



FIELD SPRAYERS

SERVICE MANUAL

From Serial Number S65.B000 - M044501

From Serial Number S65XL.A0 - N053501

From Serial Number S65XLT.A - P055496

From Serial Number S55.A000 - N052501



1000 - 71 St. E.
Saskatoon, Sask.
Ph. (306) 934-3500

P.O. Box 1928
Saskatoon, Sask.
S7K 3S5

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Product: Flexi-Coil 55/65/65XL/65XLT Field Sprayer Service Repair Manual
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FIELD SPRAYER SERVICE MANUAL

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SECTION 1

SAFETY IN SERVICE

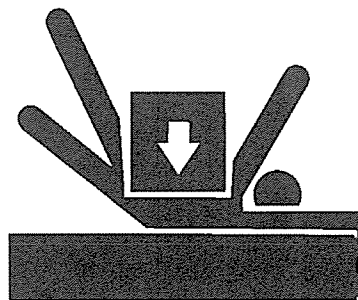
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1.1 USE SAFE SERVICE PROCEDURES

A. Park on LEVEL ground and Block adequately.

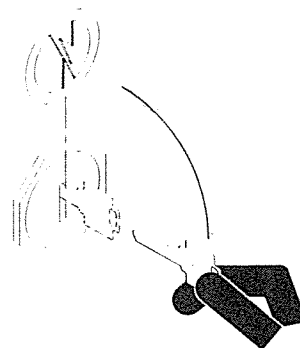


MAART015

Avoid Moving Machines

B. Remove the ignition key.

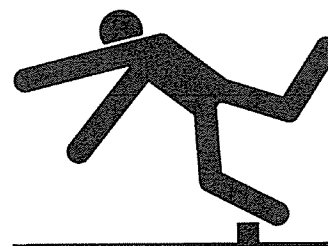
Immobilize machine before repairing or adjusting.



Remove Ignition Key_{192063C}

C. Know operators manual well.

D. Keep service area clean.

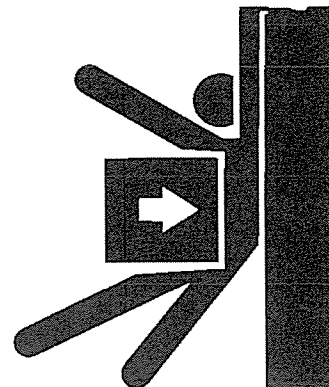


MAART040

Keep work area clean

E. Do not enter sprayer tank or tight areas.

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

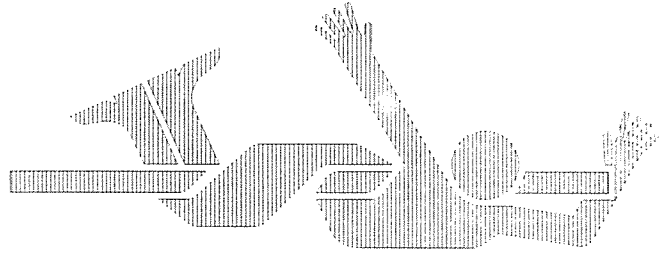


MAART015

Avoid Entering Tight Areas

F. Do not work around rotating equipment.

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



PTO

Immobilize Machine Before Maintaining

Be certain all moving parts have stopped before servicing.

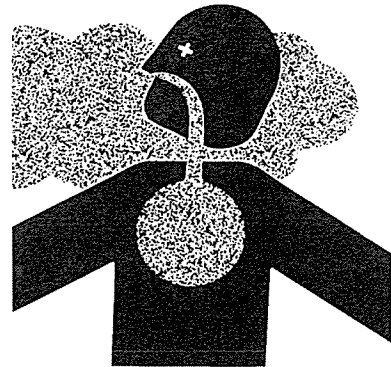


MAART021

Avoid Moving Parts

G. Breath clean air.

Avoid toxic vapours.



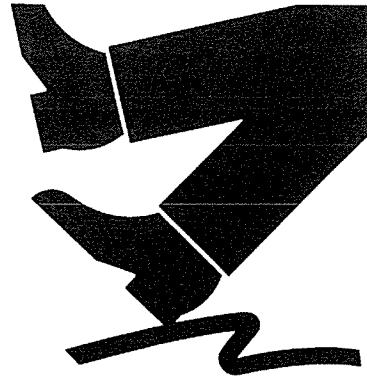
MARRT032

Avoid Toxic Vapours

1.2 AIR AND AIR HOSES

Compressed air can be dangerous. Watch for:

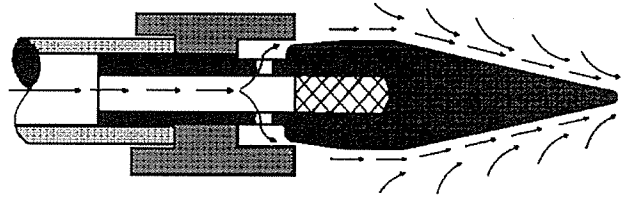
- A. Snaking compressor hoses**
when suddenly disconnected.



Loose Air Lines

MAART026

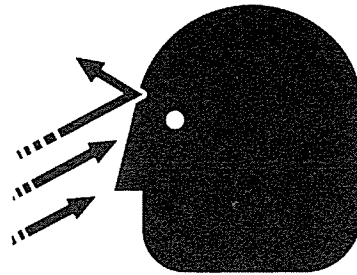
- B. Use proper air nozzles.**
Do not use compressed air to clean clothes.



Use Indirect Air Nozzles

192079S

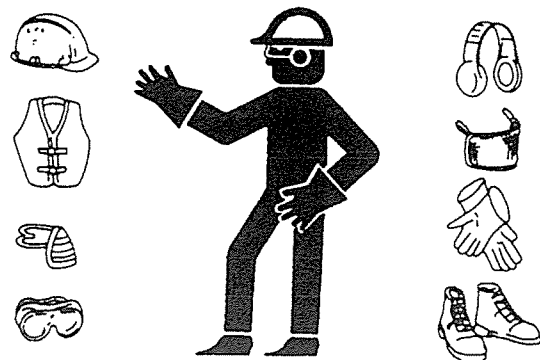
- C. Flushing chemicals.**
Avoid chemicals into eyes or piercing the skin.



Eye Protection

MAART018

- D. Use protective clothing**



Wear Protective Clothing

192078S

1.3 HYDRAULICS AND HYDRAULIC LEAKS

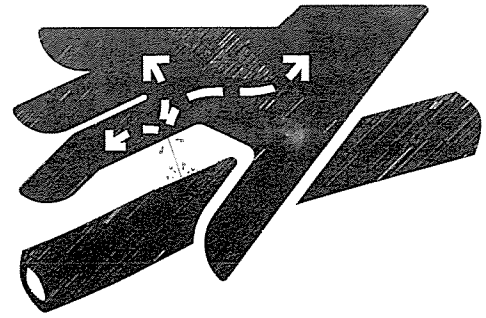
A. Avoid high-pressure fluids.

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.



192064C

Avoid High Pressure Fluid

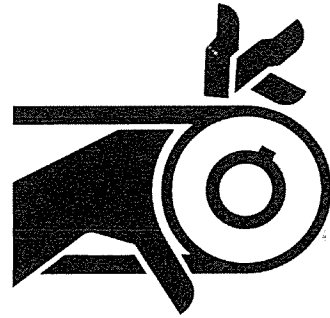
1.4 SHIELDS

Shields are designed to protect.

A. Repair damaged shields.

B. Keep shields in place.

C. Be extra cautious when repairing or servicing without protective shields.



MAART038

Keep Shields in Place

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

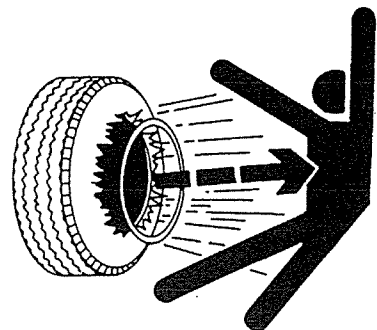
Disconnect Power Supply Before Servicing

1.6 TIRES

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

B. Avoid excessive air pressure.

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



MAART001

Stand Clear While Inflating Tire



SECTION 2

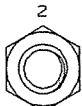
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2.1 BOLT TORQUES

UNIFIED INCH BOLT AND CAP SCREW TORQUE VALUES

SAE Grade and Head Markings	NO MARK 	5 	5.1 	5.2 	8 	8.2 
SAE Grade and Nut Markings	NO MARK 	5 	5	5	8 	8 

192062C

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	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-ft	N-m	lb-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 material.

DEFINITIONS

** "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.

NOTE: All U bolts on Flexi-coil Field Sprayers will be tightened to Grade 2 torque specifications shown in the table above.

2.2 POST ASSEMBLY/PRE-DELIVERY ADJUSTMENT

A. Discussion

As Flexi-Coil's products become more diverse, Quality Control becomes harder to assure. Post-assembly and Pre-delivery checks are the last steps in the Quality Control program which Flexi-Coil has in place.

Therefore as the last step in the Quality Control Program these inspections and adjustments should be thorough. Also these checks are intended to insure the buyer of a quality, finished product that is ready for calibration and operation in the field.

