

# **OPERATING & PARTS MANUAL**



## LIQUID APPLICATORS

602 E. VAN BUREN LENOX, IOWA 50801 PHONE: (800) 342-7498 OR (641) 333-4518

www.DaltonAg.com

### QUICK REFERENCE INDEX

Special Notice How to Order Re Who to Contact	placement Parts for Help	2 2 2
SAFETY SECTION		
Implement Safet A.A. Safety	<b>/</b>	3 4
PRE-SEASON CHECK	& OFF-SEASON STORAGE	5
OPERATIONS SECTION	4	
Formula to Conve Liquid Injector No	ert Pounds per acre to Gallons per acre zzle Chart	6 7 & 8
LOADED RADIUS OF V	ARIOUS TIRES	9
PARTS SECTION		
Tongue Assmy. Hub & Spindle Ground Drive Ass Nozzle – Coulter A Coulter Assmy. Cylinders & Hose Jack Breakdown Decal Setup	Assmy.	10 11 12 13 14 15 16 17
WARRANTY & COMPAN	YPOLICY	18

#### SPECIAL NOTICE

The information and suggestions in this manual will help you obtain the highest performance, dependability, and efficiency from your new DALTON AG implement.

Whether your new DALTON AG implement is delivered assembled, or unassembled, it is recommended that you become familiar with the contents of this manual. A basic understanding of how it is assembled and operated will be of valve to you as a reference and parts manual.

#### HOW TO ORDER REPLACEMENT PARTS

The parts assembly drawings in this manual are provided as an aid in repair and replacement parts guide. Use these numbers when ordering replacement parts.

## WHO TO CONTACT FOR HELP - 800-342-7498

In event you experience trouble in assembly, operation, or in ordering parts, contact: Dalton Ag Products, Inc. Customer Service Department Lenox, IA. 50851

### **IMPLEMENT SAFETY**

In addition to design and configuration of equipment, safety and accident prevention are dependent upon the awareness, concern and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment. Failing to follow these safety messages can result in machine damage, property damage, personal injury, and/or death.

- Before operating your applicator, thoroughly read and understand your operator's manual. If you do not understand any portion of the operators manual, contact Dalton Ag Products distributor immediately for clarification.
- Furnish this manual to a new operator.
- Tow with tractor only. Never transport applicator unit in excess of 20 MPH. Maintain a safe speed.
- Use a Slow-Moving-Vehicle (SMV) emblem when transporting.
- Be sure safety decals and readable. All safety related decals must be replaced if the applicator is painted or the decals are otherwise rendered unreadable.
- Install transport link before transporting.
- Always check for overhead obstacles in transporting applicator and before folding or unfolding the wings of the unit.
- Never permit riders on the applicator or tractor.
- Proceed slowly on rough or slippery roadways, on side hills, and around curves to avoid tipping.
- Reduce speed when approaching ditches and corners. Do not make sharp turns with brakes.
- Machinery should be operated only by persons familiar to the tractor,

applicator unit, and the safety related items.

- Do not stand on, or straddle tongue when unhitching.
- Do not modify, or permit anyone to modify, this applicator, and any of its components, without first consulting Dalton Ag distributor.
- Do not lubricate, adjust, or repair when applicator unit is in motion.
- Use only approved replacement parts.
- To prevent serious injury from highpressure fluid, NEVER attempt to inspect, service, or disassemble any part of the hydraulic system until all pressure is relieved by lowering the toolbar to the ground (or secure with cylinder transport stops provided).
- High-pressure fluid is nearly invisible, but has enough force to penetrate the skin. Never use the hands to search out a suspected leak. If injured by escaping fluid obtain medical attention at once to minimize chance of infection. Wear safety glasses or goggles to avoid eye injury when working on the hydraulic system.
- Always check torque on wheel bolts before transporting.

## A. A. SAFETY

- Before operating your applicator, thoroughly read and understand your operator's manual. If you do not understand any portion of the operator's manual, contact your Dalton Ag distributor immediately for clarification.
- Always wear a full -face mask with ammonia type canister, tight fitting safety goggles and protective gloves made of rubber or other material impervious to ammonia.
- A container of not less than five gallon of readily available clean water should be on or near every tank of ammonia.
- Never look directly into hose, meter, quick coupler or shut off.
- When transporting ammonia the discharge hose should be securely fastened on both ends. Hose end valves should be turned off while in transport, service, or storage. Precautionary measures must be taken to prevent accidental opening of these valves (especially quick openings or ¼ turn valves).
- Read and understand all safety and caution decals and keep them in their proper place. Always teach all persons involved in the handling of ammonia that it is dangerous and must be handled with care.
- No ammonia should be transported on wagons or applicators that are not safe for road travel.
- Work upwind whenever practical.
- Provide a warning to prevent filling of tank past 85% capacity.
- The hose from the wagon to the quick coupler should not be wrapped or tied to applicator. The quick coupler must be free to detach if wagon accidentally unhooks.

## PRE-SEASON CHECK

- 1. Carefully review the safety suggestions in this manual.
- 2. Check all bolts for proper tightness. When the implement is new, check after one hour and every few hours of operation.
- 3. Replace ground tools that are severely worn, broken or damaged.
- 4. Check tires for proper inflation. All tires should be inflated equally to avoid side draft.
- 5. Check the wheel lug bolts daily, keep wheel bolts tight.
- 6. Grease all fittings.
- Inspect, repack, or replace (if necessary) wheel bearings and seals.
- 8. Check hoses, hose routing and hydraulic cylinders. Any indication of leakage or fraying of hoses should be corrected.

