

KEEP FOR FUTURE REFERENCE

SERVICE MANUAL



908 W. Main • P.O. Box 368
Laurel, MT USA 59044
800-548-7341 (phone)
406-628-8231 (phone)
406-628-8354 (fax)
www.WPG.com

 **INTENDED FOR USE BY SKILLED
TECHNICAL PROFESSIONALS • READ
AND UNDERSTAND BEFORE SERVICING**



**COMPRESSED-AIR
POWER SYSTEM**

Stock number: 36112



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BEFORE SERVICING LIFTER



Disconnect power source before servicing lifter.

Disconnect the compressed air supply (figs. 1A-B).

Service personnel must read and understand the lifter's *OPERATING INSTRUCTIONS* – especially the “INSPECTIONS AND TESTS” and “MAINTENANCE” sections – before servicing the vacuum



lifter. Many of the following discussions assume knowledge of the *OPERATING INSTRUCTIONS*.

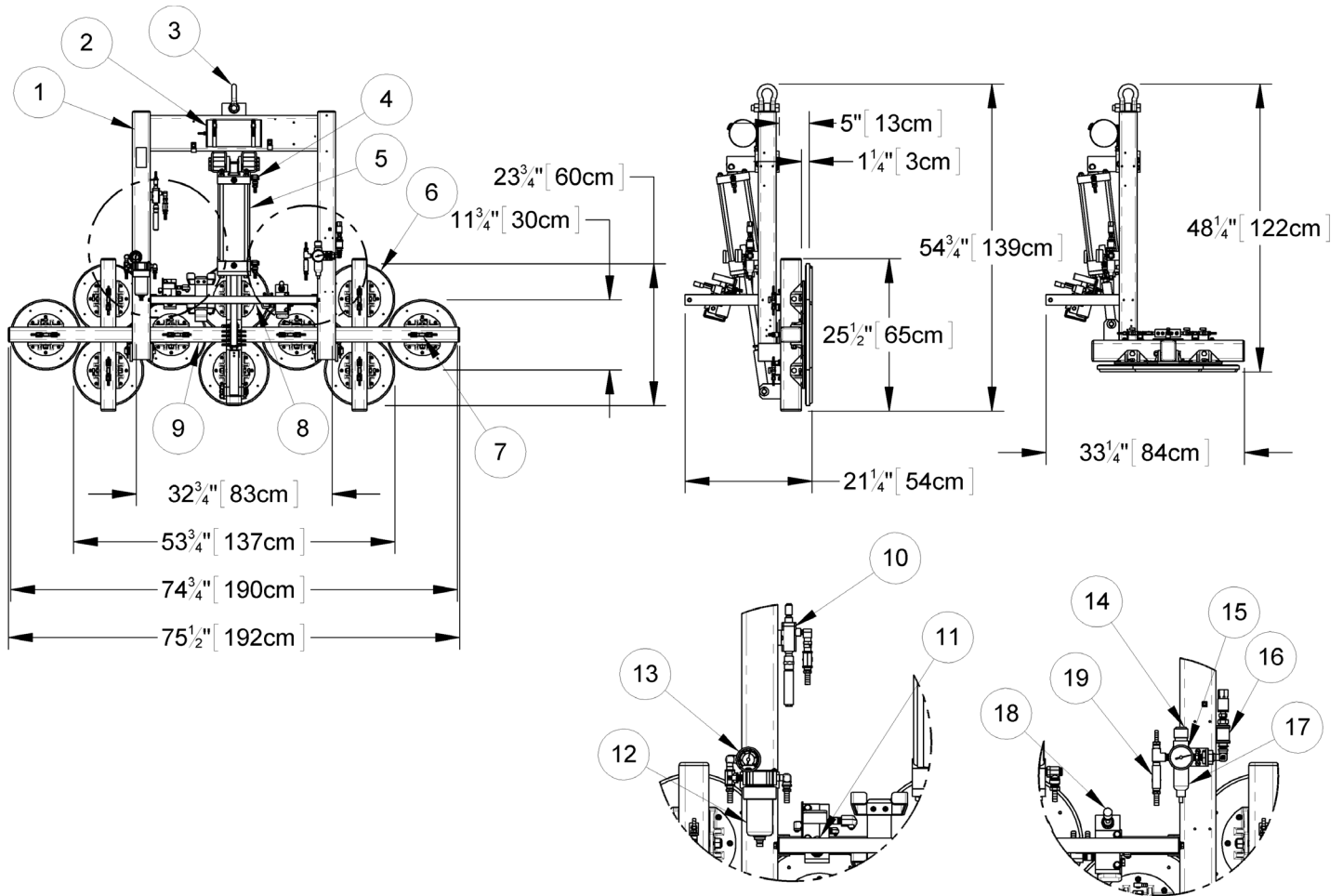
Note: The final section of the lifter's OPERATING INSTRUCTIONS may contain hose-routing diagrams for reference when servicing or troubleshooting the lifter.

