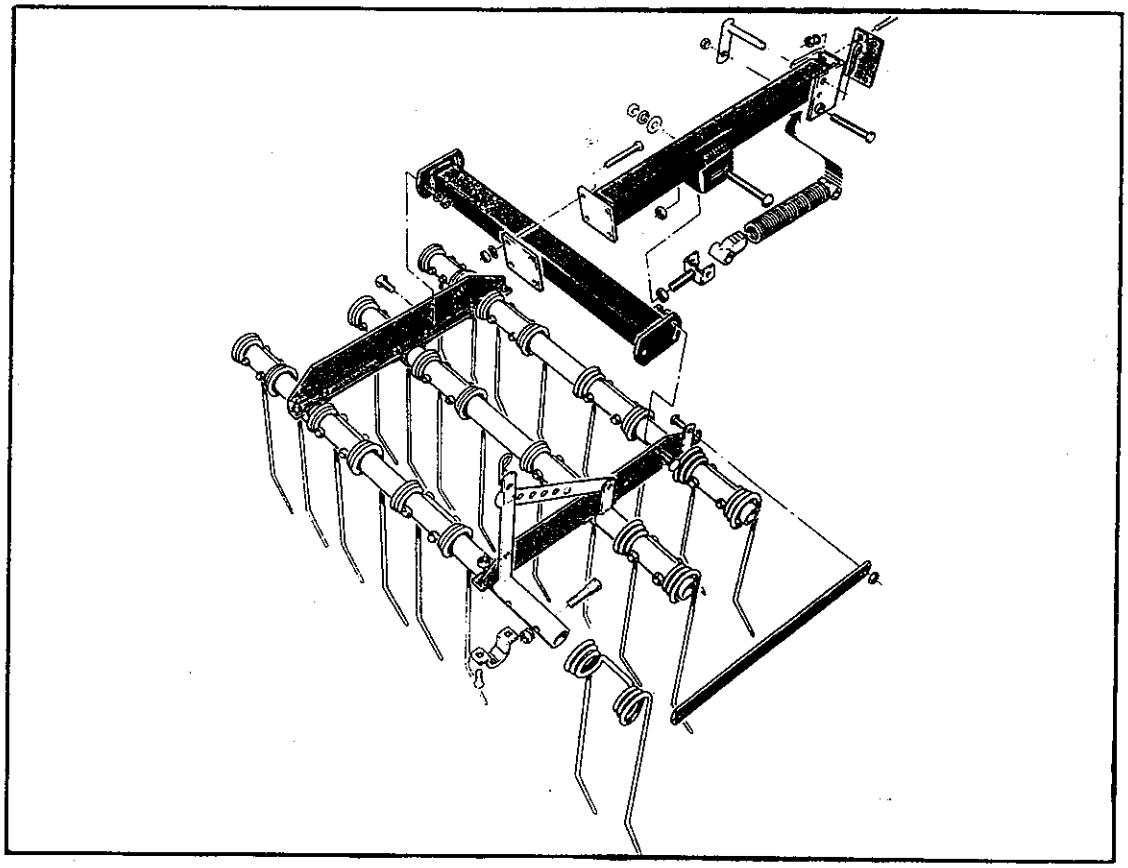
Tine Harrow

Operators Manual



Operators - A4000402

Tine Harrow

OPERATORS/ASSEMBLY/PARTS MANUAL

TABLE OF CONTENTS

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1 - SAFETY

Carefully review the procedures in this manual with all operators annually. It is important that all operators be familiar with, and follow safety precautions.

Operating instructions must be given to everyone using the tillage implement and attachments before operation and at least once yearly.

Watch for this symbol:

It identifies potential hazards to health or personal safety. It means ATTENTION - BE ALERT. Your safety is involved.

General Safety

1. Mount a fire extinguisher on your tractor and maintain it regularly in accordance with the manufacturer's instructions. Review its operation at least annually with all personnel.

2. Always keep clothing relatively tight and belted. Remove jewelry or any object that may catch in machinery.

3. Never allow passengers on tillage implement.

4. Clear all personnel before moving tractor and tillage implement.

5. Be aware of and practise all safety procedures for tractor operation when using tillage implement.

6. Never ride or climb on the frame, wings, hitch beams or any other part of the unit while equipment is moving.

7. Provide a first aid kit for use in case of accident.

8. Never put feet under shovels or harrow teeth while servicing or adjusting tillage implement.

9. Lower wings at day's end when storing implement or when unhitching from tractor.

Operating Safety

1. Never hold hitch by hand for hookup. Always use jack and rear park stand to support hitch.

2. Keep clear of hitch when hitching and unhitching. Hitch may thrust upward when uncoupled from tractor. Lower park stand before hitching and unhitching.

3. Keep hitch pin snug so clevis will not pivot on drawbar.

4. If rear mounted secondary attachments cause light hitch, either:
a) Block up rear frame using park stand or jack.

b) Lower machine.

c) Use rear park stand to improve stability.

5. Stay well clear of machine when raising or lowering wings.

6. Stay clear of machine when transporting or operating.

7. Never allow children or animals into a field where equipment is operating.

8. Be alert. Watch where you are going, especially at row ends, road slopes and around obstacles. Wherever possible stay away from the edge of a ditch or gulley.

