



BACKHOES

MODELS GX600 / GX700 / GX900



**OPERATING INSTRUCTIONS AND
PARTS MANUAL**

B072004

PRINTED IN CANADA

Warranty

This product is warranted to be free of defects in materials and workmanship under normal use and service, for a period of one year from the date of purchase, when operated and maintained in accordance with the Operating and Maintenance Instructions supplied with this unit. This warranty does not cover misuse or negligence.

Under no circumstances will the manufacturer be liable for any consequential damage or expense of any kind, including loss of profits. The manufacturer is under no circumstances liable for tractor damage of any kind. The manufacturer is not liable for the maintenance of the product.

This warranty is extended only to the original purchaser. Warranty is void if repairs are attempted by anyone other than an Authorized Service Centre.

If a difficulty develops with the product, you should contact your nearest Authorized Repair Centre, or distributor. Only these locations are authorized to make repairs to the product or affect the replacement of defective parts, which will be done at no charge within a reasonable time after the receipt of the product. Units or parts should be returned at the customer's expense to the nearest repair location or Authorized Service Centre. Pack unit in a strong carton and pad tightly to avoid damage. Damage in-transit is not covered by warranty. Include original purchase receipt with any claim (keeping a copy for your files).

The distributor's liability under warranty is limited to repair of the product and/or replacement of parts and is given to the purchaser in lieu of all other remedies including incidental and consequential charges. There are no warranties, expressed or implied other than those specified herein.

**For the nearest Authorized Service Centre call:
EMB MFG INC.
4144 BOOMER LINE
ST. CLEMENTS, ON
N0B 2M0
PHONE: 519-699-9283 FAX 519-699-4146
www.embmfg.com email: sales@embmfg.com**

Valuable information for your records.

Date of Purchase: _____

Selling Dealer: _____

Backhoe Model: _____

Backhoe Serial Number: _____

CAUTION!

A CAREFUL OPERATOR IS THE BEST OPERATOR

Most accidents can be prevented by becoming familiar with all controls before operating the backhoe, keeping in mind the safety precautions stated below, and working safely.

- Read Operator's Manual before operation.
- Enter and exit operator's platform from between stabilizers and tires only.
- Operate backhoe from operator's seat only and be sure the seat is firmly locked into position. Always keep your feet on the foot rest area.
- Backhoe digging forces can lift and turn tractor over. For maximum stability, set stabilizers to remove weight from rear tractor tires without lifting them off the ground. Always lower both stabilizers to avoid risk of overturning. Sufficient counterweight or a front end loader might be required in some applications to improve stability. See your dealer for more information.
- Check all hoses and fittings for damage or leaks before operating the backhoe.
- All levers must be in the neutral position when starting your tractor.
- Before operating the backhoe, look for obstructions in the line of movement. Stay clear from low overhead electrical wires when the backhoe is in the upper position. Verify the ground's conditions before digging and ensure digging area is free from underground cables and pipes. Keep people and animals at a safe distance while operating the backhoe and never let anyone into the bucket or onto the backhoe when driving tractor. Never leave an unattended tractor running.
- Never move tractor while operating backhoe.
- Do not use backhoe without front end loader attached.
- To avoid handling stability problems, never exceed the maximum capacity of your backhoe.
- Never use your backhoe as a battering ram (swinging left to right) to push earth. This could affect the good working condition of your backhoe.
- Never operate the tractor's three point hitch if the backhoe is connected to it.
- Keep the valve and lever setting clear from any obstructions. Never remove the safety guards on the stabilizers, cylinders, or the relief valve covering box. Keep all guards in place.
- Do not repair or service backhoe unless it is mounted on tractor and securely supported. Loss of oil or removal of parts could cause backhoe to collapse.

(Safety Instructions continued)

- When attaching or detaching, always stand on the tractor side of the stabilizer outside of rear wheel. Swing lock pin must be in center lock position before detaching backhoe from tractor.
- Before transport, attach SLOW MOVING VEHICLE sign and engage swing and boom lock. When the backhoe is in either the parked position or in transportation, make sure the locking pins are securely in place.
- A minimum of 25% of tractor weight must be on the front tractor wheels with backhoe in transport position.

