

700 and 750 Grinder-Mixers



JOHN DEERE

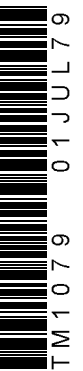
TECHNICAL MANUAL

700 and 750
Grinder-Mixers

TM1079 (01JUL79) English

Des Moines Works
TM1079 (01JUL79)

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ENGLISH



700 AND 750 GRINDER-MIXERS

TECHNICAL MANUAL
TM-1079 (Jul-79)

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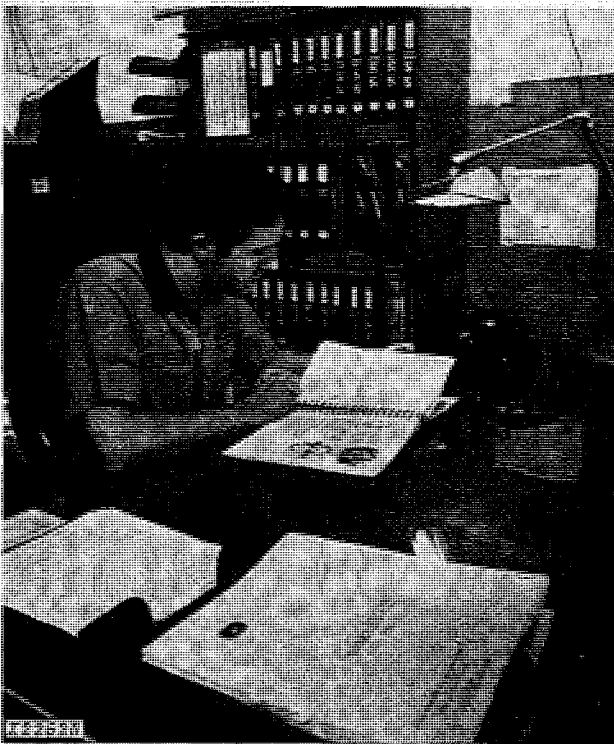
The specifications and design information contained in this manual were correct at the time this machine was manufactured. It is John Deere's policy to continually improve and update our machines. Therefore, the specifications and design information are subject to change without notice.

FOR YOUR CONVENIENCE

Vertical lines appear in the margins of many of the pages. These lines identify new material and revised information that affects specifications, procedures, and other important instructions.

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INTRODUCTION



Use FOS Manuals for Reference

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 personnel and for reference by experienced service technicians.

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



Use Technical Manuals for Actual Service

Some features of this technical manual:

- *Table of contents at front of manual*
- *Exploded views showing parts relationship*
- *Photos showing service techniques*
- *Specifications grouped for easy reference*

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.

SI (International System) Units of Measure

Metric equivalents have been included, where applicable, throughout this technical manual.


PAGE AND DATELINE LISTING

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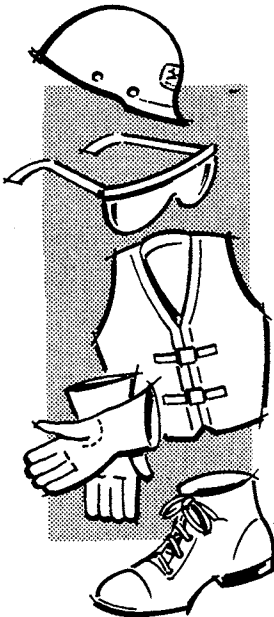
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MAINTENANCE WITHOUT ACCIDENTS**WORK SAFELY**

