⚠ SAFE OPERATION

Most backhoe equipment accidents can be avoided by following simple safety precautions.
These safety precautions, if followed at all times, will help you operate your backhoe safely.

BEFORE OPERATING BACKHOE

1. Know your equipment and its limitations. Allow only trained personnel to operate or service this equipment. Read and understand all instructions and precautions in this manual before service or operation.
   Also read and understand all instructions and precautions found in the tractor and loader operator's manuals before using this equipment.
2. It is the owner's responsibility to ensure that anyone who will operate the equipment reads and understands this manual first and becomes familiar with the safe operation of the equipment.
3. For safe operation, check the mounting bolts for tightness and that the mount levers are in the right position before operation.
4. Never operate tractor with backhoe attached and loader removed.
5. Check for buried material such as electrical, telephone, gas and water lines. When in doubt, contact local utility companies for their buried location prior to operating the backhoe.
6. Replace any safety decal that becomes damaged, lost or illegible. Also renew all decals when repainting.

OPERATING THE BACKHOE

1. Do not allow anyone other than the operator on the unit while in operation or transport.
2. Use care when operating on slopes to avoid tip-over. Travel at a speed compatible with safe operation, especially when operating on uneven terrain, crossing ditches or while turning.
3. Operate the backhoe from the backhoe operator's seat only.
4. When using on slopes, one stabilizer may be lower than the other. Use extreme care during excavation as risk of tip-over will increase.
5. To reduce the risk of tip-over on a slope, place the spoil to the high side of the excavation.
6. Do not dig under the stabilizer or tractor, especially in soft or sandy conditions. Take extra precaution in wet or thawing ground.
   Under these conditions the ground can become unstable and may collapse under the weight of the machine and may cause the unit to tip over.
7. Never operate the machine or any equipment while under the influence of alcohol or other drugs, or while fatigued.
8. When leaving the machine unattended, be sure to lower the backhoe to the ground. Set the parking brake, then shut the engine off and remove the key.

SAFETY FOR CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of children. Children are generally attracted to machines and the work being done. Never assume children will remain where you last saw them.

1. Keep children out of the operating area and under the watchful eye of another responsible adult.
2. Be alert and turn the machine off if children enter the work area.
3. Before and when backing, look behind and down for small children.
4. Never carry children while operating the machine. They may fall off and be seriously injured or interfere with safe operation of the machine.
5. Never allow children to play on the machine or attachment even when turned off.
6. Never allow children to operate the machine even under adult supervision.
7. Use extra care when approaching blind corners, shrubs, trees, or other obstructions that might hide children from sight.

DRIVING THE TRACTOR ON THE ROAD

1. Raise and center the boom, close the dipperstick, curl the bucket and engage the boom and swing locks before transporting the machine.
2. Check the local codes or regulations that may apply to tractor / loader / backhoe operation on public streets or highways, before transporting or traveling. Use SMV emblem and warning flashers as required.
   (SMV: Slow Moving Vehicle)