SERVICE SCHEDULE

Service must be performed whenever a deficiency is indicated by routine inspections or tests. Follow the “INSPECTIONS AND TESTS” section of the *OPERATING INSTRUCTIONS*. Any service warranted must be performed before resuming normal operation of the lifter.

SERVICE FEATURES

Components shown here are underlined> on their first appearance in each section to follow.¹



- | | | | | | |
|----|-----------------------|----|-------------------------------|----|-------------------------------|
| 1 | LIFT BAR | 2 | VACUUM RESERVE TANK | 3 | LIFT POINT |
| 4 | TILT SPEED VALVE | 5 | TILT ACTUATOR | 6 | VACUUM PAD |
| 7 | PAD SHUTOFF | 8 | CONTROL HANDLE | 9 | PAD FRAME |
| 10 | VACUUM PUMP (venturi) | 11 | VACUUM CONTROL VALVE | 12 | AIR FILTER — 4.4 OZ BOWL SIZE |
| 13 | VACUUM GAUGE | 14 | AIR PRESSURE REGULATOR | 15 | PRESSURE GAUGE |
| 16 | AIR SUPPLY VALVE | 17 | AIR FILTER — 1.0 OZ BOWL SIZE | 18 | TILT CONTROL VALVE |
| 19 | TILT MASTER VALVE | | | | |

Note: A standard PT1010TAIR is shown (component locations vary among models).

1..... Some components may not be applicable, depending on the lifter in question.

SERVICE PROCEDURES

AIR FILTER MAINTENANCE – 1 OZ BOWL SIZE

! *Inspect each air filter regularly, and service when necessary.*

Immediately remove liquid or other contaminants found in the filter bowl (A in fig. 1A), to prevent contact with the filter element (C in fig. 2A).

⊘ *Never use bowl drain (circled in fig. 1A) to remove liquid, because this could cause air leak.*

Replace the filter element whenever:

- It has an overall dirty appearance.
- There is a noticeable increase in the time required to attain full vacuum.

Filter Service Procedure

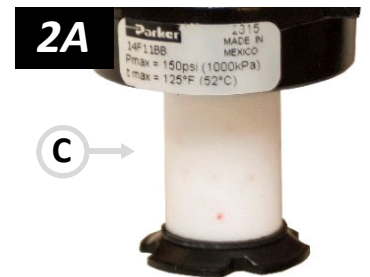
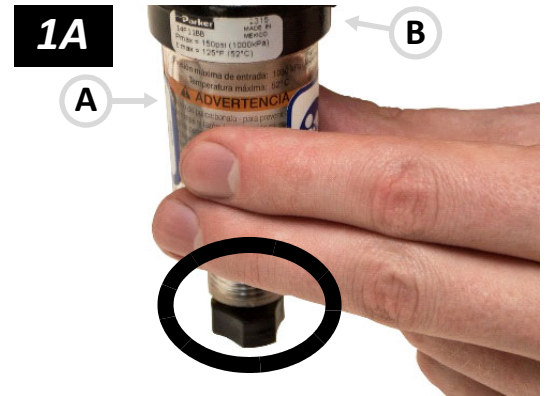
1) Unscrew the bowl (item A in fig. 1A) from the body (item B in fig. 1A) of the air filter.

Note: To protect air-line fittings from damage, hold the body while turning the bowl.

