ST820
Precision Tillage

Service Manual

NW-010V2 3/05

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MACHINE SPECIFICATIONS - AUSTRALIA - METRIC UNITS

IMPLEMENT DIMENSIONS

	Frame Width (Meters)			Number of Shanks for the following shank spacing widths			Width of Cut (Meters) for the following shank spacing widths			Transport Width (Meters)	Transport Height (Meters)	Overall Length (Meters)
	center	inner	outer	183 mm	229 mm	305 mm	183 mm	229 mm	305 mm			
3-Section Models	3.96	-	1.83	43	-	-	7.9	-	-	5.7	3.8	7.7
	3.96	-	1.83	-	35	-	-	8	-	5.7	3.8	7.7
	3.96	-	1.83	47	-	-	8.6	-	-	5.7	3.8	7.7
	3.96	-	1.83	-	-	29	-	-	8.8	5.6	3.8	7.7
	3.96	-	1.83	-	39	-	-	8.9	-	5.7	3.8	7.7
	3.96	-	2.74	57	-	-	10.4	-	-	5.7	4.6	7.7
	3.96	-	2.74	-	-	35	-	-	10.7	5.6	4.6	7.7
	3.96	-	2.74	-	47	-	-	10.8	-	5.7	4.6	7.7
	4.88	-	2.74	62	-	-	11.3	-	-	6.6	4.6	8
	4.88	-	2.74	-	-	38	-	-	11.6	6.6	4.6	8
	4.88	-	2.74	-	51	-	-	11.7	-	6.6	4.6	8
	3.96	-	3.66	-	-	41	-	-	12.5	5.7	5.5	7.7
	3.96	-	3.66	-	55	-	12.6	-	-	5.7	5.5	7.7
	4.88	-	3.66	-	-	44	-	-	13.4	6.6	5.5	8
	4.88	-	3.66	68	-	-	12.4	-	-	6.6	5.5	8
	4.88	-	3.66	-	59	-	-	13.5	-	6.6	5.5	8
5-Section Models	3.96	2.74	1.83	77	-	-	14.1	-	-	6.6	4.2	8
	3.96	2.74	1.83	-	-	47	-	-	14.3	6.6	4.2	8
	3.96	2.74	1.83	-	63	-	-	14.4	-	5.7	4.2	8
	4.88	2.74	1.83	82	-	-	15	-	-	6.6	4.2	8
	4.88	2.74	1.83	-	-	50	-	-	15.2	6.6	4.2	8
	4.88	2.74	1.83	-	67	-	-	15.3	-	6.6	3.3	8
	4.88	3.66	1.83	92	-	-	16.8	-	-	6.6	5.1	8
	4.88	3.66	1.83	-	-	56	-	-	17.1	6.6	5.1	8
	4.88	3.66	1.83	-	75	-	-	17.2	-	6.6	5.1	8
	4.88	3.66	2.74	102	-	-	18.7	-	-	6.6	5.1	8
	4.88	3.66	2.74	-	-	62	-	-	18.9	6.6	5.1	8
	4.88	3.66	2.74	-	83	-	-	19	-	6.6	5.1	8