B. Procedure

2.2a ADJUSTMENTS

Before the Flexi-Coil 65 or 65 XL Field Sprayer is delivered to the farmer or used for the first time, the following items should be checked as suggested below.

1. Check that all bolts and nuts are in place and tightened as required.
2. Grease the following points:
 - a. Fold arm pivots, (2 fittings per fold arm).
 - b. Locking castor wheel assemblies, (2 fittings per castor).
 - c. Friction castor wheel assemblies, (2 fittings per castor).

- d. Primary universal joints, (2 fittings per joint).
 - e. Secondary universal joints, (2 fittings per joint).
 - f. Latch Mechanisms, (1 fitting per latch).
 - g. Break-away trip arms, (1 fitting per arm).
 - h. Break-away trip pins, (1 fitting per pin).
 - i. Break-away pivot arms, (1 fitting per pivot).
3. Check tire pressures and wheel bolt torque.

SECTION 2 - GENERAL INFORMATION

2.2a ADJUSTMENTS - Continued

4. Check that all safety and informational decals are in place and in good condition, replace if necessary. Locate amber and red reflector decals on ends of both left and right wing booms as shown in Figure 2.2a.
5. Install SQ-184 reflector decal mount bracket to left fold arm per Figure 2.2b. Apply red decal to front face and amber decal to rear face per Figure 2.2b.

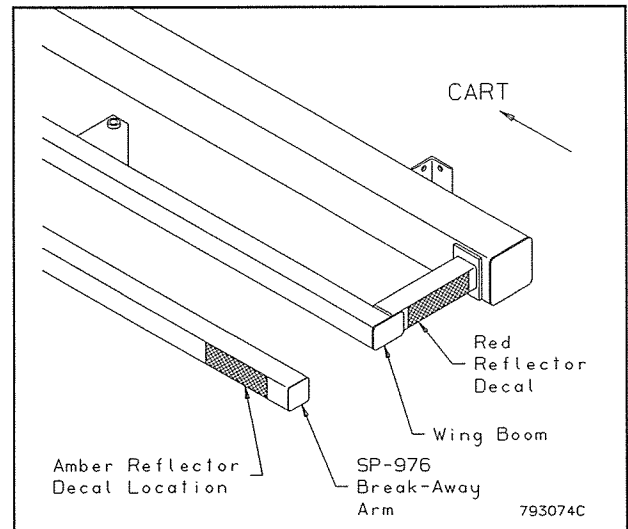


Figure 2.2a: Reflector Decal Locations

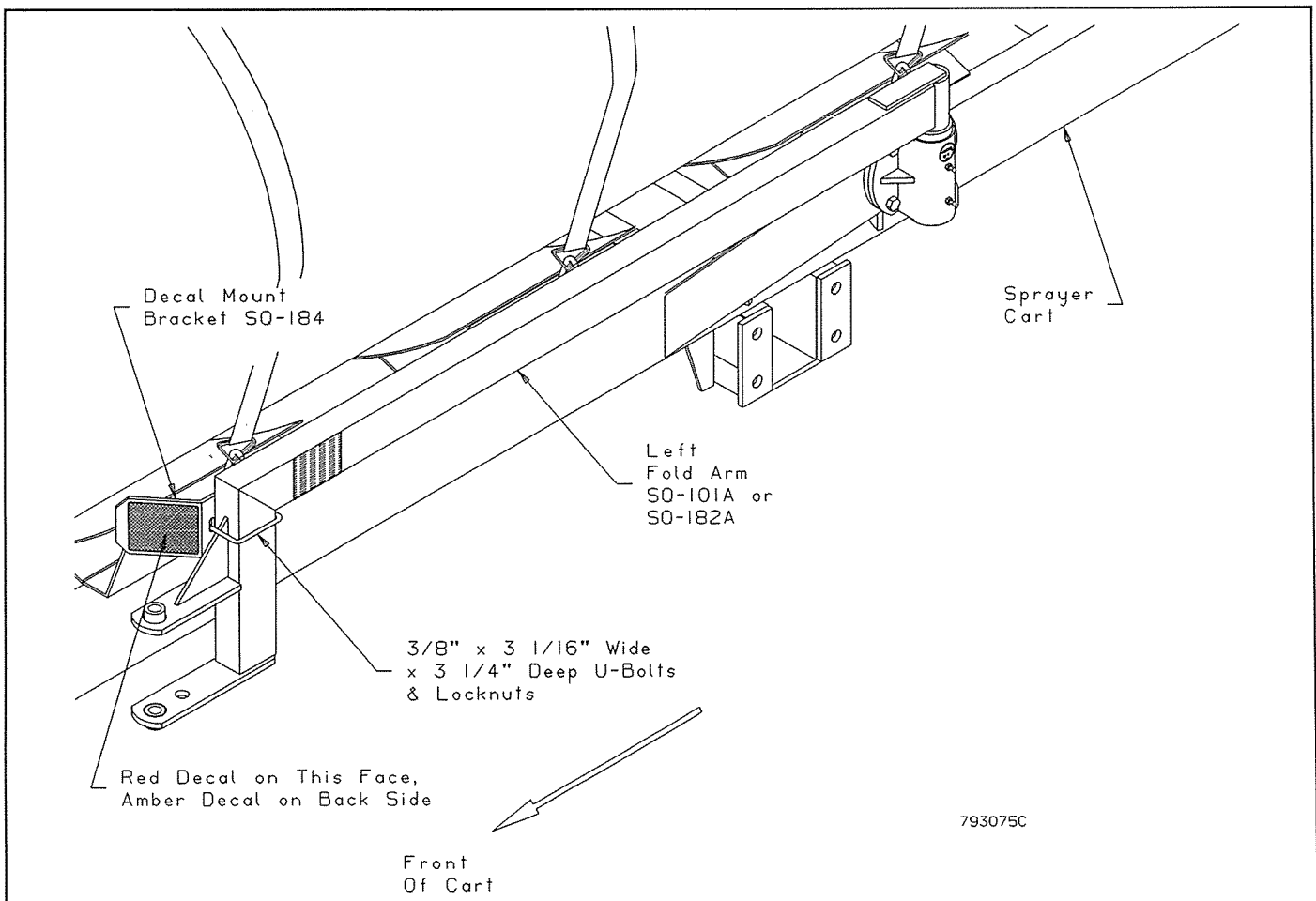


Figure 2.2b: Reflector Decal Mount Bracket SQ-184

2.2a ADJUSTMENTS - Continued

6. Mount amber decals on left and right cylinder locks facing the front (in transport position) per Figure 2.2c.
7. Connect tractor to sprayer hitch and rotate jack into stored position. Be certain tractor drawbar is equipped with a hammer strap before making connection.
8. Use a safety chain of sufficient size to withstand a force of 20,200 pounds (90 kn) between Sprayer and tractor as shown in figure 2.2d. Attach the safety chain to allow proper articulation between Sprayer and tractor.
9. Attach hydraulic hose ends to tractor. BEFORE activating hydraulics, check the following points:
 - Fittings are tight and the hoses are connected correctly.
 - All taper threads are tightened securely. DO NOT over tighten swivel connections.
10. Activate Sprayer hydraulics, rotate the secondary booms down and up, extending and retracting both hydraulic cylinders. Check for leaks.

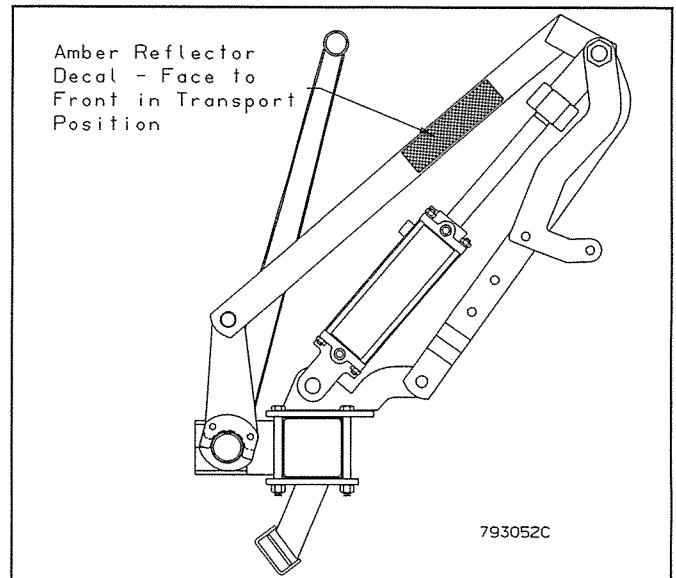


Figure 2.2c: Amber Decal Mount Locations

11. For proper operation of hydraulics bleed air from system. To bleed, fully retract cylinders and hold for 5 seconds, then fully extend cylinders and hold for 20 seconds. Repeat this procedure at least 15 to 20 times.

CAUTION! ALWAYS MAKE SURE THAT PRESSURE IS RELIEVED FROM HYDRAULIC CIRCUITS BEFORE SERVICING OR DISCONNECTING FROM COUPLERS. FAILURE TO DO SO MAY RESULT IN HYDRAULIC FLUID BEING INJECTED IN TO THE SKIN, WHICH MAY RESULT IN GANGRENE.