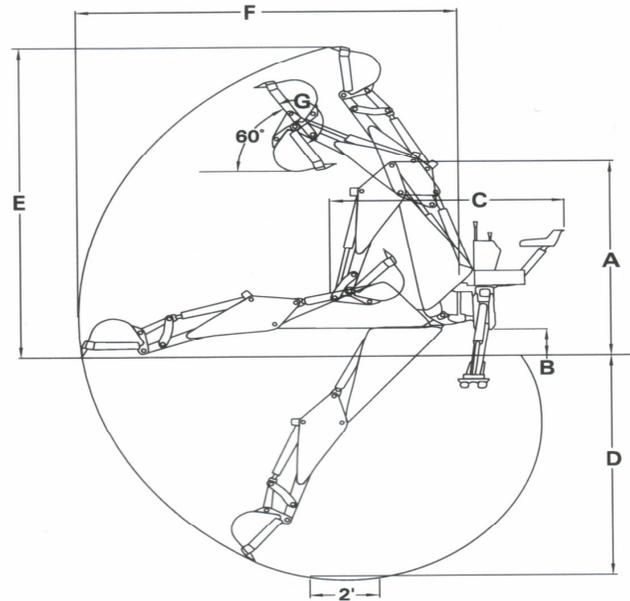


BACKHOES

STANDARD FEATURES

- Optimum performance with 5-7 gpm hydraulic system
- Dual-cylinder swing provides maximum power where it is needed
- All pivot points have grease fittings for easy maintenance
- Full width replaceable bronze bushings on all wearable pivot points
- Optional PTO hydraulic pump kit available (PTO70)
- Replaceable bucket teeth
- Continuous steel formed bucket with wear plates
- Transport and boom rotation lock
- Bucket available in 9", 12", 15", 18"

All specifications subject to change without notice.



Product Specifications	GX600	GX700	GX900
A Transport Height (with boom fully retracted)	61"	65"	84"
Transport Width (with stabilizers up)	52"	54"	54"
B Ground Clearance	8"	12"	12"
C Transport Length	67"	72"	84"
Transport Weight	625 lbs.	900 lbs.	1200 lbs.
D Digging Depth (2 ft. flat bottom)	6 ft.	7 ft.	9 ft.
E Overall Operating Height (fully raised)	7 ft.	8 ½ ft.	13 ½ ft.
F Reach from Swing Post	9 ft.	10 ft.	12 ft.
G Bucket Rotation	180 degrees	180 degrees	180 degrees
Swing Arc	180 degrees	180 degrees	180 degrees
Stabilizer Spread Operating Position	90 in.	8 ft.	8 ft.
System Relief Valve Setting	2000 psi	2250 psi	2250 psi
Dipper Boom Digging Force	1180 lbs.	1300 lbs.	2600 lbs.
Bucket Digging Force	1950 lbs.	2600 lbs.	4100 lbs.
Boom Lift Capacity	Appr. 400 lbs.	Appr. 800 lbs	Appr. 1200 lbs.
Hydraulic Volume Requirements	5-7 gpm	5-7 gpm	5-7 gpm
Recommended Tractor HP	18-30 HP	22-45 HP	45-100 HP
Recommended Skidsteer Requirements (SSQT)	n/a	30-60	45-100
Bucket Sizes Available	9",12",15"	9",12",15",18",2	9",12",15",18",24
3 Point Hitch (PT300)	Category 1	Category 1	Category 1
Main boom Cylinder Diameter	2 ½"	2 ½ "	3 "
All other Cylinder Diameters	2 "	2 ½"	2 ½ "

Starting Operation

Back up tractor close to backhoe, then plug the two hoses from the backhoe into the tractor auxillary outlets. With the stabilizers, lift the backhoe to the right height (12" ground clearance. Raise tractor lift arms to correct height. Insert pins. Never attempt to raise three point hitch while backhoe is on tractor— damage to tractor or backhoe could occur.

Disconnecting Procedure

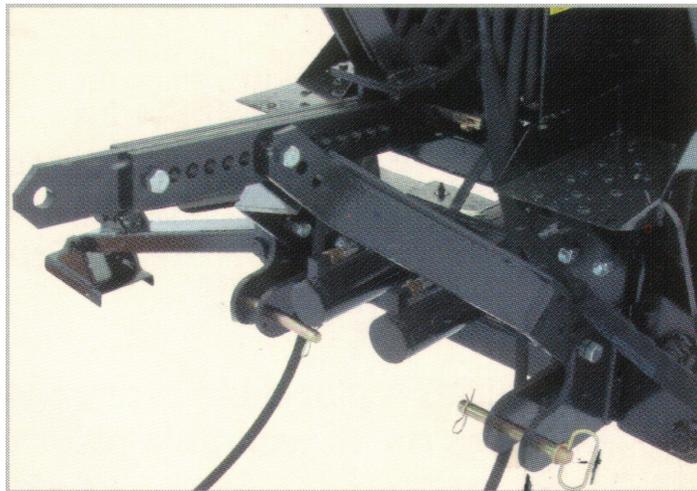
When disconnecting the backhoe from the tractor, lower stabilizers and lift backhoe until pins slide out easily. Remove pins and move tractor ahead a few inches, lowering the backhoe to the ground by lifting the stabilizers. Disconnect all hydraulic lines from the tractor. Always store your backhoe on a flat and solid surface in a dry location. Be sure to have the bucket attached to the backhoe prior to storage to avoid a stability problem when re-attaching the backhoe.

