TENNANT INSTRUCTION BULLETIN

No. 340426 Machine: 7100 Published: 1-01/00 System: OPTIONS

NOTE: DO NOT DISCARD the Parts List from the Instruction Bulletin. Place the Parts List in the appropriate place in your machine manual for future reference. Retaining the Parts List will make it easier to reorder individual parts and will save you the cost of ordering an entire kit.

NOTE: Numbers in parenthesis () are reference numbers for parts listed in Bill of Materials.

Installation instructions for kit number 391047

SYNOPSIS / PROBLEM:

This kit contains the parts needed to install a rollout battery kit on the model 7100 scrubber. Please follow step-by-step instructions.

SPECIAL TOOLS / CONSIDERATIONS: Hammer and punch, file

(Estimated time to complete: 3 hours)

PREPARATION:

(Refer to FIG. 1 thru 9)

FOR SAFETY: Before leaving or servicing machine, stop on level surface and set parking brake. Then turn off machine and remove key.

- 1. Check the solution tank on the machine is empty.
- 2. Turn the machine power on. Press the scrub switch to lower the scrub head. Turn the machine power off when the scrub head is lowered to the floor.
- 3. Disconnect the scrub head lift actuator from the scrub head. Set the cotter pin and cotter key aside. (Refer to FIG. 3)
- 4. Turn the machine power on, and raise the lift actuator once it is disconnected.
- 5. Turn the machine power off when the lift actuator is raised.
- 6. Disconnect battery cables from machine.



WARNING: Always disconnect battery cables from machine before working on electrical components.

OLD SEAT ASSEMBLY REMOVAL:

(Refer to FIG. 1 thru 4)

- 1. Lift the operator's seat. Pull up on the hinge lock. Disconnect the operator seat safety switch and the seat prop rod. Remove and set aside the seat and the seat pan.
- 2. Disconnect, remove and set aside all of the machine batteries and connecting cables from the machine. Remove and set aside the batteries and battery trays.
- 3. Disconnect, remove, and set aside the seat plate hinges from the support weldment. (Refer to FIG. 1)



FIG. 1 - SEAT PLATE ASSEMBLY REMOVAL

- 4. Disconnect the scrub head lift actuator from the main harness. Remove and set aside the lift actuator, actuator mounting plate and hardware. Remove the battery cable from the back side of the actuator housing. Remove and discard the lift actuator housing.
- 5. Remove and set aside the seat support and mounting hardware from the machine. (Refer to FIG. 2)



FIG. 2 - SEAT SUPPORT / ACTUATOR HOUSING REMOVAL



FIG. 3 - SCRUB HEAD LIFT GROUP REMOVAL

SCRUB HEAD REMOVAL, DISK BRUSH

(Refer to FIG. 3 and 4)

- 1. Disconnect and tie up the stabilizer bars from each side of the scrub head. (Refer to FIG. 3)
- NOTE: Do not attempt to disassemble or adjust the length of the stabilizer bars to remove them. Remove the nuts mounting the ends to the machine for disassembly.
 - 2. Locate the lift channel underneath the machine, connecting the scrub head to the machine frame. (Refer to FIG. 3)
 - 3. Remove the front clevis pin from the lift channel, disconnecting the lift channel from the machine frame. (Refer to FIG. 3)
 - 4. Disconnect the solution hose from the plastic tee fitting on the scrub head. (Refer to FIG. 4)
 - 5. Disconnect the scrub brush motors from the main wiring harness. (Refer to FIG. 4)
 - 6. Block the rear tires. Jack up the front of the machine, and carefully slide the scrub head assembly out from underneath the right side of the machine.

FOR SAFETY: When servicing machine, block machine tires before jacking machine up. Jack machine up at designated locations only. Block machine up with jack stands. Use a jack that will support the weight of the machine.

- NOTE: Once the scrub head is out from under the machine, take note which motor the head of the rear clevis pin is facing.
 - 7. Remove the scrub brush on the head side of the clevis pin. (Refer to FIG. 4)
 - 8. Remove the brush drive hub. Set aside the brush, hub and mounting hardware.
 - 9. Carefully turn the scrub head over, and remove the bolts mounting the brush motor to the disk frame.
 - 10. Lift the brush motor off the head weldment.
 - 11. Remove the rear clevis pin and the lift channel off the scrub head. (Refer to FIG. 3)
- 12. Insert two flange bearings into the rear holes of the new lift channel. Replace the old lift channel with the new lift channel. Install the new lift channel onto the scrub head with the clevis pin and cotter pin.
- 13. Replace the motor assembly, hub and brush, and secure with the set aside mounting hardware.