### **OFF-SEASON STORAGE**

Following these suggestions will extend Service life and satisfaction:

- 1. A little time and effort spent cleaning your machine before storing will repay in longer service, easier operation and higher resale value.
- 2. Inspect for worn or damaged parts. Replace, if required, and avoid delays the next season.
- 3. Repaint all areas where the original paint is worn off.
- 4. Lubricate your implement.
- 5. Grease all exposed metal surfaces of ground tools.
- 6. Store the unit inside a shed to protect from weather, and on a level area with wings down. The ground working parts should rest on boards.
- 7. Disconnect the rod end of the lift cylinders and retract the rod into cylinder to prevent cylinder rod from rusting.
- 8. Cap or plug all hydraulic oil lines if the cylinders are removed. This is to prevent any contaminants from entering the hydraulic system.
- Raise tires off ground, or remove and store in cool dry location out of sunlight.

## LIQUID INJECTOR NOZZLE CHART

### **NOZZLE SELECTION**

To select the proper nozzle size, first determine the gallons per acre and speed that is going to be used. Go to the table for the roper row spacing. Find the speed across the top; go down to the "Gallon Per Acre" and read the nozzle size in the box.

Order nozzle by m.p.h. and gallons per acre.

## FORMULA TO CONVERT POUNDS PER ACRE TO GALLONS PER ACRE

Pounds per Acre/Percent of Nitrogen = Total Pounds per Acre/Pounds per Gallon = Gallons per Acre

EXAMPLE: 100 (# per Acre) / .28 (28%) = 357 (# per Acre) / 10.65 (# per Gallon) = 33.5 (GPA)

**NOTE:** If 1/2 rate is needed on outside shanks, order two nozzles with half the capacity. If 1-1/2 rate is needed on outside shanks, order tow nozzles with 1-1/2 times the capacity.

## REFER TO THE FOLLOWING RATE CHART FOR TIPS AND APPLICATION !!!

602 E. VAN BUREN PO BOX 70 LENOX, IA. 50851 www.daltonagproducts.com



PH: 641-333-4518 FAX: 641-333-4429 800-342-7498 daltonag@frontiernet.net

## **BOLT TORQUE**

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**Important:** Over tightening hardware can cause as much damage as when under tightening. Tightening hardware beyond the recommended range can reduce its shock load capacity.

The chart below is a guide for proper torque. Use it unless a specified torque is called out elsewhere in the manual.

Torque is the force you apply to the wrench handle or the cheater bar, times the length of the handle or bar.

Use a torque wrench whenever possible.

The following table shows torque in ft. lbs. for coarse thread hardware.

BOLT DIA. AND THREADS PER INCH	GRADE 2	GRADE 5 A-325	GRADE B
1/4	6	10	14
5/16	12	20	30
3/8 -16	25	35	50
7/16 - 14	35	55	80
1/2 - 13	55	85	125
9/16 - 12	75	125	175
5/8 - 11	105	170	235
3/4 - 10	185	305	425
7/8 - 9	170	445	690
1-8	260	670	1030
1 1/8 - 7	365	900	1460
1 1/4 - 7	515	1275	2060
1 3/8 -6	675	1675	2700
1 1/2 - 6	900	2150	3500
1 3/4 - 5	1410	3500	5600

Lubricate all bearings and moving parts as assembled and make certain that they work freely.



**WARNING:** Never work around the toolbar/implement while in a raised position without using safety lockups.

## GPA 30" SPACING

DOUBLE GPA ON CHART BELOW									
TIP NUMBER	ORIFICE DIAM.	<u>PSI</u>	<u>CAP .1</u> <u>NOZZLE</u> <u>GPM</u>	<u>5 MPH</u> <u>GPA</u>	<u>6 MPH</u> <u>GPA</u>	<u>7 MPH</u> <u>GPA</u>	<u>8 MPH</u> <u>GPA</u>	<u>9 MPH</u> <u>GPA</u>	<u>10 MPH</u> <u>GPA</u>
TP0004	.055	20	.28	11	9	8	7		6
H1/4U-SS0004		30	.35	14	12	10	9	8	7
		40	.40	16	13	11	10	9	8
		50	.45	18	15	13	11	10	9
		60	.49	19	16	14	12	11	10
TP0005	.061	20	.35	14	12	10	9		
H1/4U-SS0005		30	.43	17	14	12	11	9	8
		40	.50	20	16	14	12	11	10
		50 60	.56	22	18 20	16 17	14 15	12 13	11 12
TP0006	.067	20	.42	17	14	12	10	9	8
H1/4U-SS0006		30	.52	20	17	15	13	11	10
		40 50	.60	24 26	20	17 18	15 17	13 15	12 13
		60	.73	28	22	20	17	15	15
TP0008	.078	20	.57	23	19	16	14	13	11
H1/4U-SS008		30	.69	27	22	19	17	15	13
		40	.80	32	26 29	22 25	20 22	17 19	16 17
		50 60	.89 .98	53 38	32	25	22	21	17
<b>TP00010</b>	.086	20	.71	28	23	20	18	16	14
H1/4U-SS0010		30	.87	34	28	24	21	19	17
		40	1.00	39	33	28	24	22	20
		50 60	1.12	44 48	36 40	32 34	28 30	24 26	22 24
TP00015	107	30	1.07	42	25	20	26	23	21
H1/4U-SS0015	.107	20 30	1.06	42	35 42	30 36	32	23	21
		40	1.50	59	42	42	37	33	30
		50	1.68	66	55	47	41	36	33
		60	1.84	72	60	51	45	40	36
TP00020	.125	20	1.41	56	47	40	35		28
H1/4U-SS0020	.143	30	1.41	68	57	50	43	38	34
LAN TO DOUGUNU		40	2.00	80	66	56	50	44	40
		50	2.24	88	74	64	56	49	44
		60	2.44	96	80	70	60	53	48
TP00030	.140	20	2.12	84	70	60	52		42
H1/4U-SS0030		30	2.60	102	86	74	64	57	51
		40	3.00	18	99	84	74	66	59
		50	3.36	134	110	96	84	72	66
		60	3.68	146	122	104	92	80	72

