



**NO. 650 SERIES  
TRACTOR DRAWN  
TOOL CARRIER  
WITH TOOL EQUIPMENT**



**JOHN DEERE**

**OPERATORS MANUAL  
NO. 650 SERIES TRACTOR DRAWN  
TOOL CARRIER WITH TOOL  
EQUIPMENT**

OMN261058 J8 English

**OMN261058 J8**

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ENGLISH



## TO THE PURCHASER

This Operator's Manual has been carefully prepared and illustrated to provide the necessary information regarding installation, operation and adjustments so that you may obtain maximum service and satisfaction from your new 650 Series Tool Carrier.

**STUDY THIS MANUAL CAREFULLY AND KEEP IT IN A SAFE PLACE FOR FUTURE REFERENCE.**



If you find that you require information not covered in this manual, consult your John Deere dealer. He will be glad to answer any question that may arise regarding the operation of your tool carrier. Your John Deere dealer has trained mechanics who are kept informed on the best service methods and will render you prompt service if needed.

Occasionally, your tool carrier may need new parts to replace worn parts. If you will furnish your dealer the description and the information which should be recorded at the bottom of this page when the tool carrier is delivered, he can give you prompt and efficient part service.

### JOHN DEERE 650 SERIES TOOL CARRIER

No. of Tool Carrier.....

Date of Purchase.....19.....

*(To be filled in by Purchaser)*

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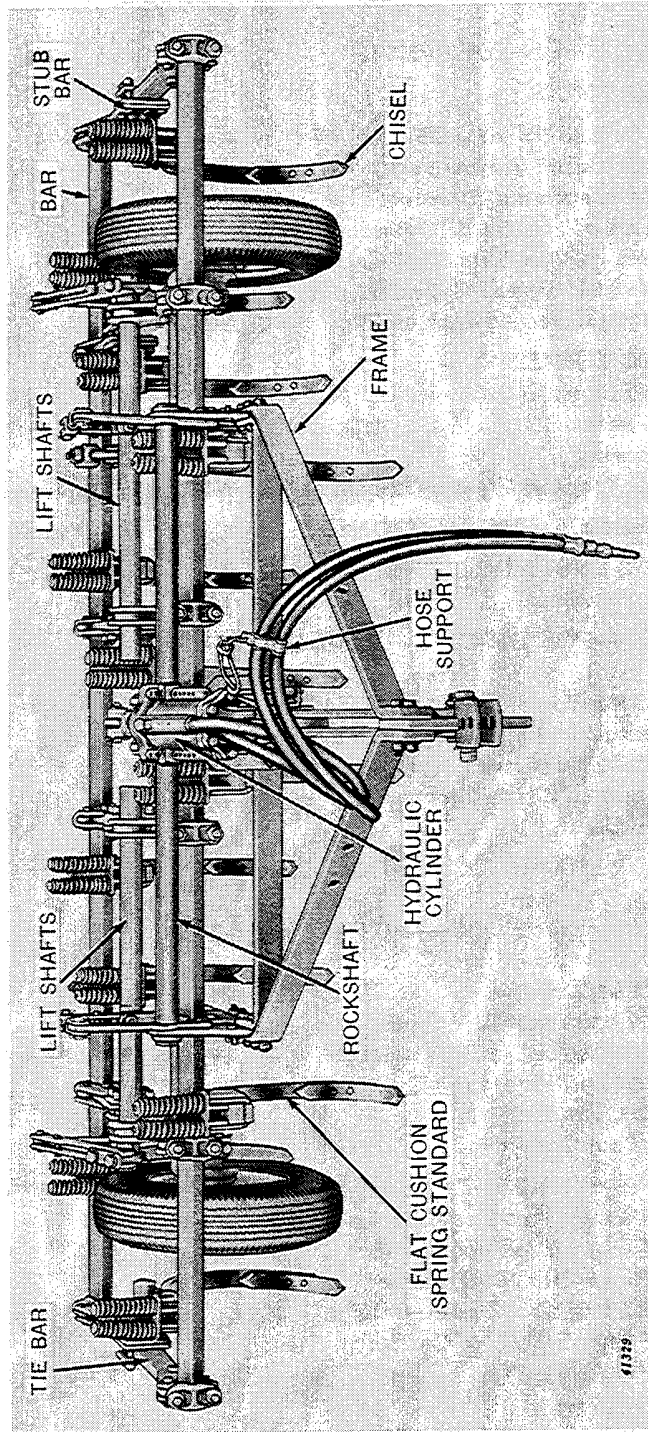