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SPECIFICATIONS

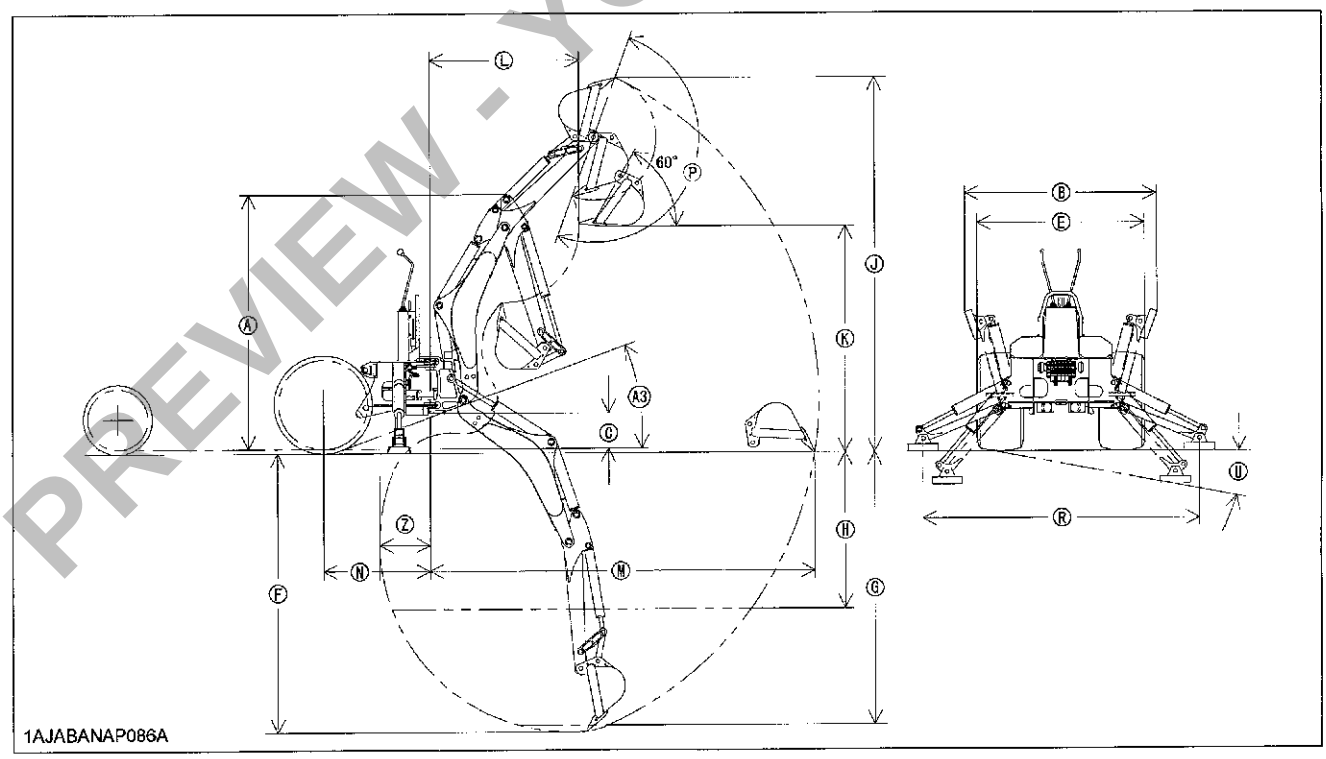
BACKHOE SPECIFICATIONS

NOTE :

- The specifications are taken with KUBOTA B3030 tractor. (Tire size: Front 23 x 8.5-12, Rear 12 x 16.5)

■Dimensions

Item		BH70
Transport height	(A)	1856 mm (73.1 in.)
Stabilizer spread-transport	(B)	1280 mm (50.4 in.)
Ground clearance	(C)	262 mm (10.3 in.)
Overall width	(E)	1260 mm (49.6 in.)
Maximum digging depth	(F)	2197 mm (86.5 in.)
Digging depth, 2 ft. flat bottom	(G)	2165 mm (85.2 in.)
Digging depth, 8 ft. flat bottom	(H)	1554 mm (61.2 in.)
Operating height, fully raised	(J)	2869 mm (113.0 in.)
Loading height	(K)	1474 mm (61.6 in.)
Loading reach	(L)	1157 mm (45.6 in.)
Reach from swing pivot	(M)	2966 mm (116.8 in.)
Swing pivot to rear axle center line	(N)	797 mm (31.4 in.)
Bucket rotation	(P)	180 deg.
Stabilizer spread-operating	(R)	1854 mm (73.0 in.)
Angle of departure per SAE J1234	(A3)	18.2 deg.
Leveling angle	(U)	11.8 deg.
Undercut	(Z)	510 mm (20.1 in.)
Swing arc		140 deg.



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OPERATING INSTRUCTIONS

OPERATING SPEED

CAUTION

To avoid personal injury:

- **Use care when operating tractor on slopes to avoid tip-over. Travel at speed compatible with safe operation, especially when operating in uneven terrain, crossing ditches, and while turning, or upset may occur.**

1. This backhoe can be operated at any engine speed from about 75% of rated rpm to factory rated rpm. The backhoe is most efficient at rated engine speed. However, in special digging conditions, for optimal fuel economy, or in residential neighborhood where noise may be a consideration, the engine speed can be lowered to about 75% of rated rpm.
2. When operating in temperature below 0 ℃ (32 ℉), run the tractor engine below about 50% of rated rpm until the oil temperature exceeds 0 ℃ (32 ℉).

