



ELECTRIC LIFT ACCESSORY

MODEL 8-4221

DESCRIPTION

The electric lift accessory provides powered operation of mid and rear hitches on mechanical transmission long frame tractors starting with 1968 models and excluding lawn tractors. It is controlled with a switch on the dash and uses battery power to raise and lower attachments in place of the manual lift lever with which these tractors are originally equipped.

ASSEMBLY AND MOUNTING INSTRUCTIONS

Item numbers in brackets used in these instructions refer to called out numbers in figure 9, which identify parts and assemblies furnished with this accessory.

1. Disconnect the ground cable at the tractor battery. Drain and remove the fuel tank. Remove the left hand foot rest and the fender and seat assembly. Pull the large hairpin cotter out of the lift arm shaft inside the hoodstand, remove the three $\frac{5}{16}$ " bolts holding the lift lever to the hoodstand and work the lever and arm assembly free of the tractor.

2. Drill a $\frac{1}{2}$ " hole in the dash panel casting at approximately the location shown in figure 1. If a

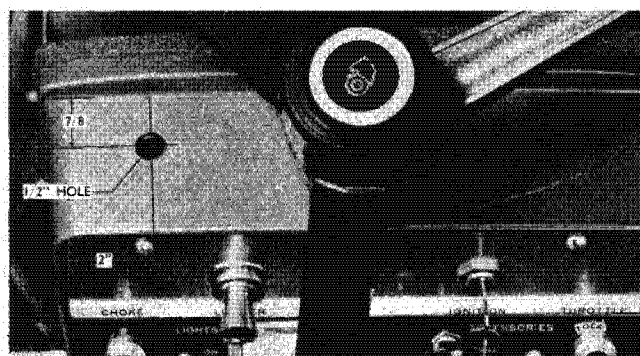


FIGURE 1

lift decal is already in place on the dash, center the hole appropriately on the decal. Otherwise, mount the lift decal from the kit as shown in figure 2.

3. Install the $\frac{3}{4}$ " snap ring in the groove on anchor pin (14). Remove the snap ring from the right end of the tractor drawbar hitch pin. Use the drilled and tapped end of the anchor pin against the hitch pin to drive it out to the left, installing the anchor pin in its place.

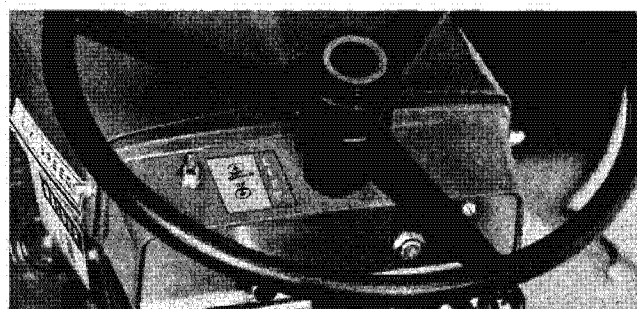


FIGURE 2

Note: If the tractor is only equipped with a slot type hitch (no drawbar) or if a tiller is to be installed, in which case the drawbar hitch must be removed, slide one Part No. 101123 Spacer, 1" O.D. x $\frac{3}{8}$ " long, (2 furnished) on the anchor pin before installing it, and place another on the left end of the pin before proceeding to the next step.

4. Fasten the brace and frame arm assembly (11, 12, 13) on the rear axle and anchor pin as shown in figure 3. Hold the anchor pin from turning with a $\frac{5}{8}$ " open end wrench over the flats on the end of the pin as the $\frac{3}{8}$ -16 x 1" Nylok bolt and $\frac{13}{32}$ " I.D. washer are tightened to hold the frame arm assembly in place.

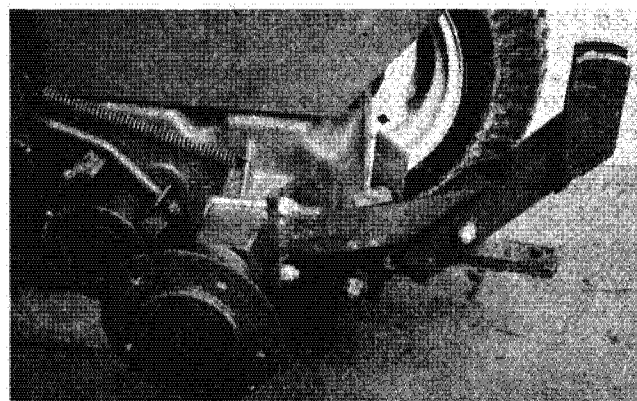


FIGURE 3

5. Fasten the bracket (3) to the tractor frame with one of the bolts previously removed with the left hand foot rest (lower center, Fig. 4).

