



CLICK ANYWHERE FOR MORE DETAILS

Oliver

Service Manual

Hydra-Letric System

For

66, 77 & 88

Service Manual

JENSALES.COM

or Call 800-443-0625



CLICK ANYWHERE FOR MORE DETAILS

THIS IS A MANUAL PRODUCED BY JENSALES INC. WITHOUT THE AUTHORIZATION OF
OLIVER OR IT'S SUCCESSORS. **OLIVER** AND IT'S SUCCESSORS
ARE NOT RESPONSIBLE FOR THE QUALITY OR ACCURACY OF THIS MANUAL.

TRADE MARKS AND TRADE NAMES CONTAINED AND USED HEREIN ARE THOSE OF OTHERS,
AND ARE USED HERE IN A DESCRIPTIVE SENSE TO REFER TO THE PRODUCTS OF OTHERS.

OL-S-HYDR-LEC

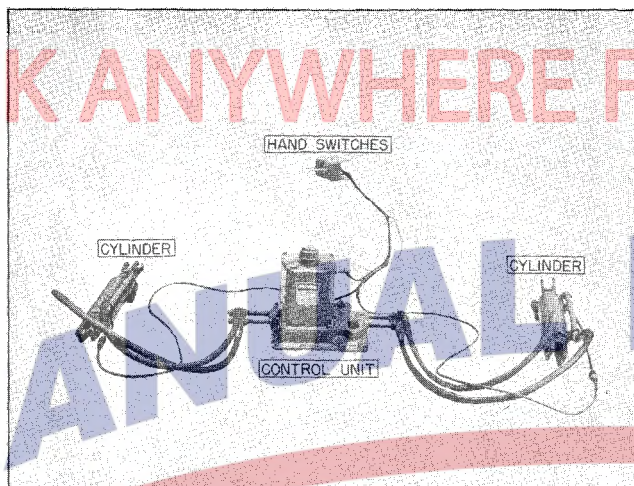


Figure 10-78 No. 1 Hydra-Lectric Control Unit

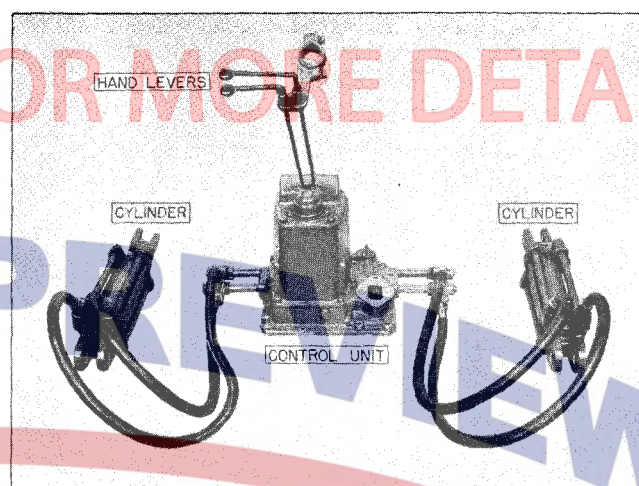


Figure 10-79 No. 1 Hydraulic Control Unit

HYDRA-LECTRIC AND HYDRAULIC CONTROL UNITS FOR 66, 77, 88; SUPER 66, 77, 88 TRACTORS

GENERAL

The introduction of hydraulics in the agricultural and industrial fields has provided tractor operators with one of the greatest labor saving devices ever created. Oliver's Hydra-Lectric Control unit is especially unique in this respect because of the extreme simplicity and flexibility of operation by utilizing a combination of electrical, mechanical and hydraulic control methods.

Since the introduction of the first Oliver Hydra-Lectric Control unit, there have been six variations of the basic unit on the 66, 77, 88, Super 66, 77 and 88 Series tractors; the No. 1 Hydra-Lectric, the No. 1 Hydraulic Control, the No. 2 Hydra-Lectric, the No. 2 Hydraulic Control, the No. 3 Hydra-Lectric and the No. 3 Hydraulic Control. The No. 3 units were also known as the New Hydra-Lectric and New Hydraulic Control units. The latter two were released with the introduction of the Super Series tractors. (See Figures 10-78, 10-79, 10-80, 10-81, 10-82 and 10-83 respectively.) There are two models each of the No. 3 units produced at present: the "L" model for the 66 and Super 66 Series tractors and the "K" model for the

77, 88, Super 77 and 88 Series tractors. The improved No. 3 basic units are interchangeable with the basic older models, however repair parts are available for all variations where the complete unit change is not desired. On the Hydra-Lectric Control units care must be taken to get the correct wiring harness, when a change-over to the improved model is made. Each unit is stamped with a serial number (See Serial Numbers) and the beginning unit serial number for both the "L" and "K" models was 1000.

