel know that in the event hydraulic fluid penetrates skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury, or gangrene may result.

Make sure that all operating and service personnel know that in the event hydraulic fluid penetrates skin, it must be surgically removed within a few hours by a doctor familiar with this form of injury, or gangrene may result.

Always wear relatively tight and belted clothing to avoid entanglement in moving parts. Wear sturdy, rough-soled work shoes and protective equipment for eyes, hands, hearing and head.

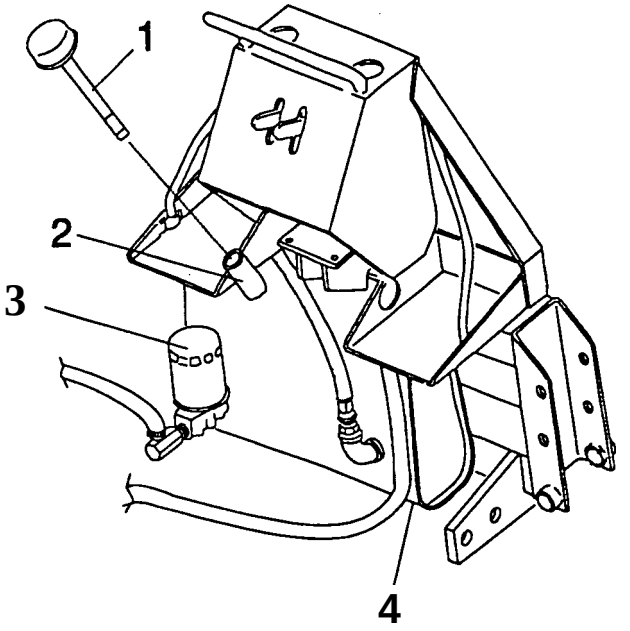
Before working on backhoe, extend boom and dipperstick and place bucket on ground. Make sure that all system pressure has been relieved by operating controls before maintenance, service or disconnecting any hydraulic lines.

⚠ WARNING **Hydraulic system leak down and failure of mechanical or hydraulic system can cause equipment to drop causing injury. Make sure all hydraulic pressure is relieved off of the backhoe before performing service on the equipment.**

Hydraulic System (Figure 25)

Daily, check the fluid level in reservoir with filler cap dipstick. Contamination will shorten the life of hydraulic system components. Change oil and filter after first 20 hours of operation and then every 200 hours of operation or annually, whichever occurs first. In extremely dusty or dry conditions, more frequent changes may be necessary. System capacity is approximately 5 to 5-1/2 U.S. gallons.

1. Operate tractor PTO at 540 rpm until the system reaches operating temperature.



1. Oil breather cap
2. Oil filler neck
3. Oil filter
4. Oil drain plug

Figure 25. Oil Maintenance

2. Remove the drain plug (4) from the hydraulic oil reservoir.
3. Drain the oil into a suitable container and dispose of properly.

Note: Please dispose of used hydraulic oil in a manner that is compatible with the environment. Do not throw it in the trash or pour it on the ground.

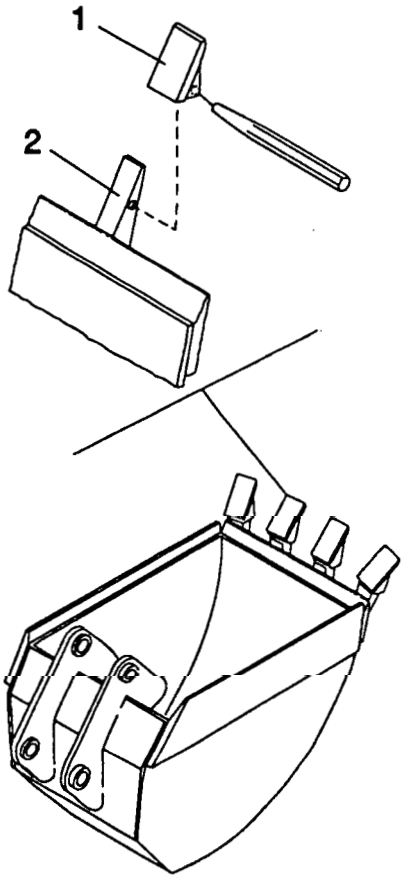
4. Put the oil pan under the oil filter (3). Remove the hydraulic oil filter.
5. Clean the oil filter mounting base. Lightly lubricate the new filter O-ring and install the filter onto the base.
6. Fill with clean oil. Do not mix oil types or grades.

Notice **Hydraulic system failure may occur by using an unsuitable hydraulic oil. Use only Dexron II type ATF.**

7. ENGAGE PTO AND RUN AT IDLE FOR 5 MINUTES, THEN CHECK OIL LEVEL. Add fluid as necessary.

Relief Valve

This valve is preset at the factory to prevent system pressure exceeding 2000 psi. Do not attempt to reset the valve. If it is malfunctioning, replace it with an authorized factory replacement part.



1. Replacement tooth
2. Tooth shank

Figure 26. Tooth Replacement

Bucket Tooth Replacement (Figure 26)

1. Remove worn tooth by driving a chisel between shank and tooth.
2. Install replacement tooth and use a punch to peen tooth to shank on both sides.

Swing Chain Adjustment (Figure 27)

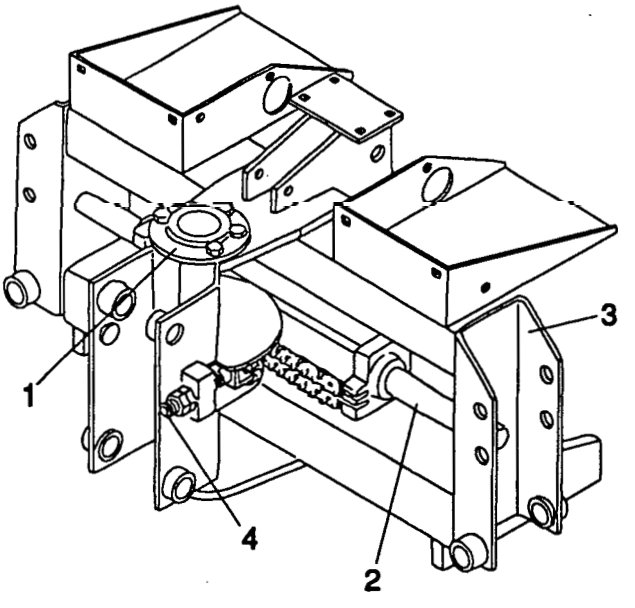
1. Center boom to mainframe. Loosen locknuts on chain adjustment bolts and tighten nuts on adjustment rods until all slack is removed from chains.

Notice **Do not over-tighten the chain. Over-tightening will cause excessive load and premature failure.**

2. Tighten locknuts on chain adjustment bolts.

Kingpost and Swing Cylinder Bolt Inspection (Figure 27)

Kingpost and swing cylinder bolts were installed using Loctite and should not loosen. However, they should be checked daily to be sure they are tight. Should any loosen, or when replacing them during a repair operation, clean bolts and nuts, apply Locquic primer and Loctite 609. Tighten as outlined in torque chart on page 11.



1. Kingpost
2. Swing cylinder
3. Mainframe
4. Chain adjustment

Figure 27. Chain Tightening & Bolt Torque

Hydraulic Hoses and Fittings

1. Hydraulic hoses are severely worked on a backhoe. Examine them daily and replace if necessary. Hose routing is very important. Make certain hoses can move freely, without kinking, and cannot be damaged or cut by backhoe action.
2. When tightening hoses and fittings, always use two wrenches: one to hold hose and one to tighten the fitting. This will prevent hose from twisting and kinking.
3. Always back locknut off and screw fitting all the way in for fittings that must be positioned and that use O-rings for sealing. Then hold in position and tighten locknut. Fittings with O-rings and flange do not require additional sealant, replace damaged O-rings.

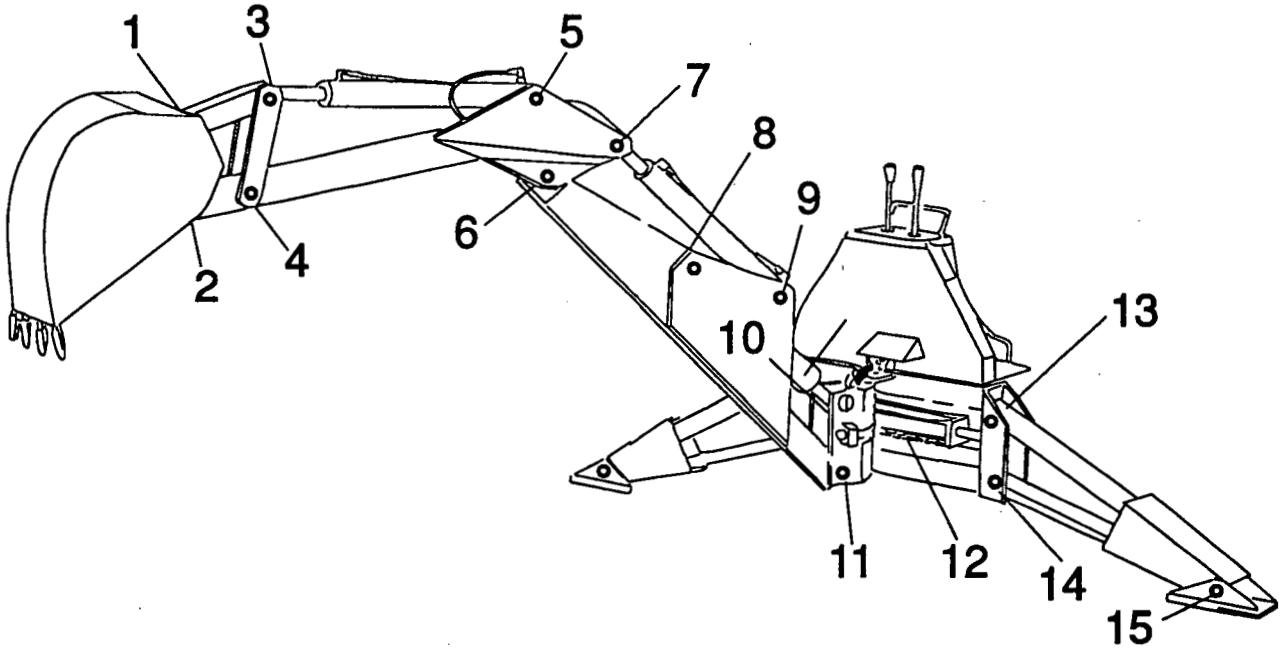
Notice **Teflon tape should be used to seal pipe threads. Use care when applying Teflon Tape to prevent It from entering the hydraulic system.**

Notes

Lubrication (Figure 28)

⚠ WARNING **Keep all persons away from operator control area while performing adjustments, service or .maintenance.**

1. **Do** not let excess grease collect on or around parts, particularly when operating in sandy areas. The accompanying illustration shows lubrication points for the backhoe.
2. It is recommended that all fittings be lubricated daily or every eight hours of operation. In very wet or dry conditions, lubricate every four hours of operation.
3. Use an **SAE** multi-purpose type grease for all locations shown unless otherwise specified. Be sure to clean fitting thoroughly before using grease gun. One good pump of most guns is sufficient.
4. Position backhoe for easy lubrication by placing boom and dipperstick at 90° to each other with bucket cutting edge vertical and teeth resting on ground. Raise stabilizers to lubricate rod end of cylinders.



1. Bucket pivot
2. Bucket pivot
3. Bucket cylinder rod end
4. 4-Bar pivot
5. Bucket cylinder base end
6. Dipperstick pivot
7. Dipperstick cylinder rod end
8. Boom cylinder base end
9. Dipperstick cylinder base end
10. Boom cylinder rod end
11. Boom pivot
12. Swing chain (**20W** motor oil)
13. Stabilizer cylinder base end (right & left)
14. Stabilizer pivot (right & left)
15. Stabilizer cylinder rod end (right & left)
16. Swing frame pivot (top & bottom)

Figure 28. Lubrication Points

HYDRAULIC CYLINDER REPAIR

General Hydraulic Repair Information

A clean working area is necessary for any hydraulic repair. Repairing hydraulic components in a dirty area is a waste of time.

All parts must be carefully cleaned before reassembly. We recommend that when repairing hydraulic components, you always replace existing seals with new ones. Clean all components in solvent and blow dry with low pressure air.

Threaded Collar Type Cylinder Repair (Figure 29)

Cylinders are obtained from two suppliers. It Is Important that you properly identify the manufacturer of the cylinder you are repairing. Cylinders have either an "E" or "L" stamped in the barrel near the butt end.

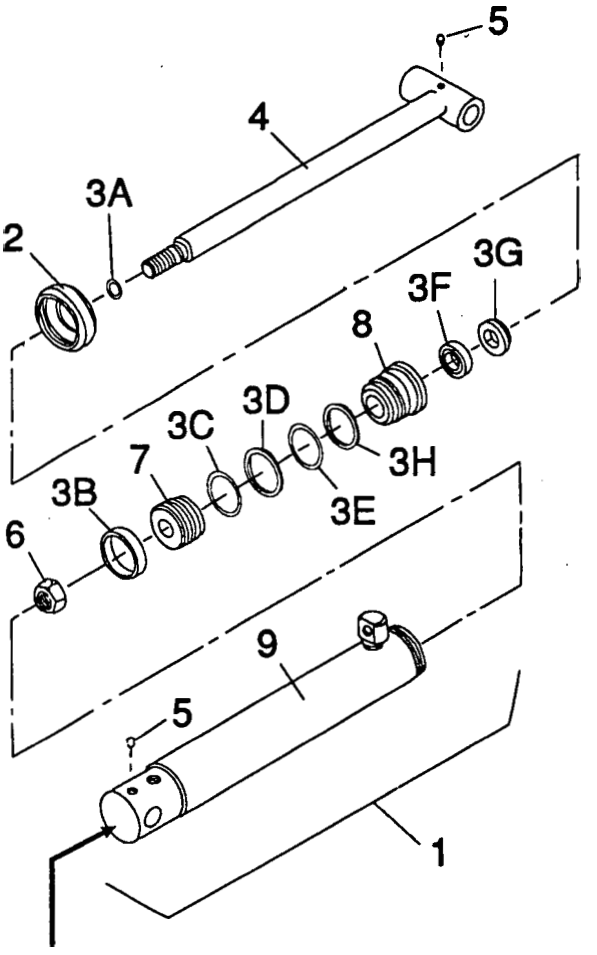
Make proper manufacturer identification, then refer to the "E" or "L" column when ordering parts.

