

# 11, 12, 22, 99, AND 122 COTTON PICKERS



JOHN DEERE

## SERVICE MANUAL 11, 12, 22, 99, AND 122 COTTON PICKERS

SM2052 (01JUN66) English

**SM2052 (01JUN66)**

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ENGLISH





## SERVICE MANUAL

# JOHN DEERE

11, 12, 22, 99 and 122

# COTTON PICKERS

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## TO THE JOHN DEERE SERVICEMAN

This service manual contains service information for John Deere 11, 12, 22, 99, and 122 Cotton Pickers. Included are complete instructions for removal, inspection, repair, assembly, and installation of the major components and assemblies of the cotton pickers.

This manual also contains brief description of the more complicated systems of the picker and tells how they operate. Dimensions of many new parts are given as an aid in determining when parts replacement is necessary. Tests and adjustments required to keep the picker operating efficiently are explained in detail.

This manual was planned and written for the service department; its place is in the shop. Use the manual whenever in doubt about correct maintenance procedures. Use it as a test book for training service department personnel, who are unfamiliar with John Deere Cotton Pickers.

Daily use of the Service Manual as a guide will reduce error and costly delay to a minimum and assure you the best in finished service work. In many instances your customer will have more confidence in your work when he sees you using the Service Manual. He will know you are following approved maintenance procedures and making the proper adjustments.

For complete service information for the 99 Cotton Picker the service manuals listed below are also required.

SM-2026	John Deere 92, 145, and 217 Power Units
SM-2053	John Deere 115, 165, and 248 Power Units
SM-2029	John Deere Electrical Systems
SM-2025	John Deere 720 Tractor
SM-2050	Power Steering for John Deere 2-Cylinder Tractors



# Section 10

# DESCRIPTION AND SPECIFICATIONS

10-5-1

## Group 5

## 11 COTTON PICKER

### DESCRIPTION

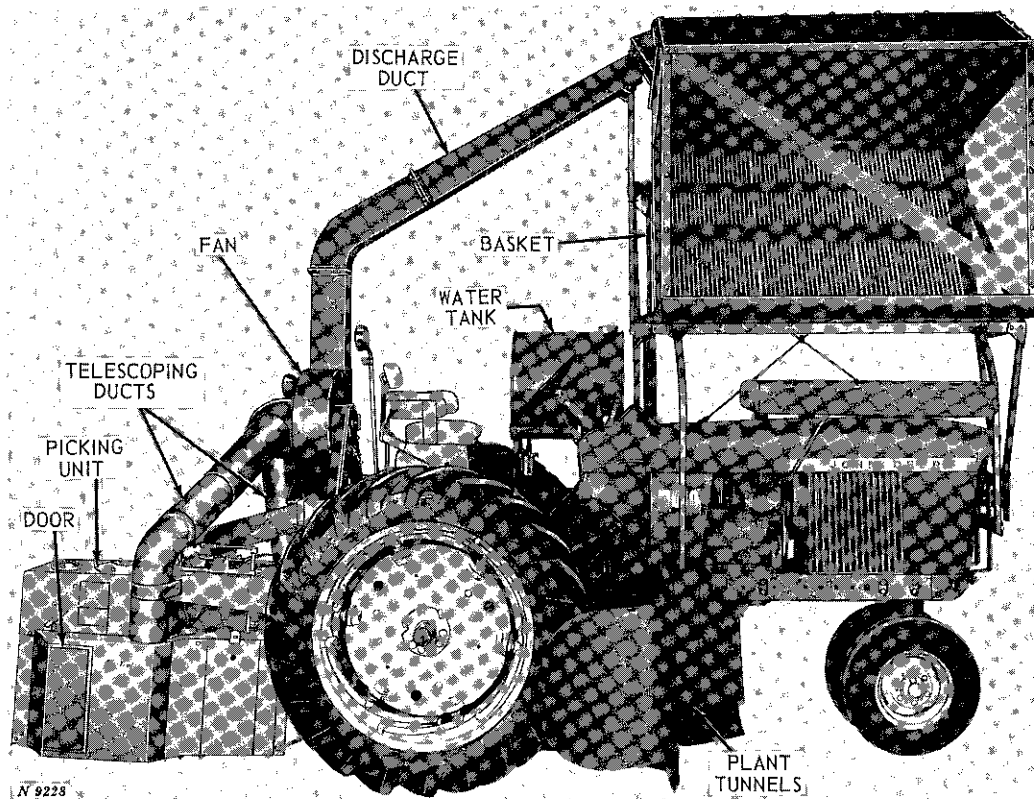


Fig. 10-5-1-11 Cotton Picker on 3010 Tractor

The 11 Cotton Picker is a one-row mounted machine designed for low acreage cotton growers. The picker mounts on the tractor so that the tractor's normal forward gears are used for picking operation.

The attaching and detaching of the picker can be done easily and quickly without any tractor conversions.

The picker consists of two basic elements:

1. One-row picking unit.
2. Fan delivery system and cotton basket.

#### PICKING UNIT

The picking unit is a ten-spindle-high picking unit with two 12-picker-bar drums, one for each side of the cotton row. The picker bars are cam controlled to position the spindles in the proper relationship to the cotton row and to the components in the picking unit.

The picking unit is gear-driven in such a manner that the speed of the picker drums is synchronized with the speed of picker forward travel. In other words the spindles have no forward or backward motion in relation to the cotton plant.

The unit contains two doffer assemblies to remove cotton from the spindles and two moistener column assemblies for cleaning the spindles prior to the spindle entry into the cotton row.

The picking unit is raised and lowered by the tractor rockshaft.

**FAN DELIVERY SYSTEM AND BASKET**

A powerful fan provides individual suction from each picker drum. The cotton is sucked out of the suction doors through pipes to the fan. Then the cotton is blown against cleaning grates in the basket.

The fan has spiral shaped blades so the cotton is handled with the least amount of damage to the seed.

The basket holds 600 pounds of seed cotton. A double-acting hydraulic cylinder raises and lowers the basket for dumping. The lid opens and closes automatically as the basket is raised and lowered.

**SPECIFICATIONS**

**PICKING UNIT**

No. of Picker Drums . . . . .	2
No. of Picker Bars:	
Front Drum (R.H.) . . . . .	12
Rear Drum (L.H.) . . . . .	12
No. of Spindles:	
Per Picker Bar . . . . .	10
Total (Unit) . . . . .	240

**PICKING UNIT SPEEDS**

Speeds given for 530 tractor equipped with 12.4-38 tires at 2.25 mph. Speeds for other tractors vary slightly.

Picker Drums . . . . .	103 rpm
Doffers . . . . .	1193 rpm
Spindles . . . . .	2334 rpm
Fan . . . . .	2429 rpm

**GROUND SPEEDS**

2010, 3010, and 4010 Tractors . . .	2.5 mph
430, and 420 Tractors . . . . .	2.0 mph
530, 630, 730, 520, 620, and 720	
Tractors . . . . .	2.25 mph
50 and 60 Tractors . . . . .	2.25 mph

**TRACTOR MOUNTINGS**

For John Deere 2010, 3010, 4010, 430, 530, 630, 730, 420, 520, 620, 720, 50, and 60 Tractors equipped for remote hydraulic cylinder operation and with rear rockshaft and either single or dual front wheels, 540 or 1000 rpm PTO. External speed changer cannot be used on PTO.

**CONTROLS**

Picking Unit Lift . . . . .	Tractor Rockshaft
Basket Lift . . . . .	One double acting Hydraulic Cylinder operated by Tractor Remote Cylinder Control Lever.

**CAPACITIES**

Cotton Basket . . . . .	600 lbs. of Seed Cotton
Water Supply Tank . . . . .	25 or 40 U.S. gals.

