

SECTION 5 MAINTENANCE AND SERVICE

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Operator's Responsibility For Maintenance

Death or injury can result if the work platform is not kept in good working order. Inspection and maintenance should be performed by competent personnel who are familiar with mechanical procedures.

The operator should be assured that the work platform has been properly maintained and inspected before using it.

Even if the operator is not directly responsible for the maintenance of this work platform, the operator should perform ALL the daily inspections in the [Maintenance and Inspection Schedule \(Table 2-4.\)](#) found in [Section 2](#) of this manual.

Note

Replace all worn, damaged or missing parts or labels discovered during this inspection.

Danger **Crushing Hazard**

DO NOT reach through scissors assembly without the safety bar properly positioned. **Failure to avoid this hazard will result in death or serious injury!**

Maintenance And Inspection Schedule

The actual operating environment of the work platform governs the use of the maintenance schedule. The inspection points covered in the [Maintenance and Inspection Schedule \(Section 2, Table 2-4.\)](#) indicates the areas of the work platform to be maintained or inspected and at what intervals the maintenance and inspections are to be performed.

Owner's Annual Inspection Record

It is the responsibility of the owner to arrange daily, weekly, monthly and annual inspections of the work platform. [The Owner's Annual Inspection Record \(Table 2-2. in Section 2\)](#) is to be used for recording the date of inspection, owner's name and the person responsible for the inspection of this work platform.

General Maintenance Hints

- Properly position maintenance bar if the scissor assembly is raised.
- Before attempting any repair work, disconnect the battery ground (-) lead.
- Preventive maintenance is the easiest and least expensive type of maintenance.

Hydraulic System And Component Maintenance And Repair

The following points should be kept in mind when working on the hydraulic system or any component:

1. Any structure has limits of strength and durability. To prevent failure of structural parts of hydraulic components, relief valves which limit pressure to safe operating values are included in the hydraulic circuits.
2. Tolerance of working parts in the hydraulic system are very close. Even small amounts of dirt or foreign material in the system can cause wear or damage to components, as well as general faulty operation of the hydraulic system. Every precaution must be taken to assure absolute cleanliness of the hydraulic oil.
3. Samples of hydraulic oil should be drawn from the reservoir every six months. These samples should be about two quarts and should be taken while the oil is warmed through normal operation of the system. If possible, the sample should be analyzed by a qualified lubrication specialist to determine whether it is suitable for further use. The intervals between oil changes depend on operating conditions and on the care used in keeping the oil clean.
4. Whenever there is a hydraulic system failure which gives reason to believe that there are metal particles or foreign materials in the system, drain and flush the entire system and replace the filter cartridges. A complete change of oil must be made under these circumstances.
5. Whenever the hydraulic system is drained, check the magnets in the hydraulic reservoir for metal particles. If metal particles are present, flush the entire system and add a new change of oil. The presence of metal particles also may indicate the possibility of imminent component failure. A very small amount of fine particles is normal.
6. **DO NOT** use synthetic or fire resistant oils in this work platform. Use ATF Dexron III (ESSO) or equivalent hydraulic oil. For conditions causing oil temperatures below -31°F (-35°C) and above 122°F (50°C) consult Skyjack, Inc.
7. All containers and funnels used in handling hydraulic oil must be absolutely clean. Use a funnel when necessary for filling the hydraulic oil reservoir, and fill the reservoir only through the filler opening. The use of cloth to strain the oil should be avoided to prevent lint from getting into the system.
8. When removing any hydraulic component, be sure to cap and tag all hydraulic lines involved. Also, plug the ports of the removed components.
9. All hydraulic components must be disassembled in spotlessly clean surroundings. During disassembly, pay particular attention to the identification of parts to assure proper reassembly. Clean all metal parts in a clean mineral oil solvent. Be sure to thoroughly clean all internal passages. After the parts have been dried thoroughly, lay them on a clean, lint-free surface for inspection.
10. Replace all o-rings and seals when overhauling any component. Lubricate all parts with clean hydraulic oil before reassembly. Use small amounts of petroleum jelly to hold o-rings in place during assembly.
11. Be sure to replace any lost hydraulic oil when completing the installation of the repaired component, and bleed any air from the system when required.
12. All hydraulic connections must be kept tight. A loose connection in a pressure line will permit the oil to leak out or air to be drawn into the system. Air in the system can cause damage to the components and noisy or erratic system operation.

MAINTENANCE. Three simple maintenance procedures have the greatest effect on hydraulic system performance, efficiency and life. Yet, the very simplicity of them may be reasons they are so often overlooked. What are they? Simply these:

1. Change filters regularly.
2. Maintain a sufficient quantity of clean hydraulic oil of the proper type and viscosity in the hydraulic reservoir.
3. Keep all connections tight.

