Technical Procedure:

Troubleshooting LTT Units

1.0 Purpose: To determine and troubleshoot common failure modes to provide technical support to customers and meet necessary quality standards for successful operation of LTT Units.

2.0 Procedure:

1. ***Determine the Common Failure Mode:***

   Failure Mode #1 - No tilt (*moves up and down but does not tilt*) and circuit breaker toggle switch is *not* tripping

   Failure Mode # 2 - No tilt, up or down (*completely immovable*)
   Failure Mode # 3 - Does not charge correctly (*lifts slowly, clicks when trying to lift*)
   Failure Mode # 4 - Other possible issues (*which may result in further questions or additional parts*)

   Please Note:
   - It is strongly recommended that a qualified electrician perform all electrical work. Maintenance should be performed only when the machine is properly locked out.
   - Before performing any maintenance or troubleshooting, always be sure to follow all safety procedures and disconnect the power source.
   - Use proper tools for the inspection and/or maintenance required, as it is extremely dangerous to use broken tools or tools designed for another purpose.

2. Once the ***Failure Mode*** is properly identified, troubleshoot the respective root cause at hand.

3. ***Failure Mode #1:*** No tilt (*moves up and down but does not tilt*) and the circuit breaker toggle switch is *not* tripping.

   Possible Root Cause:

   - Bad Motor
   - Bad Tilt Relay
   - Broken Wire
   - Bad Button on Pendant

Initial Troubleshooting Key Points:

a. Check the Normal Pathway: Tilt Switch → Relays → Tilt Cord → Male Connector → Motor
b. Remove the cover where the Tilt motor is positioned. There will be a white connector that connects the external round plug to the motor. Disconnect this white connector to remove the guard. Now you can troubleshoot the voltage from the motor through the tilt cord.
c. If there is electrical continuity to the tilt cord, everything else should be in good working order.
d. While pressing the tilt button on the pendant, check proper voltage for pins 1 & 2 by using a Digital Multimeter. Determine whether you have a minimum of +12 Volts/-12 Volts DC (depending on the direction) going to the motor from the tilt cord.
e. If you determine any reading below 12 Volts DC, this may be the result of a low battery.

   With your Digital Multimeter check the voltage between the two pins on the white plug coming from the round plug that is connected to the tilt cord. While idle (not touching the tilt switch) you should get a reading of 0.0 Volts. However, when tilting the direction that you're currently checking, the Digital Multimeter should get a reading of +12 Volts/-12 Volts DC (depending on the direction).

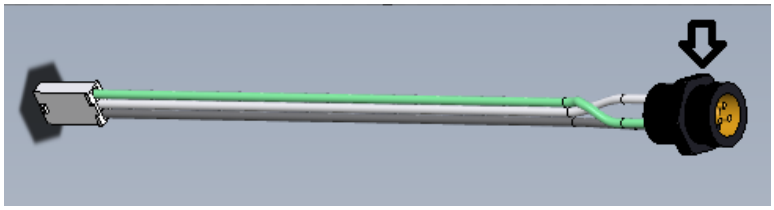
f. Two different scenarios occur from here, 1) your Digital Multimeter reading shows +12 Volts/-12 Volts DC (depending on the direction, there is some room for variance), or 2) your Digital Multimeter reading shows 0.0 Volts DC.

Scenario #1:

The Digital Multimeter reads +12 Volts or -12 Volts DC (depending on the direction) from the cord going to the motor.

Possible Root Cause:

- Broken Pins/Broken Wires on the receptacle ***P/N 9400-10-095***
- 3-pin receptacle end of male connector/3-wire harness ***P/N 0712-06-010:***



- Result of bad brushes or a bad motor
- Bauer Interlock (*if* the customer's LTT has this option)

Scenario #2:

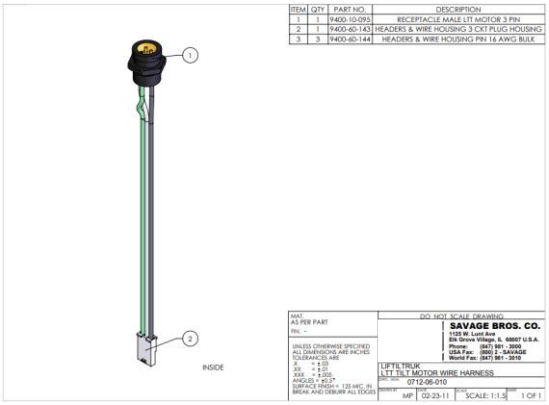
The Digital Multimeter reads 0.0 Volts DC or -12 Volts DC from the cord going to the motor.

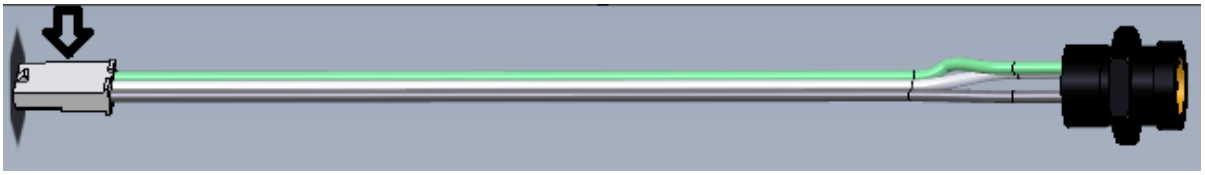
Possible Root Cause:

- Attachable 3 socket connector has been detached (reattach the connector)
- Damaged tilt motor cord
- A failed tilt relay (not present in older models)
- Low battery (the battery can still be considered operational at ~10 Volts DC)

4. ***Determining Whether this is a Possible Male Connector Issue:***

a. On the opposite side of the box, you will find the other end of the male connector/3-wire harness, the white snap-on piece which connects the male connector to the motor *(**P/N 9400-60-143**)*.





b. Check all pins in the header and wire housing *(**P/N 9400-60-144**)* and that they appear to be in good working condition (e.g., not bent, broken).

c. With the Digital Multimeter, check the black and white wires to see if it reads +12 Volts DC.

d. If your reading shows +12 Volts DC, this is *not* a male connector issue, but rather a motor issue.