\*\*\*\* 36" ROW CONVERSTION – X .83

						~~~	~~	- 1 41-	
Con	rersion	Solution	S David		0.44 0.44				
Other Spacing	8"	10"	12"	14"	u sp 16"	18"	22"	24	30"
Conversion Factors	2.5	2.0	1.67	1.43	1.25	1.11	0.91	0.83	0.66

Gallons Per Acre

Based on Wate

with Flow Begulator

Suaced at 20%

anph mph: mph mph mph .133 13.2 9.9 7.9 6.6 
 10
 188
 18.6
 14.0
 11.2

 20
 .266
 26
 19.8
 15.8
 19.8 15.8 13.2 9.9 16:1 24 19.4 12 1 .141 14.0 10.5 7.0 8.4 5.3 283 28 16.8 14.0 10.5 17-2 12.9 .153 15 2 9.1 7.6 12.9 | 10.7 .306 18.2 15.2 11.4 18.6 13.9 .12.2 5 .165 16.3 9.8 8.1 6.1 .329 19.6 | 16.3 | 12.2 30-5 .173 12.9 10.3 8.6 6.4 18.2 146 | .346 17.2 | 12.9 30 424--15-8 5 .184 18.3 13.7 11.0 9.1 6.9 20 .369 37 27 . 22 18.3 13.7 16.8 .196 | 19.4 | 14.6 | 11.7 9.7 7.3 1.10 20 .393 39 23 . 19.4 14.6 48-1 24 17.9 15.0 12.0 10.0 7.5 10 286-10.6 21 = 12014.2 20 .405 40 .20 15.0 - 49 16.1 12.8 10.7 8.0 **H**14 20 432 43 .26 1 16 1 530 52 .226 16.8 13.4 11.2 8.4 19.0 20 .453 45 16.8 5 | .233 + 23 17.3 13.9 11.6 8.7 10 330 19.6 16.3 20 .466 46 .5 .245 24. 18.2 14.6 12.2 9.1 17-2 12.9 20 .491 18.2 .272 16.2 13.5 10.1 10 385 19.1 14.3 .544 54 30--33 .280 16.7 13.9 10.4 19.6 147 20 .561 34 .292 29 17.3 14.4 10.8 3F 15.3 27 .583 58 714 71 .318 18.9 10 .635 .449 44 16.7 B - 47 39. 

Gallons Per-Acre

with Flow Regulators

Spaced at 20

Based on Water

-81

Gallons Per Acre

Based on Water

with Flow Begulators

Spaced at 20"

3 4 5

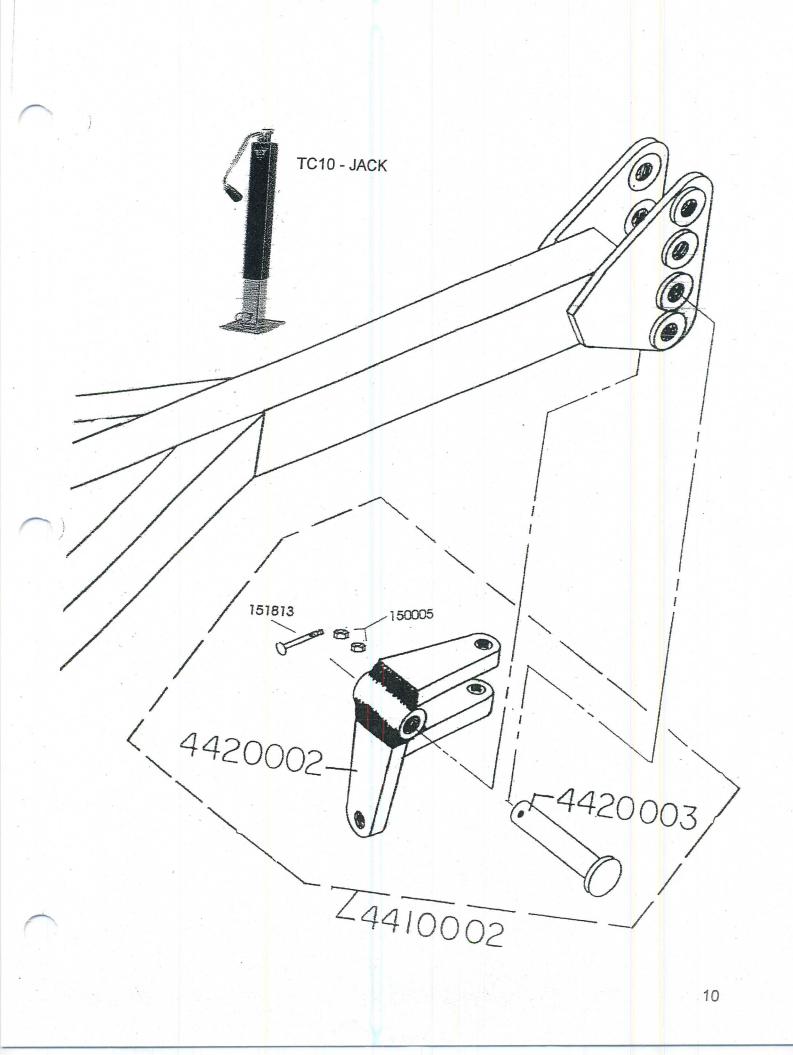
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## LOADED RADIUS OF VARIOUS TIRES -FOR USE IN SETTING JOHN BLUE GROUND-DRIVEN PUMPS