Figure 1—No. 652H—12-Foot Power-Trol Tool Carrier with TE-6 Equipment

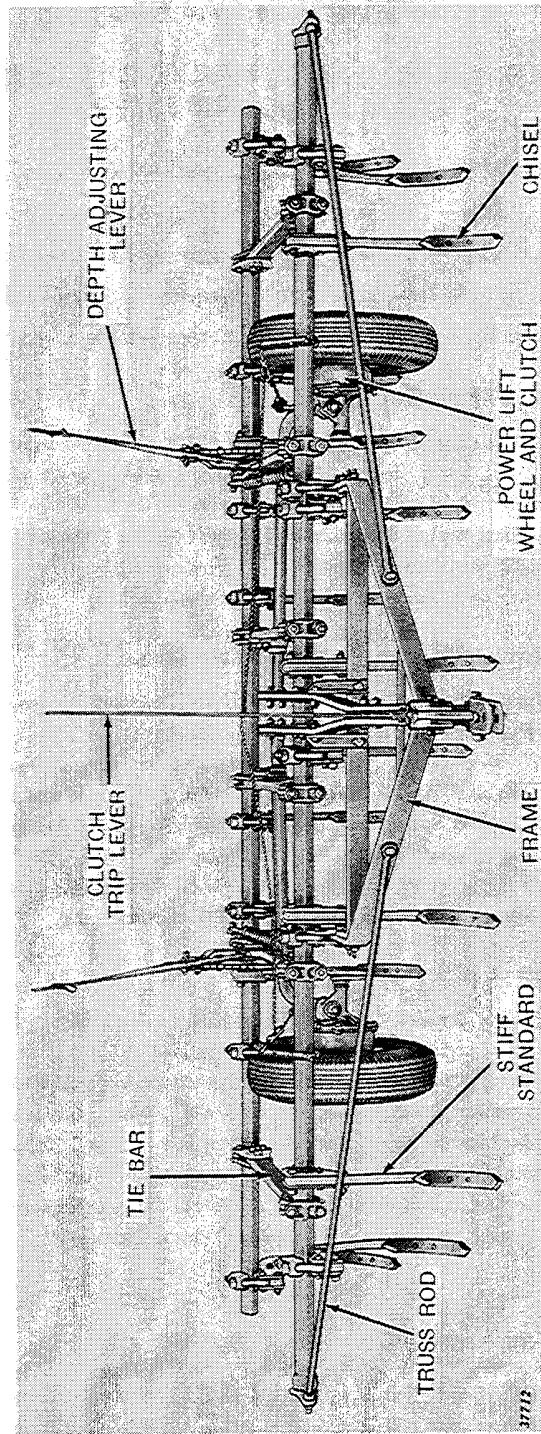


Figure 2—No. 656—16-Foot Power-Lift Tool Carrier with TE-4 Equipment

## SPECIFICATIONS

### No. 650 SERIES TRACTOR-DRAWN TOOL CARRIER

No. 651H—10-Foot Tool Carrier—Powr-Trol

No. 652H—12-Foot Tool Carrier—Powr-Trol

No. 652 —12-Foot Tool Carrier—Power-Lift

No. 656H—16-Foot Tool Carrier—Powr-Trol

No. 656 —16-Foot Tool Carrier—Power-Lift

#### Attachments for 651H Tool Carrier.

TE-1 —5 Sub-Surface Sweep Standards (YA905N, 30-Inch Sweeps).

TE-5 —Gauge Wheel Attachment (Extra Equipment to be used with TE-1).

TE-21—Stiff Standards (Y916N, 14-Inch Chisels).

TE-22—Flat Cushion Spring Standards (Y916N, 14-Inch Chisels).

TE-23—Flat Spring Standards (Y916N, 14-Inch Chisels).

TE-24—Coil Spring Standards (Y850AN, 11-Inch Chisels).

#### Attachments for 652H and 652 Tool Carriers.

TE-1 —5 Sub-Surface Sweep Standards (YA905N, 30-Inch Sweeps).

TE-3 —12 Stiff Standards (Y916N, 14-Inch Chisels).

TE-5 —Gauge Wheel Attachment (Extra Equipment to be used with TE-1 or TE-3).

TE-6 —12 Flat Cushion Spring Standards (Y916N, 14-Inch Chisels) (652H only).

TE-8 —12 Flat Cushion Spring Standards (Y916N, 14-Inch Chisels) (652 only).

TE-10—12 Flat Spring Standards (Y916N, 14-Inch Chisels) (652H only).

TE-12—12 Flat Spring Standards (Y916N, 14-Inch Chisels) (652 only).

TE-14—12 Coil Spring Standards (Y850AN, 11-Inch Chisels).

#### Attachments for 656H and 656 Tool Carriers.

TE-2 —7 Sub-Surface Sweep Standards (YA905N, 30-Inch Sweeps).

TE-4 —16 Stiff Standards (Y916N, 14-Inch Chisels).

TE-5 —Gauge Wheel Attachment (Extra Equipment to be used with TE-2 or TE-4).

TE-7 —16 Flat Cushion Spring Standards (Y916N, 14-Inch Chisels) (656H only).