5. ***Determined Motor Issue:***

a. Typically, changing out the brushes will temporarily solve the issue at hand. However, this is

is *not* a permanent solution.

Please Note: In the event that the brushes need to be replaced, refer to the following P/N's:

P/N 9400-00-104 (RAE Brush – **qty. 1**) OR ***P/N 9400-00-142*** (BODINE Brush – **qty. 2**)

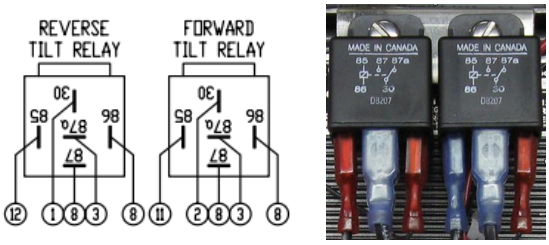
b. It's imperative to find out what motor is used for the specific lifter:

- We can support ***P/N 9400-00-099*** BODINE motors, but we are unable to supply anything older, as the cutoff date between the RAE motor and the BODINE motor is estimated to be around 2007.
- If a unit is older than 2007, without an Arm Upgrade, it's safe to assume that they have one of two Obsolete RAE motors (***P/N's 9400-00-029*** or ***9400-00-042***).
- Ask the customer to look at the tag on the motor and identify the part number to confirm.

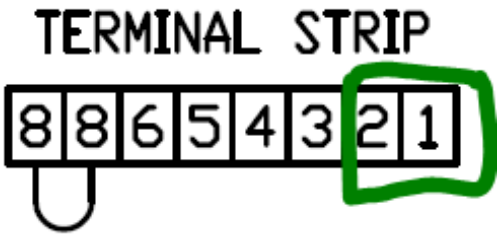
6. Firstly, check the Tilt Switch (in the pendant controller) by locating the relays. Secondly, look for the small black blocks which are the size of a small ice cube. There is a **FORWARD** relay and a **REVERSE** relay. Then listen for the actuation of the relays (the clicking sound from the relays while pressing the button). Additionally, you can use a Digital Multimeter to measure the voltage on the Terminal Strip at 1 & 2. You should have +12 Volts DC in one direction, and -12 Volts DC in the other direction.

***Incoming:** Should be +12/-12 Volts DC when actuated through the pendant.

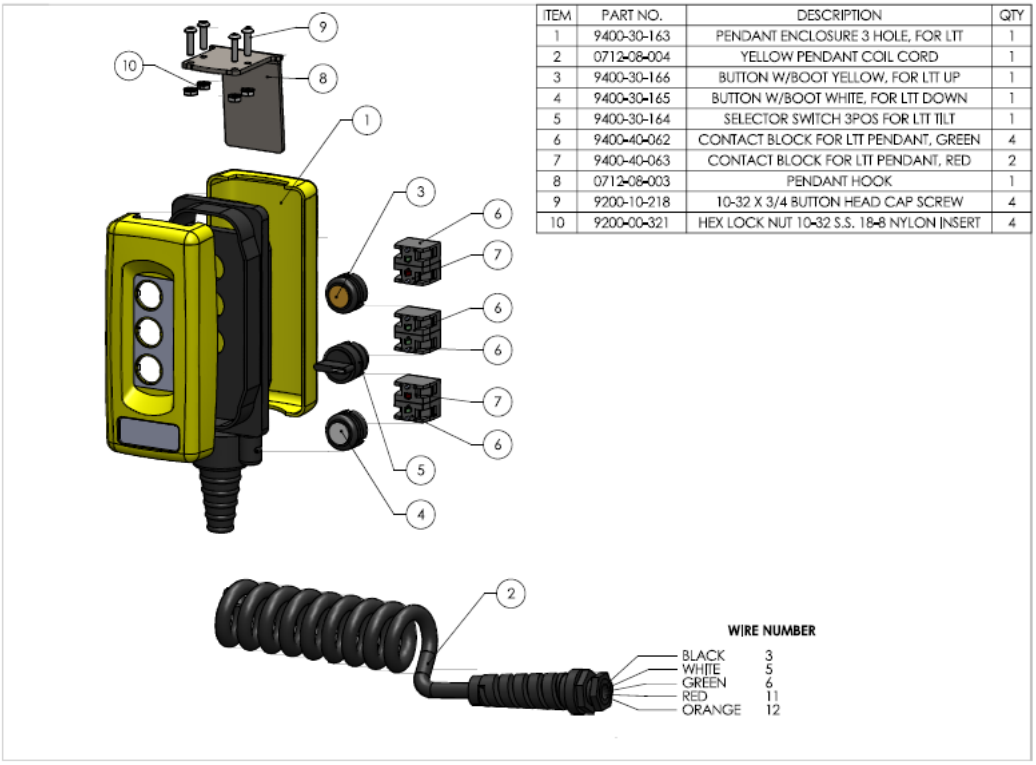
*__Outgoing__: Should be +12/-12 Volts DC when actuated through the pendant.



