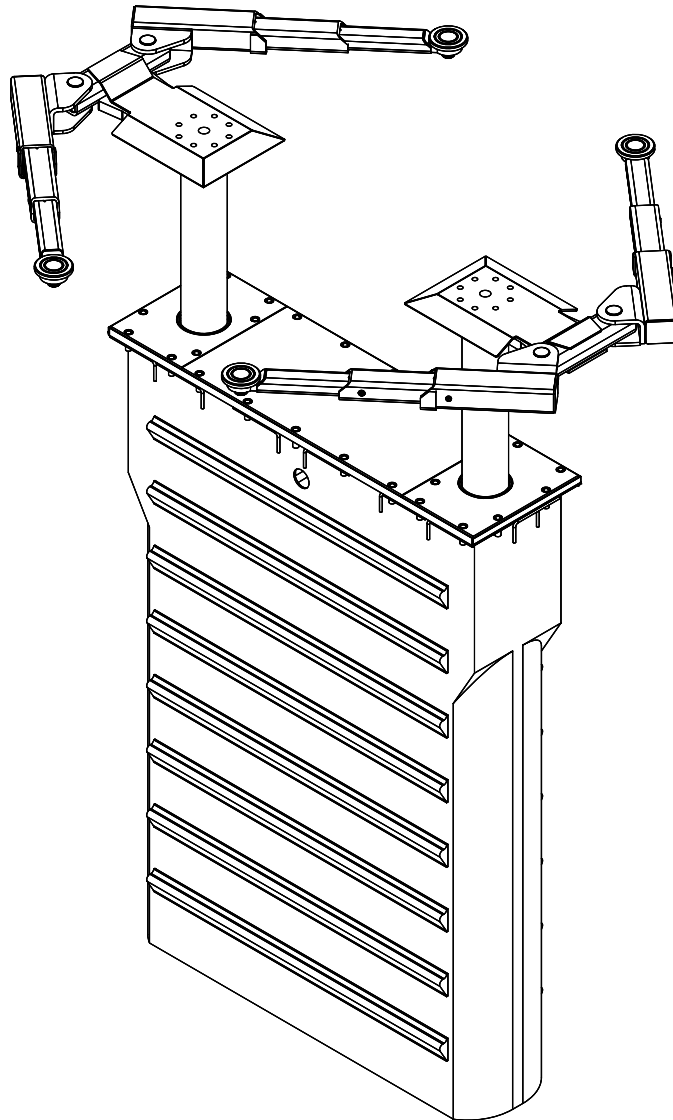


Model AV1020WV
Installation, Operation and Maintenance

CL Challenger Lifts

MODEL AV1020WV

TWO POST INGROUND CASSETTE ENVIROLIFT™ INSTALLATION, OPERATION & MAINTENANCE MANUAL



200 Cabel Street, P.O. Box 3944 Louisville, Kentucky 40201-3944
Email: sales@challengerlifts.com Web site: www.challengerlifts.com
Office 800-648-5438 / 502-625-0700 Fax 502-587-1933

IMPORTANT: READ THIS MANUAL COMPLETELY BEFORE

Rev. 3/10/09

**Model AV1020WV
Installation, Operation and Maintenance**

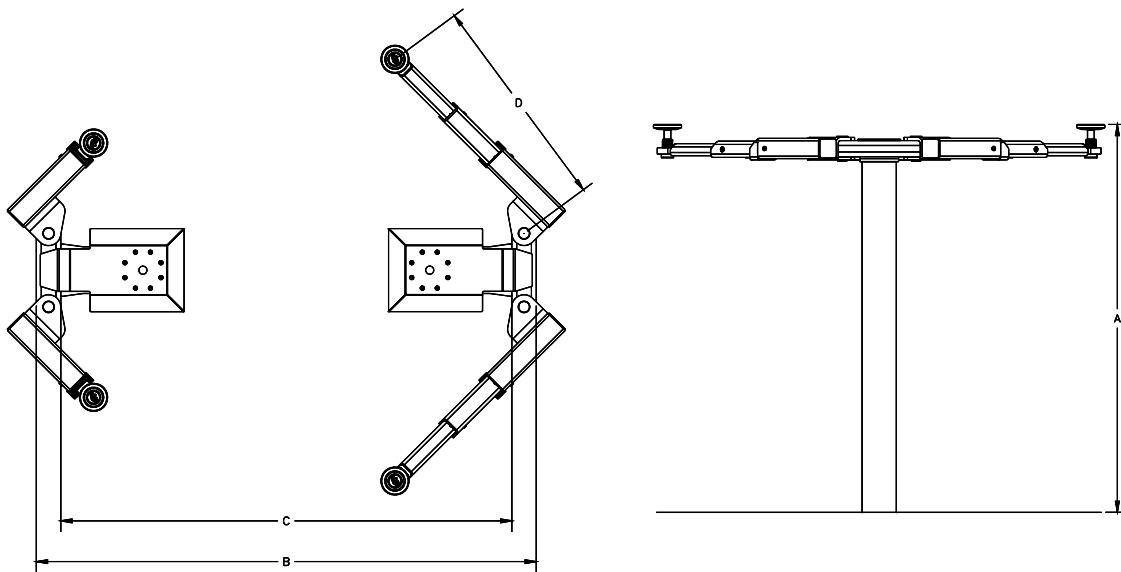
INSTALLING or OPERATING LIFT

GENERAL SPECIFICATIONS

See Figure 1	AV1020WV
A Rise Height (Screw Pads Highest Position)	80 1/8"
B Overall Width	97"
C Drive Thru	87 1/4"
D Arm Reach (min/max)	19 1/2" Min / 42" Max
Lifting Capacity *	10,000 lbs
Shop Air	200 psi
Cylinder Water Volume	13.2 gal. Per Cylinder
Speed of Rise **	50 Sec.
Max Load Per Arm	2,500 lbs

* Lift capacity ratings are based on loads equally distributed on all four arms.

** Lifting and lowering speeds may vary depending on the weight of the vehicle and air supply.



Model AV1020WV

Installation, Operation and Maintenance

VERTICAL CLEARANCE

Check the height of the area where the lift is to be installed. Clearance should be calculated based on the full raised height of the lift.



WARNING Failure by purchaser to provide adequate clearance could result in unsatisfactory lift performance, property damage, or personal injury.

LOCATION

This lift has been evaluated for indoor use only with an operating ambient temp. range of 5 – 40°C (41– 104°F)

AIR REQUIREMENTS

To achieve maximum capacity of the lift, a shop air supply of 200 psi must be supplied to the lift.

SAFETY NOTICES AND DECALS

For your safety, and the safety of others, read and understand all of the safety notices and decals included here.

READ ENTIRE MANUAL BEFORE ASSEMBLING, INSTALLING, OPERATING, OR SERVICING THIS EQUIPMENT.

PROPER MAINTENANCE AND INSPECTION IS NECESSARY FOR SAFE OPERATION.

DO NOT OPERATE A DAMAGED LIFT.

Safety decals similar to those shown here are found on a properly installed lift. Be sure that all safety decals have been correctly installed on the Power Unit reservoir. Verify that all authorized operators know the location of these decals and fully understand their meaning. Replace worn, faded, or damaged decals promptly.



WARNING Do not attempt to raise a vehicle on the lift until the lift has been correctly installed and adjusted as described in this manual.