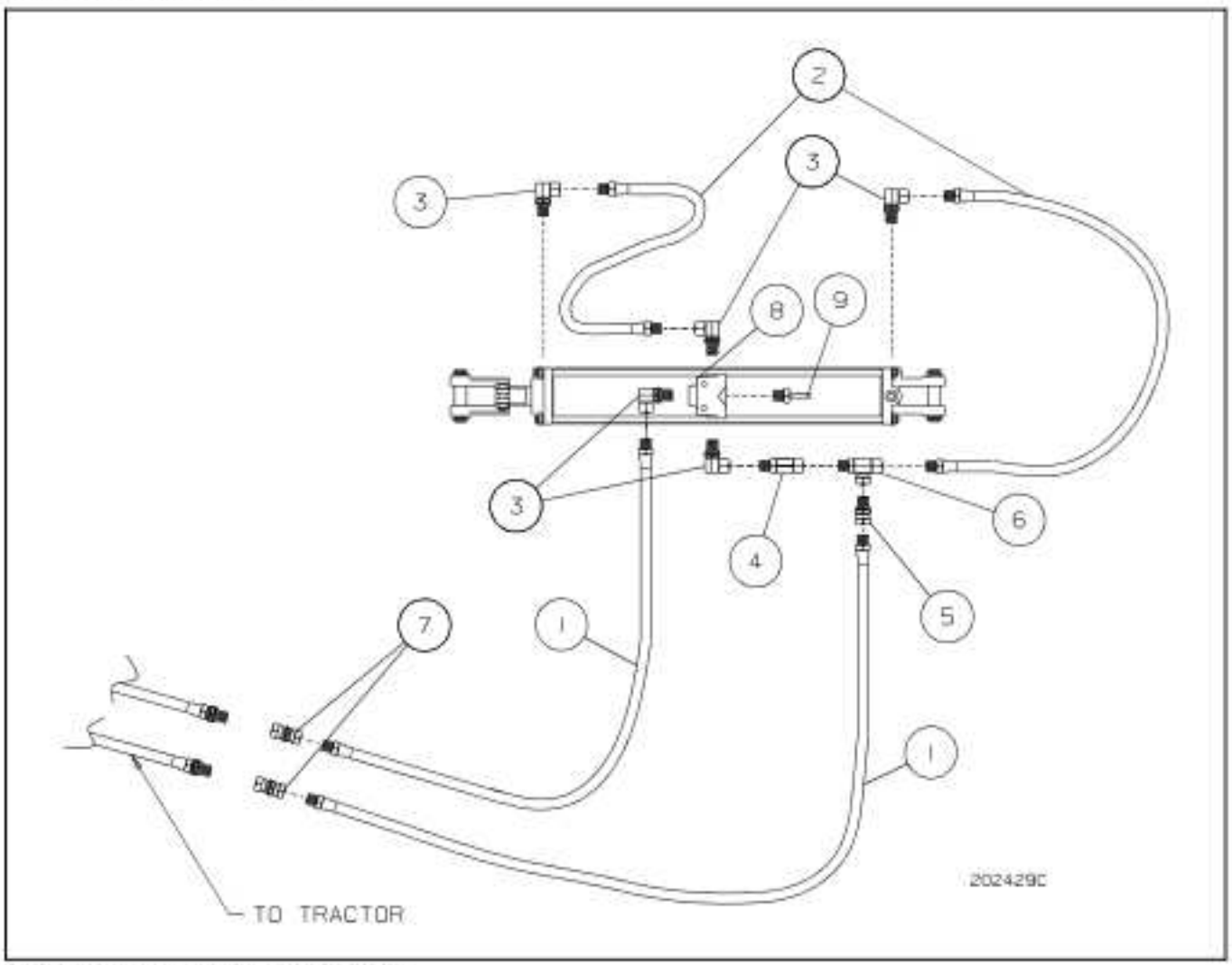
NOTE: Dimensions include sweeps - 305 mm sweeps on 183 mm or 229 mm shank spacing, and 410 mm sweeps on 305 mm shank spacings. Specifications subject to change without notice.

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RAM MOUNT DEPTH STOP CONNECTION

REF	DESCRIPTION
1	HYDRAULIC HOSE 1/2" X 150"
2	HYDRAULIC HOSE 1/2" X 15"
3	FITTING 3/4"-16 MORB X 1/2" FPT 90° SWIVEL ADAPTOR
4	FITTING 1/2" FPT X 1/2" MPT CHECK VALVE - FLOW TO MALE END
5	FITTING 1/2" MPT X 1/2" FPT SWIVEL COUPLER
6	FITTING 1/2" MPT X 1/2" FPT X 1/2" FPT SERVICE TEE
7	FITTING, PIONEER COUPLER TIP - .5"
8	VALVE, DEPTH/SECONDARY STOP (PRINCE)
9	VALVE CARTRIDGE, DEPTH STOP

Depth Stop Connection Parts



Depth Stop Connections Schematic

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PROBLEM	POSSIBLE CAUSES	POSSIBLE SOLUTIONS
Final lines are plugged - just outside of headers.	1. Insufficient product velocity because lines are level or sloping upwards.	1. Hoses from header should slope downward.
Restriction in the header.	1. Product buildup.	1. Inspect frequently. Clean as required.
	2. Lumps lodged in the header.	2. Dislodge. Use clean product. Use debris screens.
	3. Header assembly inserts rotated.	3. Service and readjust the secondary header.
	4. Header assembly air hoses inserted too far.	4. Service and readjust the secondary header.
Insufficient air velocity.	1. Discharge is blocked.	1. Clear lines at the seed boot. Boots too restrictive.
Uneven product division.	1. Header ring loose or worn.	1. Service and readjust the secondary header.
	2. Riser tube not vertical.	2. Service and readjust the secondary header.
Final line is plugged - between header and boot.	1. Boot is plugged.	1. Clear blockage in the seed boot.
	2. Hose is crimped.	2. Repair damaged hose.
Seed boots are plugging.	1. Lumps of product are lodging in the boot.	1. Clear all product buildup in the seed boot.
Dirt or mud entering the boot.	1. Backing or turning with boots in the ground.	1. Lift seeding tool out of the ground when turning.
	2. Wet clay wrapping up behind soil opener.	2. Change openers; or operate in drier conditions.
Product buildup/accumulation in air passage ways (high moisture product).	1. Humid air conditions.	1. Change to a different product.
	2. Moisture sensitive product.	2. A full tank reduces potential for this problem.
	3. Moisture condensation in the tank.	3. Do not place product in tank until time of use.
	4. Product left in tank too long.	4. Do not place product in tank until time to use.
Product buildup/ accumulation in air passageways (high levels of moisture in the air).	1. Humid air conditions.	1. Drain fan housing after a rain.
	2. Water in the fan housing at start-up.	2. Run system without product to dry lines.
	3. Moisture /condensation in hoses at start-up.	3. Run system without product to dry lines.