1 & **2** can be checked at the Terminal Strip:

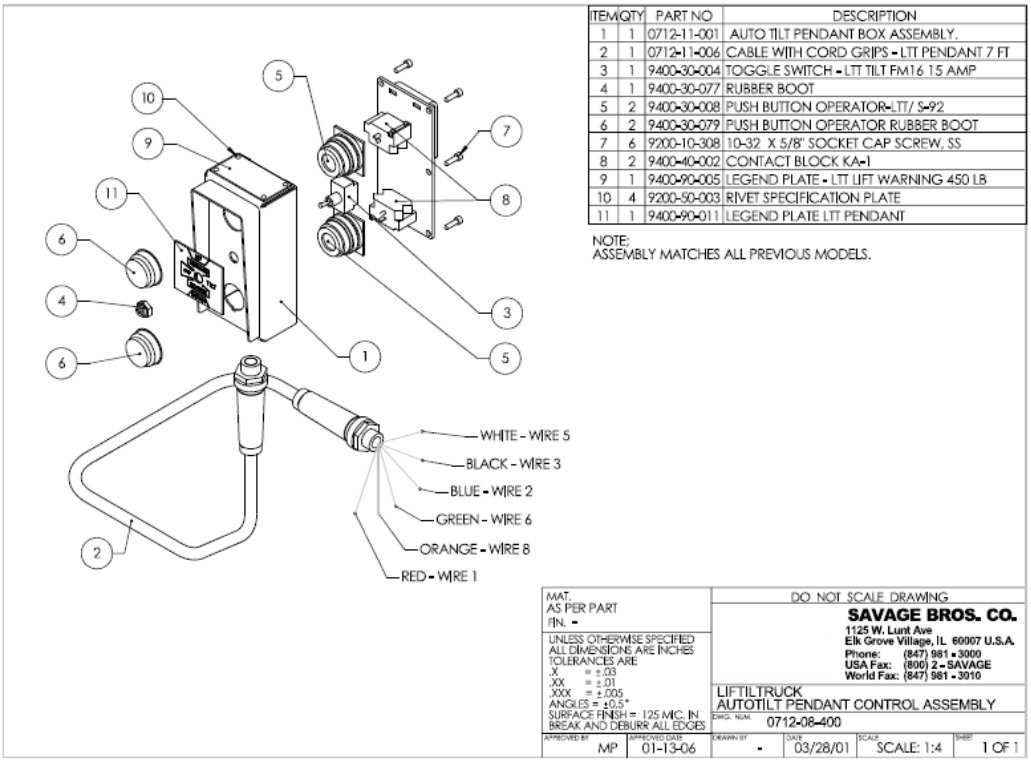


If neither one is sending power, this is likely the cause of a loose tilt switch not activating the contact blocks, or the blocks are bad. Refer to the Yellow Pendant Controller drawing:



ITEM	PART NO.	DESCRIPTION	QTY
1	9400-30-163	PENDANT ENCLOSURE 3 HOLE, FOR LTT	1
2	0712-08-004	YELLOW PENDANT COIL CORD	1
3	9400-30-166	BUTTON W/BOOT YELLOW, FOR LTT UP	1
4	9400-30-165	BUTTON W/BOOT WHITE, FOR LTT DOWN	1
5	9400-30-164	SELECTOR SWITCH 3POS FOR LTT TILT	1
6	9400-40-062	CONTACT BLOCK FOR LTT PENDANT, GREEN	4
7	9400-40-063	CONTACT BLOCK FOR LTT PENDANT, RED	2
8	0712-08-003	PENDANT HOOK	1
9	9200-10-218	10-32 X 3/4 BUTTON HEAD CAP SCREW	4
10	9200-00-321	HEX LOCK NUT 10-32 S.S. 18-8 NYLON INSERT	4

If the customer has a RAE motor with a Stainless-Steel controller, it's possible the Tilt Toggle Switch on the controller is bad. Refer to the Stainless-Steel Pendant Controller drawing:



ITEM	QTY	PART NO	DESCRIPTION
1	1	0712-11-001	AUTO TILT PENDANT BOX ASSEMBLY.
2	1	0712-11-006	CABLE WITH CORD GRIPS - LTT PENDANT 7 FT
3	1	9400-30-004	TOGGLE SWITCH - LTT TILT FM16 15 AMP
4	1	9400-30-077	RUBBER BOOT
5	2	9400-30-008	PUSH BUTTON OPERATOR-LTT/ S-92
6	2	9400-30-079	PUSH BUTTON OPERATOR RUBBER BOOT
7	6	9200-10-308	10-32 X 5/8" SOCKET CAP SCREW, SS
8	2	9400-40-002	CONTACT BLOCK KA-1
9	1	9400-90-005	LEGEND PLATE - LTT LIFT WARNING 450 LB
10	4	9200-50-003	RIVET SPECIFICATION PLATE
11	1	9400-90-011	LEGEND PLATE LTT PENDANT

NOTE;
ASSEMBLY MATCHES ALL PREVIOUS MODELS.