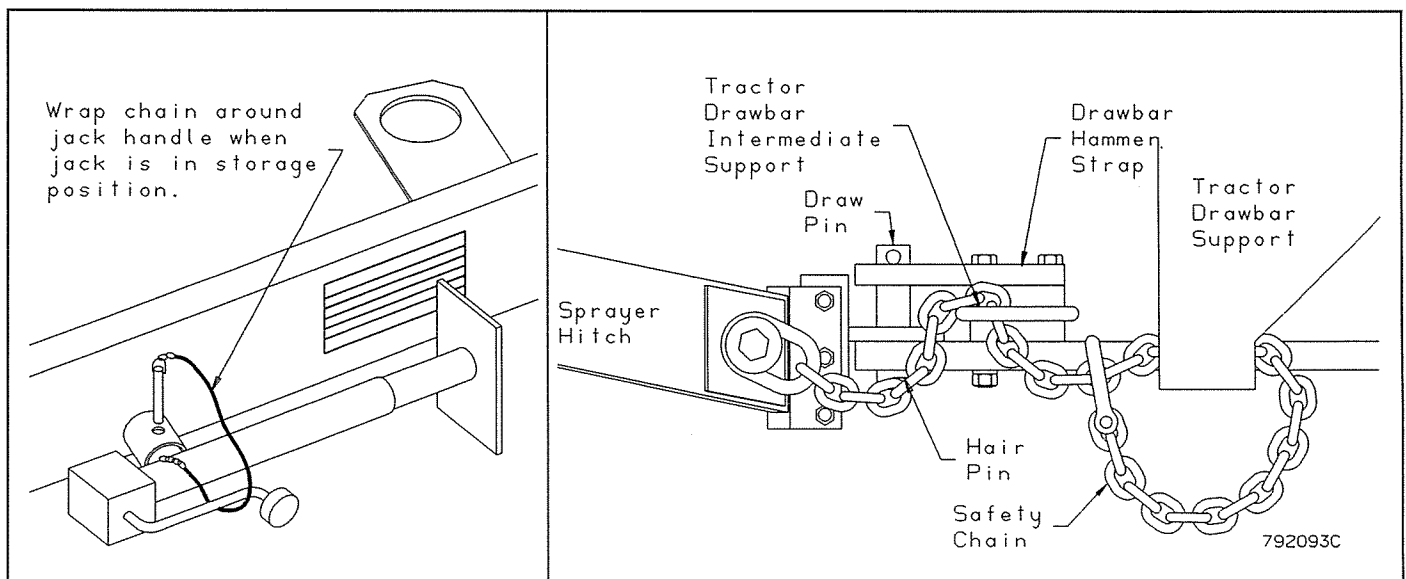


FIGURE 2.2d: Safety Chain and Tractor Connection

2.2a ADJUSTMENTS - Continued

12. Lower secondary booms, adjust hydraulic cylinder stop collars so both the left and right hydraulic cylinders are the same length. Adjust left and right spray boom height (if not equal) with secondary boom adjustable linkage on right side cylinder assembly, Figure 2.2e.

NOTE: Refer to Service Section 2.7 for proper nozzle angle adjustment.

- 13a. Model 65/65 XL/65 XLT: Raise secondary wing booms to 46" spray boom height, draw boom disc should be fully engage by latch. Raise secondary booms completely. Latch should clear draw boom disc by 1" to 1 1/2". Adjust cable if required, Figures 2.2f and 2.2g.

- 13b. Model 55: Raise secondary wing booms to 46" spray boom height, fold arm should be fully engaged by latch pin. Raise secondary booms completely, fold arm should clear latch pin. Adjust cable if required, Figures 2.2h and 2.2i.

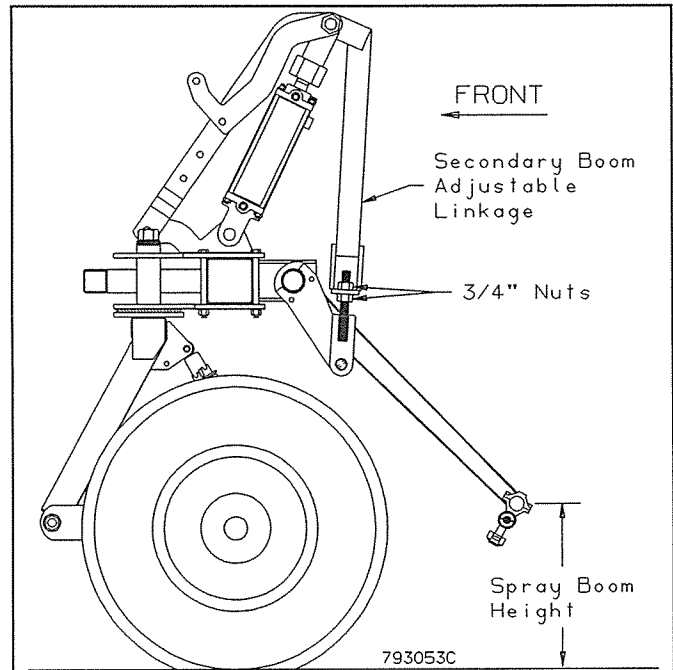


FIGURE 2.2e: Adjustable Linkage

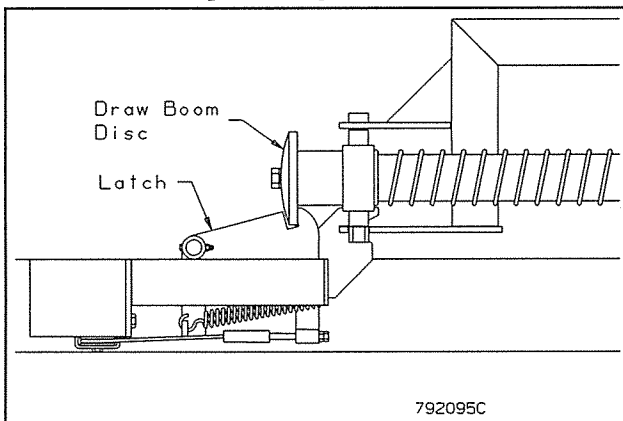


Figure 2.2f: Latch Fully Engaged

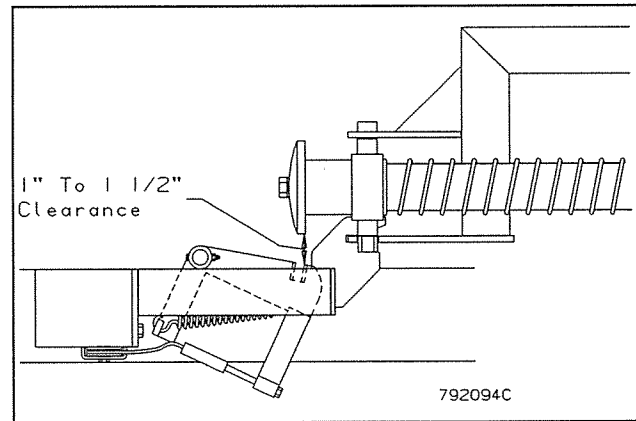


FIGURE 2.2g: Latch Disengaged

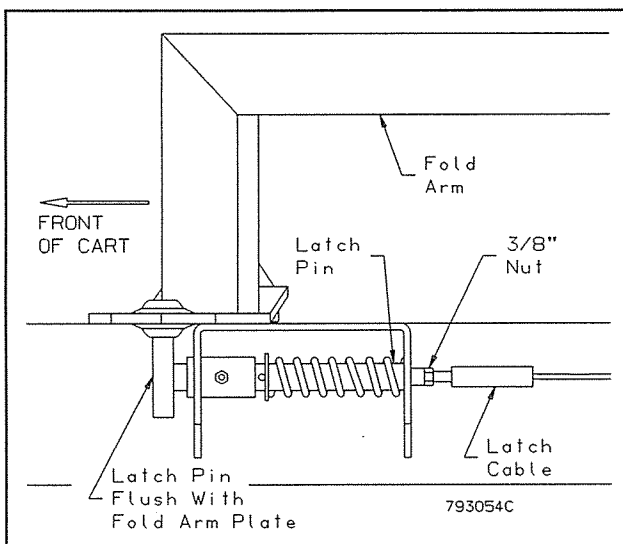


Figure 2.2h: Latch Engaged - Model 55

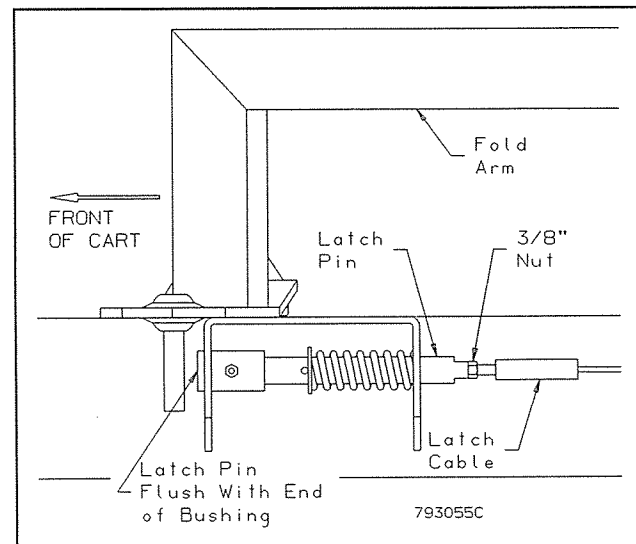


Figure 2.2i: Latch Disengaged - Model 55

2.2a ADJUSTMENTS - Continued

14. With secondary booms in raised position and hydraulic cylinders fully charged, force secondary booms back by hand at hydraulic cylinder, this will remove all play in the cylinder linkage. Adjust the 5/8" bolt on the secondary boom stop out to the secondary booms in this position. This will not allow the secondary booms to move over 15° and help keep secondary booms in phase, Figure 2.2j.
15. Check castor wheel shock adjustment. Adjust 5/8" shock adjustment nuts so distance from bottom of 4" x 4" wing boom to ground is between 31 1/2" to 32 1/2". Tighten 5/8" shock adjustment nuts securely against tab after adjustment.
16. Re-check locking castor wheel cam location and lock pin adjustment, refer to Service Section 3 for proper adjustment.
17. Activate hydraulics and fully raise secondary wing boom. Pull implement forward into full transport position. Be sure hydraulic and sprayer hoses do not get pinched or stretched with folding action of implement, reroute if necessary.