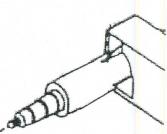
TIRE SIZE	LOADED RADIUS	TIRE SIZE	LOADED RADIUS
6.70-15SL	12.9	9.00-20	19.0
7.60-15SL	13.4	10.0-20	19.6
9.5L-15SL	13.6	11.0-20	20.1
10.0-15SL	15.1	12.0-20	20.6
11L-15SL	13.5	15.00-22.5	20.0
12.5L-15SL	14.5		
9.00-16SL	14.7		
11L-16SL	13.9		
12.5L-16SL	15.0		
13.5L-16.1SL	17.5		
16.5L-16.1SL	17.3	3	
4.8-8	7.5		
18-9.5	7.8		
16 X 6.50-8	7.4		



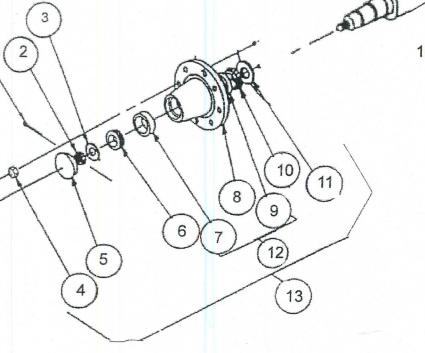


PH. 1-641-333-4518 FAX 1-641-333-4429 1-800-342-7498

## 8 & 10 BOLT HUB & SPINDLE ASSEMBLY



1002188 - SPINDLE



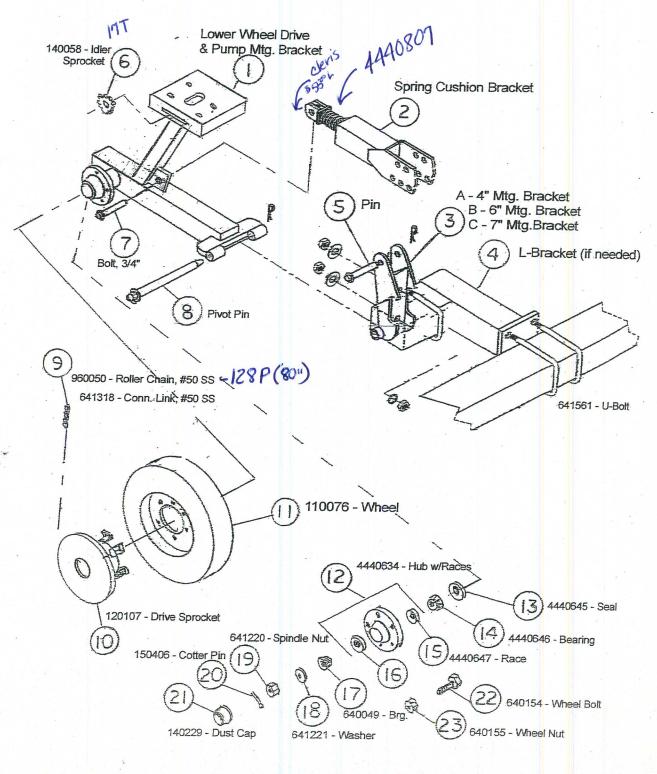
	COTTER PIN NUT, HEX FLATWASHER NUT, WHEEL	P401904 1-1/4 - P251702 P301808	873 HUB P401904 1-1/4 - P251702 P301808
1000883 1000533 1000885	FLATWASHER NUT, WHEEL	P301808	1-1/4 - P251702
1000533 1000885	NUT, WHEEL	P301808	
1000885			
		P201608	P201608 -
	DUST CAP	P502016	P502016
1002199	BEARING, OUTER	460	460
1002197	RACE, OUTER	453A	453A
N/A	HUB ONLY	N/A	N/A
1002196	RACE, INNER		33462
1002198	BEARING, INNER	39590	33275
1002200	SEAL	P602128	P602127
1002191	HUB WITH RACES	871-300-10	873-300-10
1002194	HUB COMPLETE	871-204-10	873-200-10
1 HUB WAS U	SED THRU SERIAL # ENDING	04091)	
3 HUB WAS US	SED AS OF AUGUST 1, 2004)		
	N/A 1002196 1002198 1002200 1002191 1002194 1 HUB WAS U	N/A     HUB ONLY       1002196     RACE, INNER       1002198     BEARING, INNER       1002200     SEAL       1002191     HUB WITH RACES       1002194     HUB COMPLETE	N/A     HUB ONLY     N/A       1002196     RACE, INNER     39520       1002198     BEARING, INNER     39590       1002200     SEAL     P602128       1002191     HUB WITH RACES     871-300-10       1002194     HUB COMPLETE     871-204-10       1     HUB WAS USED THRU SERIAL # ENDING 04091)     1

Stud Belt - P157409



AG PRODUCTS, INC. Manufacturers of Fertilizer Application Equipment PH. 1-641-333-4518 FAX 1-641-333-4429 1-800-342-7498