2) Determine whether the filter element (item C in fig. 2A) needs to be replaced (see above).

- *If so, proceed to step 3.*
- *If not, remove any liquid or contaminants from the bowl; clean the old bowl seal (see step 4 on next page) with mild soap and water; and skip to step 6.*

3) Carefully unscrew the element holder (item D in fig. 3A) and remove all internal parts (fig. 3B).



SERVICE PROCEDURES

- 4) Identify the parts in the Filter Element Kit (#16134), including the element (item A in fig. 4A), element holder (B), lubricant (C), deflector (D), element gaskets (E), bowl seal (F). Then dispose of the corresponding old parts.



- 5) Place the new element gaskets, element and deflector on the element holder as shown in fig. 5A. Then screw the assembly back into the filter body.



Note: Tighten gently – finger-tight.

- 6) Clean the bowl, using mild soap and water only.

Caution: Do not use any other cleaning agents.

- 7) Lubricate the new or cleaned bowl seal using a mineral-based oil or grease, such as that provided in the filter element kit.

Caution: Do not use synthetic oils, such as esters, and do not use silicones.

Then place the bowl seal around the rim of the bowl.

- 8) Screw the bowl back into the body. Hand-tighten only.

Caution: Do not contaminate the filter element with lubricant from the bowl seal.

- 9) Perform the “Vacuum Test” to be certain the air filter does not leak (see “INSPECTIONS AND TESTS: TESTING” in the lifter's OPERATING INSTRUCTIONS).

Note: Repeat this procedure for any other filter of the same type.

SERVICE PROCEDURES

AIR FILTER MAINTENANCE – 4.4 OZ BOWL SIZE



Inspect each air filter regularly, and service when necessary.

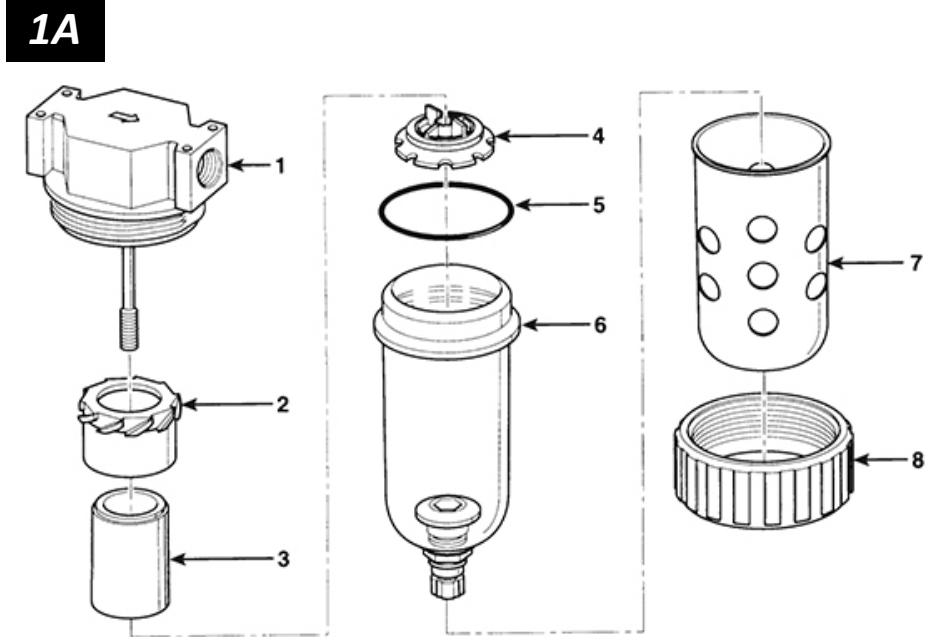
Immediately remove liquid found in the filter bowl, to prevent contact with the filter element.



Never use bowl drain to remove liquid, because this could cause air leak.

Replace the element whenever:

- It has an overall dirty appearance.
- There is a noticeable increase in the time required to attain full vacuum.



Note: The Filter Element Kit (#16132) includes an element (item 3 in fig. 1A), a bowl seal (item 5) and lubricant (not shown).

