ATO77
000 Series
Two Post Surface Mounted Lifts
Capacity:
7700 lbs. (3500 kg)
1925 lbs. (875 kg) per arm

LP20660

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Rev. C 5/22/2019
NOTE: POWER UNIT AND LOCKS CAN BE INSTALLED ON EITHER COLUMN, AND EITHER SIDE. POWER UNIT AND LOCK RELEASE MUST BE ON SAME COLUMN. BELOW IS RECOMMENDED LAYOUT FOR OPTIMAL WORK FLOW.

![Diagram of layout](image)

**Fig. 1**

- **A** 10'-3" (3121mm) Outside baseplate to baseplate.
- **B** 8'-4-5/8" (2556mm) Between columns.
- **C** 9'-0" (2743mm) Minimum to nearest obstruction.
- **D** 15'-0" (4572mm) Minimum to nearest obstruction.
- **E** 7'-8-1/8" (2340mm) Inside baseplate to baseplate.
- **F** 11'-9" (3600mm) Minimum to nearest obstruction or bay.
- **G** 11'-10-1/4" (3613mm) From floor to top of cylinder.
- **H** 11'-8-1/4" (3562mm) From floor to top of overhead.
- **I** 1'-9-1/2" (546mm) From horizontal centerline to wheel spotting dish.
- **J** 2'-5" (737mm) From vertical centerline to wheel spotting dish.

**Fig. 2**
1. Lift Location:
Use architects plan when available to locate lift. Fig. 1 shows
dimensions of a typical bay layout.

2. Lift Height:
See Fig. 2 for overall lift height.
Add 1" (25mm) to overall height to lowest obstruction.

**NOTE:** 25.4mm equals 1".

3. Column Extensions:
Before standing columns upright, install the column extensions
using (12) M10x20mm Carriage Bolts and Flanged Locknuts, Fig.
3. Overhead Mounting Bracket: Install Mounting Brackets to
column extensions, Fig 3.

4. Hydraulic Hose:
Slide carriage up until the top of the carriage clears the cylinder.
Slide cylinder up out of hole and out towards hole in side of
column, Fig. 4. Install hydraulic hoses. See Fig. 5 for location.
NOTE: Clean adapters and hoses. Inspect all threads for damage
and make sure all hose ends are crimped. Install hoses using
Flared Fittings Tightening Procedure. Install hose clamps.

**Flared Fittings Tightening Procedure:**
1. Screw the fittings together finger tight. Then, using the proper
size wrench, rotate the fitting 2-1/2 hex flats.

**IMPORTANT** Flare seat MUST NOT rotate when tightening.
Only the nut should turn.

2. Back the fitting off one full turn.
3. Again tighten the fittings finger tight; then using a wrench,
rotate the fitting 2-1/2 hex flats. This will complete the
tightening procedure and develop a pressure tight seal.

**CAUTION** Overtightening will damage fitting resulting in fluid
leakage.

After installation put cylinder back in hole and slide carriage back
down to base of lift.

5. Lift Setting:
Being careful not to damage hoses, position columns in bay using
dimensions shown in Fig. 1, Fig. 2 and Fig. 3. With column lying
on the floor, two people can lift the top of the column and walk
towards the base. As the column approaches vertical, one of the
two people should move to the opposite side of the column and
assist in slowly setting the column flat on its base. Both column
base plate backs must be square on center line of lift. Notches
are cut into each base plates to indicate center line of lift for use
with a chalk line, Fig. 8.
6. Concrete and Anchoring:
If you are installing a seismic lift, consult with your structural engineer and manufacturer’s representative for concrete and anchoring requirements (varies by location). Fig. 6 and the below table, Fig. 7, apply to non-seismic lifts only.

Non-Seismic Lifts:
Drill (8) 3/4" dia. holes in concrete floor using holes in column base plate as a guide. See Fig. 6 and Fig. 7 for hole depth, hole spacing, and edge distance requirements.

**CAUTION** DO NOT install on asphalt or other similar unstable surfaces. Columns are supported only by anchors in floor.