Table 5-1. General Specifications

Model	8831E	8841E
Electrical System	48 Volts DC	
Batteries	6V, 250AH	
Lift Relief	Refer to Serial Number Nameplate	
System Relief	Refer to Serial Number Nameplate	
Return Filter	20 Micron	
Hydraulic Tank Capacity	20.5 Gallons (77.6 Liters)	
Hydraulic System Capacity	22.0 Gallons (83.3 Liters)	
Hydraulic Pump (ci/rev)	.671 (Lift) .194 (Shift)	
DC Motor (Steer/Brake)	3.7 HP (2.76 kW)	
DC Motor (Traction)	14 HP (10.4 kW)	
High Travel Speed (Level Compacted Surface)	2.6 mph (4.2 km/h)	
High Travel Speed (Retracted platform & Steep Incline)	1.55 mph (2.5 km/h)	
Elevated Platform Drive Speed	.45 mph (.8 km/h)	
High Speed Drive Cut Out Height	10' (3.05 m)	
Lift Time (Seconds)	46	71
Lower Time (Seconds)	48	60
Gradability	25%	
Inside Turning Radius	124" (3.15 m)	
Outside Turning Radius	224" (5.69 m)	
Tires	Refer to Table 5-3	
Ground Clearance	8" (0.203 m)	
Tire Contact Pressure (Max)	Refer to Serial Number Nameplate	

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Table 5-2. Torque Specifications

Directional valve mounting bolts				28-32 lbf.in		2.16 – 3.61 Nm		
Wheel mounting bolts				135-145 lbf.ft		183.06-196.62 Nm		
Cartridge								
	Size							
Torque	08	38	58	10	12	16		
Lbf.ft (max)	20	20	20	25	35	50		
Lbf.in (max)	240	240	240	300	420	600		
Nm (max)	27.12	27.12	27.12	33.90	47.46	67.80		
Coils								
	Size							
Torque	All coils							
Lbf.ft (max)	4 to 5							
Lbf.in (max)	48 to 60							
Nm (max)	5.42 to 6.78							
SAE Plugs								
	Size							
Torque	2	4	5	6	8	10	12	16
Lbf.ft (max)	3	10	15	15	25	25	30	35
Lbf.in (max)	36	120	180	180	300	300	360	420
Nm (max)	4.07	13.56	20.34	20.34	33.90	33.90	40.68	47.46
Newton-meter = Nm		Pound-force foot = lbf.ft			Pound-force inch = lbf.in			

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Table 5-3. Tire Specifications


WARNING

Air Pressure Can Affect Stability. Temperature Changes Can Affect Air Pressure. It Is Important To Check Tire Pressures Prior To Use On A Daily Basis In The Operating Conditions Experienced By End User. If The Measured PSI Reading Is Less Than The Specification And Tolerance, Re-inflate To The Proper Specification Within The Tolerance Range Specified. Tires Shall Also Not Be Subject To Over-Inflation Above The Recommended Specification And Tolerance Range.

Tire*		Fill Specification		
Size	Fill Type	Ply Rating	Pressure Psi (kPa)	
			Factory	Listed Sidewall Maximum
#6 30-10-16.5 NHS	Air	8	50 (344.7)*	65 (448.2)
#6 32.3-10-16.5 HD Stabilizer		10	70 (482.6)*	75 (517.1)
#6 30-10-16.5 OTR Outrigger		10	70 (482.6)*	75 (517.1)
#7 31-15.5-15 NHS		8	50 (344.7)*	Not Available
#8 31-13.5-15 NHS		Consult Skyjack Inc.		
#6 31-10-16.5 "Carlisle"		10	75 (517.1)*	Not Available
#6 31-10-16.5 "Carlisle"	Solid Urethane	10	***	
#6F 30-10-16.5 NHS		8	**	
#7F 31-15.5-15 NHS		8	**	
#8F 31-13.5-15 NHS		Consult Skyjack Inc.		

* Factory preset @ 20°C, Check pressures regularly as tires can lose pressure over time and over different ambient temperatures even under normal conditions.
** Urethane used for filling #6F and #7F tires MUST be 50-55 durometer.
*** Urethane used for filling #6 "Carlisle" tires MUST be 32 durometer.

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System, Gearbox and Brake Pressure Adjustments

All adjustments **must** be made with a Calibrated Gauge.
Refer to the Serial Number Plate located on the rear of the machine for System and Lift Pressure values.

System Relief Pressure Adjustment

1. Locate the System Pressure Quick Disconnect Port on the Main Manifold. [Refer to Section 3 “Hydraulic Manifold And Port Identification”](#) for location.
2. Install a Calibrated 3000 PSI Gauge to the System Pressure Quick Disconnect Port.
3. Remove the Platform Control Box from the Guardrail and disconnect from the Main Control Cable.
4. Locate the Main Control Cable Plug in the Hydraulic/ Electric side of cabinet.
5. Disconnect the Main Cable and connect the Platform Control Box into the Plug.
6. At the Main Manifold, loosen the Locknut on the System Relief Valve R1. [Refer to Section 3 “Hydraulic Manifold And Port Identification”](#) for location.
7. Select Drive with the Lift/Off/Drive Select Switch on the Platform Control Box.
8. Engaged Steer Right and hold.
9. Observe reading on Gauge. Adjust the R1 System Relief Value listed on the Serial Number Plate. Turning the stem on the Relief Valve clockwise increases pressure. Turning the stem counterclockwise decreases pressure.
10. Release Steer Switch and tighten the Locknut.
11. Remove the gauge from the System Pressure Test Port.

Gearbox Relief Pressure Adjustment

1. Locate the Gearbox Quick Disconnect Port on the Main Manifold. [Refer to Section 3 “Hydraulic Manifold And Port Identification”](#) for location.
2. Install a Calibrated 1000 PSI Gauge to the Gearbox Quick Disconnect Port.
3. At the Main Manifold, loosen the Locknut on the Gearbox Relief Valve R2. [Refer to Section 3 “Hydraulic Manifold And Port Identification”](#) for location.
4. Disconnect the shift sensors plug (CN6) located near the top left corner of the main control board. [Refer to Section 3.](#)
5. Select Platform Controls. The Small Pump (P2) will start operating.
6. Observe reading on gauge. Adjust Gearbox Relief Valve (R2) to obtain 500 PSI. Turning the stem on the Relief Valve clockwise increases pressure. Turning the stem counterclockwise decreases the pressure.
7. Reconnect wiring to the Proximity Switches and tighten the Locknut on the Relief Valve.
8. Remove the gauge from the Gearbox Pressure Test Port.