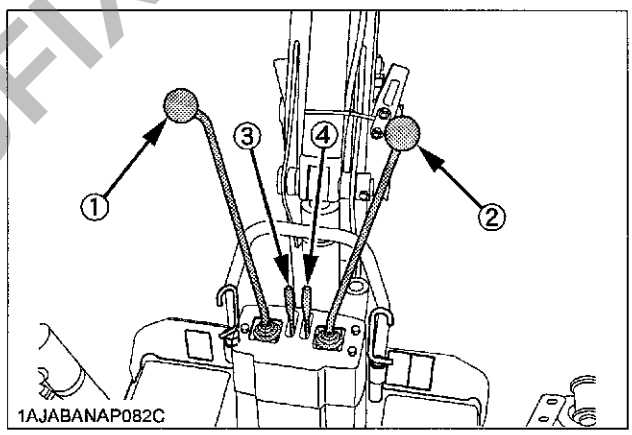
BACKHOE CONTROLS

CAUTION

To avoid personal injury:

- **For all excavation work, operate the backhoe from the backhoe operator's seat only.**
- **Do not tamper with any backhoe control valve relief pressure setting.**
  The relief valve is preset at the factory. Changing the setting can cause overloading of the backhoe and the tractor and serious personal injury may result.

The backhoe is controlled by using the two lever "joystick" system. The left lever controls the boom and swing circuits, and the right lever controls the dipperstick and bucket circuits. The further the levers are moved from neutral, the faster the component will move. Learn the feature of the controls for smooth and precise component movement.



(1) Boom and swing lever
(2) Dipperstick and bucket lever
(3) Stabilizer control lever, left
(4) Stabilizer control lever, right

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REMOVING THE BACKHOE

REMOVAL OF THE BACKHOE

CAUTION

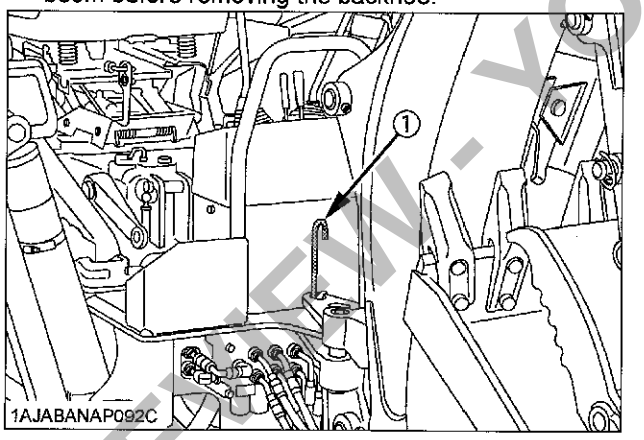
To avoid personal injury:

- **Before starting the engine, always sit in the tractor operator's seat.**
- **Before getting off the tractor, make sure that PTO lever is off and range gear shift lever is in neutral. Then set the parking brake.**
- **Keep hands, feet and body from between tractor and backhoe. Never allow any part of body under the machine.**
- **Before leaving the backhoe operator's seat, fully lower the boom to the ground.**
- **Before removing the backhoe, set the swing lock pin.**

IMPORTANT :

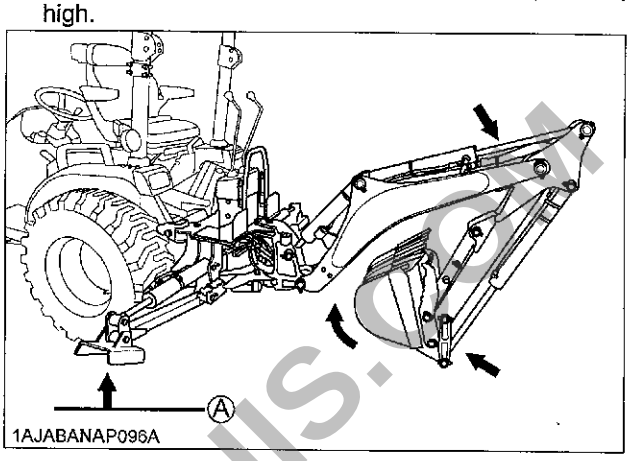
- Before removing the backhoe, set the engine speed low idle.
- For removing the backhoe, locate the tractor / loader / backhoe on a flat level and hard surface, preferably concrete.
  If the surface is soft, place a board on the ground for the bucket and stabilizers.