6. Use bolts from the removed lift lever assembly to install lift arm assembly (2) and indicator

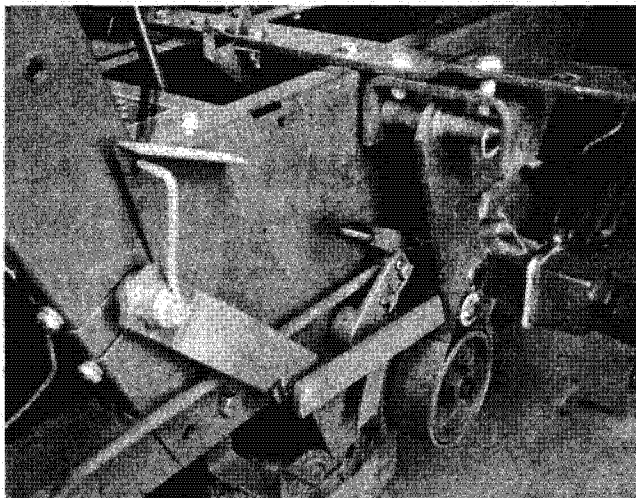


FIGURE 4

plate (5) to the hood stand (Fig. 4). Insert two large hairpin cotters (one from removed lift assembly) in the lift arm shaft inside the hoodstand. Be sure the loops and outer legs of the cotters face the front of the tractor.

7. Attach the pivot arm and bracket assembly (6, 7, 8) to the footrest bracket with $\frac{5}{16}$ " bolts, nuts and washers through the two holes closest to the frame as shown in figure 4. Be sure to insert the spacer on the outer bolt as illustrated.

8. One $\frac{1}{2}$ " I.D. washer and one spacer must be used at each end of lift link (9), but their positions will vary depending on alignment requirements. Initially, install a spacer on each pin and insert the link between the pivot and lift arms. Hold the link against the arms and observe its relation to the tractor frame. **It must be parallel with the frame.** Alternate spacers and washers as necessary to obtain proper alignment. Secure the link to the arms with cotter pins furnished (figure 4).

9. Install the clevis yoke (10), stud, and jam nuts in the end of the actuator shaft as shown in figure 9. Run the yoke stud in until the distance from the center of the clevis pin hole to the end of the actuator shaft is approximately $4\frac{1}{8}$ ". Snug, but do not tighten the jam nuts against the clevis and actuator shaft. Position the linear actuator mounting stud between

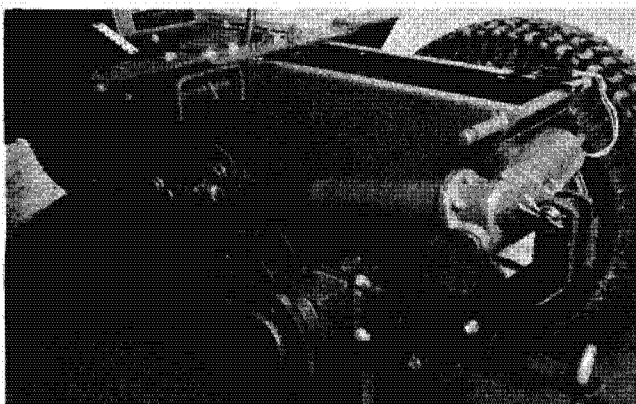


FIGURE 5

the rear frame arms and insert the rear anchor pin (15) through the holes in the arms and actuator. Secure it with two $\frac{1}{2}$ " washers and cotters (figure 5).

10. If the tractor is equipped with a four position ignition switch (1969 or later model), the solenoid (16) must be mounted on the right flange of the hoodstand as shown in figure 6.