Filter Service Procedure

1) Unscrew the threaded collar (item 8 in fig. 1A) from the body (item 1) of the air filter.

Note: To protect air-line fittings from damage, hold the body while turning the collar.

2) Remove the bowl guard (item 7) and the bowl (item 6).

3) Determine whether the filter element (item 3) needs to be replaced (see above).

- *If so, proceed to step 4.*
- *If not, remove any liquid or contaminants from the bowl; clean the old bowl seal (item 5) with mild soap and water; and skip to step 8.*

4) Unscrew the baffle (item 4), and remove the element and deflector (item 2).

5) Discard the old element and bowl seal (item 5).

SERVICE PROCEDURES

6) Clean the bowl and all remaining internal parts, using mild soap and water only.

Caution: Do not use any other cleaning agents.

7) Install the deflector and a new filter element. Then screw the baffle back on to hold the element in place.

Note: Tighten gently – finger-tight.

8) Lubricate the new or cleaned bowl seal, using a mineral-based oil or grease, such as that provided in the filter element kit.

Caution: Do not use synthetic oils, such as esters, and do not use silicones.

Then place the bowl seal around the rim of the bowl.

9) Install the bowl back onto the body.

Caution: Do not contaminate the filter element with lubricant from the bowl seal.

10) Install the bowl guard and the collar.

Note: Tighten the collar with 28-32 in-lbs [316-362 N-cm] of torque.

11) Perform the “Vacuum Test” to be certain the air filter does not leak (see “INSPECTIONS AND TESTS: TESTING” in the lifter's *OPERATING INSTRUCTIONS*).

Note: Repeat this procedure for any other filter of the same type.

SERVICE PROCEDURES

AIR FILTER MAINTENANCE – 2 OZ BOWL SIZE



Inspect each air filter regularly and service when needed.

Immediately remove liquid or other contaminants found in the filter bowl (D in fig. 1A), to prevent contact with the filter element (C).

Replace the element whenever:

- It has an overall dirty appearance
- There is a noticeable increase in the time required to attain full vacuum.

Filter Service Procedure

- 1) Unscrew the bowl (D in fig. 1A) from the body (A) of the air filter.
- 2) Determine whether the element assembly (C) needs to be replaced (see above):
 - *If so, proceed to step 3.*
 - *If not, remove any liquid or contaminants from the bowl and skip to step 7.*
- 3) Unscrew the old element assembly from the body.
- 4) Carefully remove the bowl seal (B) from the body and clean the seal with mild soap and water. Make sure the seal is not damaged.
- 5) Lubricate the bowl seal, using a mineral-based oil or grease, and reinstall the seal in its original position within the body. *Note: Do not use synthetic oils, such as esters, and do not use silicones.*
- 6) Screw the new element assembly (#16137) into the body. *Note: Tighten gently – finger-tight. Then dispose of the old assembly.*
- 7) Clean the bowl, using mild soap and water only. *Note: Do not use any other cleaning agents.*
- 8) Screw the bowl back into the body. Hand-tighten only.
- 9) Perform the “Vacuum Test” to be certain the air filter does not leak (see “INSTECTIONS AND TESTS: TESTING” in the lifter’s *OPERATING INSTRUCTIONS*).



Note: Repeat this procedure for any other filter of the same type.

SERVICE PROCEDURES

VACUUM PUMP TEST

The venturi-type vacuum pump (fig. 1A) can wear out over time, as a result of particle abrasion. If the lifter is unable to attain a minimum vacuum level of 16" Hg [-54 kPa] (see "Vacuum Test" in the lifter's *OPERATING INSTRUCTIONS*), evaluate the pump:

- 1) Systematically test all other components in the vacuum generating system for leakage.¹ Continue only when leakage has been eliminated as the cause of insufficient vacuum.
- 2) Make sure the power source consistently supplies compressed air to meet both pressure and volume requirements as stated in the "SPECIFICATIONS" of the lifter's *OPERATING INSTRUCTIONS*.
- 3) Connect the compressed air supply as directed in "ASSEMBLY" of the lifter's *OPERATING INSTRUCTIONS*. If applicable, adjust the lifter's air pressure regulator to make sure the minimum required pressure is maintained at the lifter.
- 4) If the pump is equipped with a muffler (circled in fig. 1A), remove it and perform the "Vacuum Test" as directed in the lifter's *OPERATING INSTRUCTIONS*. **Caution:** *Hearing protection is recommended when the muffler is removed.* If the lifter is now able to attain a minimum vacuum level of 16" Hg [-54 kPa], replace the muffler (see "REPLACEMENT PARTS"). If not, proceed to step 5.
If the pump is not equipped with a muffler, proceed to step 5.
- 5) Perform the "Vacuum Test" as directed in the lifter's *OPERATING INSTRUCTIONS*. If the lifter is unable to attain a minimum vacuum level of 16" Hg [-54 kPa], replace the pump (see "REPLACEMENT PARTS").



1..... For more information, search for your lifter's Model Number at www.wpg.com and select the "Troubleshooting" link on the product page.

TILT COMPONENTS MAINTENANCE

Tilt Actuator

Tilt motion is accomplished using an air-powered linear actuator. Since the tilt actuator is prelubricated, no additional lubrication is required under normal circumstances. The tilt actuator is equipped with several adjustable features that are set at the factory and should not need readjustment. However, in the event that adjustments are required, proceed:

Tilt Speed Valves

The tilt speed valves located at each end of the tilt actuator control the speed of actuator movement. Speed is adjusted independently for each direction of the actuator's stroke, using an adjustment screw located at the outside end of each speed valve:

- 1) Determine which direction of the stroke requires a speed adjustment, and identify the speed valve governing speed in that direction: The speed valve at the *upper* end of the actuator controls *retraction* (load movement from upright to flat), whereas the speed valve at the *lower* end of the actuator controls *extension* (load movement from flat to upright).
- 2) Determine which direction to turn the valve's adjustment screw in order to produce the desired stroke speed: To *reduce* the speed of the stroke, turn the adjustment screw *clockwise*. To *increase* the speed of the stroke, turn the adjustment screw *counter-clockwise*.

Note: The standard settings for the upper and lower speed valves are the number of turns counter-clockwise from full clockwise, as indicated for your lifter model.

PT10/1410TAIR = 6-1/2 turns
PT4-AIR = 2-1/2 turns

- 3) Check the stroke speed and repeat steps 1-2 as necessary to obtain the desired adjustment.

Tilt Stop Valves

Tilt stop valves are integrated in the ends of the tilt actuator to control the cushioning effect at each end of the stroke. An adjustment screw is flush-mounted on the side of the actuator *directly opposite* from each tilt speed valve, in order to adjust the cushioning effect:

- 1) Determine which end of the stroke needs to be adjusted, and identify the adjustment screw governing the cushioning effect at that end: The *upper* screw controls the end of the *retraction* stroke, whereas the *lower* screw controls the end of the *extension* stroke.

SERVICE PROCEDURES

- 2) Determine which direction to turn the adjustment screw in order to produce the desired cushioning effect: To *increase* the cushioning effect, turn the adjustment screw *clockwise*. To *reduce* the cushioning effect, turn the adjustment screw *counter-clockwise*.

Note: The standard setting for both upper and lower adjustment screws is 1/8 turn to 1/4 turn counter-clockwise from full clockwise.

- 3) Check the cushioning effect and repeat steps 1-2 as necessary to obtain the desired adjustment.

Tilt Master Valve

The tilt master valve controls airflow to the tilt actuator, in order to set the maximum stroke speed in both directions. This prevents the lifter or load from being damaged if anyone attempts to tilt the lifter when the actuator is not completely pressurized. Such a condition may exist after shipping or storing the lifter, or if the tilt control valve is operated while the air supply valve is in the “off” position (○).

Caution: *Do not adjust the tilt master valve unless there is clear indication it has come out of adjustment.*

The standard setting for the master valve is 2 turns counter-clockwise from full clockwise, when viewed from the end of the adjustment knob. The master valve must remain at the standard setting and should not be adjusted, unless there is reason to believe that it has come out of adjustment.