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REASSEMBLY OF CYLINDER

Reassemble the end cap onto the shaft:

11. The wiper seal on the rod cap makes it difficult to slide the rod cap back onto the shaft the way it was removed. To reassemble the rod cap, first remove the nut from the piston shaft.

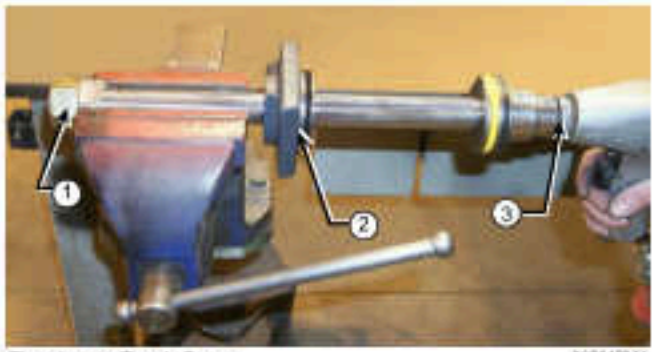
- Thread two locking nuts (1 and 2) on the threaded clevis end of the piston shaft.



Shaft in Vise 202046M1

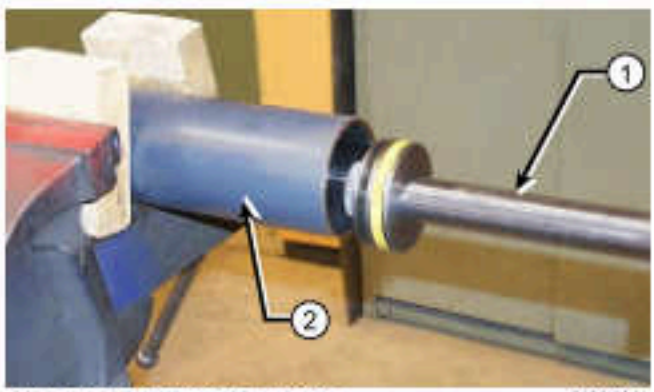
- Place the nut (1) into the vise and use an air tool and socket (3) to loosen the nut on the piston end of the shaft
- Place the nut (1) into the vise and use an air tool and socket (3) to loosen the nut on the piston end of the shaft.

12. Replace the cap (2) onto the shaft. Move the shaft so the opposite locking nut (1) is in the vise. Apply Loctite to the piston nut and tighten using an air tool and socket (3).



Replace Rod Cap 202047M1

13. Replace the piston (1) into the cylinder barrel (2). Piston inserted into the cylinder barrel (below).



Replace Piston in Cylinder 202044M1

14. Inserting piston rod cap assembly into the cylinder.


Replace End Cap 202043M1

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2. Remove nut and washer from the bolt (1). The bolt (1) should be easy to remove.



Removing Bolt 201308M1

3. To gain access to the ball joint, reposition the sleeve so it is still in the second tab and in the center frame. The sleeve is difficult to hammer out because the three sections of the frame have a tendency to move in different directions.

   - In order to remove the tension or compression between the sections use a long jack and adjust the frame height. If the frame tends to push together use pry bars to pry the wings apart.

   - In this case we needed to bring the frames together so we used a chain winch (1) and a long stroke jack (2). Aligning the sections made it easier to reposition the sleeve.



Aligning the Sections 202002M1

4. Using the driving tool (1) and a hammer, drive the sleeve (2) through the one tab on the hinge and through the ball joint. **Do not drive the sleeve past the second tab on the hinge. Keep the sleeve inserted through the center section** (3) **and through the rear tab of the hinge. This will maintain the alignment between one wing and the center section.** (Refer to the next figure.)

NOTE: A driving tool is a steel shaft that is approximately the correct diameter to drive the sleeve out of the frame sections. Note the location of any washers that are disassembled.



Driving Out the Sleeve 202005M1

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