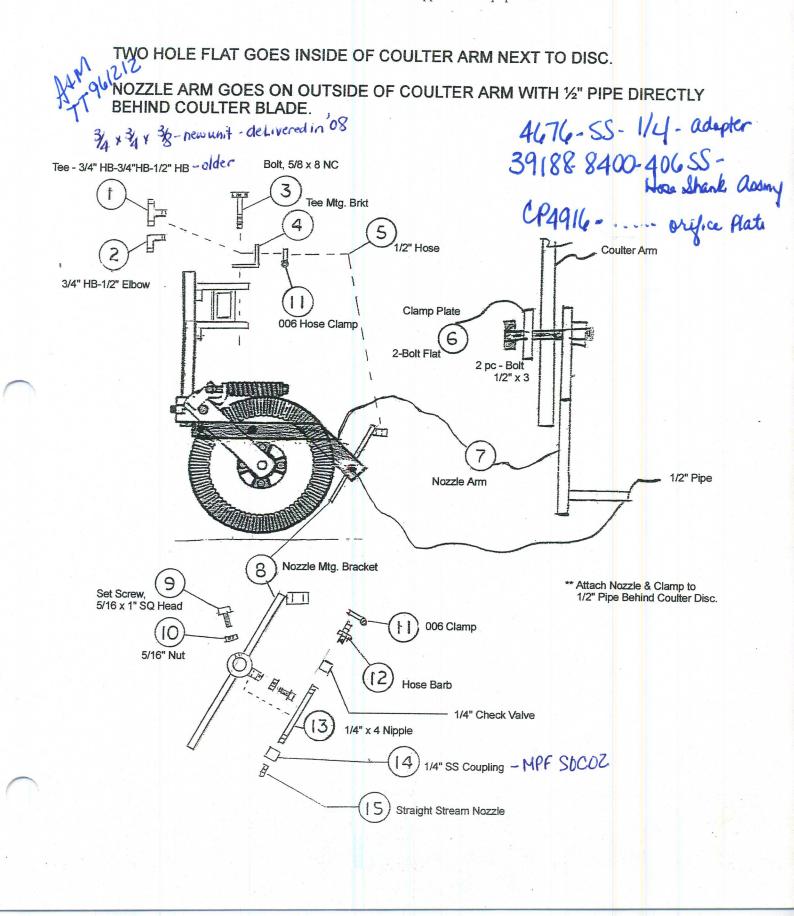






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AG PRODUCTS, INC. Manufacturers of Fertilizer Application Equipment

2910 SERIES YETTER COULTER

\* 2910-127 - ALL ITEM EXCEPT NO. 14

\* 2910-127 A - INCLUDES: NOS. 2, 3, 4, 5, 10, 11,12, 13 & 14

1. 4440629 (2910-201) - COULTER ARM W.A. 4440630 (2910-119) - ARM & HUB ASSMY. 4440631 (2910-127) - SPRING CUSHIONED BRKT & HUB ASSMY. 2910-127 BB - SPRING CUSHIONED BRKT & HUB ASSMY. (BLACK)

2. 4440576 (2910-320) - HINGE CASTING

3. 4440578 (2910-302) - SPRING BUSHING

4. 4440790 (2910-311) - SPRING

5. 2910-121 - PUSH ROD ASSEMBLY

6. 4440521 (2910-301) - LOCKING COLLAR(RED) 2910-301 BB - LOCKING COLLAR (BLACK)

9. 4440625 (2503-379) - 5/8"-11 X 1 SQ. HCSS

10. 2531-151 - COTTER KEY, 1/4" X 1-3/4" (BLACK)

11. 2520-312 - JAM NUT, 3/4"-16 ZP

12. 2502-410 - HHCS, 3/4"-16 X 3" GR. 5 ZP

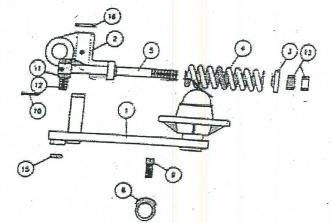
13. 2520-504 - HEX NUT, 3/4" - 16 ZP.

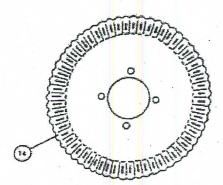
14. 4440782 - 20" NOTCHED BLADE 4440783 - 20" FLUTED BLADE 4440784 - 20" SMOOTH BLADE

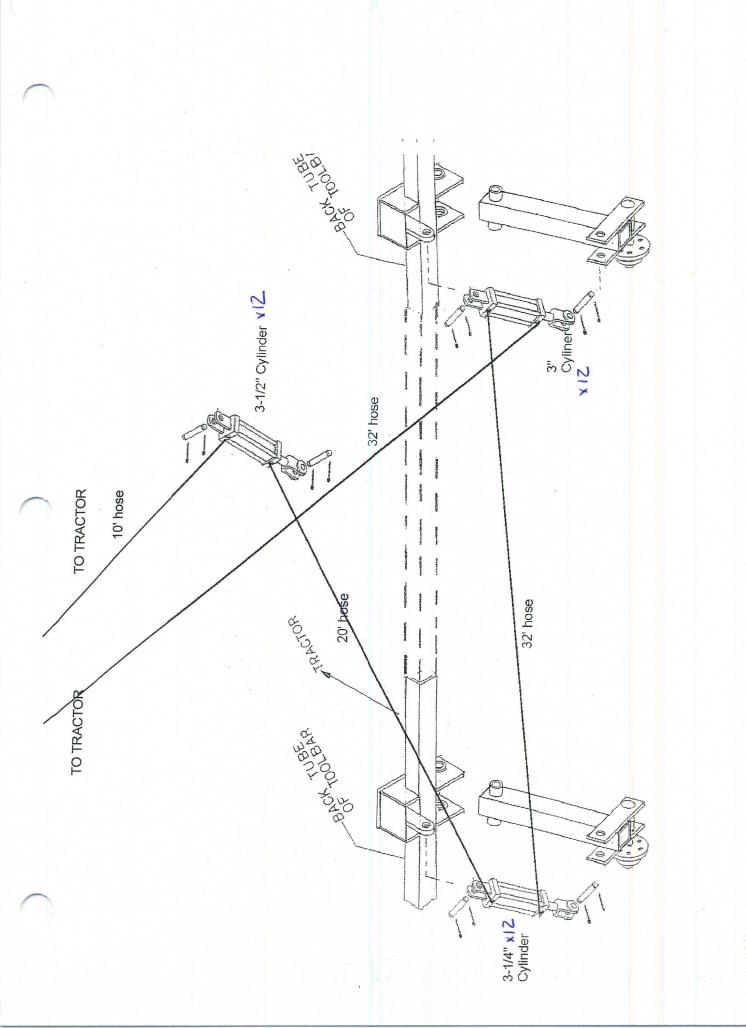
15. 2520-510 - LOCK HEX NUT, 3/4"-16 ZP

- 16. 2526-561 BUSHING, 1-17/64" ID X 7/8" X 14 GA MACHINERY (BLACK)
- 17. 4440626 (2900-108) COULTER SPINDLE (NOT SHOWN)