SAFETY INSTRUCTIONS

If attachments, accessories or configuration modifying components that are located in the load path, affect operation of the lift, affect the lift electrical listing or affect intended vehicle accommodation are used on this lift and, if they are not certified for use on this lift, then the certification of this lift shall become null and void. Contact the participant for information pertaining to certified attachments, accessories or configuration modifying components.

www.autolift.org ©2007 by ALI, Inc. ALI / WLSIAO1

SAFETY WARNING LABELS FOR INGROUND LIFTS

Lift Owner/User Responsibilities:

- A. This Safety Warning placard SHALL be displayed in a conspicuous location in the lift area.
- B. Use one of the mounting arrangements illustrated on back of this placard.
- C. These Safety Warning labels supplement other documents supplied with the lift.
- D. Be certain all lift operators read and understand these labels, operating instructions and other safety related information supplied with the lift.

				<p>The message and pictographs shown on panels of this placard are meant to give only general safety information and do not constitute a substitute for the manufacturer's instructions or safety manual.</p> <p>Nothing for this development, safety or other information is provided by the Autolifts, Inc. Patent, P.O. Box 25115, Dallas, TX 75225-0115.</p> <p>They are property of Autolifts, Inc. or its member companies.</p>

TYPICAL PLACARD LOCATIONS

Wall Mounted Lift Control

Air Supply To Lift

Push Button Controls on Electric Powered Lifts

In-floor Lift Controls:
Locate placard on wall or column in lift area near lift controls

				<p>The message and pictographs shown on panels of this placard are meant to give only general safety information and do not constitute a substitute for the manufacturer's instructions or safety manual.</p> <p>Nothing for this development, safety or other information is provided by the Autolifts, Inc. Patent, P.O. Box 25115, Dallas, TX 75225-0115.</p> <p>They are property of Autolifts, Inc. or its member companies.</p>

Model AV1020WV
Installation, Operation and Maintenance

WARNING:

DO NOT permit personnel to operate lifts who are not familiar with the information contained in these instructions.

Safety devices and controls are provided for your protection. **DO NOT** alter any devices to serve a special purpose. Never interfere with safety features built into the controls or the lift lock. **DO NOT** block valves open.

Study these instructions carefully to become familiar with the general installation procedure. Before installing your Challenger Envirolift™ with Aqua Vantage, inspect the lift to insure that it is complete and undamaged. If it is apparent that the lift has been mishandled in shipment, or if parts or assemblies are missing, note the damage or missing part(s) on the shipping papers and notify Challenger Lifts, Inc. immediately.

The Challenger Envirolift™ with Aqua Vantage consists of two packages, the lift-containment assy. and an accessory package. This accessory package includes the superstructures, arms, control assembly and hardware box.

In addition to the components furnished with the lift, certain tools, equipment, supplies and materials are required. The installer or purchaser of the lift must furnish these items:

Forklift, cherry picker, crane, winch truck, chain falls, winches, or hoist to unload and erect lift;

Machinist level, or four-foot carpenters level to check cylinder plumb;

Drywall Square, chalk line, or transit for bay layout;

200 psi Shop Air supply with filter lubricator;

Hand tools for lift assembly;

2" sch. 40 PVC for air chase;

Five yards pea gravel as backfill.

Model AV1020WV Installation, Operation and Maintenance

Installation Procedure

Location

Locate lift to allow plenty of working room on all sides. Allow room for workbenches at front of bay, aisles, lubrication equipment or other obstructions. Check overhead clearances. Ordinarily 12 feet is ample for automobiles. Observe the recommended minimums in Fig 1.

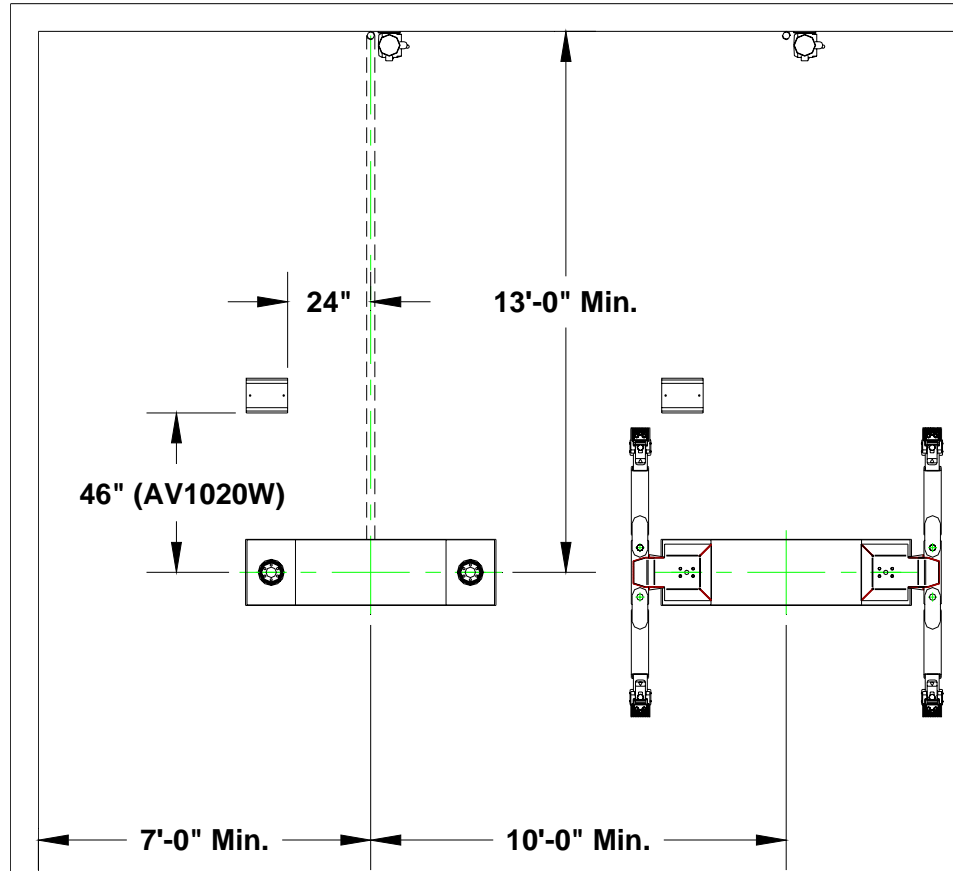


Fig. 1

New Construction Excavation

New construction requires an excavation as shown in Figure 2. All depths are measured from the finished floor level. The control is integrated into the work bench. The control unit should be located out of the working area around the lift and vehicle, but close enough to allow good visibility while operating the lift. Air lines from the lift should be recessed under the slab in a 2" sch. 40 PVC chase. CLI will supply the proper coupling to join the PVC chase to the lift.

Model AV1020WV Installation, Operation and Maintenance

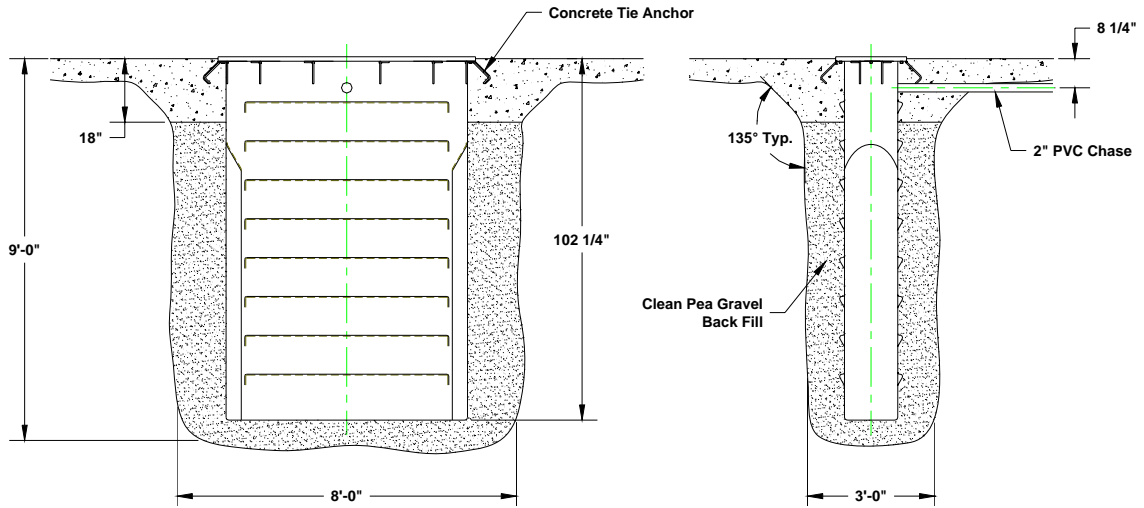


Fig. 2

Existing Facility Excavation

Excavation is the same as in new construction. However, it will be necessary to break out a trench 6"-8" wide by 12" deep to run the PVC chase.