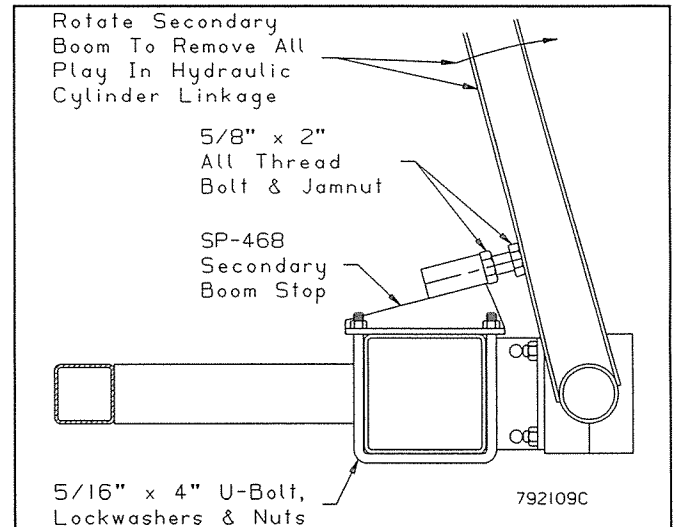


Figure 2.2j: Secondary Boom Stop Adjustment

2.2b DISCONNECTING SPRAYER

1. Know proper transport procedures before travelling on public roads.
2. Select level ground to store implement on. Be sure wing booms are trailing straight behind cart before unhooking. Adjust transport width if required, wing booms should travel approximately 6 to 7 feet apart at the locking castor wheels. Adjust 5/8" Bolts on the locking castor wheels if required.
3. Position and pin locks on hydraulic cylinders.
4. Locate jack on sprayer cart. Extend jack until pressure on tractor hitch is relieved.
5. Relieve oil pressure from hydraulic circuit and disconnect hydraulic hoses.
6. Unhook safety chain and unplug warning lights (if equipped).
7. Remove draw pin from drawbar tongue and carefully drive away.

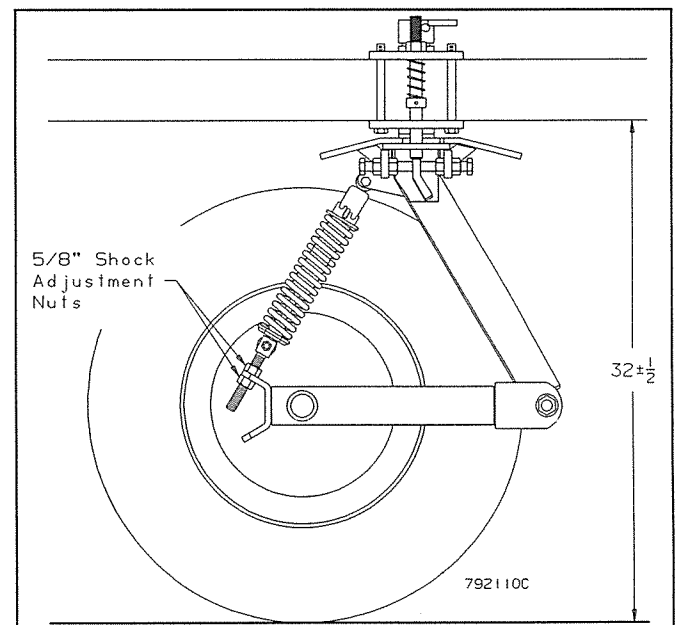


Figure 2.2k: Castor Shock Adjustment

2.2c CHECKING WING BOOM ANGLE

The wing booms are purposely set at a 1° - $2\frac{1}{2}^{\circ}$ angle at the locking castor. This angle greatly decreases the distance required to unfold (backing up) the sprayer from transport to field position. The greater the wing boom angle the faster the sprayer will fold out, but this also means that the spring assist castor wheel has to do more work to fold sprayer back in.

This adjustment **MUST** be checked/made with sprayer in **TRANSPORT POSITION**, castor wheels in line with wing booms and cart level. If cart is not level, use a jack to level.

Use a horizontal level at least 8" long to check wing boom angle.

1. Locate sprayer in transport position on level ground. Make sure all castors are in line with wing boom.

2. To check wing boom angle, place a level on truss member beside the **LOCKING CASTOR WHEEL** assembly.
3. Position horizontal bubble to level, check distance between truss member and level as shown in Figure 2.2j. Refer to chart for wing boom angle.
4. Wing boom angles should be within the following ranges:

50 Foot Models	- 1°
60 to 70 Foot Models	- 1.5°
80 to 100 Foot Models	- 2.0°
110 to 130 Foot Models	- 2.5°

5. The above wing boom angle range should be followed to allow for proper operation of each size sprayer. If wing boom angle needs adjustment, refer to Service Section 3 for details.

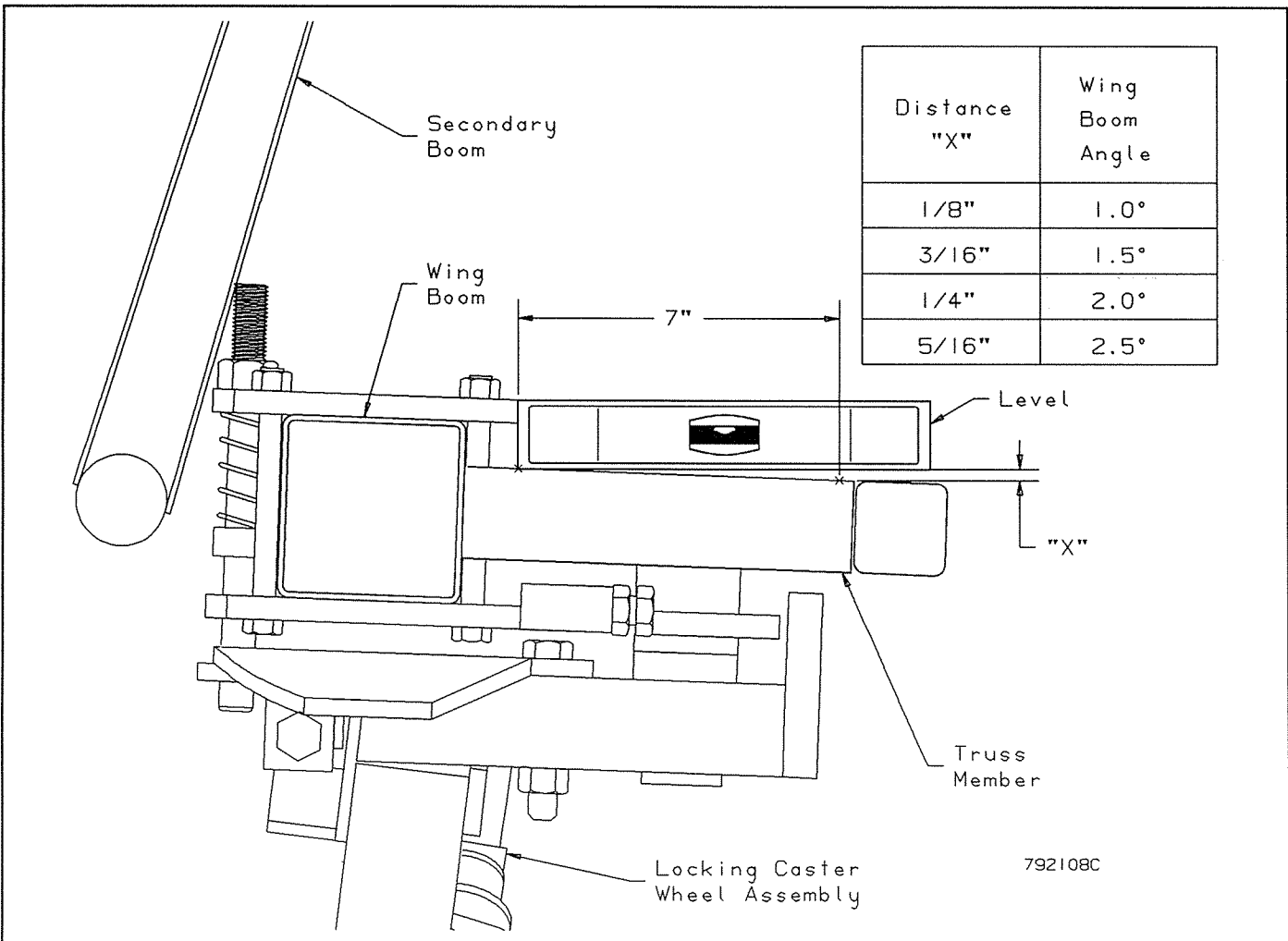


FIGURE 2.2I: Checking Wing Boom Angle At Locking Castor

SECTION 2 - GENERAL INFORMATION

2.3 NOZZLE DELIVERY RATES

2.3a NOZZLE DELIVERY RATES - IMPERIAL GALLONS

FLAT FAN EXTENDED RANGE 'XR' OR 'ER' SPRAY TIPS FLAT FAN STANDARD PRESSURE SPRAY TIPS NOZZLE DELIVERY RATES - IMPERIAL GALLONS

NOTE: XR and ER Series tips can be operated efficiently from 15 to 60 psi.
For standard tips maintain at least 30 psi for uniform spray pattern.

