

# TITAN LIFT MAINTENANCE

**1. TROUBLE SHOOTING – YOUR TITAN LIFT IS DESIGNED AND BUILT TO GIVE YEARS OF TROUBLE FREE SERVICE. HOWEVER, BECAUSE MECHANICAL PARTS CAN AND DO FAIL, PROBLEMS MAY OCCUR. LISTED BELOW IS A TROUBLE SHOOTING GUIDE WHICH WILL ASSIST IN DIAGNOSIS AND RESOLUTION TO THE PROBLEM.**

***PROBLEM & CAUSE***

***SOLUTION***

**1. Lift Will Not Operate.**

Main air supply off or line pinched.

Turn on air supply or check hoses.

Air pressure regulator needs adjustment.

Adjust air regulator.

Plugged air filter.

Replace or clean filter.

**2. Lift Operates Slow or Intermittent.**

Air supply line is pinched.

Inspected all air lines.

Low air pressure or air supply

Regulator must be set at 100 PSI- Air supply must consistently deliver 80 SCFM at 100 PSI.

High moisture content in air supply.

Inspect air dryer on compressor.

Plugged air filter or mufflers.

Clean or replace.

Lack of lubrication.

Lubricate all zerks.

Insufficient air lubrication.

Check fluid level and drip rate of lubricator.

**3. Basket Will Not Move Vertically.**

Ball screw air motor will not rotate.

Repair or replace.

Quick exhaust muffler plugged.

Replace.

Air brake on Z-axis not working.

Repair or replace.

Z-axis shuttle valve malfunction.

Replace.

Pilot valve not shifting

Repair or replace.

**4. Erratic or Loss of Vertical Control.**

Quick exhaust muffler plugged.

Replace.

Leaking valve.

Repair or replace.

Pilot valve or shuttle valve sticking.

Replace.

Ball screw dry or contaminated.

Clean & lubricate.

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| <p><b>5. <u>Basket Will Not Descend.</u></b><br/> Safety stop latch caught on safety catches on mast beam when trying to descend.</p> <p>Safety stop is not releasing.</p> <p><b>STOP!</b></p>   | <p>This may happen at times when safety latch is near a safety catch when descent is stopped and then started. Simply go up briefly and then down again. Do not force down.</p> <p><b>Repair – DO NOT RUN LIFT WITH FAULTY SAFETY</b></p> |
| <p><b>6. <u>Slow or Erratic Movement Along Rails</u></b><br/> Upper rail not parallel with lower track.</p> <p>Rails obstructed or rail joints not smooth.</p> <p>Drive chain tension incorrect.</p> <p>Some type of obstruction in drive chain.</p> | <p>Rail must be re-aligned.</p> <p>Clean rails or grind rail joints.</p> <p>Adjust chain tension.</p> <p>Inspect.</p>   |
| <p><b>7. <u>Unit is Extremely Noisy When Moving Vertically.</u></b><br/> Missing muffler.</p> <p>Damaged ball screw or lack of lubrication.</p>  | <p>Replace</p> <p><b>CALL FACTORY.</b></p>  |
| <p><b>8. <u>Basket Will Not Extend or Retract.</u></b><br/> Damaged scissors linear actuator</p>   | <p><b>CALL FACTORY.</b></p>   |
| <p><b>9. <u>Basket Extends and Retracts Slowly</u></b><br/> Scissors arm cams are obstructed</p> <p>Failed cam bearings.</p>   | <p>Clean channels.</p> <p>Replace.</p>  |
| <p><b>10. <u>Unit Continues to Run After Release of “Joy stick”.</u></b><br/> Shuttle or pilot valve sticking.</p> <p>Leaking valve.</p> <p>Leaking or pinched air line.</p> <p>Control valve muffler plugged.</p>                                   | <p>Replace.</p> <p>Replace.</p> <p>Inspect &amp; repair as necessary.</p> <p>Clean or replace.</p>  |
| <p><b>11. <u>Air Motors Not Running or Running Slow</u></b><br/> Motor temperature excessively hot.</p> <p>Motor will not run.</p> <p>Runs normally then slows.</p>  | <p>Lack of lubrication.</p> <p>Check air supply/muffler.<br/> Check lubrication.<br/> Replace motor.</p> <p>Confirm 100 PSI air pressure.</p>   |

Low Torque.	Defective air motor/replace.
Low Speed.	Lack of lubrication, misalignment, internal corrosion, inadequate air pressure.
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## TITAN LIFT

### 2. GENERAL MAINTENANCE INFORMATION

#### *A. FILTER/REGULATOR*

A combination filter/regulator is installed in the base of the unit (see fig. 9) which filters out contamination and small amounts of moisture for the air supply. This device is equipped with an automatic float valve to drain off normal amounts of moisture. However, if there is too much moisture in the air, the customer will need to install a dryer in the supply line that is feeding the unit. The regulator should be set at 100 PSI.

#### *B. AIR LUBRICATOR*

All pneumatic components in the Titan Lift are lubricated by an oil mist lubricator that is installed in the lower base of the unit (see fig. 9) next to the filter/regulator. The oil level should be checked daily and refilled when necessary. The oil mist is important for two reasons: 1. Lubrication and 2. Prevention of surface rust on internal components such as valves and air motors. Whenever adding oil to the lubricator the air supply must be shut off and drained by turning off the safety lockout valve (see fig. 7) in the unit base. Only good quality air tool oil should be used in the lubricator. If air tool oil is not available, use high quality petroleum based oil with a viscosity of 150-200 SSU at 100 deg. F. (Equivalent to SAE #10). Because some oils have additives which damage pneumatic components never substitute another type of oil. The oil delivery setting on the lubricator of 10-15 drops per minute is present at the factory and should not need readjustment. The rate can be checked by counting the number of drops of oil per minute in the feed sight dome.