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### 7-10K 2-Post Lift Anchor Installation Reference Guide

<table>
<thead>
<tr>
<th>Anchor:</th>
<th>Min Concrete Thickness</th>
<th>Min Edge Distance</th>
<th>Min Anchor Embedment</th>
<th>Installation Anchor Torque Ft-lbs</th>
<th>Min Concrete PSI Strength - For All Standards</th>
<th>Concrete pad Size If Concrete Does Not Meet Requirements</th>
<th>Maintenance Torque Values</th>
<th>SEISMIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hilti Kwik Bolt III (3/4&quot; x 5-1/2&quot;)</td>
<td>4-1/4&quot; (108mm)</td>
<td>3-3/8&quot; (86mm)</td>
<td>3-1/4&quot; (83mm)</td>
<td>110</td>
<td>3000</td>
<td>4’x4’x6’</td>
<td>65</td>
<td>Varies by location consult with your structural engineer and manufacturer’s representative.</td>
</tr>
<tr>
<td>Hilti HY200 (with HAS threaded rod)</td>
<td>6-7/16&quot; (164mm)</td>
<td>1-3/4&quot; (45mm)</td>
<td>4-1/2&quot; (115mm)</td>
<td>100 / less than 3-3/4&quot; edge distance use Torque Value of 30 FT/LBS</td>
<td>3000</td>
<td>4’x4’x6’</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Hilti HY200 (with HAS threaded rod)</td>
<td>5-1/4&quot; (134mm)</td>
<td>3’ (77mm)</td>
<td>3-1/2&quot; (89mm)</td>
<td>100 / less than 3-3/4&quot; edge distance use Torque Value of 30 FT/LBS</td>
<td>3000</td>
<td>4’x4’x6’</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

*The supplied concrete fasteners meet the criteria of the American National Standard “Automotive Lifts - Safety Requirements for Construction, Testing, and Validation” ANSI/ALI ALCTV-2011, and the lift owner is responsible for all charges related to any additional anchoring requirements as specified by local codes. Contact customer service for further information at: 800.640.5438*
**IMPORTANT** Using the horse shoe shims provided, shim each column base until each column is plumb. If one column has to be elevated to match the plane of the other column, full size base shim plates should be used (Reference FA5221 Shim Kit). Recheck columns for plumb. Tighten anchor bolts to an installation torque of 110 ft-lbs. Shim thickness MUST NOT exceed 1/2” when using the 5-1/2” long anchors (D) provided with the standard lifts, Fig. 8. Adjust the column extensions plumb.

If anchors do not tighten to 110 ft-lbs. installation torque, replace concrete under each column base with a 4’ x 4’ x 6” thick 3000 PSI minimum concrete pad keyed under and flush with the top of existing floor. Let concrete cure before installing lifts and anchors. For seismic lifts, contact customer service.

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| A  | Approach                                      |
| B  | Anchor Here                                   |
| C  | **DO NOT ANCHOR HERE**                        |
| D  | Use long flat shims here                      |

| E  | Chalk line                                    |
| F  | Align notches in baseplates with chalk line.  |
| G  | 7’-8-1/8” (2340mm) Inside baseplate to baseplate. |
7. Overhead Assembly:
Assemble overhead, Fig 9. Adjust to dimension, shown. Install (4) M10 x 20Lg. HHCS and Flanged lock nuts, (2) Each Side. DO NOT TIGHTEN. Install with bolts facing outward.
8. **Overhead Limit Switch Install:** Install switch box to overhead as shown, Fig. 9. Ensure to mount box on power unit side of lift with knock out holes facing the power unit column, Fig. 10 and Fig. 11.