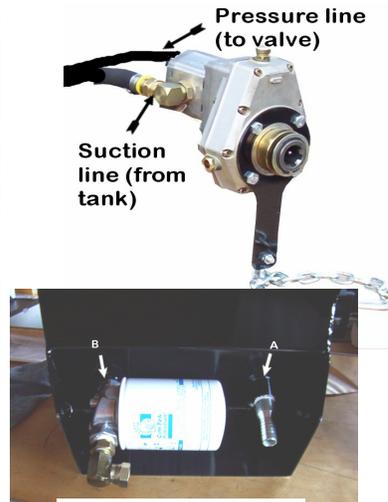
Maintenance

Grease all lubrication points with a grease gun daily. See tractor manual for hydraulic oil/filter change recommendations. Check daily for oil leaks, tighten if necessary. Check daily for loose or missing pins and bolts, replace or tighten if necessary.

Initial Setup

When using a tractor with the backhoe for the first time, the 3 point hitch rigid link may need to be adjusted so the backhoe operators platform sits level. Set up 3 point hitch mounting kit as shown in the photograph below. The backhoe should have approximately 12" of ground clearance (less on GX-600 on smaller tractors).





**Optional PTO Pump Kit
(PTO70)**

DIAGRAM 3

PTO pump kit consists of PTO pump, reservoir assembly complete with filter, suction hose, and required fittings.

1. Install reservoir on backhoe frame. Reservoir slides on top of existing frame. Holes may drilled in upper lip and bolted to ensure stability.
2. Route and connect suction hose from reservoir (A- DIAGRAM 3) to pump through hole with other hoses in main backhoe frame. [DIAGRAM 2]
3. Connect inlet hose at valve to pressure port on pump. Connect return line from valve to fitting on bottom of reservoir on filter head. [B- DIAGRAM 3]
4. Install oil as required. Approximate system capacity is 5 gallons. Dual purpose hydraulic/ transmission oil is recommended.
5. Attach pump to tractor PTO. Fasten pump to tractor drawbar with chain.

