John Deere
1424
Mower-Conditioner

JOHN DEERE

TECHNICAL MANUAL

John Deere 1424
Mower-Conditioner

TM1264 (01AUG82) English

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LITHO IN U.S.A. (REVISED)
ENGLISH

1424 MOWER-CONDITIONER TECHNICAL MANUAL TM-1264 (AUG-82)

CONTENTS

All information, illustrations and specifications contained in this technical manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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INTRODUCTION

This technical manual is part of a twin concept of service:

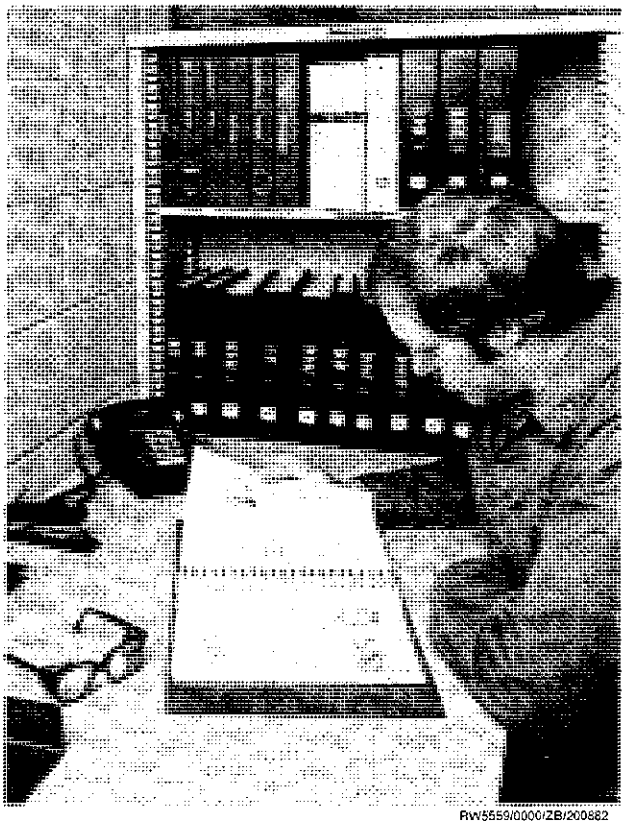
FOS Manuals — for reference

Technical Manuals — for actual service

The two kinds of manuals work as a team to give you both the general background and technical details of shop service.

Fundamentals of Service (FOS) Manuals cover basic theory of operation, *fundamentals* of trouble shooting, *general* maintenance, and *basic* types of failures and their causes. FOS Manuals are for training new people and for reference by experienced technicians.

Technical Manuals are concise service guides for a *specific* machine. Technical Manuals are on-the-job guides containing only the vital information needed by an experienced technician.



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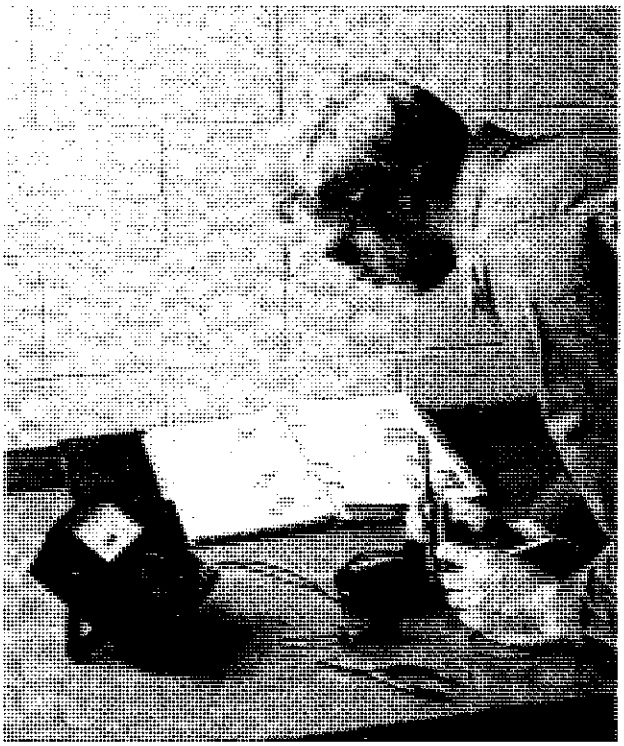
FEATURES OF THIS TECHNICAL MANUAL

- John Deere ILLUSTRUCTION format emphasizing more detailed pictures and fewer words.
- Instructions and illustrations grouped together in easy-to-use modules.
- Removal and installation groups preceding some repair groups. These groups show how to remove and install components from the machine rather than from major components. They also show how to acquire access to major components of a machine.
- *Exploded views showing parts relationship.*

This technical manual was planned and written for you — an experienced technician. Keep it in a permanent binder in the shop where it is handy. Refer to it whenever in doubt about correct service procedures or specifications.