**DIMENSIONS (As mounted on 530 Tractor)**

Over-all Length . . . . .	16 ft.
Over-all Width . . . . .	9 ft. 2 in.

**HEIGHT**

Basket Lowered . . . . .	12 ft. 4 in.
Basket Raised . . . . .	16 ft. 4 in.
Basket Dumping Pivot Height . . .	9 ft. 11 in.

**WEIGHT**

Cotton Picker only (Does not include tractor)  
3100 lbs. approx.

## Group 10

# 12 COTTON PICKER

### DESCRIPTION

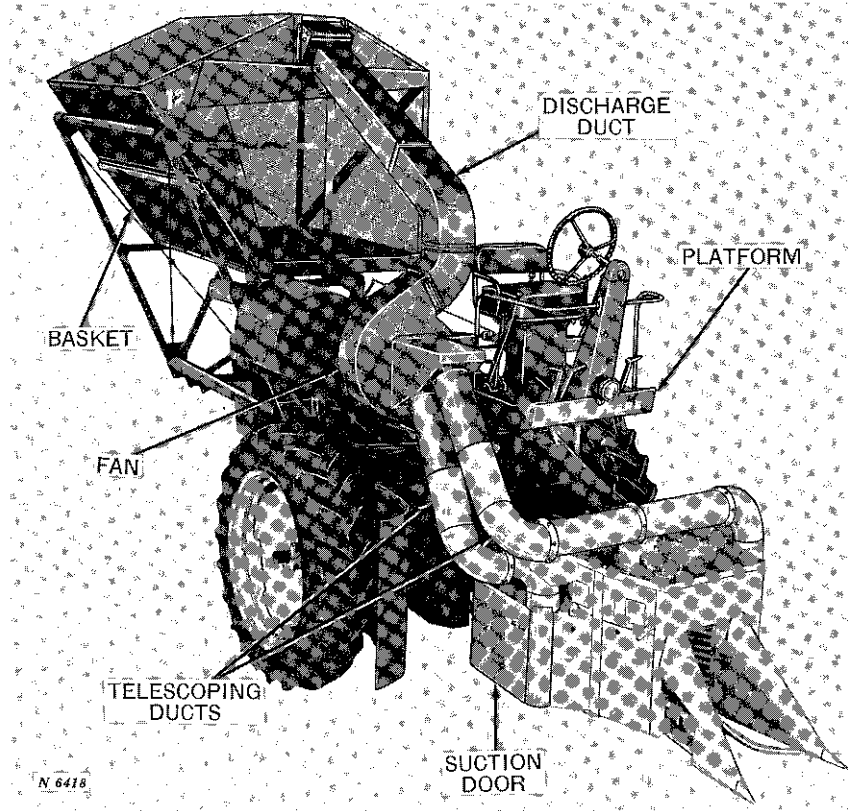


Fig. 10-10-1-12 Cotton Picker on 2010 Tractor

The 12 Cotton Picker is a one-row tractor mounted machine designed for low acreage cotton growers. The picker mounts on John Deere Tractors so that the tractor operates in reverse gear during picking operation. Transporting the picker can be done from either the tractor seat or operator's platform seat.

The cotton picker consists of three basic elements:

1. One-row picking unit.
2. Fan delivery system and basket.
3. Operator's platform and controls.

#### PICKING UNIT

The picking unit is a ten-spindle-high picking unit with two, 12-picker-bar drums, one for each side of the cotton row. The picker bars are cam controlled to position the spindles in the proper relation to the cotton row and to the components in the picking unit.

The picking unit is gear driven (power is transmitted from tractor PTO) in such a manner that the speed of the picker drums is synchronized with the speed of picker forward travel. In other words, the spindles have no forward or backward motion in relation to the cotton plant.

The picking unit is gear-driven in such a manner that the speed of the picker drums is synchronized with the speed of picker forward travel. In other words the spindles have no forward or backward motion in relation to the cotton plant.

The unit contains two doffer assemblies to remove cotton from the spindles and two moistener column assemblies for cleaning the spindles prior to the spindle entry into the cotton row.

The picking unit is raised and lowered by the tractor rockshaft.

FAN DELIVERY SYSTEM AND BASKET

A powerful fan provides individual suction from each picker drum. The cotton is sucked out of the suction doors through pipes to the fan. Then the cotton is blown against cleaning grates in the basket.

The fan has spiral shaped blades so the cotton is handled with the least amount of damage to the seed.

The basket holds 600 pounds of seed cotton. A double-acting hydraulic cylinder raises and lowers the basket for dumping. The lid opens and closes automatically as the basket is raised and lowered.

SPECIFICATIONS

PICKING UNIT

No. of Picker Drums . . . . .	2
No. of Picker Bars:	
Front Drum (R.H.) . . . . .	12
Rear Drum (L.H.) . . . . .	12
No. of Spindles:	
Per Picker Bar . . . . .	10
Total (Unit) . . . . .	240

PICKING UNIT SPEEDS

Speeds given for 530 tractor equipped with 12.4-38 tires at 2.25 mph. Speeds for other tractors vary slightly.

Picker Drums . . . . .	103 rpm
Doffers . . . . .	1193 rpm
Spindles . . . . .	2334 rpm
Fan . . . . .	2429 rpm

GROUND SPEEDS

2010, 3010, and 4010 Tractors . . .	2.5 mph
430, and 420 Tractors . . . . .	2.0 mph
530, 630, 730, 520, 620, and 720 Tractors . . . . .	2.25 mph
50 and 60 Tractors . . . . .	2.25 mph

TRACTOR MOUNTINGS

For John Deere 2010, 3010, 4010, 430, 530, 630, 730, 420, 520, 620, 720, 50, and 60 Tractors equipped for remote hydraulic cylinder operation and with rear rockshaft and either single or dual front wheels, 540 or 1000 rpm PTO. External speed changer cannot be used on PTO.

CONTROLS

Picking Unit Lift . . . . .	Tractor Rockshaft
Basket Lift . . . . .	One double acting Hydraulic Cylinder operated by Tractor Remote Cylinder Control Lever.

CAPACITIES

Cotton Basket . . . . .	600 lbs. of Seed Cotton
Water Supply Tank . . . . .	25 or 40 U.S. gals.

DIMENSIONS (As mounted on 530 Tractor)

Over-all Length . . . . .	16 ft.
Over-all Width . . . . .	9 ft. 2 in.

HEIGHT

Basket Lowered . . . . .	12 ft. 4 in.
Basket Raised . . . . .	16 ft. 4 in.
Basket Dumping Pivot Height . . .	9 ft. 11 in.

WEIGHT

Cotton Picker only (Does not include tractor) 3100 lbs. approx.