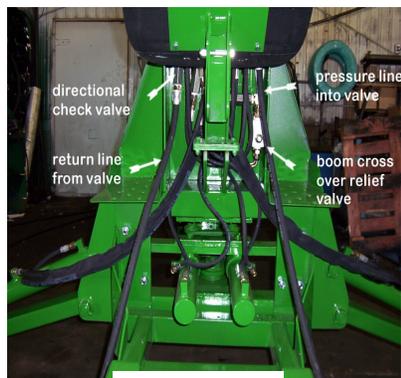


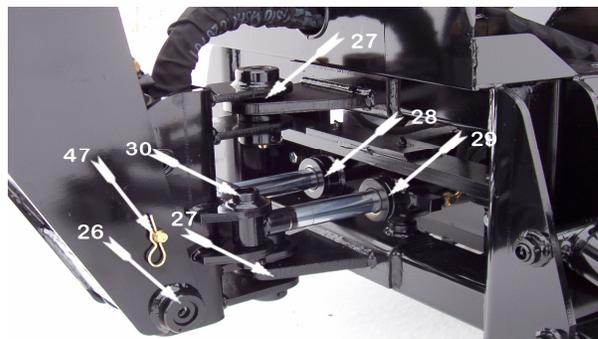
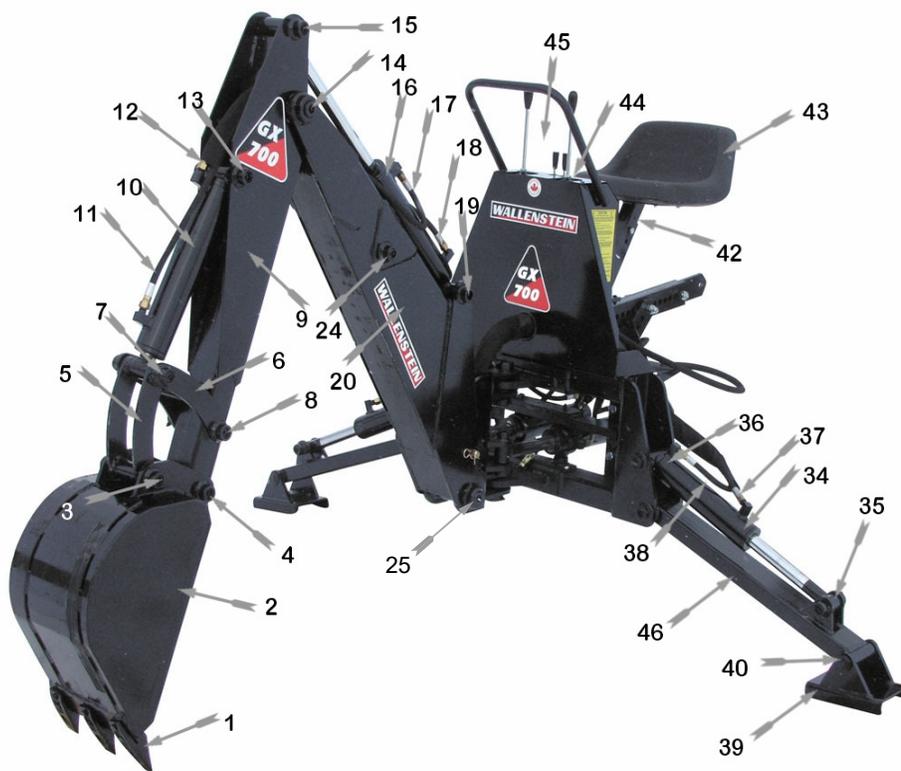
DIAGRAM 1



DIAGRAM 2

Wallenstein Models GX600, GX700 & GX900 Backhoes					
Position	Description	Quantity	GX600	GX700	GX900
			Part Number	Part Number	Part Number
1	Bucket teeth	3 or 4	BKT40	BKT40	BKT40
2	buckets - 9" bucket		BK690	BK900	BK900
	- 12" bucket		BK612	BK120	BK120
	- 15" bucket		BK615	BK150	BK150
	- 18" bucket		BK618	BK180	BK180
	- 24" bucket		N/A	BK240	BK240
3	pin, bucket bracket	1	B13011	B13011	B13011
4	pin, main bucket	1	B13011	B13011	B13011
5	bucket to cylinder bracket	1	B13012	B13012	B13012
6	bucket bracket- cylinder to boom	1	B13013	B13013	B13013
7	pin, bucket cylinder- shaft end	1	B13011	B13011	B13011
8	pin, bucket bracket to boom	1	B13011	B13011	B13011
9	dipper boom	1	B13103	B13014	B13015
10	bucket cylinder	1	B13104	B13016	B13016
11	hose, bucket cylinder- shaft end	1	B13105	B13017	B13018
12	hose, bucket cylinder- butt end	1	B13123	B13019	B13020
13	pin, bucket cylinder- butt end	1	B13021	B13021	B13021
14	pin, dipper boom main pivot	1	B13022	B13022	B13022
15	pin, dipper cylinder- shaft end	1	B13021	B13021	B13021
16	dipper cylinder	1	B13106	B13023	B13057
17	hose, dipper cylinder- shaft end	1	B13107	B13019	B13025
18	hose, dipper cylinder- butt end	1	B13108	B13026	B13027
19	pin, dipper cylinder- butt end	1	B13085	B13085	B13085
20	main boom	1	B13109	B13028	B13029
21	cylinder, main boom	1	B13110	B13030	B13031
22	hose, boom cylinder- shaft end	1	B13111	B13032	B13032
23	hose, boom cylinder- butt end	1	B13111	B13032	B13032
24	pin, boom cylinder- shaft end	1	B13085	B13085	B13085
25	pin, boom cylinder- butt end	1	B13060	B13060	B13060
26	pin, main boom	1	B13022	B13022	B13022
27	pin, pivot swing, top and bottom	2	B13037	B13037	B13037
28	cylinder, right swing (sitting on seat)	1	B13113	B13038	B13038
29	cylinder, left swing (sitting on seat)	1	B13114	B13039	B13039
30	pin, swing cylinder- shaft end	2	B13040	B13040	B13040
31	hose, swing cylinder- butt end	2	B13115	B13041	B13041
32	hose, swing cylinder- shaft end	2	B13116	B13042	B13042
33	cylinder, right stabilizer	1	B13117	B13043	B13043
34	cylinder, left stabilizer	1	B13118	B13044	B13044
35	pin, stabilizer cylinder-shaft end	2	B13040	B13040	B13040
36	pin, stabilizer cylinder-butt end	2	B13051	B13046	B13046
37	hose, stabilizer cylinder- shaft end	2	B13119	B13047	B13047
38	hose, stabilizer cylinder- butt end	2	B13120	B13048	B13048
39	stabilizer shoe	2	B13122	B13049	B13049
40	pin, stabilizer shoe pin	2	B13125	B13050	B13050
41	pin, main stabilizer pin	2	B13051	B13046	B13046
42	seat mounting kit	1	B13052	B13052	B13052
43	seat	1	B13053	B13053	B13053
44	valve cover	1	B13054	B13054	B13054
45	control valve	1	B13055	B13055	B13055
46	stabilizer	2	B13121	B13056	B13056
	boom & swivel lockout pins	2	B13058	B13058	B13058