Using the technical manual as a guide will reduce error and costly delay. It will also assure you the best in finished service work.



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Section 10
GENERAL

CONTENTS

1000/AA/200882

SAFETY MESSAGES

This safety alert symbol and the word **CAUTION** identify important safety messages in this manual and on the platform. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

1005/ZE/200882

IMPORTANT

The **IMPORTANT** message identifies potential problems which may cause consequential damage to the platform. Following the recommended procedure will instruct the technician how to avoid the problem.

1005/ZF/200882

NOTES

The word *NOTE* is followed by a statement that identifies a qualification or exception to a previous statement. A "NOTE" may also identify nice-to-know information pertinant to, but not directly related to the previous statement.

1005/ZG/200882

AVOID HIGH PRESSURE-FLUIDS

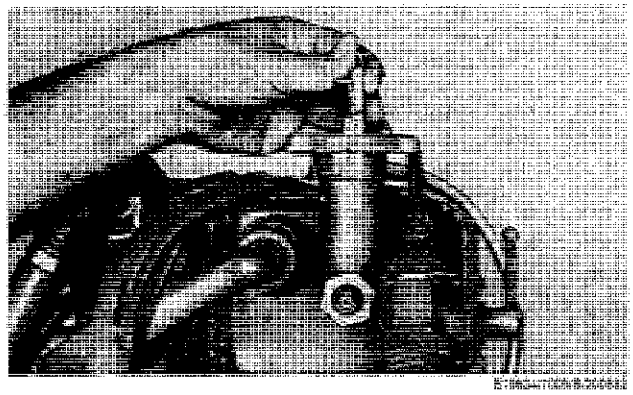
Escaping fluid under pressure can penetrate the skin causing serious injury. Relieve pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure. Keep hands and body away from pinholes and nozzles which eject fluids under high pressure. Use a piece of cardboard or paper to search for leaks. Do not use your hand.

If ANY fluid is injected into the skin, it must be surgically removed within a few hours by a doctor familiar with this type injury or gangrene may result.

X9811/1005/A/200882

WORKING ON HYDROSTATIC SYSTEM

To avoid being sprayed by hot oil when working on hydrostatic system, relieve reservoir pressure by lifting fill cap lever.



USE ADEQUATE SERVICE FACILITIES

Keep the service area clean and dry. Wet or oily floors are slippery. Wet spots can be dangerous when working with electrical equipment.

Make sure the service area is adequately vented.

Periodically check the shop exhaust system for leakage. Engine exhaust gas is dangerous.

Be sure all electrical outlets and tools are properly grounded.

Use adequate light for the job at hand.

Use lifting equipment and safety stands which have adequate strength for the job being performed.

Wear fairly tight clothing.

Know where the first aid kit and fire extinguishers are located, and know how to use them.

1005IZH/200862

OBSERVE SAFETY RULES

This safety alert symbol identifies important safety messages in this manual and on the machine. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.

Avoid loose clothing that can catch in moving parts and put you out of work.

Wear your safety glasses while on the job.

Avoid working on equipment with the engine running. If it is necessary to make checks with the engine running, ALWAYS USE TWO PEOPLE — with the operator, at the controls, able to see the person doing the checking. Also, put the transmission in neutral, set the brake, and apply safety locks provided. KEEP HANDS AWAY FROM MOVING PARTS.

Disengage all power and be sure all moving parts have stopped.

Before removing any housing covers, stop engine. Take all objects from your pockets which could fall into the opened housings. Don't let adjusting wrenches fall into opened housings.

Clear obstructions off machine when machine is shut off and all moving parts have stopped.

Always operate machine at rated PTO speed.

Always unhook towed equipment on level ground.