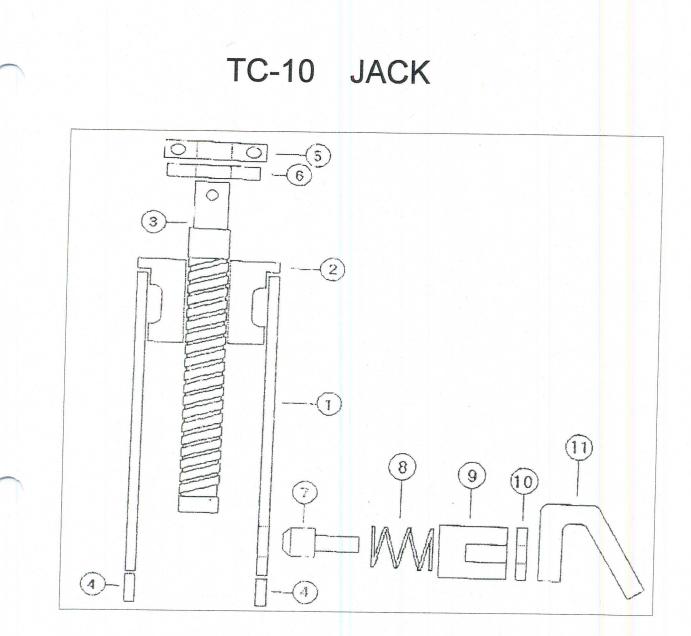
2571-168 - FLUTED MULTI-PUNCH, 20"







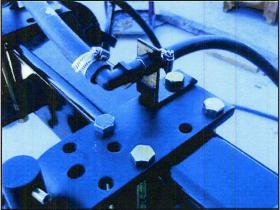
3/16/04



NO.	PART NO.	DESCRIPTION
1	ST/31212019	MIDDLE TUBE
2	PA/NT12S	CAST NUT
3	PA/JSJ11410	JACK SCREW
4	PA/BBH1412	BOT.BANK/HAND (2)
5	PA/64T64	THRUST BEARING
6	PA/C134	COLLAR

## **ASSEMBLY OF LIQUID APPLICATOR**

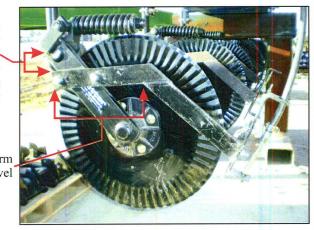


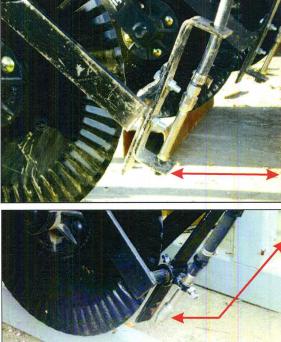






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Point Nozzle Forward Towards Blade

Old Style Nozzle Bracket

COULTER ROD 2" ABOVE TOP OF PLATE TO TOP OF ROUND SHANK







HYDRUALIC TREE FOR DOUBLE FOLD WINGS



REMOVABLE SPACER'S FOR W ING TILT



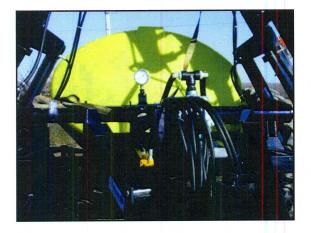


MAIN LIFT CYLINDER 3-1/2 X 12" STROKE WITH TRANSPORT LOCK-UP

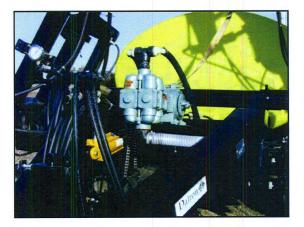


REMOVE SPACERS FOR WING TILT





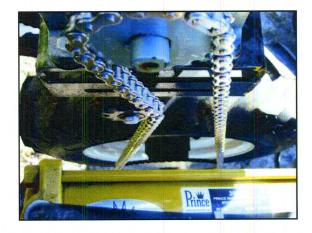
HOSE & PRESSURE GAUGE MOUNTING BRACKET



TEE ON DISCHARGE SIDE OF PUMP WITH 2-FEEDER LINES TO BOOM HOSE, 2" ST EL HOSEBARB IN SUCTION SIDE OF PUMP



CROSS SHAFT GREASE BOLT WITH BUSHING INSIDE OF CROSS SHAFT LIFT ARM



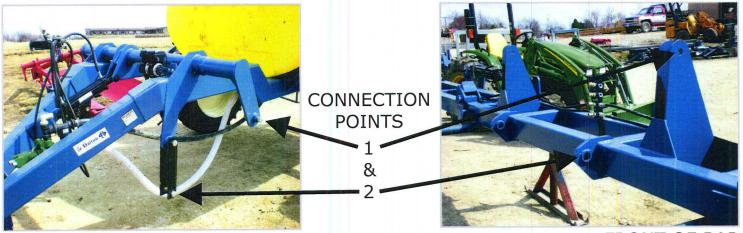
TIGHTNER ON SLACK SIDE OF PUMP DRIVE CHAIN



GREASE BOLTS WITH BUSHINGS INSIDE OF PULL ARMS. 4440238, Grease Bolt, 1"x 4"2 Ged 5

