


## SAFETY PRECAUTIONS

 The safety of the operator was a prime consideration in the design of this backhoe. Proper shielding, convenient controls, simple adjustments, and other safety features have been built into this backhoe.

### PREPARATION -

Know your controls. Read this operator's manual and the manual provided with your tractor. Learn how to stop the tractor, the engine, and the backhoe quickly in an emergency.

Be sure the area is clear of underground obstructions.

Position a barricade around the work area.

Provide adequate front end weight to counterbalance the backhoe at all times.

Keep all bystanders a safe distance away.

Decal, 70020-00741 opposite, is located on the operator's console.

### OPERATION -

Operate the backhoe from the operator's seat only.

Allow only one person to operate the backhoe at any time.

Never dig with the backhoe unless the stabilizers are properly set.

Do not dig under stabilizers or tractor-backhoe. Soft ground or sandy soil can cause cave-ins. The following decal is located on the operator's console:



Watch for overhead wires. Do not touch wires with any part of the backhoe.

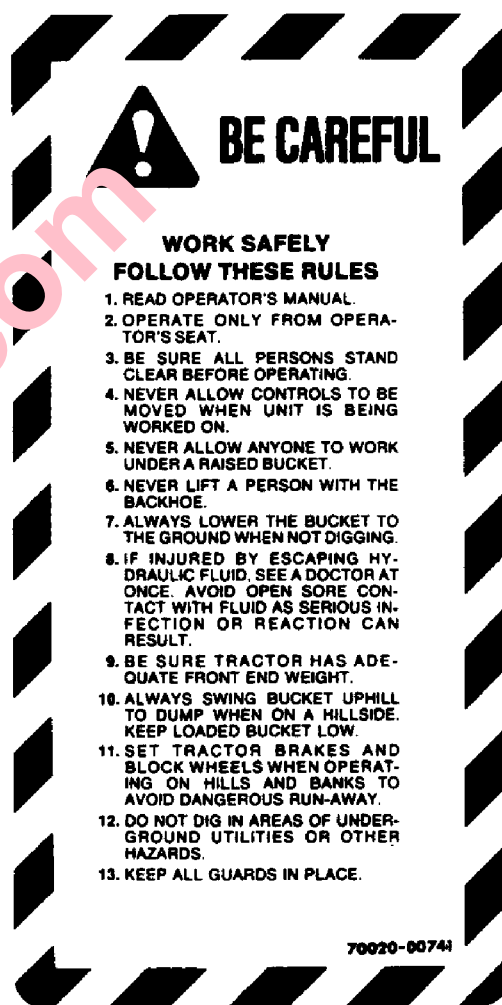
Never allow a person to work under a raised bucket.

Never lift a person with the backhoe.

Do not use the backhoe bucket as a battering ram.

Always lower the bucket to the ground before leaving the backhoe seat.

Never leave the tractor unattended with the engine running.



### TRANSPORTATION -

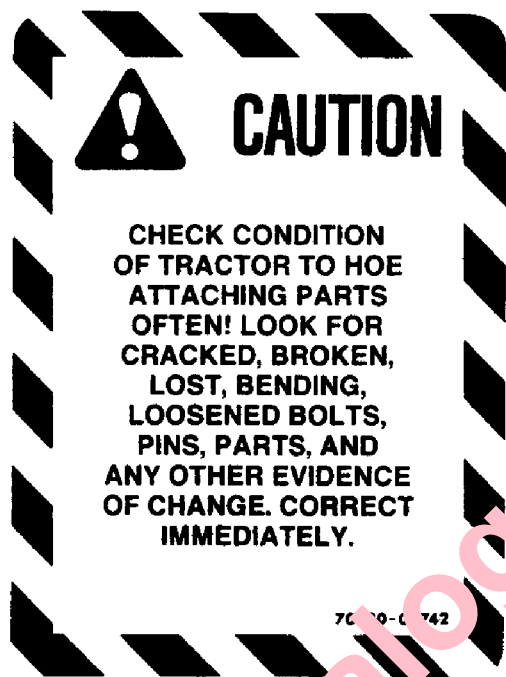
Do not drive the tractor near the edge of a ditch or excavation.

The rate of travel and the orientation of the backhoe on hillsides and curves should always be such that there is no danger of tipping.

Always use accessory lights and devices, when transporting on a road or highway, to warn operators of other vehicles. Check your local government regulations. Be sure that the SMV emblem is visible to the rear.