1005/C/200682

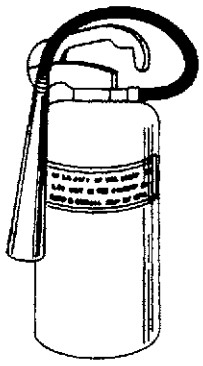
AVOID FIRE HAZARDS

Be prepared if an accident or fire should occur. Know where the first aid kit and the fire extinguishers are located — know how to use them.

Don't smoke while refueling or handling highly flammable material.

Shut off the engine when refueling.

Use care in refueling if the engine is hot.



N35540

Don't use open pans of gasoline or diesel fuel for cleaning parts. Use good commercial, nonflammable solvents.

Provide adequate ventilation when charging batteries.

Don't check battery charge by placing metal objects across the posts.

Don't allow sparks or open flame near batteries.

Don't smoke near battery.

Never check fuel, battery electrolyte, or coolant levels with an open flame.

Never use an open flame to look for leaks anywhere on the equipment.

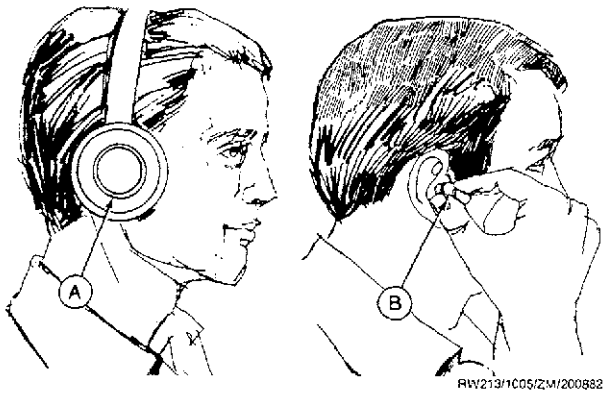
Never use an open flame as light anywhere on or around the equipment.

N35540/1005/ZL/200882

PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs (A) or earplugs (B) to protect against objectionable or uncomfortable loud noises.



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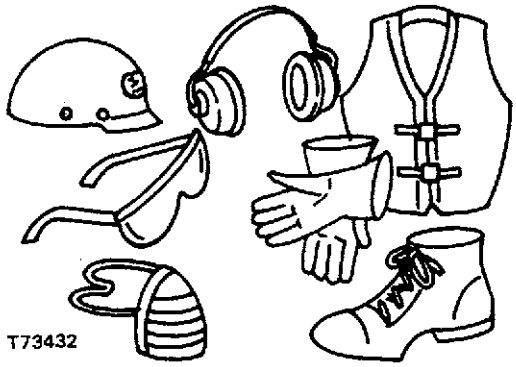
Wear safety equipment.



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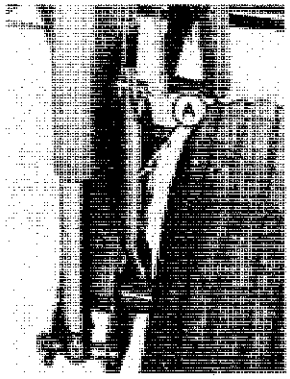
SERVICE MACHINE SAFELY

When working on machine with platform raised, engage platform support (A) and install pin.

Block the wheels to keep the machine from moving while it is being serviced.



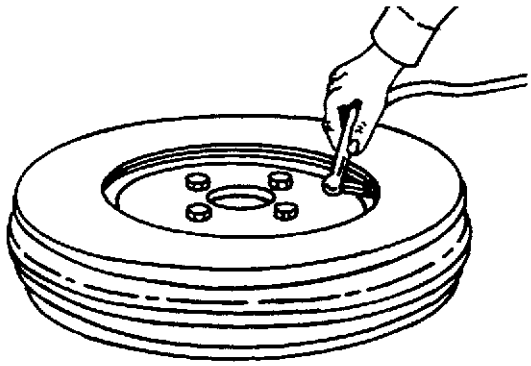
E19810/1005/D/200882

SERVICE TIRES SAFELY

Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death. Do not attempt to mount a tire unless you have the proper equipment and experience to perform the job. Have it done by your John Deere dealer or a qualified tire repair service.

When sealing tire beads on rims, never exceed 240 kPa (2.4 bar) (35 psi) or maximum inflation pressure specified by tire manufacturers for mounting tires. Inflation beyond this maximum pressure may break the bead, or even the rim, with dangerous explosive force. If both beads are not seated when the maximum recommended pressure is reached, deflate, reposition tire, relubricate bead, and reinflate.

