



20 SERIES SEED CARTS

Service Manual for the 20 Series Seed Cart

Starting at Serial No. GH2320.A-M043701

Starting at Serial No. G1720.A-P054101

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TABLE OF CONTENTS

Pages listed are a table of contents for that section

Section - Title	Page	Section - Title	Page
1 - ADJUSTMENTS & MAINTENANCE	1-1	3 - MONITOR SYSTEM	3-1
Safety in Service		Introduction	
Bolt Torques		Block Diagram	
Schematic Drawings		Sensor Descriptions	
Major Operating Components		Service and Troubleshooting	
Connecting Drive Components			
Dampers, Manifolds and Hoses			
Undercarriage Components			
Major Structural Components			
2 - SERVICE TOPICS	2-1	4 - ASSEMBLY INSTRUCTIONS	4-1
Auger and Auger Support		General Assembly Information	
The Fan Assembly		The Seed Cart Assembly	
The Meter Drive Box (Less Clutch)		Assembly to the Seeding Tool	
The Meter Box Assembly		Double Shoot Option	
The Meter Rollers		Remote Switch	
Clutch - Magnetic		Warning Lamp Package	
Clutch - Wrap Spring			
Drive Ratio Sprockets and Chain			
Meter Drive Chain and Idlers			
The Drive Link - Meter Box Output to Meter Roller			
The Primary and Secondary Dampers			
The Center Manifold and Carriers			
The Intermediate Manifold			
The Distribution System			
Hubs and Wheel Bearings		5 - POST-ASSEMBLY / PRE-DELIVERY	
Front Caster Pivot Housing Assembly		CHECKS	5-1
Field Hitch		Post Assembly Checks	
3 Point Hitch		Pre-delivery Checks	

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SECTION 1

ADJUSTMENTS & MAINTENANCE

CONTENTS OF THIS SECTION

	PAGE
1.1 SAFETY IN SERVICE	
1.1.1 Use Safe Service Procedures	1-3
1.1.2 Air and Air Hoses	1-5
1.1.3 Hydraulics and Hydraulic Leaks	1-6
1.1.4 Shields	1-6
1.1.5 Electrical	1-6
1.1.6 Tires	1-6
1.2 BOLT TORQUES	1-7
1.3 (No Entries)	
1.4 SCHEMATIC DRAWINGS	
1.4.1 Hydraulics (Tow Between)	1-8
1.4.2 Hydraulics (Tow Behind)	1-14
1.4.3 Hydraulics (3 Point)	1-20
1.4.4 Air Flow	1-22
1.5 MAJOR OPERATING COMPONENTS	
1.5.1 Auger/Auger Support	1-23
1.5.2 The Fan Assembly	1-26
1.5.3 The Meter Drive Box (Less Clutch)	1-29
1.5.4 The Meter Box Assembly (Less Meter Rollers)	1-30
1.5.5 The Meter Rollers Assemblies	1-33
1.5.6 Clutch - Magnetic	1-34
1.5.7 Clutch - Wrap Spring	1-35

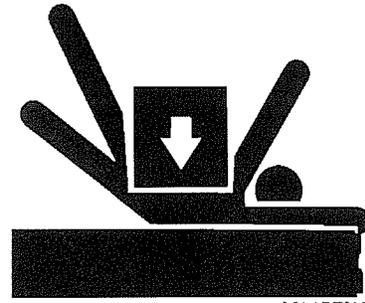
CONTENTS OF THIS SECTION (cont'd)

	PAGE
1.6 CONNECTING DRIVE COMPONENTS	
1.6.1 Chain Tension	1-37
1.6.2 Chain Lubrication	1-37
1.6.3 Drive Wheel Sprocket and Chain	1-38
1.6.4 Drive Ratio Sprockets, Chain & Idler	1-40
1.6.5 Meter Drive Chain and Idlers	1-42
1.6.6 Drive Link - Meter Box Output to Meter Roller	1-43
1.7 DAMPERS, MANIFOLDS AND HOSES	
1.7.1 Air Damper	1-44
1.7.2 Center Manifold and Carriers	1-45
1.7.3 The Intermediate Manifold	1-47
1.7.4 Primary Hoses and Pressurization Hoses	1-48
1.7.5 Quick Connects	1-49
1.8 UNDER CARRIAGE COMPONENTS	
1.8.1 Tires (Including Adjusting for Different Sized Rear Tires)	1-50
1.8.2 Rims	1-52
1.8.3 Hubs / Bolts	1-53
1.8.4 Spindles	1-54
1.8.5 Front Caster Pivot Housing Assembly (Tow Behind Only)	1-55
1.8.6 Front Caster Brake	1-56
1.9 MAJOR STRUCTURAL COMPONENTS	
1.9.1 Tank Assembly (Less Meter Boxes)	1-57
1.9.2 Frame (Including Wheel Housings)	1-58
1.9.3 Field Hitch Assembly (Including Hose Tray Assembly)	1-59

1.1 SAFETY IN SERVICE

1.1.1 USE SAFE SERVICE PROCEDURES

A. Park on LEVEL ground and Block adequately.

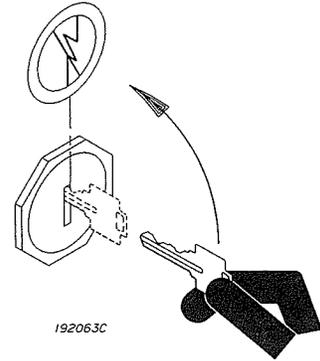


MAART015

Avoid Moving Machines

B. Remove the ignition key

Immobilize machine before repairing or adjusting.



192063C

Remove Ignition Key

Be certain all moving parts have stopped before servicing.



MAART021

Avoid Moving Parts

C. Know operators manual well.

D. Keep service area clean.



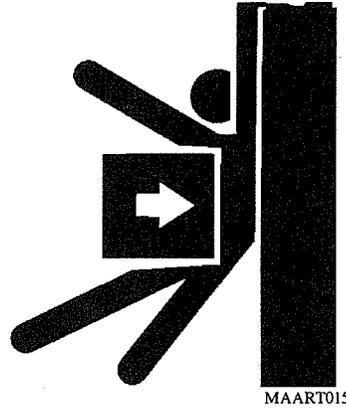
MAART040

Keep work area clean

SECTION 1 - ADJUSTMENTS & MAINTENANCE

E. Do not enter tanks and tight areas

Be certain machine is tagged out of order or work area is supervised.



MAART015

Avoid Entering Tight Areas

F. Do not work around rotating equipment.

Loose clothing, rings, watch bands, etc. can get caught and cause serious injury.

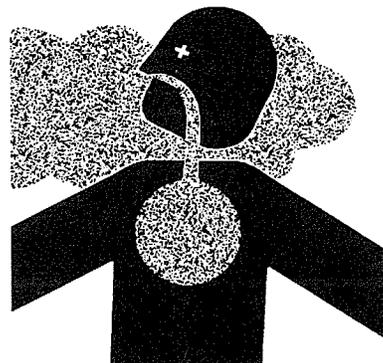


MAART035

Immobilize Machine Before Maintaining

G. Breathe clean air.

Avoid toxic fumes and fertilizer dust.



MARRT032

Avoid Toxic Fumes

1.1.2 AIR AND AIR HOSES

Compressed air can be dangerous. Watch for:

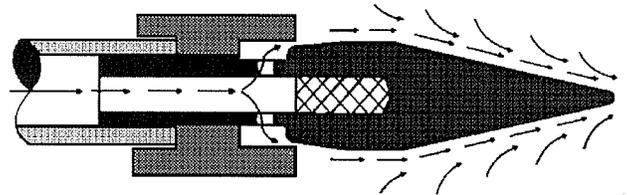
- A. Snaking compressor hoses when suddenly disconnected.



Loose Air Lines

MAART026

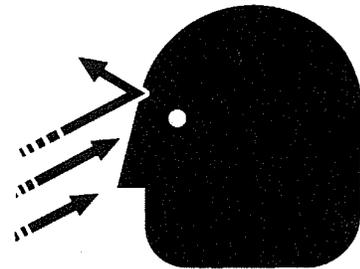
- B. Use proper air nozzles.
Do not use compressed air to clean clothes.



Use Indirect Air Nozzles

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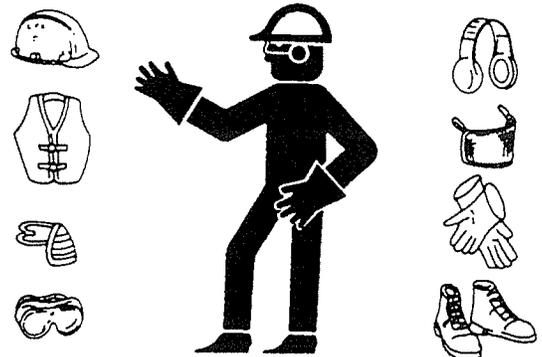
- C. Fan or seeder hose exhausting entrained particles into eyes or piercing the skin.



Eye Protection

MAART018

- D. Use protective clothing



Wear Protective Clothing

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1.1.3 HYDRAULICS AND HYDRAULIC LEAKS

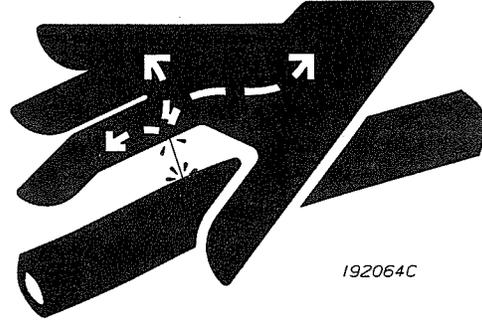
A. Avoid high-pressure fluids.

Check for oil leaks with cloth or paper - not your hand.

Avoid piercing the skin with hydraulic fluids, as infection will result.

Beware excessive hydraulic pressure - explosive structural failure can result.

Beware air locks in cylinders. Large cylinder displacements can occur without hydraulic oil flow.



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Avoid High Pressure Fluid

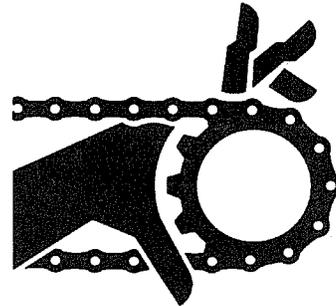
1.1.4 SHIELDS

Shields are designed to protect.

Repair damaged shields.

Keep shields in place.

Be extra cautious when repairing or servicing without protective shields.



MAART037

Keep Shields in Place

1.1.5 ELECTRICAL

A. Remove the ground wire to avoid arcing contacts.

B. Remove ground wire when welding

- to prevent electrical shocks.
- to avoid burnout of the electrical system.



MAART025

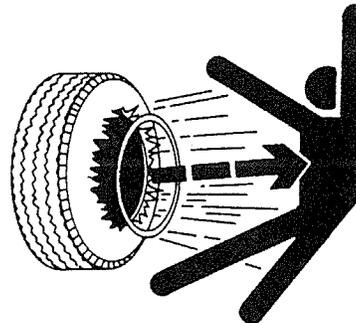
Disconnect Power Supply Before Servicing

1.1.6 TIRES

If possible, use a cage when setting tires on rims.

Avoid excessive air pressure.

Stand aside when inflating a tire. Explosive forces are present.