9. **Overhead Switch Bar Installation:**

   For single phase lifts and three phase lifts with push button control box: Insert M6 x 70mm HHCS through pivot hole in end of switch bar. Insert opposite end of bar through slot in switch mounting bracket Fig. 10 and Fig. 11. Then secure HHCS and Switch Bar to overhead as shown, using (2) 19mm spacers and lock nut. Note which hole to use. Tighten Hex bolt leaving 1.6mm gap between the spacer and the overhead assembly.
10. Overhead:
With a ladder by each column, two people position the overhead assembly onto column mounting brackets and fasten with (2) M10 x 20mm HHCS and (2) M10 lock nuts, Fig. 12. Tighten bolts at center of overhead assembly.

11. Power Unit:
Install Power Unit Mounting bracket to column as shown, Fig. 13. See Fig. 1 for typical mounting location.

12. Install Branch Tee Adapter:
Install Branch Tee Adapter to power unit at location shown, Fig. 15. Install and hand tighten Branch Tee to pump until O-ring is seated, Fig 15. Continue to tighten the lock nut to 14 - 20Nm (1.4 - 2.1kg-m), or until the nut and washer bottom out against the pump manifold. NOTE: You may still be able to rotate the Branch Tee. This is acceptable unless there is seepage at the O-ring. If so, slightly tighten the lock nut.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>M10 x 30mm lg. Carriage Bolt Grade 8.8</td>
</tr>
<tr>
<td>B</td>
<td>M10 Locknut</td>
</tr>
<tr>
<td>C</td>
<td>M6 x 12mm lg. Carriage Bolt</td>
</tr>
<tr>
<td>D</td>
<td>M6 Nut</td>
</tr>
<tr>
<td>E</td>
<td>Lock Hole Cover</td>
</tr>
<tr>
<td>F</td>
<td>Lock Handle installed on Power Unit Side Lock</td>
</tr>
<tr>
<td>G</td>
<td>Column Hole Plug</td>
</tr>
<tr>
<td>H</td>
<td>Lock Hole Cover location</td>
</tr>
<tr>
<td>I</td>
<td>Install Locks in this location</td>
</tr>
<tr>
<td>J</td>
<td>Power Unit location</td>
</tr>
<tr>
<td>K</td>
<td>Lock with Handle</td>
</tr>
</tbody>
</table>

**Fig. 16**

**Direction Of Approach**
13. Installing Locking Latches:
Install locking latches, lock hole covers, and lower column hole plugs onto columns, Fig. 16. NOTE Graphic which locates which side of column to install locks and lock hole covers.

14. Raising Carriages:
A) Using appropriate equipment, raise carriage 43” (1100mm). Be sure locking latch is securely engaged.

15. Installing Latch Release Cables:
Install Release Handle, (J) Fig. 17. Slip looped end over cable stud on non-power unit side latch as shown, Fig. 17. Route up through Cable End Bracket. Put cable through the Sheath and slide Sheath down into Cable End Bracket.

Attach Cable End Bracket to overhead as shown. Slide cable through Bracket and push other end of Sheath into Bracket. Run cable across to other side of overhead. Repeat process and run sheath and cable down to Cable End Bracket on power unit side lock assembly.

Insert cable in cable clamp, loop around nylon pulley (see arrow) and back up and around cable stud. Insert cable along other side of cable clamp. Place top back on clamp, barely tightening.

Using pliers, pull cable tight and secure the clamp close to the stud. Tighten clamp. Cut off excess cable length.

Attach lock covers and ball handle, Fig. 18.
16. Attaching Hydraulic Hoses:
Install hoses and hose clips, Fig. 19.

NOTE: Clean adapters and hoses. Inspect all threads for damage and make sure all hose ends are crimped. Install hoses using Flared Fittings Tightening Procedure. Install hose clamps.

Flared Fittings Tightening Procedure:
1. Screw the fittings together finger tight. Then, using the proper size wrench, rotate the fitting 2-1/2 hex flats.

**IMPORTANT** Flare seat MUST NOT rotate when tightening. Only the nut should turn.

2. Back the fitting off one full turn.
3. Again tighten the fittings finger tight; then using a wrench, rotate the fitting 2-1/2 hex flats. This will complete the tightening procedure and develop a pressure tight seal.