The major difference between the Hydra-Lectric and Hydraulic Control units is the means by which the valve spools are operated. The Hydra-Lectric Control unit controls the valve spools electrically through hand operated switch levers while in the Hydraulic Control unit the spools are moved manually through the operating levers. The valves, mounting bases, swivels, hoses, pumps and reservoirs are all basically identical.

The main difference between the No. 1 and No. 2 Hydra-Lectric Control units is in the cylinder and wiring harness in what is referred to as the change from the electrical follow-up to the electromagnetic follow-up system. Minor changes were also incorporated in the valves, pump mounting base and couplings although they did not affect the hydraulic circuit. These changes were first released with unit serial numbers L2172 and K9495. Details of these

OLIVER

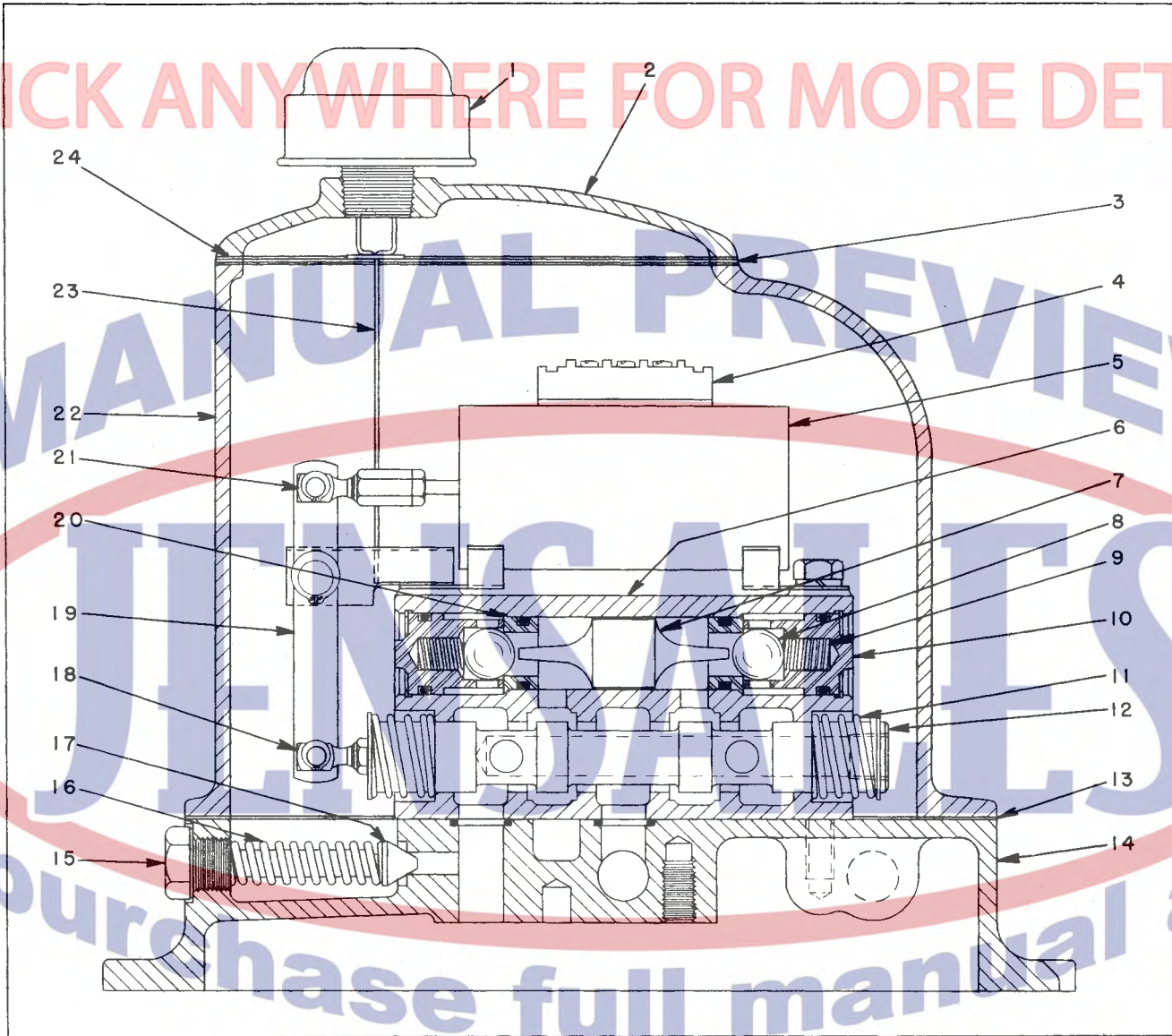


Figure 10-91 Cross Section Of No. 1 Hydra-Lectric Reservoir And Valve Mechanism

- | | |
|--------------------------------------|----------------------------------|
| 1. Breather | 13. Reservoir Housing Gasket |
| 2. Reservoir Cover | 14. Control Mounting Base |
| 3. Oil Baffle | 15. Relief Valve Guide |
| 4. Terminal Block | 16. Relief Valve Spring |
| 5. Valve Actuating Solenoid Assembly | 17. Relief Valve Plunger |
| 6. Selector Valve Body | 18. Ball Socket Joint (Threaded) |
| 7. Interlock Plunger | 19. Solenoid Lever Assembly |
| 8. Steel Ball, 3/4 Inch | 20. Interlock Valve Seat |
| 9. Interlock Spring | 21. Ball Socket Joint (Tapped) |
| 10. Interlock Valve Guide | 22. Reservoir Housing |
| 11. Valve Centering Spring | 23. Bayonet Gauge |
| 12. Selector Valve Spool | 24. Reservoir Cover Gasket |