MAT.
AS PER PART
FIN. -

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE INCHES
TOLERANCES ARE
.X = ±.03
.XX = ±.01
.XXX = ±.005
ANGLES = ±0.5°
SURFACE FINISH = 125 MIC. IN.
BREAK AND DEBURR ALL EDGES

APPROVED BY: MP | APPROVED DATE: 01-13-06

DO NOT SCALE DRAWING

SAVAGE BROS. CO.
1125 W. Lunt Ave
Elk Grove Village, IL 60007 U.S.A.
Phone: (847) 981 • 3000
USA Fax: (800) 2 • SAVAGE
World Fax: (847) 981 • 3010

LIFTILTRUCK
AUTOTILT PENDANT CONTROL ASSEMBLY

DWG. NUM. 0712-08-400

DRAWN BY: - | DATE: 03/28/01 | SCALE: SCALE: 1:4 | SHEET: 1 OF 1

7. ***Replacement Motor:*** In the event that the customer needs a replacement motor, it is required that the following be changed out; entire arm (**qty. 1**), circuit breaker (**qty. 1**), tilt cord (**qty. 1**).

   Additional Recommendation: Change out the entire right side, which is completely *optional* and comes with an FYI warning to the customer.

- Different fittings were used by welders for the blue arms, however, they are no longer used for SS arms. Thus, on rare occasions the customer's original right blue arm and their new SS arm will not be level. This causes the kettle to tilt to one side. There is no factory fix for this. However, the customer can either use a rubber mallet for percussive realignment or use shims to level it.
- Depending on the date of manufacture, it is possible to reuse the original blue frame and change out the gearbox and motor.

8. Determine which route the customer will need to proceed with. The following are options for the ***Arm Retrofit Parts*** (*To use new gearbox*) OR ***Left Arm Assembly*** *(Upgrade**)*** along with the ***Right Arm Assembly*** *(Recommended/Optional)***:**

Arm Retrofit Parts *- To use new gearbox (Assembly required)*

Part Number	Part Description	Qty. Per
0712-04-630	Gearbox Assembly >10/04	1 EA
0712-03-665	Tilt Motor Assembly - Std >10/04	1 EA
9400-35-032	Circuit Breaker LTT 12V 10 Amp For Bodine Tilt Motor	1 EA
0712-08-520	Auto Tilt Coiled Cord Assembly	1 EA

Left Arm Assembly *- Upgrade*

Part Number	Part Description	Qty. Per
0712-03-600SS	New stainless steel arm assembly (includes motor and gearbox)	1 EA
9400-35-032	Circuit Breaker LTT 12V 10 Amp For Bodine Tilt Motor	1 EA
0712-08-520	Auto Tilt Coiled Cord Assembly	1 EA

Plus: ***Right Arm Assembly*** *- Recommended/Optional*

Part Number	Part Description	Qty. Per
0711-03-610SS	Lifter Idler Arm Assembly, B/C SS	1 EA

9. ***Why The Need for These Parts*?**

Reason for Each Respective Part:

The Arm

The Arm has an older gearbox, which is not compatible with the new tilt motors. The shaft is longer and integrated into the motor. Additionally, the bearings on the opposite side are not found on the original gearbox design.

The Breaker

The old RAE motors tripped out at 5.2 Amps. The new motors require a 10 Amp breaker.

The Cord

The cord is typically either yellow or black w/2 pins. If, in the rare event, they happen to have a black-coiled cord w/3 pins, this is *not* necessary.

Please Note: If you have the BODINE *(P/N **9400-00-099**)* → You will need to order the Replacement Kit *(P/N **0712-03-665**)*

10. ***Failure Mode #2:*** No tilt, no up and down (*completely immoveable*)

Possible Root Cause:

- Dead Battery
- Loose Battery Cable
- Stretched or Broken Pendant Cable
- Broken E-Stop Switch

Initial Troubleshooting Key Points:

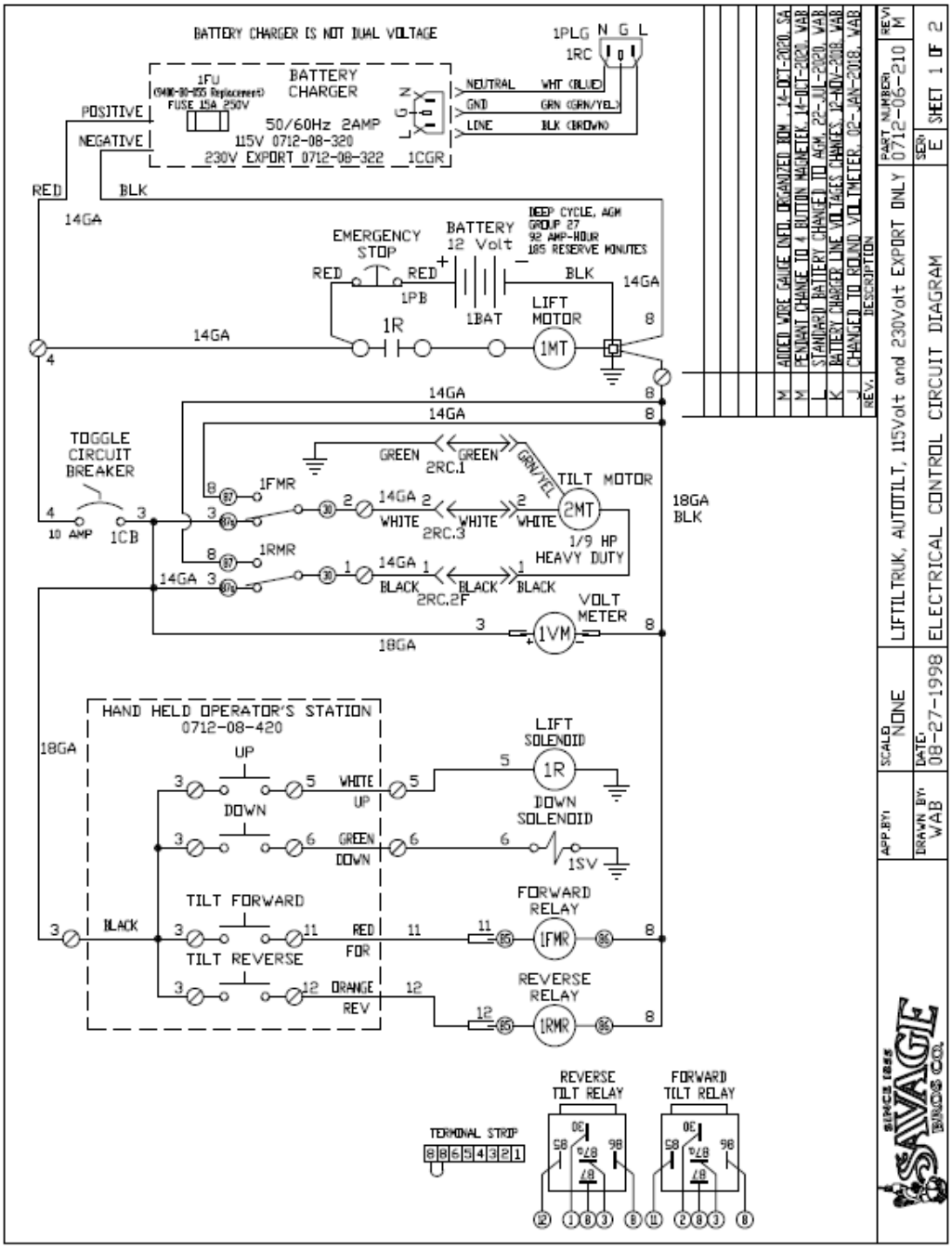
a. Check that the Circuit Breaker is in the **UP** position. This switch is located next to the main hydraulic electrical cabinet (looks like a toggle switch).

b. Check that the E-Stop is **PULLED OUT.**

c. Ensure that the battery is connected.

Please Note:

Refer to the below schematic, if necessary.



BILL OF MATERIAL			0712-08 E	ELEC/HYDR 12VDC BOX -AUTO TILT
ITEM	Qty	UM	Part Number	Description
1RC	1	EA	9400-10-179	POWER INLET W/ WATER PROOF PVC COVER,10A 250V, IEC 60320 C14
1CGR	1	EA	0712-08-320	BATTERY CHARGER ASSEMBLY 115V 50/60HZ
			0712-08-322	BATTERY CHARGER ASSEMBLY EXPORT ONLY 100/240V 50/60HZ
1BAT	1	EA	9400-95-003	BATTERY 12VDC AGM DEEP CYCLE, 185 RES. MIN., 92 AMP-HOUR
1BAT	1	EA	9400-50-007	BATTERY CABLE - BLACK / LTT
1BAT	2	EA	9400-50-008	BATTERY CABLE - RED / LTT
1PB	1	EA	9400-30-315	DISCONNECT SWITCH BATTERY 125A
1CB	1	EA	9400-35-032	CIRCUIT BREAKER LTT 12V/10AMP
1VM	1	EA	9400-22-005	VOLTMETER DIGITAL WITH 20 LED GAUGE 5-15VDC ROUND 1.150"HOLE
1VM	2	EA	9400-10-140	QUICK CONNECT FEMALE FULLY INSULATED 20-18 AWG
2OP,STA	1	EA	0712-08-420	AUTOTILT PENDANT CONTROL ASSY YELLOW MAGNETEK
1FR,1RR	1	EA	0712-08-412	AUTOTILT PENDANT RELAYS ASSY - YELLOW
2MT	1	EA	0712-08-520	AUTOTILT COIL CORD ASSEMBLY
1ENCL	1	EA	9400-40-014	TERMINAL BLOCK 8 POS 2 ROW SCREW TERM
1ENCL	2	EA	9400-60-025	RING TERMINAL- 5/16"/16-14/BLUE
1ENCL	1	EA	9400-60-032	RING TERMINAL-#10 STUD/16-14/BLUE
1ENCL	13	EA	9400-60-029	RING TERMINAL - #6 STUD/22-18/RED
1ENCL	4	EA	9400-60-140	TN14-WJ T&B NYLON WIRE JOINT QUICK CONNECT FEMALE-22-18/FULINS
1ENCL	1	EA	9400-90-028	LTT Yellow Pendant Label Set-English/French/Spanish
2OP,STA			**0712-08-420**	**AUTOTILT PENDANT CONTROL ASSY YELLOW MAGNETEK**
ITEM	Qty	UM	Part Number	Description
2ENCL	1	EA	9400-30-420	PENDANT STATION 4 BUTTON YELLOW MAGNETEK
2CORD	1	EA	0712-08-004	LTT YELLOW PENDANT COIL CORD CUT 10'EXT/2'RET 18 GA / 5 CONDUCTOR
2CORD			**0712-08-004**	**LTT YELLOW PENDANT COIL CORD CUT 10'EXT/2'RET 18 GA / 5 CONDUCTOR**
ITEM	Qty	UM	Part Number	Description
	0.5	EA	9400-50-170	COIL CORD - 18/5 SJOW 300VAC 20'Extended / 4'Retracted, 5 Amps
	1	EA	9400-60-066	CORD GRIP W/FLEX CAP SEALCON .39-.55" 1/2"NPT MALE
	1	EA	9400-60-067	LOCKNUT FOR 1/2"NPT CORDGR SEALCON
	3	EA	9400-60-026	SPADE TERMINAL-#6 STUD/22-18/RED
	2	EA	9400-10-140	QUICK CONNECT FEMALE FULLY INSULATED 20-18 AWG
				REPLACEMENT PARTS:
1R	1	EA	0712-08-202	SOLENOID KIT LTT UP, w/ MOTOR CONNECTING STRAP
1CGR	1	EA	9400-20-352	BATTERY CHARGER 115V 50/60Hz SCHAUER
			9400-20-397	BATTERY CHARGER 100-240V 50/60Hz EXPORT ONLY SCHAUER
1FU	1	EA	9400-80-055	Fuse 5x20mm 15A 250VAC Fast Acting Glass (SPARE / REPLACEMENT)
2MT	1	EA	9400-00-210	GEARMOTOR 12VDC LTT 1/9 HP, 60:1 GEAR RATIO, 100LB-In TORQUE 53 RPM
2MT	1	EA	9400-10-096	PLUG 3 SOC ATTACHABLE LTT TILT FEMALE THREAD MINI
				MECHANICAL ASSEMBLY
1MT	1	EA	9600-10-013	HYDRAULIC PUMP - 12VDC LIFTILTRUK, DYNA-JACK SYSTEM - SET@ 1000 PSI