Nozzle Tip # Strainer Size	Press (PSI)	Flow Rate 1 Noz. GPM	Imperial Gallons per Acre at:										
			5.0 MPH	5.5 MPH	6.0 MPH	6.5 MPH	7.0 MPH	7.5 MPH	8.0 MPH	8.5 MPH	9.0 MPH	9.5 MPH	10.0 MPH
8001VS	15	0.051	3.0	2.7	2.5	2.3	2.2	2.0	1.9	1.8	1.7	1.6	1.5
XR8001VS	20	0.059	3.5	3.2	2.9	2.7	2.5	2.3	2.2	2.1	1.9	1.8	1.7
XR11001VS	30	0.072	4.3	3.9	3.6	3.3	3.0	2.8	2.7	2.5	2.4	2.2	2.1
ER8001	40	0.083	4.9	4.5	4.1	3.8	3.5	3.3	3.1	2.9	2.7	2.6	2.5
ER11001	50	0.093	5.5	5.0	4.6	4.2	3.9	3.7	3.4	3.2	3.1	2.9	2.8
100 mesh	60	0.102	6.0	5.5	5.0	4.6	4.3	4.0	3.8	3.6	3.4	3.2	3.0
80015VS	15	0.077	4.5	4.1	3.8	3.5	3.2	3.0	2.8	2.7	2.5	2.4	2.3
XR80015VS	20	0.088	5.3	4.8	4.4	4.0	3.8	3.5	3.3	3.1	2.9	2.8	2.6
XR110015VS	30	0.108	6.4	5.8	5.4	4.9	4.6	4.3	4.0	3.8	3.6	3.4	3.2
ER80015	40	0.125	7.4	6.8	6.2	5.7	5.3	5.0	4.6	4.4	4.1	3.9	3.7
ER110015	50	0.140	8.3	7.5	6.9	6.4	5.9	5.5	5.2	4.9	4.6	4.4	4.2
100 mesh)	60	0.153	9.1	8.3	7.6	7.0	6.5	6.1	5.7	5.3	5.1	4.8	4.5
8002VS	15	0.102	6.1	5.5	5.1	4.7	4.3	4.0	3.8	3.6	3.4	3.2	3.0
XR8002VS	20	0.118	7.0	6.4	5.8	5.4	5.0	4.7	4.4	4.1	3.9	3.7	3.5
XR11002VS	30	0.145	8.6	7.8	7.2	6.6	6.1	5.7	5.4	5.1	4.8	4.5	4.3
ER8002	40	0.167	9.9	9.0	8.3	7.6	7.1	6.6	6.2	5.8	5.5	5.2	5.0
ER11002	50	0.187	11.1	10.1	9.2	8.5	7.9	7.4	6.9	6.5	6.2	5.8	5.5
50 mesh)	60	0.205	12.1	11.0	10.1	9.3	8.7	8.1	7.6	7.1	6.7	6.4	6.1
8003VS	15	0.153	9.1	8.3	7.6	7.0	6.5	6.1	5.7	5.3	5.1	4.8	4.5
XR8003VS	20	0.177	10.5	9.5	8.8	8.1	7.5	7.0	6.6	6.2	5.8	5.5	5.3
XR11003VS	30	0.217	12.9	11.7	10.7	9.9	9.2	8.6	8.0	7.6	7.1	6.8	6.4
ER8003	40	0.250	14.9	13.5	12.4	11.4	10.6	9.9	9.3	8.7	8.3	7.8	7.4
ER11003	50	0.280	16.6	15.1	13.8	12.8	11.9	11.1	10.4	9.8	9.2	8.7	8.3
50 mesh)	60	0.306	18.2	16.5	15.2	14.0	13.0	12.1	11.4	10.7	10.1	9.6	9.1
	15	0.203	12.1	11.0	10.1	9.3	8.6	8.1	7.5	7.1	6.7	6.4	6.0
	20	0.235	13.9	12.7	11.6	10.7	10.0	9.3	8.7	8.2	7.7	7.3	7.0
	30	0.288	17.1	15.5	14.2	13.1	12.2	11.4	10.7	10.0	9.5	9.0	8.5
ER8004	40	0.332	19.7	17.9	16.4	15.2	14.1	13.1	12.3	11.6	11.0	10.4	9.9
ER11004	50	0.371	22.0	20.0	18.4	17.0	15.7	14.7	13.8	13.0	12.2	11.6	11.0
50 mesh)	60	0.407	24.2	22.0	20.1	18.6	17.3	16.1	15.1	14.2	13.4	12.7	12.1
	15	0.254	15.1	13.7	12.6	11.6	10.8	10.1	9.4	8.9	8.4	7.9	7.5
	20	0.293	17.4	15.8	14.5	13.4	12.5	11.6	10.9	10.3	9.7	9.2	8.7
	30	0.359	21.3	19.4	17.8	16.4	15.2	14.2	13.3	12.6	11.9	11.2	10.7
ER8005	40	0.415	24.7	22.4	20.5	19.0	17.6	16.4	15.4	14.5	13.7	13.0	12.3
ER11005	50	0.464	27.6	25.1	23.0	21.2	19.7	18.4	17.2	16.2	15.3	14.5	13.8
50 mesh)	60	0.508	30.2	27.4	25.2	23.2	21.6	20.1	18.9	17.8	16.8	15.9	15.1
	15	0.305	18.1	16.5	15.1	13.9	12.9	12.1	11.3	10.7	10.1	9.5	9.1
	20	0.352	20.9	19.0	17.4	16.1	14.9	13.9	13.1	12.3	11.6	11.0	10.5
	30	0.431	25.6	23.3	21.3	19.7	18.3	17.1	16.0	15.1	14.2	13.5	12.8
ER8006	40	0.498	29.6	26.9	24.7	22.8	21.1	19.7	18.5	17.4	16.4	15.6	14.8
ER11006	50	0.557	33.1	30.1	27.6	25.4	23.6	22.0	20.7	19.5	18.4	17.4	16.5
50 mesh)	60	0.610	36.2	32.9	30.2	27.9	25.9	24.2	22.6	21.3	20.1	19.1	18.1

SECTION 2 - GENERAL INFORMATION

2.3b NOZZLE DELIVERY RATES - U.S. GALLONS

FLAT FAN EXTENDED RANGE 'XR' OR 'ER' SPRAY TIPS FLAT FAN STANDARD PRESSURE SPRAY TIPS NOZZLE DELIVERY RATES - U.S. GALLONS



NOTE: XR and ER Series tips can be operated efficiently from 15 to 60 psi.
For standard tips maintain at least 30 psi for uniform spray pattern.