**CAUTION** Overtightening will damage fitting resulting in fluid leakage.
17. Oil Filling:
Remove fill-breather cap on power unit, Fig. 19. Fill to MIN mark on tank with Dexron III ATF, or hydraulic fluid that meets ISO 32 specifications. Replace fill-breather cap.

18. Installing Optional Adapter Holders, and Tool Holders:
Install optional holders as shown, Fig. 20.

A | Power unit column
B | M6 x 1.0 x 16mm carriage bolt
C | M6 x 1.0 lock nut
D | Tool holder (Optional)
E | Adapter Holder (Optional)
F | Install adapters (Optional)
19. Equalizing Cables:
Remove sheave cover, Fig. 21.

Refer to Fig. 22 for the general cable arrangement. First, run a cable end up through the small hole in the lower tie-off plate, Fig. 23.

Push cable 1 up until the stud is out of the carriage top opening.

Run a nylon insert locknut onto cable 1 stud so 13mm of the stud extends out of the locknut.

Pull cable 1 back down, Fig. 22.

Run cable 1 around the lower sheave, then up and around overhead sheave and across and down to the opposite carriage, Fig. 22. Install sheave cover, Fig. 21.

Fasten cable 1 end to the carriage upper tie-off bracket. Tighten the locknut enough to apply light tension to the cable.

Repeat procedure for cable 2. Adjust the tension of both cables during the final adjustments in section 31.
20. **Electrical:** Have a certified electrician run appropriate power supply to motor, Fig. 24. Size wire for 20 amp circuit. See Motor Operating Data Table.

**CAUTION:** Never operate the motor on line voltage less than 208V. Motor damage may occur.

**IMPORTANT:** Use separate circuit for each power unit. Protect each circuit with time delay fuse or circuit breaker. For single phase 208-230V, use 20 amp fuse. Three phase 208-240V, use 20 amp fuse. For three phase 400V (*E Model) and above, use 10 amp fuse. For wiring see Fig. 24, Fig. 25, & Fig. 25b. All wiring must comply with NEC and all local electrical codes.

**Note:** 60Hz. single phase motor CAN NOT be run on 50Hz. line without a physical change in the motor.

**NOTE:** Assure cord used for connection between the overhead switch and power unit is of the type specified in:

UL201, Sections 10.1.1.3 & 10.1.1.4

(Example: SO, G, STO) Size for 25 amp circuit. See UL201, Section 15 for proper wiring requirements for this connection.

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**Connect supply to wires in box as shown. Attach ground wire to screws provided.**

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**CNGL Line Voltage | Running Motor Voltage Range**

<table>
<thead>
<tr>
<th>Line Voltage</th>
<th>Running Motor Voltage Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>208-230V 50Hz</td>
<td>197-253V</td>
</tr>
<tr>
<td>208-230V 60Hz</td>
<td>197-253V</td>
</tr>
</tbody>
</table>

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**Single Phase Motor Operating Data Table**

<table>
<thead>
<tr>
<th>A</th>
<th>Overhead Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Black</td>
</tr>
<tr>
<td>C</td>
<td>White</td>
</tr>
<tr>
<td>D</td>
<td>Green</td>
</tr>
<tr>
<td>E</td>
<td>208-230V 10</td>
</tr>
<tr>
<td>F</td>
<td>Attach Black wire to one motor wire</td>
</tr>
<tr>
<td>G</td>
<td>Attach White wire to one motor wire</td>
</tr>
<tr>
<td>H</td>
<td>Attach Ground wire here</td>
</tr>
</tbody>
</table>

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**Fig. 24**
NOTES:
Unit not suitable for use in unusual conditions. Contact Rotary Lift for moisture and dust environment duty unit.

Control Box must be field mounted to power unit.

Motor rotation is counter clockwise from top of motor.

Newer model three phase lifts use the push button control box with contactor. Its instructions follow the Drum Switch instructions.
21. **3ø Control Box Installation:**

Attach Mounting Bracket on column, as shown in Fig. 25a, using (2) M8 x 1.25 x 20mm LG HHCS, (2) M8 Flat Washers, and (2) M8 Lock Washers.