## ADJUSTMENTS AND INSPECTION -

Check pins that attach backhoe to tractor and all pivot pins for tightness several times daily. The following decal is located on the operator's console:



Do not oil, grease, or adjust the backhoe while it is in motion.

Do not change any backhoe relief valve settings. They are factory set for best backhoe performance and safety.

Escaping fluid, under pressure, can have sufficient force to penetrate the skin and cause serious injury. Be sure to relieve all pressure before disconnecting lines. Be sure all connections are tight and that lines, pipes, and hoses are not damaged before applying pressure to the system.

Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood - not your hands - to search for suspected leaks.

See a doctor at once if injured by escaping fluid. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

Protect your eyes - wear safety glasses.

Guard against injury when driving connecting pins or performing any repair in which particles can chip from work piece or striking tool.

Do not remove any guards on backhoe or tractor. The following decal is located on the operator's console:



## BACKHOE - GENERAL OPERATION



**CAUTION** - To avoid possible injury, observe the following safety rules **BEFORE** operating the backhoe:

1. Be sure area is clear of underground obstructions.
2. Position a barricade around work area.
3. Provide adequate front end weight to counter-balance backhoe at all times.
4. Keep bystanders a safe distance away.

### DIRECTIONS -

The terms right, left, front, and back are determined from the position of the operator when seated in the operating position on the backhoe.

### ENGINE SPEED -

The speed at which the backhoe operates is partially dependent upon engine RPM. Use moderate engine speed to start and increase it as your experience permits.

### CONTROLS -

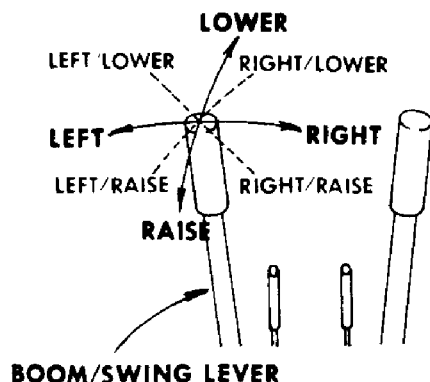
The Model B670 Backhoe has two major control levers plus the stabilizer control levers. These controls are located on the control panel directly ahead of the operator. Following is a list of the controls with the function of each reading from left to right:

#### 1. Boom/Swing:

The boom/swing control lever, next page, controls four functions - raising or lowering the boom and swinging it to the left or right.

# KUBOTA TRACTOR B670 BACKHOE

Figure: 3 - BACKHOE - GENERAL OPERATION (CONTINUED)



**LOWER** the boom by pushing the control lever forward. **RAISE** the boom by pulling lever back.

**SWING LEFT** by moving the lever left and **SWING RIGHT** by moving the lever to the right.

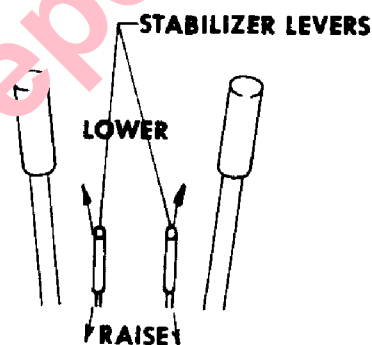
By moving the lever to one of the intermediate positions, the boom can be swung left or right at the same time it is being raised or lowered.

**SWING LEFT AND LOWER** the boom by moving the control lever forward and to the left.

**SWING LEFT AND RAISE** the boom by moving the control lever back and to the left.

**SWING RIGHT AND LOWER** the boom by moving the lever forward and to the right.

**SWING RIGHT AND RAISE** the boom by moving the lever back and to the right.



## 2. Left Hand Stabilizer:

**LOWER** the LH stabilizer by pushing the control lever forward. **RAISE** the LH stabilizer by pulling lever back.

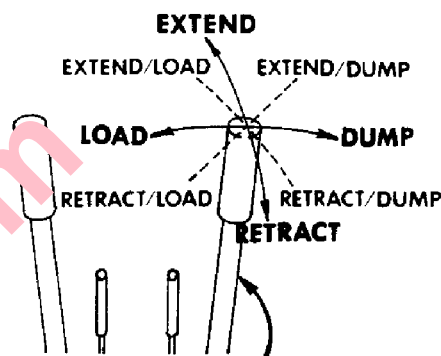
## 3. Right Hand Stabilizer:

**LOWER** the RH stabilizer by pushing the control lever

forward. **RAISE** the RH stabilizer by pulling lever back.