9. Avoid sudden turns, stops or starts.

10. When operating on a hillside avoid sharp uphill turns.

11. Never ride on machine or hitch when machine is operating.

12. Do not exceed 6 mph (9.5 km/h) when operating.

13. Reduce speed when operating on slopes, near obstructions or on rough ground.

14. Avoid shovels or harrow teeth. They are sharp and cause serious injury.

15. Raise shovels from ground before turning in the field.

16. Never permit anybody to ride in the driver's compartment or on the towbar when operating the tractor and tillage implement.

17. Never allow anybody within immediate area of the tillage unit while working in the field.

18. Do not attempt to perform any maintenance or adjustments on the tillage implement while it is in motion.

Transport Safety

Do not transport the tillage unit until the following procedure is completed. Refer to tillage implement operators manual for further information.

IMPORTANT

The tillage unit may sink in soft surfaces when in transport mode because of increased load on the center wheel. Use care to avoid surfaces which cannot bear the extra weight. Transport only with a tractor of sufficient size and weight for safe control at transport speeds.

a) Ensure that the wings are firmly seated in the transport wing stops.

b) Install the transport lockpins and retain with clip pins.

c) Secure upright wings together with a safety chain during road transport.

d) Swivel the safety links on the center frame towers and pin in the down (transport) position.

e) Use the safety chain provided to secure the cultivator hitch when transporting.

1. Transport tillage implement only with a tractor. Never use a truck or other light vehicle.

2. Secure all trailing attachments such as mulchers, packers or harrows before transporting.

3. Secure safety chain to tractor hitch before transporting tillage implement.

4. Raise and lower wings slowly.

5. Remove all loose items from frames.

6. Secure pin wings in transport position.

7. Watch for overhead power lines and low clearance overhead or side obstructions. Hooking a firm obstruction with any frame could cause serious injury.

8. Ensure transport pins are removed and hinge cylinder is retracted before lowering wings.

9. Never stand on hitch during transport or maneuvering.

10. Never exceed 20 mph (32 km/h) on any road.

11. Do not operate on side slopes greater than 10 degrees with wings folded.

12. Display a slow moving vehicle (SMV) sign on rear of machine center frame when transporting on public roads. Ensure sign is visible to traffic.

13. Check local rules for transporting oversized equipment on roadways.

14. Avoid transporting machine at night. If so, ensure tractor lights display machine.

Maintenance Safety

1. Always use depth cylinder hold up bars to support machine and relieve hydraulic pressure on cylinders prior to working under frames or shovels.

2. Do not remove axle assemblies on frames without depth control cylinder or where cylinder is disconnected.

3. Do not release any nut or bolt under tension. Serious injury could result.

4. Never loosen any hydraulic fitting under pressure. Serious injury could result.

5. Escaping fluid under pressure can penetrate the skin causing severe injury and possible toxic reaction. See a doctor immediately if injured.

6. When searching for hydraulic leaks, wear goggles and heavy gloves and use a piece of cardboard as a backstop against spurting fluid.

7. Keep tires at recommended pressures. Never stand over a tire while inflating it.

8. Never stand, walk or perform inspection under raised wing. Ensure wings are firmly rested on the wing stops and that both transport lock pins are in place and secured with clip pins.

9. Block up frame securely when working inside or under a frame.

10. Never stand under or near wings when raising or lowering. A sudden hydraulic system failure could cause them to fall rapidly causing serious injury or death.

11. Shut down tractor, engage park brake and block tractor wheels and lower wings before servicing either machine.

12. Never adjust or service tillage implement when it is moving.

13. Lower wings before doing any work under them.

Hydraulic Safety System

1. Do not stand under the wings, especially when raising or lowering them. A sudden failure in the hydraulic system can cause them to fall rapidly. Maintain positive connections by keeping all connections and fittings clean.

2. Use the proper hand and face protection when searching for suspected hydraulic leaks.

3. Fluid escaping under pressure from a pin hole size leak can penetrate the skin, causing possible infection and toxic reaction. If skin penetration from hydraulic fluid occurs, see a doctor immediately.

4. Since the spray of escaping hydraulic fluid may be nearly invisible under high pressure, use a piece of wood or cardboard to locate the suspected leaks.

5. Ensure that all fittings are tight; hoses are not pinched or kinked, and steel tubing is not flattened or bent.

6. Relieve all pressure to the system before disconnecting hydraulic lines.

Storage Safety

1. Store unit away form areas of human activity. If stored with wings raised, ensure transport lock pins are in place and secured with clip pins.

2. Level the tillage implement using the front jack. Block up securely to relieve the weight on the jack. Use park stand at rear of unit whether it has rear mounted attachments or not.

3. Store the unit with wings lowered. If stored with the wings raised, use a safety chain to secure the wings to each other.

4. Do not permit children to play around the stored tillage implement or the harrows.

FIELD ADJUSTMENTS

Height and Pressure Adjustment

Loosen carriage bolt and adjust nuts on adjusting clevis to change height and pressure, Figure 1.

Tighten carriage bolt.