1. Set the swing lock pin to prevent the pivoting of the boom before removing the backhoe.



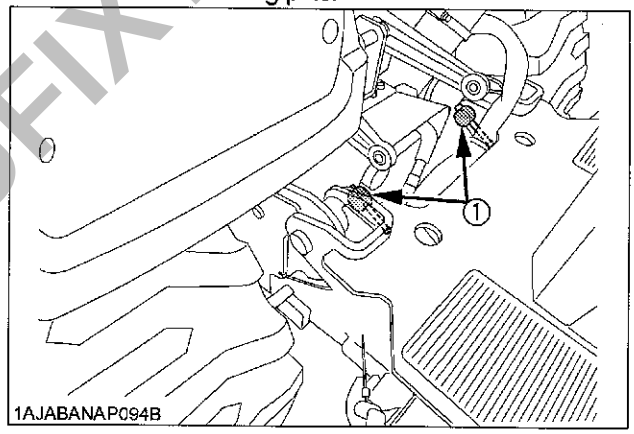
(1) Swing lock pin

2. Stand beside the rear tire, fully close the dipperstick, curl the bucket and lower the boom until the back of bucket contacts the ground.
3. Keep the stabilizer pads at about 381 mm (15.0 in.) high.



(A) 381 mm (15.0 in.)

4. Raise the rear wheels slightly with the boom and remove the mounting pins.



(1) Mounting pin

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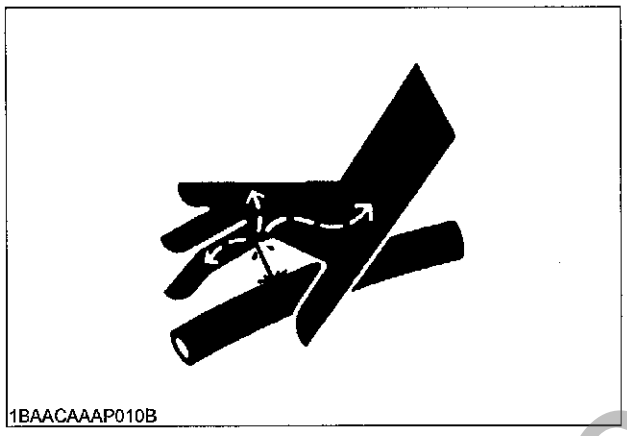
MAINTENANCE

DAILY CHECKS

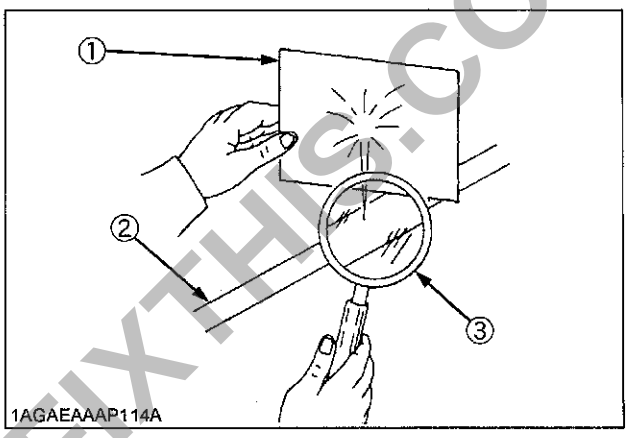
CAUTION

To avoid personal injury:

- **Never make any repairs, service or adjustments when the hydraulic system is under pressure, when the engine is running or when any backhoe cylinder is under load.**
- **Escaping hydraulic fluid under pressure can have sufficient force to penetrate skin, causing serious personal injury.**


1BAACAAAP010B

- **Before disconnecting lines, be sure to relieve all pressure. Before applying pressure to system, be sure all connections are tight and that lines, pipes and hoses are not damaged.**
- **Fluid escaping from a very small hole can be almost invisible. Do not use hands to search for suspected leak, use a piece of cardboard or wood. If injured by escaping fluid, see a doctor at once.**
  Serious infection or allergic reaction will develop if proper medical treatment is not administered immediately.



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(1) Cardboard
(2) Hydraulic line
(3) Magnifying glass