Detailed agricultural tire mounting instructions, including necessary safety precautions, are contained in John Deere Fundamentals of Service (FOS) Manual 55, Tires and Tracks, available through your John Deere dealer. Such information is also available from the Rubber Manufacturers Association and from tire manufacturers.



E19547/1005/E/200882

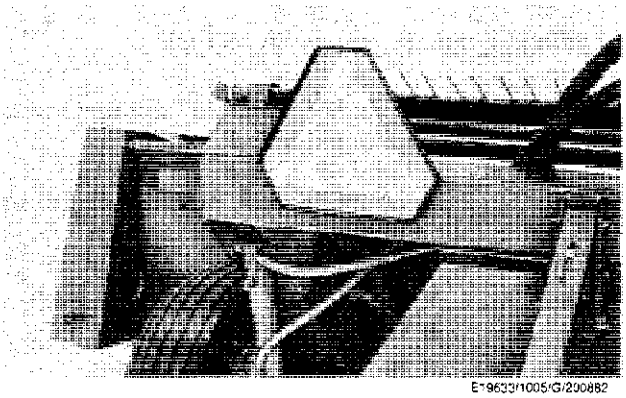
DO NOT MODIFY MACHINE

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

1005/F/200882

TRANSPORT SAFELY

When transporting the equipment on a road or highway at night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. In this regard, check local governmental regulations. Various safety devices are available from your John Deere dealer.



E19633/1005/G/200882

CONDITIONER ROLLS
- Drive ..... Timed Roller Chain
- Construction ..... Fluted Steel or Intermeshing Rubber
- Diameter ..... 197 mm (7-3/4 in.)
- Length ..... 1473 mm (58 in.)
- Speed ..... 730 rpm

CUTTERBAR
- Guards ..... Heavy-duty, double forged steel
- Guard angle ..... 6, 9, or 12° downward
- Knives (chrome) ..... Undeserrated standard, smooth available
- Speed ..... 1650 strokes per min.
- Type drive ..... Enclosed, running in oil

CUTTING HEIGHT ..... – 51 to 483 mm (– 2 in. to 19 in.)

OPERATING SPEED ..... Up to 9.7 km/h (6 mph)

POWER TAKE-OFF SPEED ..... 540 or 1000 rpm

REEL
- Diameter ..... 1067 mm (42 in.)
- Drive ..... V-belt
- Speed:
  - Standard ..... 50-75 rpm
- Tooth bars ..... 4, 5, or 6 bat cam controlled tooth angle

TRACTOR HYDRAULIC PRESSURE TO LIFT PLATFORM ..... 123 kg/cm² (121 bar) (1750 psi)

WHEELS
- Tire size ..... 11L x 4
- Tire inflation pressure ..... 2 kg/cm² (2 bar) (32 psi)
- Gauge wheels (optional) ..... 2 kg/cm² (2 bar) (28 psi)

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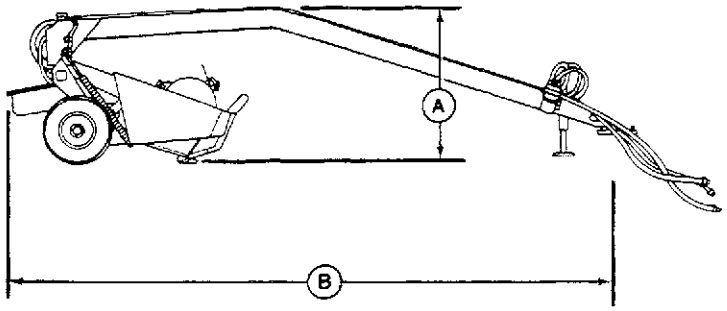

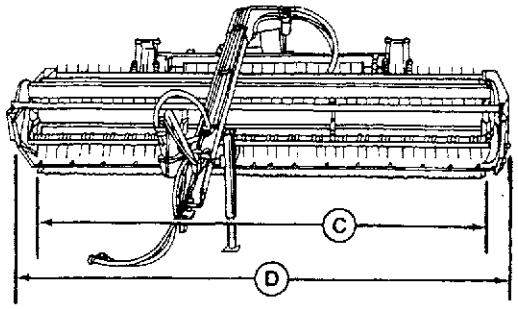

A—Height ..... 1600 mm (5 ft. 3 in.)