150061, Nut, 1"

## BAR TO FRAME ASSEMBLY



FRONT OF FRAME

FRONT OF BAR



ALIGNMENT

ALIGN FRAME TO BAR AS SHOWN

BE SURE TO USE ALL 6 BUSHINGS-1.0625"IDX1.5"ODX2.375" GREASABLE BOLTS-1"-8X4.5" & NUTS IN ALL 3 ATTACHMENT POINTS ON BOTH SIDES

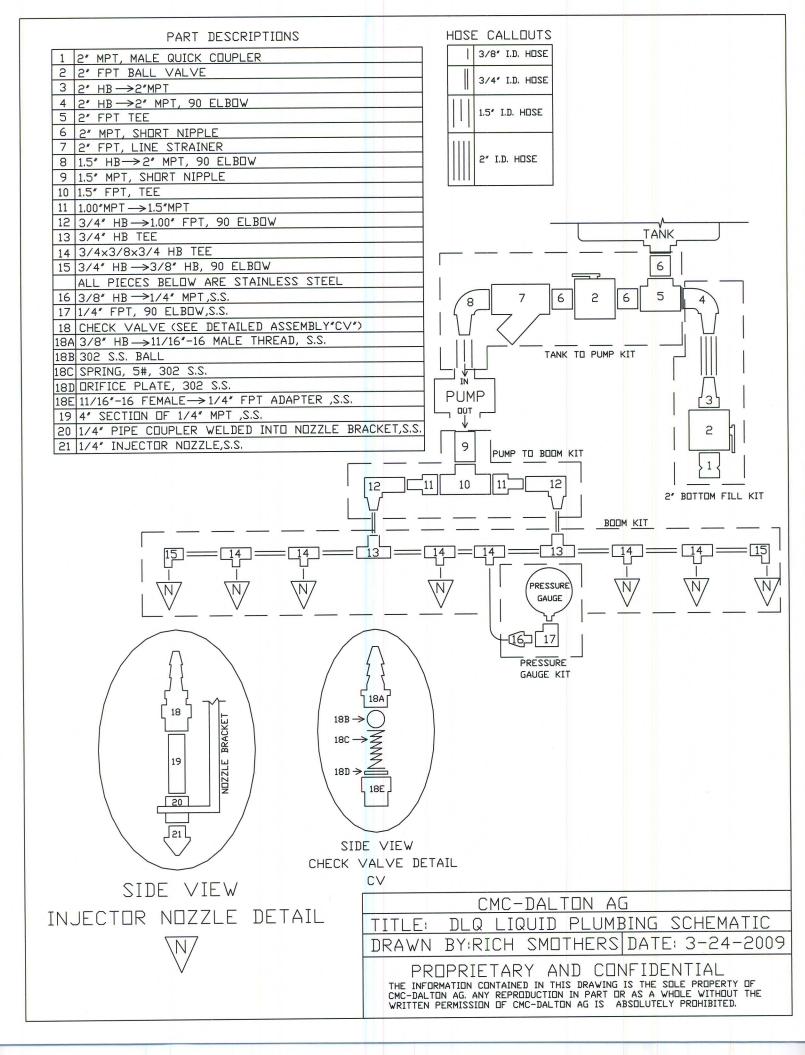
INSERT BUSHINGS IN THESE LOCATIONS ON EACH SIDE

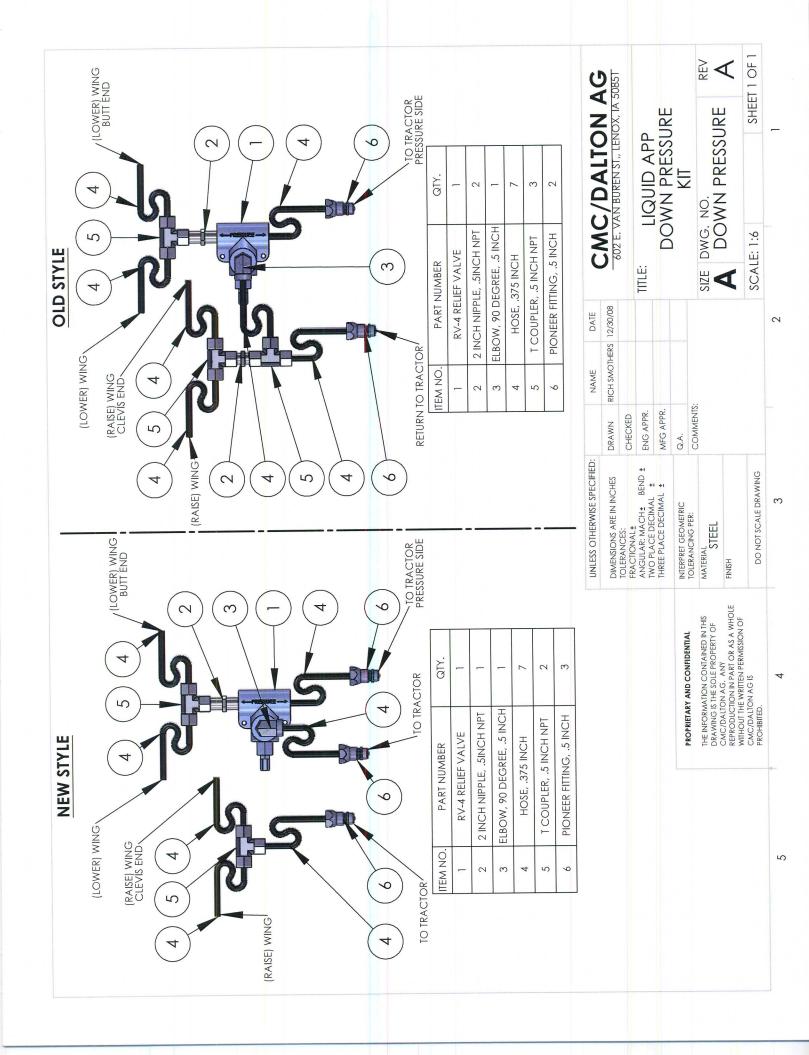
ASSEMBLY

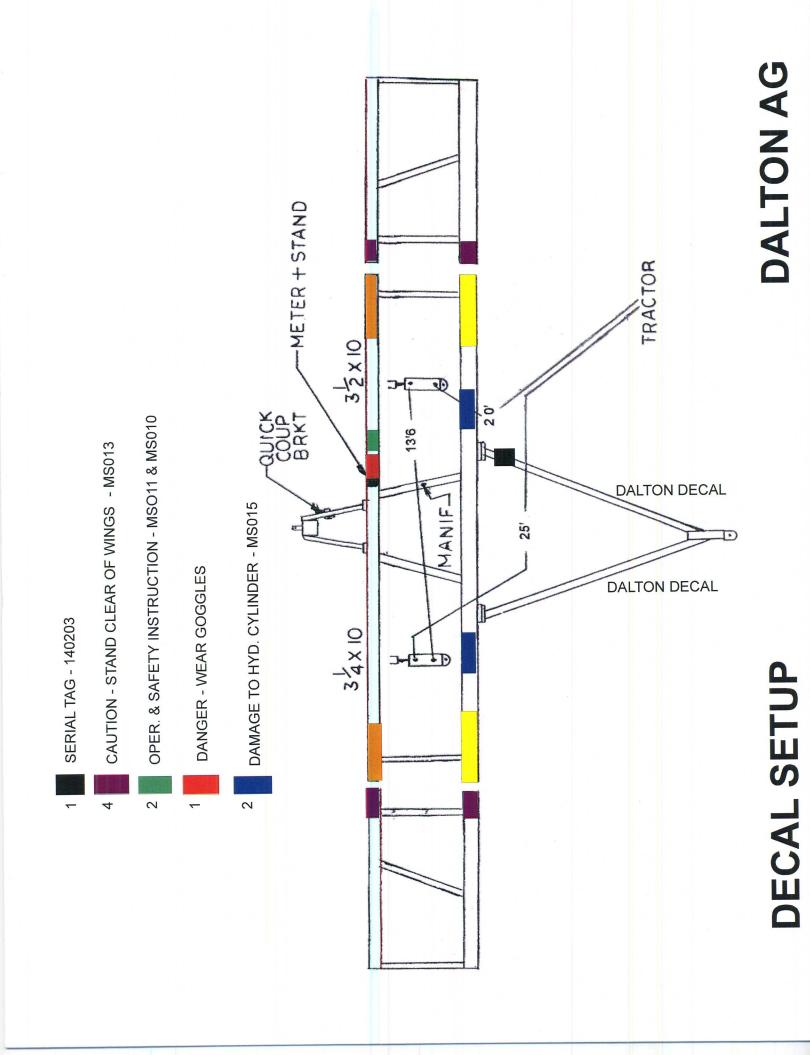


FINAL ASSEMBLY











PH: 641-333-4518 FAX: 641-333-4429 800-342-7498 daltonag@frontiernet.net

#### LIMITED WARRANTY

Cox Manufacturing Company dba Dalton Ag Products warrants all products, including all equipment and accessories, manufactured by CMC - Dalton Ag Products to be free from defects in material and workmanship if the product is operated and serviced according to the manufacturer's instruction manual. This warranty shall remain effective for twelve months from the date of delivery to the original purchaser.

CMC - Dalton Ag Products obligation under this warranty is limited to the repair of replacement of parts (not including labor) which have been returned to CMC - Dalton Ag Products factory freight prepaid, and after inspection, are deemed by CMC - Dalton Ag Products to be defective. In no event shall CMC - Dalton Ag Products be liable for special or consequential damages except as may be approved by CMC - Dalton Ag Products in advance in writing. This warranty shall not apply to components parts which are not manufactured by CMC - Dalton Ag Products. Neither shall this warranty apply to any parts or components which are expendable and are expected to wear out in normal service during the course of this warranty.