Brake Pressure Adjustment

1. Locate Pressure Switch (PS2) on Main Manifold. [Refer to Section 3 “Hydraulic Manifold And Port Identification”](#) for location.
2. Disconnect spade connectors for pressure switch wires.
3. Turn the black knurled portion of the pressure switch body counter-clockwise until movement stops.
4. Turn the black knurled portion of the pressure switch clockwise for only four full revolutions and reconnect spade connectors.
5. Install 3000 PSI Gauge to quick coupler on main manifold. Refer to Section 3 “Hydraulic Manifold And Port Identification” for location.
6. Operate Drive slowly while observing gauge. It should read a minimum of 800 PSI.
7. If pressure needs to be increased, turn black knurled portion clockwise. If pressure need to be decreased turn counter-clockwise.
8. Once 800 PSI is obtained, brake pressure adjustment is complete.

Brake Adjustment Procedure

1. Place machine on level surface and block wheels to prevent rolling in either direction.
2. Unplug battery , disconnect plug.
3. Locate brake manifold in hydraulic/electric side cabinet.
4. Depress black knob.
5. Grasp the red plunger and rapidly depress until plunger can no longer be depressed and the brake is fully released.
6. Inspect caliper and brake pads for binding. Pads should move freely on the pins.
7. Remove pin from brake cylinder clevis and brake actuating lever. Rotate actuating lever counter-clockwise to the end of it's stroke.
8. Adjust brake cylinder clevis to obtain 1/2" between the center of the holes of the actuating lever and brake cylinder clevis. See Figure 5-1. Tighten jamb nut on brake cylinder rod against clevis. Note: It is important that the brake cylinder reaches it's maximum stroke before the caliper to prevent damage to the caliper.

HOLD ACTUATOR ARM
TO FULL COUNTER-CLOCKWISE

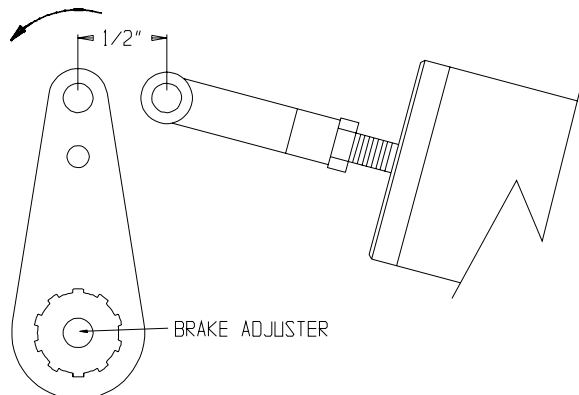


Figure 5-1. Brake Adjustment

9. Reinstall clevis pin back into the clevis actuating lever.
10. Remove plastic plug located on the end of the caliper shaft. See Figure 5-2.

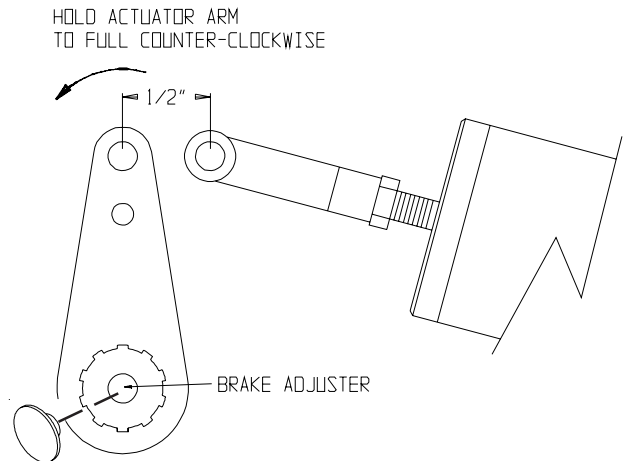


Figure 5-2. Plug Removal and Replacement

11. Using a 1/4" Allen wrench, turn brake adjuster counter-clockwise until it bottoms out. Turn Allen wrench 1/2 turn clockwise to set adjustment.
12. Replace plastic plug back into the end of the caliper shaft.
13. Pull out black knob to reset brake circuit.
14. Remove Wheel blocks. Reconnect battery, disconnect plug. Operate drive several times to seat pads to brake disc.