B—Length ..... 6629 mm (21 ft. 9 in.)

C—Operating Width:
- 3658 mm (12 ft.) platform ..... 5715 mm (18 ft. 9 in.)
- 4267 mm (14 ft.) platform ..... 6235 mm (20 ft. 9 in.)

D—Transporting Width:
- 3658 mm (12 ft.) platform ..... 4001 mm (13 ft. 1-1/2 in.)
- 4267 mm (14 ft.) platform ..... 4610 mm (15 ft. 1-1/2 in.)

E21590/1010/B/200882

Item	Measurement	Specification
WEIGHT		
With 3658 mm (12 ft.) platform		1979 kg (4397 lbs.)
With 4267 mm (14 ft.) platform		2019 kg (4487 lbs.)
SPEED (NO LOAD)		
Auger		
13 Tooth		173 rpm
15 Tooth		200 rpm
Knife		1650 cuts per minute
WIDTH OF CUT		
3658 mm (12 ft.) platform		3734 mm (12 ft. 3 in.)
4267 mm (14 ft.) platform		4343 mm (14 ft. 3 in.)

HYDRAULICS

STEERING CYLINDER	Bore	76 mm (3.00 in.)
	Stroke	406 mm (16.00 in.)
	Maximum Pressure	175 kg/cm² (172 bar) (2500 psi)
MASTER LIFT CYLINDER	Bore	57 mm (2.25 in.)
	Stroke	318 mm (12.50 in.)
	Maximum Pressure	158 kg/cm² (155 bar) (2250 psi)
SLAVE LIFT CYLINDER	Bore	48 mm (1.88 in.)
	Stroke	318 mm (12.50 in.)
	Maximum Pressure	158 kg/cm² (155 bar) (2250 psi)
FILTER	10 Micron, Full Flow with Bypass	14 kg/cm² (14 bar) (200 psi) Max.
RESERVOIR	Capacity	95 l (25 Gal. U.S.)
	Operating Fluid Temperature	71 to 107° C (160 to 225° F)
RELIEF VALVE	Relief Pressure	246 kg/cm² (241 bar) (3500 psi)

PUMP UNIT	540 RPM	1000 RPM
Displacement	45.4 cm³ (2.77 cu. in.)	39.2 cm³ (2.01 cu. in.)
Output Flow	88.6 L/pm (23.4 gpm)	87.7 L/pm 22.9 gpm
Shaft Speed	2160 rpm	3000 rpm
	4:1 Step up	3:1 Step Up
	Case Drain Flow	15.9 L/pm (4.2 gpm) Max.
	Case Drain Pressure	2 kg/cm² (2 bar) (30 psi) Max.
MOTOR	Displacement	82.6 cm³ (5.04 cu. in.)
	No-Load Shaft Speed	1176 rpm
	Case Drain Flow	6.8 L/pm (1.8 gpm) Max.
	Case Drain Pressure (Must not exceed motor outlet pressure)	7 kg/cm² (7 bar) (100 psi) Max.

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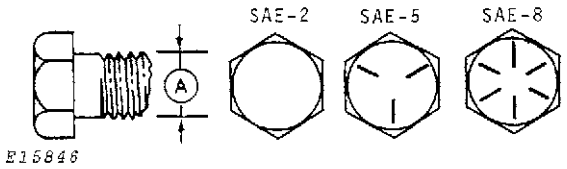
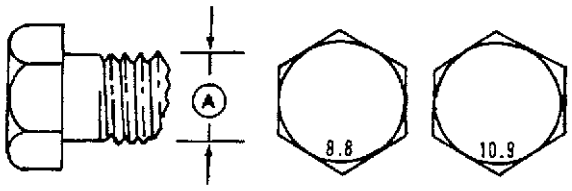
BOLT TORQUE CHART

Tables shown below give correct torque values for various bolts and cap screws. Check tightness of bolts periodically, using bolt torque chart as a guide.