SCRUB HEAD REMOVAL, CYLINDRICAL BRUSH

(Refer to FIG. 3 and 5)

- 1. Disconnect and tie up the stabilizer bars from each side of the scrub head.
- NOTE: Do not attempt to disassemble or adjust the length of the stabilizer bars to remove them. Remove the nuts mounting the ends to the machine for disassembly.
 - 2. Locate the lift channel underneath the machine, connecting the scrub head to the machine frame.
 - 3. Remove the front clevis pin from the lift channel, disconnecting the lift channel from the machine frame.
 - 4. Disconnect the solution hose from the plastic tee fitting on the scrub head.

- 5. Disconnect the scrub brush motors from the main wiring harness.
- 6. Carefully slide the scrub head group out from underneath the right side of the machine.
- 7. Locate and remove the clevis pin and cotter pin, connecting the lift channel to the scrub head. (Refer to FIG. 5)
- 8. Insert two flange bearings into the rear holes of the new lift channel. Replace the old lift channel with the new lift channel. Install the new lift channel onto the scrub head with the set aside clevis pin and cotter pin. (Refer to Figure 7)

ROLL OUT BATTERY ASSEMBLY INSTALLATION, ALL SCRUB HEAD TYPES (Refer to FIG 6 thru 9)

- 1. Install the reworked tank filler panel (17) to the left hand side of the machine with mounting hardware. (Refer to FIG. 8)
- Position the battery roller assembly on the frame, with the slotted opening centered over the opening in the tank filler panel (17). Mount the battery roller assembly to the machine floor with hex screws (7 and 9), washers (8)and sleeves (10). Tighten the mounting hardware to 18.5-24Nm (13.2-17.4ft lb). (Refer to FIG. 8)
- 3. Using a hammer and chisel, punch out the notched out square on the left side of the machine floor for the new scrub head actuator location. (Refer to FIG. 8)
- 4. Mount the seat support (1) with hex screws (2) and washers (3). Secure the seat support to the solution tank with the set aside hardware. (Refer to FIG. 6)
- Mount the high density pad (7) to the inside of the seat support (1) with three hex screws (8), six washers (6) and three lock nuts (9). Tighten the mounting hardware to 7.6–9.9Nm (5.5–7ft lb). (Refer to FIG 6)
- Mount the seat support brace (4) to the machine floor with a hex screw (2) and washer (3). Secure the other end of seat support brace (4) to the seat support (1) with two hex screws (5) and washers (6). (Refer to FIG 6)
- Position the new lift actuator housing (11) in the left front corner of the rollout battery compartment. Secure the lift actuator housing (11) to the machine floor with two hex screws (2) and washers (3). Secure the lift actuator housing (11) to the seat support (1) with two more hex screws (2) and washers (3). Tighten the actuator housing mounting hardware to 18.5-24Nm (13.2-17ft lb). (Refer to FIG 6)
- 8. Position the set aside lift actuator, with the actuator mounting plate, into the lift actuator housing (11).
- 9. Mount the rubber grommet (12) in the hole, in the back side of the actuator housing (11). Guide the main harness through the rubber grommet (12). Connect the main harness to the lift actuator. Secure the actuator mounting plate to the top of the actuator housing (11) with the set aside mounting hardware. (Refer to FIG 6)
- Install the new battery connecting cable 390776 to the back side of the lift actuator housing (11) with the set aside mounting hardware. Tighten the mounting hardware to 7.6–9.9 Nm (5.4–7.0ft lb). Route the cable under the machine and connect to the back side of the instrument panel. (Refer to FIG 9)

- 11. Mount the battery angle latch (12) to the rollout battery housing (11) with the threaded stud (16), washers (14), lock nut (15) and securing knob (13). Mount the battery angle latch (12) with the lip pointing towards the top of the rollout battery housing (11). (Refer to FIG 8)
- NOTE: Mount the knob (13) to the lower stud on the threaded stud weld. (16). (Refer to FIG 8)
 - 12. Place the rollout battery housing (11) onto the battery roller assembly with the angle latch (12) facing out. Slide the angle latch down into the slot in the battery roller assembly, and tighten the securing knob (13) to hold the battery housing in place. (Refer to FIG 8)
 - 13. Assemble the set aside batteries and battery cables in the battery housing according to layout in FIG. 9. Connect the battery pack to the machine. (Refer to FIG 9)

ROLL OUT BATTERY SCRUB HEAD LIFT GROUP INSTALLATION, ALL TYPES (Refer to FIG. 7)