Proximity Switch Replacement And Adjustment Procedure

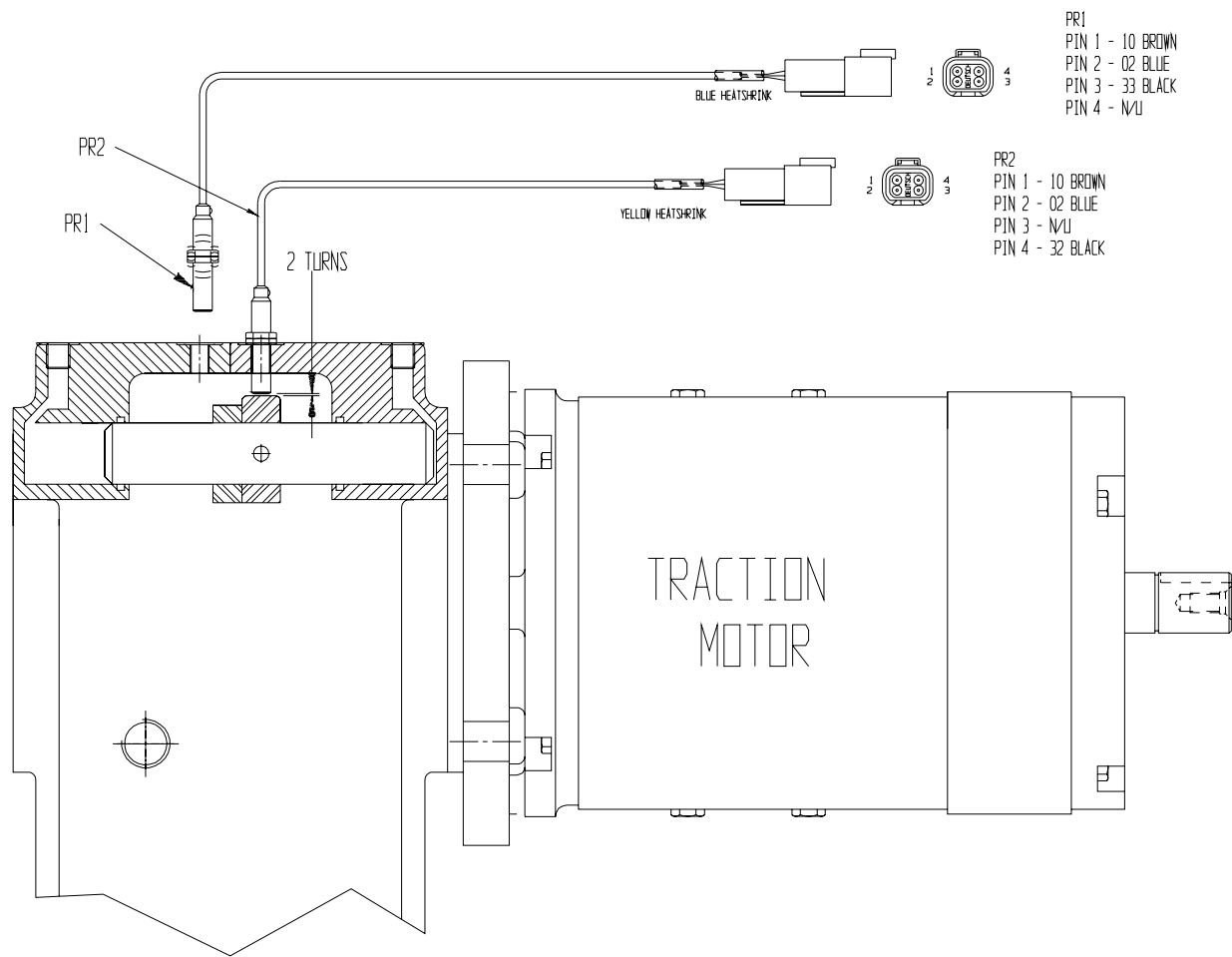


Figure 5-3. Traction Motor/Lift Pump Proximity Switch Location

1. To replace a proximity switch. First select either: lift mode to replace the PR2 proximity switch or traction mode to replace the PR1 proximity switch.
2. Disconnect the main battery disconnect plug.
3. Unplug the connector for the electrical wiring to the proximity switch you want to replace.
4. Back off the lock nut and remove the proximity switch from the gearbox.
5. To install the new proximity switch turn the switch in until it bottoms out. **NOTE:** There should be threads of the proximity switch showing when it bottoms out. Then back off the switch two full turns. This insures the switch is set at the proper distance from it's sensing surface of 2mm.
6. Tighten the lock nut down while holding the proximity switch in it's adjusted position.
7. Reconnect the connector for the electrical wiring to the proximity switch.
8. Reconnect the main battery disconnect plug.

WARNING

Make sure the correct proximity switch is adjusted.
If the switch you are adjusting does not match the selected mode you will damage the component.