Nozzle Tip # Strainer Size	Press (PSI)	Flow Rate	US Gallons per Acre at:										
		1 Noz US GPM	5.0 MPH	5.5 MPH	6.0 MPH	6.5 MPH	7.0 MPH	7.5 MPH	8.0 MPH	8.5 MPH	9.0 MPH	9.5 MPH	10.0 MPH
8001VS	15	0.06	3.6	3.3	3.0	2.8	2.6	2.4	2.3	2.1	2.0	1.9	1.8
XR8001VS	20	0.07	4.2	3.8	3.5	3.2	3.0	2.8	2.6	2.5	2.3	2.2	2.1
XR11001VS	30	0.09	5.1	4.7	4.3	4.0	3.7	3.4	3.2	3.0	2.9	2.7	2.6
ER8001	40	0.10	5.9	5.4	5.0	4.6	4.2	4.0	3.7	3.5	3.3	3.1	3.0
ER11001	50	0.11	6.6	6.0	5.5	5.1	4.7	4.4	4.2	3.9	3.7	3.5	3.3
100 mesh	60	0.12	7.3	6.6	6.1	5.6	5.2	4.8	4.5	4.3	4.0	3.8	3.6
80015VS	15	0.09	5.5	5.0	4.5	4.2	3.9	3.6	3.4	3.2	3.0	2.9	2.7
XR80015VS	20	0.11	6.3	5.7	5.3	4.8	4.5	4.2	3.9	3.7	3.5	3.3	3.2
XR110015VS	30	0.13	7.7	7.0	6.4	5.9	5.5	5.1	4.8	4.5	4.3	4.1	3.9
ER80015	40	0.15	8.9	8.1	7.4	6.9	6.4	5.9	5.6	5.2	5.0	4.7	4.5
ER110015	50	0.17	10.0	9.1	8.3	7.7	7.1	6.6	6.2	5.9	5.5	5.2	5.0
100 mesh)	60	0.18	10.9	9.9	9.1	8.4	7.8	7.3	6.8	6.4	6.1	5.7	5.5
8002VS	15	0.12	7.3	6.6	6.1	5.6	5.2	4.8	4.5	4.3	4.0	3.8	3.6
XR8002VS	20	0.14	8.4	7.6	7.0	6.5	6.0	5.6	5.3	4.9	4.7	4.4	4.2
XR11002VS	30	0.17	10.3	9.4	8.6	7.9	7.3	6.9	6.4	6.1	5.7	5.4	5.1
ER8002	40	0.20	11.9	10.8	9.9	9.1	8.5	7.9	7.4	7.0	6.6	6.3	5.9
ER11002	50	0.22	13.3	12.1	11.1	10.2	9.5	8.9	8.3	7.8	7.4	7.0	6.6
50 mesh)	60	0.24	14.5	13.2	12.1	11.2	10.4	9.7	9.1	8.6	8.1	7.7	7.3
8003VS	15	0.18	10.9	9.9	9.1	8.4	7.8	7.3	6.8	6.4	6.0	5.7	5.4
XR8003VS	20	0.21	12.6	11.5	10.5	9.7	9.0	8.4	7.9	7.4	7.0	6.7	6.3
XR11003VS	30	0.26	15.4	14.0	12.9	11.9	11.0	10.3	9.6	9.1	8.6	8.1	7.7
ER8003	40	0.30	17.8	16.2	14.9	13.7	12.7	11.9	11.1	10.5	9.9	9.4	8.9
ER11003	50	0.34	19.9	18.1	16.6	15.3	14.2	13.3	12.5	11.7	11.1	10.5	10.0
50 mesh)	60	0.37	21.8	19.8	18.2	16.8	15.6	14.6	13.6	12.8	12.1	11.5	10.9
	15	0.24	14.5	13.2	12.1	11.2	10.4	9.7	9.1	8.6	8.1	7.7	7.3
	20	0.28	16.8	15.3	14.0	12.9	12.0	11.2	10.5	9.9	9.3	8.8	8.4
	30	0.35	20.6	18.7	17.1	15.8	14.7	13.7	12.9	12.1	11.4	10.8	10.3
ER8004	40	0.40	23.8	21.6	19.8	18.3	17.0	15.8	14.9	14.0	13.2	12.5	11.9
ER11004	50	0.45	26.6	24.1	22.1	20.4	19.0	17.7	16.6	15.6	14.8	14.0	13.3
50 mesh)	60	0.49	29.1	26.5	24.2	22.4	20.8	19.4	18.2	17.1	16.2	15.3	14.5
	15	0.31	18.2	16.5	15.2	14.0	13.0	12.1	11.4	10.7	10.1	9.6	9.1
	20	0.35	21.0	19.1	17.5	16.2	15.0	14.0	13.1	12.4	11.7	11.1	10.5
	30	0.43	25.7	23.4	21.4	19.8	18.4	17.1	16.1	15.1	14.3	13.5	12.9
ER8005	40	0.50	29.7	27.0	24.8	22.8	21.2	19.8	18.6	17.5	16.5	15.6	14.9
ER11005	50	0.56	33.2	30.2	27.7	25.5	23.7	22.1	20.8	19.5	18.4	17.5	16.6
50 mesh)	60	0.61	36.4	33.1	30.3	28.0	26.0	24.2	22.7	21.4	20.2	19.1	18.2
	15	0.37	21.8	19.9	18.2	16.8	15.6	14.6	13.7	12.8	12.1	11.5	10.9
	20	0.42	25.2	22.9	21.0	19.4	18.0	16.8	15.8	14.8	14.0	13.3	12.6
	30	0.52	30.9	28.1	25.7	23.8	22.1	20.6	19.3	18.2	17.2	16.3	15.4
ER8006	40	0.60	35.7	32.4	29.7	27.4	25.5	23.8	22.3	21.0	19.8	18.8	17.8
ER11006	50	0.67	39.9	36.3	33.2	30.7	28.5	26.6	24.9	23.5	22.2	21.0	19.9
50 mesh)	60	0.74	43.7	39.7	36.4	33.6	31.2	29.1	27.3	25.7	24.3	23.0	21.8



SECTION 2 - GENERAL INFORMATION

2.3c NOZZLE DELIVERY RATES - METRIC

FLAT FAN EXTENDED RANGE 'XR' OR 'ER' SPRAY TIPS FLAT FAN STANDARD PRESSURE SPRAY TIPS NOZZLE DELIVERY RATES - METRIC

NOTE: XR and ER Series tips can be operated efficiently from 100 to 400 kPa.
For standard tips maintain at least 200 kpa for uniform spray pattern.

Nozzle Tip # Strainer Size	Press (kPa)	Flow Rate	Litres (water) per Hectare at:								
		1 Noz L/MIN	8 KM/H	9 KM/H	10 KM/H	11 KM/H	12 KM/H	13 KM/H	14 KM/H	15 KM/H	16 KM/H
8001VS XR8001VS ER8001 ER11001 100 mesh	100	0.23	34	30	27	24	22	21	19	18	17
	150	0.28	41	37	33	30	27	25	23	22	21
	200	0.32	47	42	38	35	32	29	27	25	24
	275	0.38	56	49	45	40	37	34	32	30	28
	350	0.43	63	56	50	46	42	39	36	33	31
	400	0.46	67	60	54	49	45	41	38	36	34
80015VS XR80015VS ER80015 ER110015 100 mesh)	100	0.34	50	45	40	37	34	31	29	27	25
	150	0.42	62	55	49	45	41	38	35	33	31
	200	0.48	71	63	57	52	47	44	41	38	36
	275	0.57	83	74	67	61	56	51	48	44	42
	350	0.64	94	84	75	68	63	58	54	50	47
	400	0.69	101	89	80	73	67	62	57	54	50
8002VS XR8002VS ER8002 ER11002 50 mesh)	100	0.46	67	60	54	49	45	41	38	36	34
	150	0.56	82	73	66	60	55	51	47	44	41
	200	0.65	95	85	76	69	63	59	54	51	48
	275	0.76	111	99	89	81	74	69	64	59	56
	350	0.86	126	112	101	91	84	77	72	67	63
	400	0.92	134	120	108	98	90	83	77	72	67
8003VS XR8003VS ER8003 ER11003 50 mesh)	100	0.69	101	89	80	73	67	62	57	54	50
	150	0.84	123	110	99	90	82	76	70	66	62
	200	0.97	142	126	114	103	95	88	81	76	71
	275	1.14	167	148	133	121	111	103	95	89	83
	350	1.28	188	167	151	137	125	116	108	100	94
	400	1.37	201	179	161	146	134	124	115	107	101
ER8004 ER11004 50 mesh)	100	0.91	134	119	107	97	89	82	76	71	67
	150	1.11	164	146	131	119	109	101	94	87	82
	200	1.29	189	168	151	137	126	116	108	101	95
	275	1.51	222	197	177	161	148	136	127	118	111
	350	1.70	250	222	200	182	167	154	143	133	125
	400	1.82	267	238	214	194	178	164	153	143	134
ER8005 ER11005 50 mesh)	100	1.14	167	149	134	122	111	103	96	89	84
	150	1.39	205	182	164	149	136	126	117	109	102
	200	1.61	236	210	189	172	158	145	135	126	118
	275	1.89	277	246	222	202	185	171	158	148	139
	350	2.13	313	278	250	227	208	192	179	167	156
	400	2.28	334	297	267	243	223	206	191	178	167
ER8006 ER11006 50 mesh)	100	1.37	201	178	160	146	134	123	115	107	100
	150	1.67	246	218	196	179	164	151	140	131	123
	200	1.93	284	252	227	206	189	175	162	151	142
	275	2.26	333	296	266	242	222	205	190	177	166
	350	2.55	375	333	300	273	250	231	214	200	188
	400	2.73	401	356	321	292	267	247	229	214	201

2.4 PUMP LOAD CHARACTERISTICS (Charts)

This section pertains to pump performance charts for Flexi-Coil Field Sprayers. From these charts it is evident that the HM4 hydraulic pump does not handle the larger sprayers and tip sizes. These sprayers should be subbed up to HM1 hydraulic pump providing that the tractor has enough oil output.

NOTE: Flexi-Coil now offers an Ace hydraulic pump, the Ace hydraulic pump performs similar to the HM1 pump with oil flows similar to the HM4 hydraulic pump.

To determine if a selected nozzle and pump will work for a specific size of sprayer use either;

Section 2.4a Method 1 - Pump/Tip/Sprayer Size Charts:

- For 20" nozzle spacing only.

Section 2.4b Method 2 - Pump Charts:

- All sprayer sizes, all nozzles spacings, requires some calculations.