Installation

1. For best balance of lift / containment assembly while lowering into excavation, sling using the shipping straps provided. See Figure 3. **DO NOT** remove or loosen any of the bearing assembly bolts at this time.

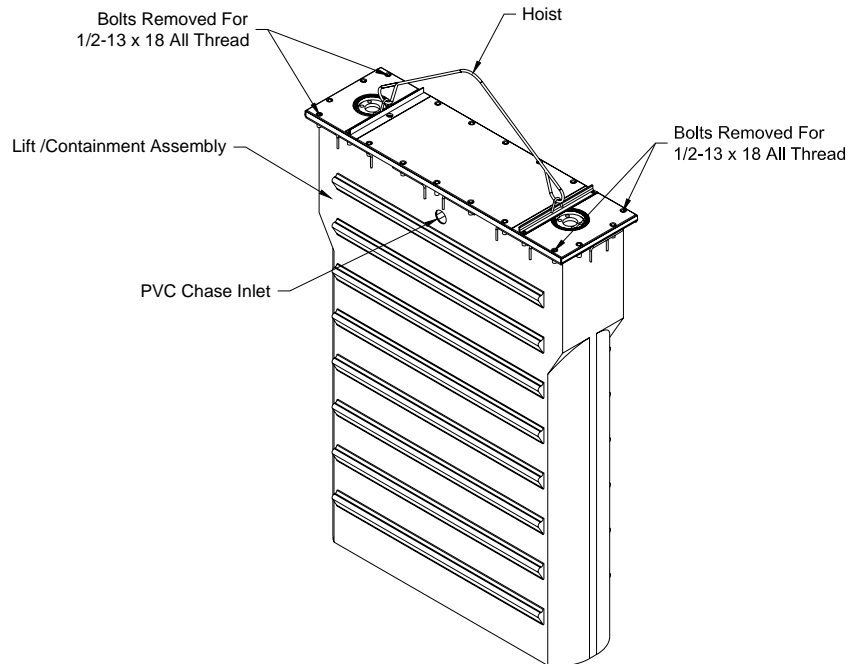


Fig. 3

Model AV1020WV Installation, Operation and Maintenance

- Using a chain hoist and tripod, fork lift, crane, etc. for lifting; lower the lift / containment assembly in the excavation being sure the PVC inlet hole is toward the control unit location, until the top of the assembly is 1/8" to 1/4" above finished floor level and aligned with the previously determined center lines. Refer to Figures 1 and 3.
- Remove the outer two bolts from each end of the center cover plate and replace with 1/2-13 x 18 threaded rods. Attach two 6 x 6 timbers using 1/2-13 nuts and washers, to support the lift / containment assembly on the existing floor or forms. Remove the shipping straps and replace the bolts. Torque the bolts to 60 ft-lbs. Bend concrete tie anchors out 90 degrees and down 45 degrees. Refer to Figures 3 and 4.

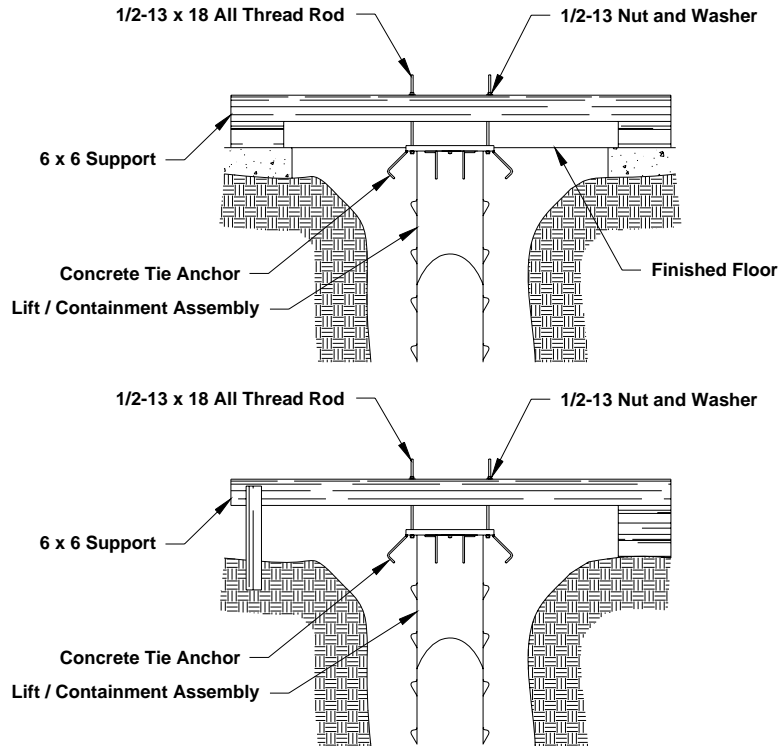


Fig. 4

- Plumb and level using a machinist level on top of each plunger. Level in several directions. **DO NOT** level off the lift frame.
- Run the 2" PVC chase from the control area and join to the lift / containment assembly using the coupling provided. Use a soap water solution to ease assembly. All PVC joints must be leak proof. The power unit end of the chase should be finished as shown in Figure 5 to prevent contamination from entering the chase, while allowing the system to breathe.

Model AV1020WV Installation, Operation and Maintenance

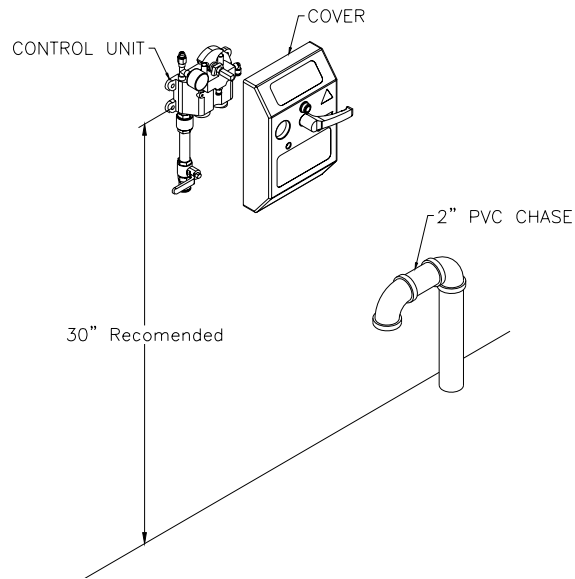


Fig. 5

6. Before beginning to back fill take care to protect the plunger tops, cover joints and hardware from debris. Make sure all factory supplied thread protectors and caps are in place. Recheck plumb and back fill approximately 2 feet with pea gravel. Recheck plumb and continue back filling and rechecking plumb to within 18 inches of finished floor level. **DO NOT** use a mechanical tamper or saturate the fill to achieve compaction, **hand tamp only**.
7. Check plumb and elevation, adjust if necessary. **DO NOT** remove 6 x 6 supports at this time.