- 1. Mount one bearing (2) on the right side of the lift tool (1) with two retaining rings (5). (Refer to FIG 7)
- 2. Slide the other bearing (2) on the left side of the lift tool (1). Install the lift arm (6) onto the end of the left side of the lift arm (1), so that the lift arm is raised slightly higher than the lift tool (1), and secure with the roll pin (7). (Refer to FIG 7)
- 3. Install the lift arm and line the bearings (2) up with their mounting locations under the machine. Mount the bearings (2) on each side of the lift tool (1), to the machine frame with hex screws (3) and lock nuts (4). Grease each bearing with 5 or 6 pumps from a grease gun. (Refer to FIG 7)
- 4. Slide the new scrub head under the machine.
- Position the lift tool (1) over the tool lift channel with the longer side on the left hand side of the machine. Mount the lift tool (1) to the tool lift channel with three clevis pins (9), washers (10) and cotter pins (11). Release the link arms, and reconnect each side to the scrub head. (Refer to FIG 7)
- 6. Turn the machine power on, and slowly lower the scrub head lift actuator. Connect the lift actuator to the lift arm (6) on the lift tool (1) with the cotter pin and cotter key. (Refer to FIG 7)
- 7. Reconnect the solution hose to the tee fitting on the scrub head. (Refer to FIG 4)
- 8. Reconnect the scrub motors to the main wire harness.
- 9. Turn the machine power on.
- 10. Check the lift assembly and scrub assemblies for proper operation.



FIG. 4 - MOTOR REMOVAL, DISC BRUSH



FIG. 6 - ROLLOUT BATTERY SEAT SUPPORT GROUP

BILL OF MATERIALS FOR ROLLOUT BATTERY SEAT SUPPORT GROUP

Ref.	TENNANT Part No.	Description	Qty.
1	390752	Support wldt, seat, battery, R/O	1
2	16931	Screw, hex, M08 X 1.25 X 20, 8.8	8
3	32491	Washer, flt, 0.31 std	8
4	390755	Brace wldt, sppt, seat, R/O	1
5	06943	Screw, hex, M06 X 1.0 X 20, 8.8	2
6	32483	Washer, flt, 0.25 sea	2
7	390751	Pad, Hi-Dns pye, 0.50 X 4.0 X 18.0L	1
8	06945	Screw, hex, M06 X 1.0 X 30, 8.8	3
9	08708	Nut, hex, lock, M06 X 1.0, NI	3
10	391305	Tread, non-skid, 5.0 2.5	1
11	390661	Housing, tool, lift	1
12	04051	Grommet, rbr, 1.31id, F/1.6h, 0.12matl	1

FIG. 7 - SCRUB HEAD LIFT GROUP INSTALLATION

BILL OF MATERIALS FOR ROLLOUT BATTERY SCRUB HEAD LIFT GROUP

Ref.	TENNANT Part No.	Description	Qty.
1	390655	Shaft wldt, tool, lift, R/O	1
2	369337	Bearing assy, 2 hole, 1.25b	2
3	09028	Screw, hex, M10 X 1.5 X 25, Ss	4
4	08714	Nut, hex, lock, M10 X 1.5, NI, Ss	4
5	59861	Ring, retaining, ext, 1.25d	2
6	390658	Arm wldt, input, tool, lift, R/O	1
7	51317	Pin, roll, 0.380D X 2.00l, 0.375/0.382	1
8	11211	Pin, Clevis, 0.50 D X 2.25L	1
9	222196	Pin, Clevis, 0.50 D X 4.00l	2
10	41619	Washer, flt, 0.50 Ss	2
11	02942	Pin, hair cotter, 0.62 D, 120 wir	3
12	15648	Bushing, flng, 0.50b 0.59d 0.38l	2

FIG. 8 - ROLLOUT BATTERY CASE GROUP

BILL OF MATERIALS FOR ROLLOUT BATTERY CASE GROUP

Ref.	TENNANT Part No.	Description	Qty.
13	391152	Frame wldt, mtg, roller, R/O	1
14	391155	Angle, mtg, roller, battery, R/O	2
15	369415	Bearing, needle, 0.25b 0.25b 0.88d 0.50w	8
16	33930	Screw, hex, M06 X 1.0 X 40, Ss	8
17	01684	Washer, flt, 0.25 Ss	8
18	08712	Nut, hex, lock, M06 X 1.0, NI, Ss	8
19	16931	Screw, hex, M08 X 1.25 X 20, 8.8	7
20	32491	Washer, flt, 0.31 std	7
21	39277	Screw, hex, M08 X 1.25 X 25, 8.8	2
22	222516	Sleeve	2
23	391149	Housing wldt, battery, R/O	1
24	391150	Angle, latch, battery, R/O	1
25	390955	Knob, 2.00d 1.00h 0.38-16 Thread alm	1
26	41187	Washer, belleville, 0.38	2
27	59156	Nut, hex, lock, 0.38-16 1.50l	1
28	390956	Stud wldt, thrd, 2.38-16 1.50l	1
29	391166	Panel, tank, filler, rwk, R/O	1

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FIG. 9 - ROLLOUT BATTERY CASE GROUP