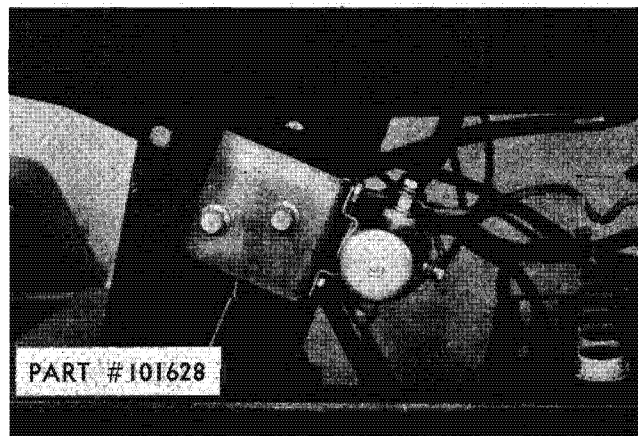


FIGURE 6

11. Place the wiring harness (9) on the fuel tank support and push the end of the long harness wire down through the rubber grommet as shown in figure 7. Pull the wire behind the steering shaft and down the right side of the hoodstand. Loosen the dust cover bolts enough to allow the wire to come up between the back edge of the dust cover and the front of the tool box. From there, run the wire along the top right flange of the tool box to the rear of the tractor and plug the two-wire connector into the mating connector at the actuator. Secure the wire with two wire clips along the tool box flange as shown in figure 5, and one each on the right frame rail and the right flange of the hoodstand.

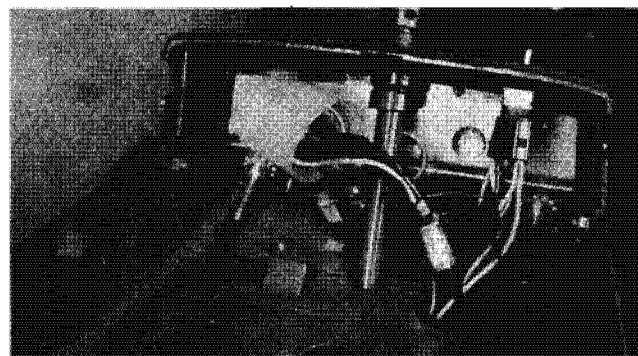


FIGURE 7

12. Using the color coded wiring diagram (figure 8) to identify numbered harness leads and corresponding switch terminals, connect leads 2, 3, 4, 5, 6 & 7 (figure 8) to the actuator switch (17). The harness ground wire connects to the bolt at the left side of the fuel tank support as shown in figure 7. Clean paint off to expose bare metal at this point to assure a good electrical connection.

Pass the orange harness wire (#1, figure 8) through the fuel tank support grommet and connect it to the bottom solenoid post. If no solenoid is being used, connect the wire to the positive (+) terminal of the tractor battery.

14. Pass one end of the accessory-to-solenoid wire (20) through the grommet and connect it to the center post of the solenoid. Connect the other end to the cigar lighter binding post (Raider models) or to the ignition switch side of a switch for other accessory such as headlights or electric clutch.

15. Connect the battery-to-solenoid wire from the top solenoid terminal to the positive (+) battery terminal (figure 6).

16. Test operation of the system by temporarily connecting the battery ground cable and quickly turning the actuator switch on and off (if a solenoid was installed, the ignition switch must be turned one notch to the right). Observe which direction the toggle must be moved to start the actuator shaft moving outward. This is the "UP" position of the switch and determines which way the switch must be installed in the dash to agree with the directions on the lift decal. Disconnect the battery and install the actuator switch in the dash.

17. Reinstall the fuel tank and connect the battery. Operate the actuator switch to fully retract the actuator shaft. Swing the pivot and lift arms rearward to the limit of their travel. If they must be moved forward again slightly before the holes in the actuator clevis yoke will align with the clevis hole in the pivot arm, install the clevis pin through the yoke and the arm and secure it with a hairpin cotter.

Important

If the arms reach the rearward limit **before** the clevis hole in the arm will align with the holes in the clevis yoke, increase the yoke-to-actuator shaft distance by turning the clevis yoke (10) on the yoke stud until the holes will line up **before** the arms reach their rear limit stop. Tighten the jam nuts on the yoke stud securely. Flats are provided for holding the actuator shaft with a wrench when tightening the rear jam nut.