Existing Floor

8. Pour concrete floor taking care not to run concrete in or on top of the lift / containment assembly. The floor should slope away from the lift in all directions for drainage. The floor slope should not exceed 1/16" per foot. 3500 psi concrete, steel reinforced per local commercial practice is required. The new concrete must be mechanically joined to the existing floor with rebar.
9. After the concrete has set up, remove the 6 x 6 supports and threaded rods. Replace the cover bolts and torque to 60 ft-lbs.
10. **DO NOT** use the lift until the concrete has fully cured to 3500 psi.

New Floor

11. Pour 8" to 12" of concrete around the top of the lift / containment assembly and install rebar to tie in the finished floor. Refer to Figure 6.

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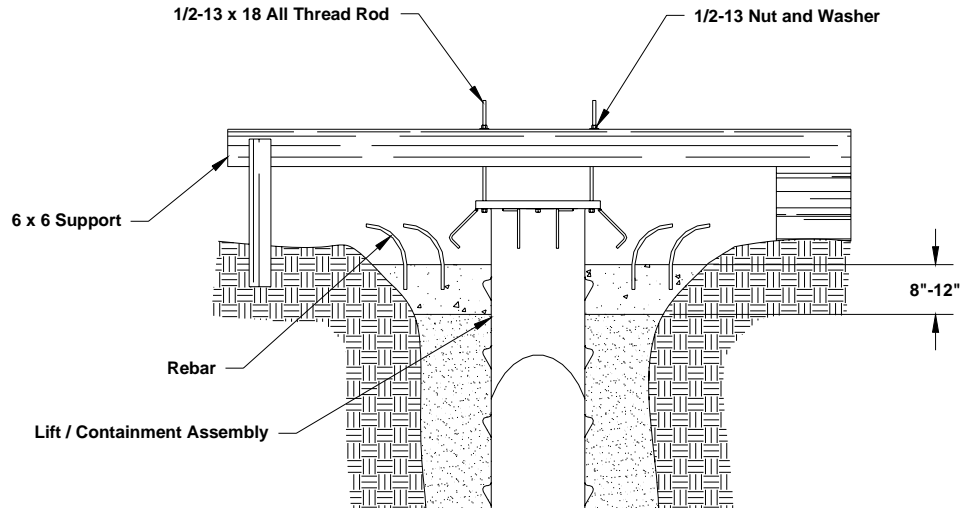


Fig. 6

12. After the concrete has set up remove the 6 x 6 supports and threaded rods. Replace the cover bolts and torque to 60 ft-lbs.
13. Pour concrete floor taking care not to run concrete in or on top of the lift / containment assembly. The floor should slope away from the lift in all directions for drainage. The floor slope should not accede 1/16" per foot.
14. **DO NOT** use the lift until the concrete has fully cured to 3500 psi.
15. Install the control unit using the anchors provided. Install the cover with the provided socket head screws. Refer to Figure 5.
16. Attach the super structure to the piston using (8) M12x60mm Lg. socket head bolts per bolster. **Torque to 75 ft-lbs.**



WARNING

Do not use an impact wrench. Over tightening these bolts can cause un-repairable damage to the piston.

17. Remove the center cover plate for the lift / containment assembly to expose the airline connections. Inside the lift there will be two push lock tee fittings. Connect 75 psi of air to the small tee fitting to open the water control valves. The large tee fitting leave open, this allows air to escape.
18. Open the filler plugs on both pistons and fill each cylinder with 13.2 gallons (50 liters) of clear water using a bucket and a funnel. Add 3-5 gallons to one side and then move to the other side to allow the trapped air to escape. **Do Not** use a hose to fill the cylinders. This can cause air to be trapped in the cylinder and possibly introduce contamination from the hose into the cylinder. The cylinder is filled correctly when the water level is over the head of the inside piston or about 1" below the filler hole. See Figure 7.

Model AV1020WV Installation, Operation and Maintenance

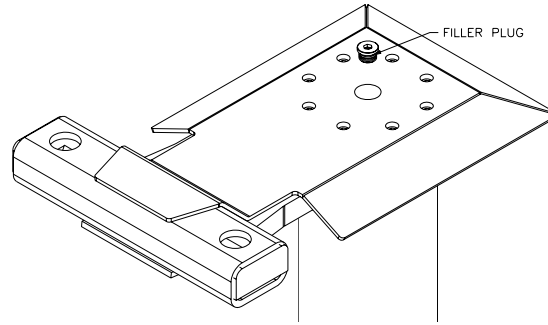


Fig. 7

19. Replace filler plugs on both pistons. See figure 7.
20. Disconnect the 75psi air supply from the small tee fitting.
21. The shop air supply must be clean, dry, lubricated, and regulated to 200 psi. The air supply must run through a Filter/Regulator/Lubricator (FLR) within 30 feet of factory assembled air valve. Failure to provide clean, dry lubricated and pressure regulated air will void warranty on pneumatic components. Push one 16mm and two 6mm airlines through the PVC chase beginning at the control unit. Connect the airline to the appropriate push lock fittings at each end. Refer to figure 8.

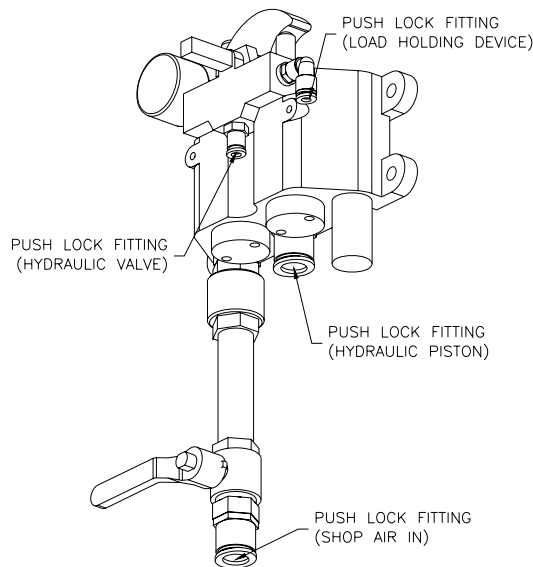


Fig. 8

22. Raise the lift approximately 18" and lower. Raise the lift again to approximately 36" and lower continuing this process until full rise is reached. Check all functions. Make sure that all connections are tight and there are no leaks. Close the air supply valve and exhaust all air. Remove the fill caps and double check the water level. Repeat step 18 if water level is low. Reinstall fill caps.
23. Attach the cover to the valve body with to M6x10mm Lg. screws and control valve handle. See figure 9.

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Installation, Operation and Maintenance

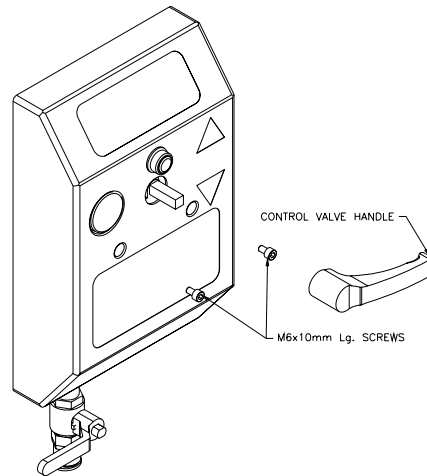


Fig. 9

24. Replace the center cover plate and torque bolts to 60 ft-lbs.
25. Extend the foot pad to both extents and apply “anti-seize” to the three retaining rings and where the double screw makes contact with the base of the foot pad.
26. With the lift lowered, arms extended fully and foot pad in the lowest position, check clearance of the footpad screw to ensure it does not make contact with the floor. Use the height adjustment bolt (see figure 10) to either raise or lower the bolster as necessary. If there is more then 3/8” of clearance on both screws with the bolt fully seated against the bottom of the bolster remove the bolt.