Chart Information:

- Section 2.4a Pump Load Charts are based on 20 inch nozzle spacing.
- All hydraulic pump load tests conducted at 2000 psi hydraulic pressure.
- All PTO pump load tests were conducted at rated tractor rpm for pto pumps.
- Pump output reduces as pressure increases.
- Nozzle tip output increases as pressure increases.
- Left side of chart indicates Flow in Imperial GPM to the spray nozzles only.
- Right side of chart indicates Flow in U.S. GPM to the spray nozzles only.
- Chart pump curves are based on full agitation for each sprayer and pump type.
- Maximum flow to the spray boom nozzles is 42 U.S. gpm (35 Imp. gpm) for the models 65, 65 XL and 65 XLT. 25 U.S. gpm (21 Imp. gpm) for the model 55.

2.4a METHOD 1 - PUMP/TIP/SPRAYER SIZE Charts

The charts from page 13 to 30 are for each sprayer size. They have pump curves as well as nozzle flow rate curves based on 20 inch nozzle spacing. These charts do not require any calculations.

For example in Imperial units: 130 foot sprayer, operator wants to apply 10 gpa at 7.5 mph and 40 psi using a hydraulic driven pump. Tractor is a Case 2590.

1. Determine nozzle tip size: from nozzle delivery rate charts select 03 tip, 9.9 gpa at 40 psi and 7.5 mph.
2. Determine pump type: from hypro pump selection guide select HM4 for tractor type.
3. Verify pump output to supply selected nozzles. Refer to correct pump chart.

4. Run a straight line up from the 40 psi point to the 03 nozzle tip curve. HM series pump curve chart, page 2-13, point "A". This point falls between the upper and lower agitation curves of the HM4 pump. Therefore this pump would work on all 130 models except the 65 XL. The XL higher agitation requirement indicates that a larger pump is required or Agitation will have to be reduced to reach 40 psi.

5. The limitations of this pump and nozzle selection for this size of sprayer would be that 60 psi would not be achievable, refer to chart. Using this data the operator could not increase the spray pressure to 60 psi using the HM4 pump. If 60 psi is desired for other application then the HM1 pump would be required.

NOTE: To check U.S. units simply use the U.S. Nozzle Delivery Rate charts and the Flow in U.S. GPM on the right side of the charts.

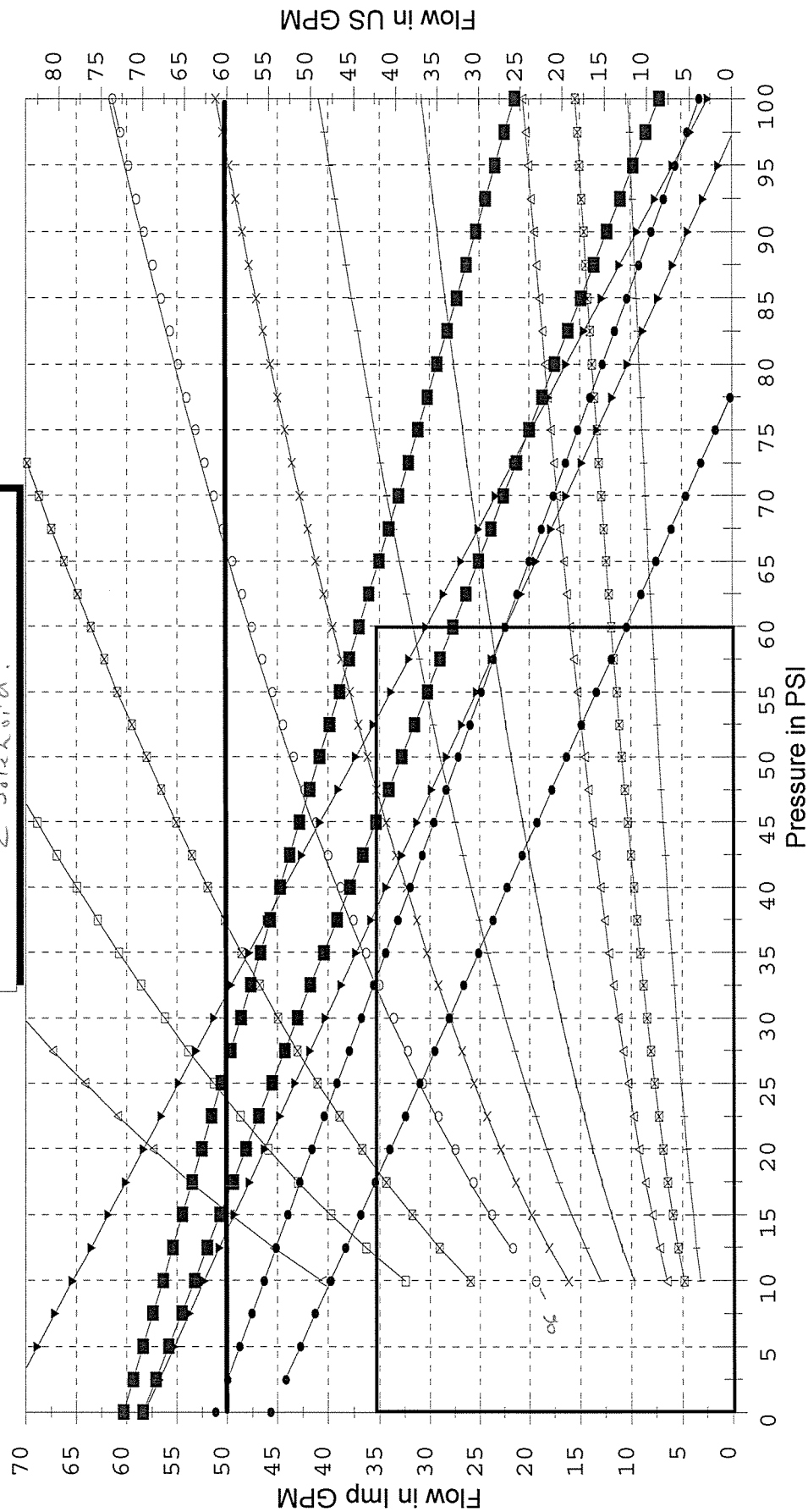
HYDRAULIC PUMP SELECTION GUIDE - HYPRO

A hydraulic drive centrifugal pump provides quick and easy hook up, high capacity, and reliable operation when coupled to a tractor equipped with a modern and adequate hydraulic system. The Hypro selection guide, APPENDIX A,

will provide correct hydraulic pump to tractor match.

NOTE: Where the selection guide manual calls for an HM2 pump, the HM4 pump should be used.

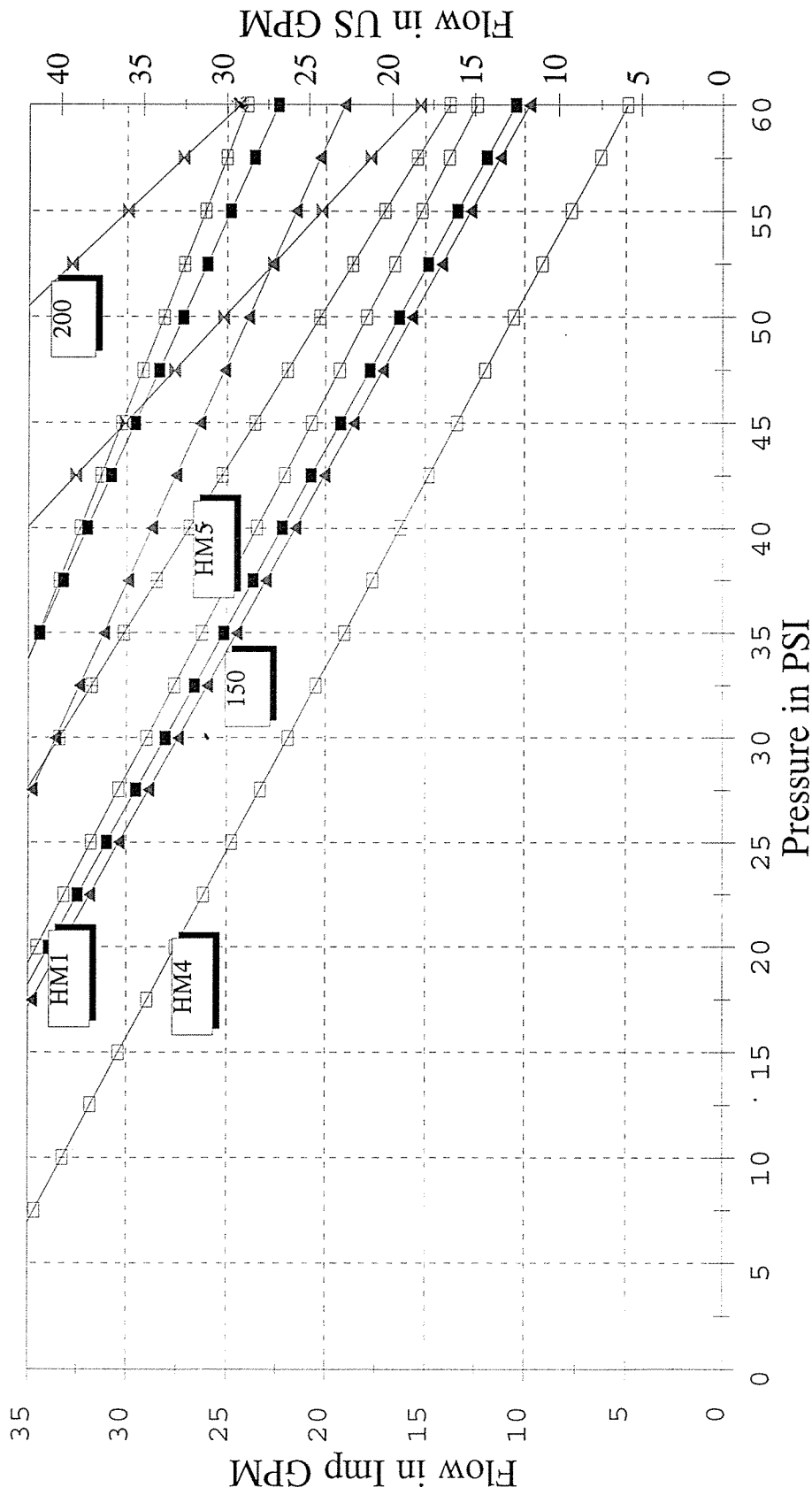
Hypro Cast Prototype Comparison @ 2000 PSI, 130' Unit 2 5/16" orid.