Disassembly

1. Loosen set screw and unscrew threaded collar (2) from barrel (9). Pull on rod **(4)** to remove piston from barrel.
2. Clamp cross pin end of rod assembly **(4)** in a vise with protective jaws. Remove locknut (6) from rod assembly. Remove piston (7) and gland (8) from rod.
3. Remove and discard all seals, wear rings and O-rings.
4. Clean all components in solvent and blow dry with low pressure air.

Assembly

1. Lubricate O-rings and seals with clean hydraulic fluid. Install back-up washer (3H) on gland (8), then install O-ring (3E) in exterior O-ring groove of gland. Install rod seal (3F) into inner groove of gland with open portion of V-groove toward piston.



IDENTIFICATION STAMP

1. **2 x 16-3/4"** Hydraulic cylinder
2. Collar
3. Seal kit (contains 3A through 3H)
3A. Rod static seal
3B. Wear ring
3C. O-Ring
3D. Piston seal
3E. Gland static seal
3F. Rod seal
3G. Rod wiper
3H. Back-up washer
4. Rod assembly
5. Grease zerk
6. 7/8" Self-lock hex nut
7. Piston
8. Gland
9. Barrel assembly

• Not used in cylinder stamped "L"

Figure 29. Hydraulic Cylinder (Threaded Collar Style)

2. Place rod wiper (3G) in outer gland groove. Slide gland assembly **(8)** onto rod. Place wear ring **(3B)** in wide groove of piston. Place O-ring (3C) and piston seal (3D) in narrow piston groove.
3. Lightly coat rod threads with hydraulic oil and slide O-ring (3A) over threads and into groove. Install piston (7) onto rod **(4)** with wear ring on side away from gland. Install locknut **(6)** and torque to **175** ft-lbs.
4. Compress wear ring and piston seal and carefully insert piston and rod assembly into barrel. Use care to prevent damage while installing.
5. Install collar (2) onto barrel (9) and tighten. Tighten set screw.

Lock Wire or Threaded Plug Style Cylinder (Figure 30)

Note: Cylinders used in the same application are provided from two suppliers. One uses a lock wire and one uses a threaded plug for a locking device.

- Lock wire cylinders can be identified by the "L" stamped on butt end of cylinder.
- **All** threaded plug cylinders have an **"E"** stamped on butt end of cylinder.
- Be sure to make the proper manufacturer identification before ordering repair parts.

Lock Wire Removal (Cylinder stamped "L")

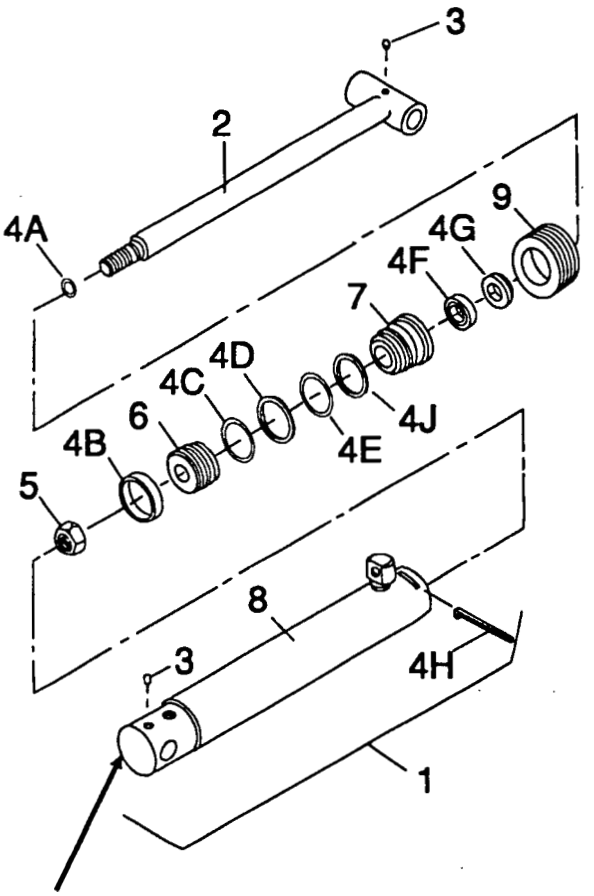
Insert a screwdriier into slot in barrel. Pry up on end of lock wire and turn gland until lock wire feeds out through slot.

Threaded Plug Removal - (Cylinder stamped "E")

Unscrew threaded plug using a spanner wrench, or carefully use punch and hammer to remove.

DISASSEMBLY

1. Remove piston and rod assembly from barrel.
2. Clamp **cross** pin end of rod assembly in vise with protective jaws. Remove locknut from rod.
3. Remove and discard all seals, wear rings and O-rings.



1. 2-1/2 x **16-3/4"** Hydraulic cylinder
2. Rod assembly
3. 1/4 - **28** Grease fitting
4. Seal kit (contains 4A - 4J)
4A. Rod static seal
4B. Wear strip
4C. 0-Ring
4D. Piston seal
4E. Gland static seal
4F. Rod seal
4G. Rod wiper
'4H. Lock wire
**4J. Back-up washer
***5.* **7/8"** Self-lock hex nut
6. Piston
7. Gland
8. Barrel assembly
**9. Threaded retainer
'Used on lock wire cylinder - stamped "L"
Used on threaded plug cylinder - stamped **"E"

Figure *30.* Hydraulic Cylinder
(Lock Wire or Threaded **Plug** Style)

4. Clean all components in solvent and blow dry with low pressure air.

ASSEMBLY

1. Lubricate O-rings and seals with clean hydraulic fluid.
2. Assemble using exploded view. Note that items **(48)** and **(4H)** are used with lockwire cylinder only. Note that items **(4J)** and (9) are used with threaded plug cylinder only.
3. Torque locknut to 175 ft-lbs.
4. Carefully insert piston and rod into barrel. It will be necessary to compress wear ring and piston seal to avoid damage during insertion.

Lock Wire Installation

Rotate gland until lock wire starting hole in gland is visible through slot in barrel. Insert lock wire hook into hole and pull into groove by rotating gland until wire is completely seated.

Threaded Plug Installation

Screw threaded plug into cylinder using a spanner wrench, or carefully use a punch and hammer.

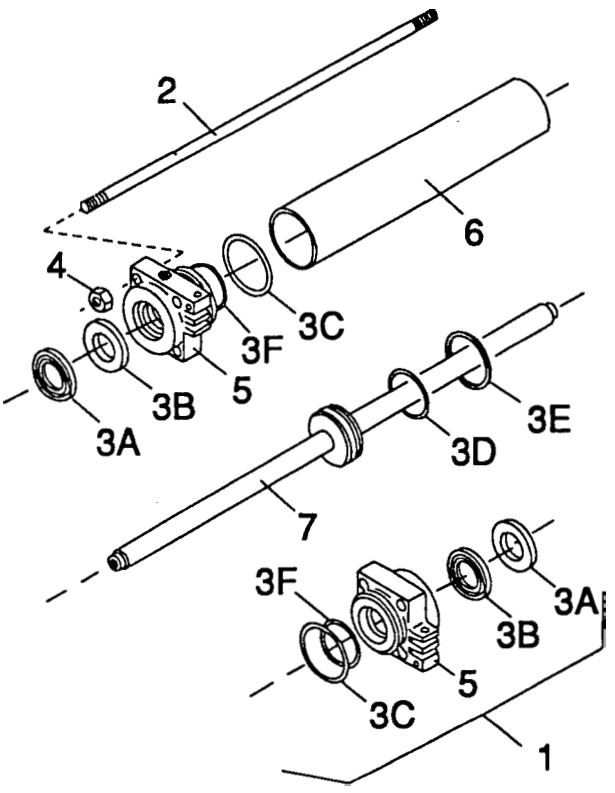
Swing Cylinder (Figure 31)

DISASSEMBLY

1. Remove hex nuts **(4)** from tie rods (2).
2. Remove both piston rod guides (5) from barrel (6).
3. Remove and discard rod wiper and seal (3A&3B) from each piston rod guide.
4. Remove rod assembly (7) from barrel (6). Remove and discard seals.
5. Clean all components in solvent and blow dry with low pressure air.

ASSEMBLY

1. Lubricate seals and wipers with clean hydraulic fluid.
2. **Install O-ring (3D)** in groove on piston and piston seal **(3E)** on top of O-ring in piston groove.



1. Hydraulic swing cylinder complete
2. 7/16 x 16" Tie rod
3. Seal kit (contains **3A - 3F**)
3A. Rod wiper
3B. Rod seal
3C. Gland static seal
3D. O-Ring
3E. Piston seal
3F. Back-up ring
4. 7/16 Hex nut
5. Piston rod guide
6. Barrel
7. Rod assembly

Figure 31. Swing Cylinder

3. Carefully insert piston and rod into barrel. Piston seal must be compressed when inserting.

4. Carefully insert piston and rod into barrel. Piston seal must be compressed when inserting.

5. Place back-up ring (3F), if required, into groove on piston rod guide ***(5)*** then install O-ring (3C) into groove. Install rod seals (3B), with V-groove toward piston, into each piston rod guide outer groove.

6. When installing piston rod guides to barrel, make sure chain fastening lugs are positioned properly. With cylinder in front of you, place right rod guide with chain lugs on bottom and left rod guide with chain lugs on top as illustrated.

7. Insert the four tie rods **(2)** with rod guide chain hole centerlines parallel. Torque nuts *to* **40-45 ft-lbs.**

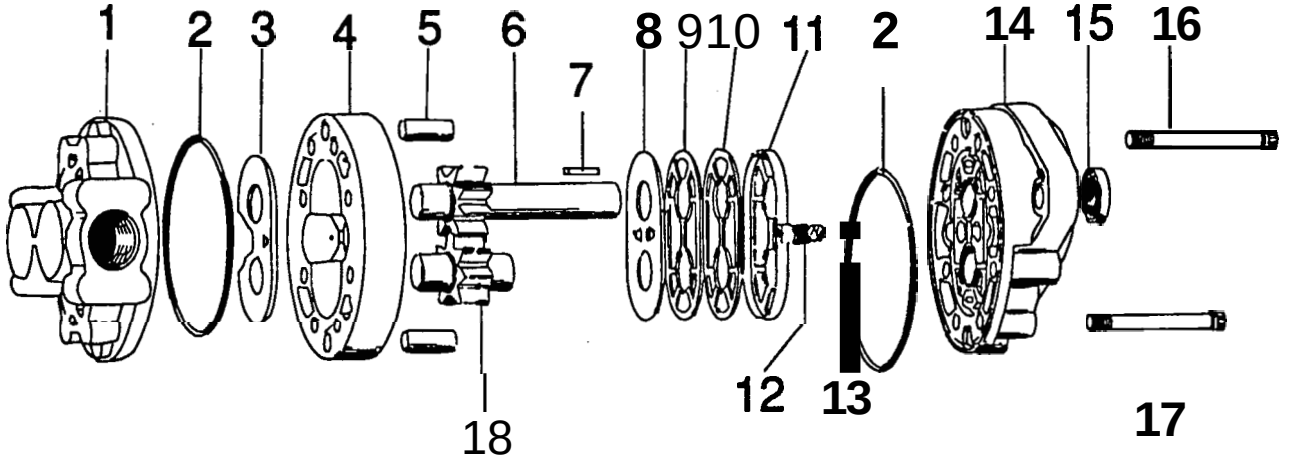
NOTES

HYDRAULIC PUMP REPAIR (Figure 32)

Pump repair is limited to seal replacement.

DISASSEMBLY

1. Remove key (7) from shaft.
2. Clean outside of pump thoroughly.
3. Clamp pump in vise, shaft up.
4. Remove tie bolts **(16),** four each.
5. Remove tie bolts **(1**7), four each.
6. Use sharp tool to mark across front plate, body and back plate. This will assure proper reassembly.
7. Remove pump from vise, hold pump in hands and bump shaft against a wooden block to separate front plate **(14)** from back plate **(1).** Body **(4)** will remain with either front plate or back plate.
8. To separate body from section it remains with, place drive gear **(6)** in bearing and tap protruding end with plastic hammer.
9. Remove thrust plate.**(3)** from back plate.
10. Remove O-ring **(2)** from back plate.
11. Remove O-ring **(2)** from front plate.
12. Remove diaphragm **(8)** from front plate by prying with sharp tool.
13. Lift springs **(12)** two each, and steel balls **(13)** two each, from front plate.
14. Lift back-up gasket (9) and protector gasket **(10)** from front plate.
15. Lift diaphragm seal **(11)** from front plate.
16. Remove shaft seal **(15)** from plate.



1. Back plate assembly
2. O-Ring
3. Thrust plate
4. Body
5. Dowel pin
6. Drive gear assembly
7. 1/4 x 1/4 x 15/16 Key
8. Diaphragm
9. Back-up gasket
10. Protector gasket
11. Diaphragm seal
12. Spring
13. Steel ball
14. Front plate assembly
15. Shaft seal
16. Tie bolt
17. Tie bolt
18. Idler gear assembly

Figure 32. Pump Assembly

INSPECT PARTS FOR WEAR

General

Clean and dry all parts.

Remove nicks and burrs from all parts with emery cloth.