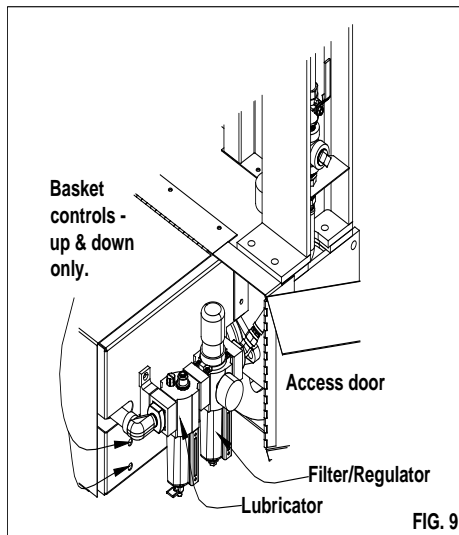


FIG. 9

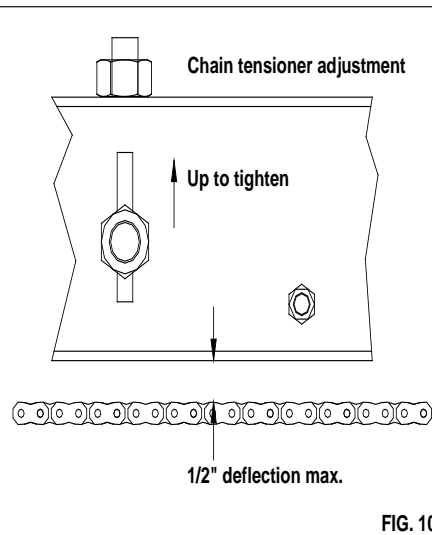


FIG. 10

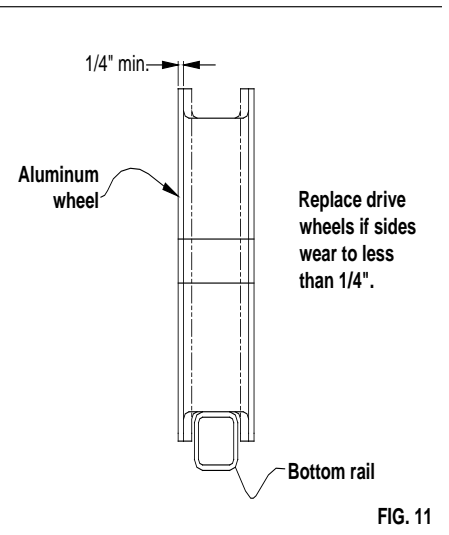


FIG. 11

### C. BALLSCREW

The ball screw and nut must be inspected on a regular basis (see suggested PM schedule). Visually inspect the ball screw for signs of wear and/or damage. Clean the screw. If there are any signs of wear, flaking or pitting on the surface of the ball screw, both ball screw and nut must be replaced. Once the screw starts to deteriorate, rapid degradation will occur, therefore the screw and nut must be replaced to avoid catastrophic failure. If the ball screw is cleaned and inspected on a frequent basis, both screw and nut should last the life of the lift.

### D. DRIVE CHAIN

The drive chain is located in the base of the unit and should be lubricated at least every 160 hours of use (see PM schedule) with a lubricant designed for industrial roller chain. The chain will need to be readjusted whenever more than 1/2" deflection can be measured between drive sprockets as shown (see fig. 10). Adjusting the chain tension is an easy task. Loosen the chain tensioner nut, raise chain tensioner to take up the slack, retighten tensioner nut. (see fig. 10) Note – If your lift has single wheel drive, ignore all items referenced in above mentioned D. Drive Chain.

### E. GEAR BOXES

The gearboxes used in each Titan Lift have “sealed for life” bearings and should require little or no maintenance. Periodically make visual inspections and check for oil leaks.

### F. ALUMINUM DRIVE WHEELS

In order to reduce the possibility of sparking in an explosive environment, the drive wheels are made of aluminum. These wheels should be inspected periodically for damage or wear and replaced when excessive wear is

evident. The inner wheel flange may wear because of the force applied to the wheel by the lower rail. (see fig. 11)

### G. SAFETY STOPS

The Titan Lift is equipped with safety devices to prevent uncontrolled descent of the basket. The first safety device is a pneumatic brake mounted between the air motor and gear box on the ball screw drive. The brake is released by air pressure when the Z-axis control valve is activated. This is a “FAILSAFE” device that will be energized with loss of air supply. The second safety device is a mechanical stop which will lock onto stops that are welded on the mast columns. This safety device is applied by an air cylinder that is released by air pressure when the Z-axis control valve is activated. The air cylinder and linkage will also operate instantaneously when excessive vertical acceleration is detected. This will minimize free fall to a maximum of 6 in. This assembly should be inspected periodically to insure proper operation (see PM schedule & fig. 12).

- NOTE: 1.) THE MOUNTING BOLTS MUST BE TORQUED TO 150 FT. LBS. IF THE SAFETY LATCH IS REMOVED OR REPLACED FOR WHATEVER REASON.  
2.) IT IS CRUCIAL TO THE SAFETY OF OPERATING PERSONNEL THAT THIS DEVICE BE TESTED ON A DAILY BASIS TO VERIFY ITS PERFORMANCE.*