## Group 10

# 12 COTTON PICKER

### DESCRIPTION

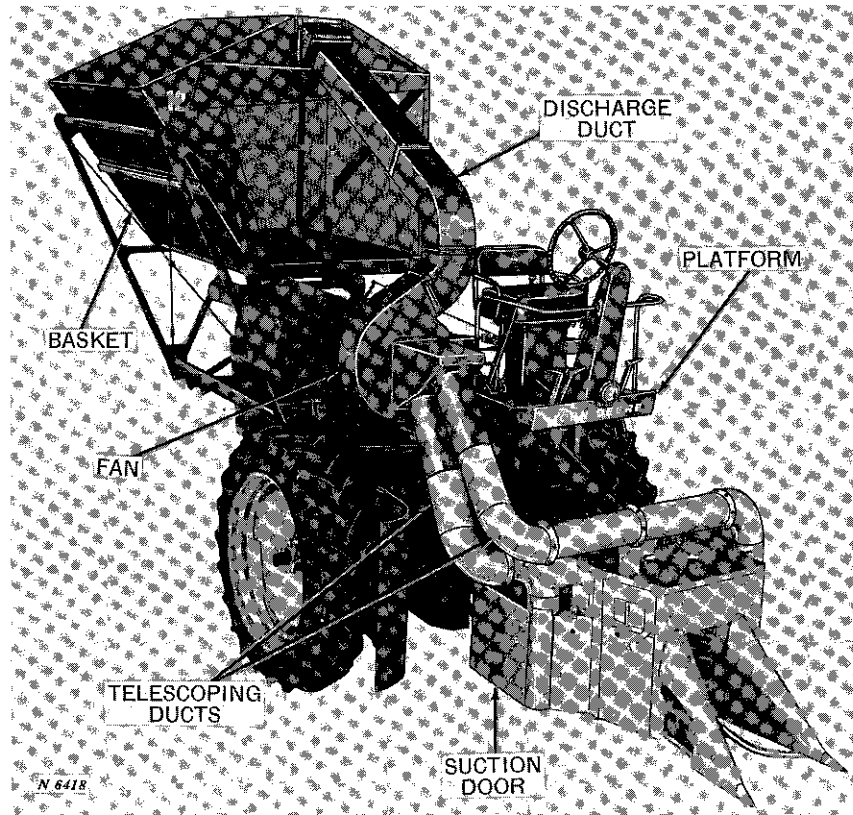


Fig. 10-10-1-12 Cotton Picker on 2010 Tractor

The 12 Cotton Picker is a one-row tractor mounted machine designed for low acreage cotton growers. The picker mounts on John Deere Tractors so that the tractor operates in reverse gear during picking operation. Transporting the picker can be done from either the tractor seat or operator's platform seat.

The cotton picker consists of three basic elements:

1. One-row picking unit.
2. Fan delivery system and basket.
3. Operator's platform and controls.

#### PICKING UNIT

The picking unit is a ten-spindle-high picking unit with two, 12-picker-bar drums, one for each side of the cotton row. The picker bars are cam controlled to position the spindles in the proper relation to the cotton row and to the components in the picking unit.

The picking unit is gear driven (power is transmitted from tractor PTO) in such a manner that the speed of the picker drums is synchronized with the speed of picker forward travel. In other words, the spindles have no forward or backward motion in relation to the cotton plant.



The unit contains two doffer assemblies to remove the cotton from spindles and two moistener column assemblies for cleaning the spindles prior to the spindle entry into the cotton row.

The picking unit is raised and lowered by the tractor rockshaft.

#### FAN DELIVERY SYSTEM AND BASKET

A powerful fan provides individual suction from each picker drum. The cotton is sucked out of the suction doors, through pipes to the fan. Then the cotton is blown against cleaning grates in the basket.

The fan has spiral-shaped blades so the cotton is handled with the least amount of damage to the cotton seed.

The basket holds 600 pounds of seed cotton. A double-acting hydraulic cylinder raises and lowers the basket for dumping. The lid opens and closes automatically as the basket is raised and lowered.

#### PLATFORM AND CONTROLS

The platform is located above the picking unit so the operator has maximum visibility of the picking operation.

All controls necessary for picking operation are located within easy reach from the operator's seat. The controls are connected by linkages to the tractor controls. The tractor engine is started and stopped from the tractor seat.

### SPECIFICATIONS

#### PICKING UNIT

No. of Picker Drums . . . . .	2
No. of Picker Bars:	
Front Drum (R.H.) . . . . .	12
Rear Drum (L.H.) . . . . .	12
No. of Spindles:	
Per Picker Bar . . . . .	10
Total (Unit) . . . . .	240
Doffer Assemblies (Unit) . . . . .	2
No. of Doffer Plates (per Assembly) . .	10
Moistener Column Assemblies (Unit) . .	2
No. of Moistener Pads (per Assembly) .	10

#### PICKING UNIT SPEEDS

Speeds given for 2010 Tractor equipped with 12.4-36 tires at 2.23 mph. Speeds for other tractors vary slightly

Picker Drums . . . . .	100 rpm
Doffers . . . . .	1225 rpm
Spindles . . . . .	2575 rpm
Fan . . . . .	2443 rpm

#### GROUND SPEEDS (Based on 2010 Tractor)

Picking Speed . . . . .	2.23 mph
Transport Speed . . . . .	8.97 mph
Reverse Speed . . . . .	2.00 mph

#### CAPACITIES

Cotton Basket . . . . .	600 lbs. of Seed Cotton
Water Supply Tank . . . . .	40 U.S. Gal.

#### DIMENSIONS (Mounted on 2010 Tractor)

Length . . . . .	17 ft. 4 in.
Width . . . . .	9 ft. 4 in.
Height:	
Basket Lowered . . . . .	12 ft. 0 in.
Basket Raised . . . . .	16 ft. 0 in.
Basket Dumping Pivot Height . .	9 ft. 7 in.

#### WEIGHT

Cotton Picker only (Does Not Include Tractor) 3175 lbs. approx.

#### TRACTOR MOUNTINGS

2010, 430, and 420, tractor with single or dual hydraulic system, single remote cylinder control with breakaway coupler. Single or dual front wheels, and 540, or 1000 rpm PTO. External speed changers cannot be used on PTO. Tire sizes recommended are shown on page 10-10-3.

3010 and 4010 Tractors with rear rockshaft, single or dual remote cylinder control with breakaway coupler. Single or dual front wheels and power take-off. Tire sizes recommended are shown on page 10-10-3.

530, 630, 730, 520, 620, 720, 50, and 60 Tractors with rear rockshaft, single or dual remote cylinder control, single or dual front wheels, 540 or 1000 rpm transmission or engine driven power take-off. External speed changers cannot be used on PTO. Tire sizes recommended are shown on page 10-10-3.