Gear Assembly

1. Inspect drive gear shaft (6) for broken keyway.
2. Inspect both the drive gear and idler gear shafts at bearing points and seal area for rough surfaces and excessive wear.
3. If shaft measures less than .873" in diameter in bearing area, the pump should be replaced.
4. Inspect gear face for scoring and excessive wear.
5. If gear width is below 1.067", pump should be replaced.
6. Assure that snap rings are in grooves on either side of drive and idler gears.
7. If edges of gear teeth are sharp, break edge with emery cloth.

Front & Back Plates

Oil grooves in bearings in both front and back plates should be in line with dowel pin holes and 180° apart. This positions the oil grooves closest to the respective pin holes.

If ID of bearings in front plate or back plate exceeds .879", pump should be replaced.

Bearings in front plate should be flush with islands in groove pattern.

Body

Check inside gear pockets for excessive scoring or wear.

Pump should be replaced if the ID (internal diameter) of the gear pocket exceeds 2.107".

REASSEMBLY

1. The thrust plate, diaphragm, back-up gasket, protector gasket, diaphragm seal, shaft seal and O-rings should be replaced as new parts. Install O-ring (2) in groove in front plate (14).
2. Tuck diaphragm seal (11) into grooves in front plate with open part of "V" section down. (Use dull tool.)
3. Press protector gasket (10) and back-up gasket (9) into diaphragm seal.
4. Drop steel balls (13) into respective seats and place springs (12) over balls.
5. Place diaphragm (8) on top of back-up gasket, bronze face up.
6. Entire diaphragm must fit inside the raised rim of the diaphragm seal.
7. Dip gear assemblies into oil and slip into front plate bearings.
8. Install dowel pins **(5)** in body (4).
9. Apply a thin coat of heavy grease to both milled faces of body. Slip body over gears onto front plate (half moon port cavities in body must face away from front plate). Note small drilled hole in one of the cavities. This hole must be on pressure side of pump.
10. Install thrust plate (3), bronze face toward gears. Side with mid-section cut away must be on suction side of pump. Thrust plate must fit inside gear pockets.
11. Install O-ring (2) in groove in back plate (1).
12. Slide back plate over gear shafts until dowel pins are engaged.
13. Install bolts (16 & 17) and tighten evenly to **40** ft-lbs. torque.
14. Work shaft seal over drive gear shaft, taking care not to cut rubber sealing lip. (Oil seal liberally before installing.)
15. Place 1-5/16" O.D. (outside diameter) sleeve over shaft and seat shaft seal by driving with plastic hammer.
16. Rotate pump shaft by hand or with pliers. Pump will have small amount of drag, but should turn freely after short period of use.

GENERAL PUMP INFORMATION

Direction of rotation on all "L" Series pumps with two ball checks in the front plate may be reversed by removing the tie bolts and rotating back plate, thrust plate and body 180°.

It is important that the relationship of the back plate, thrust plate, body and front plate is correct. You will note two half moon cavities in the body which must face away from the front plate. Note also a small drilled hole in one of these cavities. This hole must be on the pressure side of the pump. Side of thrust plate with mid-section cut away must be on suction side of pump.

Suction side of back plate is always the side with the larger port boss. Pumps using only one ball check in the front plate cannot be reversed.

Refer to Placing Pump Back in Service, page 21.

Placing Pump Back Into Service

1. Before starting pump, it is recommended to prime it first.
2. If shop test stand is available, the following procedure for testing rebuilt pumps is recommended:
   a. Mount pump on test stand, making sure that the proper level of clean oil is available in the reservoir. Check suction line for leaks and obstructions.
   b. Start pump and run for three minutes at 200 psi pressure.
   c. Intermittently load pump to 500 psi for three minutes.
   d. Intermittently load pump to 1000 psi for three minutes.
   e. Intermittently load pump to 2000 psi for three minutes.
   f. Relieve pressure, remove pump from test stand and check for looseness of drive shaft. Check for leaks.
3. If shop test stand is not available, the following procedure for testing rebuilt pumps is recommended:
   a. Mount pump on equipment and run pump at 1/2 engine speed at 200 psi pressure.
   b. By operating control valve, build pressure intermittently for three minutes.
   c. Increase engine speed to full throttle and build pressure intermittently for three minutes.
   d. Idle engine and check for leaks.

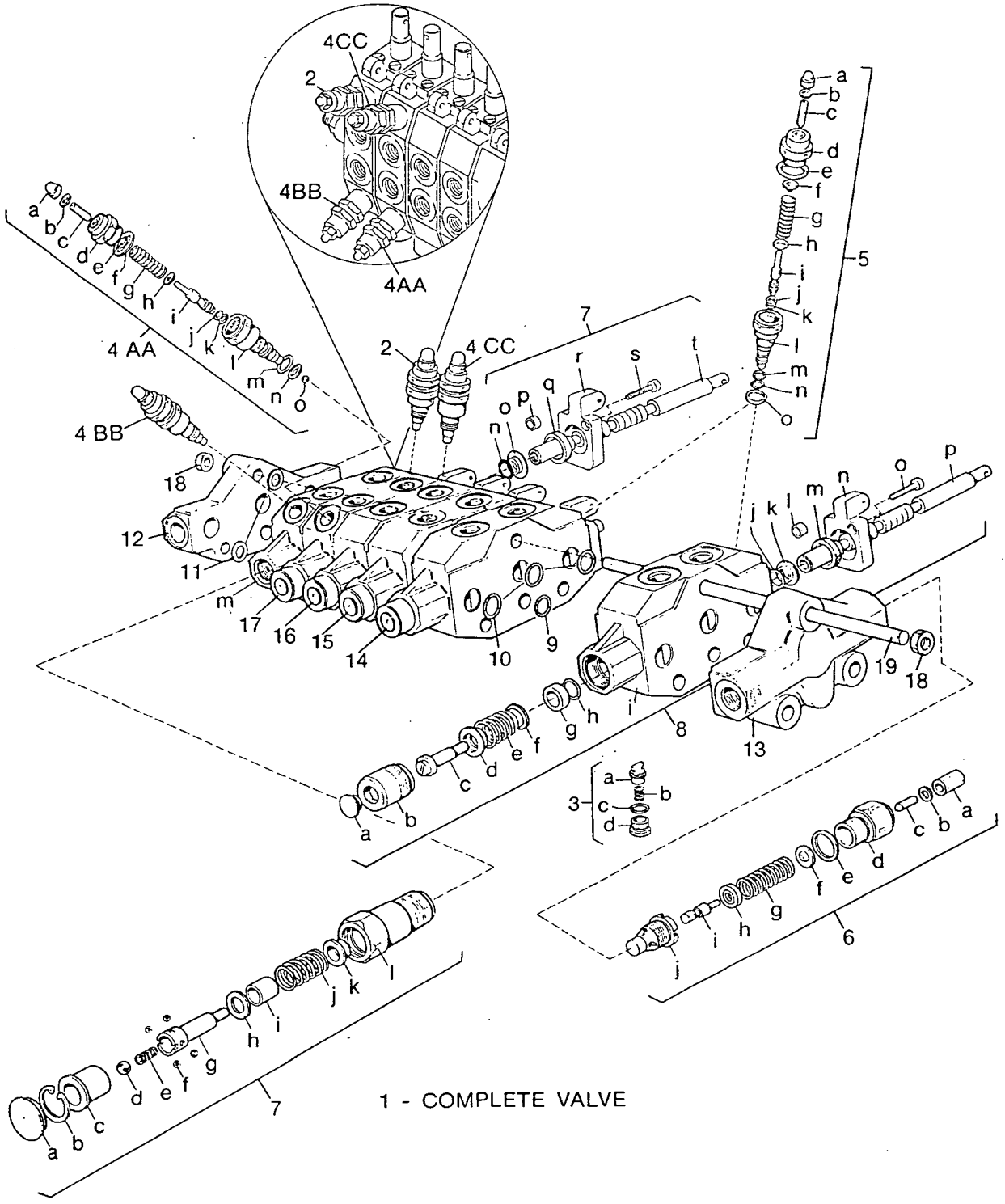


Figure 33. Hydraulic Valve Repair

1. Complete hydraulic valve
2. Shodddampening valve, 3500 psi
3. Check valve assembly
   a. Poppet
   b. Spring
   c. Seal
   d. Car plug

4AA. Shock/dampening valve, 2000 psi
   a. Cap nut
   b. Washer
   c. Adjusting screw
   d. Retainer
   e. Rear spring washer
   f. Copper washer
   g. Spring for relief valve
   h. Front spring washer
   i. Valve poppet
   j. Back-up ring
   k. Seal
   l. Valve seat
   m. Back-up ring
   n. Washer
   o. Ball, Dia. 5

4BB. Shock/dampening valve, 2500 psi

4CC. Shock/dampening valve, 2000 psi

5. Shock/dampening valve, 2500 psi
   a. Cap nut
   b. Washer
   c. Adjusting screw
   d. Retainer
   e. Copper washer
   f. Rear spring washer
   g. Spring for relief valve
   h. Front spring washer
   i. Valve poppet
   j. Back-up ring
   k. Seal
   l. Valve seat
   m. Back-up ring
   n. Seal
   o. Washer

6. 1350 - 3000 Psi Relief valve assembly
   a. Cap nut
   b. Copper washer
   c. Adjusting screw
   d. Retainer
   e. Copper washer
   f. Rear spring washer
   g. Spring
   h. Front spring washer
   i. Valve poppet
   j. Valve seat

7. Spool position control 04 assembly
   a. Plug for 04 positioner
   b. Snap ring
   c. Bushing for 04 positioner
   d. Ball
   e. Spring
   f. Ball
   g. Connecting bolt
   h. Washer
   i. Spacer
   j. Spring for 04 positioner
   k. Spring flange
   l. Housing
   m. Boom segment
   n. O-Ring
   o. Flanged washer
   p. Dowel bushing
   q. Scraper
   r. Lever bracket
   s. Cap screw
   t. Spool

8. Dipstick segment complete
   a. Plug
   b. Housing
   c. Connecting bolt
   d. Spring cap
   e. Spring
   f. Spring cap
   g. Spacer
   h. O-Ring
   i. Dipstick segment
   j. O-Ring
   k. Flanged washer
   l. Dowel bushing
   m. Scraper
   n. Lever bracket
   o. Cap screw
   p. Spool

9. Seal
10. Seal
11. Spacer
12. Standard exhaust section
13. Front port inlet section
14. Bucket segment
15. Right stabilizer segment
16. Left stabilizer segment
17. Swing segment
18. Nut
19. Tie rod

HYDRAULIC VALVE REPAIR (Figure 34)

Valve repair should be accomplished in a clean work place. Individual components for many of the assemblies are not available as repair parts. This will simplify repair and allow you to replace complete assemblies.

Pressure Settings on Shock/Dampening Valves

Pressure settings on shock/dampening valves are preset at the factory. Although they are adjustable, they must not be reset in the field using backhoe hydraulic system. The backhoe pump will separate or crack if system pressure exceeds the maximum.

Relief valve adjustment requires a test bench and accurate gauges.

Adjusting System Relief Valve Pressure

Place a pressure gauge in the pump pressure line at the relief valve. When installing pressure gauge, be sure to use steel fittings that will withstand working pressure up to 5000 psi. Remove cap nut (6a). Adjusting screw (6c) has a hex socket - rotate screw clockwise to increase pressure and counter-clockwise to decrease pressure. Start tractor PTO and set system relief valve pressure at 2000 psi. When pressure is adjusted, shut tractor PTO and tractor off. Replace cap nut (6a) on system valve.

Replacing Shock/Dampening Valves

It is not necessary *to* remove console valve from console to replace shock/dampening valve cartridges. Remove console cover and replace them. Be sure you install valve cartridges set at the correct pressure. Valves are similar and can be easily mixed up.

Shock/Dampening Valve	Pressure Setting
2	3500 PSI
4AA	2000 PSI
4BB	2500 PSI
4CC	2000 PSI
5	2500 PSI

Segment Replacement

1. Relieve system pressure and remove valve from backhoe. Remove tie rods and separate the valve sections.
2. Replace defective sections as necessary. Make sure you install two spacers between each section of each tie rod. Note the location of O-rings (9 & 10). They must be placed in location between valve sections as shown.
3. When assembling valve sections, use care when torquing nuts on tie rods. This must be done in steps - that is to say, gradually increasing the tightening torque up to 13 ft-lbs. in an alternating sequence. Non-uniform or excessive tightening can cause binding of spools. Failure to attain the proper torque can result in leaks. Always use a torque wrench.

Installing Valve (Figure 34)

1. Reconnect control linkage to valve.
2. Adjustment of the linkage should not be necessary unless it was disturbed.
3. Control handles should be positioned with console as shown.
4. When completing a maintenance function on the valve, perform a functional test by placing control handles in their various positions and make certain the correct operation occurs corresponding to the decals on the operator's console. Pay specific attention to the float position of the boom. Do not operate backhoe if functions differ from the decal.
5. If the functions differ from the decal, check to make sure control linkage is correctly installed and check plumbing schematics to make sure hoses are correctly connected.