Proximity Switch Test Procedure

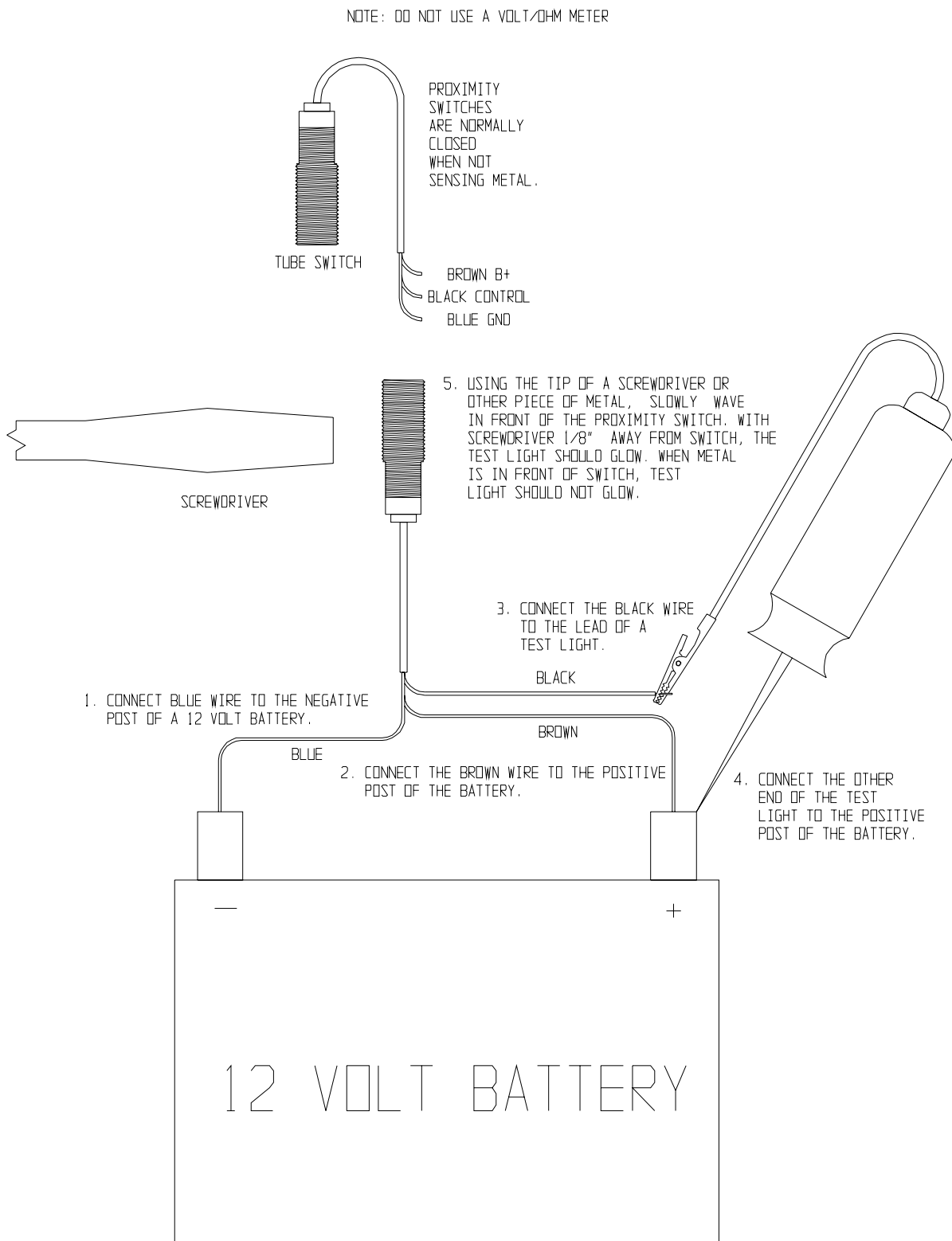


Figure 5-4. Proximity Switch

Sevcontroller Adjustment And Diagnostics

Sevcon Calibration Tool



WARNING

All machine functions remain operational while calibrator is plugged in.

ADJUSTMENT PROCEDURE:

The following procedure is relevant for the drive controller, except where otherwise noted. The controller is preset to factory specifications but may be readjusted.

A hand-held calibrator (Figure 5-5, Skyjack part #701051) can be plugged into the controller adjustment socket and used to digitally view or reset the parameters. The current value of these parameters will be shown on an LCD display. Additionally, the calibrator can perform certain measurements that can be useful for diagnostic purposes.

The calibrator has a bar display, operated by the SELECT button, showing the parameters/ measurement selected and an LCD display showing values that, provided they are parameters, may be adjusted using the +/- buttons. This unit can also be used to perform certain tests on the control wiring and controller (joystick).

1. Locate Sevcon inside Electrical/Hydraulic Cabinet on the right side of the machine.
2. Locate controller adjustment socket, as shown in [Figure 5-6](#), and connect hand-held calibrator. Power up the Platform by selecting platform controls using key switch at the Platform Control Box.



WARNING

Before making any adjustments, you must determine the revision of your calibrator. When the calibrator is plugged in, turn the power on and push and hold down the “-” button for 5 seconds.

3. No LED segments on the bar display will be lit and the minutes/seconds count is displayed. The hours count is displayed by pressing the (-) button and the 1000's of hours count is displayed by pressing the (+) button as described later in this section. Pressing the select button reverts the calibrator to its normal operation and the IMax LED will be lit.
4. When the desired parameters has been selected, on the left side of the calibrator, it may be adjusted by pressing the + or - button on the right side of the calibrator. [See Table 5-4A. \(For calibrator Revision .07\) or Table 5-4B. \(for calibrator Revision .10\)](#) for adjustable parameters and ranges.
5. When the calibrator is unplugged the Sevcontrol will 'memorize' the new parameters settings.

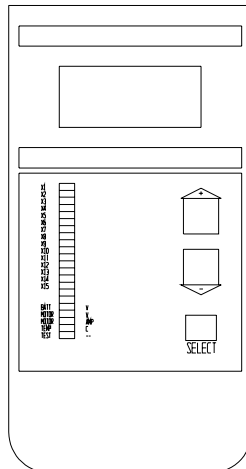


Figure 5-5. Sevcon Calibrator

Sevcontroller Adjustment And Diagnostics (Continued)