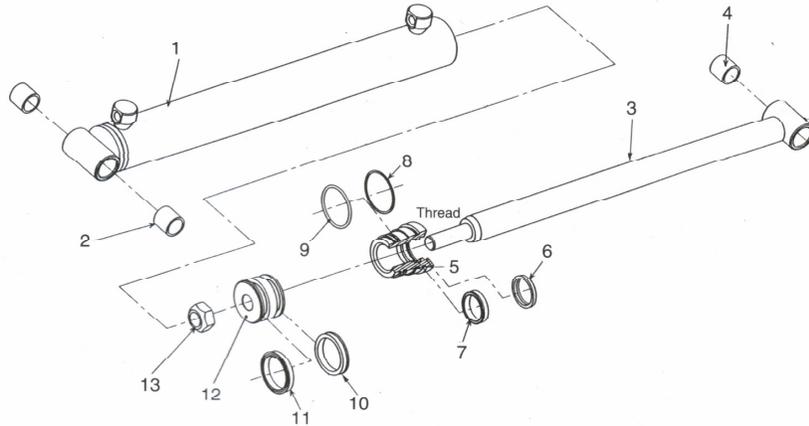
Parts List Diagram



Replaceable Bushing Guide- All Models

<u>Position</u>	<u>Pin Location</u>	<u>Quantity</u>	<u>Size</u>	<u>Part Number</u>
28 & 29	SWING CYLINDER PIVOT L & R	2 ea. Side	1" X 1 1/2"	B13311
30	SWING CYLINDER SHAFT END	2	1" X 2"	B13312
25	BOOM CYL. BUTT END	1	1" X 2 1/2"	B13313
24	BOOM CYL. SHAFT END	2	1" X 1 3/4"	B13314
26	BOOM PIVOT	2	1 1/2" X 2"	B13315
15	DIPPER CYL. SHAFT END	2	1" X 1 3/4"	B13314
19	DIPPER CYL. BUTT END	2	1" X 1 3/4"	B13314
14	DIPPER/BOOM PIVOT	2	1 1/2" X 2"	B13315
7	BUCKET CYL. SHAFT END	1	1" X 2 1/2"	B13313
13	BUCKET CYL. BUTT END	2	1" X 1 3/4"	B13314
8	DIPPER/LINKAGE PIVOT	2	1" X 1 3/4"	B13314
4	BUCKET/DIPPER PIVOT	2	1" X 1 3/4"	B13314
3	BUCKET/LINKAGE PIVOT	2	1" X 1 3/4"	B13314
7	LINKAGE/CYLINDER PIVOT	2	1" X 1"	B13316