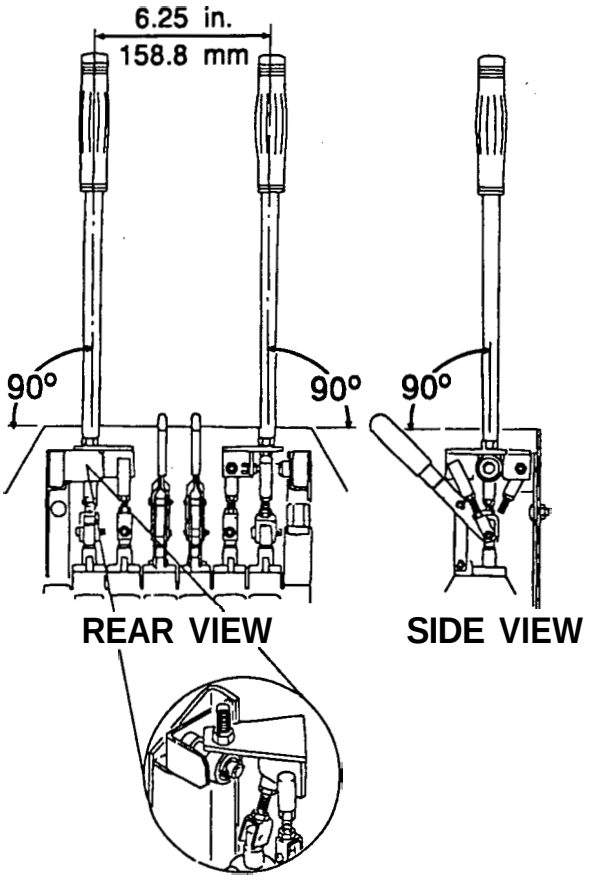
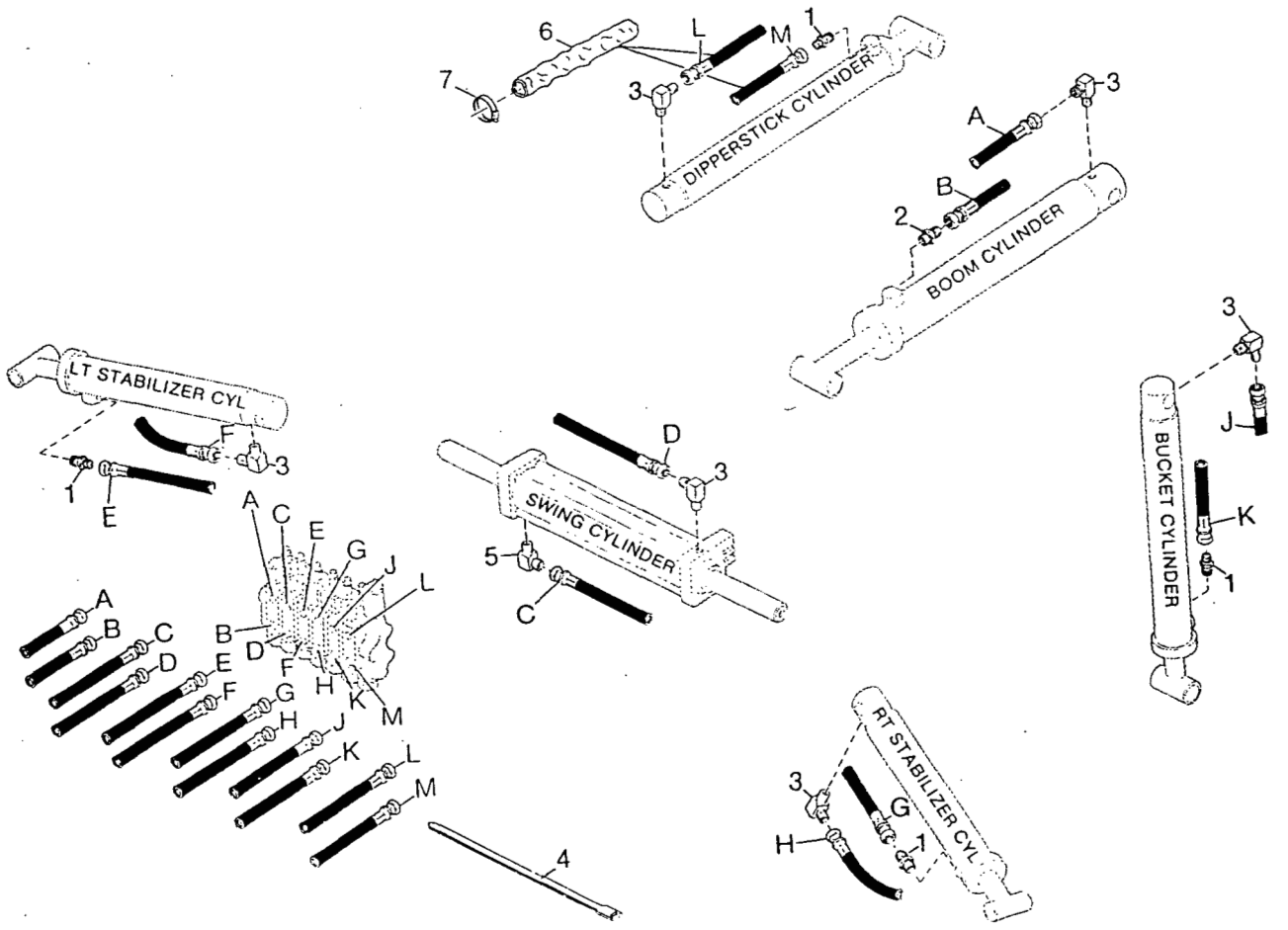


Figure 34. Linkage Installation

PLUMBING SCHEMATIC



Use this figure and Figure 36 for plumbing schematics. Letters are for hose connection locations for both Figure 35 and Figure 36.

1. 114 x 114" Straight adapter union
3. 114 x 1/4" 90° Adapter union
4. 114 x 1/4" 90° Adapter union with 1116" restrictor
5. Relief valve
6. Shock dampening valve, 2500 psi
7. Shock dampening valve, 2000 psi
8. Shock dampening valve, 2000 psi
9. Shock dampening valve, 3500 psi
10. Shock dampening valve, 2500 psi
11. Shock dampening valve, 2500 psi

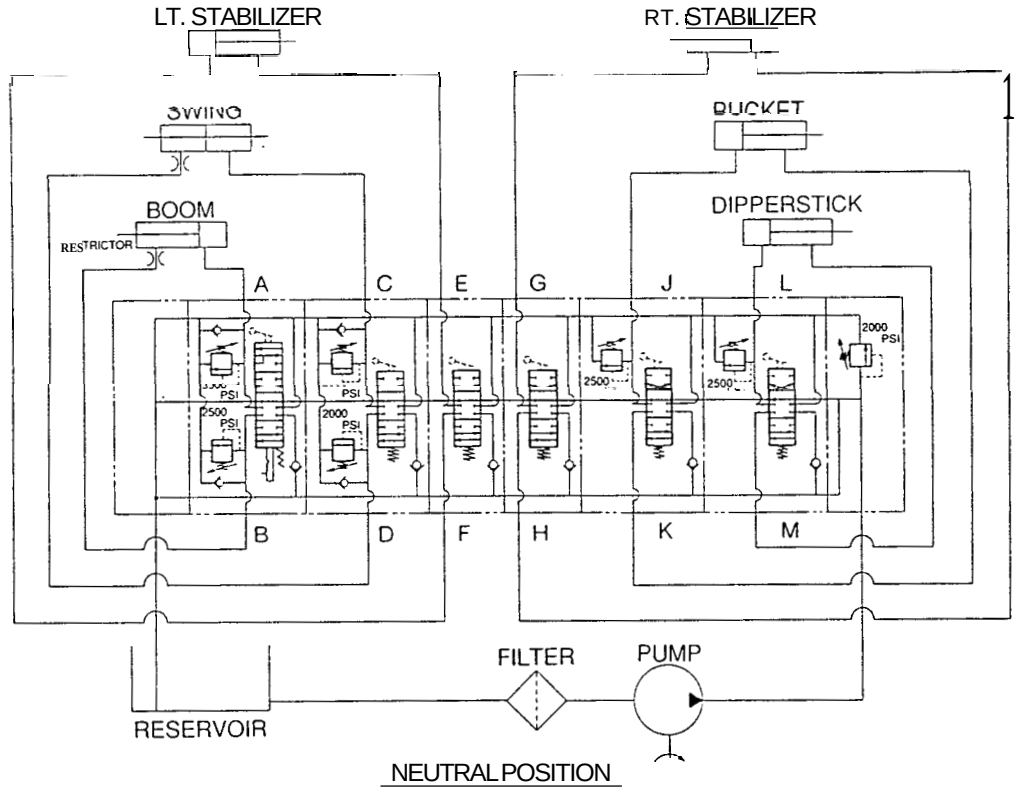
The BH6575 uses a 114 x 114" straight adapter union with 3/32" restrictor in the rod end of the boom cylinder.

LEGEND

A from top port of boom valve segment to piston end of boom cylinder
B from bottom port of valve boom segment to rod end of boom cylinder
C from top port of valve swing segment to bottom left port of swing cylinder
D from bottom port of valve swing segment to top right port of swing cylinder
E from top port of valve left stabilizer segment to rod end of left stabilizer cylinder.
F from bottom port of valve left stabilizer segment to piston end of left stabilizer cylinder
G from top port of valve right stabilizer segment to rod end of right stabilizer cylinder
H from bottom port of valve right stabilizer segment to piston end of right stabilizer cylinder
J from top port of valve bucket segment to piston end of bucket cylinder
K from bottom port of valve bucket segment to rod end of bucket cylinder
L from top port of valve dipperstick segment to piston end of dipperstick cylinder.
M from bottom port of valve dipperstick segment to rod end of dipperstick cylinder.

Figure 35. Plumbing Schematic

PLUMBING SCHEMATIC (Cont.)