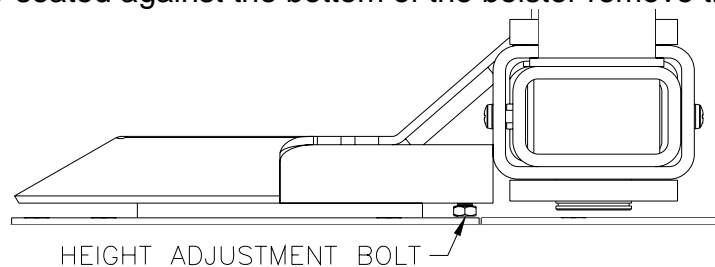


Fig. 10

26. Locate and install the wheel-spotting pan using the anchors provided. Refer to Figure 1. These are recommended dimensions only and may vary according to the fleet of vehicles being serviced.
27. Finish installation by cleaning around the top of the lift / containment unit and Thoroughly seal joints between the cover plate, bearing plates, and the perimeter with a premium silicone caulk.

Model AV1020WV Installation, Operation and Maintenance

Lifting a Vehicle

Be sure the adapters are in the lowered position and the arms are parked as seen in Figure 1 before attempting to drive on or off of the lift. Failure to do so may damage the adapters or vehicle.

Drive vehicle over the lift until the left front wheel is positioned in the spotting pan. This will approximately position the center of gravity of the vehicle over the center of the lift superstructure. This is an approximation and some adjustment may be necessary depending on wheelbase and weight distribution. Adjust the adapters laterally and fore and aft to contact points of maximum stability in accordance with the vehicle manufacturer's recommended lifting points.

Remember that positioning the adapters to yield the widest and longest distances between points of contact with the vehicle lifting points provides the maximum stability.

Adapters may be used in lowered, intermediate or raised height positions as necessary to clear mufflers, pipes, brake lines etc.

To raise pull out on the control handle and rotate upward (Counter Clockwise) and hold until the vehicles tires just clear the floor. **STOP** and check adapters for proper contact of vehicle manufacturers recommended lifting points and stability of the vehicle. Continue to raise the vehicle to the desired working height. **DO NOT** go under vehicle unless all four adapters are securely contacting the vehicle manufacturers recommended lifting points.

Lowering a Vehicle

To lower pull out on the control handle and rotate downward (Clockwise). Continue to hold the handle in this position until the lift is completely lowered. Return adapters to there lowest position and park the swing arms to provide unobstructed exit of the vehicle.

Trouble Shooting

If any problems are encountered please contact your local Challenger Representative.

Model AV1020WV

Installation, Operation and Maintenance

OWNER/OPERATOR CHECKLIST

- 1) Demonstrate the operation of the lift to the owner/operator and review correct and safe lifting procedures using the **Lifting It Right** booklet as a guide.
- 2) Complete the Installation Checklist/Warranty Validation questionnaire with the owner. Review the terms of the warranty registration card, and return the card and a copy of the questionnaires to:

Challenger Lifts, Inc.

200 Cabel Street

Louisville, KY. 40206

OPERATION PROCEDURE

SAFETY NOTICES AND DECALS

This product is furnished with graphic safety warning labels, which are reproduced on page 3 of these instructions. Do not remove or deface these warning labels, or allow them to be removed or defaced. For your safety, and the safety of others, read and understand all of the safety notices and decals included.

OWNER/EMPLOYER RESPONSIBILITIES

This lift has been designed and constructed according to ANSI/ALI ALCTV-2006 standard. The standard applies to lift manufactures, as well as to owners and employers. The owner/employer's responsibilities as prescribed by ANSI/ALI ALOIM-2000, are summarized below. For exact wording refer to the actual standard provided with this manual in the literature pack.

The Owner/Employer shall insure that lift operators are qualified and that they are trained in the safe use and operation of the lift using the manufacturer's operating instructions; ALI/SM 93 - 1, ALI Lifting it Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; ALI/WL Series, ALI Uniform Warning Label Decals/Placards; and in case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts.

The Owner/Employer shall establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and the employer shall insure that the lift inspectors are qualified and that they are adequately trained in the inspection of the lift.

The Owner/Employer shall establish procedures to periodically maintain the lift in accordance with the lift manufacturer's instructions or ANSI/ALIOIM-

2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and the employer shall insure that the lift maintenance personnel are qualified and that they are adequately trained in the maintenance of the lift.

The Owner/Employer shall maintain the periodic inspection and maintenance records recommended by the manufacturer or ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance.

The Owner/Employer shall display the lift manufacturer's operating instructions; ALI/SM 93 - 1, ALI Lifting it Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and in the case of frame engaging lift, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts; in a conspicuous location in the lift area convenient to the operator.

IMPORTANT SAFETY INSTRUCTIONS

When using your garage equipment, basic safety precautions should always be followed, including the following:

1. Read all instructions.
2. Care must be taken as burns can occur from touching hot parts.
3. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
4. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
5. Use only as described in this manual. Use only manufacturer's recommended attachments.
6. ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.

SAVE THESE INSTRUCTIONS

Model AV1020WV

Installation, Operation and Maintenance

Maintenance

To avoid personal injury, permit only qualified personnel to perform maintenance on this equipment. Maintenance personnel should follow lockout/tagout instructions per ANSI Z244.1.

The following maintenance points are suggested as the basis of a preventive maintenance program. The actual maintenance program should be tailored to the installation. See ANSI/ALI ALOIM booklet for periodic inspection checklist and maintenance log sheet.

- Replace all Safety, Warning or Caution Labels if missing or damaged (**See *Installation instructions page 3.***)

Daily

Drain water from air supply to avoid contamination of lock release components.

Check lock operation. The lock operation should be heard as lift is raised.

Inspect lifting adapters for damage.

Keep area around lift / containment assembly clean and free of dirt, sand, water, etc. to prevent scoring of the plunger.

Monthly

Check for proper torque on all superstructure bolts (75 ft-lbs.).