## 4. Dipperstick/Bucket:

The dipperstick bucket control lever, shown below, controls four functions - extending or retracting the dipperstick and loading or dumping the bucket.



**EXTEND** the dipperstick by pushing the control lever forward. **RETRACT** it by pulling the lever back.

**LOAD** the bucket by moving the control lever to the left. **DUMP** it by moving the lever to the right.

By moving the lever to one of the intermediate positions, the dipperstick can be extended or retracted at the same time the bucket is being loaded or dumped.

**EXTEND AND LOAD** the bucket by moving the lever forward and to the left.

**RETRACT AND LOAD** the bucket by moving the lever back and to the left.

**EXTEND AND DUMP** the bucket by moving the lever forward and to the right.

**RETRACT AND DUMP** the bucket by moving the lever back and to the right.

In general the direction of movement of a control lever corresponds to the movement of the operating member.

## OPERATING THE BACKHOE -



**CAUTION** - To avoid possible injury, observe the following safety rules **WHEN** operating the backhoe:

1. Operate the backhoe from the operator's seat only.
2. Lower the stabilizers until the rear of the tractor is totally supported by them.

KUBOTA TRACTOR  
B670 BACKHOE

Figure: 5 - BACKHOE - GENERAL OPERATION (CONTINUED)/SERVICE

Raise the bucket to the top of the trench and dump it on the spoil pile. With a little practice, raising, swinging, and dumping can be accomplished in one smooth operation.

When loading high, continue rolling the bucket, as it is being raised, to prevent spilling the contents.

## 2. Using The Dipperstick To Dig:

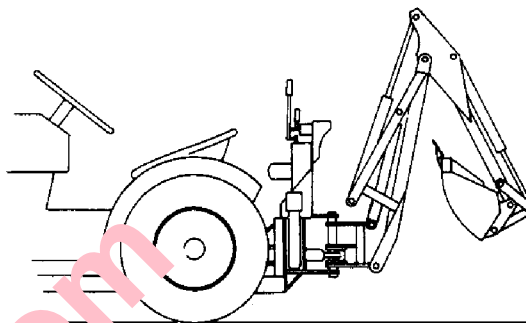
Lower the bucket to the digging area, with bucket pivot 18 to 24 inches forward of the boom/dipper pivot, see diagram. Rotate the bucket until the cutting edge teeth are flat on the ground.

Using only the dipperstick cylinder, retract the dipperstick, dragging the bucket through the trench until it is about half full. Begin to roll the bucket while you continue to retract the dipperstick.

Raise the bucket and swing the boom until the bucket can be dumped in the spoil area.

2. Do not drive the tractor near the edge of a ditch or excavation.

3. Use accessory lights and SMV emblem when traveling on highways.



## TRANSPORTING THE BACKHOE



**CAUTION** - To avoid possible injury, observe the following safety rules when **TRANSPORTING** the backhoe:

1. Travel slowly over rough terrain, on hillsides, and around curves to prevent tipping.

Before mounting tractor, position the backhoe for transport by raising boom, crowding dipperstick in, curling bucket in, and raising the stabilizers, as shown.

When transporting for long distances, periodically examine the backhoe and raise it back up to full transport height. It is normal for the hoe to slowly settle while being transported.

## SERVICE



**CAUTION** - To avoid possible injury, observe the following safety rules when **SERVICING** the backhoe:

1. Do not oil, grease, or adjust the backhoe while it is in motion.
2. Do not change any backhoe relief valve settings. They are factory set for best backhoe performance and safety.
3. Escaping fluid under pressure can have sufficient force to penetrate the skin and cause serious injury. Be sure to relieve all pressure before disconnecting lines. Be sure all connections are tight and that lines, pipes, and hoses are not damaged before applying pressure to the system.
4. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood - not your hands - to search for suspected leaks.
5. See a doctor at once if injured by escaping fluid. Serious infection or reaction can develop if proper medical treatment is not administered immediately.

6. Protect your eyes - wear safety glasses. Guard against injury when driving connecting pins or performing any repair in which particles can chip from work piece or striking tool.

## BEGINNING OF SEASON -

Remove all protective covering.

Check hydraulic hoses for deterioration and replace if necessary.

Check hydraulic system for loss of fluid and fill to proper level if necessary.