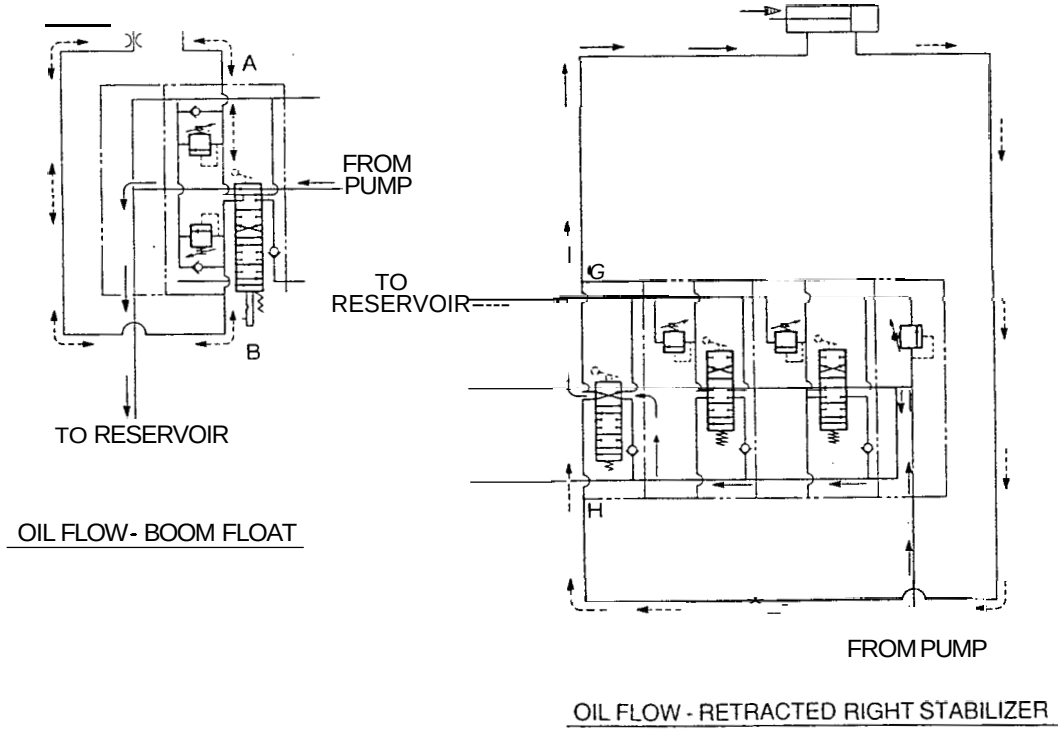


Figure 36. Plumbing Schematic

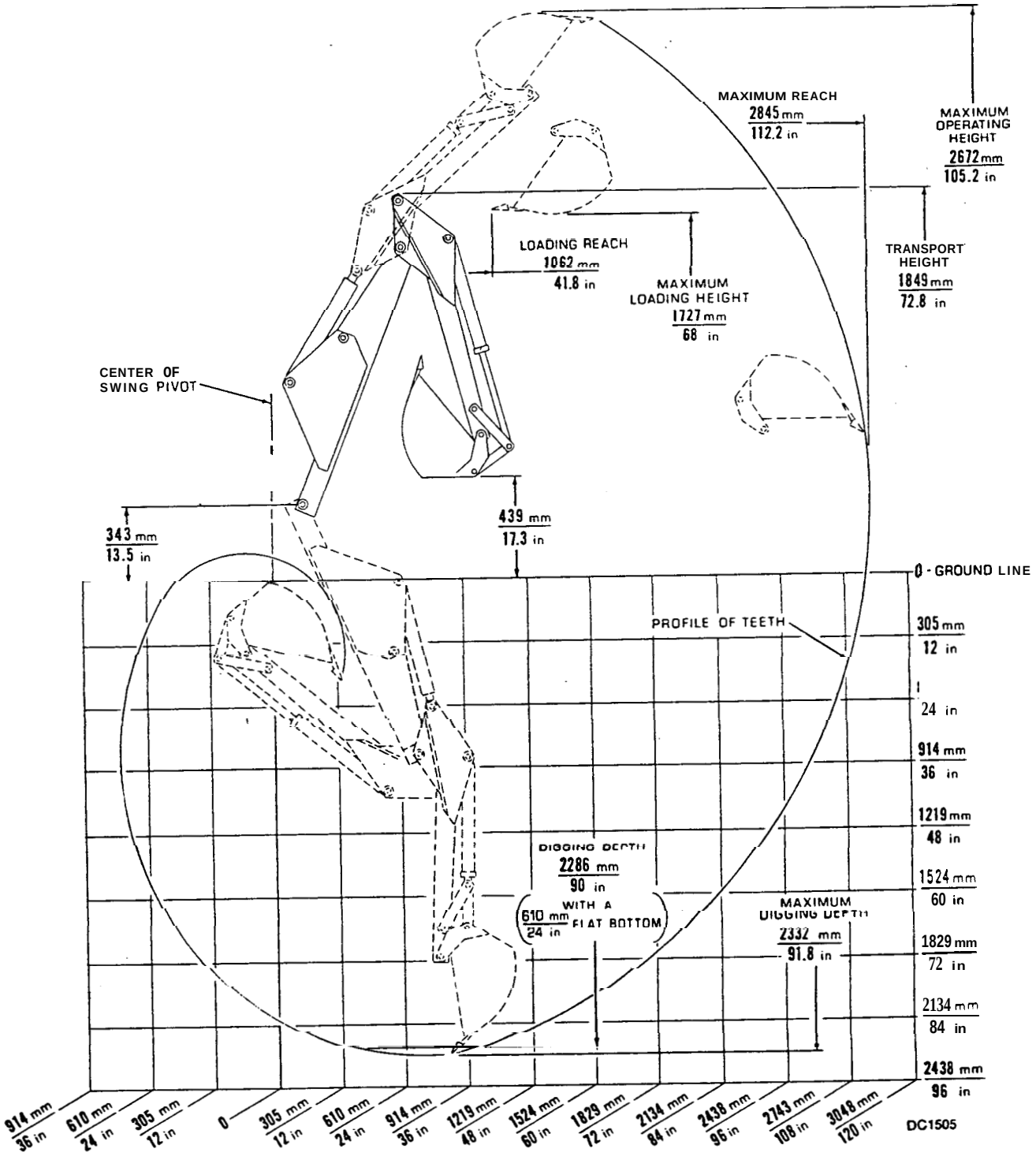
SPECIFICATIONS

REACH BELOW GRADE (Standard Bucket)		
Maximum	91.8"	2332 mm
With two foot flat bottom trench*	90"	2286 mm
LOADING HEIGHT'	68.0	1727 mm
REACH		
From center of swing mast pivot point	112.2"	2845 mm
BUCKET ARC	175°	
SWING WORKING ARC	180°	
OPERATING PRESSURE		
Digging'	2000 psi	13.8 MPa
Swing'	2000 psi	13.8 MPa
STABILIZER SPREAD	52.5" - 89.5"	1333 - 2273 mm
BOOM CYLINDER		
Bore	2.5"	63.5 mm
Stroke	16.75"	425.5 mm
DIPPERSTICK CYLINDER		
Bore	2.0"	50.8 mm
Stroke	16.75"	425.5 mm
Digging Force'	2275 lbs.	1032 kg
BUCKET CYLINDER		
Bore	2.0"	50.8 mm
Stroke	16.75"	425.5 mm
Digging Force	2600 lbs.	1179 kg
SWING CYLINDER		
Bore	2.5"	63.5 mm
Stroke	10.62"	269.7 mm

BUCKET CAPACITY	HEAPED	STRUCK
8 Inches	77 $ft.^3$ .022 m^3	.65 ft^3 .018 m^3
12 Inches	1.23 $ft.^3$ .035 m^3	1.00 $ft.^3$ .028 m^3
16 Inches	1.71 $ft.^3$ .048 m^3	1.37 ft^3 .039 m^3
18 Inches	2.02 $ft.^3$ .057 m^3	1.55 $ft.^3$ .044 m^3
24 Inches	3.32 ft^3 .094 m^3	2.10 $ft.^3$ .060 m^3

*Per SAE J49 Standard.

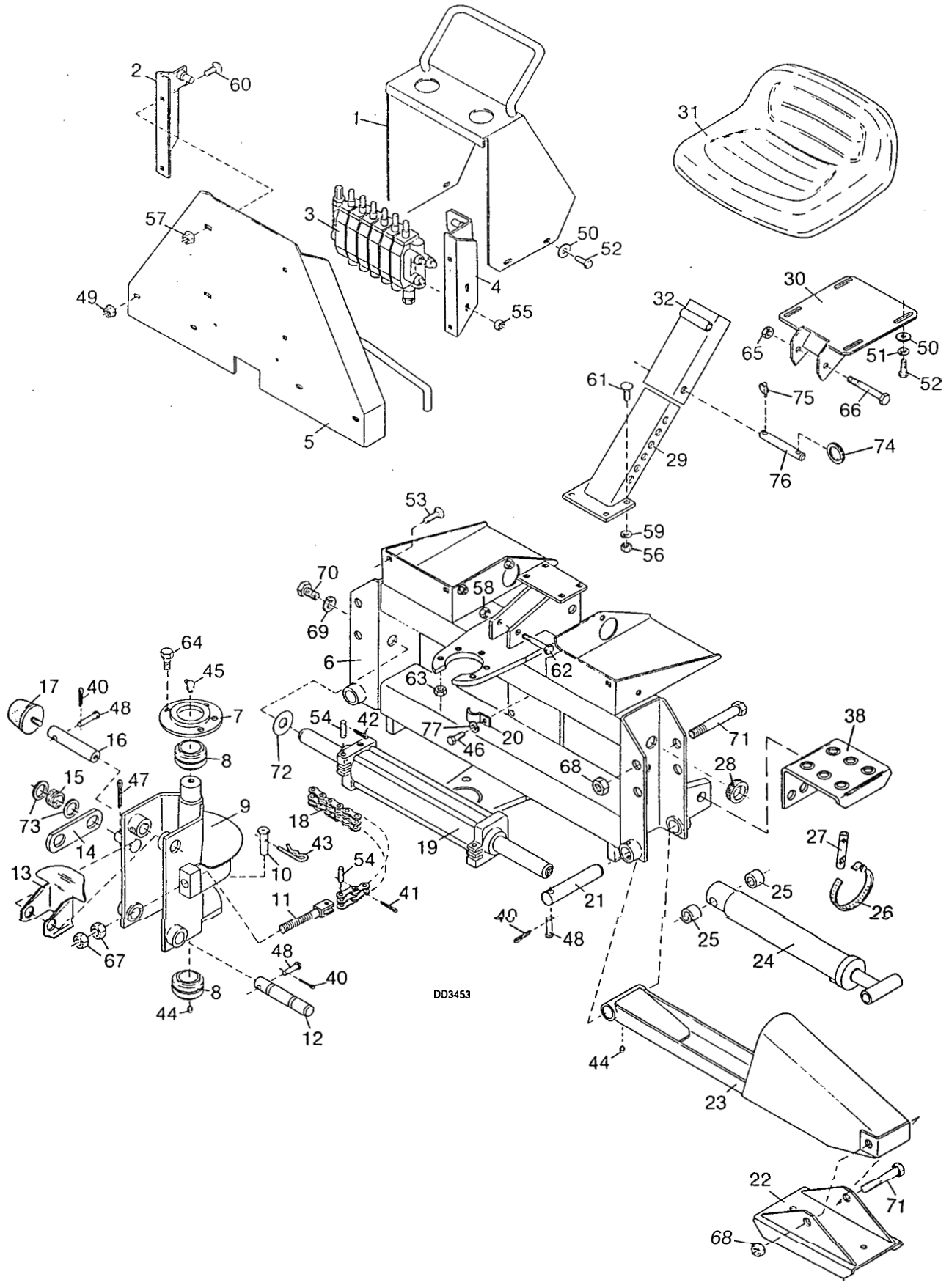
SPECIFICATIONS(Cont.)



NOTES

INDEX TO PARTS LISTS

MAIN FRAME ASSEMBLY



MAIN FRAME ASSEMBLY

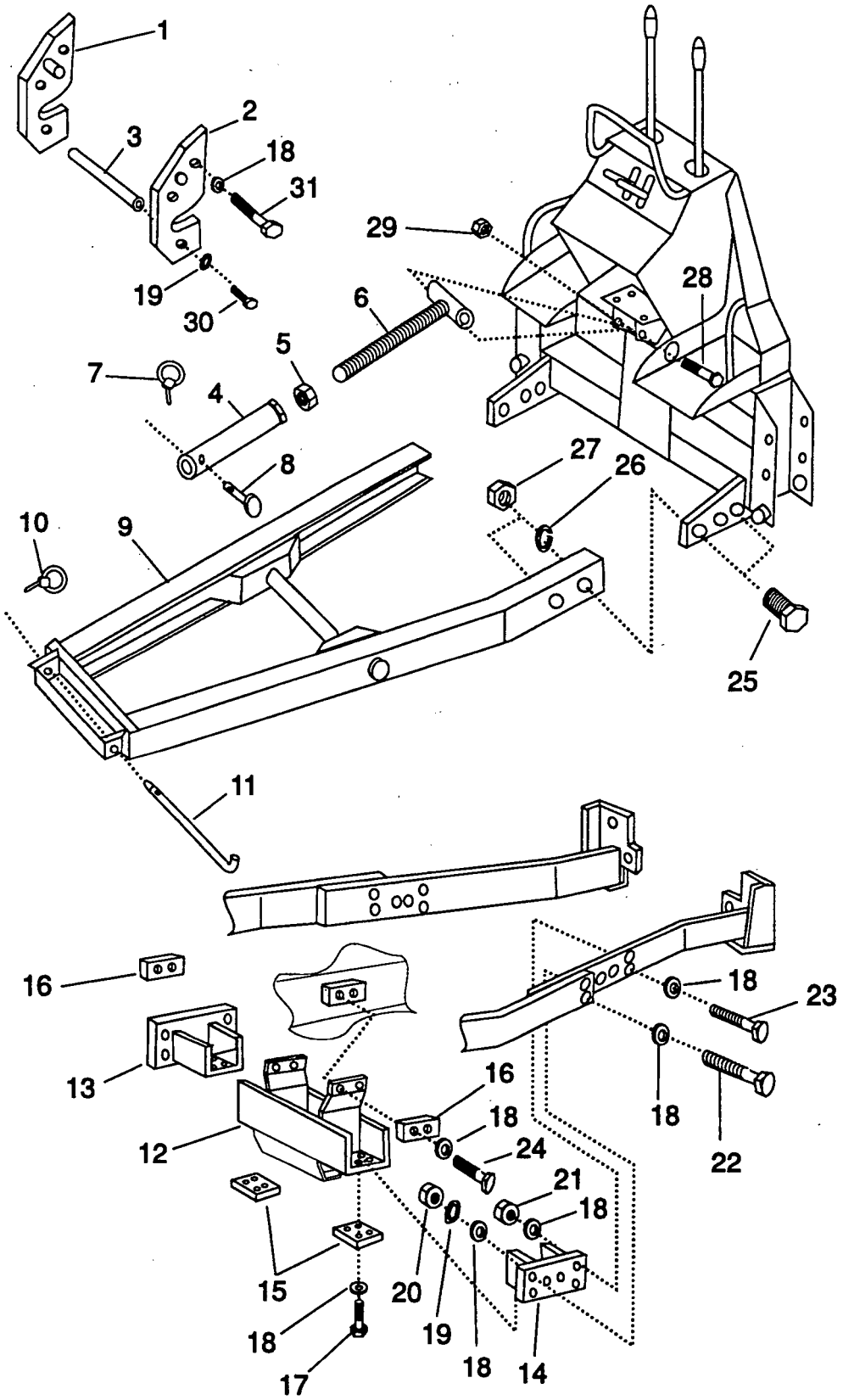
Fig No.	No. Used	Description
1	1	Console cover
2	1	Right valve bracket assy
3	1	Console valve
4	1	Left valve bracket asy
5	1	Valve mounting plate asy
6	1	Frame assembly, main
7	1	Cap asy, kingpost
8	2	1-1/2 ID Ball bushing
9	1	Kingpost weldment assy
10	1	Swing lock pin
11	2	Bolt, chain tension
12	1	Pivot pin, boom
13	1	Guide, hose
14	1	Plate, latch
15	1	.072 x .62 Compression spring
16	1	Pin, pivot
17	2	Pad asy, bumper
18	2	Chain, swing
19	1	Swing cylinder assy. (see page 65 for breakdown)
20	2	Clamp, hose
21	2	Pin, pivot
22	2	Pad assy, stabilizer
23	2	Stabilizer assembly
24	2	2 x 14-1/2 Stabilizer cylinder (see page 67 for breakdown)
25	4	13/16 x 1-1/4 x 1 Bushing
26	2	Hose clamp
27	2	Shield, hose protector
28	2	Grommet, .25 x 1.0 x 1.38
29	1	Lower seat support
30	1	Seat bracket assy.
31	1	Seat
32	1	Upper seat suuport
35	1	Complete label set BH6575

HARDWARE

Fig No.	Description
'40	1/16 x 1/2 Cotter pin
'41	3/32 x 1/2 Cotter pin
'42	3/32 x 1-1/2 Cotter pin
*43	3/16 Safety pin
44	Straight 1/4 tapered thread grease fitting
45	1/4 - 28 Threaded 90° grease fitting
'46	1/4 NC x 3/4 Hex head cap screw GR5
'47	1/4 x 1-1/2 Cotter pin
48	1/4 x 1-7/8 Clevis pin
49	5/16 NC Flanged hex locknut
'50	5/16 Standard flat washer
'51	5/16 Standard lockwasher
52	5/16 NC x 3/4 Hex head cap screw GR5
'53	5/16 NC x 3/4 Carriage bolt
54	Pin, chain
55	8mm x 1.25mm Pitch hex nut
'56	3/18 NC Hex nut, plated
57	3/8 NC Flanged hex locknut
'58	3/8 NC Hex locknut
'59	3/18 Standard lockwasher
'60	3/8 NC x 3/4 Carriage bolt
'61	3/8 NC x 1 Carriage bolt
'62	3/8 NC x 3 Hex head cap screw GR5
'63	7/16 NF Hex locknut
64	7/16 NF x 1-1/4 Wheel bolt
'65	1/2 NC Hex locknut
'66	1/2 NC x 4 Hex head cap screw GR5
'67	5/8 NC Hex nut
'68	3/4 NC Hex locknut
'69	3/4 Standard lockwasher
70	3/4 NC x 1-1/2 Hex head cap screw GR5
71	3/4 NC x 6 Hex head cap screw GR5
72	13/16 x .010 Shim washer
73	10 GA x 1-1/2 Washer
74	.11 x 1.1 OD Split ring
75	3/16 x 1 Klik pin
76	1/2 x 4-1/2 Clevis pin