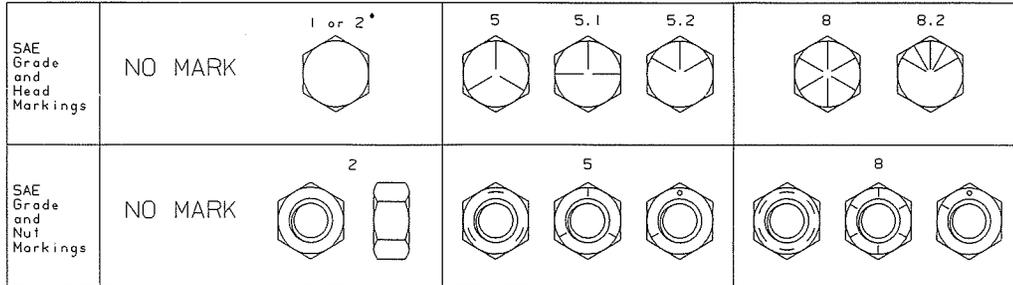


MAART000

Stand Clear While Inflating Tire

1.2 BOLT TORQUES

UNIFIED INCH AND ISO BOLT AND CAP SCREW TORQUE VALUES



195079C

Size	Grade 1				Grade 2*				Grade 5, 5.1, or 5.2				Grade 8 or 8.2			
	Lubricated**		Dry**		Lubricated**		Dry**		Lubricated**		Dry**		Lubricated**		Dry**	
	N-m	lbf-ft	N-m	lbf-ft	N-m	lbf-ft	N-m	lbf-ft	N-m	lbf-ft	N-m	lbf-ft	N-m	lbf-ft	N-m	lbf-ft
1/4	3.7	2.8	4.7	3.5	6	4.5	7.5	5.5	9.5	7	12	9	13.5	10	17	12.5
5/16	7.7	5.5	10	7	12	9	15	11	20	15	25	18	28	21	35	26
3/8	14	10	17	13	22	16	27	20	35	26	44	33	50	36	63	46
7/16	22	16	28	20	35	26	44	32	55	41	70	52	80	58	100	75
1/2	33	25	42	31	53	39	67	50	85	63	110	80	120	90	150	115
9/16	48	36	60	45	75	56	95	70	125	90	155	115	175	130	225	160
5/8	67	50	85	62	105	78	135	100	170	125	215	160	215	160	300	225
3/4	120	87	150	110	190	140	240	175	300	225	375	280	425	310	550	400
7/8	190	140	240	175	190	140	240	175	490	360	625	450	700	500	875	650
1	290	210	360	270	290	210	360	270	725	540	925	675	1050	750	1300	975
1-1/8	470	300	510	375	470	300	510	375	900	675	1150	850	1450	1075	1850	1350
1-1/4	570	425	725	530	570	425	725	530	1300	950	1650	1200	2050	1500	2600	1950
1-3/8	750	550	950	700	750	550	950	700	1700	1250	2150	1550	2700	2000	3400	2550
1-1/2	1000	725	1250	925	990	725	1250	930	2250	1650	2850	2100	3600	2650	4550	3350

DO NOT use these values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only. Check tightness of fasteners periodically.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

** "Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated without any lubrication.

* Grade 2 applies for hex caps (not hex bolts) up to 152mm (6 in.) long. Grade 1 applies for hex cap screws over 152mm (6 in.) long, and for all other types of bolts and screws of any length.

Fasteners should be replaced with the same or higher grade. If higher grade fasteners are used, these should only be tightened to the strength of the original.

Make sure fasteners threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

Tighten plastic insert or crimped steel-type lock nuts to approximately 50 percent of the dry torque shown in the chart, applied to the nut, not to the bolt head. Tighten toothed or serrated-type lock nuts to the full torque value.

1.4 SCHEMATIC DRAWINGS

1.4.1 HYDRAULICS (Tow Between)

Serial Numbers Fr: GH2320.A0-M043701 To: GH2320.A0-N047940
Fr: G1720.A0-M045101 To: G1720.A0-N047846

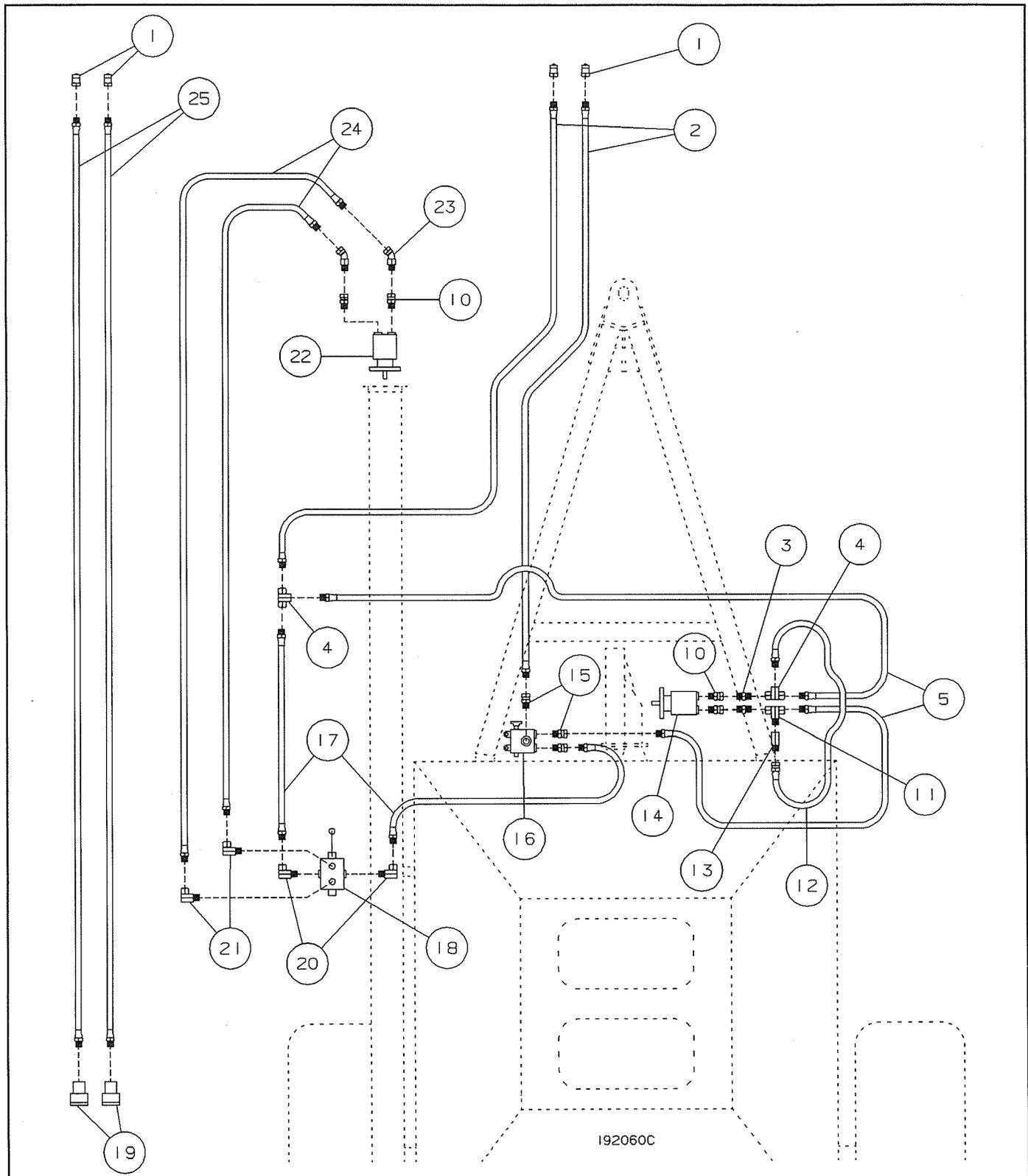


Figure 1.4.1a Tow Between Hydraulics

SECTION 1 - ADJUSTMENTS & MAINTENANCE

Serial Numbers Fr: GH2320.A0-M043701 To: GH2320.A0-N047940
Fr: G1720.A0-M045101 To: G1720.A0-N047846