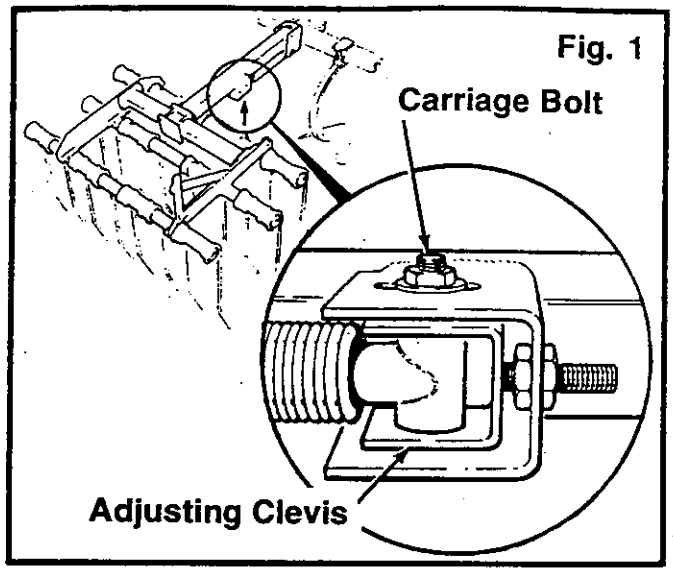


Fig. 1

Tooth Angle Adjustment

To change the tine angle remove the hairpin from the handle pin and relocate the handle to one of the link bracket holes, Figure 2. Once the desired tooth angle has been achieved reinstall hairpin.

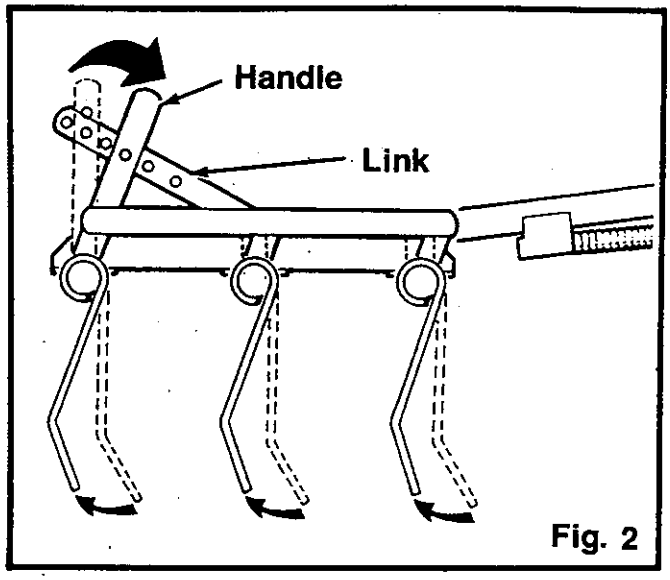


Fig. 2

Lockout

To lockout tines, tilt tines forward and pin the link to hole in the tine harrow side plate, Figure 3.

CAUTION

Tine harrow additions may alter the transport height. Take appropriate precautions.

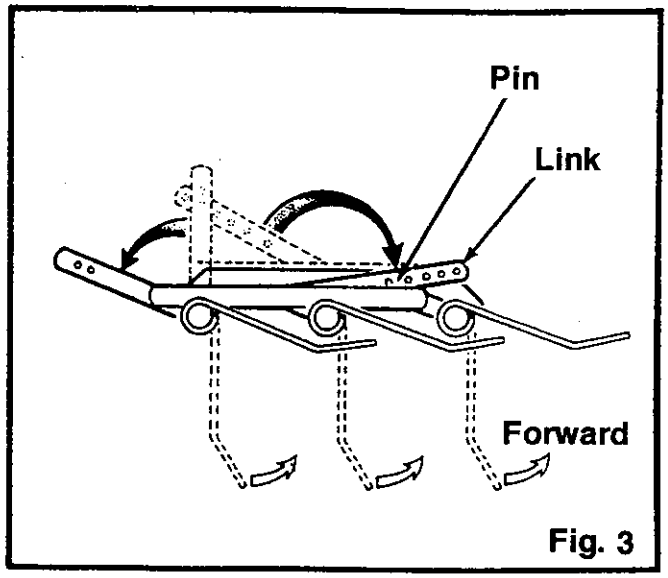


Fig. 3

Assembly & Installation

1. Position tine harrows behind the tillage implement. Refer to the **TINE HARROW LOCATION CHARTS** for information pertaining to your particular unit.

When attaching tine harrows, work from the center line outwards.

NOTE

Tine harrows should not overhang hinge points by more than 1-1/2 ft. (457 mm) otherwise damage will occur when wings are folded.

The space between tine harrows should be the same as the tooth spacing - approximately 2-1/2 in. (63.5 mm), Figure 4.

2. Position the tine harrow arm as close as possible to the center of the cross tube without it interfering with the unit's shank, Figure 5.

Bolt arm to cross tube. DO NOT TIGHTEN.

3. Position the arms as equally as possible from the side plates on the tine harrows requiring two arm assemblies, Figure 6.

NOTE

Some tine harrow arms may require an optional extension tube, depending on the model of cultivator. Refer to PARTS LIST.