• Obtain Locally

BACKHOE SUB-FRAME ASSEMBLY



BACKHOE SUB-FRAME ASSEMBLY

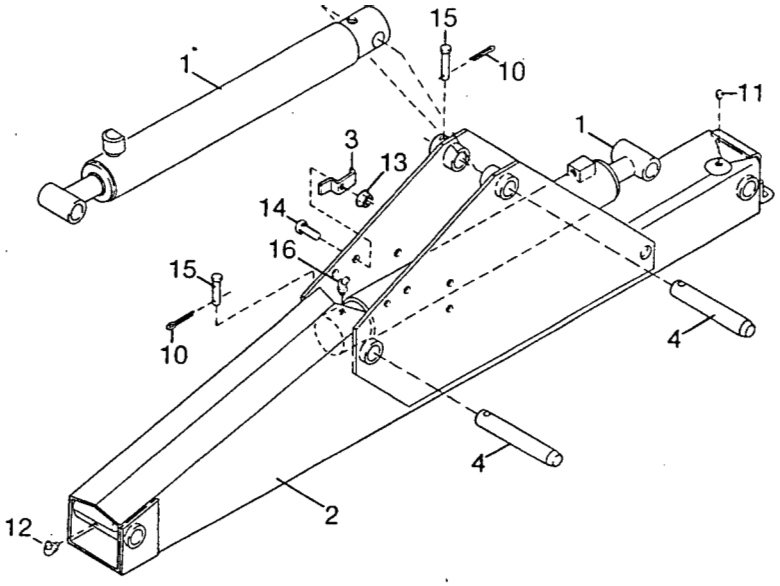
Ref No.	No. Used	Description
1	1	Set plate, right
2	1	Set plate, left
3	1	Cross shaft
4	1	Top link, outer
5	1	1" Nut
6	1	Top link, inner
7	1	Klik pin
8	1	Clevis pin, 19 x 76 mm
9	1	Backhoe sub-frame assy.
10	1	Klik pin, 1/4 x 1-3/4"
11	1	Pin, 19 x 397 mm
12	1	Crossmember assy.
13	1	Crossmember bracket, right
14	1	Crossmember bracket, left
15	2	Set plate, "B"
16	2	Set plate, " A

Hardware

Ref No.	Description
'17	Bolt, 1/2 x 1-5/8" GR 5
'18	Flat washer, 1/2"
'19	Lockwasher, 1/2
'20	Nut, 1/2"
'21	Locknut, 1/2"
'22	Bolt, 1/2 x 2" GR 5
'23	Bolt, 1/2 x 1-3/4" GR 5
'24	Bolt, 12 x 35 mm
'25	Bolt, 7/8 x 2-1/2 GR 8
'26	Lockwasher, 7/8"
'27	Nut, 7/8"
'28	Bolt, 3/4 NC x 3-1/2" GR 5
'29	Locknut, 3/4"
'30	Bolt, 1/2 NC x 1-1/4 GR 5
'31	Bolt, 12 x 80 mm

' Obtain locally

BOOM ASSEMBLY



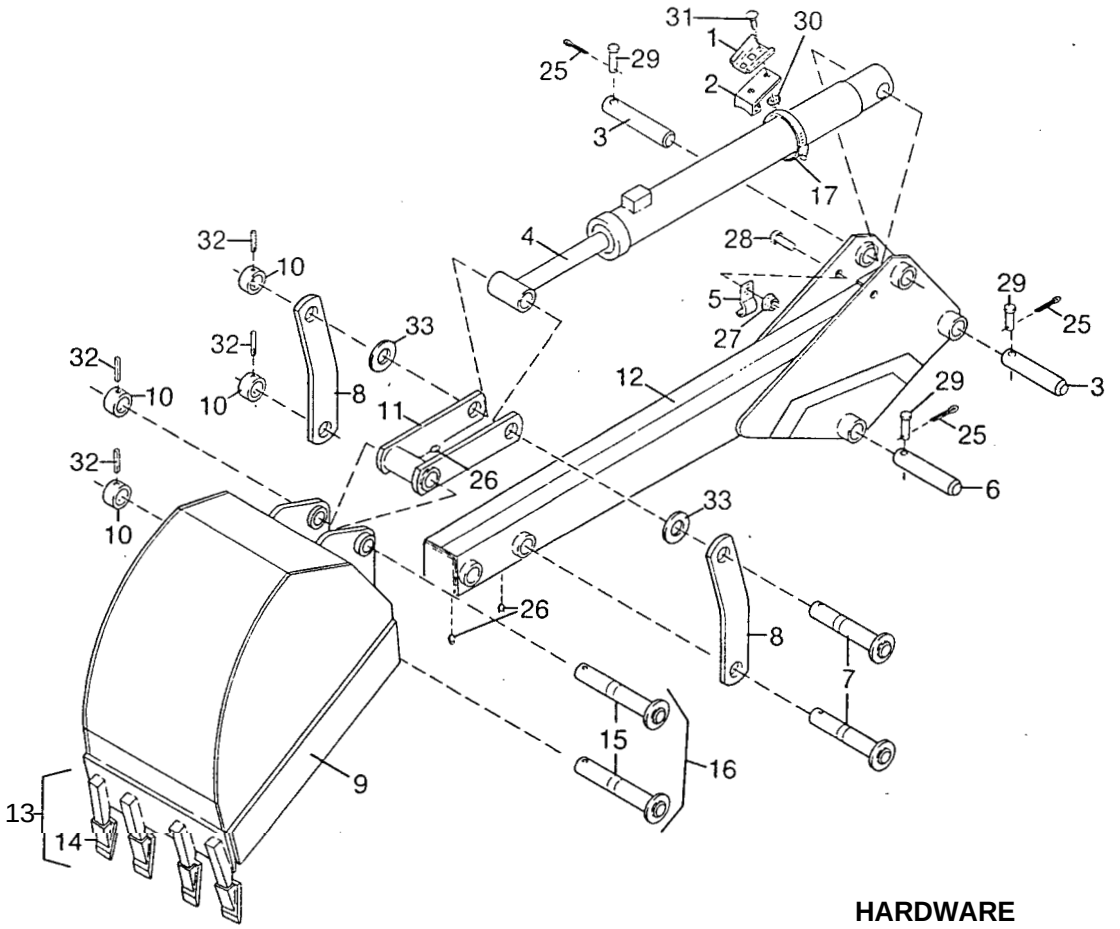
Ref No.	No. Used	Description
1	2	2-1/2 x 16-3/4 Hydraulic boom cylinder assembly (see page 66 for breakdown)
2	1	Boom weldment assembly
3	1	Cylinder hose clamp
4	2	Pin, Pivot

HARDWARE

Ref No.	Description
*10	1/1 6 x 1/2 Cotter pin
*11	1/4 - 28 Tapered thread grease fitting
'12	1/4 - 28 Threaded 90^0 grease fitting
13	1/4 NC Flanged hex locknut
'14	1/4 NC x 1-1/4 Hex head cap screw GR5
15	1/4 x 1-7/8 Clevis pin
'16	1/4 - 28 Threaded greese fitting

* Obtain Locally

DIPPERSTICK & BUCKET ASSEMBLY



Ref No.	No. Used	Description
1	1	Socket, **SMV** emblem
2	1	Bracket, **SMV** socket
3	2	Pin, Pivot
4	1	2 x 16-3/4 Hydraulic cylinder (see page 66 **for** breakdown)
5	2	Hose clamp
6	1	Pivot pin, Boom
7	2	Rotating pivot pin
8	2	Link arm
9	1	12" Backhoe bucket
10	**4**	Pivot pin retaining sleeve
11	1	Bucket arm
12	1	Dipperstick weldment assy
13	A/R	Shank & tooth assy
15	2	Pivot pin assembly, 1.0 x 7.25
16	1	HD Pin **kit** (includes two each **of** items 10, 15 & **32)**
17	—	Hose clamp

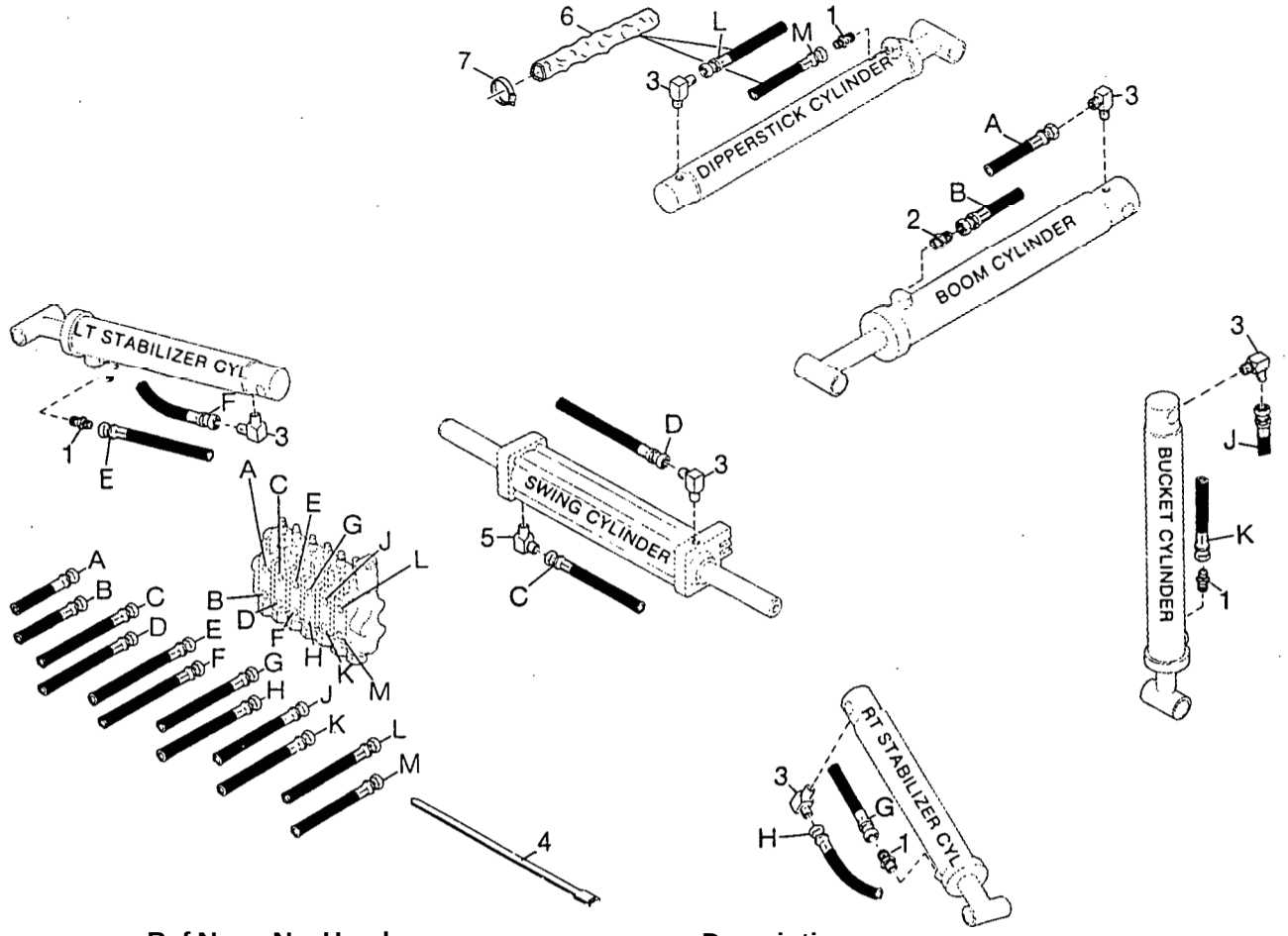
A/R - **As** Required

HARDWARE

Ref No.	Description
'25	1/1 6 x 1/2 Cotter pin
'26	1/4 - 28 Tapered thread grease fitting
27	1/4 NC Flanged hex locknut
'28	1/4 NC x 3/4 Hex head cap screw **GR5**
29	1/4 **x** 1-7/8 Clevis **pin**
30	5/16 NC Flanged hex locknut
31	5/16 NC x 1/2 Carriage **bolt**
32	5/16 x 1-3/4 Spirol pin
33	1" **SAE** Flat washer