## Group 15

# 22 COTTON PICKER

### DESCRIPTION

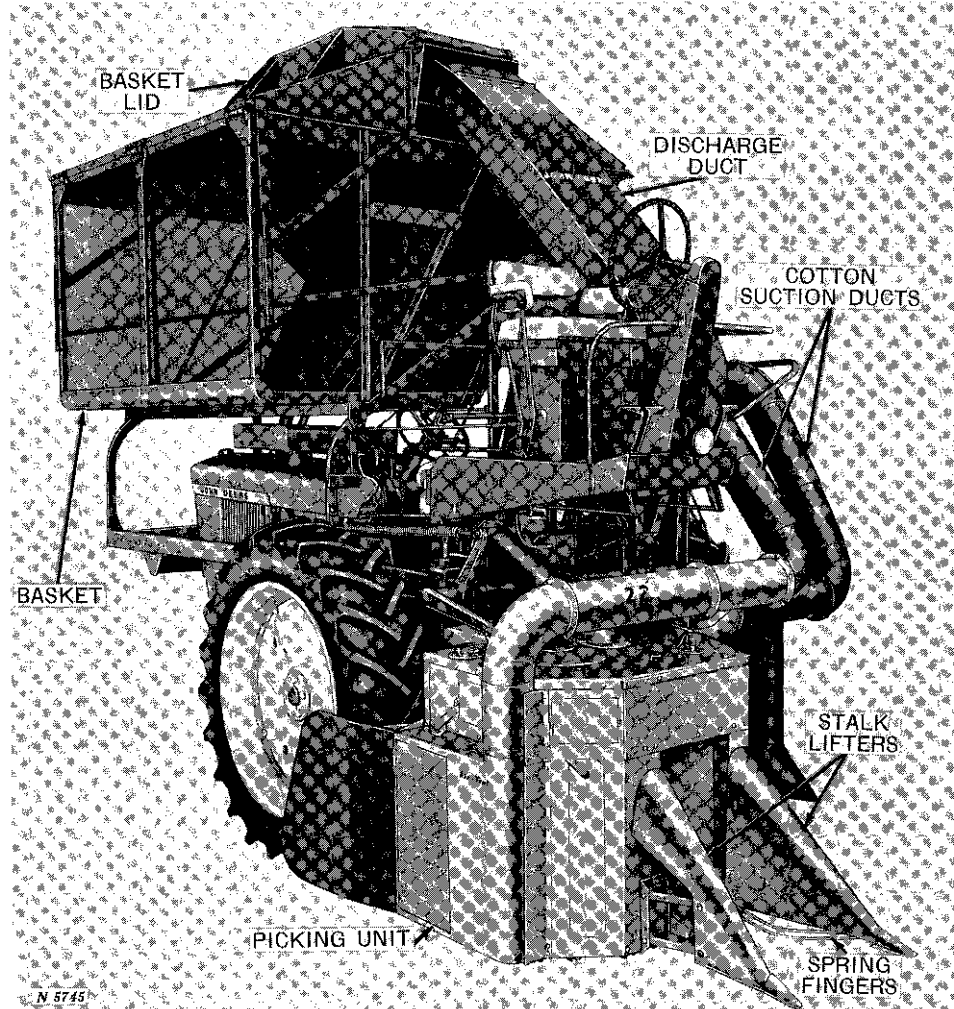


Fig. 10-15-1-22 Cotton Picker on 3010 Tractor

The 22 Cotton Picker is a one-row tractor-mounted machine. The picker is provided in two types of units; the low drum machine for short cotton and the high drum for tall cotton. The picker mounts on John Deere Tractors so that the tractor operates in reverse gear during picking operation. Transporting the picker can be done from either the tractor seat or operator's platform.

The cotton picker consists of three basic elements:

1. One-row picking unit.
2. Fan delivery system and basket.
3. Operator's platform and controls.

**PICKING UNIT**

The picking unit has two picker drums, one on each side of the cotton row. The front drum contains 16 picker bars and the rear drum contains 12 picker bars. On a low drum unit each picker bar has 14 spindles. On a high drum unit each picker bar has 20 spindles. The picker bars are cam-controlled to position the spindles in the proper relationship to the cotton row and to components in the picking unit.

The unit also contains two doffer assemblies to remove cotton from the spindles and two moistener column assemblies for cleaning the spindles prior to the spindle entry into the cotton row.

The picking unit is gear-driven (power is transmitted from tractor PTO) in such a manner that the speed of the picker drums is synchronized with the speed of picker forward travel. In other words, the spindles have no forward or backward motion in relation to the cotton plant. The picking unit is raised and lowered by the tractor rockshaft.

**FAN DELIVERY SYSTEM AND BASKET**

A powerful double fan provides individual suction from each picking drum. The cotton is sucked out of the suction doors and through pipes to the fan. Then the cotton is blown against cleaning grates in the basket.

The fan has spiral-shaped blades so the cotton is handled with the least amount of damage to the cotton seed.

The basket holds 1200 pounds of seed cotton. Two double-acting hydraulic cylinders raise and lower the basket for dumping. The lid opens and closes automatically as the basket is raised and lowered.

**PLATFORM AND CONTROLS**

The platform is located above the picking unit so that the operator has maximum visibility of the picking operation.

All controls necessary for picking operations are located within easy reach from the operator's seat. The controls are connected by linkages to the tractor controls. The tractor engine is started and stopped from the tractor seat.

**SPECIFICATIONS**

**PICKING UNIT**

No. of Picker Drums . . . . .	2
No. of Picker Bars:	
16-Bar Drum (Front) . . . . .	16
12-Bar Drum (Rear) . . . . .	12
No. of Spindles Per Picker Bar:	
High Drum . . . . .	20
Low Drum . . . . .	14
Total No. of Spindles (Unit)	
High Drum . . . . .	560
Low Drum . . . . .	392
Doffer Assemblies (Unit) . . . . .	2
No. of Doffer Plates (per assembly)	
High Drum . . . . .	20
Low Drum . . . . .	14
Moistener Column Assemblies (Unit) . . .	2
No. of Moistener Pads (per assembly)	
High Drum . . . . .	20
Low Drum . . . . .	14

**PICKING UNIT SPEEDS**

Speeds given are for 3010 tractor at 2.5 mph equipped with 13.9 x 36 tires. Speeds will vary slightly for other tractors.

<b>Picker Drums:</b>	
16-bar (Front) . . . . .	87 rpm
12-bar (Rear) . . . . .	115 rpm
Spindles . . . . .	2760 rpm

<b>Doffers:</b>	
16-bar (Front) . . . . .	1320 rpm
12-bar (Rear) . . . . .	1380 rpm
Fan . . . . .	1840 rpm

**GROUND SPEEDS (Based on 3010 tractor)**

Picking Speed . . . . .	2.50 mph
Transport Speed . . . . .	12.0 mph
Reverse Speed . . . . .	2.0 mph

**CAPACITIES**

Cotton Basket . . . . .	1200 lbs. of Seed Cotton
Water Supply Tank . . . . .	40 U.S. Gal.

## DIMENSIONS (Mounted on 3010 Tractor)

Length . . . . .	18 ft.-8 in.
Width . . . . .	9 ft.-7 in.
Height:	
High Drum	
Basket Lowered . . . . .	14 ft.-10 in.
Basket Raised. . . . .	18 ft.-7 in.
Low Drum	
Basket Lowered . . . . .	13 ft.-10 in.
Basket Raised. . . . .	17 ft.-7 in.

## TRACTOR MOUNTINGS

\*2010 Tractor with single or dual hydraulic system, single remote cylinder control with breakaway couplings, single or dual front wheels, power take-off and power steering. Tire sizes recommended are shown on page 10-15-4.

2510, 3010, 3020, 4010 and 4020 Tractors with rear rockshaft, single or dual remote cylinder control valve with breakaway couplings. Single or dual front wheels and power take-off. Tire sizes recommended are shown on page 10-15-4.

\*530, 630, 730, \*520, 620, 720, \*50, 60, 70, \*A, and \*G tractors with rear rockshaft, single or dual remote cylinder control, single or dual front wheels, 540 or 1000 rpm transmission driven or engine drive power take-off. Tire sizes recommended are shown on page 10-15-4.