OLIVER

SELL SERVICE

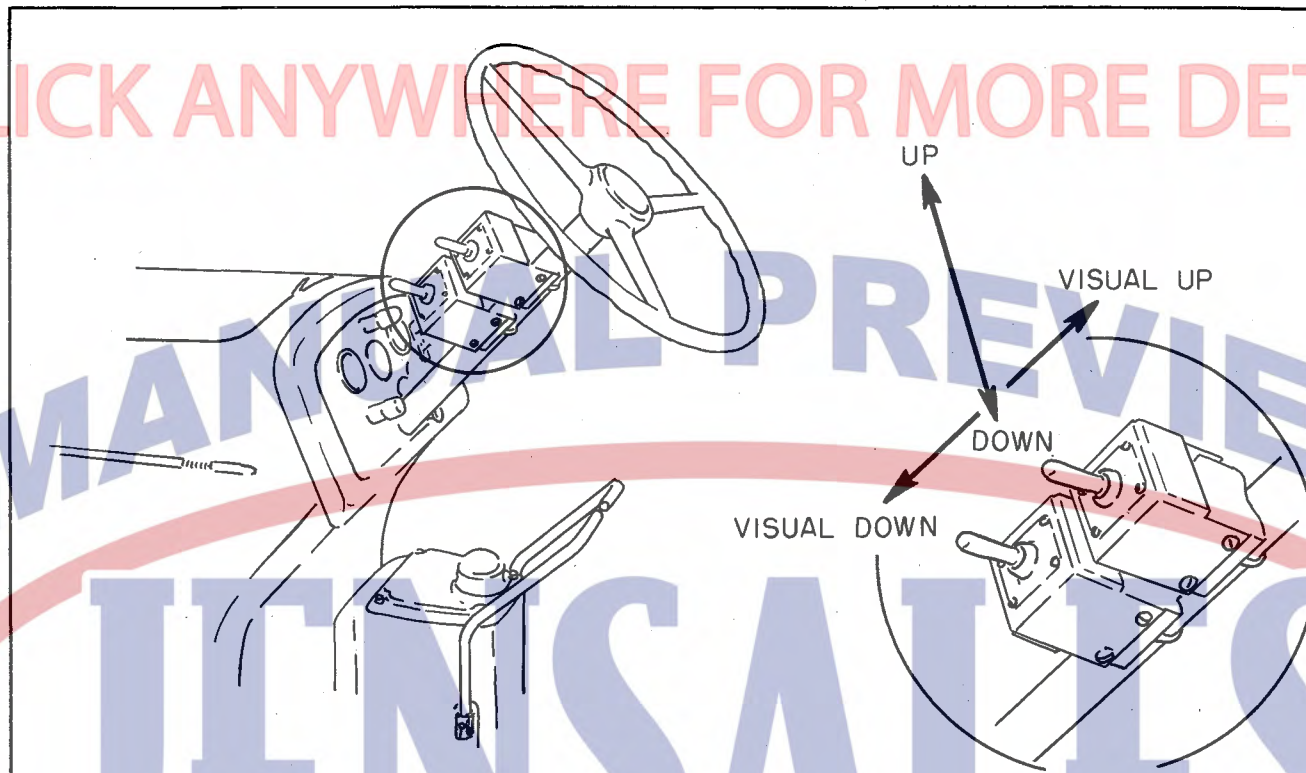


Figure 10-95 Hand Switch Positions No. 1 And No. 2 Hydra-Lectric Control Units



Figure 10-96 No. 3 Hydra-Lectric Control Operation

OLIVER

SELL SERVICE



Figure 10-97 Hand Actuating Levers Late No. 2 Hydra-Lectric Control

attached levers on late No. 2 units. (See Figure 10-97.) To raise the implement, the right-hand shaft must be turned from its self-centering position about 15° in a clockwise direction, and the left-hand shaft turned in a counterclockwise direction. To lower the implement, the shafts must be turned in the opposite direction about 15° from their self-centering position. On the No. 3 Hydra-Lectric Control units the operating levers protruding from the top of the unit are used for both electrical and mechanical operation. (See Figure 10-86.) A touch of the levers is all that is necessary to actuate the spool and solenoid rail for Hydra-Lectric operation, but for manual operation the same levers can be held in position a few moments and the mechanism operates as a Hydraulic Control unit.