Cylinder Breakdown



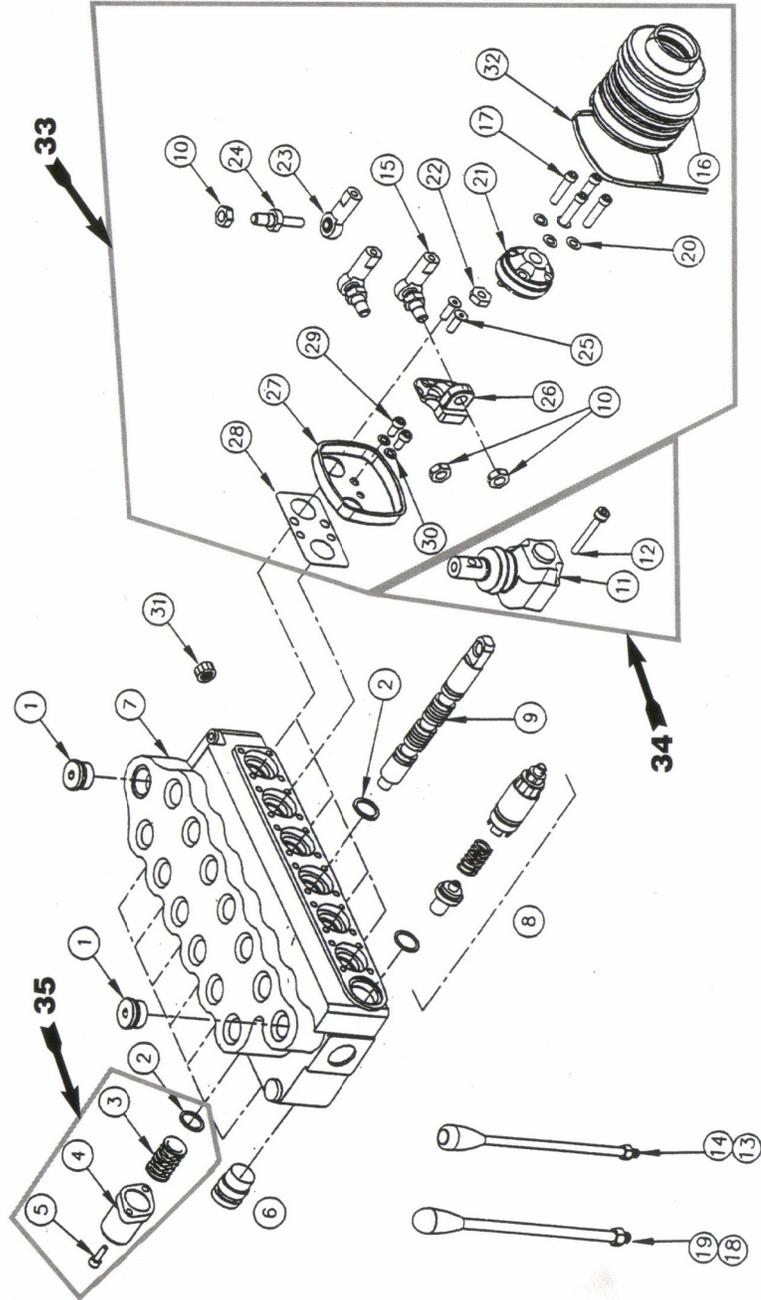
Cylinder Parts List

<u>Position</u>	<u>Description</u>	<u>Quantity</u>
1	cylinder barrel	1
2	changeable bushing	2
3	cylinder rod	1
4	changeable bushing	2
5	cylinder gland	1
6	wiper seal (order seal kit)	1
7	U-cup seal (order seal kit)	1
8	back-up seal (order seal kit)	1
9	O-ring (order seal kit)	1
10	bearing seal (order seal kit)	1
11	U-cup seal (order seal kit)	1
12	Piston+	1
13	shaft nut	1
	seal kit for 2" cylinder	
	seal kit for 2 1/2" cylinder	
	seal kit for 3" cylinder	
PART NUMBERS FOR INDIVIDUAL CYLINDERS ON FOLLOWING PAGE.		
<u>Cylinder Diameters</u>		
GX600-- Main boom cylinder- 2 1/2", all other cylinders 2" diameter		
GX700-- All cylinders are 2 1/2" in diameter		
GX900-- Main boom cylinder- 3", all other cylinders 2 1/2" diameter		