*\*Tractors limited for use with low-drum pickers only.*

**TRACTOR TIRE SIZES**

Size	Ply Rating	Size	Ply Rating	Size	Ply Rating
<b>2010 Tractor</b>		<b>4020 Tractor</b>		<b>50 Tractor</b>	
6.00 x 14	4	6.00 x 16	6	5.50 x 16	4
6.00 x 14	6	7.50 x 15	6	6.50 x 16	6
6.50 x 16	8	7.50 x 16	10	6.50 x 16	8
9.00 x 10	8	11.00 x 12	12	9.00 x 10	8
12.4 x 36	6	15.5 x 38	6	11 x 38	6
13.9 x 36	6	15.5 x 38 C & R	6	11 x 38 C & R	6
		16.9 x 34	6	11 x 42	6
		18.4 x 34	6		
		18.4 x 34 C & R	6	<b>60 Tractor</b>	
<b>2510 Tractor</b>		<b>530 and 520 Tractors</b>		6.00 x 16	4
6.00 x 16	6	5.50 x 16	4	6.00 x 16	6
7.50 x 16	10	6.00 x 16	4	7.50 x 16	8
9.00 x 10	8	6.00 x 16	6	9.00 x 10	8
13.6 x 38	6	6.50 x 16	6	11 x 42	6
13.6 x 38 C & R	6	6.50 x 16	8	12 x 38	6
		9.00 x 10	8	12 x 38 C & R	6
		12.4 x 36	6	13 x 38	6
		12.4 x 38	6		
		11 x 38 C & R	6	<b>70 Tractor</b>	
<b>3010 Tractor</b>		<b>630 and 620 Tractors</b>		6.00 x 16	4
6.00 x 14	6	6.00 x 16	4	6.00 x 16	6
6.00 x 16	6	6.00 x 16	6	7.50 x 16	10
7.50 x 15	6	7.50 x 15	6	12 x 38	6
6.50 x 16	8	7.50 x 16	8	12 x 38 C & R	6
7.50 x 16	10	9.00 x 10	8	13 x 38	6
9.00 x 10	8	9.00 x 10	8	13 x 38 C & R	6
11.00 x 12	12	11.00 x 12	12		
13.9 x 36	6	13.6 x 38	6	<b>A Tractor</b>	
13.6 x 38	6	15.5 x 38	6	5.50 x 16	4
15.5 x 38	6	12 x 38 C & R	6	9.00 x 10	8
13.6 x 38 C & R	6			11 x 42	6
15.5 x 38 C & R	6	<b>730 and 720 Tractors</b>		12 x 38	6
15.5 x 38 C & R	6	6.00 x 16	4	12 x 38 C & R	6
		6.00 x 16	6		
<b>3020 Tractor</b>		7.50 x 15	6	<b>G Tractor</b>	
6.00 x 16	6	7.50 x 16	10	6.00 x 16	4
7.50 x 15	6	11.00 x 12	12	6.00 x 16	6
7.50 x 16	10	13.6 x 38	6	6.00 x 16	8
11.00 x 12	12	15.5 x 38	6	7.50 x 16	8
13.6 x 38	6	12 x 38 C & R	6	12 x 38	6
15.5 x 38	6	13 x 38 C & R	6	12 x 38 C & R	6
13.6 x 38 C & R	6			13 x 38	6
15.5 x 38 C & R	6			13 x 38 C & R	6
16.9 x 38	6				
		<b>4010 Tractor</b>			
		6.00 x 16	6		
		7.50 x 15	6		
		7.50 x 16	10		
		11.00 x 12	12		
		13.6 x 38	6		
		15.5 x 38	6		
		15.5 x 38 C & R	6		

## Group 20

# 122 COTTON PICKER

### DESCRIPTION

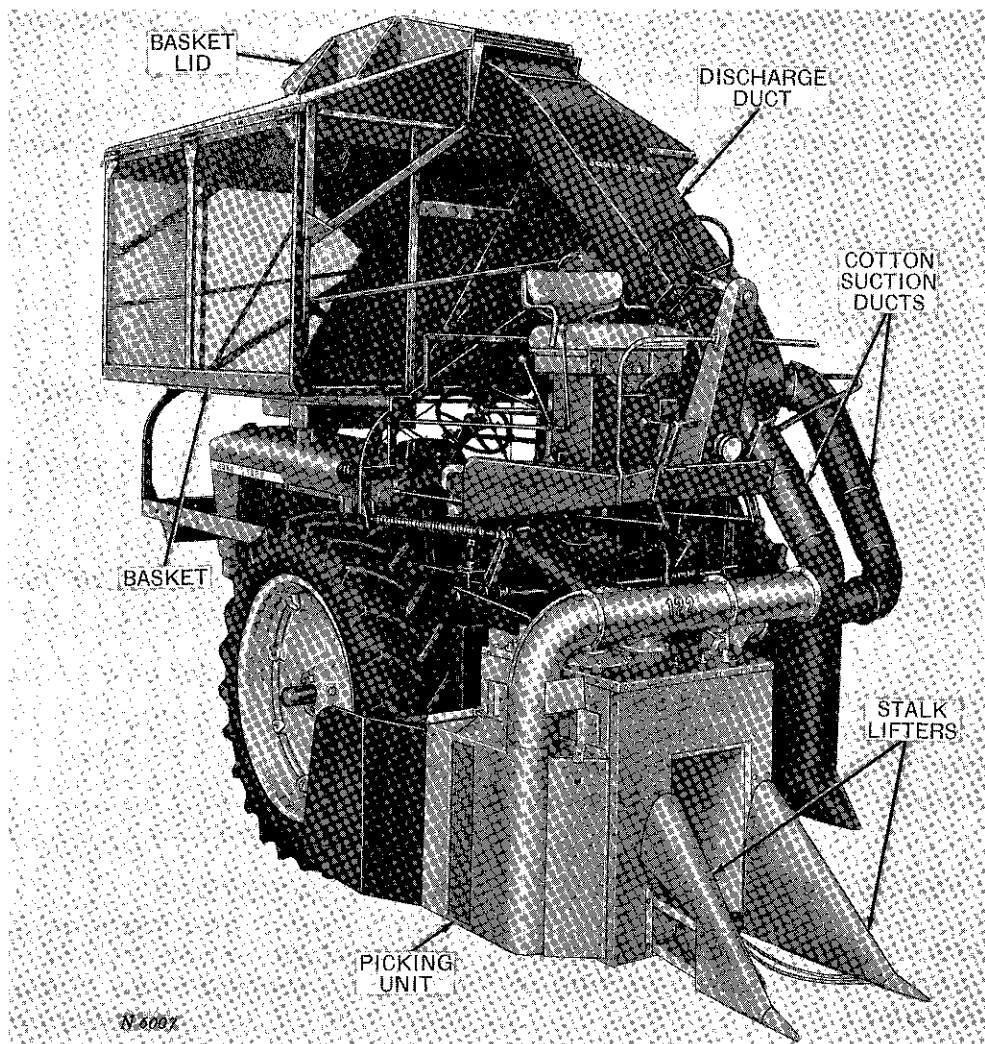


Fig. 10-20-1—122 Cotton Picker on 3010 Tractor

The 122 Cotton Picker is a one-row tractor-mounted machine. The picker mounts on John Deere Tractors so that the tractor operates in reverse gear during picking operation. Transporting the picker can be done from either the tractor seat or operator's platform seat.

The cotton picker consists of three basic elements:

1. One-row picking unit.
2. Fan delivery system and basket.
3. Operator's platform and controls.

#### PICKING UNIT

The picking unit is a fourteen spindle high unit with two 12-picker bar drums, one for each side of the cotton row. The picker bars are cam-controlled to position the spindles in the proper relationship to the cotton row and to the components of the picking unit.

The unit contains two doffer assemblies to remove cotton from the spindles and two moistener column assemblies for cleaning the spindles prior to the spindle entry into the cotton row.

The picking unit is gear driven (power is transmitted from tractor PTO) in such a manner that the speed of the picker drums is synchronized with the speed of picker forward travel. In other words, the spindles have no forward or backward motion in relation to the cotton plant.

The picking unit is raised and lowered by the tractor rockshaft.

**FAN DELIVERY SYSTEM AND BASKET**

A powerful double fan provides individual suction from each picking drum. The cotton is sucked out of the suction doors and through pipes to the fan. Then the cotton is blown against cleaning grates in the basket lid.

The fan has spiral-shaped blades so the cotton is handled with the least amount of damage to the seed cotton.

The basket holds 1200 pounds of seed cotton. Two double-acting hydraulic cylinders raise and lower the basket for dumping. The lid opens and closes automatically as the basket is raised and lowered.

**PLATFORM AND CONTROLS**

The platform is located above the picking unit so that the operator has maximum visibility of the picking operation.