TE-9 —16 Flat Cushion Spring Standards (Y916N, 14-Inch Chisels) (656 only).

TE-11—16 Flat Spring Standards (Y916N, 14-Inch Chisels) (656H only).

TE-13—16 Flat Spring Standards (Y916N, 14-Inch Chisels) (656 only).

TE-15—16 Coil Spring Standards (Y850AN, 11-Inch Chisels).

#### Tool Bars.

No. 651H—Front Bar, 96 x 2-1/4 x 2-1/4-Inch Solid Bar.

Rear Bar, 120 x 2-1/4 x 2-1/4-Inch Solid Bar.

Nos. 652H and 652—Front and Rear Bars, 144 x 2-1/4 x 2-1/4-Inch Solid Bars.

Nos. 656H and 656—Front and Rear Bars, 192 x 2-1/4 x 2-1/4-Inch Solid Bars.

**Axles.**

Axles Are 2 Inches Round on These Tool Carriers.

**Wheels.**

Steel Disk Wheels with 6.70 x 15—4-Ply Rating Tires—Regular; 6.70 x 15—6-Ply Rating Tires—Special. 15-Inch Wheels without Tires and Tubes—Optional.

**Lift Mechanism.**

Nos. 651H, 652H, and 656H, Powr-Trol.  
Nos. 652 and 656—Power Lift.

**Hydraulic Cylinder Requirements for Powr-Trol Tool Carriers.**

Nos. 651H and 652H Are Designed for 8-Inch Stroke Hydraulic Cylinders only.  
No. 656H Is Designed for Either 8- or 12-Inch Stroke Hydraulic Cylinders.

**Standards.**

Sub-Surface Sweep Standard, with Friction Trip for 30-Inch Sweeps.  
Stiff Standard, 1-1/4 x 2-1/4-Inch, for Heavy-Duty Sweeps, Chisels, and Spikes.  
Flat Cushion Spring Standard, 1 x 2-Inch, for Heavy-Duty Sweeps, Chisels, and Spikes.  
Flat Spring Standard, 1 x 2-Inch, for Heavy-Duty Sweeps, Chisels, and Spikes.  
Coil Spring Standard, 1-1/4 x 1-1/4-Inch, for Heavy-Duty Sweeps and Chisels.

**Sweeps.**

30-Inch Sweeps for Sub-Surface Sweep Standards.

**Chisels.**

14-Inch Chisels for Stiff Standards, Flat Cushion Spring Standards, and Flat Spring Standards.  
11-Inch Chisels for Coil Spring Standards.

**Extra Equipment.**

Drawbar, for use with Rod Weeders, Grain Drills, etc.  
18-Inch Plain Rolling Coulters, for use with 30-Inch Sweeps.  
17-Inch Notched Rolling Coulters, for Use with 30-Inch Sweeps.

**Extra Equipment for Flat Cushion Spring Standards and Flat Spring Standards.**

Sweeps, Heavy-Duty, 16- and 18-Inch.  
Chisels, 16-Inch.  
Spikes, 14- and 16-Inch.  
Sweeps, Wheatland, 6-, 8-, 10-, 12-, and 14-Inch.

**Extra Equipment for Coil Spring Standards.**

Sweeps, Heavy-Duty, 6-, 8-, 10-, 12-, and 14-Inch.  
Chisels, Heavy-Duty, 11-Inch.

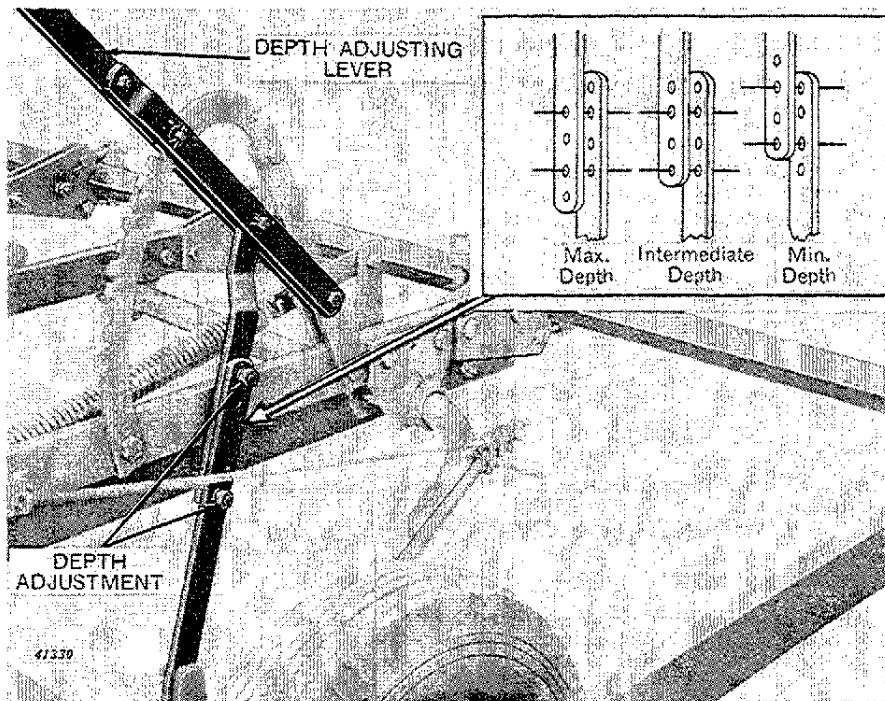
*NOTE: Right- and left-hand sides referred to in this manual are determined from a position at the rear of the machine facing in the direction of travel.*