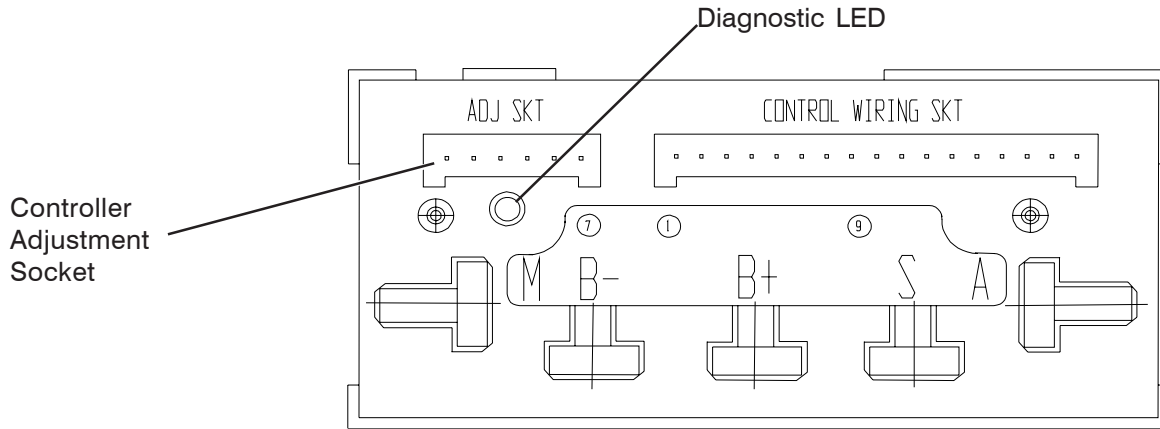


Figure 5-6. Traction Controller

Table 5-4A. Sevcontrol Adjustable Parameters (Software Revision .07)

SEQ. NO.	PARAMETER	MIN.	MAX.	UNITS	DEFAULT
1	IMAX Maximum Controller Current	50	600	Amps	400
2	ACCEL Acceleration Delay	1	3	Seconds	1
3	DECEL Deceleration Delay	0.1	3	Seconds	0.1
4	CREEP Maximum Controller Current	0	10	% of Max. Speed	2
5	MAX Maximum Allowed Speed	5	100	% of Max. Possible Speed	80
6	ELEVA Elevated Cutback Speed	5	25	% of Max. Speed	15
7	TILT Tilted Cutback Speed	5	75	% of Max. Speed	50
8	CONSTANT SPEED CONTROL Proportional Gain (Do Not Adjust)	0	150	Counts	30
9	CONSTANT SPEED CONTROL Integral Gain (Do Not Adjust)	1	100	Counts	20
10	BATTERY Low Battery Cut-out	25	40	Volts	25
11	Not Used				
12	Not Used				
13	BRAKE Brake Personality Timer	0	3	Seconds	0.5

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NOTE: Skyjack does NOT recommend exceeding the default settings.



WARNING

Before making any adjustments, you must determine the revision of your software. When the calibrator is plugged in, turn the power on and push and hold down the “-” button for 5 seconds.

Sevcontroller Adjustment And Diagnostics (Continued)

Table 5-4B. Sevcontrol Adjustable Parameters (Software Revision .10)

SEQ. NO.	PARAMETER	MIN.	MAX.	UNITS	DEFAULT
1	IMAX Maximum Controller Current	50	600	Amps	400
2	ACCEL Acceleration Delay	1.0	3.0	Seconds	1.0
3	DECEL Deceleration Delay	0.1	3.0	Seconds	0.1
4	CREEP Maximum Controller Current	0	10	% of Max. Speed	2
5	MAX Maximum Allowed Speed	5	100	% of Max. Possible Speed	80
6	ELEVA Elevated Cutback Speed	5	25	% of Max. Speed	15
7	TILT Tilted Cutback Speed	5	75	% of Max. Speed	50
8	CONSTANT SPEED CONTROL Proportional Gain (Do Not Adjust)	0	150	Counts	30
9	CONSTANT SPEED CONTROL Integral Gain (Do Not Adjust)	1	100	Counts	20
10	BATTERY Low Battery Cut-out	25	40	Volts	25
11	Not Used				
12	Not Used				
13	ELEVATED CURRENT Max. Current When Elevated	50	400	Amps	230
14	BRAKE Brake Personality Timer	0.0	3.0	Seconds	0.5

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NOTE: Skyjack does NOT recommend exceeding the default settings.



WARNING

Before making any adjustments, you must determine the revision of your software. When the calibrator is plugged in, turn the power on and push and hold down the “-” button for 5 seconds.

Sevcontroller Adjustment And Diagnostics (Continued)

Sevcon Calibration Tool (Continued)

HOURS COUNTER:

The hours counter records pulsing hours, and is displayed when the calibrator is first plugged in. Once the SELECT button is pressed, the calibrator reverts to normal operation.

Initially a minute/seconds count is displayed. By pressing the (-) button, hours are displayed and by pressing the (+) button 1000's of hours are displayed.

Releasing the buttons reverts back to the minute/seconds display. The decimal point blinks every second during drive. The counter will record up to 65,500 hours before rolling back to 0.

DIAGNOSTIC PROCEDURE:



WARNING

All machine functions remain operational while calibrator is plugged in.

The last five segments on the bar display are as follows.

BATT	Displays the current battery voltage. Pressing the (+) button displays the highest voltage, for the machine, that the Sevcontrol has recorded.
MOTOR V.	Displays the motor voltage as the machine is being driven.
MOTOR AMP	Displays the motor current as the machine is being driven.
TEMP	Displays the temperature of the MOSFET heat sink in °C. Pressing the (+) button displays the highest temperature recorded and pressing the (-) button displays the lowest temperature recorded.
TEST	This invokes the diagnostic test routines to check machine switches, joystick, control wiring etc.

With the calibrator connected and the platform powered up, as described in the adjustment procedure. Use the SELECT button to select the test segment. If the SELECT button is pressed at any time during the test, the test will be terminated and the minute/seconds count will be displayed.

The first test displayed, on the drive Sevcontrol, is the joystick input. This displays the input as 0-100% as joystick is moved from min. to max.

Pressing the (+) and (-) buttons step through the tests as shown in [Table 5-5](#). After the final test, the sequence will loop back to the joystick input test, then test 1.