All controls necessary for picking operations are located within easy reach from the operator's seat. The controls are connected by linkages to the tractor controls. The tractor engine is started and stopped from the tractor seat.

**SPECIFICATIONS**

**PICKING UNIT**

No. of Picker Drums . . . . .	2
No. of Picker Bars:	
Front Drum (R.H.) . . . . .	12
Rear Drum (L.H.) . . . . .	12

No. of Spindles	
Per Picker Bar . . . . .	14
Total (Unit) . . . . .	336
Doffer Assemblies (Unit) . . . . .	2
No. of Doffer Plates (per assembly) . . . . .	14
Moistener Column Assemblies . . . . .	2
No. of Moistener Pads (per assembly) . . . . .	14

**PICKING UNIT SPEEDS**

Speeds given for 3010 Tractor at 2.5 mph equipped with 13.9 x 36 tires. Speeds vary slightly for other tractors.

Picker Drums . . . . .	112 rpm
Spindles . . . . .	2883 rpm
Doffers . . . . .	1398 rpm
Fans . . . . .	1840 rpm

**GROUND SPEEDS (Based on 3010 Tractor)**

Picking Speed . . . . .	2.50 mph
Transport Speed . . . . .	12.0 mph
Reverse Speed . . . . .	2.0 mph

**CAPACITIES**

Cotton Basket . . . . .	1200 lbs. Seed Cotton
Water Supply Tank . . . . .	40 U.S. Gal.

**DIMENSIONS (Mounted on 3010 Tractor)**

Length . . . . .	18 ft. 8 in.
Width . . . . .	9 ft. 7 in.
Height:	
Basket Lowered . . . . .	13 ft. 10 in.
Basket Raised . . . . .	17 ft. 7 in.

**TRACTOR MOUNTINGS**

2010 Tractor with single or dual hydraulic system, single remote cylinder control with breakaway couplings, single or dual front wheels, power take-off and power steering. Tire sizes recommended are shown on page 10-15-4.

2510, 3010, 3020, 4010, and 4020 Tractors with rear rockshaft, single or dual remote cylinder control valve with breakaway couplings. Single or dual front wheels and power take-off. Tire sizes recommended are on page 10-15-4.

530, 630, 730, 520, 620, 720, 50, 60, 70, A, and G Tractors with rear rockshaft, single or dual remote cylinder control, single or dual front wheels, 540 or 1000 rpm transmission driven or engine drive power take-off. Tire sizes recommended are shown on page 10-15-4.





## Section 20

# PARTS SPECIFICATIONS

### Group 5

## SPECIFICATIONS

#### PURPOSE

This section contains specifications for the major part of the cotton picker. The dimensions given for new parts are intended to aid the serviceman in determining when part replacement is necessary.

Also included in this section is the torque requirement for assembling one part to another.

The new part information shown here should never be used as the only reason for part replacement. Satisfactory performance during the future service life of the cotton picker should be the main consideration. However, worn parts usually require more attention than do new parts.

#### PICKING UNIT

##### SPINDLES

End play, inboard bushing to back of spindle gear . . . . .	0.0100 to 0.0250 in.
Spindle barrel . . . . .	0.5616 to 0.5630 in.
I.D. of bushings after broaching . . . . .	0.5638 to 0.5655 in.

##### PICKER BAR

Maximum clearance, picker bar journal to drum head bearing cap . . . . .	0.0250 in.
O.D. of bearing journal . . . . .	1.6780 to 1.6820 in.
I.D. of bar for needle bearings . . . . .	1.1280 to 1.1310 in.
I.D. of bar for sealed bearing at top of spindle drive shaft . . . . .	1.3779 to 1.3789 in.
O.D. of follower roller . . . . .	1.4990 to 1.5000 in.
O.D. of picker bar stud . . . . .	0.7470 to 0.7490 in.
Torque, spindle nut to picker bar . . . . .	40 to 70 ft-lbs
Torque, picker bar stud to drum . . . . .	15 to 20 ft-lbs
Torque, picker bar bearing cap to drum head . . . . .	50 to 60 ft-lbs
Spindle plane, one picker bar to another . . . . .	0.0000 to 0.0150 in.

##### PICKER DRUM

I.D., lower end of drum . . . . .	11 and 12 Cotton Picker . . . . .	1.3120 to 1.3130 in.
	122 Cotton Picker . . . . .	1.4360 to 1.4380 in.
O.D. of picker drum stud . . . . .	22 and 99 Cotton Picker . . . . .	2.4409 to 2.4419 in.
	11, 12 and 122 Cotton Picker . . . . .	0.9985 to 0.9995 in.
Torque, picker drum stud to frame . . . . .	22 and 99 Cotton Picker . . . . .	1.1804 to 1.1814 in.
		25 to 30 ft-lbs
Torque, upper drum to drum head . . . . .		100 to 110 ft-lbs

**\*DRUM DRIVE SHAFT AND SUN GEAR**

O.D. of shaft for drum upper bearing . . . . .	1.3771 to 1.3781 in.
O.D. of shaft for sun gear needle bearing . . . . .	1.7490 to 1.7500 in.
O.D. of shaft for sun gear drive gear bearing . . . . .	1.5739 to 1.5749 in.
Dimension, bottom of needle bearing to bottom of sun gear housing . . . . .	5/16 in.
I.D. of drum gear hub for release clutch . . . . .	2.2450 to 2.2480 in.
O.D. of release clutch hub . . . . .	2.2520 to 2.2540 in.
Torque, sun gear to housing . . . . .	35 to 40 ft-lbs
Torque, sun gear drive gear to housing . . . . .	25 to 30 ft-lbs
Torque, upper bearing housing to unit . . . . .	20 to 25 ft-lbs
Torque, large nut on top of drum drive shaft . . . . .	120 to 180 ft-lbs

*\*The drum drive shaft is an integral part of picker drum on 11, 12 and 122 Cotton Pickers.*

**DRUM RELEASE CLUTCH**

Tension spring, overall length . . . . .	4-5/8 in.
O.D. of release clutch hub . . . . .	2.2520 to 2.2540 in.

**DRUM SLIP CLUTCH**

I.D. of bushing in drum gear idler gear . . . . .	1.2510 to 1.2540 in.
O.D. of idler shaft in bushing area . . . . .	1.2480 to 1.2490 in.
Overall length of spring without tension . . . . .	2.2500 in.
Tension, spring, overall length . . . . .	Fixed length—no adjustment
Torque, lock nut on idler shaft . . . . .	75 to 100 ft-lbs

**IDLER GEARS**

I.D. of bushing in drum gear idler gear (drum slip clutch) . . . . .	1.2510 to 1.2540 in.
O.D. of idler shaft for idler gear bushing (drum slip clutch) . . . . .	1.2480 to 1.2490 in.
Torque, bearing housing to unit . . . . .	12 to 18 ft-lbs
Torque, idler gear cap screw (12 and 122 Cotton Picker without drum slip clutch) . . . . .	130 to 170 ft-lbs

**CAM**

Width of track . . . . .	1.5100 to 1.5200 in.
Torque, cam to unit . . . . .	35 to 40 ft-lbs

**DOFFER**

Shaft flange face run-out, maximum . . . . .	0.0005 in.
Doffer plate spacing on shaft . . . . .	1-5/8 in.
Doffer plate spacing tolerance after grinding (total accumulated) . . . . .	0.0000 to 0.0070 in.
Torque, slotted nut at bottom of doffer . . . . .	100 to 150 ft-lbs

**DOFFER STUB SHAFT**

Stub shaft flange run-out, maximum . . . . .	0.0005 in.
Torque, slotted nut at top of stub shaft . . . . .	100 to 150 ft-lbs

## PICKING UNIT GEAR HOUSING

Vertical shaft bearing adjustment . . . . .	No end play while shaft turns freely
Torque, slotted nut on front end of long horizontal shaft . . . . .	100 ft-lbs less one slot of nut
Horizontal shaft bearing adjustment . . . . .	No end play while shaft turns freely
Bevel gear backlash . . . . .	0.0080 to 0.0120 in.
Torque, gear housing to unit . . . . .	50 to 60 ft-lbs

## TRANSMISSION

## DIFFERENTIAL

Thrust washer thickness . . . . .	0.058 to 0.062 in.
O.D. of pinion pin (enclosed type differential) . . . . .	0.8585 to 0.8600 in.
Torque, differential housing to ring gear assembly (enclosed type differential) . . . . .	35 to 40 ft-lbs
O.D. of pinion pin (open type differential) . . . . .	1.1045 to 1.1055 in.
Torque, bearing housing to transmission case . . . . .	50 to 55 ft-lbs
Differential shaft end play . . . . .	0.0020 to 0.0050 in.