*(It is John Deere policy to improve our machines at every opportunity. Consequently, it may be necessary to change design without notice.)*

## OPERATION AND ADJUSTMENT

The No. 650 Series Tool Carrier when properly adjusted meets the requirements of practically all field cultivating jobs. This machine is ideal for sub-surface cultivation and summer-fallow work. It is a very efficient weeder and, because of the wide variety of equipment available, it is the ideal heavy-duty cultivator for use in field and orchard.

### Power-Lift Depth Adjustment.

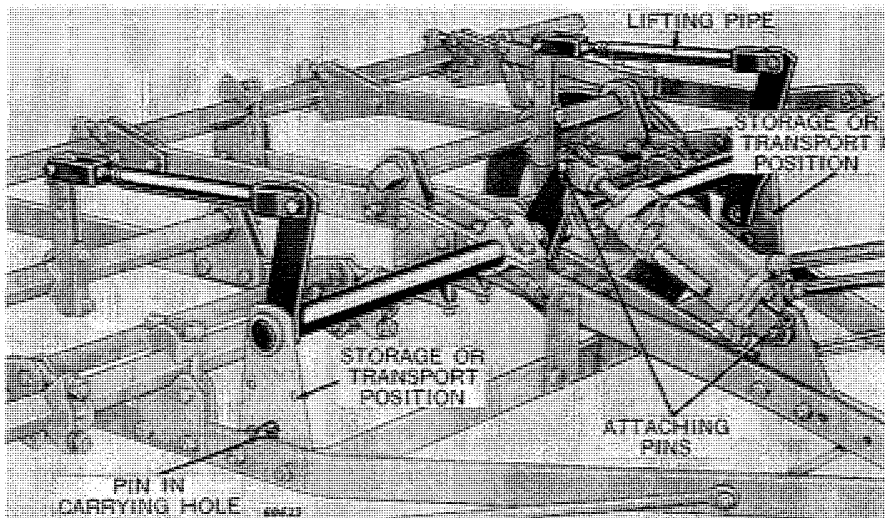


*Figure 3—Depth-Adjusting Bar*

The depth is adjusted by the levers, Figure 3, on the power-lift tool carrier. The axle lift bars have a series of holes which provide for three settings, intermediate depth, maximum depth, and minimum depth. By using the proper hole, depending on depth of operation, the levers will be at the center of ratchets when tool carrier is at work.

### Powr-Trol Depth Adjustment.

The depth of the Powr-Trol tool carrier is accurately controlled by the operator from the tractor seat by means of the tractor hydraulic system. For operation of the Powr-Trol system, see your Tractor Operator's Manual or OM-R2021R, Operation of Powr-Trol System.



*Figure 4—Operation of Hydraulic Cylinder*

The standards on the Powr-Trol tool carrier may be adjusted evenly on both sides by adjusting lift pipes, Figure 4, on the depth control pipes.

Powr-Trol tool carriers are raised or lowered with the hydraulic remote control cylinder.

### Installation of Hydraulic Cylinder.

To place tool carrier in operating position, install cylinder with two attaching pins, operate cylinder so pin can be removed from storage or transport position and placed as shown in Figure 4.

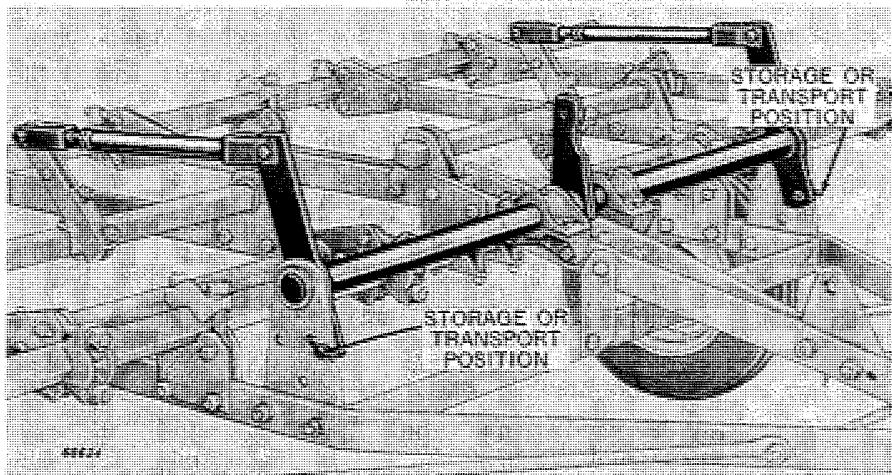
### Transporting Powr-Trol Tool Carrier.