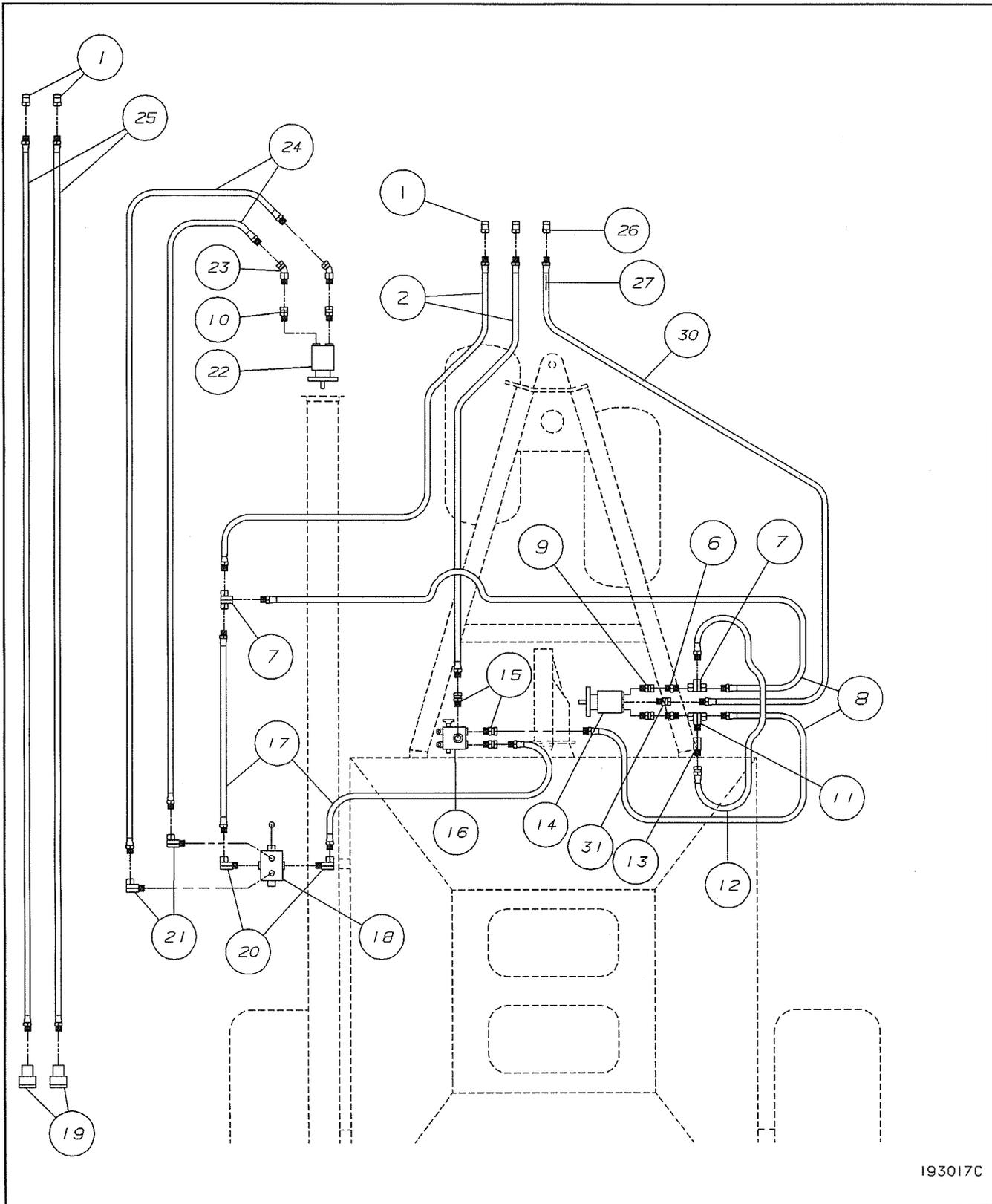
REF	PART #	DESCRIPTION
1	1319	FITTING, PIONEER COUPLER TIP #8010-4 (.50")
2	7219	HOSE HYD. .50 X 155" F.L. .5 MPT X .5 MPT, HR2C
3	1244	FITTING STEEL .5 MPT CLOSE HEX NIPPLE SEATS BOTH ENDS
4	3819	FITTING .5 FPT X .5 FPT X .5 FPT SWIVEL TEE FIXED BR
5	1925	HOSE HYD. .500 X 60" F.L. .50 MPT X .50 MPT 100R2AT
10	2760	FITTING .875-14 MORB X .5 FPT SWIVEL ADAPTOR (for Danfoss OMPA80 motor)
	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR (for Char-Lynn motor)
11	1242	FITTING .5 FPT X .5 MPT X .5 FPT SWIVEL TEE
12	3589	HOSE HYD. .500 X 18" F.L. .5 MPT X .5 MPT FARMEX HR1C
13	1322	FITTING .5 FPT X .5 MPT CHECK VALVE LT50-O W
14	6537	HYD. MOTOR (GRESEN) SPLINED SHAFT, MODEL MGG20025-BA6A3
	5284	HYD. MOTOR SEAL KIT FOR GRESEN #MGG20025
15	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR
16	2149	SELECTOR VALVE, TWO WAY
	6082	VALVE KNOB - 3/8 THREAD, TWO WAY SPOOL VALVE
	6817	SEAL KIT FOR S-50 SELECTOR VALVE, GRESEN VALVE
17	7093	HOSE HYD. .375 X 158" F.L. .5MPT X .5MPT FARMEX HR1C
18	2150	VALVE 410 GRESEN SPOOL W/DETENT C/W HANDLE & PIN
	4616	VALVE SEAL KIT FOR GRESEN SPOOL VALVE (#2150)
	5363	VALVE HANDLE,(NO COVERING) 410 GRESEN SPOOL VALVE
	5364	VALVE HANDLE MOUNTING PIN 410 GRESEN SPOOL VALVE
19	5259	FITTING, BRUNING COUPLER BODY #AG-401
20	1240	FITTING .5 FPT X .75 MPT 90 DEG SWIVEL ELBOW
21	1239	FITTING .5 MPT X .5 FPT 90 DEG SWIVEL ELBOW
22	7256	HYD. MOTOR, DANFOSS OMPA80
	7275	SEAL KIT, DANFOSS OKPA80 HYDRAULIC MOTOR
22	5168	HYD. MOTOR SERIES "S" CHAR-LYNN #103-1532
	5341	HYD. MOTOR SEAL KIT FOR ALL SERIES "S" CHAR-LYNN
23	1238	FITTING .5 FPT X .5 MPT 45 DEG SWIVEL ELBOW
24	5932	HOSE HYD. .375 X 151" F.L. .50 MPT X .50 MPT 100R2AT
25	7092	HOSE HYD. .500 X 292" F.L. .5 MPT X .5 MPT HR2C

SECTION 1 - ADJUSTMENTS & MAINTENANCE

1.4.1 HYDRAULICS (Tow Between)

Serial Numbers Fr: GH2320.A0-NO47941 To: GH2320.A0-NO54660

Fr: G1720.A0-N047847 To: G1720.A0-NO51358



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Figure 1.4.1b Tow Between Hydraulics

SECTION 1 - ADJUSTMENTS & MAINTENANCE

Serial Numbers Fr: GH2320.A0-N047941 To: GH2320.A0-NO54660

Fr: G1720.A0-N047847 To: G1720.A0-NO51358

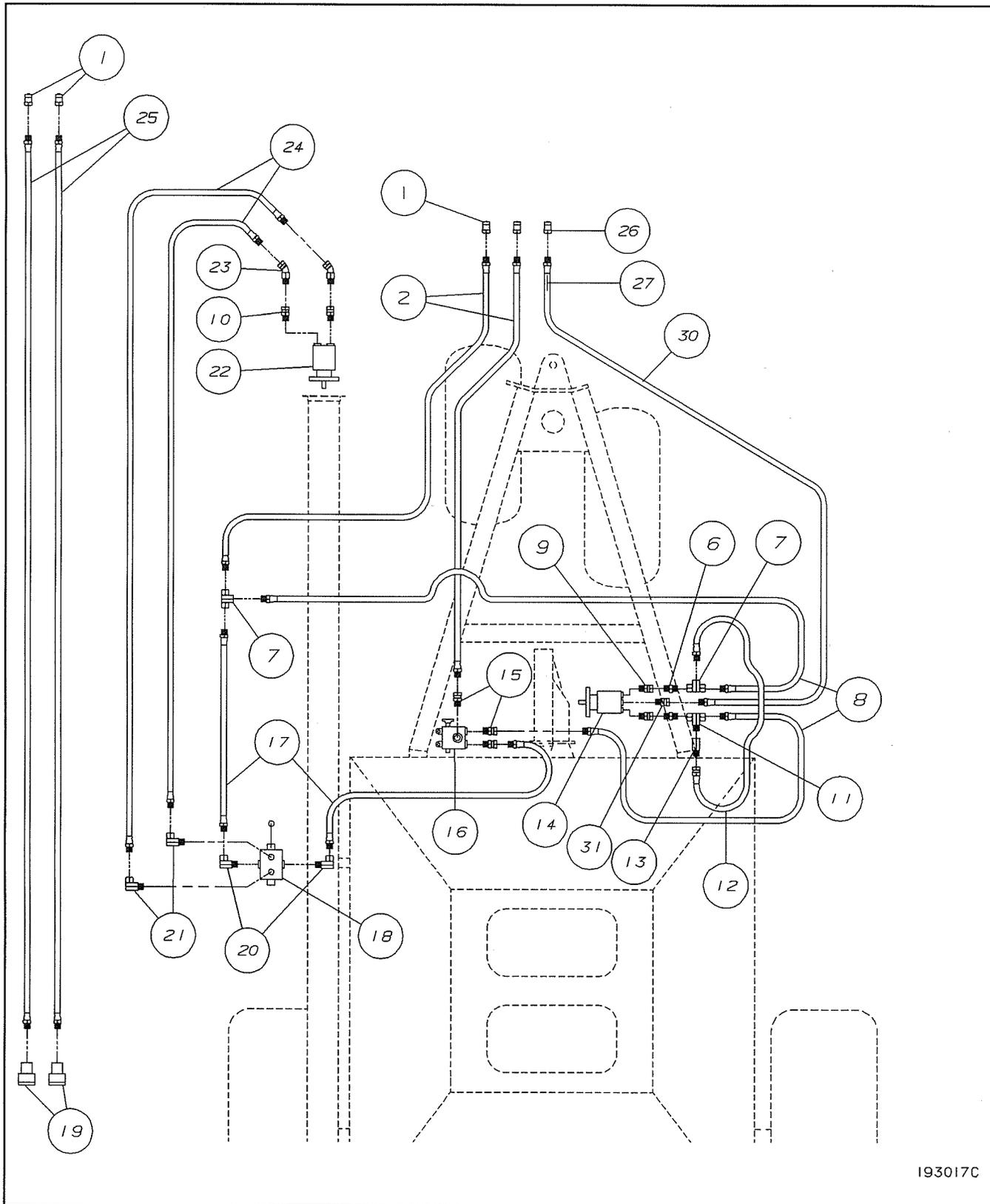
REF	PART #	DESCRIPTION
1	1319	FITTING, PIONEER COUPLER TIP #8010-4 (.50")
2	7219	HOSE HYD. .50 X 155" F.L. .5 MPT X .5 MPT, HR2C
3	1244	FITTING STEEL .5 MPT CLOSE HEX NIPPLE SEATS BOTH ENDS
4	3819	FITTING .5 FPT X .5 FPT X .5 FPT SWIVEL TEE FIXED BR
5	1925	HOSE HYD. .500 X 60" F.L. .50 MPT X .50 MPT 100R2AT
10	2760	FITTING .875-14 MORB X .5 FPT SWIVEL ADAPTOR (for Danfoss OMPA80 motor)
	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR (for Char-Lynn motor)
11	1242	FITTING .5 FPT X .5 MPT X .5 FPT SWIVEL TEE
12	3589	HOSE HYD. .500 X 18" F.L. .5 MPT X .5 FPT FARMEX HR1C
13	1322	FITTING .5 FPT X .5 MPT CHECK VALVE LT50-O W
14	7842	HYD. MOTOR (ULTRA) SPLINED SHAFT, MODEL 1MR010C
	7976	SEAL KIT, ULTRA, 8301-023-OMR
15	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR
16	2149	SELECTOR VALVE, TWO WAY
	6082	VALVE KNOB - 3/8 THREAD, TWO WAY SPOOL VALVE
	6817	SEAL KIT FOR S-50 SELECTOR VALVE, GRESEN VALVE
17	7093	HOSE HYD. .375 X 158" F.L. .5MPT X .5MPT FARMEX HR1C
18	2150	VALVE 410 GRESEN SPOOL W/DETENT C/W HANDLE & PIN
	4616	VALVE SEAL KIT FOR GRESEN SPOOL VALVE (#2150)
	5363	VALVE HANDLE,(NO COVERING) 410 GRESEN SPOOL VALVE
	5364	VALVE HANDLE MOUNTING PIN 410 GRESEN SPOOL VALVE
19	5259	FITTING, BRUNING COUPLER BODY #AG-401
20	1240	FITTING .5 FPT X .75 MPT 90 DEG SWIVEL ELBOW
21	1239	FITTING .5 MPT X .5 FPT 90 DEG SWIVEL ELBOW
22	7256	HYD. MOTOR, DANFOSS OMPA80
	7275	SEAL KIT, DANFOSS OKPA80 HYDRAULIC MOTOR
22	5168	HYD. MOTOR SERIES "S" CHAR-LYNN #103-1532
	5341	HYD. MOTOR SEAL KIT FOR ALL SERIES "S" CHAR-LYNN
23	1238	FITTING .5 FPT X .5 MPT 45 DEG SWIVEL ELBOW
24	5932	HOSE HYD. .375 X 151" F.L. .50 MPT X .50 MPT 100R2AT
25	7092	HOSE HYD. .500 X 292" F.L. .5 MPT X .5 MPT HR2C
26	7335	FITTING PIONEER COUPLER TIP #4010-3, .375" THROUGH
27	GH-500.05	DECAL, WARNING THIRD LINE
30	7338	HOSE HYD. .375 X 155" F.L. .375 MPT X .375 MPT
31	7341	FITTING .563-18 SAE X .375 FPT SWIVEL ADAPTOR

SECTION 1 - ADJUSTMENTS & MAINTENANCE

1.4.1 HYDRAULICS (Tow Between)

Serial Numbers Fr: GH2320.A0-PO54690

Fr: G1720.A0-NO54866



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Figure 1.4.1c Tow Between Hydraulics