CYLINDER PARTS LIST

GX600 CYLINDER PARTS LIST									
DESCRIPTION	COMPLETE CYL PART #	BARREL [1]	CYLINDER ROD [3]	CYL. GLAND [5]	PISTON [12]	SHAFT NUT [13]	SEAL KIT	BUTT END BUSHINGS [2]	ROD END BUSHINGS [4]
MAIN BOOM CYL 2 1/2"	B13110	ORDER COMPLETE CYL	B13421	B13422	B13423	B13424	B13415	B13313 [1]	B13314 [2]
DIPPER CYL. 2"	B13106	ORDER COMPLETE CYL	B13425	B13426	B13427	B13424	B13414	B13314 [2]	B13314 [2]
BUCKET CYL. 2"	B13104	ORDER COMPLETE CYL	B13428	B13426	B13427	B13424	B13414	B13314 [2]	B13313 [1]
SWING CYL RH 2"	B13113	ORDER COMPLETE CYL	B13429	B13426	B13427	B13424	B13414	B13311 [2] (PIVOT)	B13312 [2]
SWING CYL LH 2"	B13114	ORDER COMPLETE CYL	B13429	B13426	B13427	B13424	B13414	B13311 [2] (PIVOT)	B13312 [2]
STABILIZER CYL. RH 2"	B13117	ORDER COMPLETE CYL	B13430	B13426	B13427	B13424	B13414	N/R	N/R
STABILIZER CYL. LH 2"	B13118	ORDER COMPLETE CYL	B13430	B13426	B13427	B13424	B13414	N/R	N/R
GX700 CYLINDER PARTS LIST									
DESCRIPTION	COMPLETE CYL PART #	BARREL [1]	CYLINDER ROD [3]	CYL. GLAND [5]	PISTON [12]	SHAFT NUT [13]	SEAL KIT	BUTT END BUSHINGS [2]	ROD END BUSHINGS [4]
MAIN BOOM CYL 2 1/2"	B13030	ORDER COMPLETE CYL	B13431	B13422	B13423	B13424	B13415	B13313 [1]	B13314 [2]
DIPPER CYL. 2 1/2"	B13023	ORDER COMPLETE CYL	B13432	B13422	B13423	B13424	B13415	B13314 [2]	B13314 [2]
BUCKET CYL. 2 1/2"	B13016	ORDER COMPLETE CYL	B13433	B13422	B13423	B13424	B13415	B13314 [2]	B13313 [1]
SWING CYL RH 2 1/2"	B13038	ORDER COMPLETE CYL	B13434	B13422	B13423	B13424	B13415	B13311 [2] (PIVOT)	B13312 [2]
SWING CYL LH 2 1/2"	B13039	ORDER COMPLETE CYL	B13434	B13422	B13423	B13424	B13415	B13311 [2] (PIVOT)	B13312 [2]
STABILIZER CYL. RH 2 1/2"	B13043	ORDER COMPLETE CYL	B13436	B13422	B13423	B13424	B13415	N/R	N/R
STABILIZER CYL. LH 2 1/2"	B13044	ORDER COMPLETE CYL	B13436	B13422	B13423	B13424	B13415	N/R	N/R
GX900 CYLINDER PARTS LIST									
DESCRIPTION	COMPLETE CYL PART #	BARREL [1]	CYLINDER ROD [3]	CYL. GLAND [5]	PISTON [12]	SHAFT NUT [13]	SEAL KIT	BUTT END BUSHINGS [2]	ROD END BUSHINGS [4]
MAIN BOOM CYL 3"	B13031	ORDER COMPLETE CYL	B13438	B13440	B13441	B13424	B13416	B13313 [1]	B13314 [2]
DIPPER CYL. 2 1/2"	B13057	ORDER COMPLETE CYL	B13439	B13422	B13423	B13424	B13415	B13314 [2]	B13314 [2]
BUCKET CYL. 2 1/2"	B13016	ORDER COMPLETE CYL	B13433	B13422	B13423	B13424	B13415	B13314 [2]	B13313 [1]
SWING CYL RH 2 1/2"	B13038	ORDER COMPLETE CYL	B13434	B13422	B13423	B13424	B13415	B13311 [2] (PIVOT)	B13312 [2]
SWING CYL LH 2 1/2"	B13039	ORDER COMPLETE CYL	B13434	B13422	B13423	B13424	B13415	B13311 [2] (PIVOT)	B13312 [2]
STABILIZER CYL. RH 2 1/2"	B13043	ORDER COMPLETE CYL	B13436	B13422	B13423	B13424	B13415	N/R	N/R
STABILIZER CYL. LH 2 1/2"	B13044	ORDER COMPLETE CYL	B13436	B13422	B13423	B13424	B13415	N/R	N/R