Raise the tool carrier to the highest position with the Powr-Trol lever when transporting from one field to another.



When transporting tool carrier on highway after dusk, we suggest a warning light be placed on the extreme left-hand side of tool carrier.

### Removal of Hydraulic Cylinder.



*Figure 5—Hydraulic Cylinder Removed*

To remove hydraulic cylinder from tool carrier, raise tool carrier to lifted position, remove pin from carrying hole and place it in storage or transport position, Figure 5. Relieve the load on the cylinder and remove the attaching pins. The tool carrier will then be held in the lifted position and can be stored or transported without replacing the cylinder. The oil line hoses regularly furnished with the tractor remote cylinder are long enough to permit installation of cylinder on tool carrier. No extensions are needed.

### Clutch Trip Lever Adjustment.

The position of the trip lever can be adjusted for the convenience of the operator. There is a series of three holes at the lower end of clutch trip lever to make this adjustment.

### Clutch Trip Adjustment.

To adjust trip lever, untie trip rope from clutch arm and take up slack. Be sure rope is taken up equal distance from each clutch so when clutches are tripped they will release simultaneously.

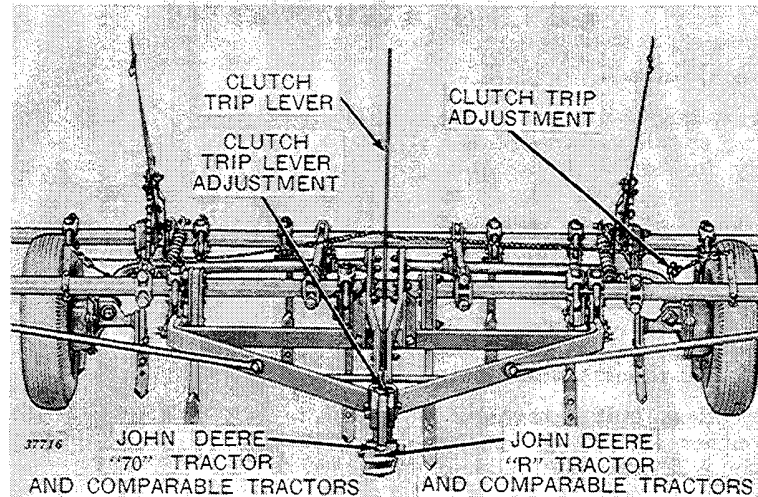


Figure 6—Clutch and Trip Lever Adjustment

#### Clutch Free Travel.

Adjust the free travel of the clutch trip lever by moving the “U” bolt “A,” Figure 7, in the slot of the lever stop. The clutch trip lever should have only enough free travel to engage itself. Excessive free travel of the clutch trip lever will be indicated by a clicking noise in the clutch or by failure of the clutch to trip.

#### Enclosed Lifting Clutch.

The mechanism of the lifting clutch is completely enclosed and operates in a bath of light grease. Dirt cannot get in—grease cannot get out. Only a small amount of grease is added to the clutch before leaving the factory. Therefore, the clutch, wheel box, and land axle journal must be thoroughly lubricated through the grease fittings before using the tool carrier—thereafter, grease must be added daily.

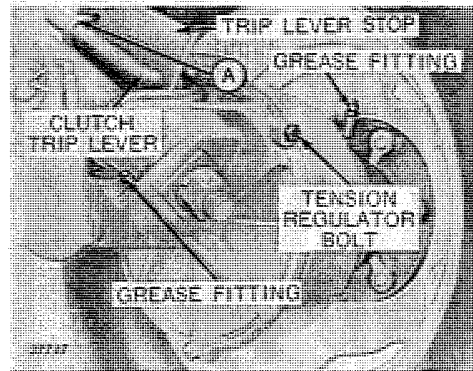


Figure 7—Clutch

**CAUTION:** The tension bolt, Figure 7, at the front of the clutch housing regulates the tension on the spring controlling the throw-out lever. Tension is properly adjusted when clutch is assembled at the factory, but should greater tension be necessary, the bolt should be tightened by turning one or two turns clockwise. NEVER LOOSEN THIS BOLT OR THE SPRING INSIDE THE CLUTCH HOUSING MAY BECOME DISCONNECTED.