U.S. MEASUREMENT

Bolt Diameter "A"	Newton-Meters SAE 2	Newton-Meters SAE 5	Newton-Meters SAE 8	Foot-Pounds SAE 2	Foot-Pounds SAE 5	Foot-Pounds SAE 8
1/4"	8	14	19	6	10	14
5/16"	18	27	40	13	20	30
3/8"	30	45	70	23	35	50
7/16"	45	75	110	35	55	80
1/2"	75	115	160	55	85	120
9/16"	100	175	240	75	130	175
5/8"	140	230	325	105	170	240
3/4"	250	410	575	185	300	425
7/8"	220	600	930	160	445	685
1"	345	910	1400	255	670	1030
1-1/8"	450	1230	1980	330	910	1460
1-1/4"	650	1700	2790	480	1250	2060



METRIC MEASUREMENT

Bolt Diameter "A"	Newton-Meters 8.8	Newton-Meters 10.9	Foot-Pounds 8.8	Foot-Pounds 10.9
5 mm	5	7	4	5
6 mm	8	12	6	9
8 mm	20	30	15	23
10 mm	40	60	30	45
12 mm	70	105	50	80
16 mm	175	255	130	190
20 mm	350	500	260	370
24 mm	600	850	445	630
30 mm	1430	1700	1055	1250
36 mm	2100	2980	1550	2200

NOTE: BOLTS using prevailing torque lock nuts should be torqued to approximately 60% of the value shown.

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Location	Torque (kgm)	Torque (Nm)	Torque (ft-lbs)
Planetary Gear Case Front Plate Bolts	2-2.4	20-24	15-18
Planetary Gear Case Mounting Bolts	7.5-8.1	75-81	55-60
Motor Backplate Mounting Bolts	2-2.4	20-24	15-18
Steering Cylinder Piston Rod Lock Nut	20.5-23.2	205-232	150-170
Cutterbar Drive Case Cover Bolts	20.3	203	150
Cutterbar Drive Case Flywheel Nut	27.1	271	200
Knife Drive Arm Holder Nut	21.7	217	160 (then rap with hammer and tighten nut to one more castellation)

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HOSE AND TUBING FLARE CONNECTION TORQUES

Metal Tube Outside Diameter mm (inches)	Thread and Fitting Size mm (inches)	Steel Tubing** Torque N•m (lb-ft)	Aluminum or Copper Tubing Torque N•m (lb-ft)	Nominal Torque Winch Span Inches
6.35 (1/4)	11.11 (7/16)	14-47 (10-35)	7-9 (5-7)	5/8
9.53 (3/8)	15.88 (5/8)	41-47 (30-35)	15-18 (11-13)	3/4
12.7 (1/2)	19.05 (3/4)	41-47 (30-35)	15-18 (11-13)	7/8
15.88 (5/8)	22.22 (7/8)	41-47 (30-35)	24-29 (18-21)	1-1/16
19.05 (3/4)	26.99 (1-1/16)	41-47 (30-35)	31-38 (23-28)	1-1/4

**If a connection is made with steel to aluminum or copper, use the lower torque specification.*
***Use steel tubing torque only when both ends of connection are steel.*

1010/F/200882

DIAGNOSING MALFUNCTIONS

Problem	Possible Cause	Possible Remedy	Section
Auger Problems			
Crop carries over top of auger.	Incorrect stripper adjustment.	Readjust for 3 mm (1/8-in.) clearance between strippers and auger.	20
Crop wraps around middle of auger.	Heavy-long stem crop.	Remove rubber auger paddles.	—
Crop plugs in front of auger.	Clutch slipping or worn clutch disks.	Adjust clutch. Replace disks if worn excessively.	20
Auger stops — crop piles up in front of auger.	Auger slip clutch slipping.	Adjust clutch. Replace disks if worn excessively.	20
	Auger clogged.	Remove obstruction.	—

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Problem	Possible Cause	Possible Remedy	Section
Crop Loss at Cutterbar			
Leaf loss or crop damage.	Reel speed not coordinated with ground speed.	Change reel drive to coordinate reel speed with ground speed so reel will move material smoothly and evenly.	—
	Ground speed too fast for condition of crop.	Slow down.	—
	Crop carrying over top of reel.	Reduce reel speed and rotate cam for earlier release.	—
Excessive Breakage of Knife Sections or Guards	Cutterbar operating too low in stony field conditions.	Raise cutterbar, using gauge shoes, and by reducing guard angle.	—
	Improper platform float spring adjustment.	Readjust float springs.	—
	Bent or broken guard.	Replace.	40
	Reel teeth too low (teeth into knife)	Raise reel and replace damaged parts.	—
	Ground speed too fast.	Slow down.	—

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