## GEARS, SHAFTS AND SHIFTING RAILS

Shifting fork pad width (high-low shifter) . . . . .	0.2480 to 0.2540 in.
Shifting fork pad width (all other shifters) . . . . .	0.2450 to 0.2550 in.
Shaft end play; transmission drive, countershafts, differential drive, fan drive, picking unit drive . . . . .	0.0020 to 0.0050 in.
Input shaft bearing preload (rolling torque) . . . . .	1 to 2 ft-lbs
Spiral bevel gear backlash . . . . .	0.0050 to 0.0070 in.
Torque, all shaft bearing caps to housing . . . . .	50 to 55 ft-lbs
Torque, spiral bevel gear and fan drive gear to transmission drive shaft hub . . . . .	35 to 40 ft-lbs
Torque, picking unit drive sheave to shaft . . . . .	80 to 100 ft-lbs
Torque, universal joint to input shaft . . . . .	90 to 100 ft-lbs

## FINAL DRIVE

Pinion shaft end play . . . . .	0.0020 to 0.0050 in.
Torque, pinion shaft end plate to housing . . . . .	50 to 55 ft-lbs
Torque, axle slotted nut . . . . .	*45 ft-lbs
Torque, housing to mounting pad . . . . .	100 to 115 ft-lbs
Torque, wheel to axle . . . . .	150 ft-lbs

*\*If original bearings are reinstalled, torque slotted nut to 15 ft-lbs.*

## FAN

Torque, rotor to shaft . . . . .	100 to 130 ft-lbs
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## GUIDE WHEEL

Torque, yoke to pedestal . . . . .	225 to 250 ft-lbs
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## MAIN DRIVE SHAFT

Torque, U-bolt to universal joint half . . . . .	14 to 17 ft-lbs
Torque, cap screws to universal joint connection . . . . .	15 to 18 ft-lbs

### HYDRAULIC SYSTEM

#### CYLINDERS

Torque, piston to rod . . . . . 150 ft-lbs

#### CONTROL VALVE

Torque, cap screws, end plate to port plate . . . . . 12 ft-lbs

#### CESSNA PUMP

Torque, cap screws, rear plate to body . . . . . 25 ft-lbs

#### HYDRECO PUMP

Torque, cap screws, cover to body . . . . . 45 to 60 ft-lbs

### ELECTRICAL SYSTEM

#### BATTERIES

For gasoline and LP-gas engines . . . . . Heavy duty-type, high electrolyte level, 6-volt, Group I, 100 ampere hours minimum, rubber case with anti-leak caps. Dimensions: 9-1/8 inches long, 7-1/8 inches wide, 9-3/8 inches high over terminals.

For diesel engine . . . . . 90 plate, high electrolyte level, SAE 9H9 agricultural type, 12-volt, AABM group symbol 30HS, 91 ampere hours minimum, rubber case with anti-leak caps. Dimensions: 13-1/2 inches long, 6-3/4 inches wide, 9-1/4 inches high over terminals.

#### FUSES

In instrument panel . . . . . AGC 20 ampere  
 In wiring harness (front of engine) . . . . . \*AGC 30 ampere

*\*Pickers with fuse receptacle measuring 1/4 x 1-7/16 inches require the use of SFE 30 ampere fuse.*

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## Group 25

# 99 COTTON PICKER

### DESCRIPTION

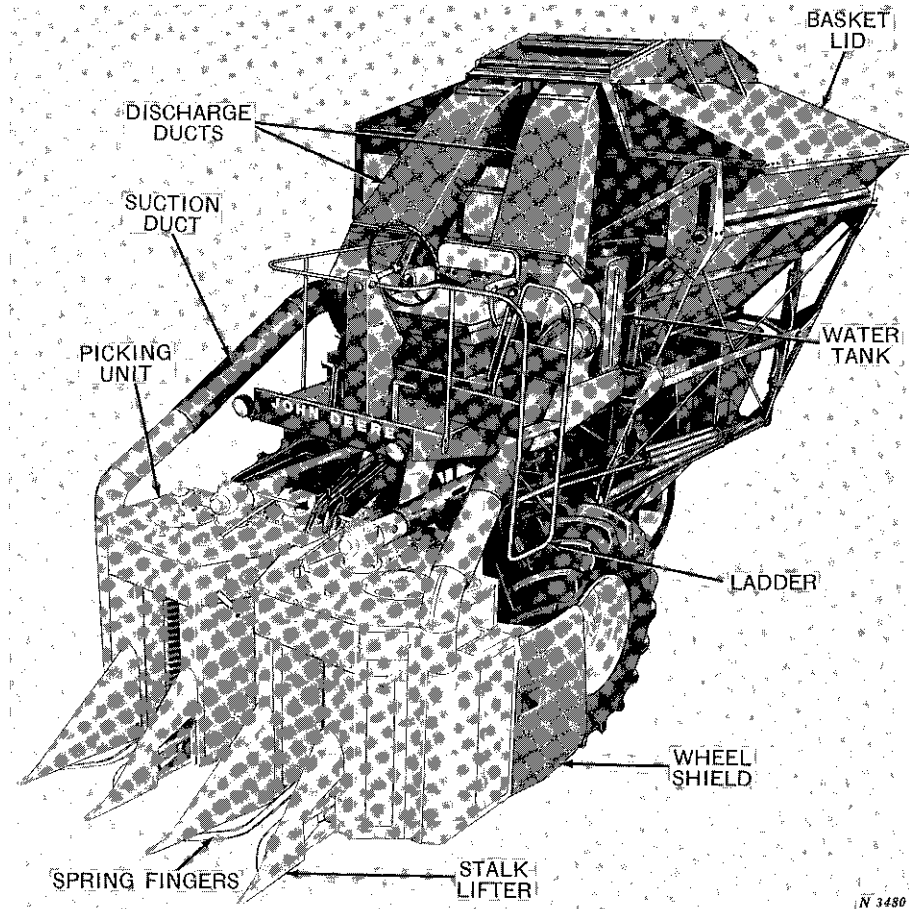


Fig. 10-25-1-99 Cotton Picker

The 99 Cotton Picker is a two-row, self-propelled machine. The machine is provided in two types of picking units and three different types of engines. A low drum unit is generally used for low growing cotton, while the high drum unit is used in high growing cotton. A gasoline, LP-Gas, or diesel engine is the source of power in the 99 Cotton Picker.

The cotton picker consists of four basic elements which are described briefly:

1. Picking units
2. Fan delivery system and basket
3. Operator's platform and controls
4. Propelling mechanism

#### PICKING UNITS

The two picking units, one for each row, have two picker drums each making it possible to pick from each side of the row at once. The front drum contains 16 picker bars and the rear drum contains 12 picker bars. Each picker bar has 14 spindles on a low drum unit or 20 spindles on a high drum unit. The picker bars are cam-con-

trolled to position the spindles in the proper relationship to the cotton row and to components of the picking unit.