HYDRAULIC CONTROL

For all three Hydraulic Control units, the *hydraulic* mechanism is identical with the corresponding Hydra-Lectric Control unit; (See detailed discussions which follow on: Neutral, Raising and Lowering.) however, the *control* mechanism is different. In the No. 1, No. 2 and No. 3 Hydraulic Control units the manual actuating levers have only two operating positions; the *Up* and *Down*. The levers are within easy reach of the operator as they extend upward from the hydraulic unit. (See Figures 10-98, 10-99 and 10-100.)

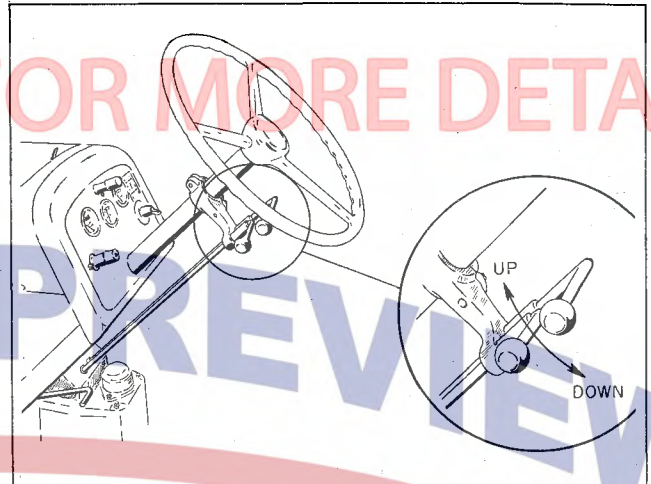


Figure 10-98 No. 1 Hydraulic Control Hand Lever Positions

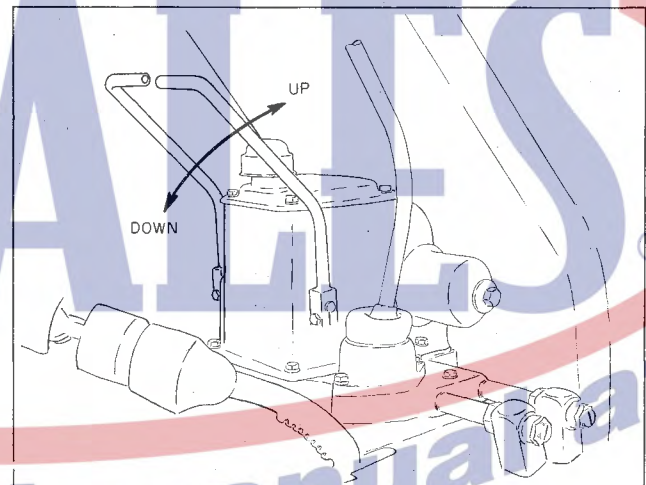


Figure 10-99 No. 2 Hydraulic Control Hand Lever Positions

To extend the cylinder and raise the implement, move the hand lever upward or forward. This moves the valve spool in such a manner as to direct oil to the lower, or base end, of the cylinder. As the cylinder extends, oil discharged from the rod end flows through the hoses and base plate to either the reservoir or second valve.