## EXTRA EQUIPMENT

### Rolling Coulters.

The rolling coulters must be lined up so the coulters blade is directly in line with point on sweep (see Figure 8). The coulters blade should be set just deep enough to cut the trash, yet high enough so the coulters bearing will clear the trash. This adjustment is made by loosening the bolts on the coulters clamp and moving the shank up or down.

The rolling coulters is available with either an 18-inch smooth blade or a 17-inch notched blade to meet field conditions. See page 13.

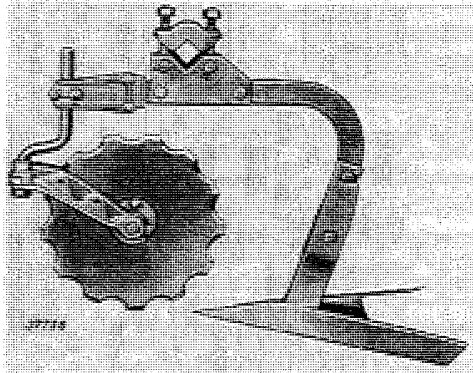


Figure 8—Rolling Coulters

### Gauge Wheels.

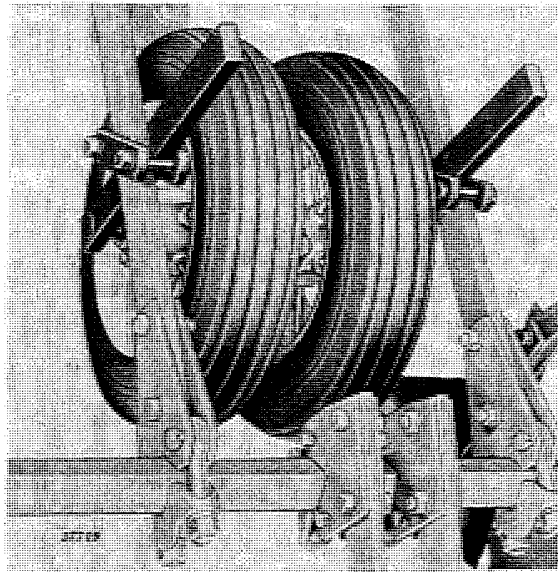
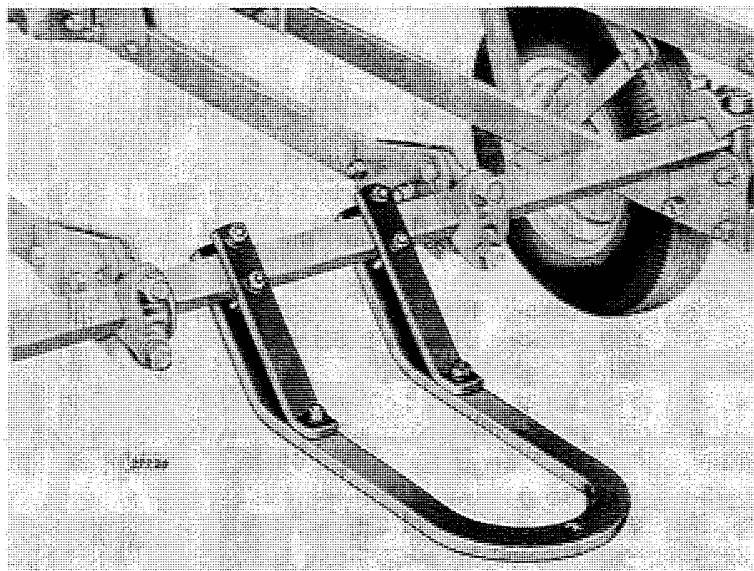


Figure 9—Gauge Wheels

The gauge wheels can be used where additional flotation is required for accurate depth gauging.

### Hinge Bracket.

Hinge brackets can be used to attach the inner ends of two tool carriers when tool carriers are pulled abreast behind a squadron hitch. See page 12 for shipping bundle.

**Drawbar.**

*Figure 10—Drawbar*

A sturdy drawbar can be ordered for attaching rod weeders, grain drills, etc., to the rear of the tool carrier. See page 12 for shipping bundles required.

## MAINTENANCE SUGGESTIONS

**Shovels, Sweeps, and Coulters.**

Protect the face of the shovel, sweep, or coultter blade from rust between seasons or intermittent periods of use by greasing the polished surface with a coat of cup grease or hard oil.

**Lubrication Instructions.**

All wheels (and rolling coultters, if used) have grease fittings and should be lubricated twice daily or every 6 hours of field use. The enclosed clutch when used, also has a grease fitting. Lubricate the enclosed clutch daily. On Powr-Trol tool carriers, lubricate the rockshaft every 6 hours of field use. Use a grease-gun and a good grade of grease. All working parts should be oiled daily with a good grade of lubricating oil.