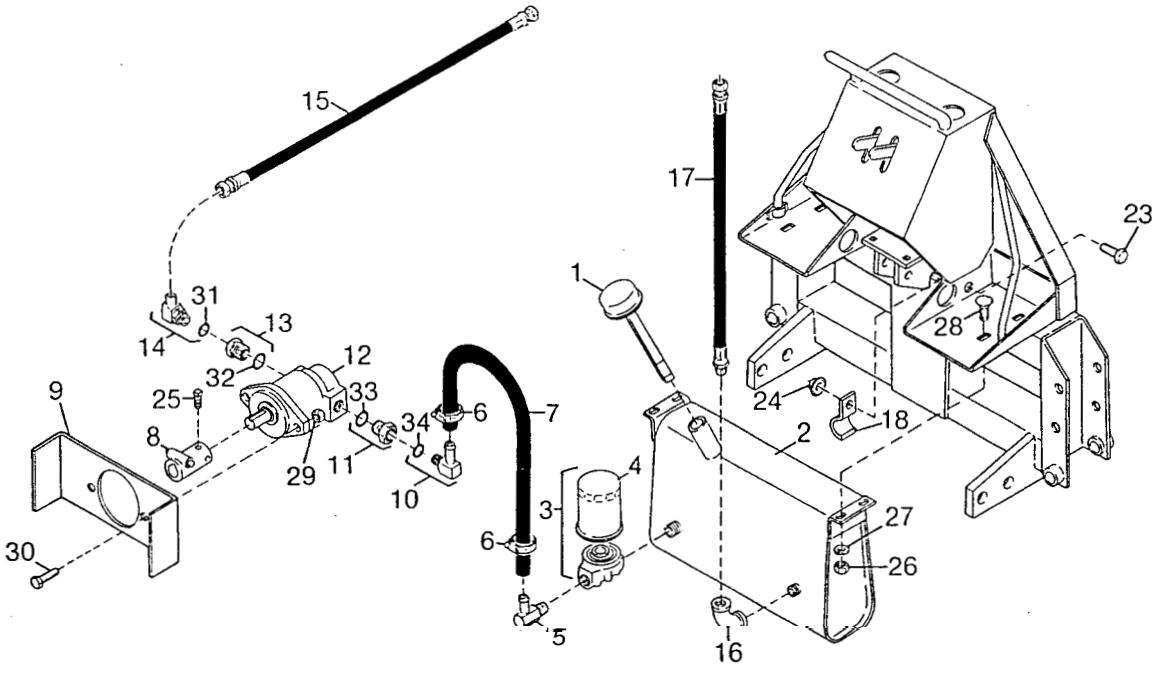
• Obtain Locally

HOSES & FITTINGS



Ref No.	No. Used	Description
1	4	Connector
2	1	9/16 x 1/4 Male restrictor connector
3	6	9/16 - 18 x 1/4 NPTF 90° Fitting
4	2	Hydraulic hose tie, 7" long
5	1	9/16 x 1/4 NPT 90° Fitting with 1/16 restriction
6	2	Hose sleeve, 13"
7	2	1/2 Hose screw clamp
A	—	Female 9/16 - 18 flare x 99 high pressure hose assembly
B	—	Female 9/16 - 18 flare x 99 high pressure hose assembly
C	—	Female 9/16 - 18 flare x 49 high pressure hose assembly
D	—	Female 9/16 - 18 flare x 49 high pressure hose assembly
E	—	Female 9/16 - 18 flare x 49 high pressure hose assembly
F	—	Female 9/16 - 18 flare x 50 high pressure hose assembly
G	—	Female 9/16 - 18 flare x 49 high pressure hose assembly
H	—	Female 9/16 - 18 flare x 50 high pressure hose assembly
I	—	Female 9/16 - 18 flare x 124 high pressure hose assembly
K	—	Female 9/16 - 18 flare x 124 high pressure hose assembly
L	—	Female 9/16 - 18 flare x 99 high pressure hose assembly
M	—	Female 9/16 - 18 flare x 99 high pressure hose assembly

PUMP & TANK ASSEMBLY



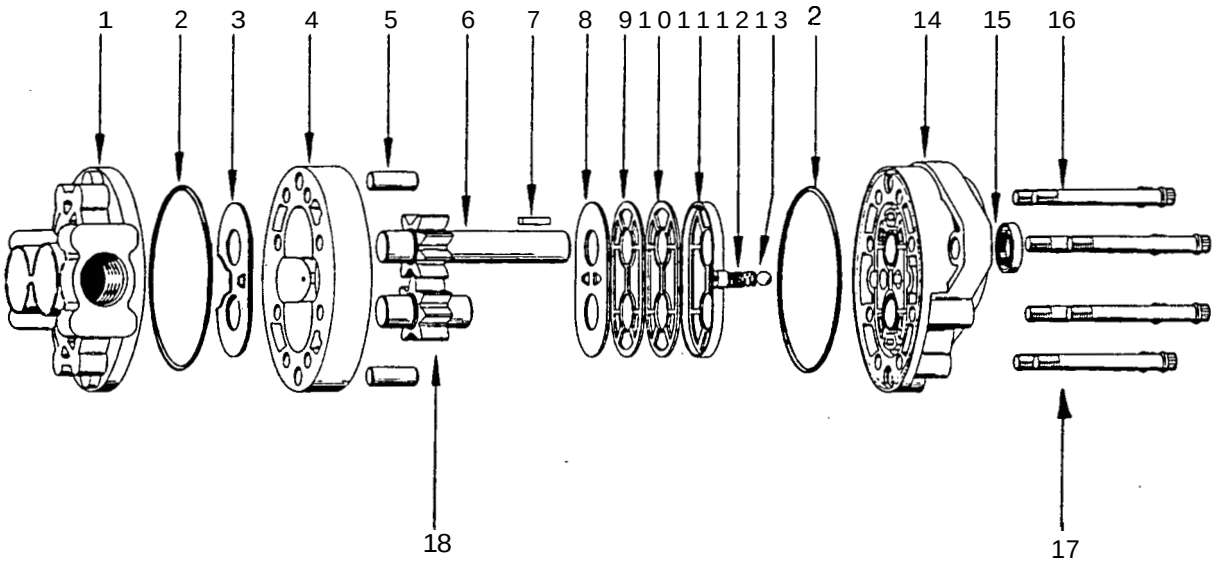
Ref No.	No. Used	Description
1	1	Tank breather cap with dipstick
2	1	Tank assembly
3	1	Filter & housing assy. complete
4	1	Filter element
5	1	3/4 Hose x 3/4 pipe 90° elbow
6	2	1/2 Screw hose clamp
7	1	3/4 x 40 Low pressure suction hose
8	1	Pump drive coupler
9	1	Pump mounting bracket
10	1	1-1/16 - 12 x 3/4 Hose 90° elbow
11	1	1-5/8 - 12 x 1-1/16 - 12 Reducer
12	1	Pump assembly complete (see page 62 for breakdown)
13	1	1-5/16 - 12 x 7/8 - 14 Reducer with O-ring
14	1	7/18 - 14 x 9/16 Flare 90° elbow
15	1	9/16 Flare x 9/16 flare x 34 high pressure hose assembly
16	1	1/2 x 1/2 90° Pipe elbow
17	1	9/16 Flare x 1/2 NPT x 28 high pressure hose assembly
18	1	Hose clamp

HARDWARE

Ref No.	Description
*23	1/4 NC x 3/4 Hex head cap screw GR5
24	1/4 NC Flanged locknut
*25	5/16 NC x 1 Cup point square head set screw GD5
*26	3/8 NC Hex nut, plated
*27	3/8 Standard lockwasher
*28	3/8 NC x 3/4 Carrage bolt
*29	1/2 NC Hex locknut
*30	1/2 NC x 1 Hex head cap screw GR5
31	.097 x .755 ID O-ring #910
32	.116 x 1.17 ID O-ring #916
33	.118 x 1.48 ID O-ring #920
34	.116 x .924 ID O-ring #912

* Obtain Locally

HYDRAULIC GEAR PUMP ASSEMBLY

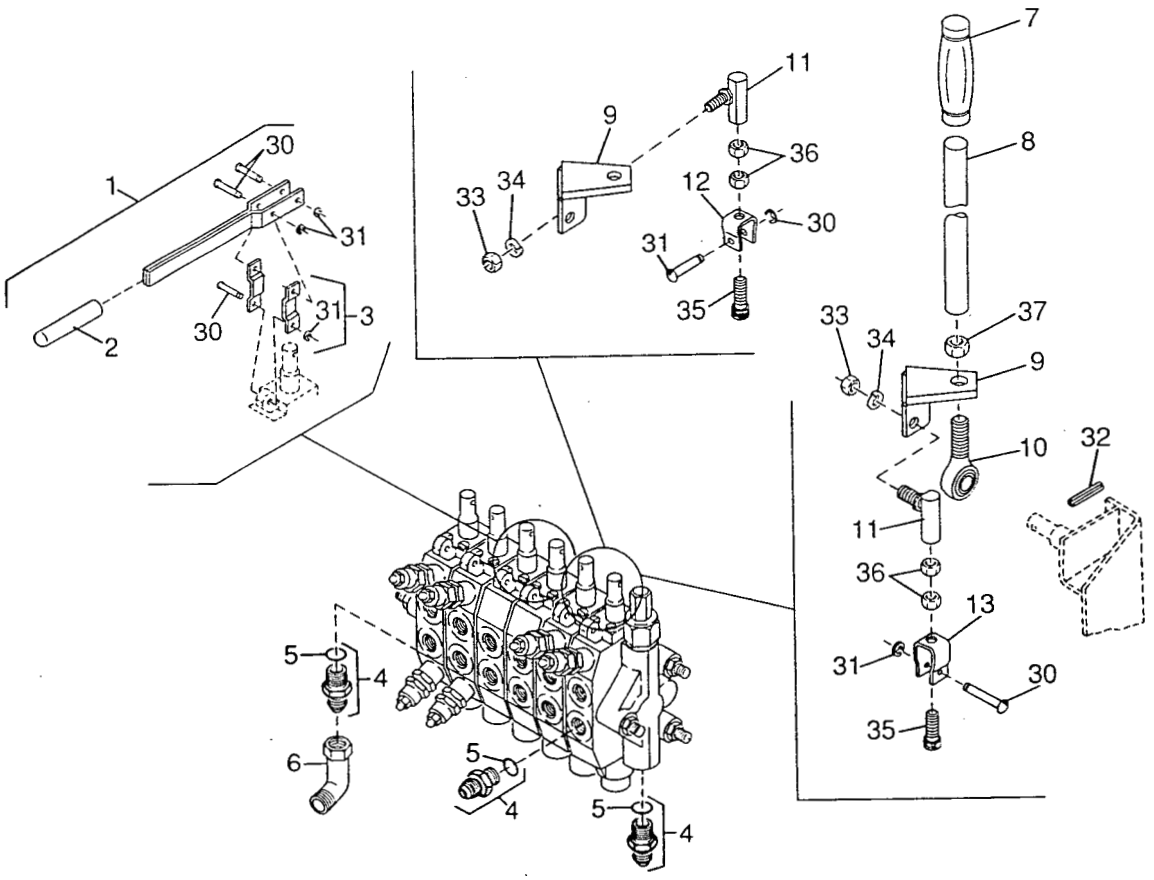


Ref No.	No. Used	Description
'1	1	Back plate assembly
+2	2	O-Ring
+3	1	Thrust plate
'4	1	Body
5	2	Dowel pin
'6	1	Drive gear assembly
7	1	1/4 x 1/4 x 15/16 Key
+8	1	Diaphragm
+9	1	Back-up gasket
+10	1	Protector gasket
+11	1	Diaphragm seal
'12	2	Spring
'13	2	Steel ball
'14	1	Front plate assembly
+15	1	Shaft seal
'16	4	Tie bolt
'17	4	Tie bolt
'18	1	Idler gear assembly
19	1	Gear pump assembly
20	1	Seal kit complete (includes items 2, 3, 8, 9, 10, 11 & 15)

* Not Serviceable

+ Not Sold Separately

VALVE CONTROLS & HARDWARE



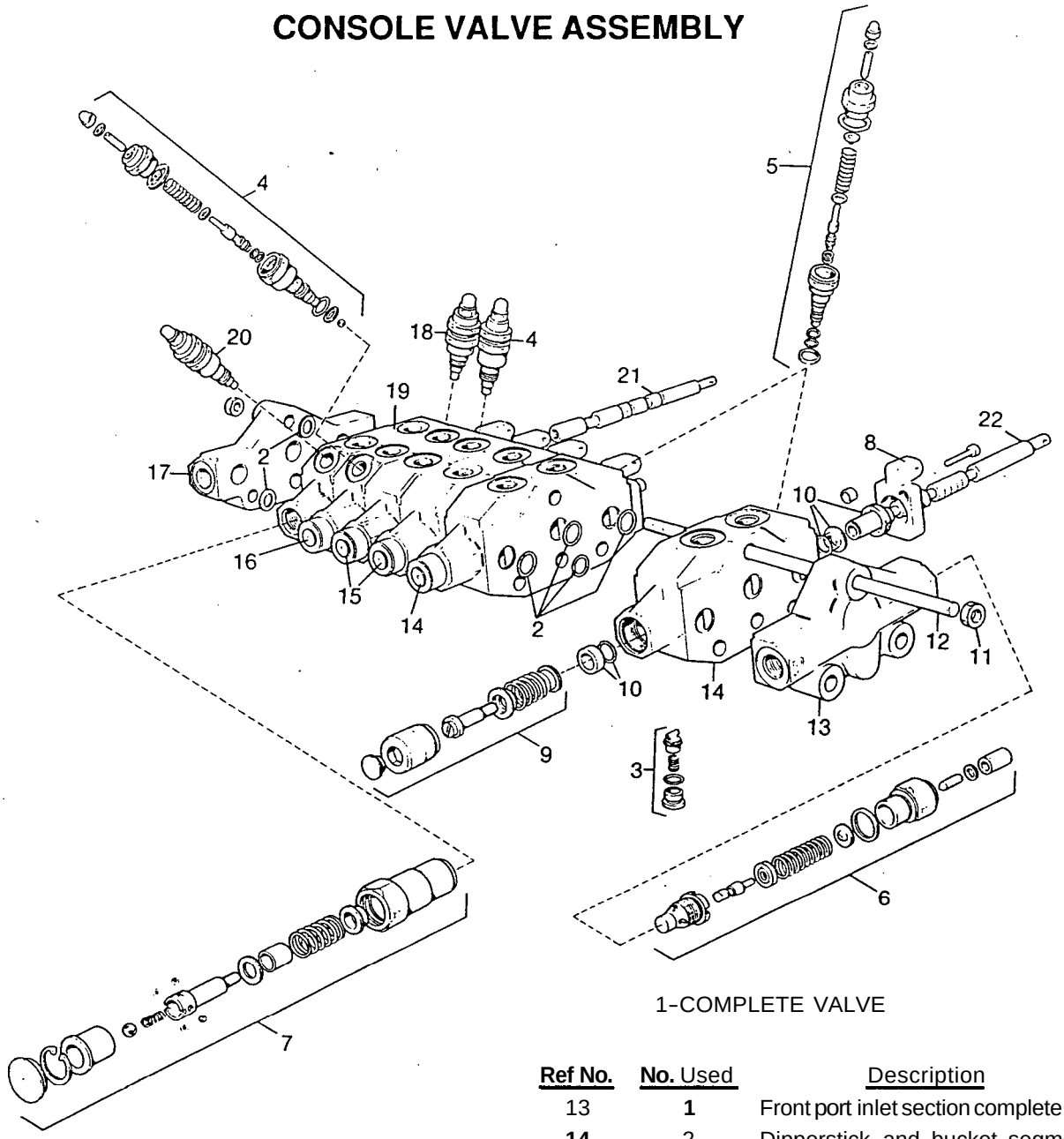
Ref No.	No. Used	Description
1	2	Stabilizer handle assembly
2	2	Rubber handle
3	2	Stabilizer handle link kit
4	14	9/16 - 18 O-ring connector
5	14	#906 O-ring, .468 ID x .078 cross section
6	1	9/16 - 18 x 450 Swivel nut elbow
7	2	Grip, .63 x 1.06 x 5.0 (black)
8	2	Control handle
9	2	Handle arm weldment assembly
10	2	Rod end 7/16 NF male
11	4	Ball joint, 5/16 NF
12	2	Clevis - Valve spool .69
13	2	Clevis - Valve spool 1.00