Lubricate all grease fittings and oil handle linkage.

Tighten all loose bolts, nuts, and set-screws.

Inspect bucket teeth and sharpen or replace them if necessary.

Operate the backhoe slowly for a short time before placing the unit under full load.

## BLEEDING BACKHOE HYDRAULIC SYSTEM -

If the hydraulic hoses have been disconnected from the backhoe or tractor, all trapped air must be removed after the hoses are connected. Start tractor engine and operate backhoe through all movements fully, several times, to purge the system of air.

## HYDRAULIC SYSTEM HOSES -

Oil leaks in the pressure side of the system can be located by carefully inspecting the external area of the hoses and fittings.

Check the return side of the system for leaks by examining the oil in the reservoir. If air is being drawn into the system, the oil will contain air bubbles and appear to foam.

When tightening connections, always use two wrenches.

**IMPORTANT** - Do not over-tighten fittings. Make them just tight enough to prevent leaks.

**Never** use teflon tape on pipe thread fittings. Always use a paste type sealer.

Hoses on any backhoe are very severely worked and will fail in time. Examine them regularly and replace any that show signs of failure. Pay careful attention to the routing of hoses so they can move fully and freely, without kinking, and can not be pinched or cut by any part of the backhoe.

## HYDRAULIC SYSTEM RESERVOIR -

Maintain the reservoir fluid level at 2-½ inches below the tank top when the bucket is extended to full reach, bucket rolled back for loading and resting on the ground, stabilizers fully raised. Do not over-fill, fluid may be forced out of the breather filler cap.

Fill with:

SAE 10W40 engine oil with API "SD" classification in northern climates.

SAE 40W engine oil with API "SD" classification in southern climates.

Change oil every 200 hours or more often if necessary.

## HYDRAULIC SYSTEM FILTER -

Use any good quality automotive filter:

AC	PF2
APCO	KF-1/APH-8A
FRAM	PH8A
HASTING	P115
NAPA	1015
PUROLATOR	PER-1
WIX	PC-15

Change filter every time oil is changed.

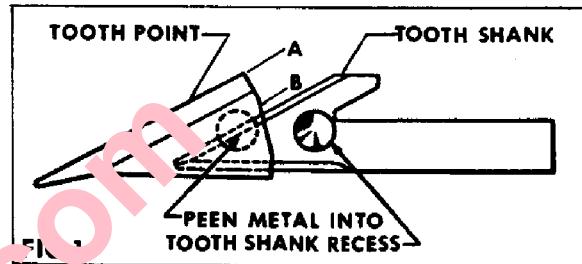
## HYDRAULIC SYSTEM PRESSURE -

The hydraulic system is set to operate up to 1500 PSI by the relief valve in the backhoe control valve.



**CAUTION** - Never adjust the relief valve setting to above 1500 PSI. The backhoe becomes unstable and could upset the tractor causing injury and equipment damage.

## BUCKET TOOTH POINTS -



The bucket tooth points are self-sharpening and will require little attention; however, these points on the bucket shanks can be replaced when they become badly worn or broken.

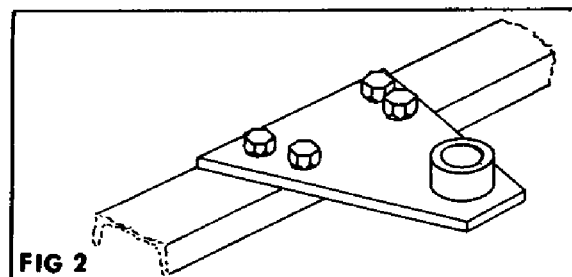
A tooth point can be removed from the welded tooth shank by hammering at (A) on the tooth point or by driving a chisel at (B) just between the tooth point box section and the tooth shank. Install the new point and anchor it to the shank by peening at the location shown, Fig 1.

If a tooth shank breaks off, becoming lost or damaged so that it can not hold a tooth point, a new shank should be welded to the bucket in its place.

## TIGHTENING NUTS AND BOLTS -

Periodically, check to be sure all bolts and nuts are tight. Tighten all hardware to torque requirements specified in torque chart on page 7.

Regularly (daily when hoe is new) check the four bolts that hold the top bearing plate to the frame channel. Bolts are located under the reservoir. Keep these bolts torqued to 140 ft lbs, Fig 2.



Check all pins for cotter pins, washers and retainers, replace if missing.

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