**Tire Inflation Pressure.**

Recommended tire inflation pressure is:

28 pounds for 6.70 x 15"—4-ply rating tires.

40 pounds for 6.70 x 15"—6-ply rating tires.

*NOTE: Be sure tire pressure is the same in both tires. This is important; side draft can occur if tire pressure is not the same in both tires.*

## ASSEMBLY INSTRUCTIONS

### SHIPPING BUNDLES

Bundle No.	Description	651H	652H	652	656H	656
------------	-------------	------	------	-----	------	-----

#### REGULAR SHIPPING BUNDLES

C 1782 N	Tool Bar, Rear (10-Foot only).....	1	..	..	..	..
C 1781 N	Tool Bar, Front (8-Foot only).....	1	..	..	..	..
C 1388 N	Tool Bar (12-Foot only).....	2	2	..	..	..
C 1389 N	Tool Bar (16-Foot only).....	..	..	2	2	..
C 1558 N	Hitch Frame Bar.....	2	2	2	2	2
SC 714 N	Hitch Frame Brace.....	1	1	1	1	1
SC 715 N	Hitch Frame Clamps (2 Clamps).....	2	2	2	2	2
SC 768 N	Hitch Cross Brace.....	1	1	1	1	1
SC 717 N	Tie Bar, Lever.....	..	..	2	..	2
SC 718 N	Tie Bar, Inner.....	..	..	2	..	2
SC 719 N	Tie Bar, Outer.....	..	2	2	2	2
SC 732 N	Tie Bar, Axle.....	4	4	..	4	..
SC 720 N	Power-Lift Axle and Clutch, R.H. ....	..	..	1	..	1
SC 721 N	Power-Lift Axle and Clutch, L.H. ....	..	..	1	..	1
SC 722 N	Power Lift Depth-Adjusting Levers.....	..	..	1	..	1
SC 724 N	Truss Rods.....	..	..	..	1	1
SC 733 N	Power-Trol Axle.....	2	2	..	2	..
SC 734 N	Axle Lift Shaft.....	2	2	..	..	..
SC 830 N	Axle Lift Shaft.....	..	..	..	2	..
SC 735 N	Rockshaft and Hose Support.....	1	1	..	..	..
SC 829 N	Rockshaft and Hose Support.....	..	..	..	1	..
JD 680 E	15" Wheel (Less Tire and Tube)....	2	2	2	2	2
SC 645 N	Wheel Bolts.....	1	1	1	1	1
SD 201 AN	Power-Lift Clutch Rope.....	..	..	1	..	1
SC 783 N	Safety Reflectors and Brackets....	1	1	1	1	1

#### EXTRA SHIPPING BUNDLES

SC 706 N	Wheel (With Tire and Tube) (6.70 x 15—4-Ply Rating Tires).....	2	2	2	2	2
JD 3400 N	15" Wheel (Less Tire and Tube for 8.00 x 15 Tire).....	2	2	2	2	2
SC 757 N	Wheel (With Tire and Tube) (6.70 x 15—6-Ply Rating).....	2	2	2	2	2
SC 748 N	Drawbar (For Rod Weeder, Grain Drill, etc.).....	1	1	1	1	1
SC 759 N	Hinge Bracket (For Attaching Inner Ends of Two Tool Carriers).....	..	..	..	..	..
				Order as Required		
SD 2314 A	Screw Jack.....	1	1	..	1	..
*SC 842 N	Outer Stub Bar.....	..	1	1	..	..

\*These outer stub bars may be attached to each outer tie bar, converting a 12-foot tool carrier to a 14-foot carrier.

**ATTACHMENTS FOR No. 650 SERIES TOOL CARRIER**

Bundle No.	Description	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE	TE
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	21	22	23	24

**REGULAR SHIPPING BUNDLES**

SC 723 N	Sub-Surface Sweep Standard.	5	7																	
YA 905 N	30" Sweep.....	5	7																	
SC 671 N	Stiff Standard, Front.....	6	6														4			
SC 672 N	Stiff Standard, Rear.....	6	10														6			
Y 916 N	14" Chisel.....	12	16		12	16	12	16	12	16	12	16				10	10	10		
SC 725 N	Flat Cushion Spring Standard ..				12	16	12	16								10				
SC 726 N	Flat Spring Standard.....								12	16	12	16								10
SC 737 N	Stub Bar, Short.....				3	3	3	3	3	3	3	3				1				1
SC 736 N	Stub Bar, Front.....						2	2			2	2								
SC 756 N	Stub Bar, Rear.....				2	2	2	2	2	2	2	2				2				2
SC 709 N	1-1/4" Coil Spring Standard, R.H. Front.....														3	3				3
SC 710 N	1-1/4" Coil Spring Standard, L.H. Front.....														3	3				1
SC 711 N	1-1/4" Coil Spring Standard, R.H. Rear.....														3	5				3
SC 712 N	1-1/4" Coil Spring Standard, L.H. Rear.....														3	5				3
Y 938 N	11" Heavy-Duty Chisel.....														12	16				10