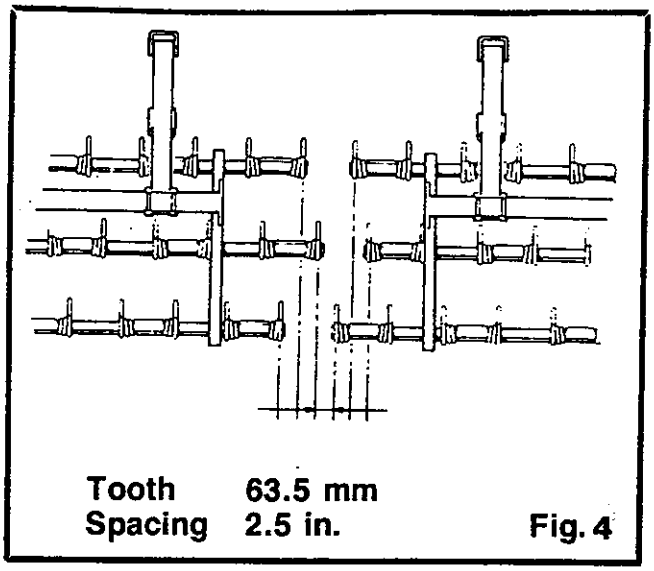


Fig. 4

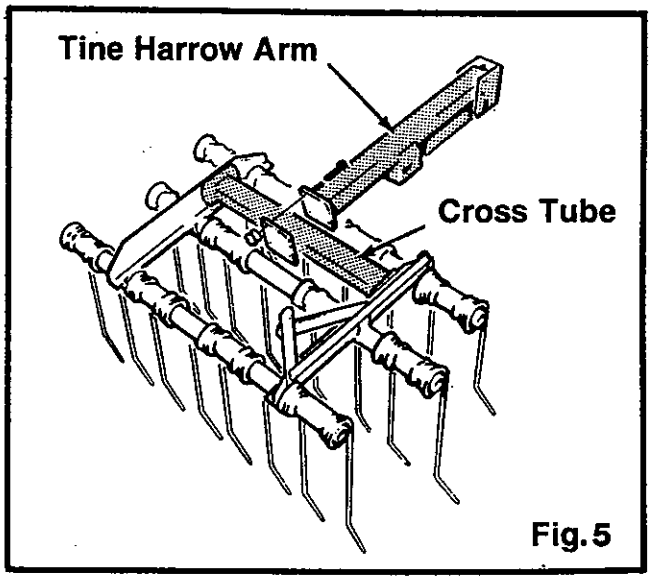


Fig. 5

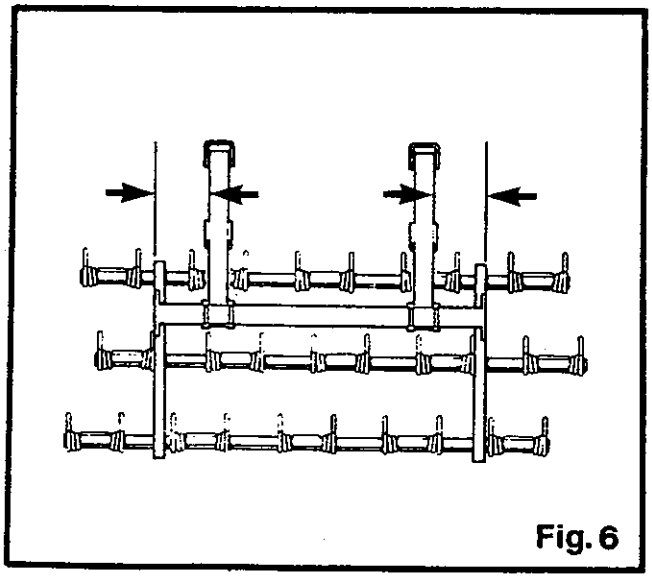


Fig. 6

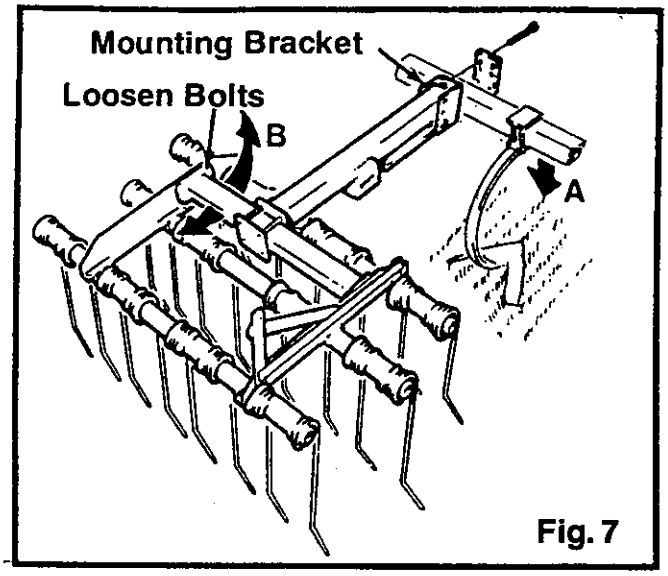


Fig. 7

4. Lower the cultivator until the shovels rest on the ground, "A", Figure 7.

Loosen bolts and rotate cross tube to line up arm assembly mounting bracket with cultivator frame, "B", Fig. 7.