SECTION 1 - ADJUSTMENTS & MAINTENANCE

Serial Numbers Fr: GH2320.A0-PO54690

Fr: G1720.A0-NO54866

REF	PART #	DESCRIPTION
1	1319	FITTING, PIONEER COUPLER TIP #8010-4 (.50")
2	7219	HOSE HYD. .50 X 155" F.L. .5 MPT X .5 MPT, HR2C
3	1244	FITTING STEEL .5 MPT CLOSE HEX NIPPLE SEATS BOTH ENDS
4	3819	FITTING .5 FPT X .5 FPT X .5 FPT SWIVEL TEE FIXED BR
5	1925	HOSE HYD. .500 X 60" F.L. .50 MPT X .50 MPT 100R2AT
10	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR
11	1242	FITTING .5 FPT X .5 MPT X .5 FPT SWIVEL TEE
12	3589	HOSE HYD. .500 X 18" F.L. .5 MPT X .5 FPT FARMEX HR1C
13	1322	FITTING .5 FPT X .5 MPT CHECK VALVE LT50-O W
14	7842	HYD. MOTOR (ULTRA) SPLINED SHAFT, MODEL 1MR010C
	7976	SEAL KIT, ULTRA, 8301-023-OMR
15	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR
16	2149	SELECTOR VALVE, TWO WAY
	6082	VALVE KNOB - 3/8 THREAD, TWO WAY SPOOL VALVE
	6817	SEAL KIT FOR S-50 SELECTOR VALVE, GRESEN VALVE
17	7093	HOSE HYD. .375 X 158" F.L. .5MPT X .5MPT FARMEX HR1C
18	2150	VALVE 410 GRESEN SPOOL W/DETENT C/W HANDLE & PIN
	4616	VALVE SEAL KIT FOR GRESEN SPOOL VALVE (#2150)
	5363	VALVE HANDLE,(NO COVERING) 410 GRESEN SPOOL VALVE
	5364	VALVE HANDLE MOUNTING PIN 410 GRESEN SPOOL VALVE
19	5259	FITTING, BRUNING COUPLER BODY #AG-401
20	1240	FITTING .5 FPT X .75 MPT 90 DEG SWIVEL ELBOW
21	1239	FITTING .5 MPT X .5 FPT 90 DEG SWIVEL ELBOW
22	8214	HYD. MOTOR, DANFOSS DS-80 #151-2442
	8215	SEAL KIT, DANFOSS DS-80 HYD. MOTOR #151-1274
22	5168	HYD. MOTOR SERIES "S" CHAR-LYNN #103-1532
	5341	HYD. MOTOR SEAL KIT FOR ALL SERIES "S" CHAR-LYNN
23	1238	FITTING .5 FPT X .5 MPT 45 DEG SWIVEL ELBOW
24	5932	HOSE HYD. .375 X 151" F.L. .50 MPT X .50 MPT 100R2AT
25	7092	HOSE HYD. .500 X 292" F.L. .5 MPT X .5 MPT HR2C
26	7335	FITTING PIONEER COUPLER TIP #4010-3, .375" THROUGH
27	GH-500.05	DECAL, WARNING THIRD LINE
30	7338	HOSE HYD. .375 X 155" F.L. .375 MPT X .375 MPT
31	7341	FITTING .563-18 SAE X .375 FPT SWIVEL ADAPTOR

SECTION 1 - ADJUSTMENTS & MAINTENANCE

1.4.2 HYDRAULICS (Tow Behind)

Serial Numbers Fr: GH2320.A0-M043701 To: GH2320.A0-N047982

Fr: G1720.A0-M045101 To: G1720.A0-N049717

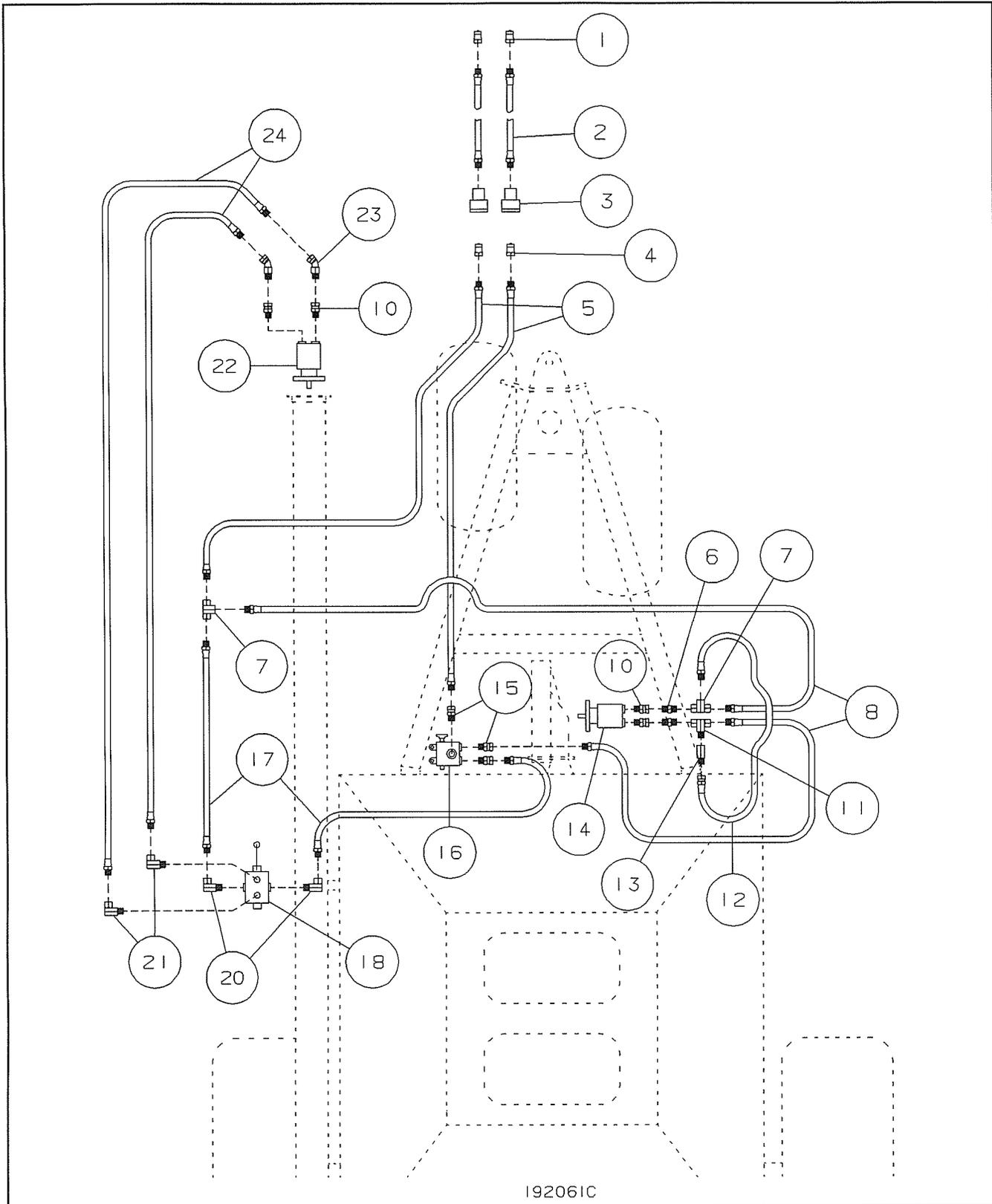


Figure 1.4.2a Tow Behind Hydraulics

SECTION 1 - ADJUSTMENTS & MAINTENANCE

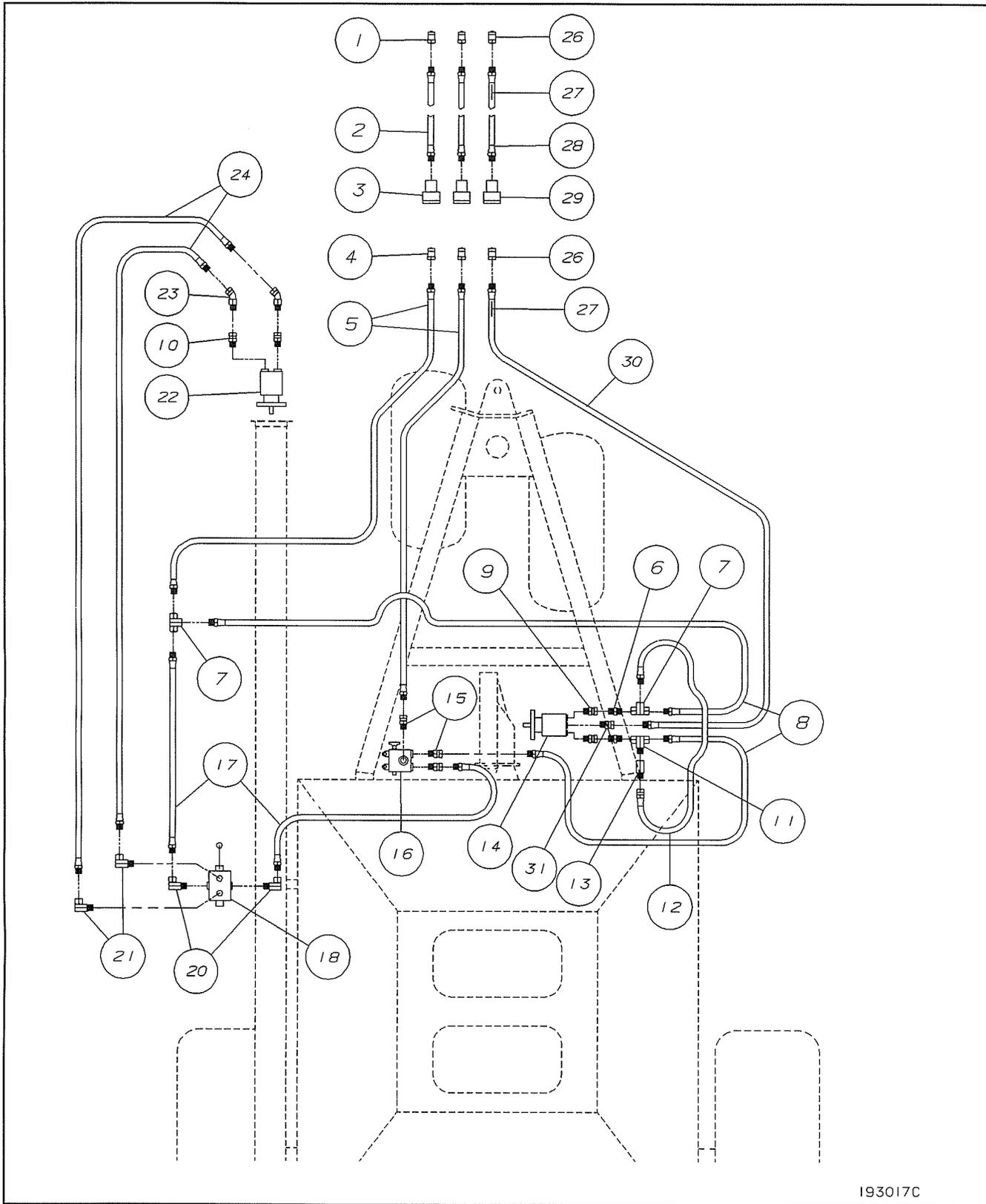
Serial Numbers Fr: GH2320.A0-M043701 To: GH2320.A0-N047982
Fr: G1720.A0-M045101 To: G1720.A0-N049717