HARDWARE

Ref No.	Description
30	Valve linkage pin
31	.025 x .156 External E-ring
'32	3/16 x 1-1/8 Spring pin
'33	5/16 NF Hex nut
'34	5/16 Standard lockwasher
35	5/16 NF x 1 Socket head cap screw
'36	5/16 NF Hex jam nut
'37	7/16 NF Hex nut

* Obtain Locally

CONSOLE VALVE ASSEMBLY



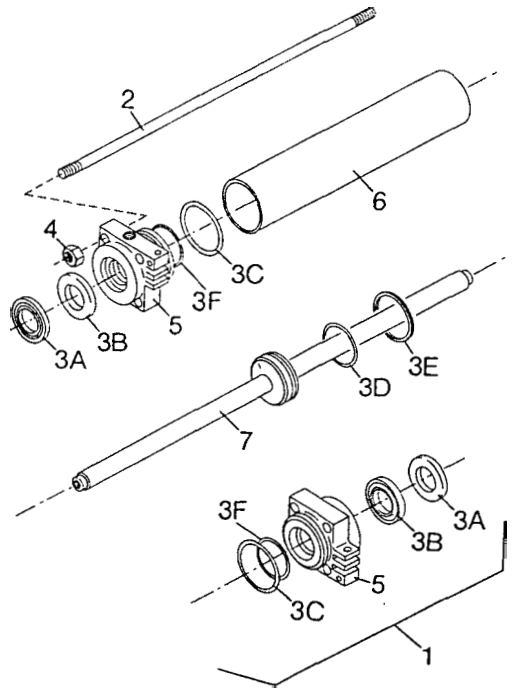
1-COMPLETE VALVE

Ref No.	No. Used	Descrition
1	1	Console valve
2	1	Section seal repair kit
3	6	Check valve assembly
4	2	Shock/dampening valve, 2000 psi
5	2	Shock/dampening valve, 2500 psi
6	1	Relief valve assembly
7	1	Spool position control assembly
8	6	Lever bracket
9	5	Spool position control assembly
10	**6**	Spool repair kit
11	**6**	**8** mm x 1.25 mm Pitch hex nut
12	3	M8 x 1.25 x 276 Tie rod

Ref No.	No. Used	Description
13	**1**	Front port inlet section complete
14	2	Dipperstick and bucket segments **complete** (includes body, spool, **check** valve & 2500 **psi** relief **assy.)**
15	**2**	Stabilizer segment complete (includes body, spool ***8*** check valve)
16	1	Swing segment complete (includes body, **spool,** check valve ***8*** **two** 2000 psi relief assemblies)
17	1	Standard exhaust section
18	1	Shodddampening valve, 3500 psi
19	1	Boom segment complete (includes body, **spool** with float position, check valve, 3500 psi ***8*** 2500 psi relief assemblies)
20	1	Shock/dampening valve, 2500 psi
21	1	Spool (used on boom segment only)
22	**5**	**Spool**

SWING CYLINDER

NOTICE **Be sure to make proper manufacturer identification, then refer to either the "E" or "L" column when ordering parts.**



Swing cylinders were obtained from two suppliers. All items except barrel **(6)** and rod assembly **(7)** are interchangeable between cylinders. When ordering either of these items, check manufacturer identification. "Energy" barrels have an "E" stamped into the barrel. "Lantex" barrels will either have an "L" stamped in the barrel or will be unmarked. An "Energy" barrel will not work with a "Lantex" rod assembly. A "Lantex" barrel will not work with an "Energy" rod assembly. The seal kit contains repairs for both cylinders. Item (3F) back-up ring is not used on item *(5)* piston rod guide with the word "Lantex" in the casting.

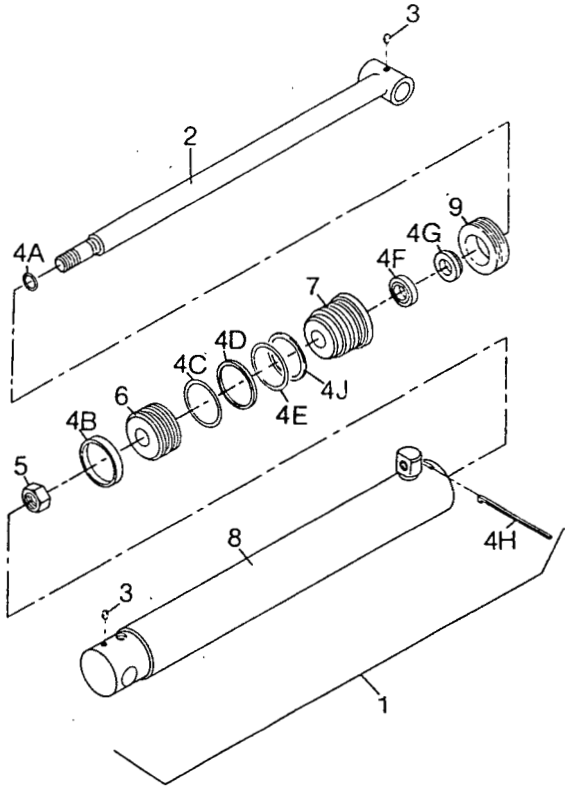
Ref No.	No. Used "E"	No. Used "L"	Description
1	1	1	Hydraulic swing cylinder complete
2	4	4	7/16 NF x 16 Tie rod
3	1	1	Seal kit (contains 3A thru 3F)
3A	2	2	Rod wiper
3B	2	2	Rod seal
3c	2	2	Gland static seal
3D	1	1	O-ring
3E	1	1	Piston seal
3F	2	+2	Back-up ring
*4	8	8	7/16 NF Hex nut
5	2	2	Piston rod guide
6	1	++	Barrel
7	1	++	Rod assembly

• Obtain Locally

+ **(3F Not)** used on Lantex

++ "Lantex" barrel and rod assembly are no longer available. If you have a "Lantex" barrel and need to order either item **(6)** or **(7),** replace both barrel **(6)** and rod assembly (7) with "Energy" parts.

BOOM & DIPPERSTICK CYLINDER

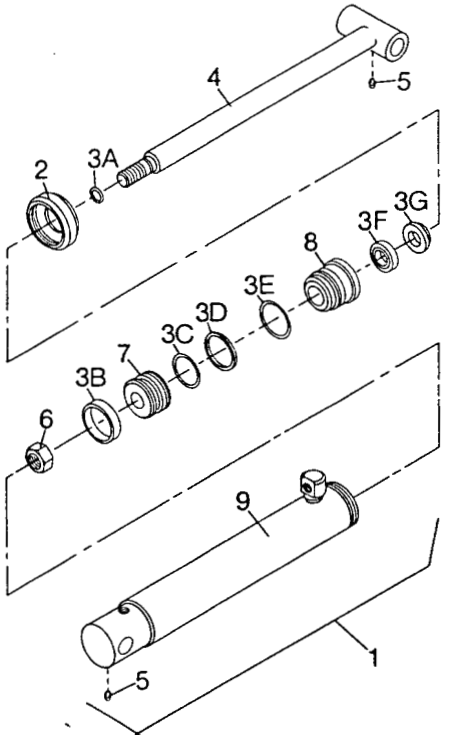


Lock Wire or Threaded Plug Style Cylinder Cylinders used in the same application are provided from two suppliers. One uses a lock wire and one uses a threaded plug for locking devices. Lock wire cylinders can be identified by the "L" stamped on butt end of the cylinder. All threaded plug cylinders have an "E" stamped on the butt end of the cylinder. **Be sure to make proper manufacturer identification and order repair parts from correct column.**

Ref No.	No. Used ("E")	No. Used ("L")	Description
1	1	1	2-1/2 x 16-3/4 Hydraulic cylinder
2	1	1	Rod assembly
3	2	2	1/4-28 Taper thread grease fitting
4	1	1	Seal kit (contains 4A thru 4J)
4A	1	1	Rod static seal
4B	NIA	1	Wear strip
4C	1	1	O-ring
4D	1	1	Piston seal
4E	1	1	Gland static seal
4F	1	1	Rod seal
4G	1	1	Rod wiper
4H	N/A	1	Lock wire
4J	N/A	1	Back-up washer
5	1	1	7/8 NF Self-lock hex nut
6	1	—	Piston
6	—	1	Piston
7	1	—	Gland
7	—	1	Gland
8	1	1	Barrel assy. (Not sold separately)
9	1	N/A	Threaded retainer

• Obtain Locally N/A - Not Applicable

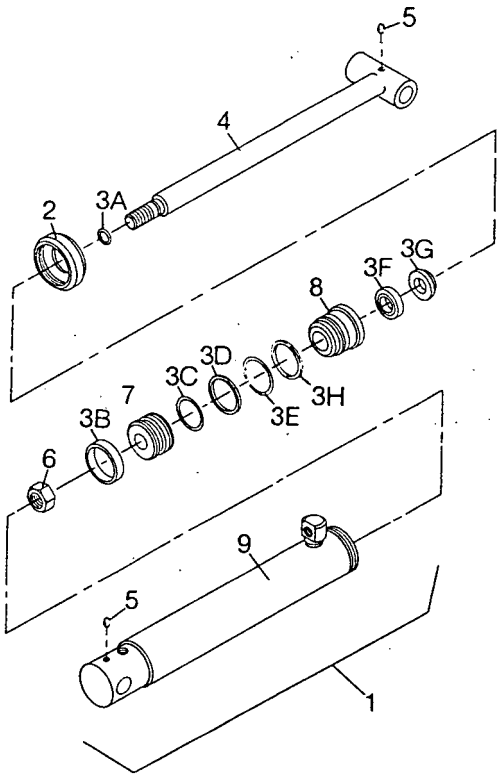
STABILIZER CYLINDER



Ref No.	No. Used ("E")	No. Used ("L")	Description
1	1	1	2 x 14-1/2 Hydraulic cylinder assy.
2	1	—	Collar
2	—	1	Collar
3	1	1	Seal kit (contains 3A thru 3G)
3A	2	2	Rod static seal
3B	2	2	Wear ring
3c	2	2	O-ring
3D	1	1	Piston seal
3E	1	1	Gland static seal
3F	2	2	Rod seal
3G	1	1	Rod wiper
4	1	1	Rod assy.
'5	2	2	1/4 - 28 Taper greese fitting
6	1	1	7/8 NF Self-lock nut
7	1	1	Piston
8	1	—	Gland
8	—	1	Gland
9	1	1	Barrel assy. (not sold separately)

* Obtain Locally

BUCKET CYLINDER



Cylinders are obtained from *two* suppliers. They may be identified by an "E" or "L" stamped into cylinder buff end. **Be sure to** make proper manufacturer identification, then refer to **either the "E" or "L" column when ordering parts.**

Ref No.	No. Used ("E")	No. Used ("L")	Description
1	1	1	2 x 16-3/4 Hydraulic cylinder assy.
2	—	1	Collar
2	1	—	Collar
3	**1**	1	Seal kit (contains 3A thru 3H)
3A	2	2	Rod static seal
3B	2	2	Wear ring
3c	2	2	O-ring
3D	1	1	Piston seal
3E	1	1	Gland static seal
3F	2	2	Rod seal
3G	**1**	**1**	Rod wiper
3H	1	+	Back-up washer
4	—	1	Rod assy.
4	1	—	Rod assy.
5	**2**	2	1/4 - 28 Taper greese fitting
6	1	1	7/8 **NF** Self-lock nut
7	1	1	Piston
8	—	1	Gland
8	1	—	Gland
9	1	1	Barrel assy. (not sold separately)

• Obtain Locally

+ Not used on Lantex Cylinders

WARRANTY SERVICE

Your satisfaction and goodwill are important to your dealer and to us. All Honda warranty details are explained in the Distributor's Limited Warranty. Normally, any problems concerning the product will be handled by your dealer's service department. If you have a warranty problem that has not been handled to your satisfaction, we suggest you take the following action:

Discuss your problem with a member of dealership management. Often complaints can be quickly resolved at that level. If the problem has already been reviewed with the Service Manager, contact the Owner of the dealership or the General Manager.

If your problem still has not been resolved to your satisfaction, contact the Power Equipment Customer Service Department of American Honda Motor Co., Inc:

American Honda Motor Co., Inc.
Power Equipment Division
P.O. Box 100021
Duiuth, Georgia 30136-9421
Telephone: (404) 497-6400

We will need the following in order to assist you:

- Your name, address, and telephone number
- Product model and serial number
- Date of purchase
- Dealer name and address
- Nature of the problem

After reviewing all the facts involved, you will be advised of what action can be taken. Please bear in mind that your problem will likely be resolved at the dealership, using the dealer's facilities, equipment, and personnel, so it is very important that your initial contact be with the dealer.

Your purchase of a Honda product is greatly appreciated by both your dealer and American Honda Motor Company. We want to assist you in every way possible to assure your satisfaction with your purchase.

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