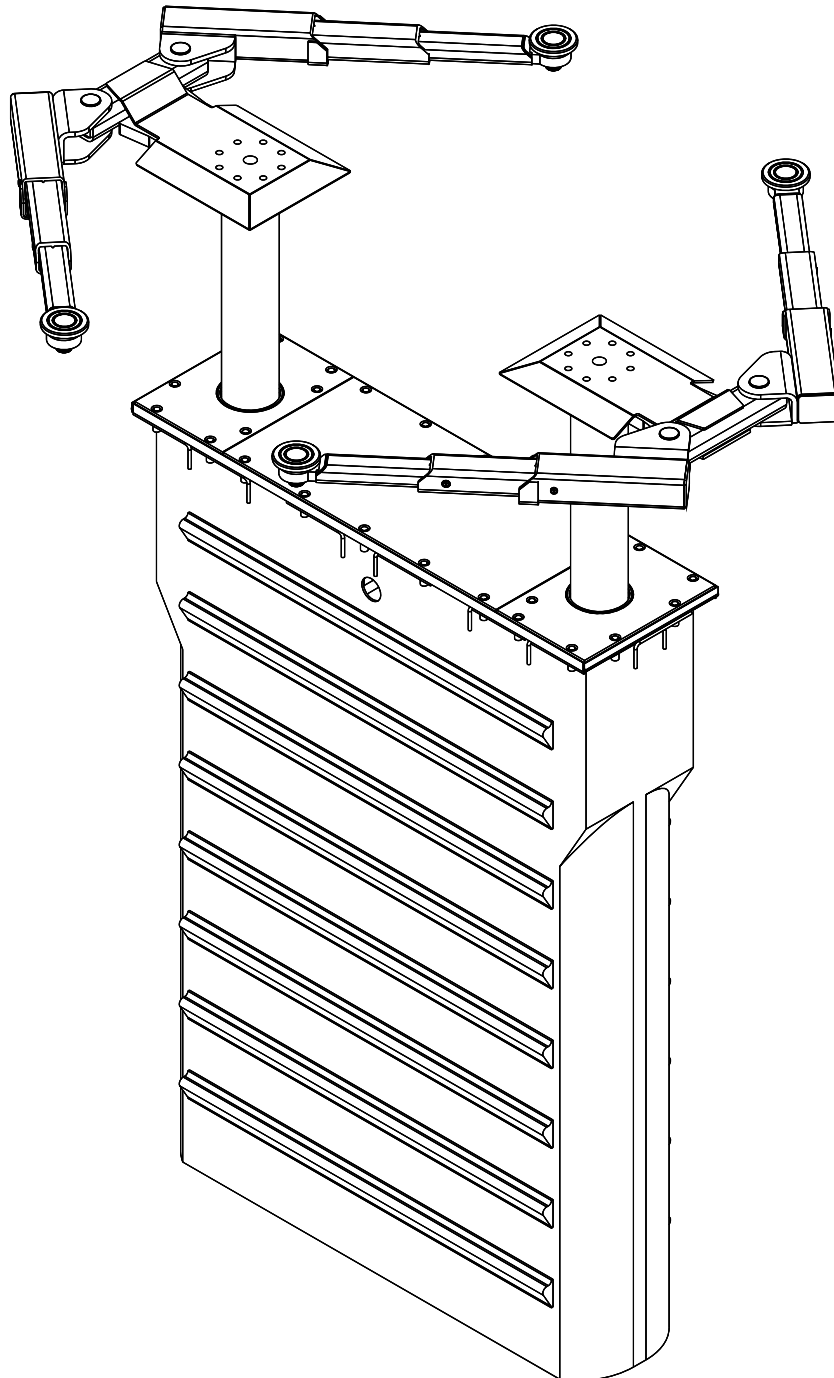
Check containment tub for liquid accumulation. Remove liquid if present.

Annually

Lubricate lift guides and the mechanical cross bar. Use the grease nipple 10-12 pumps with a manual grease gun. Use HERRMANN grease.

Model AV1020WV
Installation, Operation and Maintenance

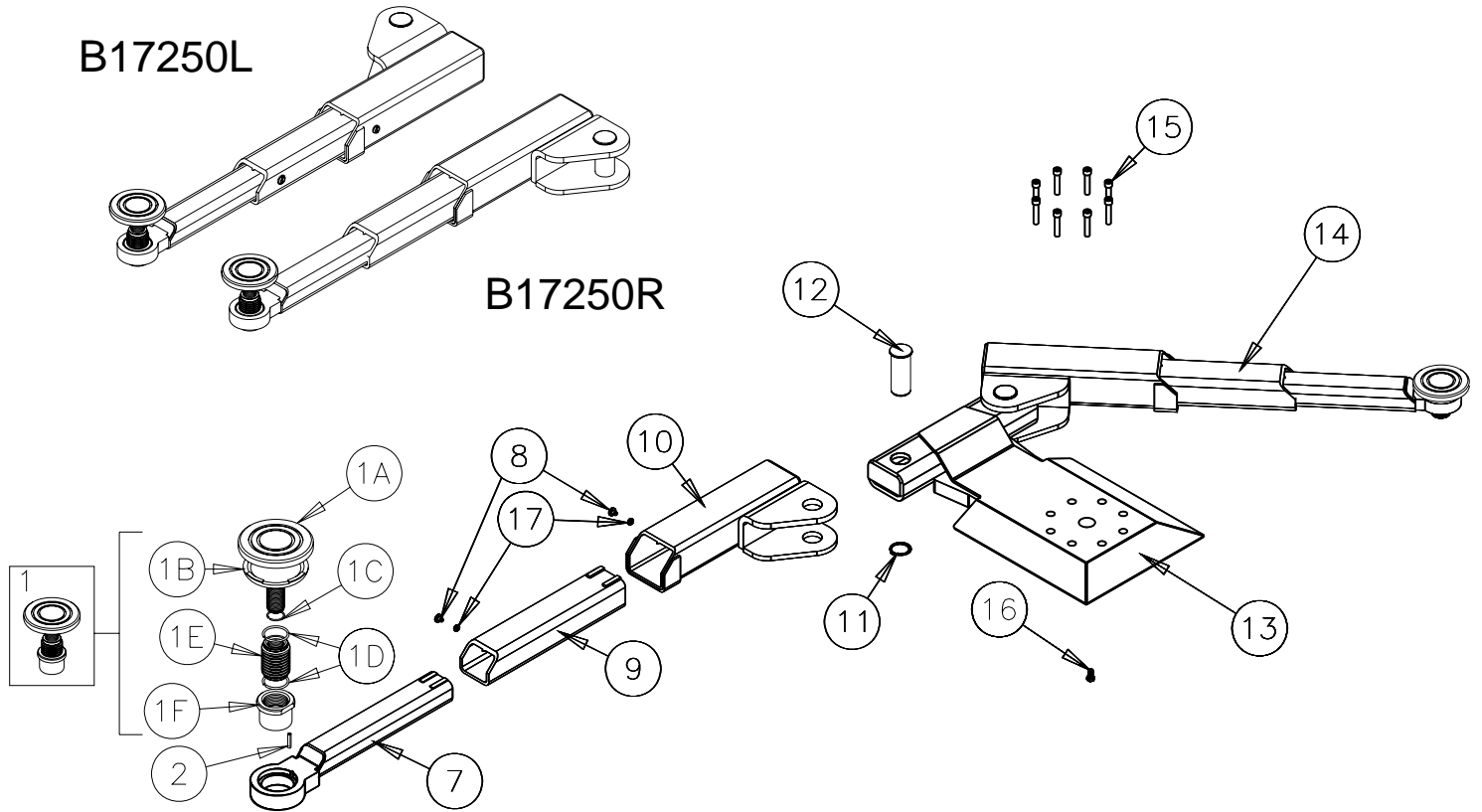
**Parts Break Down
Model AV1020WV**



IMPORTANT

Replace all worn or broken parts with **genuine Challenger Lifts, Inc. parts**. Contact your local Challenger Lifts parts distributor for pricing and availability. Call Challenger Lifts, Inc. at **(502) 625-0700** for the distributor in your area.