18. Attach the indicator arm (4) to the lift arm shaft with the bolt and washers furnished. When the actuator shaft is fully extended, the indicator arm should point to "UP" on the indicator plate decal.

19. Complete the installation by tightening the dust cover bolts, reinstalling the foot rest and the fender and seat assembly.

MAINTENANCE

Lubricate pivot points with oil each time the tractor is lubricated. The actuator is lubricated at the factory and needs no further attention. However, if the actuator shaft is to be left in the extended position out of doors for a prolonged period, it would be well to wipe it with an oily rag to prevent rust.

To raise the seat and fender assembly for access to the tool box or transmission filler pipe, remove one cotter pin and withdraw the anchor pin (15) from the rear frame arms (12 & 13), remove the bolt connecting the brace (11) to the frame arm (13), and lower the linear actuator and frame arms together.

Caution: On tractors with a four position ignition switch, the actuator solenoid is continuously energized and drawing battery current whenever the key is in the "Run and Accessories" position. The ignition switch must be turned to "Off" position when the engine is not running to prevent the battery from discharging.

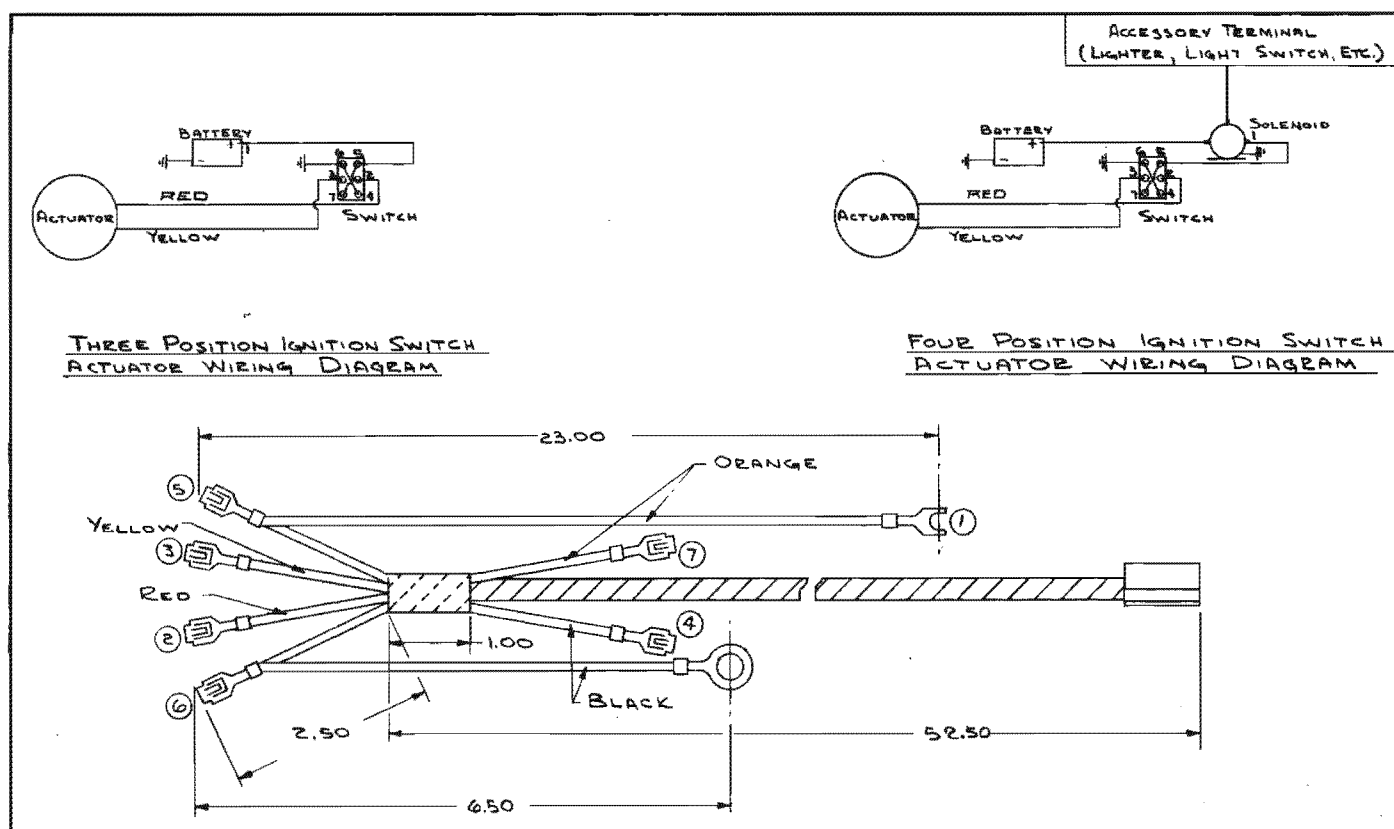


FIGURE 8

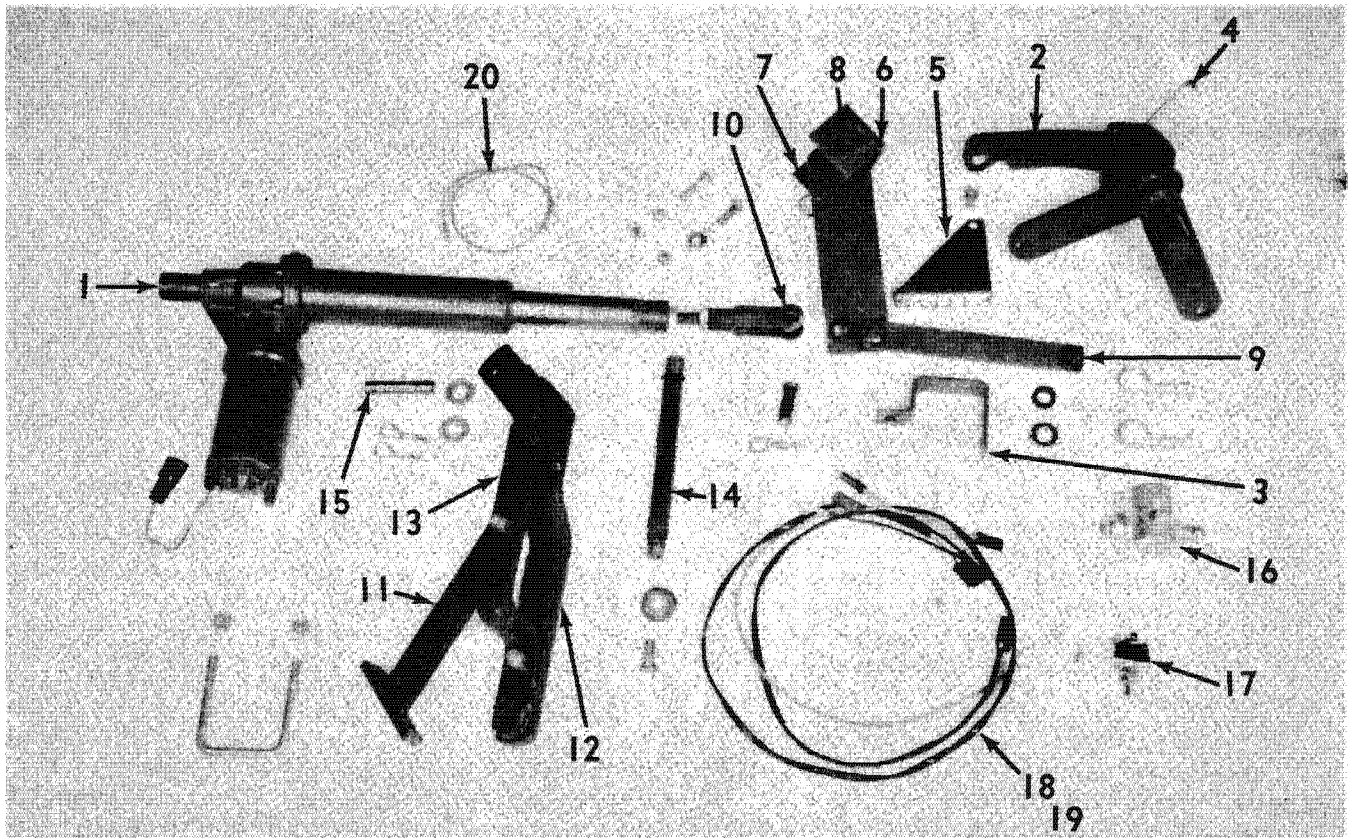


FIGURE 9

ELECTRIC LIFT ACCESSORY PARTS LIST — MODEL 8-4221

When ordering parts always list Part No. and name of Part.