BILL OF MATERIAL			0712-08-412	AUTOTILT YELLOW PENDANT RELAYS ASSY
ITEM	Qty	UM	Part Number	Description
1FR,1RR	2	EA	9400-30-152	RELAY 12V DC COIL 35A NO/ 20A NC SPDT QUICK CONNECT
1FR,1RR	1	EA	9400-60-141	TN10-WJ T&B NYLON WIRE JOINT 12-10GA CAP SPLICE
1FR,1RR	1	EA	9400-60-142	RP7 T&B NYLON WIRE JOINT 3#14 to 2#10 max CAP SPLICE
1FR,1RR	2	EA	9400-10-140	QUICK CONNECT FEMALE FULLY INSULATED 20-18 AWG
1FR,1RR	6	EA	9400-10-142	QUICK CONNECT FEMALE FULLY INSULATED 16-14 AWG
1FR,1RR	4	EA	9400-60-027	SPADE TERMINAL - #6 STUD/16-14/BLUE

BILL OF MATERIAL				
ITEM	Qty	UM	Part Number	Description
1PLG	1	EA	9400-50-162	POWER CORDSET 115V NEMA 5-15 10A, IEC 60320 C13, 18GA, 2.44M/8Ft
			9400-50-163	POWER CORDSET 230V NEMA 6-15 10A, IEC 60320 C13, 18GA, 2.44M/8Ft
			9400-50-164	POWER CORDSET AUSTRALIAN 10A, IEC 60320 C13, 18GA, 2.5M/8Ft
			9400-50-165	POWER CORDSET UK & IRELAND 10A, IEC 60320 C13, 18GA, 2.5M/8Ft
			9400-50-166	POWER CORDSET CONTINENTAL EU 10A, IEC 60320 C13, 18GA, 2.5M/8Ft
			9400-50-167	POWER CORDSET India/SAfrica 10A, IEC 60320 C13, 18GA, 2.5M/8Ft
			9400-50-340	POWER CORDSET CHINESE 10A, IEC 60320 C13, 18GA, 2.5M/8Ft Long

d. Ensure the battery is live, +12 Volts DC. Anything under ~10 Volts DC is considered a dead battery.
e. Determine if the unit works with the power charging cord plugged into the wall. If yes, most likely this is the result of a bad battery and/or bad charger.

11. ***Failure Mode #3:*** Does not charge correctly (*lifts slowly, clicks when trying to lift*)

Possible Root Cause: Bad Charger

Initial Troubleshooting Key Points:

a. **Q:** *How often is the LTT charged?*

A: Depends on usage. Frequent usage requires a full charge each night, we strongly recommend charging after each shift, at the end of the day.

b. **Q:** *How long is the LTT charged?*

A: Recommendation is 12 hours for a full charge.

c. **Q:** *How old is the battery?*

A: If obsolete, you will need a *new* battery. However, this will need to be sourced locally. Please see the below example of what type of battery to purchase:

Marine Deep Cycle Battery

(Standard 12 Volts DC with 160-180 reserve minutes, 80-105amp hours, Group 27)

<u>Troubleshooting the Charger:</u>

a. Check the battery charger leads (connections to the battery).

b. If the voltage (DC) quickly spikes from 0.0 Volts DC to +12 Volts DC, the battery is not holding the charge and needs to be replaced.

c. If the voltage on the battery does not rise when the charger is plugged in, then it could be the result of one of the following: 1) bad ammeter, 2) blown fuse, 3) charger not on, 4) bad charger.

d. Enter a Sales Order for the customer for *P/N* ***0712-08-320*** (Battery Charger Assy 115V 50/60HZ Kit)

e. If you have an old charger (not Schauer), refer to Battery Usage and Charging on the next page

BATTERY USAGE AND CHARGING:

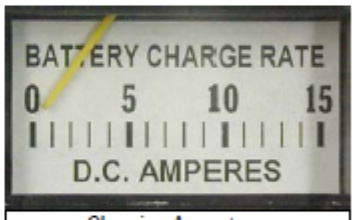
The hydraulic lift motor operates on 12 volts dc. It uses a large amount of current when it runs and it can only get that current from the battery. The machine will not operate without a battery connected.