**Model AV1020WV
Installation, Operation and Maintenance**

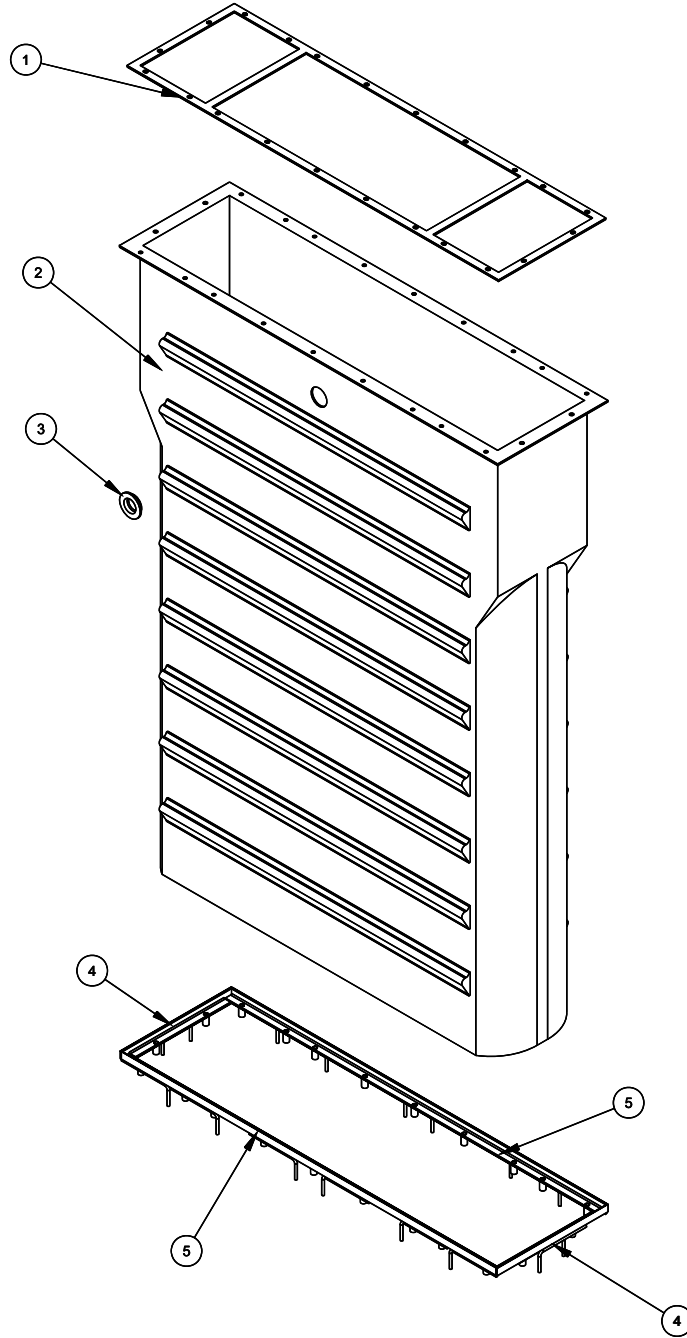


AV1020WV Super Structure

Item	Part	Qty. / Lift	Description
1	B2250	4	Foot Pad Assembly (items 1A-1F)
1A	B2208	4	Rubber Insert
1B	B2205	4	Foot Pad Weld
1C	B17256	4	2 x 30mm Retaining Ring
1D	B17257	8	3 x 45mm Retaining Ring
1E	B17254	4	Threaded Sleeve
1F	B17276-1	4	Threaded insert
2	B2211	4	Roll Pin, 6mm DIA x 30mm Lg.
7	B17253L / B17253R	2/2	Male Arm Weld Left / Male Arm Weld Right
8	B17258	8	M10 Stop Screw
9	B17252L / B17252R	2/2	Intermediate Arm Weld Left / Intermediate Arm Weld Right
10	B17251L / B17251R	2/2	Female Arm Weld Left / Female Arm Weld Right
11	16125	4	1 7/8 Snap Ring
12	B17259	4	Arm Pin
13	B17001AV	2	Bolster
14	B17250UL / B17250UR	2/2	3-Stage Arm Assembly Left / 3-Stage Arm Assembly Right
15	TOP80150	16	M12x60mm Lg. SOCKET HD. SCREW
16	17315	2	M12x1.75 x 20mm, HHCS, Gr. 8.8, ZINC PLT'D
17	CS1020-01-09	AS NEEDED	10mm FLAT WASHER, 1mm THICK

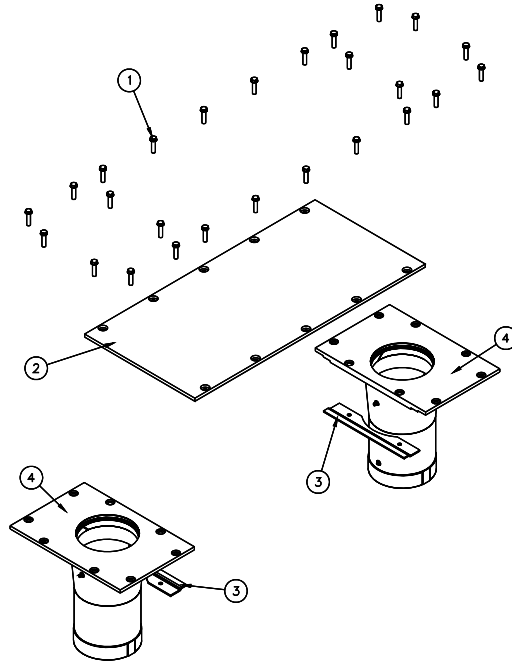
**Model AV1020WV
Installation, Operation and Maintenance**

Containment



Item	Part	Qty./Lift	Description
1	17200	1	Single Piece Rubber Gasket
2	16380	1	Containment Tub (Not Serviceable after Installation)
3	15009	1	2" PVC Grommet (Not Serviceable after Installation)
4	16407	2	Concrete Tie Weld-Short (Not Serviceable after Installation)
5	16111	2	Concrete Tie Weld-Long (Not Serviceable after Installation)

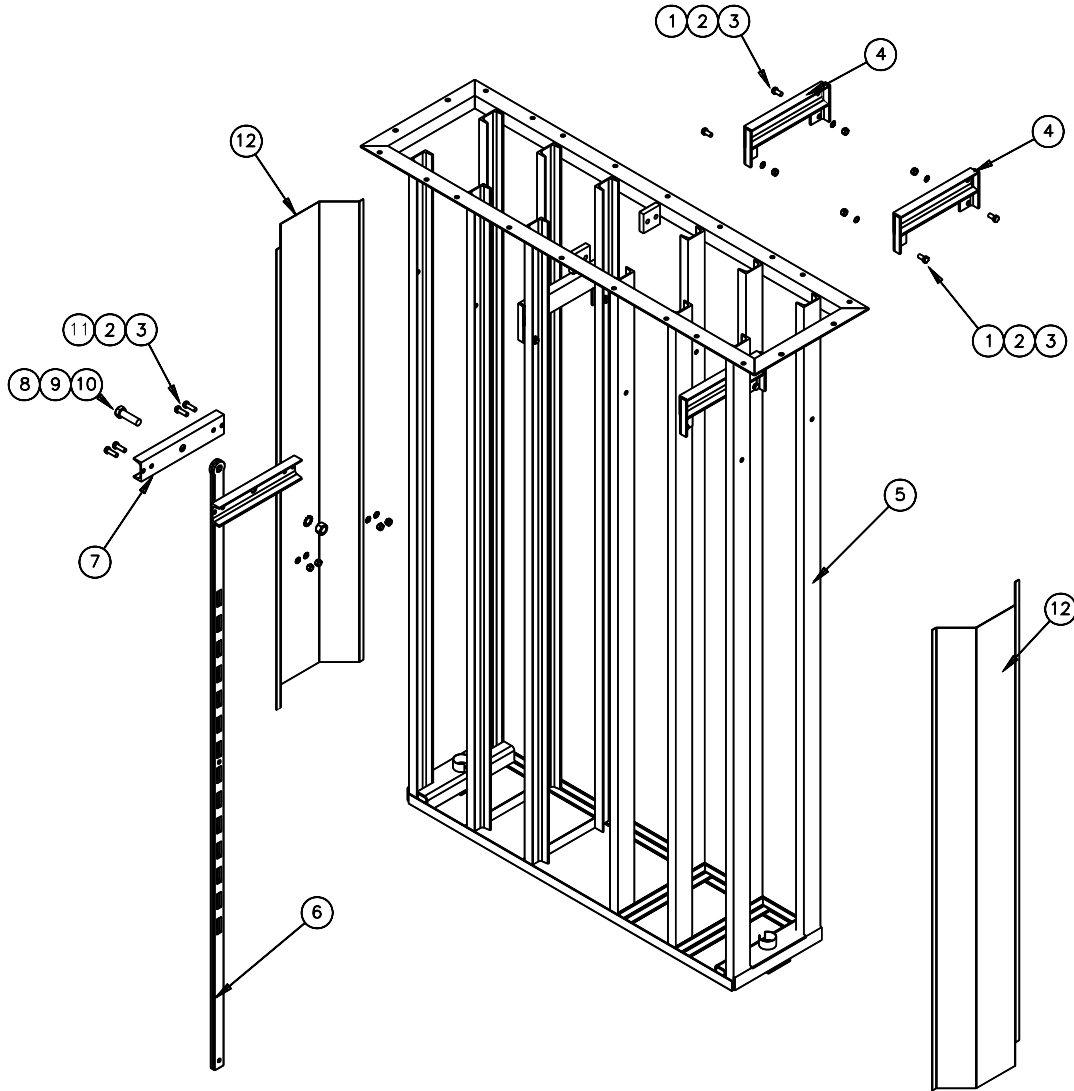
**Model AV1020WV
Installation, Operation and Maintenance**