Parts available only through Authorized Dealers.

(Specifications subject to change without notice.)

Item No.	Part No.	Description	No. Req'd.	Item No.	Part No.	Description	No. Req'd.
1	101438	Assembly — Linear Actuator	1	11	101278	Assembly — Brace	1
2	6615	Assembly — Lift Arm	1		2378	U-Bolt	1
	933506-4	Hairpin Cotter	1		915663-4	Nut, $\frac{3}{8}$ -16 E.S.	2
3	8007	Bracket — Foot Rest	1	12	101288	Assembly — Frame Arm	1
	900214-4	Bolt, $\frac{5}{16}$ -18 x $\frac{3}{4}$ Carriage	1	13	101290	Assembly — Frame Arm	1
	915662-4	Nut, $\frac{5}{16}$ -18 E.S.	1	14	101285	Pin — Anchor	1
4	6629	Arm — Height Indicator	1		936125	Snap Ring, $\frac{3}{4}$ " Shaft	1
	908017-4	Bolt, $\frac{5}{16}$ -18 x $\frac{3}{4}$	1		2844	Washer, $\frac{13}{32}$ " I.D.	1
	920082-4	Lockwasher, $\frac{5}{16}$ dia.	1		908035-4	Bolt, Hex $\frac{3}{8}$ -16 x $1\frac{1}{4}$	1
	920008-4	Washer, $\frac{5}{16}$ SAE	1		101123	Spacer, 1" O.D. x $\frac{3}{8}$ " Long	2
5	6628	Plate — Indicator	1	15	101612	Pin — Anchor — Rear	1
	6630	Decal — Height Indicator	1		932009-4	Pin — Cotter, $\frac{3}{32}$ x 1	2
6	101284	Bracket — Pivot Mounting	1		920011-4	Washer, $\frac{1}{2}$ SAE	2
	908019-4	Bolt, $\frac{5}{16}$ -18 x 1	1	16	101222	Solenoid	1
	908020-4	Bolt, $\frac{5}{16}$ -18 x $1\frac{1}{4}$	1		908001-4	Bolt, Hex $\frac{1}{4}$ -20 x $\frac{1}{2}$	2
	915112-6	Nut, $\frac{5}{16}$ -18 Esllok	2		915111-6	Nut, Hex $\frac{1}{4}$ -20 Esllok	2
	920008-4	Washer, $\frac{5}{16}$ SAE	1	17	8799	Switch — Actuator	1
	6990	Spacer	1		8785	Nut (Knurled) Special	1
7	101282	Assembly — Pivot Arm	1		8786	Nut, Hex Special	1
8	101283	Pin — Pivot	1		8759	Decal, Lift	1
	933505-4	Hairpin	1	18	101248	Harness — Wiring	1
9	101245	Assembly — Lift Link	1	19	101228	Wire — Battery-to-Solenoid	1
	5943	Spacer	2	20	101229	Wire — Accessory-to-Solenoid	1
	920011-4	Washer, $\frac{1}{2}$ SAE	3		3023	Clip, Wire	3
	932009-4	Hairpin	2		8519	Clip, Wire	1
10	101246	Yoke — Clevis	1	N.S.*	101628	Bracket — Solenoid Mounting	1
	101247	Stud — Yoke	1		908017-4	Bolt, Hex $\frac{5}{16}$ -18 x $\frac{3}{4}$	2
	915238-4	Nut, $\frac{1}{2}$ -13 Jam	2		915112-6	Nut, Hex $\frac{5}{16}$ -18 Esllok	2
	932998-4	Pin — Clevis $\frac{1}{2}$ x $1\frac{1}{2}$	1				
	932009-4	Hairpin	1				

* Not shown in Figure 9. See Figure 6.