The provisions of this warranty shall not apply to any CMC - Dalton Ag Products product which has been subject to misuse, negligence, alteration or accident, or which shall have been repaired in any way so as, in the reasonable judgment of CMC - Dalton Ag Products to affect adversely its performance and reliability.

This warranty is expressly in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, and of any other obligations for liability on the part of CMC - Dalton Ag Products and CMC - Dalton Ag Products neither assumes nor authorizes any other person to assume for it any other liability in connection with such products.

#### **COMPANY POLICY**

- 1. Specify catalog numbers, sizes and all other information necessary to properly fill the order.
- 2. Check merchandise immediately upon receipt. If received in bad condition or there is a shortage of bundles or boxes, do not fail to note this fact on the carrier promptly. Shortages must be reported within fifteen days.
- 3. Returned goods will not be accepted without our consent. All returned merchandise is subject to 10% restocking charge.
- 4. Goods returned for credit must be prepaid and accompanied by CMC Dalton Ag bill of lading or letter of explanation giving order numbers, invoice number, date purchased and reason for returning merchandise. If error is made by CMC Dalton Ag, we will accept merchandise freight collect if returned by lowest transportation cost. Goods must be returned within sixty days after purchase.
- Our warranty does not cover the use of chemicals harmful to equipment of the operator. It does cover defective material or workmanship, and is limited to value of material only.
  Cutting or welding on merchandise without our approval voids the warranty.
- Special orders require deposits and are not subject to cancellation without our consent.