Bearings

Item	Part	Qty / Lift	Description
1	16116	26	½-13 x 2"Lg. BOLT
2	16399	1	COVER PLATE – AV1020WV
3	CAL006	2	GASKET SUPPORT
4	TOP20174	2	BEARING ASSEMBLY

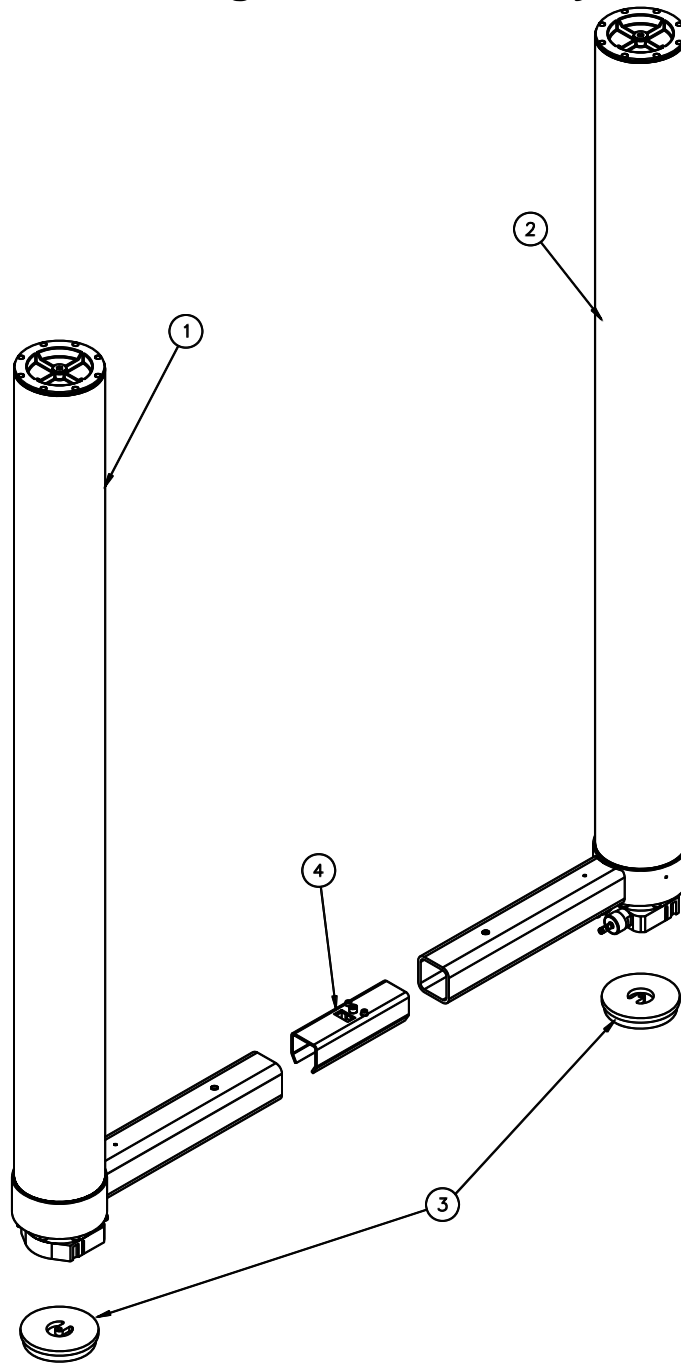
**Model AV1020WV
Installation, Operation and Maintenance**



Frame

Item	Part	Qty./Lift	Description
1	16157	8	½-13 x 1 Frame Support Bolt
2	16158	12	½" External Tooth Lock washer
3	16159	12	½-13 Hex Nut
4	CAL007	3	Frame Support
5	16400	1	Frame Weld (Not Serviceable after Installation)
6	CAL009	1	Lock Ladder Assembly
7	16412	2	Ladder Rail
8	16153	1	7/8-9 x 3 Lock Ladder Bolt
9	16154	1	7/8" External Tooth Lock washer
10	16155	1	7/8-9 Hex Nut
11	16470	4	½-13 x 1 ¾ Ladder Rail Bolt
12	16373	2	End Shield

Model AV1020WV
Installation, Operation and Maintenance
Plunger/Rail Assembly

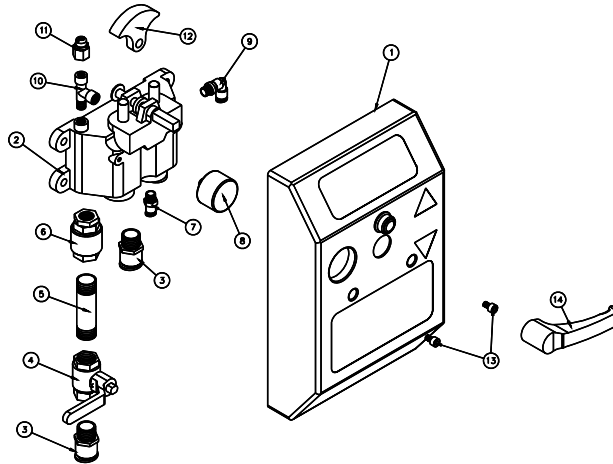


Plunger/Rail Assembly

ITEM #	PART #	QTY/LIFT	DESCRIPTION
1	TOP20173-A	1	LEFT CYLINDER ASSEMBLY
2	TOP20173-B	1	RIGHT CYLINDER ASSEMBLY
3	CAL008	2	CYLINDER SUPPORT WELD
4	TOP20175	1	LOCKING RELEASE UNIT

**Model AV1020WV
Installation, Operation and Maintenance**

Control Unit



ITEM #	PART #	QTY/LIFT	DESCRIPTION
1	P0496512	1	CONTROL UNIT COVER
2	TOP20173-1	1	VALVE BODY
3	TOP20173-2	2	½ NPT PUSH LOCK FITTING
4	TOP20173-3	1	½ NPT FEMALE AIR VALVE FITTING
5	TOP20173-4	1	3 ½"Lg. PIPE
6	TOP20173-5	1	½ NPT FEMALE, CHECK VALVE
7	TOP20173-6	1	1/8 NPT MALE x 6mm PUSH LOCK FITTING
8	P0496511	1	PRESSURE GAUGE, 0-16 BAR
9	TOP20173-7	1	1/8 NPT MALE x 6mm SWIVEL PUSH LOCK FITTING
10	TOP20173-8	1	1/8 NPT TEE
11	TOP20173-9	1	POPPET VALVE
12	TOP20173-10	1	RAISE/LOWER ROCKER ARM
13	TOP20173-11	2	M6 x 10mm Lg. SOCKET HEAD BOLT
14	P0496509	1	CONTROL UNIT HANDLE