REPLACEMENT PARTS

Stock No.	Description	Qty.
66174	Vacuum Pump – Venturi Type – 5.7 SCFM (for MR4-AIR)	1
66166	Vacuum Pump – Venturi Type – 2.8 SCFM (for FLEXR[L]-AIR, MT-10TAIR, PT4-AIR)	1
66162	Vacuum Pump – Venturi Type – 1.0 SCFM (for MRTA6LP6FAIRS, MTA-AIR, MT1TL6FAIR)	1
66161	Vacuum Pump – Venturi Type – 4.3 SCFM (for PT-10TAIR, P1-AIR)	1
65291	Air Supply Valve w/Lever – 1/4 FNPT x 1/4 MNPT (for MTA-AIR, PT4-AIR)	1
65289	Air Supply Valve w/Lever – 1/4 FNPT x 1/4 FNPT (for MRTA6LP6FAIRS, MT1TL6FAIR, PT-10TAIR)	1
65284	Air-Piloted Valve Block (for MR4-AIR)	1
65277	Vacuum Control Valve w/Lever (for PT-10TAIR, PT4-AIR)	1
65275	Vacuum Control Valve w/Lever (for P1-AIR)	1
65273	Tilt Control Valve w/Lever (for PT-10TAIR, PT4-AIR)	1
65268	Tilt Speed Valve (for PT-10TAIR)	2
65267BM	Tilt Speed Valve (for PT4-AIR)	2
65265	Tilt Master Valve (for PT-10TAIR, PT4-AIR)	1
65264M	Valve Adapter (for MRTA6LP6FAIRS, MTA-AIR vacuum release button)	1
65263	Vacuum Control Valve – 3-Way (for MRTA6LP6FAIRS, MTA-AIR vacuum release button)	1
65262	Toggle Switch Valve (for MR4-AIR power switch)	1
65260	Valve - 1/8NPT - 4-Way/3-Position (for FL1-AIRS)	1
65258	Push Button (for MRTA6LP6FAIRS, MTA-AIR vacuum release button)	1
65257CA	Air Pilot Valve – Push-In – Flush Mount (for FLEXR[L]-AIR)	1
65218	Air Pilot Valve - 4-Way (for FL1-AIRS)	1
65212	Check Valve – 1/4 NPT (for other models)	1
65211	Check Valve – 1/8 NPT (for FLEXR[L]-AIR), MT-10TAIR, MTA-AIR	1
64985	Tilt Actuator – Air Cylinder Type (for PT4-AIR)	1
64980	Tilt Actuator – Air Cylinder Type (for PT-10TAIR)	1
58456	Air Control Valve w/Lever (for MT-10TAIR)	1
16137	Filter Element Kit (for 2 oz bowl size air filter) (for FLEXR[L]-AIR)	2
16134	Filter Element Kit (for 1 oz bowl size air filter/regulator)	1
16132	Filter Element Kit (for 4.4 oz bowl size air filter)	1/2*
16102	Silencer Muffler – 58 dB – 1/4 NPT (for FLEXR[L]-AIR), PT-10TAIR)	1
16100AM	Silencer Muffler – 85 dB – 1/4 NPT (for other models)	1
16100	Bronze Exhaust Muffler – 1/8 NPT (for MR4-AIR)	1
16042	Quick Connector – 1/4 MNPT – Male End	1
16040	Quick Connector – 1/4 FNPT – Female End	1
15972	Pressure Gauge – 1/8 NPT – CBM Type	1
15930	Vacuum Gauge – 1/4 NPT – LM Type (for MRTA6LP6FAIRS, MTA-AIR, MT1TL6FAIR)	1
15920	Vacuum Gauge – 1/8 NPT – CBM Type (for FLEXR[L]-AIR), MR4-AIR	1
15910	Vacuum Gauge – 1/8 NPT – CBM Type (for MT-10TAIR, PT-10TAIR, PT4-AIR)	1

* Quantity of 2 for MT-10TAIR and PT-10TAIR

See **OPERATING INSTRUCTIONS** for additional parts.

**SERVICE ONLY WITH IDENTICAL REPLACEMENT PARTS,
AVAILABLE AT WPG.COM OR THROUGH AN AUTHORIZED WPG DEALER**