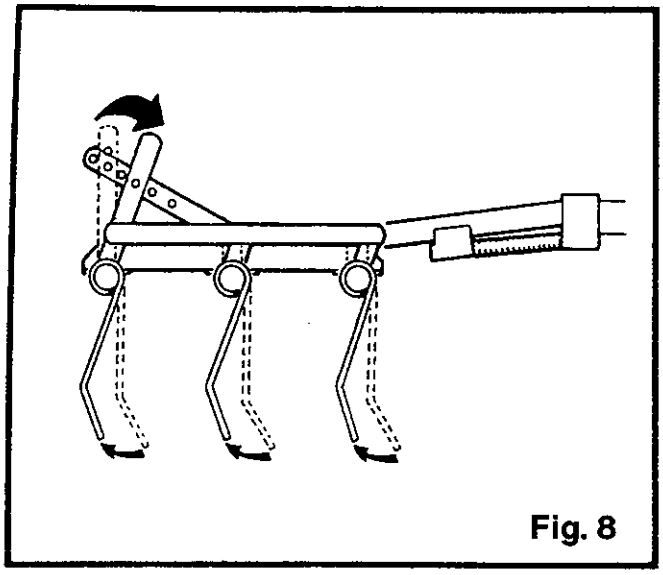


Fig. 8

NOTE

The teeth of the tine harrow should be angled backward for stability while installing, Figure 8.

5. Level tine harrow frame and tighten bolts on cross tube.

CAUTION

BE ALERT

Tine harrow attachments will shift weight distribution to the rear. When installing harrows or unhitching the unit, lower the shovels or block up the rear of the unit. This will prevent the unit's hitch suddenly tipping upward.

Lower park stand before unhitching cultivator from tractor.

Tine harrow additions may alter the transport height. Take appropriate precautions.

Tine Harrow Location Charts

179 Cultivator

Cultivator Size	Recommended Tine Size & Location Wing	Center Frame	Wing	Working Width
19 ft.	5	5-5	5	19.2 ft.
20.3 ft.	5	5-5	5	19.2 ft.
21.7 ft.	6	5-5	6	21.6 ft.
23.0 ft.	6	5-5	6	21.6 ft.
24.3 ft.	7	5-5	7	24.0 ft.
25.6 ft.	7	6-6	7	26.4 ft.
26.9 ft.	7	7-7	7	28.8 ft.
28.2 ft.	7	7-7	7	28.8 ft.
29.5 ft.	5-5	5-5	5-5	28.8 ft.

NOTE

Tine harrow locations are given only as a guide. Other combinations and locations are possible.

279 Cultivator

Cultivator Size	Recommended Tine Size & Location Wing	Center Frame	Wing	Working Width
30.3 ft.	5-5	6-6	5-5	31.2 ft.
31.0 ft.	5-5	6-6	5-5	31.2 ft.
32.0, 32.1, 32.5 ft.	5-6	6-6	6-5	33.6 ft.
32.0, 32.1, 32.5 ft.	5-5	7-7	5-5	33.6 ft.
34.8, 35.3, 36.0 ft.	5-6	7-7	6-5	36.0 ft.
36.9, 34.7 ft.	6-6	7-7	6-6	38.4 ft.
36.9, 37.4 ft.	5-7	7-7	7-5	38.4 ft.
38.5, 38.7, 40.0 ft.	6-7	7-7	7-6	40.8 ft.
40.2, 41.3 ft.	6-7	7-7	7-6	40.8 ft.

379
Cultivator

Cultivator Size	Recommended Tine Size & Location: Outer Wing	Inner Wing	Center Frame	Inner Wing	Outer Wing	Working Width
46.6 ft.	6	5-5	5-6-5	5-5	6	46.8 ft.
	5	6-6	6-6	6-6	5	45.6 ft.
47.9 ft.	6	6-6	6-6	6-6	6	48 ft.
49.2 ft.	7	5-5	5-6-5	5-5	7	49.2 ft.
	7	6-6	6-6	6-6	7	50.4 ft.
50.5 ft.	7	6-6	6-6	6-6	7	50.4 ft.
51.8 ft.	7	5-7	7-7	7-5	7	52.8 ft.
53.1 ft.	7	5-7	7-7	7-5	7	52.8 ft.
54.5,55.8,57.1	7	6-7	7-6	7-6	7	54 ft.
58.4, 59.7 ft.	5-5	6-7	7-6	7-6	5-5	58.8 ft.
61 ft.	5-6	6-7	7-6	7-6	6-5	61.2 ft.

CAUTION

Tine harrow attachments will shift weight distribution to the rear. When installing harrows or unhitching the unit, lower the shovels or block up the rear of the unit. This will prevent the unit's hitch suddenly tipping upward.

Tine harrow additions may alter the transport height. Take appropriate precautions.

203
Chisel Plow

Chisel Plow Size	Recommended Tine Size & Location: Wing	Center Frame	Wing	Working Width
14 ft.		7-7		14.4 ft.
16-1/2 ft.		5-7-5		16.8 ft.
18-1/2 ft.	6	7	6	19.2 ft.
21 ft.	7	7	7	21.6 ft.
23 ft.	7	5-5	7	24.0 ft.
25 ft.	5-5	6	5-5	25.2 ft.
27-1/2 ft.	5-5	7	5-5	26.4 ft.