T27999

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

**EVERY EMPLOYER HAS A
SAFETY PROGRAM. KNOW
WHAT IT IS!**

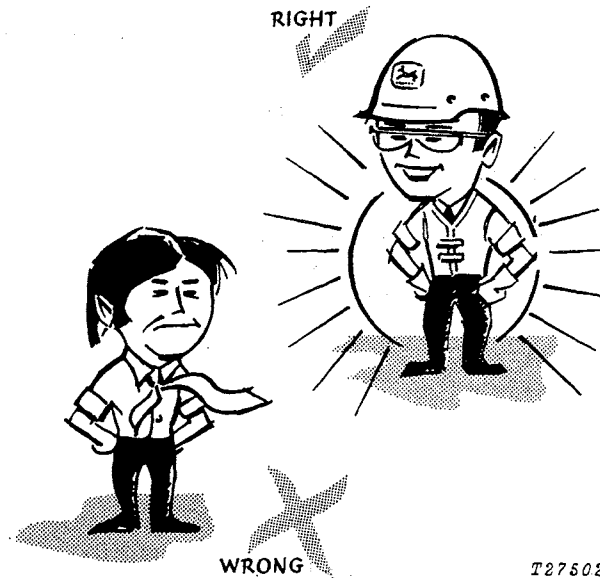


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Consult your shop foreman for specific instructions on a job, and the safety equipment required.

For instance, you may need: Hard hat, safety shoes, safety goggles, heavy gloves, reflector vests, ear protectors, respirators.

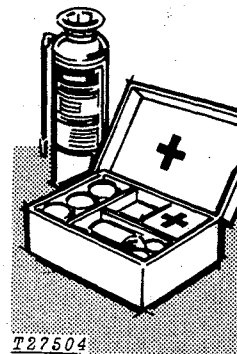
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**ALWAYS AVOID**

Loose clothing or any accessory—flopping cuffs, dangling neckties and scarves, or rings and wrist watches—that can catch in moving parts and put you out of work.

BE ALERT!

Plan ahead—work safely—avoid accidental damage and injury. If a careless moment does cause an accident or fire, react quickly with the tools and skills at hand—know how to use a first aid kit and a fire extinguisher—and where to get aid and assistance. In an emergency, split-second action is the key to safety.



T27504

Section 10 GENERAL

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Group 5 DESCRIPTION

The John Deere 700 and 750 Grinder-Mixers are portable feed grinders and mixers. They are shipped from the factory with either a 540 or 1000-rpm PTO drive. The 540-rpm PTO drive is designed for use with tractors having a maximum of 90 horsepower (67 kW). The 1000-rpm PTO drive is designed for use with tractors having a maximum of 150 horsepower (112 kW).



CAUTION: Never operate a 540 rpm grinder-mixer with a 1000 rpm tractor PTO.

All types of grain may be ground with the grinder-mixer. Hay slices may be fed into the plain hopper individually, or the optional hay attachment may be used to feed hay bales. Grinding loose hay is not recommended.

A concentrate hopper with bag opener at the rear of the grinder-mixer allows addition of concentrate while grinding. The mixture of grain or hay is fed into the hammermill and ground until it will pass through the screen.

The bulk of the ground feed is delivered directly to the mixing tank by the horizontal auger. The finely ground feed is drawn by a suction fan through the dust collector into the horizontal auger. The ground feed and concentrate are then mixed thoroughly in the mixing tank.

After the grinding operation is performed, the hammer mill can be disengaged and the mixing tank auger run to mix the feed while it is transported to the feed lot or unloading area.

The unloading auger pivots 225 degrees on its pedestal and will unload the tank at the rate of 22 bushels (0.78 m³) per minute.