Sevcontroller Adjustment And Diagnostics (Continued)

Table 5-5. Sevcontrol Test Sequence

Drive Controller Test Sequence		
Sequence No.	Test	Display
-	Controller (Joystick) Input	0 to 100%
1	Forward Switch	CL/OP
2	Reverse Switch	CL/OP
3	Tachometer Input	0 to 100%
4	Elevated Position	CL= Collapsed OP= Lifted
5	Tilt Switch	CL= Level OP= Tilt
6	Pump/Traction Switch	CL= Pump Mode OP= Traction Mode
7	Actual Direction, Tachometer Output	CL= Reverse OP= Forward
8	Lift Transmission Position Sense	CL = Engaged OP = Disengaged
9	Traction Transmission Position Sense	CL = Engaged OP = Disengaged
10	First Error Latch	Value= Flash Code
		NOTE: CL= Switch Closed OP= Switch Open

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Sevcontroller Adjustment And Diagnostics (Continued)

Traction Controller Pin Reference

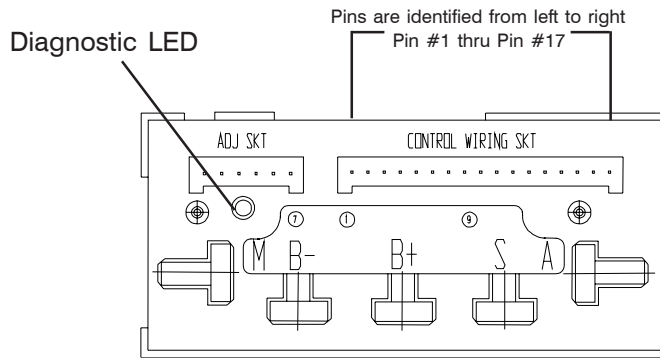


Figure 5-7. Traction Controller

Pin 1- Brake relay control. Brings B- to brake relay (25CR). Test between pin 1 and wire #10A.	Pin 11- Reverse direction input from joystick 24 volts = reverse selected. Test between pin 11 and wire #02.
Pin 2- Direction signal from pin 4 of tachometer card. Determines direction. 0 volts = forward. 15 volts = reverse. Test between pin 4 and wire #02.	Pin 12- Speed signal from pin 2 on tachometer card. 7.5 volts with joystick in neutral. 7.5 volts to 15 volts = reverse. 7.5 volts to 0 volts = forward. Test between pin 12 and wire #02.
Pin 3- Not used.	Pin 13- Speed sensing enable. Determines lift or drive mode. 2 volts = drive. Speed sensing enabled. 4 volts = lift. Speed sensing disabled. Anything above 2.52 volts = Lift Test between pin 13 and wire #02.
Pin 4- High Drive Cut-out. 24 volts high drive enabled. 0 volts high drive disabled. Test between pin 4 and wire #02 with platform fully lowered.	Pin 14- Accelerator input. 3.8 to 4.2 volts with joystick in neutral and key switch on. 3.5 volts = slow speed. 0 volts = fast speed. Test between pin 14 and wire #02.
Pin 5- 24 volt input from line contactor. Test between pin 6 and wire #02.	Pin 15- Forward contactor output. Brings B- to forward drive contactor. Test between pin 15 and wire #10A.
Pin 6- 48 volt input from line contactor. Test between Pin 6 and wire #02 with Key Switch on.	Pin 16- Drive/Lift Select. 0 volts = drive 24 volts = lift Test between pin 16 and wire #02.
Pin 7- Tilt switch input. 24 volts = full speed 0 volts = 50% full speed. Test between pin 7 and wire #02.	Pin 17- Reverse contactor output. Brings B- to reverse drive contactor. Test between pin 17 and wire #10A.
Pin 8- Forward/Up input from joystick. 24 volts = drive forward or lift up selected. Test between pin 8 and wire #02.	
Pin 9- Not used	
Pin 10- Not used	

Sevcontroller Adjustment And Diagnostics (Continued)

Table 5-6. Traction Controller Flash Fault Pin References

		Number of Flashes											
Pin Reference Number		2	3	4	5	6	7	8	10	11	12	13	14
	1												
	2								X	X			
	3												
	4												
	5												X
	6						X						X
	7										X		
	8	X			X								
	9												
	10												
	11	X			X								
	12								X	X			
	13											X	
	14					X							
	15			X	X								
	16	X				X							
	17			X	X								

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Tachometer Board Pin Reference