**ATTACHMENTS FOR 650 SERIES TOOL CARRIER—Continued**

Bundle No.	Description	EXTRA SHIPPING BUNDLES																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
SD 1432 AN	18" Rolling Coultter (Smooth Blade)...	5	7																							
SC 648 N	17" Rolling Coultter (Notched Blade)...	5	7																							
SC 747 N	Gauge Wheel Axles.				1																					
SD 1956 A	Wheel (With Tire and Tube) (5.90 x 15)				2																					
SD 1955 A	15" Wheel (Less Tire and Tube) (In Lieu of SD1956A).....					2																				
Y 922 N	6" Sweep						12	16																		
Y 944 N	6" Wheatland (Special)																									
Y 923 N	Sweep						12	16																		
Y 953 N	8" Sweep																									
Y 945 N	8" Wheatland Sweep																									
Y 945 N	8" Wheatland (Special)																									
Y 902 N	Sweep																									
Y 954 N	10" Sweep																									
Y 946 N	10" Wheatland Sweep																									
Y 946 N	10" Wheatland (Special)																									
Y 903 N	Sweep																									
Y 955 N	12" Sweep																									
Y 955 N	12" Wheatland Sweep																									
Y 947 N	12" Wheatland (Special)																									
Y 904 N	Sweep																									
Y 956 N	14" Sweep																									
Y 956 N	14" Wheatland Sweep																									
Y 948 N	14" Wheatland (Special)																									
Y 914 N	Sweep																									
Y 957 N	16" Sweep																									
Y 915 N	16" Wheatland Sweep																									
Y 915 N	18" Sweep																									
Y 958 N	18" Wheatland Sweep																									
Y 920 N	12" Chisel																									
Y 917 N	16" Chisel																									
Y 918 N	14" Spike																									
Y 919 N	16" Spike																									
Y 938 N	11" Chisel																									

In Lieu of Y916N or Y938N



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## ASSEMBLY—POWER-LIFT TOOL CARRIER

### Frame.

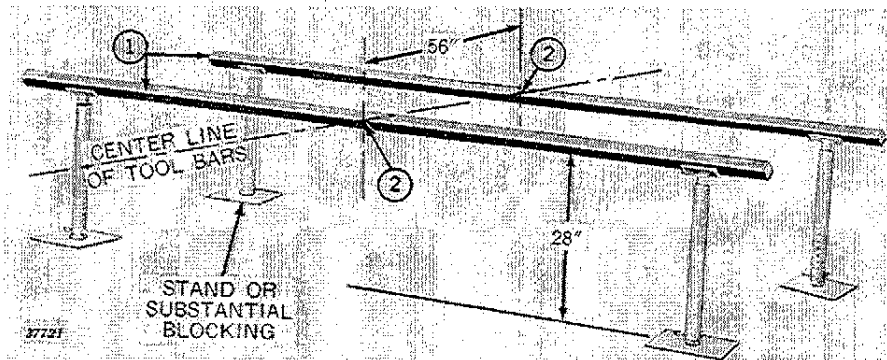


Figure 11

1. (Figure 11) Set the tool bars (which are identical) on stands or block up to approximately 28 inches high. The bars should be 56 inches apart center-to-center as shown.

2. (Figure 11) Measure and mark the center of both tool bars.

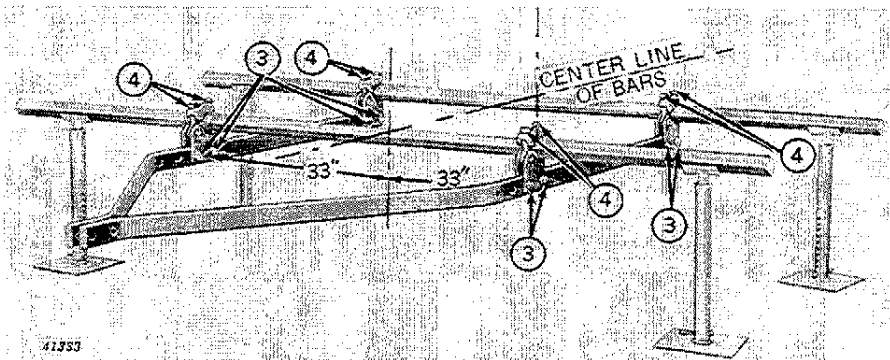


Figure 12

3. (Figure 12) Bolt hitch clamps to hitch frames.

4. (Figure 12) Bolt right-hand and left-hand hitch frame bars to tool bars 33 inches from center of bar to the *inside* of hitch frame bars as shown. **CAUTION: Tighten hex. nuts on all eyebolts evenly. This will allow clamps to be seated properly.**

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