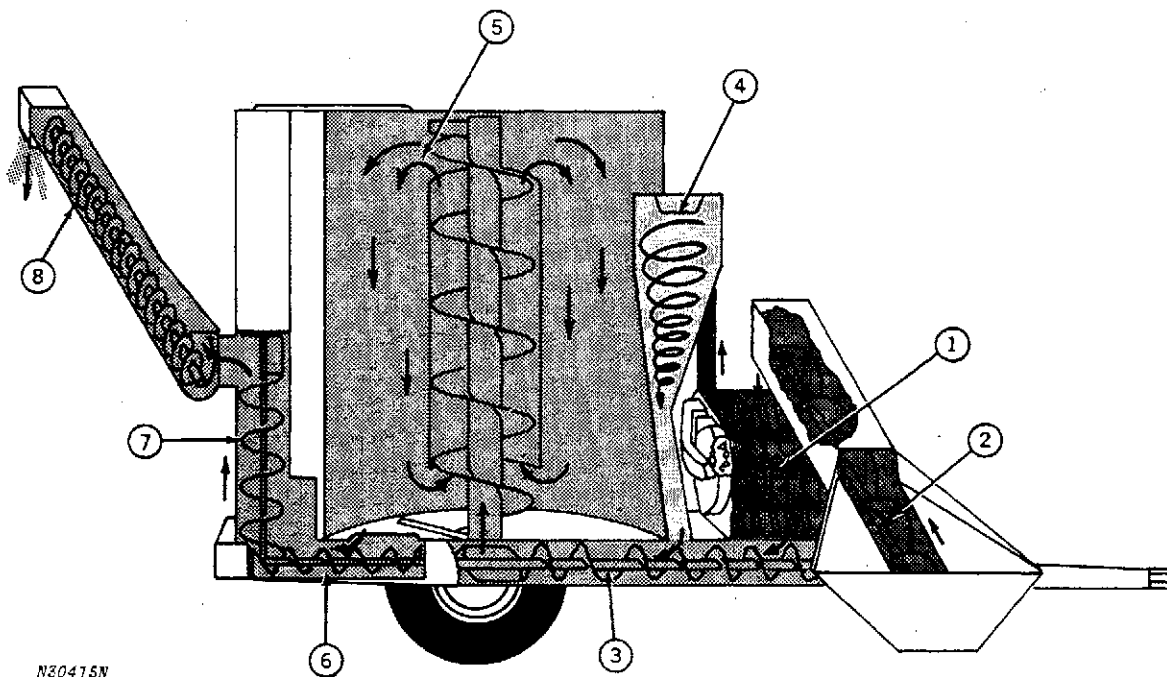
The feed level or quantity in the mixing tank is visible through the three safety glass windows staggered along the side of the mixing tank. Mounting steps at the front of the tank give access to the door on top of the tank.

The grinder-mixer may be equipped with the optional hydraulically driven auger feeder. The auger feeder drive is operated by the tractor hydraulic system. The drive speed can be varied from 0 to 150 rpm by positioning the variable speed lever on the auger feeder. The auger feeder is spring balanced or winch-operated for ease in handling and will pivot through a 120 degree arc.

The hay grinding option makes it possible to power feed bales of hay or straw into the grinder-mixer. The twine on the bales may be removed or left on the bale as the operator desires.

The hay attachment is available with or without the feeding auger.

FEED FLOW



N30415N

Fig. 1-Feed Flow

The hammer mill capacity depends upon six factors; rate of feed, type of material, moisture content of material, tractor horsepower, hammer mill rotor speed, and screen hole size.

Underfeeding of material reduces capacity, preventing the optimum operation of the hammer mill. Overfeeding tends to slow the tractor rpm, and reduces the capacity of the hammer mill. Uneven feeding is a combination of both underfeeding and overfeeding.

The rotor shaft speed (2600 rpm for 540 rpm PTO and 2750 rpm for 1000 rpm PTO) must be maintained. This speed is obtained when the tractor PTO speed is adjusted properly with the tractor engine speed.

It is important to use the correct size screen. The larger the hole size in the screen, the greater the hammer mill capacity. The smaller the hole size in the screen, the lesser the capacity.

The following is a step-by-step description of the feed flow through the grinder-mixer:

1. After the concentrate is added, material is fed into the hammer mill (1, Fig. 1) by the feed auger (2) or hay attachment (not shown), or directly into the mill, where it is ground until it passes through the screen at the bottom of the hammer mill into the auger (3).
2. From the hammer mill screen, the bulk of the ground feed is augered (3) to the mixing tank (5).
3. The finely ground feed (dust) is sucked through the screen, flows down through the dust collector (4) into the horizontal auger (3), and is augered into the mixing tank (5).
4. The feed in the mixing tank is then mixed thoroughly with the concentrate from the concentrate hopper.
5. When ready to unload, the feed is augered through the horizontal unloading auger (6) to the vertical unloading auger (7), and to the unloading auger (8) where it can be bagged or unloaded into wagons or feeders.