Attach Control Box to Bracket using (4) 1/4”-20NC x 1/2” HHCS, (4) 1/4” Flat Washers, and (4) 1/4” Star Washers.

Route cord through strain relief on motor and connect per table on the bottom of page 15.

Note:
The contactor in the control box has a 480V coil. For installations where the electric supply is 230V, the coil must be replaced with the extra 230V coil shipped with the control box. For 575V electric supply, the coil must be replaced with the extra 575V coil shipped with the lift.
22. **Arms & Restraints:**

Before installing arms, raise carriages to a convenient height. Grease swivel arm pins and holes with Lithium grease. Slide arm into yoke, Fig. 26. Install 1-3/4" diameter arm pin(s).

After installing arms and pins, install arm Restraint Gears as follows: Install Restraint Gear onto arm clevis, as shown, Fig. 27. Ensure side of gear marked TOP is facing upward, Fig. 27.

**NOTE:** TOP is stamped on top side of gear. You may need to pull up on the pin-ring to allow enough room to install Restraint Gear.

Then, install the (3) 3/8"-16NC x 1-1/2" HHCS (12 total for all 4 arms) and 3/8" Spring Lock washers into the gear and arm, Fig. 28. Torque the Restraint Gear bolts to 30-34 ft.-lbs (46 N·m).

**NOTE:** To check operation of arm restraints, raise carriage 1" min. from full down position. Pull up on pin-ring and adjust arms to desired position. To engage restraint, let pin-ring down allowing gear teeth to mesh together. It may be necessary to rotate arm slightly to engage gear teeth.

**NOTE:** Pin & Ring, Spring, & Gear Block are all preassembled.

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**A TOP** will be marked on top side of restraint gear.

**B** Note beveled orientation

**C** (3) Each arm - 3/8"-16NC x 1-1/2" HHCS

**D** (3) Each arm - 3/8" lock washers

**NOTE:** Once arm is installed in yoke, pull up actuator pin and swing arm fully around, being sure that the Restraint Gear and Gear Block always stay aligned. If they do not stay aligned, remove restraint gear and install in the opposite position.
23. Door Bumper Installation:
Install door bumpers and finger guards, Fig. 28.

24. Pinch Point Decal / Capacity Decal Location:
Install enclosed pinch point decals. Place (1) decal on each column, Fig. 29. Decals should be a minimum of 203mm from the bottom of decal to the ground. Capacity decals should be located just above the lock hole covers on each column.
25. Oil Bleeding:
Start unit, raise lift about 2 ft. Open cylinder bleeders approximately 2 turns, Fig. 30.

Close bleeders when fluid streams. Torque values for the bleeders are 15 ft. lb. minimum and 20 ft lb. maximum. Fully lower lift. Add more fluid until it reaches the MIN mark on the tank. Replace fill-breather cap.

*CAUTION* If fill-breather cap is lost or broken, order replacement. Reservoir must be vented.

26. Equalizer Cable Adjustment:
Raise lift to check equalizer cable tension. Below carriage, grasp adjacent cables between thumb and forefinger, with about 67N. effort you should just pull the cables together. Adjust at upper tie-offs Fig. 31.

27. Check Operation:
Operate lift and assure that push button raises lift when pushed and stops lift when released. Check that overhead switch stops lift from raising when actuated and that lift regains power when deactivated.

28. Wheel Spotting Dish:
Position wheel spotting dish as shown in Fig. 1 on page 2. Drill (2) 3/8” holes 2-1/2” deep in concrete floor using holes in spotting dish as guide. Drive both anchors, provided, into concrete to secure dish.
Installer: Please return this booklet to literature package, and give to lift owner/operator.

Thank You

Trained Operators and Regular Maintenance Ensures Satisfactory Performance of Your Rotary Lift.

Contact Your Nearest Authorized Rotary Parts Distributor for Genuine Rotary Replacement Parts. See Literature Package for Parts Breakdown.