The units contain two doffer assemblies each to remove cotton from the spindles and two moistener columns each for cleaning the spindles, prior to the spindle entry into the cotton row.

The picking units are gear driven in such a manner that the speed of the picker drums is synchronized with the speed of picker forward travel. In other words, the spindles have no forward or backward motion in relation to the cotton plant.

Both picking units are identical in function. However, the main difference is the location of the picking assemblies. The 16-bar drums are both on the outside in relation to the cotton row and the 12-bar drums are next to the center. Thus, the 16-bar drum on the right-hand unit is to the right of its cotton row while the 16-bar drum on the left-hand unit is to the left of its row.

The picking units are raised and lowered hydraulically by two single-acting cylinders. The units may be controlled individually or simultaneously depending upon how the hydraulic system is set to function.

FAN DELIVERY SYSTEM AND BASKET

Two powerful double fans provide individual suction from each of the four picking drums. The cotton is sucked out of the suction doors and through the pipes to the fans. Then the cotton is blown through the discharge ducts against cleaning grates in the basket lid.

The fan has spiral-shaped blades so the cotton is handled with the least amount of damage to the seed cotton.

The cotton basket holds 1600 pounds of seed cotton or if equipped with extensions, 2100 pounds of seed cotton. Two double-acting hydraulic cylinders raise and lower the basket. If the basket is equipped with high-lift mechanism, the basket dumping pivot is raised 10 inches. The basket lid opens and closes automatically when the basket is raised and lowered.

PLATFORM AND CONTROLS

The platform is located above the picking units so that the operator has maximum visibility of the picking operations.

All controls are located within easy reach from the operator's seat.

PROPELLING MECHANISM

The cotton picker is powered by a six-cylinder gasoline, LP-Gas, or diesel engine. The power is transmitted through a drive shaft to the transmission. The transmission divides the power to propel the drive wheels, picking units, and fans. The transmission contains facilities for four forward and one reverse ground speeds and two speeds for driving the picking units. The disk type brakes are on the outside of the transmission housing.

SPECIFICATIONS

PICKING UNIT

No. of Units . . . . .	2
No. of Picking Drums . . . . .	4
No. of Picker Bars:	
Front Drum (16-Bar) . . . . .	16
Rear Drum (12-Bar) . . . . .	12
Total per Unit . . . . .	28
Total per Picker . . . . .	56
No. of Spindles per Picker Bar:	
Low Drum . . . . .	14
High Drum . . . . .	20
Per Unit	
Low Drum . . . . .	392
High Drum . . . . .	560
Per Picker	
Low Drum . . . . .	784
High Drum . . . . .	1120
Doffer Assemblies . . . . .	
No. of doffer plates (per assembly):	
Low Drum . . . . .	14
High Drum . . . . .	20
Moistener Column Assemblies . . . . .	
No. of Moistener Pads (per assembly):	
Low Drum . . . . .	14
High Drum . . . . .	20

**PICKING UNIT SPEEDS**

(All speeds determined with engine operating at 2500 rpm, rated speed under field load.)

<b>Front Drum (16-Bar)</b>	
Low Range . . . . .	69.4 rpm
High Range . . . . .	92.4 rpm
<b>Rear Drum (12-Bar)</b>	
Low Range . . . . .	92.5 rpm
High Range . . . . .	123.1 rpm
<b>Doffer</b>	
<b>Front Drum (16-Bar)</b>	
Low Range . . . . .	1232 rpm
High Range . . . . .	1645 rpm
<b>Rear Drum (12-Bar)</b>	
Low Range . . . . .	1250 rpm
High Range . . . . .	1670 rpm

**SPINDLES**

<b>Front Drum (16-Bar)</b>	
Low Range . . . . .	2160 rpm
High Range . . . . .	2875 rpm
<b>Rear Drum (12-Bar)</b>	
Low Range . . . . .	2100 rpm
High Range . . . . .	2800 rpm

**GROUND SPEEDS (Full Throttle)**

<b>Picking Speeds</b>	
1st Gear . . . . .	2.1 mph
2nd Gear . . . . .	2.7 mph
<b>Transport Speeds</b>	
3rd Gear . . . . .	8.3 mph
4th Gear . . . . .	11.0 mph
Reverse Speed . . . . .	3.2 mph

**CAPACITIES**

<b>Cotton Basket</b>	
Regular . . . . .	1600 lbs. Seed Cotton
With Basket Extension . . . . .	2100 lbs. Seed Cotton
<b>Water Supply Tank . . . . .</b>	<b>67 U.S. Gal.</b>
(64 U.S. Gal. serial 99L-1302 and Up and 99H-3654 and Up)	
<b>Fuel Tank</b>	
Gasoline and Diesel . . . . .	33 U.S. Gal.
LP-Gas (85% Full) . . . . .	41 U.S. Gal.
<b>Hydraulic System</b>	
Regular . . . . .	13 U.S. Qts.
With High Lift Basket . . . . .	15 U.S. Qts.
<b>Cooling System</b>	
Gasoline . . . . .	6-1/2 U.S. Gal.
LP-Gas . . . . .	7 U.S. Gal.
Diesel . . . . .	6 U.S. Gal.
<b>Engine Crankcase (including oil filter) . . . . .</b>	<b>7 U.S. Qts.</b>

**WEIGHT (Approximate)**

High Drum . . . . .	12,055 lbs.
Low Drum . . . . .	11,430 lbs.

**DIMENSIONS**

Length . . . . .	19 ft. 8 in.
Width . . . . .	9 ft. 11 in.
<b>Height (Basket Lowered)</b>	
Serial 99L-101 to 99L-1301; 99H-101 to 99H-3653	
Regular . . . . .	13 ft. 2 in.
With Extension . . . . .	14 ft. 5 in.
Serial 99L-1302 and Up; 99H-3654 and Up	
Regular . . . . .	13 ft. 6-1/2 in.
With Extension . . . . .	14 ft. 9-1/2 in.
<b>Tread, Center to Center of Tires . . . . .</b>	<b>78-1/8 in.</b>
<b>Wheelbase . . . . .</b>	<b>109 in.</b>

**GROUND CLEARANCE**

Under Main Axle . . . . .	34 in.
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**TIRES**

<b>Front Drive Wheels . . . . .</b>	<b>18.4-26, 6 or 10 ply rating, Bar or Low Profile Tread. 18.4-26, 6-ply rating Cane and Rice Tread.</b>
<b>Rear Guide Wheel . . . . .</b>	<b>7.50-20, 10-ply rating Triple Rib</b>

**ENGINE**

<b>Make . . . . .</b>	<b>John Deere</b>
<b>Model and Type</b>	
NA 217 G — Gasoline	
NA 217 L — LP-Gas	
NA 248 D — Diesel	
NB 217 G — Gasoline	
NB 217 L — LP-Gas	
<b>Engine Speeds</b>	
Fast Idle (no load) . . . . .	2600 rpm Gasoline and LP-Gas
	2650 rpm Diesel
Rated (under field load) . . . . .	2500 rpm All Engines
Slow Idle (no load) . . . . .	600 rpm Gasoline and LP-Gas
	800 rpm Diesel

**ENGINE CLUTCH . . . . . Single Plate (Borg and Beck)****COOLING SYSTEM**

<b>Type . . . . .</b>	<b>Pressurized Water</b>
<b>Thermostat . . . . .</b>	<b>160° Gasoline and LP-Gas Engine</b>
	<b>180° Diesel Engine</b>