If the lifter begins to lift very slowly or the lift power relay begins to chatter, the battery has sustained serious damage and will have a tremendously diminished life expectancy and ability to hold a charge.

A fully charged new battery will provide approximately 90 to 110 lift (250 Lb) and tilt cycles on a single charge. At that point the battery will be completely empty. Incidentally, running the battery down to empty is definitely not a good routine but it may happen to you. For optimum usage of the battery, it is recommended that the battery be recharged after about 70 lift and tilt cycles which is approximately 70% discharged.

Charge Voltmeter - "Fuel Gauge"

On the door of the battery/pump box is a round gauge (voltmeter) that shows how much charge is in the battery. Wait a minute after performing a lift to read the gauge as during lifting the pointer will pull to the left. When it is pointing in the yellow or red zones, recharge the battery.



Charging Ammeter –
"Confirming Charger is Working"

When the charger is plugged in, the rectangular shaped ammeter on the side of the enclosure will indicate the charge rate. If the battery is fully charged, the ammeter may not indicate any current, or it may momentarily show a charging condition and then quickly drop off to zero. If the battery is more than [20%] discharged, the ammeter will initially indicate 10 amps. As the battery builds up a charge, the ammeter will begin to drop down to around 3 amps. If the time allotted for charging is not long enough for the battery charger to bring the battery up to a full charge, then you will want to consider having a second battery and charger on the side and perform a swap before killing the battery.

For longer battery life expectancy, develop a routine to recharge the battery before it is empty, that is, before the voltmeter pointer is in the red zone.

When the Lifter is not used for more than a few days, turn off the toggle switch or push in the red emergency stop button to prevent the slow drain of the battery by the voltmeter.

The battery charger can not charge if the red emergency stop button is pushed in, but it will be chargable if the toggle switch is off.

If the battery reaches the end of it's useful service life, purchase a replacement battery locally. There are several ways to describe what you'll be looking for: 12 Volt; Deep Cycle, RV, or Marine type; Case size: Group 27; Rated: 160 Reserve Minutes, or 100 Amp-Hours.

f. Alternate reference (for a more visual representation):

BATTERY CHARGER NOT HOLDING CHARGE

First check 3 things on the charger itself

1) Check the power cable to make sure it is seated properly

2) Check the power switch to make sure it is in the correct position. The white dot indicates the ON position.

3) Check the fuse. If it has burned out, it must be changed. An example of this is on the right.

1 | SAVAGE BROS.

g. We do have retrofit kits for the old Schauer units (used between June 2011 to March 2022), in order to use the new charger.

12. ***Failure Mode #4:*** Other Possible Failures May Include*:*

    a. **Issue –** Column jerks around while going down.

    Cause – Most likely a sticky column or the column slide pads could be swelled, full of grit or simply worn out.

    Solution – If slide pads are worn out, the customer may need to replace them with new slide pads.

    - We offer a Bearing Kit – LTT Slide Pads *(P/N **0709-02-100**)* for models manufactured from 10/19/2013 and on.
    - Use Isopropyl Alcohol to clean and wipe the column with a cloth.
    - Use a thin layer of an NSF approved lubricant, such as the following:

Kimball Midwest Torq CB **CRC Food Grade White Grease**

- We use and suggest **Mobil DTE-FM 32** (highly refined white mineral oil). We do sell this product by the quart *P/N **9800-90-002***. Please see below for additional information of approved products:

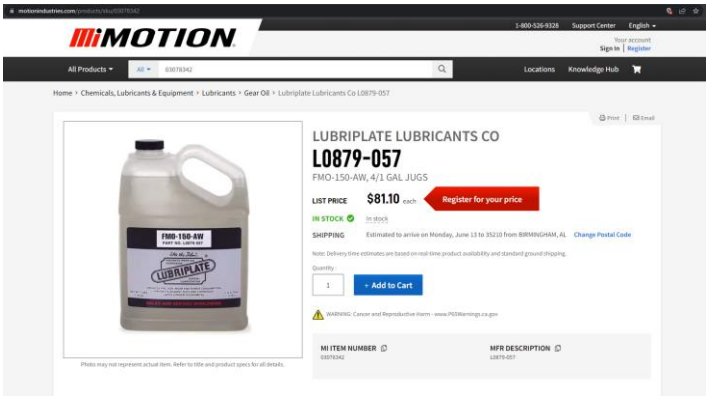
Mobil DTE FM 32 Food Grade Hydraulic Fluid Equivalents	
Name	**Product**
JAX	FGH-AW ISO 32
Lubriplate	FMO-150-AW
Belray	No-Tox HD 62682

Name	Product	Container Size
JAX	FGH-AW ISO 32	4 x 1 gal case
Lubriplate	FMO-150-AW	1 gal 1 quart
Belray	No-Tox HD 62682	4 x 4L case
Mobil	DTE FM 32	55Gal drum

Also available for purchase from companies such as Motion Industries.

https://www.motion.com/products/sku/03078342

Product SKU # **03078342**



Suggestion: For a dusty environment we highly recommend daily cleaning, specifically at the end of each shift. We do this with our in-house units in our welding and polishing departments.

b. **Issue-** Arms go down slowly/slower than usual. Have the customer define *how* slow.