To retract the cylinder and lower the implement, move the hand lever backward or down. This will move the valve spool to a position where oil is directed to the top, or rod end, of the cylinder thus causing the implement to be lowered. Oil discharged from the base end flows back to the mounting base and to the second valve or reservoir.



Figure 10-128 "L" Series No. 1 Control Unit
Drain Plug



Figure 10-129 "L" Series No. 2 Control Unit
Drain Plug

Engine flushing oils can be used to flush the hydraulic unit after the regular fluid has been drained. The flushing solution should be drained out after a few minutes of operation and the unit again filled with 10W engine oil. The flushing and draining period should be carried out each Fall a few days before the tractor finishes its Fall work and is stored for the Winter months, or, at any other time the unit becomes sluggish or has been working in extremely dusty conditions. If the unit does not react to the flushing operation, the deposits within the system will be so bad that a complete overhaul will be required to properly clean the system.

To drain the system on 77, 88 and similar Super series tractors, remove the rear pipe plug from the left side of the control mounting base under the reservoir and allow the fluid to drain out. (See Figures 10-125, 10-126 and 10-127.) On 66 Series tractors, the drain plug is on the rear side of the mounting base next to the relief valve. (See Figures 10-128, 10-129 and 10-130.)

Disconnect all hose connections from the unit and drain the hoses. To drain the hoses equipped with quick disconnect couplings, it is necessary to remove the coupling from the hose. Remove the cylinders from the implement and work the piston in the cylinder until the cylinder is completely clear of fluid.

CAUTION

AT NO TIME SHOULD THE TRACTOR
ENGINE BE OPERATED WITH THE SYS-
TEM DRAINED.

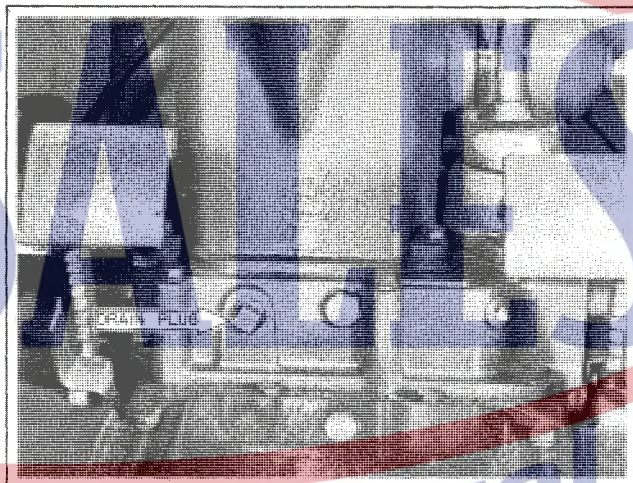


Figure 10-130 "L" Series No. 3 Control Unit
Drain Plug

The hydraulic pump is lubricated by the fluid within the system and running the engine while the system is drained may seriously damage the pump.

FILLING THE UNIT

To fill the unit, pour fluid into each cylinder through the hose inlets until the fluid is level with the openings. Connect the cylinders to the reservoir by means of the hose connections which should also be filled with fluid after one end of the hose has been connected to the unit. Pour fluid into the reservoir through the filler tube where the air breather is located. (See Figures 10-122, 10-123 and 10-124.)