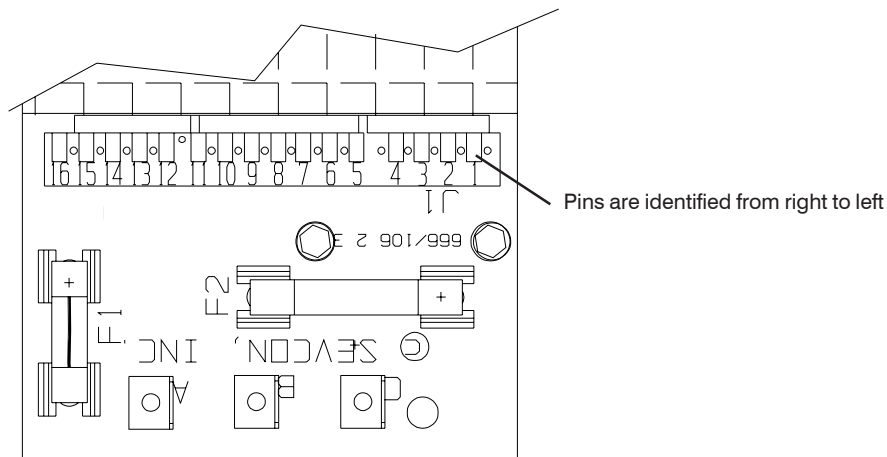


Figure 5-8. Tachometer Board

Term A- 48 volt input from relay 10ACR-2.	Pin 6- Steer enable
Term B- 24 volt input from wire #10A. Test between terminal B and wire 02.	Pin 7- not used Pin 8- Lift mode selected. 24 volts when lift selected. Test between Pin 8 and wire 02.
Term C- 24 volt output to drive, steer and line contactors. Fused from terminal B. Test between terminal C and wire 02.	Pin 9- Drive mode selected. 24 volts when drive selected. Test between Pin 9 and wire 02.
Pin 1- Battery negative	Pin 10- Speed sensing enable. To Pin 13 on controller. Drive mode = 2 volts = speed sensing enabled. Lift mode = 4 volts = speed sensing disabled. Test between pin 10 and wire #02.
Pin 2- Speed signal to Pin 12 of controller. 7.5 volts with key switch on and platform selected. 7.5 volts to 15 volts = reverse 7.5 volts to 0 volts = forward Test between pin 2 and wire #02.	Pin 11- Spike suppression for 24 volt B+.
Pin 3- Tachometer generator input.	Pin 12- Not used
Pin 4- Direction signal to Pin 2 of controller. 0 volts = forward 15 volts = reverse Test between pin 4 and wire #02.	Pin 13- Spike suppression B-.
Pin 5- Tachometer generator input.	Pin 14- Not used`
	Pin 15- Not used
	Pin 16- Not used

Tachometer Generator Testing Procedure

1. Locate tachometer generator on back of drive motor. Remove rubber boot from the rear of the tachometer generator.
2. Mark the location of the wires attached to the generator and remove wires. **NOTE:** Wires must be reattached to the same terminals as they were removed from or the Sevcon controller will not function when reassembled.
3. Remove the four 5/16-18 x 1-1/2" bolts securing the tachometer generator mounting plate to the rear of the motor.
NOTE: Do not attempt to remove the tachometer generator from mounting plate until it has been determined to be defective.
4. Remove the coupler half from the tachometer generator and attach generator to a drill with a 1000-RPM rating.
5. Attach a voltmeter to the terminals on the rear of the tachometer generator and set the meter for D.C. voltage.
6. Energize drill and read voltage on meter. At 1000-RPM voltmeter should indicate (20.8) volts. If reading is lower the tachometer generator is defective.
7. Put the drill in reverse and energize drill, read voltage on meter. At 1000-RPM voltmeter should read (-20.8) volts. If reading is lower the tachometer generator is defective.

NOTE:

Steps #6 and #7, the voltage should be a smooth incline to proper voltage.
If voltage is erratic it may affect the performance of the machine.

1. GEAR BOX
2. DRIVE MOTOR
3. COUPLER HALF
4. TACHOMETER GENERATOR MOUNTING PLATE
5. COUPLER HALF
6. TACHOMETER GENERATOR

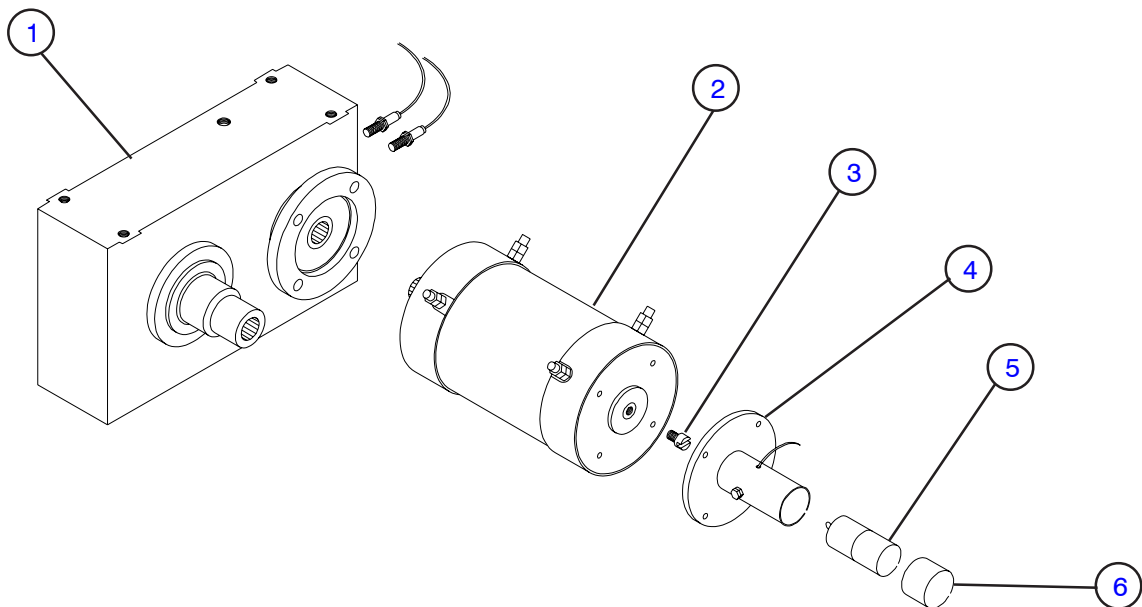


Figure 5-9. Traction Motor/Tach Generator