Group 10 SPECIFICATIONS

700 GRINDER-MIXER

Equipped with 1000 to 540-rpm PTO Drive
Approximate Weight (with auger feeder) . . 3276 lbs.
(1487 kg)

Mixing Tank

Capacity . . . 95 Bushel (3.4 m³) (2 Tons) (1814 kg)
Auger Diameter 18 Inches (457 mm)
Auger Length 73 Inches (1 854 mm)

Unloading Auger

Diameter 6 Inches (152 mm)
Length 13 Feet (3 962 mm)
Discharge Rate . . 22 Bushels Per Minute (0.8 m³)
Pedestal Height 54 Inches (1 372 mm)

Hydraulic Variable Speed Auger Feeder

Auger Housing Hopper Width 43 Inches
(1 092 mm)
Auger Diameter 10 Inches (254 mm)
Auger Length 92 Inches (2 337 mm)
Type Drive Hydraulic Variable Speed
Drive Speed 0 to 150 rpm

Hammer Mill

Rotor and Fan Speed .2600 rpm for 540-rpm PTO
2750 rpm for 1000-rpm PTO
Type Drive Six A-Section Powerband
Belts for 1000-rpm PTO Drive
(or) Eight A-Section Powerband
Belts for 540-rpm PTO
Drive
Number of Hammers . . . 64 Four-Way Reversible
Throat Opening 20 Inches (508 mm)
Screen Area 703 Square Inches (18 m²)
Screens Available Fourteen with Hole
Diameters from 3/32 Inches to 1-1/2 Inches
(2.1 mm to 38 mm)

Tire Size 11L-15, 8 PR

Hay Attachment

Type of Drive Hydraulic Variable Speed
Drive Speed 0 to 70 rpm
Number of Knives 16
Number of Hammers 48

Scale Attachment

Weight 110 lbs. (50 kg)
Power Input 12 Volt DC
System Range 0-15000 lbs. (0-6804 kg)
Circuitry Micro Miniature,
Modular, Solid State

750 GRINDER-MIXER

Equipped with 1000 or 540-rpm PTO Drive
Approximate Weight (less Auger Feeder) . 3220 lbs.
(1461 kg)

Mixing Tank

Capacity .130 Bushels (4.6 m³) (3 Tons) (2722 kg)
Auger Diameter 22 Inches (559 mm)
Auger Length 77-7/8 Inches (1 978 mm)

Unloading Auger

Diameter 6 Inches (152 mm)
Length 13 Feet (3 962 mm)
Discharge Rate . . 22 Bushels Per Minute (0.8 m³)
Pedestal Height 55 Inches (1 372 mm)

Hydraulic Variable Speed Auger Feeder

Auger Housing Hopper Width 43 Inches
(1 092 mm)
Auger Diameter 10 Inches (254 mm)
Auger Length 92 Inches (2 337 mm)
Type Drive Hydraulic Variable Speed
Drive Speed 0 to 150 rpm

Hammer Mill

Rotor and Fan Speed .2600 rpm for 540-rpm PTO
2750 rpm for 1000-rpm PTO
Type Drive Six A-Section Powerband Belts
for 1000-rpm PTO Drive (or)
Eight A-Section Powerband
Belts for 540-rpm PTO Drive
Number of Hammers . . . 64 Four-Way Reversible
Throat Opening 20 Inches (508 mm)
Screen Area 703 Square Inches (18 m²)
Screens Available Fourteen with Hole
Diameters from 3/32 Inches to 1-1/2 Inches
(2.1 mm to 38 mm)

Tire Size 12.5L-16, 8 PR

Hay Attachment

Type of Drive Hydraulic Variable Speed
Drive Speed 0 to 70 rpm
Number of Knives 16
Number of Hammers 48

Scale Attachment

Weight 110 lbs. (50 kg)
Power Input 12 Volt DC
System Range 0-15000 lbs. (0-6804 kg)
Circuitry Micro Miniature,
Modular, Solid State

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