OLIVER

SELL SERVICE

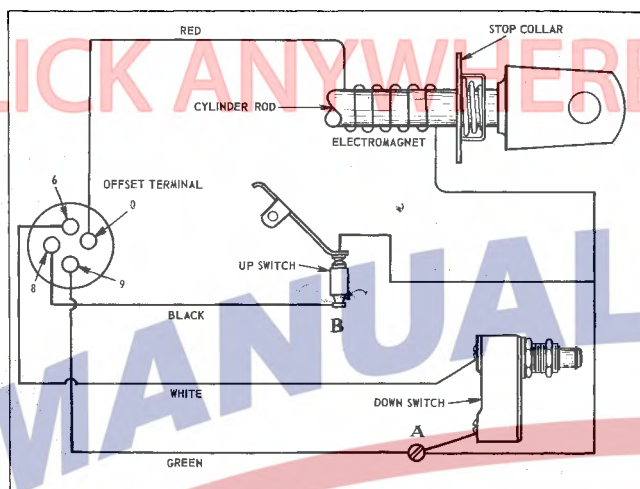


Figure 10-156 No. 3 Unit Electromagnetic Cylinder Wiring Diagram

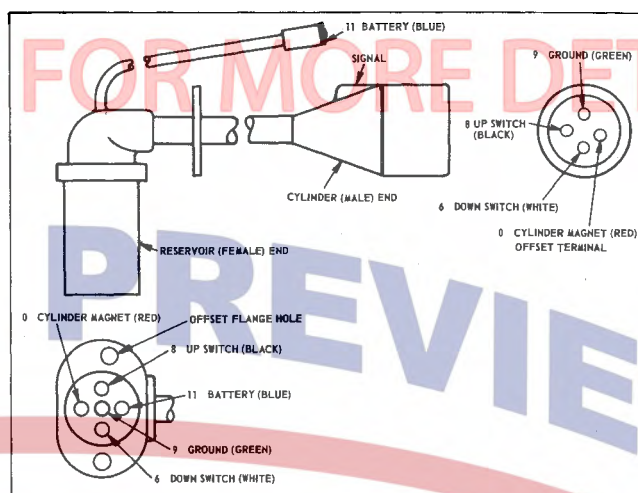


Figure 10-158 No. 3 Hydra-Lectric Wiring Harness

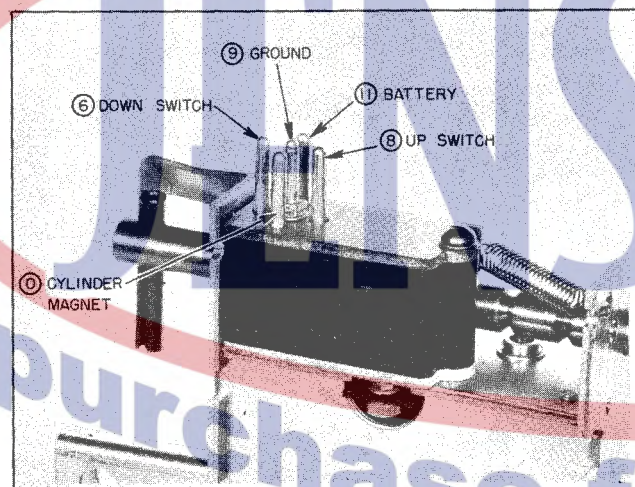


Figure 10-157 No. 3 Unit Switch Assembly Terminals

TROUBLE CORRECTIONS – Electrical NO. 3 UNITS (Super Series Tractors)

DEAD CIRCUIT CHECKS

Ground Circuit

CYLINDER — Place one battery lead on plug terminal “9”. (See Figure 10-156.) Place the other battery lead on an unpainted part of the cylinder head. If the test bulb lights, the circuit is all right. If it does not light, check the ground screw at “A” in Figure 10-156 to be sure it is clean and properly grounded, otherwise the cylinder cable must be defective and will have to be replaced.

SOLENOID AND SWITCH ASSEMBLY — Remove the reservoir cover and place one test battery lead on the battery terminal “11” of the switch assembly and the other battery lead on ground terminal “9”. (See Figure 10-157.) If the test bulb lights, the circuit is all right. If it does not light, check both primary and secondary solder connections of the solenoid; check for loose ground terminal of the switch; check the blade contact as it may be bent, dirty or damaged. Replace necessary parts.

WIRING HARNESS — Place one battery lead on the “9” terminal of the cylinder (male) end of the wiring harness and the other lead on the “9” terminal at the reservoir (female) end of the harness. (See Figure 10-158.) If the test bulb lights, the circuit is all right. If it does not light the wiring harness is faulty and must be replaced.