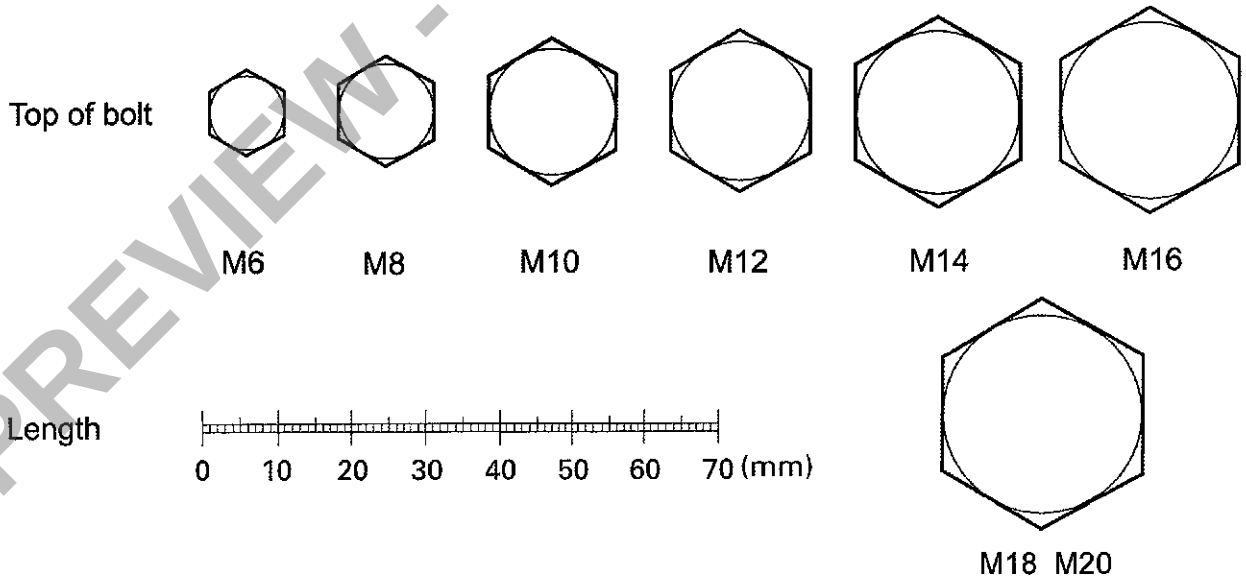
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■General torque specification

*If the torque levels are specified in the text, follow that specification.

American standard screws, bolts and nuts with UNC or UNF threads			Metric cap screws 8.8		
SAE grade No.	SAE GR.5	SAE GR.8	property class		8.8 Approx. SAE GR 5
1/4	(N-m) (kgf-m) (ft-lbs)	11.7 to 15.8 1.19 to 1.61 8.6 to 11.6	16.3 to 19.8 1.66 to 2.02 12.0 to 14.6	M6	(N-m) (kgf-m) (ft-lbs)	9.8 to 11.2 1.0 to 1.1 7.2 to 8.3
5/16	(N-m) (kgf-m) (ft-lbs)	23.1 to 27.8 2.35 to 2.83 17.0 to 20.5	32.5 to 39.3 3.31 to 4.01 24.0 to 29.0	M8	(N-m) (kgf-m) (ft-lbs)	23.6 to 27.4 2.4 to 2.8 17.4 to 20.2
3/8	(N-m) (kgf-m) (ft-lbs)	47.5 to 57.0 4.84 to 5.81 35.0 to 42.0	61.0 to 73.2 6.22 to 7.46 45.0 to 54.0	M10	(N-m) (kgf-m) (ft-lbs)	48.1 to 55.8 4.9 to 5.7 35.5 to 41.2
1/2	(N-m) (kgf-m) (ft-lbs)	108.5 to 130.2 11.06 to 13.28 80.0 to 96.0	149.2 to 179.0 15.21 to 18.25 110.0 to 132.0	M12	(N-m) (kgf-m) (ft-lbs)	77.5 to 90.1 7.9 to 9.2 57.2 to 66.5
9/16	(N-m) (kgf-m) (ft-lbs)	149.2 to 179.0 15.21 to 18.25 110.0 to 132.0	217.0 to 260.4 22.13 to 26.55 160.0 to 192.0	M14	(N-m) (kgf-m) (ft-lbs)	124 to 147 12.6 to 15.0 91.5 to 108.4
5/8	(N-m) (kgf-m) (ft-lbs)	203.4 to 244.1 20.74 to 24.89 150.0 to 180.0	298.3 to 358.0 30.42 to 36.51 220.0 to 264.0	M16	(N-m) (kgf-m) (ft-lbs)	196 to 225 20.0 to 23.0 145 to 166
				M18	(N-m) (kgf-m) (ft-lbs)	275 to 318 28.0 to 32.5 203 to 235
				M20	(N-m) (kgf-m) (ft-lbs)	368 to 431 37.6 to 44.0 272 to 318