REF	PART #	DESCRIPTION
1	1319	FITTING, PIONEER COUPLER TIP #8010-4 (.50")
2	6334	HOSE HYD. 0.75 X 485" F.L. .5MPT X .75MPT FARMEX HR2C
3	GE-202A	CLAMP ASSEMBLY FOR TWO PIONEER .75" COUPLERS
4	6936	FITTING, PIONEER COUPLER TIP #4110-5, .75" THROUGH
5	7091	HOSE HYD. .750 X 216" F.L. .5MPT X .75MPT, HR2C
6	1244	FITTING STEEL .5 MPT CLOSE HEX NIPPLE SEATS BOTH ENDS
7	3819	FITTING .5 FPT X .5 FPT X .5 FPT SWIVEL TEE FIXED BR
8	1925	HOSE HYD. .500 X 60" F.L. .50 MPT X .50 MPT 100R2AT
9	2760	FITTING .875-14 MORB X .5 FPT SWIVEL ADAPTOR
10	2760	FITTING .875-14 MORB X .5 FPT SWIVEL ADAPTOR (for Danfoss OMPA80 motor)
	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR (for Char-Lynn motor)
11	1242	FITTING .5 FPT X .5 MPT X .5 FPT SWIVEL TEE
12	3589	HOSE HYD. .500 X 18" F.L. .5 MPT X .5 FPT FARMEX HR1C
13	1322	FITTING .5 FPT X .5 MPT CHECK VALVE LT50-O W
14	6537	HYD. MOTOR (GRESEN) SPLINED SHAFT, MODEL MGG20025-BA6A3
	5284	HYD. MOTOR SEAL KIT FOR GRESEN #MGG20025
15	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR
16	2149	SELECTOR VALVE, TWO WAY
	6082	VALVE KNOB - 3/8 THREAD, TWO WAY SPOOL VALVE
	6817	SEAL KIT FOR S-50 SELECTOR VALVE, GRESEN VALVE
17	7093	HOSE HYD. .375 X 158" F.L. .5MPT X .5MPT FARMEX HR1C
18	2150	VALVE 410 GRESEN SPOOL W/DETENT CW HANDLE & PIN
	4616	VALVE SEAL KIT FOR GRESEN SPOOL VALVE (#2150)
	5363	VALVE HANDLE,(NO COVERING) 410 GRESEN SPOOL VALVE
	5364	VALVE HANDLE MOUNTING PIN 410 GRESEN SPOOL VALVE
20	1240	FITTING .5 FPT X .75 MPT 90 DEG SWIVEL ELBOW
21	1239	FITTING .5 MPT X .5 FPT 90 DEG SWIVEL ELBOW
22	7256	HYD. MOTOR, DANFOSS OMPA80
	7275	SEAL KIT, DANFOSS OKPA80 HYDRAULIC MOTOR
22	5168	HYD. MOTOR SERIES "S" CHAR-LYNN #103-1532
	5341	HYD. MOTOR SEAL KIT FOR ALL SERIES "S" CHAR-LYNN
23	1238	FITTING .5 FPT X .5 MPT 45 DEG SWIVEL ELBOW
24	5932	HOSE HYD. .375 X 151" F.L. .50 MPT X .50 MPT 100R2AT

1.4.2 HYDRAULICS (Tow Behind)

Serial Numbers Fr: GH2320.A0-NO47983 To: GH2320.A0-PO54656

Fr: G1720.A0-NO49718 To: G1720.A0-NO51388



193017C

Figure 1.4.2b Tow Behind Hydraulics

SECTION 1 - ADJUSTMENTS & MAINTENANCE

Serial Numbers Fr: GH2320.AO-N047983 To: GH2320.AO-PO54656
Fr: G1720.AO-N049718 To: G1720.AO-NO51388

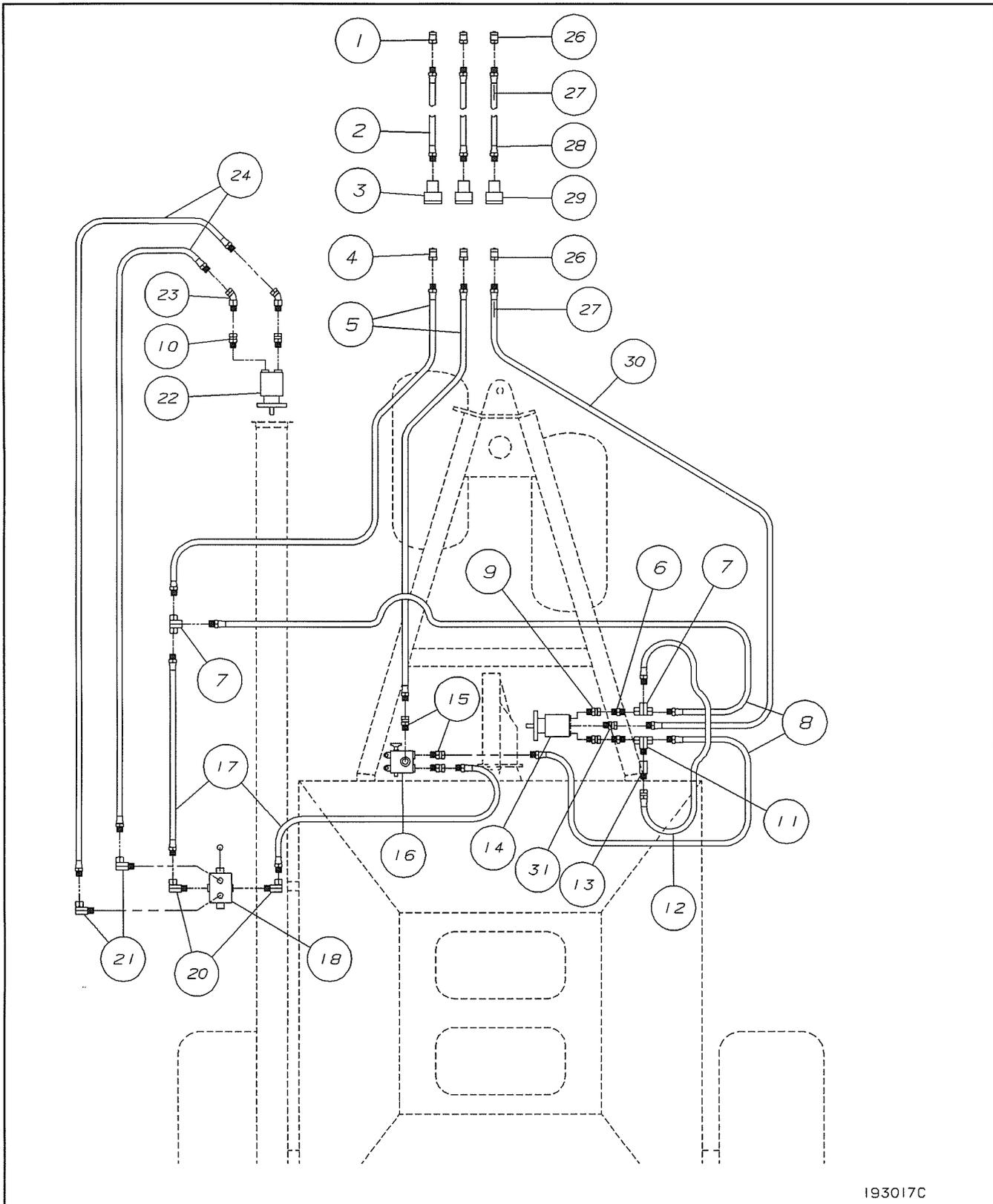
REF	PART #	DESCRIPTION
1	1319	FITTING, PIONEER COUPLER TIP #8010-4 (.50")
2	6334	HOSE HYD. 0.75 X 485" F.L. .5MPT X .75MPT FARMEX HR2C
3	GE-202A	CLAMP ASSEMBLY FOR TWO PIONEER .75" COUPLERS
4	6936	FITTING, PIONEER COUPLER TIP #4110-5, .75" THROUGH
5	7091	HOSE HYD. .750 X 216" F.L. .5MPT X .75MPT, HR2C
6	1244	FITTING STEEL .5 MPT CLOSE HEX NIPPLE SEATS BOTH ENDS
7	3819	FITTING .5 FPT X .5 FPT X .5 FPT SWIVEL TEE FIXED BR
8	1925	HOSE HYD. .500 X 60" F.L. .50 MPT X .50 MPT 100R2AT
9	2760	FITTING .875-14 MORB X .5 FPT SWIVEL ADAPTOR
10	2760	FITTING .875-14 MORB X .5 FPT SWIVEL ADAPTOR (for Danfoss OMPA80 motor)
	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR (for Char-Lynn motor)
11	1242	FITTING .5 FPT X .5 MPT X .5 FPT SWIVEL TEE
12	3589	HOSE HYD. .500 X 18" F.L. .5 MPT X .5 FPT FARMEX HR1C
13	1322	FITTING .5 FPT X .5 MPT CHECK VALVE LT50-O W
14	7842	HYD. MOTOR - ULTRA 1MR010C
	7976	SEAL KIT, ULTRA, 8301-023-OMR
15	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR
16	2149	SELECTOR VALVE, TWO WAY
	6082	VALVE KNOB - 3/8 THREAD, TWO WAY SPOOL VALVE
	6817	SEAL KIT FOR S-50 SELECTOR VALVE, GRESEN VALVE
17	7093	HOSE HYD. .375 X 158" F.L. .5MPT X .5MPT FARMEX HR1C
18	2150	VALVE 410 GRESEN SPOOL W/DETENT C/W HANDLE & PIN
	4616	VALVE SEAL KIT FOR GRESEN SPOOL VALVE (#2150)
	5363	VALVE HANDLE,(NO COVERING) 410 GRESEN SPOOL VALVE
	5364	VALVE HANDLE MOUNTING PIN 410 GRESEN SPOOL VALVE
20	1240	FITTING .5 FPT X .75 MPT 90 DEG SWIVEL ELBOW
21	1239	FITTING .5 MPT X .5 FPT 90 DEG SWIVEL ELBOW
22	7256	HYD. MOTOR, DANFOSS OMPA80
	7275	SEAL KIT, DANFOSS OKPA80 HYDRAULIC MOTOR
22	5168	HYD. MOTOR SERIES "S" CHAR-LYNN #103-1532
	5341	HYD. MOTOR SEAL KIT FOR ALL SERIES "S" CHAR-LYNN
23	1238	FITTING .5 FPT X .5 MPT 45 DEG SWIVEL ELBOW
24	5932	HOSE HYD. .375 X 151" F.L. .50 MPT X .50 MPT 100R2AT
26	7335	FITTING PIONEER COUPLER TIP #4010-3, .375" THROUGH
27	GH-500.05	DECAL, WARNING THIRD LINE
28	7333	HOSE HYD. .375 X 485" F.L. .375 MPT X .375 MPT SINGLE BRAID
29	7334	FITTING PIONEER COUPLER BODY #4050-3, .375" THROUGH
30	7332	HOSE HYD. .375 X 216" F.L. .375 MPT X .375 MPT
31	7341	FITTING .563-18 X .375 FPT SWIVEL ADAPTOR