1. *Up* or *Down* positions inoperative, all other positions operative — Under Dead Circuit Checks, check the following: (a) all ground circuit checks and (b) *Up* circuit or *Down* circuit, whichever case applies, of the Solenoid And Switch Assembly.
2. *Visual Up* or *Visual Down* positions inoperative, all other positions operative — Under Dead Circuit Checks, check the following: (a) all ground circuit checks and (b) *Visual Up* or *Visual Down* circuits for the Solenoid And Switch Assembly.

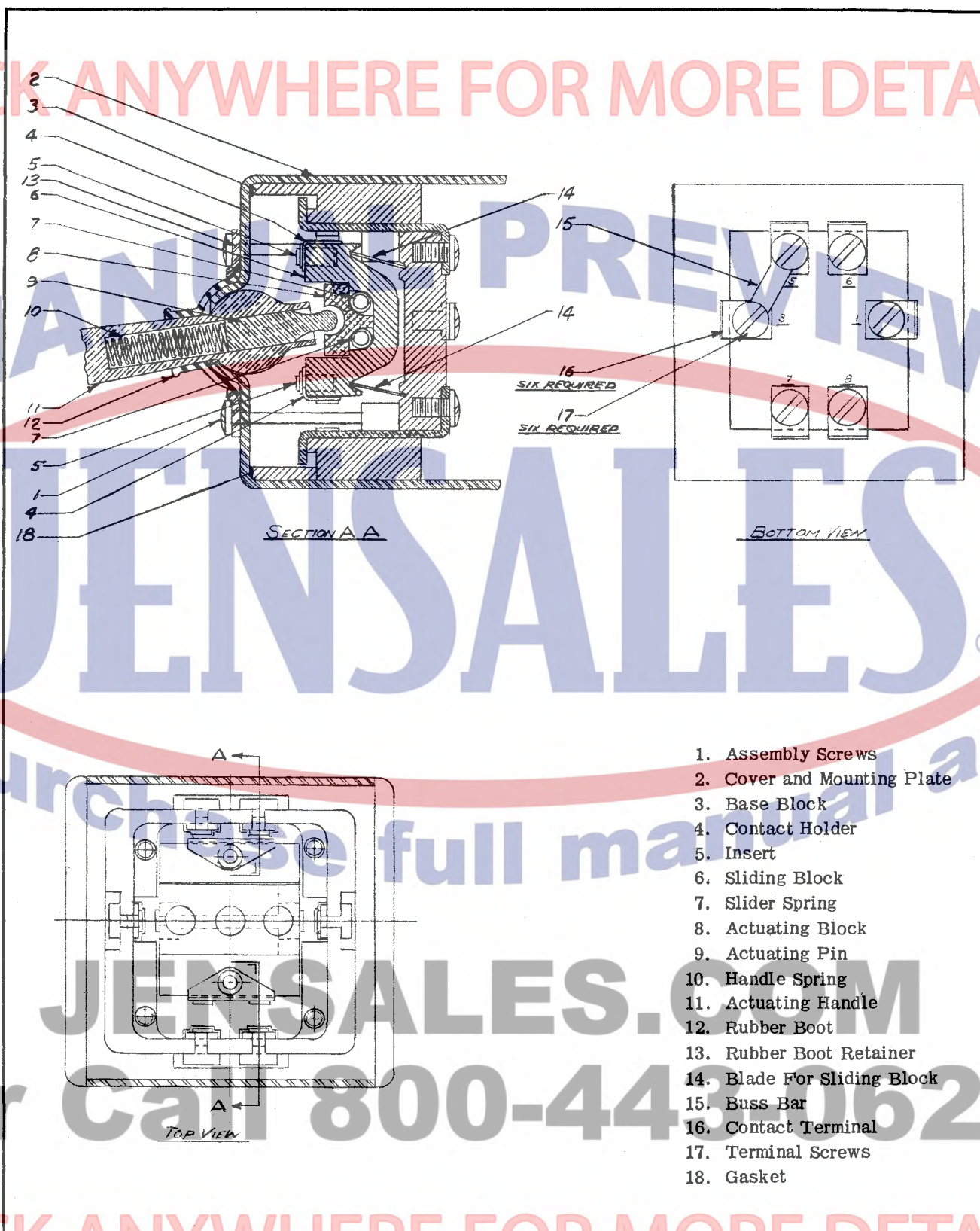


Figure 10-310 Hand Switch

SELL SERVICE

OLIVER