Tine Size and Location

Chisel Plow Size	Main Frame	Working Width
11 FEET	5-6	10.8 FEET
13 FEET	6-7	13.2 FEET
15 FEET	5-6-5	15.4 FEET
17 FEET	5-7-5	16.8 FEET
19 FEET	6-7-6	19.2 FEET

	Wing	Main Frame	Wing	
21 FEET	5	6-6	5	21.4 FEET
23 FEET	5	6-7	5	22.8 FEET
25 FEET	6	6-7	6	25.2 FEET

807
Chisel Plow

Chisel Plow Size	Recommended Tine Size & Location Wing	Center Frame	Wing		Working Width
25 ft.	5	5-6-5	5		25.2 ft.
	6	7-6	6		25.2 ft.
27 ft.	6	5-5-5	6		26.4 ft.
	7	7-6	7		27.6 ft.
29 ft.	7	7-7	7		28.8 ft.
	7	5-5-5	7		28.8 ft.
31 ft.	7	5-7-5	7	*	31.2 ft.
	5-5	6-6	5-5		31.2 ft.
33 ft.	5-5	7-6	5-5		32.4 ft.
	5-5	5-5-5	5-5		33.6 ft.
	5-6	6-6	6-5		33.6 ft.
35 ft.	5-5	5-6-5	5-5		34.8 ft.
	6-6	6-6	6-6		36.0 ft.
	5-5	5-7-5	5-5	*	36.0 ft.
37 ft.	6-6	7-6	6-6		37.2 ft.
	6-5	5-6-5	5-6		37.2 ft.
39 ft.	6-6	7-7	6-6		38.4 ft.
	6-6	5-6-5	6-6		39.6 ft.
41 ft.	6-7	7-7	7-6		40.8 ft.
	6-6	5-7-5	6-6	*	40.8 ft.

* Recommended for use with the air seeder

808
Chisel Plow

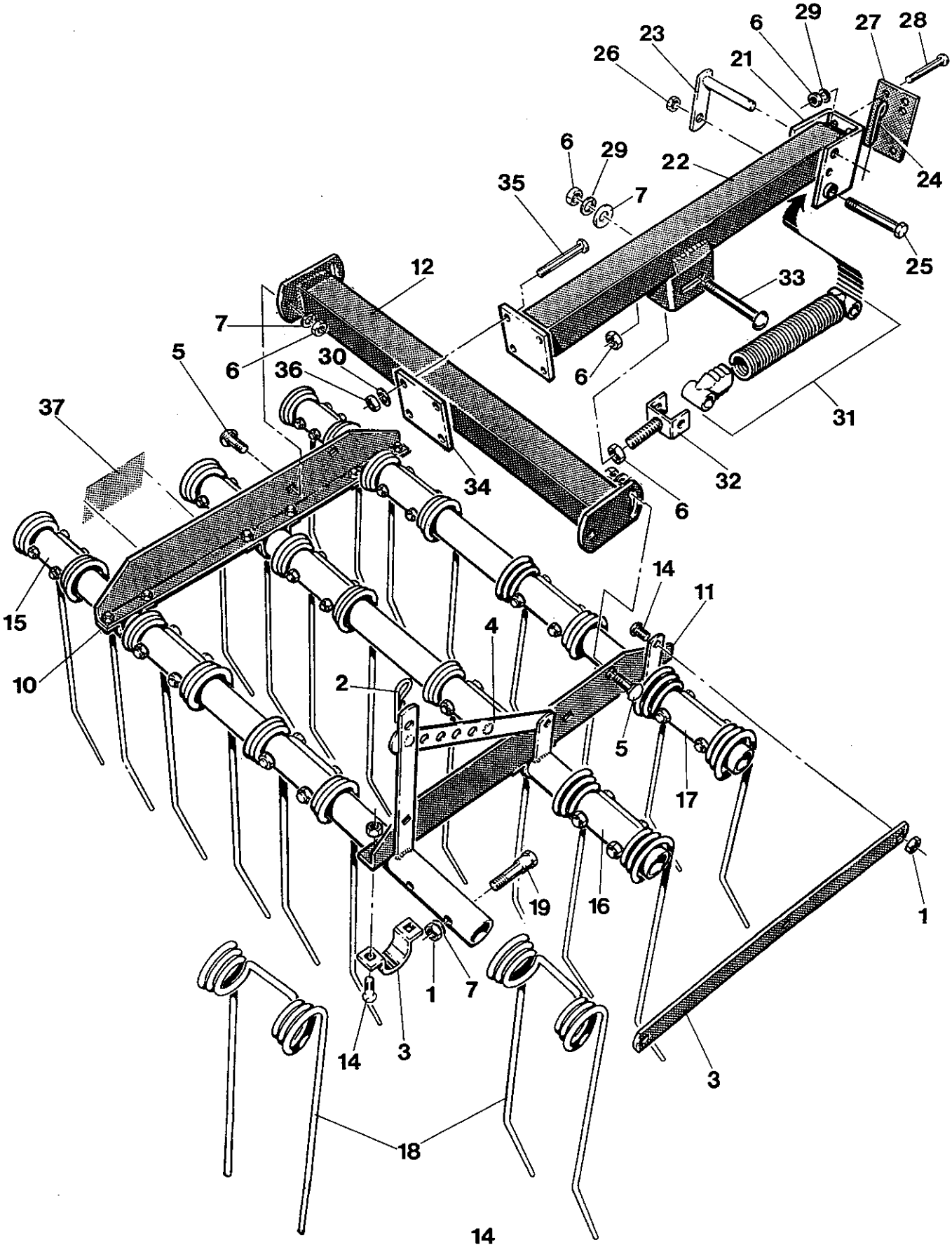
Chisel Plow Size	Recommended Tine Size & Location Outer Wing	Inner Wing	Center Frame	Inner Wing	Outer Wing	Working Width
49 ft.	6	6-5	5-6-5	5-6	6	49.2 ft.
51 ft.	7	6-5	5-6-5	5-6	7	51.6 ft.
53 ft.	7	6-5	5-7-5	5-6	7	52.8 ft.
55 ft.	5-5	6-5	5-5-5	5-6	5-5	55.2 ft.
57 ft.	6-5	6-5	5-5-5	5-6	5-6	57.6 ft.