SECTION 1 - ADJUSTMENTS & MAINTENANCE

1.4.2 HYDRAULICS (Tow Behind)

Serial Numbers Fr: GH2320.A0-PO54661

Fr: G1720.A0-PO54802



193017C

Figure 1.4.2c Tow Behind Hydraulics

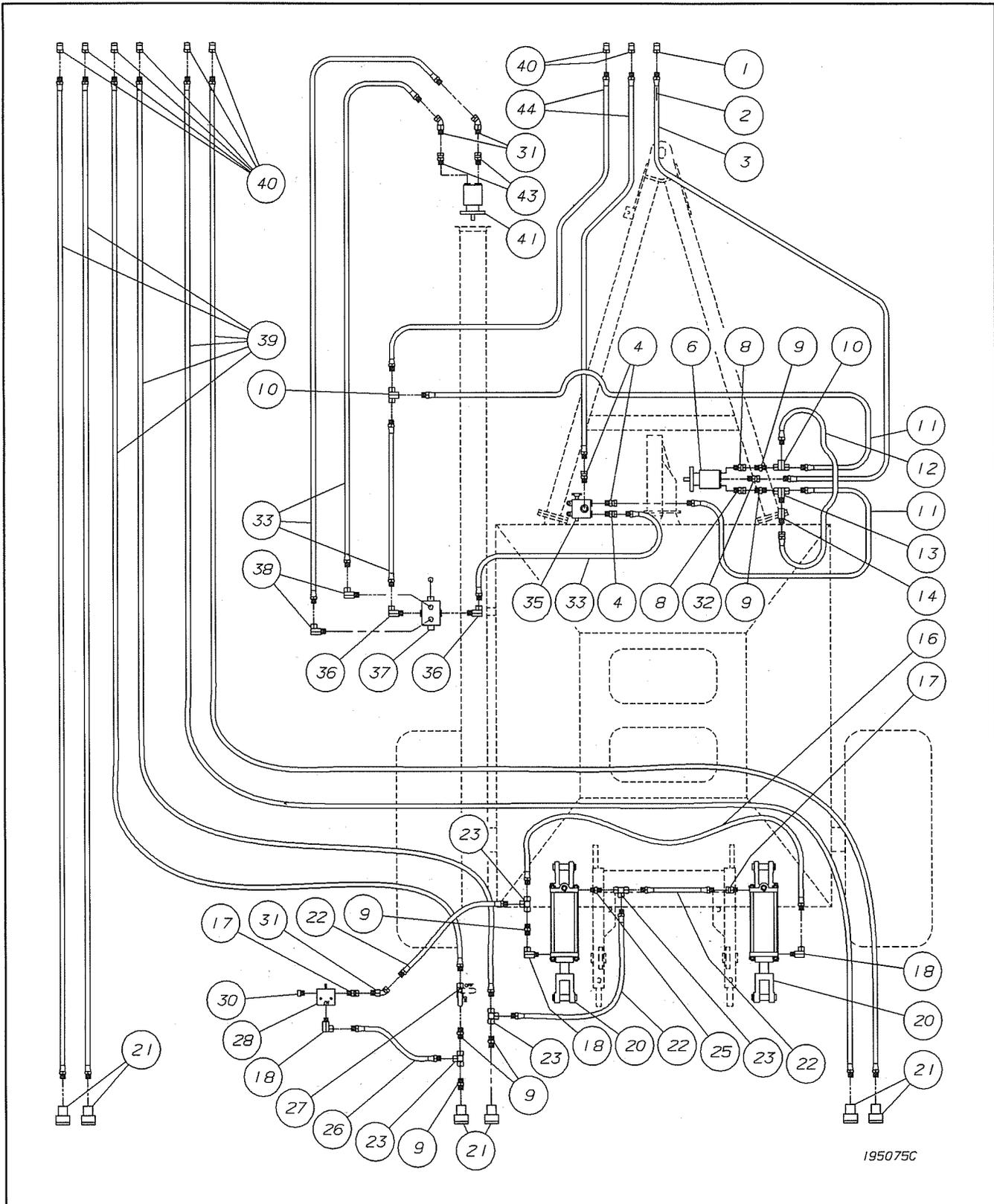
SECTION 1 - ADJUSTMENTS & MAINTENANCE

Serial Numbers Fr: GH2320.A0-PO54661
Fr: G1720.A0-PO54802

REF	PART #	DESCRIPTION
1	1319	FITTING, PIONEER COUPLER TIP #8010-4 (.50")
2	6334	HOSE HYD. 0.75 X 485" F.L. .5MPT X .75MPT FARMEX HR2C
3	GE-202A	CLAMP ASSEMBLY FOR TWO PIONEER .75" COUPLERS
4	6936	FITTING, PIONEER COUPLER TIP #4110-5, .75" THROUGH
5	7091	HOSE HYD. .750 X 216" F.L. .5MPT X .75MPT, HR2C
6	1244	FITTING STEEL .5 MPT CLOSE HEX NIPPLE SEATS BOTH ENDS
7	3819	FITTING .5 FPT X .5 FPT X .5 FPT SWIVEL TEE FIXED BR
8	1925	HOSE HYD. .500 X 60" F.L. .50 MPT X .50 MPT 100R2AT
9	2760	FITTING .875-14 MORB X .5 FPT SWIVEL ADAPTOR
10	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR
11	1242	FITTING .5 FPT X .5 MPT X .5 FPT SWIVEL TEE
12	3589	HOSE HYD. .500 X 18" F.L. .5 MPT X .5 FPT FARMEX HR1C
13	1322	FITTING .5 FPT X .5 MPT CHECK VALVE LT50-O W
14	7842	HYD. MOTOR - ULTRA 1MR010C
	7976	SEAL KIT, ULTRA, 8301-023-OMR
15	1234	FITTING .5 FPT X .5 MPT SWIVEL ADAPTOR
16	2149	SELECTOR VALVE, TWO WAY
	6082	VALVE KNOB - 3/8 THREAD, TWO WAY SPOOL VALVE
	6817	SEAL KIT FOR S-50 SELECTOR VALVE, GRESEN VALVE
17	7093	HOSE HYD. .375 X 158" F.L. .5MPT X .5MPT FARMEX HR1C
18	2150	VALVE 410 GRESEN SPOOL W/DETENT C/W HANDLE & PIN
	4616	VALVE SEAL KIT FOR GRESEN SPOOL VALVE (#2150)
	5363	VALVE HANDLE,(NO COVERING) 410 GRESEN SPOOL VALVE
	5364	VALVE HANDLE MOUNTING PIN 410 GRESEN SPOOL VALVE
20	1240	FITTING .5 FPT X .75 MPT 90 DEG SWIVEL ELBOW
21	1239	FITTING .5 MPT X .5 FPT 90 DEG SWIVEL ELBOW
22	8214	HYD. MOTOR, DANFOSS DS-80 #151-2442
	8215	SEAL KIT, DANFOSS DS-80 HYD. MOTOR #151-1274
22	5168	HYD. MOTOR SERIES "S" CHAR-LYNN #103-1532
	5341	HYD. MOTOR SEAL KIT FOR ALL SERIES "S" CHAR-LYNN
23	1238	FITTING .5 FPT X .5 MPT 45 DEG SWIVEL ELBOW
24	5932	HOSE HYD. .375 X 151" F.L. .50 MPT X .50 MPT 100R2AT
26	7335	FITTING PIONEER COUPLER TIP #4010-3, .375" THROUGH
27	GH-500.05	DECAL, WARNING THIRD LINE
28	7333	HOSE HYD. .375 X 485" F.L. .375 MPT X .375 MPT SINGLE BRAID
29	7334	FITTING PIONEER COUPLER BODY #4050-3, .375" THROUGH
30	7332	HOSE HYD. .375 X 216" F.L. .375 MPT X .375 MPT
31	7341	FITTING .563-18 X .375 FPT SWIVEL ADAPTOR

1.4.3 HYDRAULICS (3 Point Hitch)

Serial Numbers Fr: G1720.A0-P060921



195075C

Figure 1.4.3a 3 Point Hitch Hydraulics

SECTION 1 - ADJUSTMENTS & MAINTENANCE

Serial Numbers Fr: G1720.A0-P060921

REF	PART #	DESCRIPTION
1	7335	FITTING, PIONEER, COUPLER TIP, #4010-3, .375"
2	GH-500.05	DECAL, "IMPORTANT ... THIRD LINE"
3	7338	HOSE, HYDRAULIC, .375" X 155", SINGLE BRAID, .375" MPT X .375" MPT
4	1234	FITTING, .5" FPT X .5" MPT, SWIVEL ADAPTOR
6	7842	HYDRAULIC MOTOR, ULTRA, 1MR010C(4142J)
	7976	SEAL KIT, ULTRA, 8301-023-0MR
	7977	SHAFT SEAL, ULTRA, 8301-020-00M
8	2760	FITTING, .875"-14 MORB X .5" FPT, SWIVEL ADAPTOR
9	1244	FITTING, STEEL, .5" MPT, CLOSE, HEX NIPPLE, SEATS BOTH ENDS
10	3819	FITTING, .5" FPT X .5" FPT X .5" FPT, SWIVEL TEE, FIXED BRANCH
11	1925	HOSE, HYDRAULIC, .5" X 60", FULL LENGTH, .5" MPT X .5" MPT, 100R2AT
12	3589	HOSE, HYDRAULIC, .5" X 18", FULL LENGTH, .5" MPT X .5" MPT, FARMEX, HR1C
13	1242	FITTING, .5" FPT X .5" MPT X .5" FPT, SWIVEL TEE
14	1322	FITTING, .5" FPT X .5" MPT, CHECK VALVE, LT50-0 W
16	8521	HOSE, HYDRAULIC, .5" X 56", FULL LENGTH, .5" MPT X .5" MPT, 100R2AT
17	6551	FITTING, .75"-16 MORB X .5" FPT, SWIVEL ADAPTOR
18	3568	FITTING, .75"-16 MORB X .5" FPT, 90 DEGREE, SWIVEL ADAPTOR
20	8456	CYLINDER, 4 X 8, MONARCH, 1.375" ROD, .75"-16 SAE PORTS, NO PINS (See page 7.30.1 for parts)
21	5259	FITTING, PIONEER, COUPLER BODY, #AG-401
22	3835	HOSE, HYDRAULIC, .5" X 28", FULL LENGTH, .5" MPT X .5" MPT, 100R2AT
23	6809	FITTING, .5" FPT X .5" FPT X .5" FPT, ALL SWIVEL TEE
25	6539	FITTING, .75"-16 MORB X .5" MPT, ADAPTOR
26	3837	HOSE, HYDRAULIC, .5" X 24", FULL LENGTH, .5" MPT X .5" MPT, FARMAX, HR1C
27	6633	VALVE HYDRAULIC BALL, .5" FPT, APOLLO, 73-103-01, 1/4 TURN
	6968	VALVE HANDLE FOR APOLLO BALL VALVE
28	6610	DEPTH STOP VALVE ASSEMBLY, COMPLETE, PRINCE BODY AND CARTRIDGE
	6284	DEPTH STOP VALVE CARTRIDGE, PRINCE, SAE PORTS
30	6554	FITTING, .75"-16 MORB, PLUG, INTERNAL HEX SOCKET HEAD
31	1238	FITTING, .5" FPT X .5" MPT, 45 DEGREE, SWIVEL ELBOW
32	7341	FITTING, .563"-18 SAE X .375" FPT, SWIVEL ADAPTOR
33	5932	HOSE, HYDRAULIC, .375" X 151", FULL LENGTH, .5" MPT X .5" MPT, 100R2AT
35	2149	VALVE, TWO WAY SELECTOR
	6082	VALVE KNOB, 3/8" THREAD, TWO WAY SPOOL VALVE
	6817	SEAL KIT FOR S-50 SELECTOR VALVE, GRESEN VALVE
36	1240	FITTING, .5" FPT X .75" MPT, 90 DEGREE, SWIVEL ELBOW
37	2150	VALVE, 410 GRESEN, SPOOL WITH DETENT, C/W PIN & HANDLE
	4616	VALVE SEAL KIT FOR GRESEN SPOOL VALVE, #2150
	5363	VALVE HANDLE, (NO COVERING), 410 GRESON, SPOOL VALVE
	5364	VALVE HANDLE MOUNTING PIN, 410 GRESON, SPOOL VALVE
38	1239	FITTING, .5" MPT X .5" FPT, 90 DEGREE, SWIVEL ELBOW
39	7092	HOSE, HYDRAULIC, .5" X 292", FULL LENGTH, .5" MPT X .5" MPT, HR2C
40	1319	FITTING, PIONEER, COUPLER TIP, #8010-4, (.5")
41	8214	HYDRAULIC MOTOR, DANFOSS, DS-80, #151-2442
	8215	HYDRAULIC MOTOR SEAL KIT, DANFOSS, DS-80, #151-1274
	5168	HYDRAULIC MOTOR, SERIES "S", CHAR-LYNN, #103-1532
	5341	HYDRAULIC MOTOR SEAL KIT, FOR ALL SERIES "S" CHAR-LYNN
43	2760	FITTING, .875"-14 MORB X .5" FPT, SWIVEL ADAPTOR (for Danfoss motor)
	1234	FITTING, .5" FPT X .5" MPT, SWIVEL ADAPTOR (for Char-Lynn motor)
44	7219	HOSE, HYDRAULIC, .5" X 155", FULL LENGTH, .5" MPT X .5" MPT, HR2C
	GH-208	HOSE MARKER KIT, 4 COLORS