Control Valve Breakdown



REPAIR KITS		Valve Breakdown Diagram			
		Position	Description	Quantity	Part Number
33	joystick kit			2	B13220
	valve seal kit (12 spool O-rings & 2 gaskets (#28))	B13211 B13219	BSP plug 1/2" O-ring	12	B13233
34	Lever block kit (stabilizer spools)	B13213	V08 kit	6	B13237
35	end cap kit (spool centering)	B13218	cap	6	B13238
			M5 x 14 cap screw	6	B13240
			VR5 kit	1	B13241
	VALVE SPOOLS		working section SD5/6	1	N/A
9	valve spool (all spools except main boom)	B13217	main relieve (2250 PSI)	1	B13216
9	Metering/load check combo spool (main boom spool—needs load check)	B13223	spool SD5	1	(see left)
			nut-- M8-P1.25	1	B13236
31	Closed centre plug	B13221	complete lever base (stabilizer spools)	2	B13213
	Power beyond plug	B13222	hex socket cap screw M5-P 0.8 x 35	6	B13242
	Relief valve replacement (solid plug)	B13239	lever- M8 x 125 (stabilizer)	2	B13214
	(for use with closed center system only in some applications)		jam nut M8- P1.25	2	B13234
			rod end with stud	4	B13228
			rubber boot for joystick	2	B13212
	Backhoe valve is normally shipped set up for open center hydraulic system. When using backhoe with closed center system, AET SD5 plug (#31 in diagram) must be replaced with closed center plug.		hex socket cap screw M6- P1.0x25	8	B13243
			jam nut M12- P1.75	2	B13235
			lever- M12 x 250	2	B13215
			1/4" lock washer	8	B13244
			lever holder	2	B13229
			nut-- M6- P1.0	2	B13245
			rod end	2	B13226
			rod end guide	2	B13227
			flat head socket screw M5- P0.8x14	4	B13246
			attachment block	2	B13224
			attachment plate	2	B13232
			gasket	2	B13231
			hex socket cap screw M5-p 0.8 x 354	4	B13247
			disk lock	4	B13248
			AET SDG plug	1	(see left)
			snare	2	B13210
			Complete valve	1	B13055

Locations of Grease Fittings

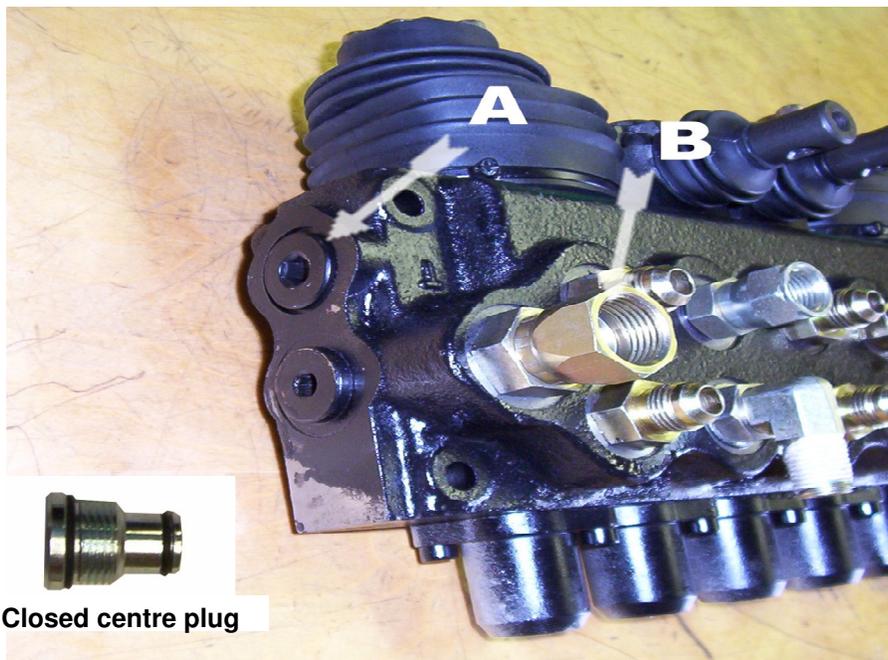
Grease machine daily to ensure longevity of your backhoe.



CLOSED CENTRE PLUG INSTALLATION

THE CLOSED CENTRE PLUG IS FOR INSTALLATION IN THE BACKHOE VALVE ON UNITS WHICH WILL BE USED ON TRACTORS WITH A CLOSED CENTRE HYDRAULIC SYSTEM.

NOTE: THE OPTIONAL PTO PUMP (PTO70) IS AN OPEN CENTRE SYSTEM AND DOES NOT REQUIRE THE CLOSED CENTRE PLUG.



CLOSED CENTER PLUG INSTALLATION:

TO CONVERT BACKHOE VALVE FOR CLOSED CENTRE OPERATION REMOVE PLUG A, AND INSTALL CLOSED CENTER PLUG WITH LONG SHOULDER.