IMPORTANT
Use the longer tube arms for the MT4000.

Recommended
Tine Size & Location

Multi-Tool Size	Wing	Center Frame	Center Wing	Working Width
22 1/2	8-8	7		24
37 1/2	7-7	8	8-8	39.6
52 1/2	7-7	7	8-8, 8-8	55.2

TINE HARROW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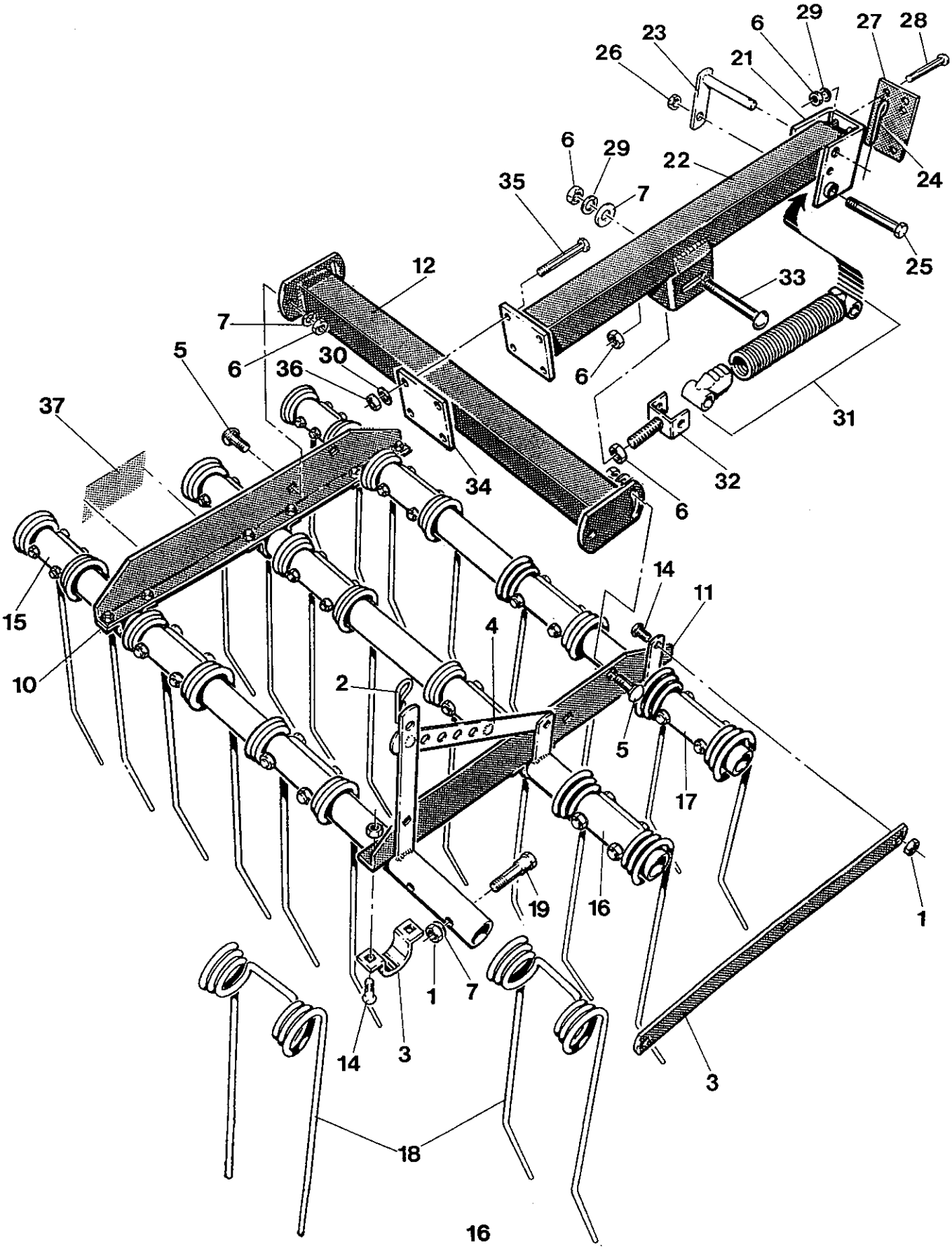
TINE HARROW