- Hypro 1000 rpm
- 05 Tip
- 01 Tip
- 15 Tip
- 04 Tip
- Hypro HM1 @ 14.5 gpm
- 10 Tip
- 03 Tip
- Cast HM1 @ 11.1 gpm
- 08 Tip
- 02 Tip
- 06 Tip
- 015 Tip



HM Pump Curves



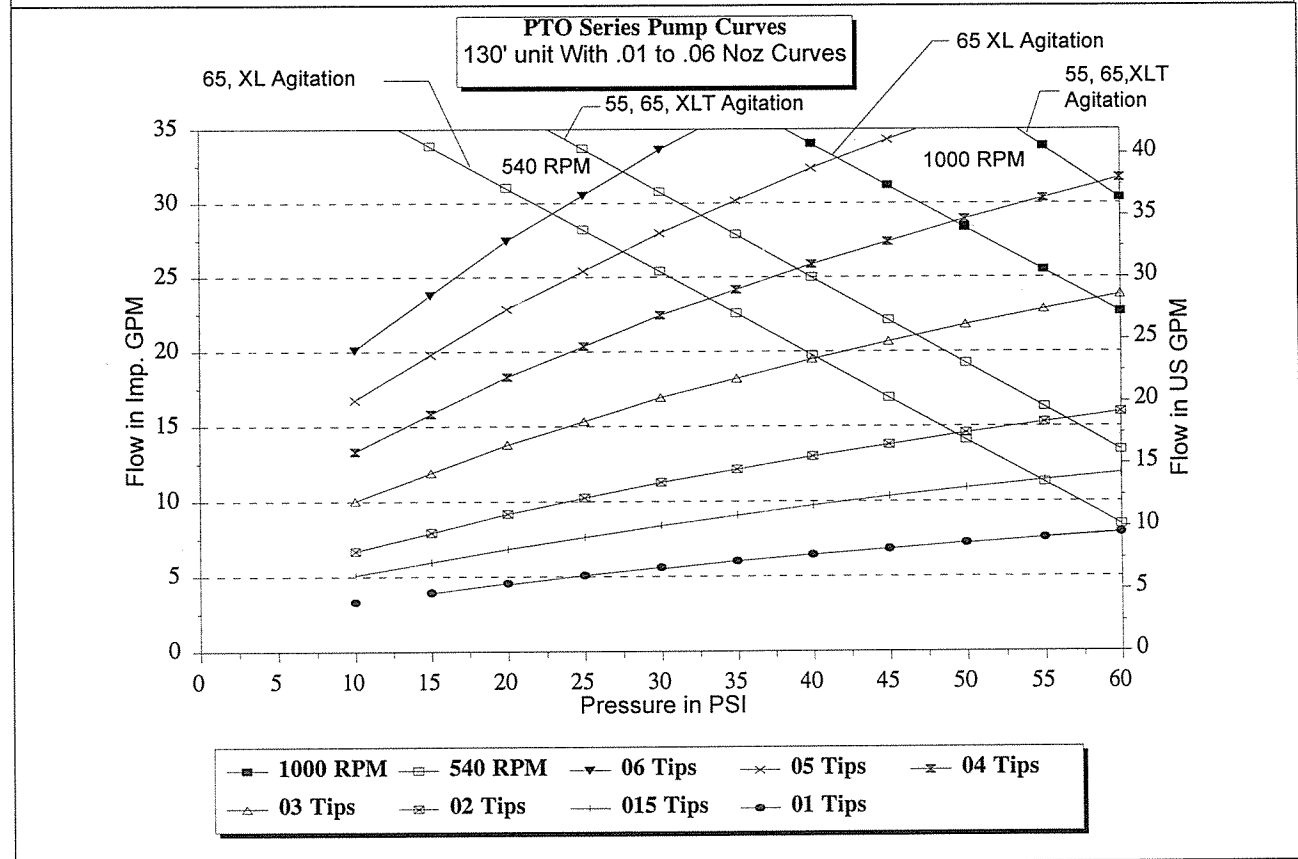
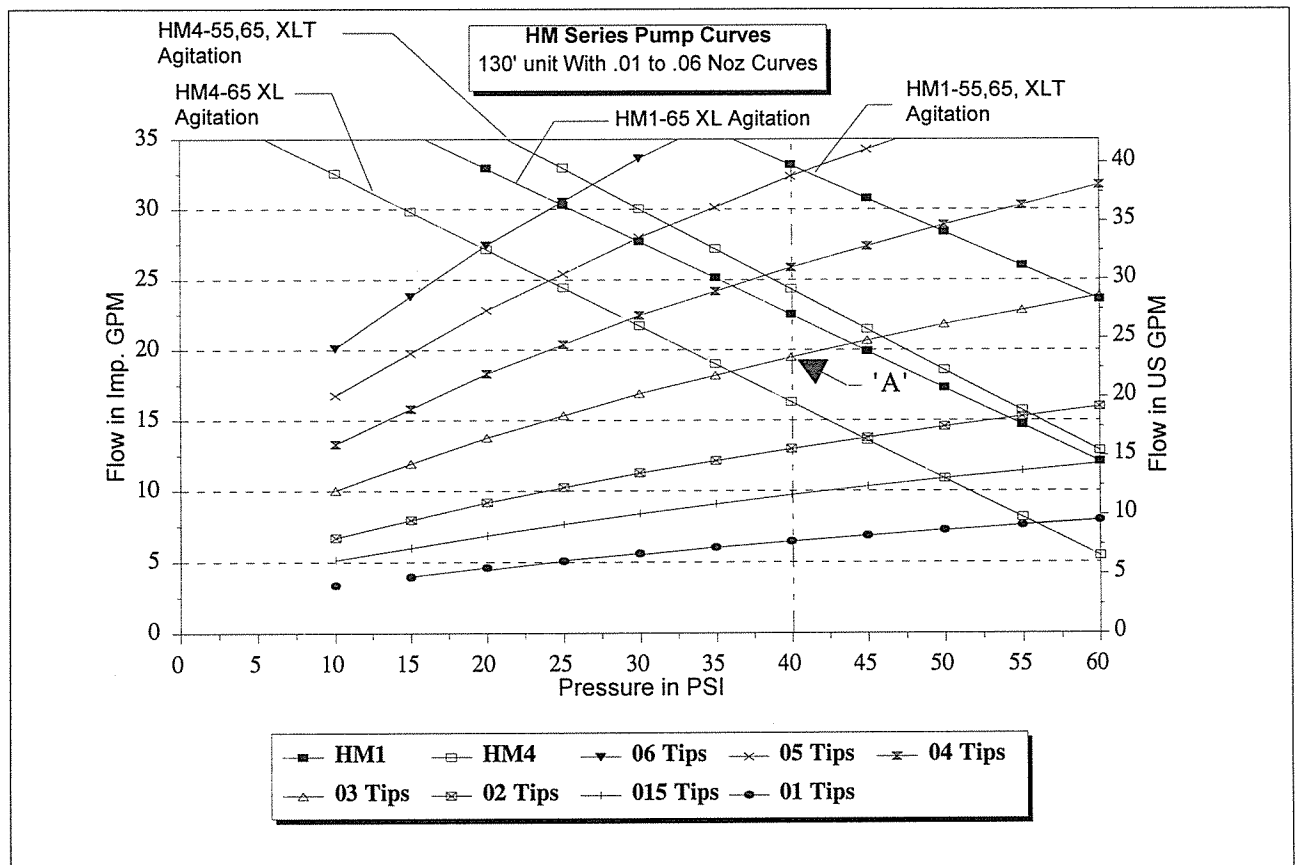
HM1
 HM4
 HM5
 Ace 150
 Ace 200

FORMULA Boom Flow Rate = (Flow Rate per Nozzle * Number of Nozzles on Sprayer)
 Flow Rate per Nozzle from Nozzle Charts in Operators Manual



SECTION 2- GENERAL INFORMATION

2.4a Pump Load Charts



SECTION 2- GENERAL INFORMATION

2.4a Pump Load Charts