Explanation- Arms go down slowly - Remind the customer that since the arms go down *with* gravity (*not* hydraulic pressure) it will *always* go down *slower* than when it goes up.

Please Note: Max. lifting capacity is 450lbs (including container, nests and/or straps).

13. ***For Pendant Control Update:***

Two Possibilities Exist:

1. Switching from the *old* Yellow Controller to the *new* Yellow Controller.
2. Switching from the *old* Stainless-Steel Controller to the *newest* Yellow Controller with **(4)** buttons.

*P/N **0712-08-400***
(Oldest - *Electrical Parts available)*

*P/N **0712-08-410***
*(*Old - *No longer available)*

*P/N **0712-08-420***
*(*New - *Available)*

Please Note:

1. Switching from the *old* Yellow Controller to the *new* Yellow Controller requires:

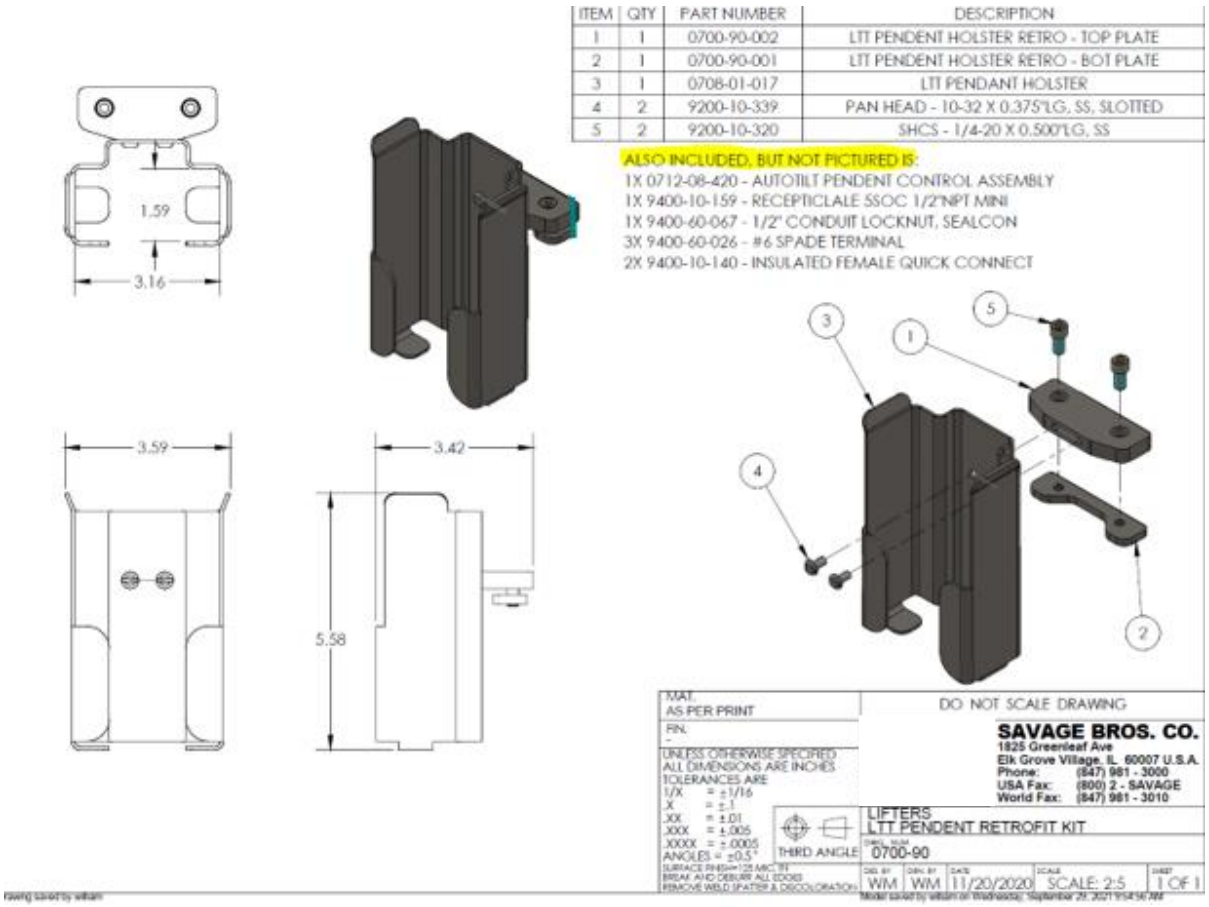
Part Number	Part Description	Qty. Per
0700-90	LTT Pendant Control Retrofit Kit 2022	1 EA

2. Switching from the *old* Stainless-Steel Controller to the *new* Yellow Controller requires:

Part Number	Part Description	Qty. Per
0700-90	LTT Pendant Control Retrofit Kit 2022	1 EA
0712-08-412	Auto tilt Pendant Relays Assy	1 EA

******WIRING INSTRUCTIONS INCLUDED******

3.0 Reference Diagrams & Drawings:



4.0 Revisions:

Revision	Description	Date	Approved By:
A	Website Version	8/9/2024	BB