ITEM	NUMBER	DESCRIPTION	QTY
1	4956	NUT, Hex Hd - 3/8 NC	A/R
2	7780	CLIP PIN	1
3	41023	BAR	1
4	41061	LINK	1
5	107074	BOLT, Carriage Head - 1/2 NC x 1	4
6	108611	NUT, Hex Hd - 1/2 NC	4
7	108995	FLATWASHER, 1/2	2
8	108971	LOCKWASHER, 1/2	4
9	41058	CLAMP, Tine tUBE	4
10	41055	SIDE PLATE, Left Hand	1
11	41054	SIDE PLATE, Right Hand	1
12	41047	CROSS TUBE, 5 ft. Harrow	1
	41048	CROSS TUBE, 6 ft. Harrow	1
	41049	CROSS TUBE, 7 ft. Harrow	1
	A0703502	CROSS TUBE, 8 ft. Harrow	1
13	107015	BOLT, Carriage - 3/8 NC x 1 1/4"	14
14	107014	BOLT, Carriage - 3/8 NC x 7/8"	1
15	41015	TUBE, Rear - 5 ft. Harrow	1
	41016	TUBE, Rear - 6 ft. Harrow	1
	41017	TUBE, Rear - 7 ft. Harrow	1
	A0703302	TUBE, Rear - 8 ft. Harrow	1
16	41010	TUBE, Center - 5 ft. Harrow	1
	41012	TUBE, Center - 6 ft. Harrow	1
	41014	TUBE, Center - 7 ft. Harrow	1
	A0703202	TUBE, Center - 8 ft. Harrow	1
17	41009	TUBE, Front - 5 ft. Harrow	1
	41011	TUBE, Front - 6 ft. Harrow	1
	41013	TUBE, Front - 7 ft. Harrow	1
	A0703102	TUBE, Front - 8 ft. Harrow	1

TINE HARROW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TINE HARROW

ITEM	NUMBER	DESCRIPTION	QTY
18	41040	TINE, Bent	A/R
	A0702902	TINE, Straight	A/R
19	41018	BOLT, Shoulder - 3/8 NC	A/R
20	41078	SPRING, Arm	A/R
21	41021	MOUNT, Arm	A/R
22	A0651302	TUBE, Arm - Longer Arm	A/R
	41039	TUBE, Arm	A/R
23	41052	PIN, Weldment	1
24	109345	COTTERPIN, 3/16 x 1 1/4	1
25	100108	SCREW, 1/2NC x 6 HHC	1
26	12385	NUT, Hex Lock - 1/2 NC	1
27	41022	PLATE, Mounting - Rear	1
28	100107	SCREW, 1/2NC x 5 1/2	4
29	108971	LOCKWASHER, 1/2	5
30	108969	LOCKWASHER, 3/8	4
31	41078	PLUG AND SPRING ASSEMBLY	1
	41056	SPRING	1
	4885	PLUG, Shank	2
32	41005	SPRING ADJUSTMENT CLEVIS	1
33	107087	CARRIAGE BOLT, 1/2 x 4 1/2	1
34	41035	MOUNTING PLATE	1
35	100056	SCREW, 3/8NC x 3 1/2 HHC	4
36	108609	NUT, 3/8NC Hex	4
37	41066	DECAL, 325	1
	41069	DECAL, 326	1
	41068	DECAL, 327	1
	A0704578	DECAL, 324S	1
	A0704678	DECAL, 326S	1
	A0704778	DECAL, 327S	1
	A0704878	DECAL, 328S	1
38	41034	TUBE, Spacer	1

SPECIFICATIONS
Tine Harrow Measurements

	325	326	327	328*
Nominal Width	5'	6'	7'	8'
Number of Tines	12	15	18	21
Working Width	4.8'	6.0'	7.2'	8.4'
Arms Recommended	one	two	two	two

* - straight tine only

TINES
- 3/8 in. (9.5mm) diameter x 16 in (406mm) long double teeth with a 30 degree forward tilt for bent tines.

TOOTH SPACING
- 2.4 in. (61mm)

RANK
- 3 ranks, 1-5/8 in (41mm) diameter x 7/64 in (0.109) wall thickness @ 11.8 in (300mm) spacing.

CARRIER ARM
- 1/8 in. (0.125 in) thick tubing 2.5 in (63.5) square.

PRESSURE SPACING
- Tension spring 2-1/8 in. (54mm) O.D. x 10-1/8 in (257mm) long x 3/8 in (9.5mm) diameter wire.

MOUNTING
- Heavy mounting bracket made of 3/8 in (9.5mm) plate
- Accommodates 3 in (76mm) and 4 in (102mm) square tubes

ESTIMATED WEIGHT
- 325, 12 tine section 86 lb (40kg)
- 326, 15 tine section 95 lb (43kg)
- 327, 18 tine section 104 lb (47kg)
- 328, 21 tine section 113 lb (51kg)
- Carrier arm 40 lb (18kg)

Specifications and information are subject to change without notice.