1.4.4 AIR FLOW

A. Tow Behind Single Shoot.

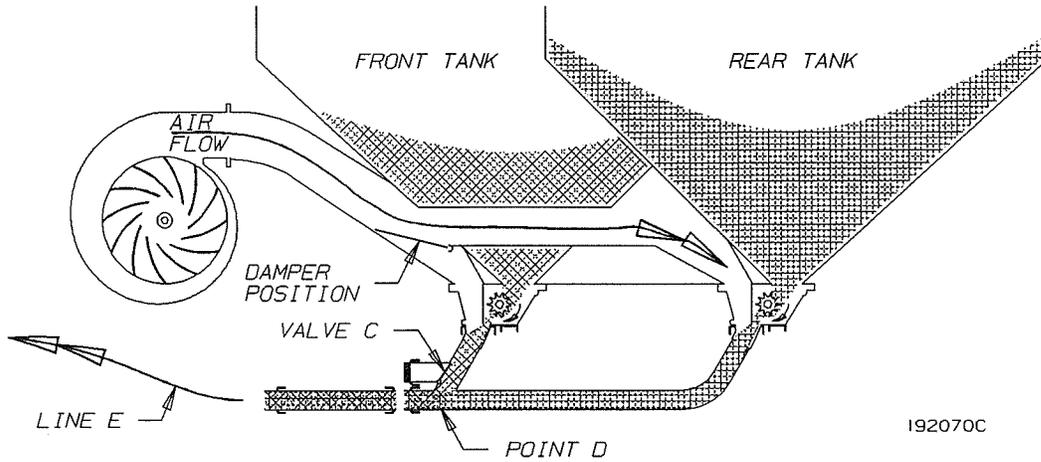


Figure 1.4.4a Tow Behind Single Shoot

B. Tow Between Single Shoot.

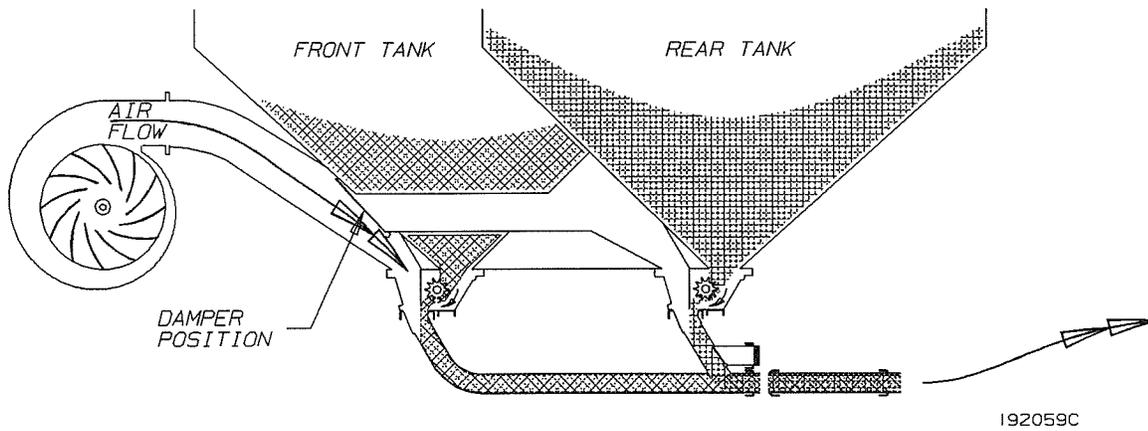


Figure 1.4.4b Tow Between Single Shoot

C. Double Shoot.

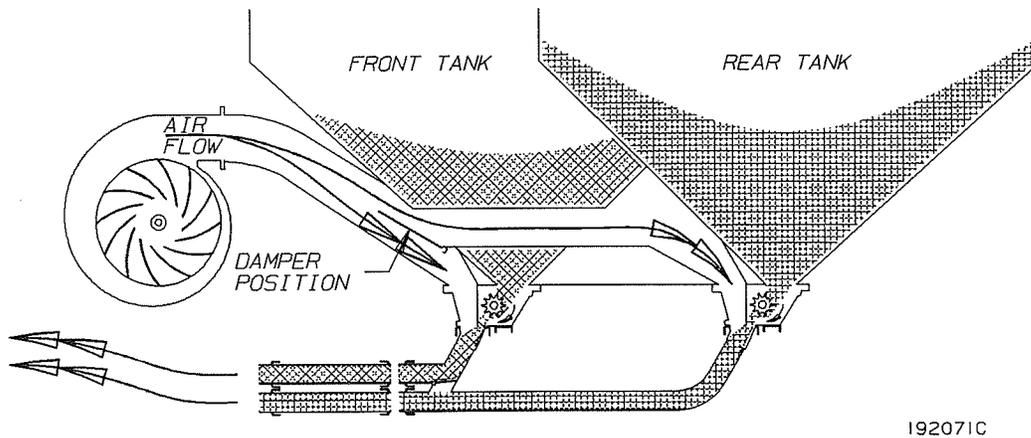


Figure 1.4.4c Tow Behind Double Shoot

1.5 MAJOR OPERATING COMPONENTS

1.5.1 AUGER/AUGER SUPPORT

A. Description.

Physical

Length: 17 feet
 Diameter: 7"
 Flighting: Double cup entry
 Drive: Hydraulic orbit
 Auger Weight: 330 lbs.

DANFOSS DS-80 4.9 cu.in./rev.	DANFOSS OMPA80 4.75 cu.in./rev.	CHAR-LYNN 4.5 cu.in./rev.			
USGPM	USGPM	USGPM	RPM	Δ P (PSI)	BU./HOUR *
10.6	10.3	9.7	500	450	1040
12.7	12.3	11.7	600	600	1150
15.9	15.4	14.6	750	650	1230

* Auger Bushels/Hour determined using standard flighting.

B. Service adjustments.

1. Front lock arm adjustment.

Rapid wear occurs on the back side of the front support arm if the adjustment is not kept tight.

Adjust the 7/16 bolts (1) such that the auger lock arm (2) will force the pivot arm (3) firmly against the bolts when the lock arm is in the locking position.

Slots in the auger lock will allow movement forward or backwards. Loosen the 3/8" bolts and adjust lock. Tighten 3/8" bolts.

See rear pivot adjustment (point #3) if pivot arm fails to contact front lock arm adjustment bolts.

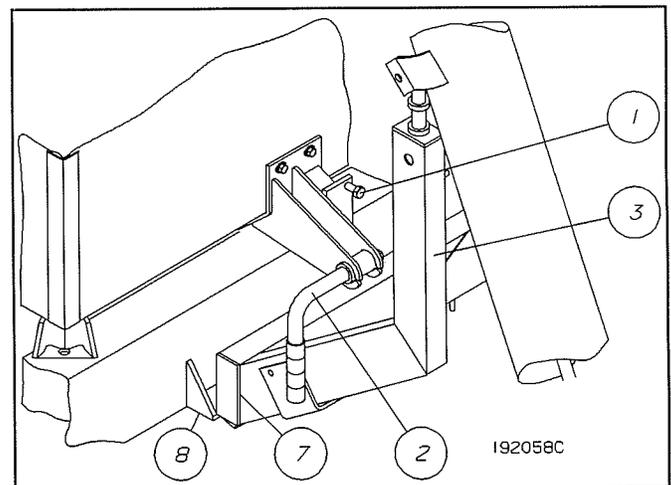


Figure 1.5.1a Front Lock arm

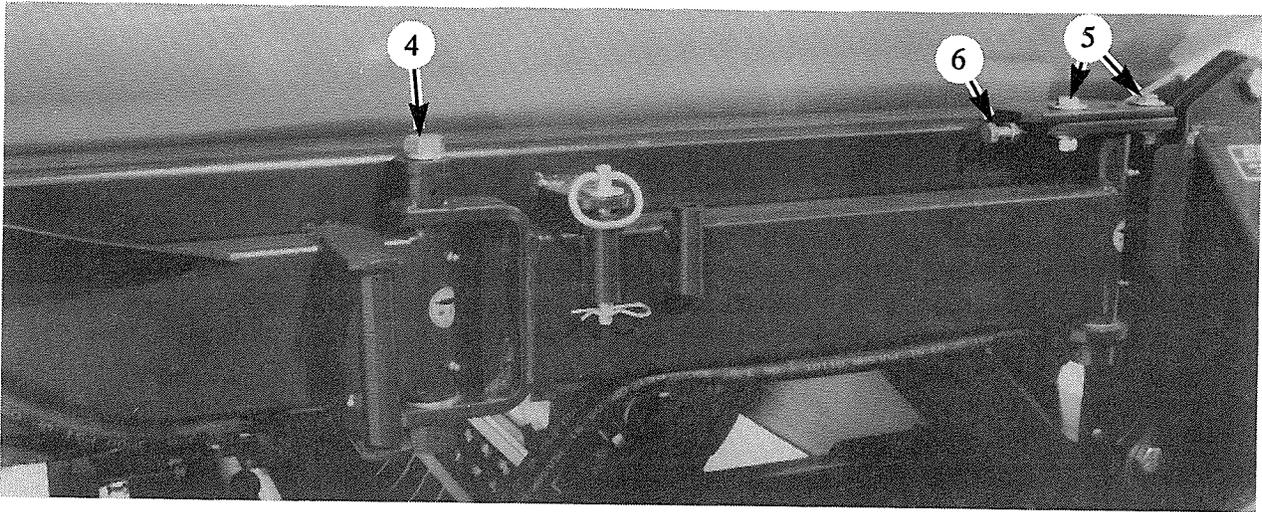


Figure 1.5.1b Intermediate / Rear Pivot Adjustments

192321H

2. Intermediate pivot drag adjustment.

With the auger in loading position, tighten 3/4" bolt (4) to create tension in the intermediate pivot. Adjust only enough to not allow unwanted movement when augering product.