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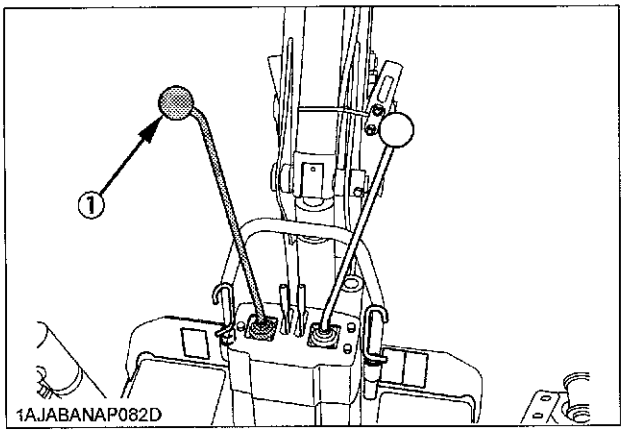
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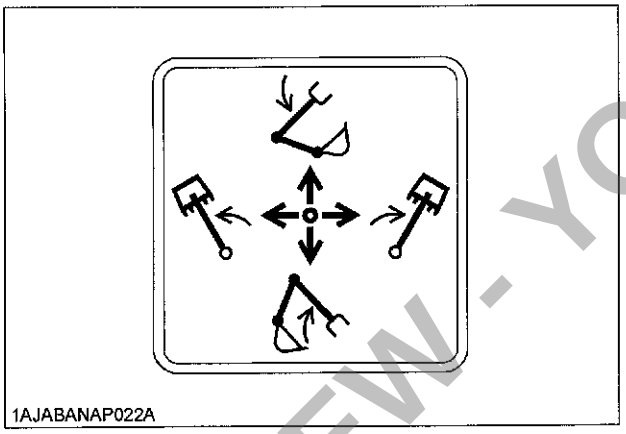
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■Boom & Swing Lever

Pushing the lever forward will lower the boom, and pulling it back will raise it.
Movement of the lever to the left will swing the bucket to the left, and right lever movement will swing to the right.
By moving the lever out of the plus "+" position; into an "X" relationship, it is possible to raise or lower and swing at the same time.

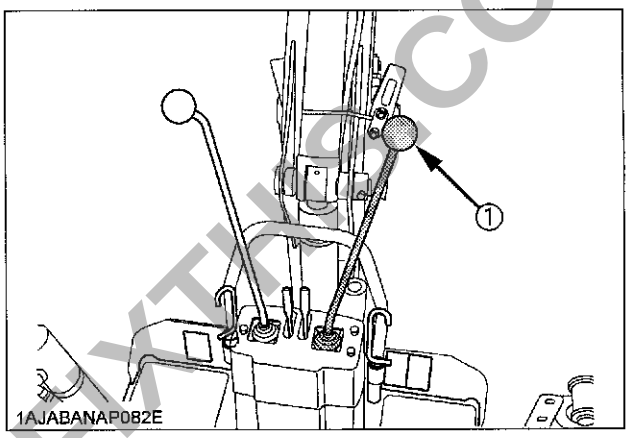


(1) Boom and swing lever

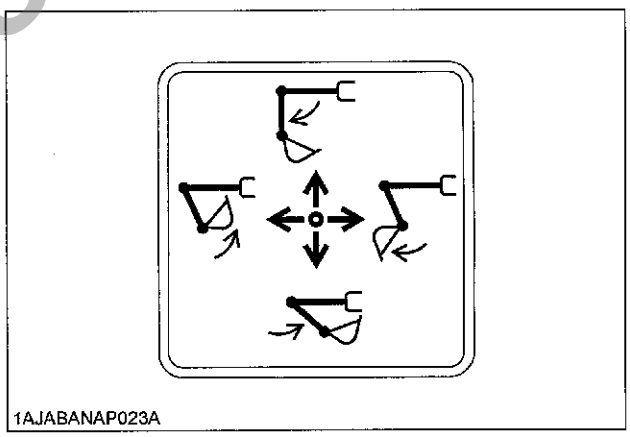


■Dipperstick & Bucket Lever

Pushing the lever forward will crowd out the dipperstick and the bucket and pulling it back will crowd them in. Lever movement to the left will curl the bucket to fill it, and right lever movement will dump the bucket.
Again, movement into an "X" relationship will crowd in and fill the bucket, or crowd out and dump the bucket.
With experience, the combination of both "joystick" levers will allow lift, swing, crowd out and spoil dumping, all in one smooth movement, or lowering, swing, crowd in and bucket filling with reverse movement.



(1) Dipperstick and bucket lever



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