3. Rear pivot adjustment.

Loosen bolts at (5) slightly and loosen jam-nut on bolt (6) adjust bolt (6) such that the forward pivot arm (7) just rests on the forward support at (8). Tighten the jam-nut on (6) and re-tighten bolts at (5). It may be necessary to move the pivot arm in or out to achieve proper alignment of pivot arm to the front lock arm adjustment bolts.

4. Rear auger support cradle.

Adjust yoke (1) so lock arm (2) securely cradles the auger when in transport position. Do not over-tighten.

Note that on later machines the lock arm does not have the lower bend allowing more clearance between the handle and the lower rest for the auger.

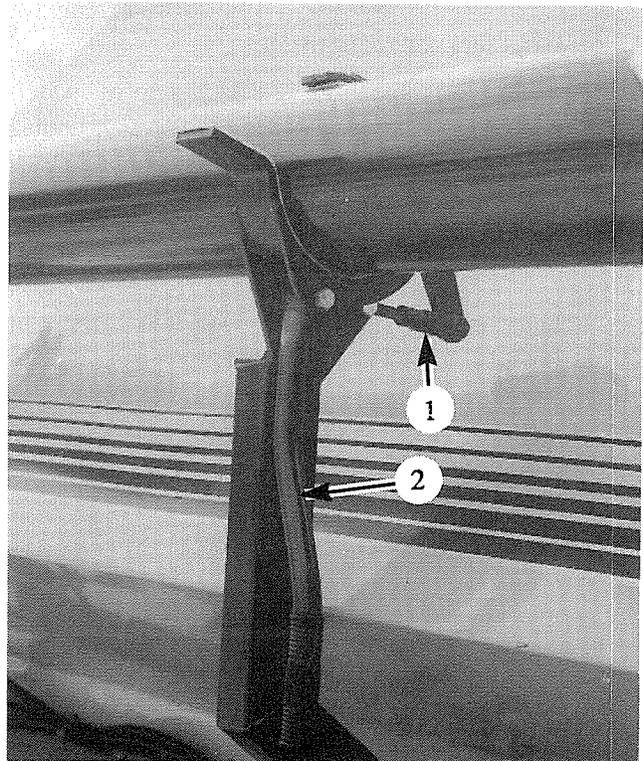


Figure 1.5.1c Rear Pivot & Cradle

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C. Maintenance.

1. Lubrication.

- 50 hr - Front lock arm (#3) - 1 place.
- 50 hr - Intermediate pivot (#4) - 2 places.
- 50 hr - Rear pivot (#5) - 2 places.

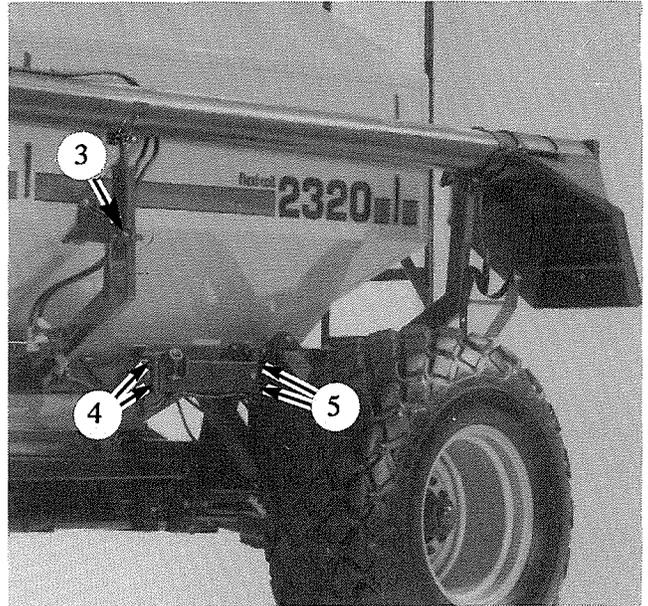


Figure 1.5.1d Lubricating Auger Arm

192315H

2. Inspection and cleaning.

Hopper:

Keep the hopper pivot surfaces (#1) clean to permit free rotation. May require occasional disassembly for cleaning.

Flighting Guard:

This guard is a structural member for the hopper. It is designed this way as it must be in place for safety.

Shim slightly (at point #2) if the hopper does not pivot easily.

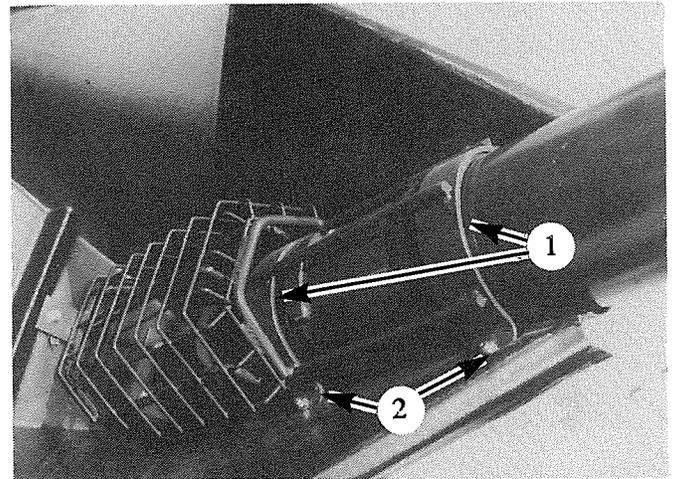


Figure 1.5.1e Hopper and Flighting Guard

192319H

D. Service topics.

1. Repairs to the auger hopper bushing and lower flighting shaft - service topic 2.1.1
2. Correcting for excessive wear on the front support arm - service topic 2.1.2
3. Servicing the auger drive motor - service topic 2.1.3.
4. Servicing the auger spool valve 2.1.4

1.5.2 THE FAN ASSEMBLY

A. Description.

	<u>Physical</u>
Assembly weight:	185 lbs.
Housing diameter:	25"
Inlet diameter:	8.5"
Outlet size:	3 x 5"
Impeller width:	2"
Impeller diameter:	16.5"
Impeller blades:	Backward curved
Hydraulic motor:	MGG2 - Gresen BA6A3 Ultra - 1MR010C
Coupling:	Spline SAE 1-9-16/32
Fan Sensor:	Field - Hall Effect Sensor

	<u>Capacity</u>
FAN:	
Speed range:	- 0 to 5000 rpm
Volume @ 5000 rpm	
@ 20" H ₂ O:	- 2000 cfm
@ 32" H ₂ O:	- 1100 cfm
Static pressure:	- 32.9 in H ₂ O @ 5000
MOTOR: Gresen	
Motor displacement:	- .58 in ³ /rev
Oil flow (@ max):	- 14.76 gpm (@ 85% Vol. Eff.)
Pressure (Δ P max):	- 2000 psi
Back Pressure (max):	- 1000 psi

MOTOR: Ultra	
Motor displacement:	- .61 in ³ /rev
Oil flow (@ max):	- 14.67 gpm (@ 90% Vol. Eff.)
Pressure (Δ P max):	- 2000 psi
Case Drain Line required.	

B. Service Adjustments.

There are two fan speed sensor arrangements:

1. Fan Shaft Sensor (Fig. 1.5.2a & b).

Adjust nuts (1) on shaft sensor (2) to obtain gap adjustment of 1/8" between sensor and round head bolt mounted on fan shaft. If the sensor also picks up the hex head bolt, a double signal will occur.

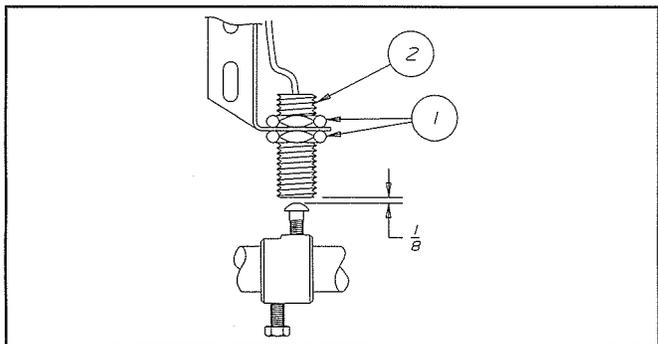


Figure 1.5.2a Shaft Sensor Gap

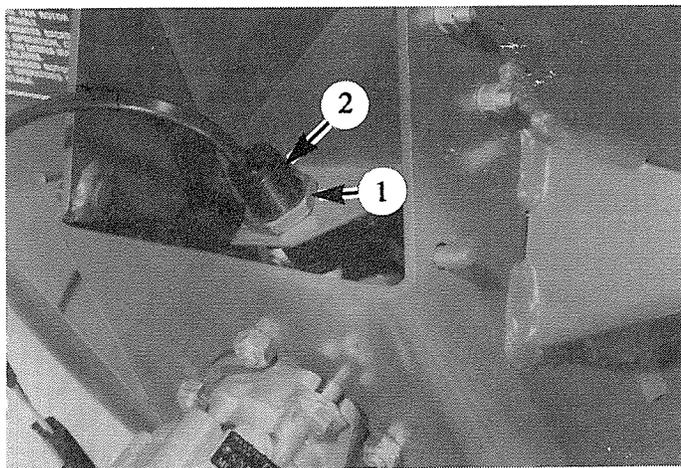


Figure 1.5.2b Fan Sensor

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2. Fan Housing Sensor

This sensor picks up on a nut mounted on the fan impeller. It is important to accurately set the sensor relative to the fan impeller.

Remove the sensor from the housing. Rotate the fan impeller by hand until the pick-up nut head can be seen. Replace the sensor and turn in until the sensor just touches the pick-up nut. From this position, turn the sensor out 3 turns. Tighten in place with the sensor jamnut. (Fig 1.5.2c)

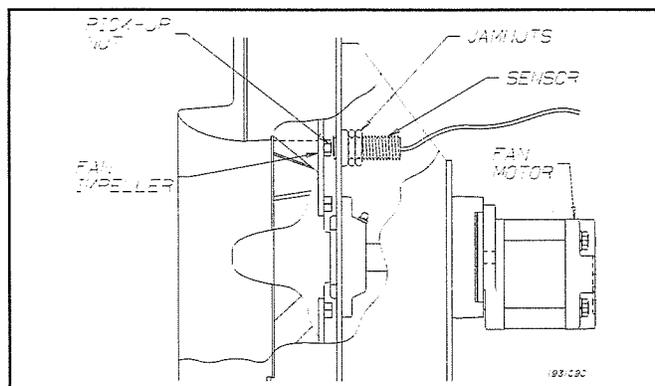


Figure 1.5.2c Fan Housing Sensor

192-020