



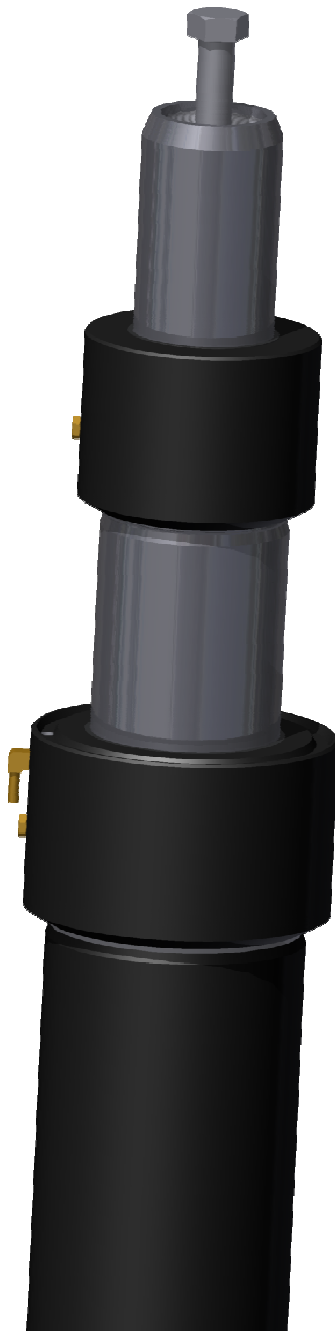
Solutions
in motion



Telescopic – **Holeless** Installation guide

SOLUTIONS
in motions

Product **presentation**

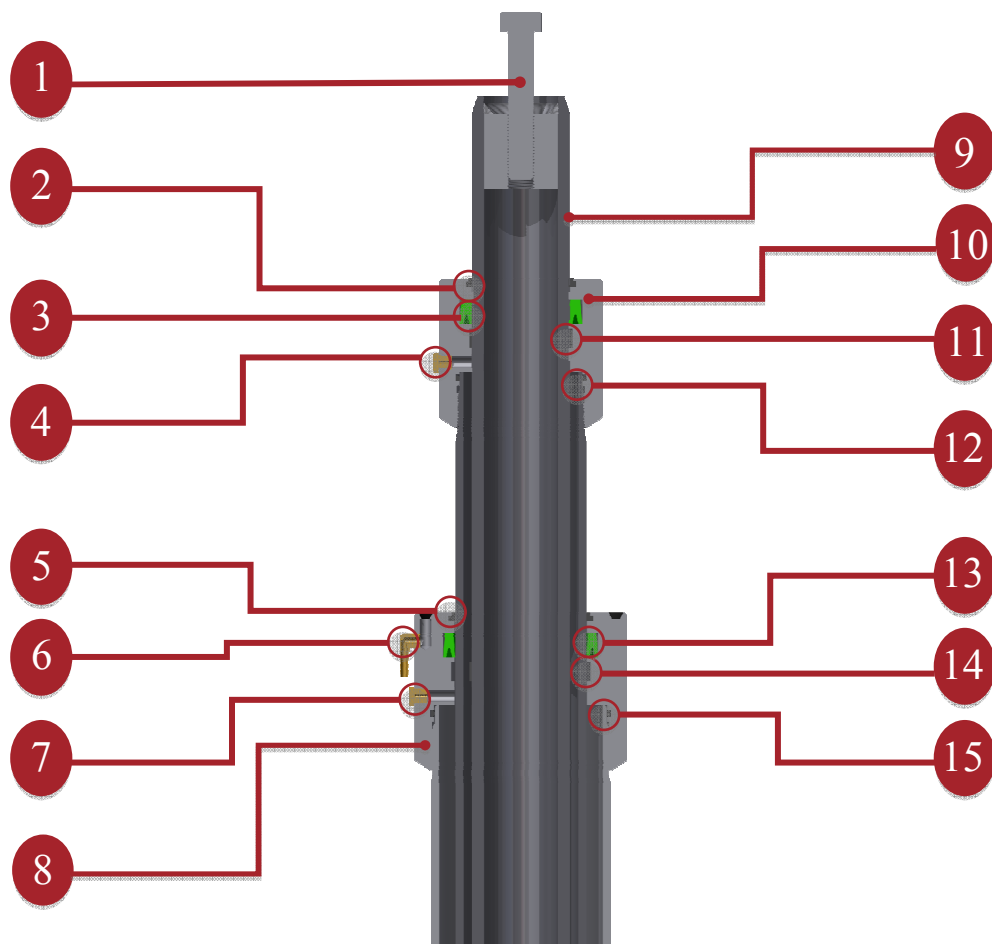




Tables of **contents**

Product presentation	2
Technical drawing – Head	4
Technical drawing – Bottom	5
Product characteristics	6
Holeless telescopic jack installation	7
Air bleeding	9
Followers guides	10
Twin jacks	11
Maintenance program	12
Check valve replacement	13
Warranty policy	15

Technical drawing – Head



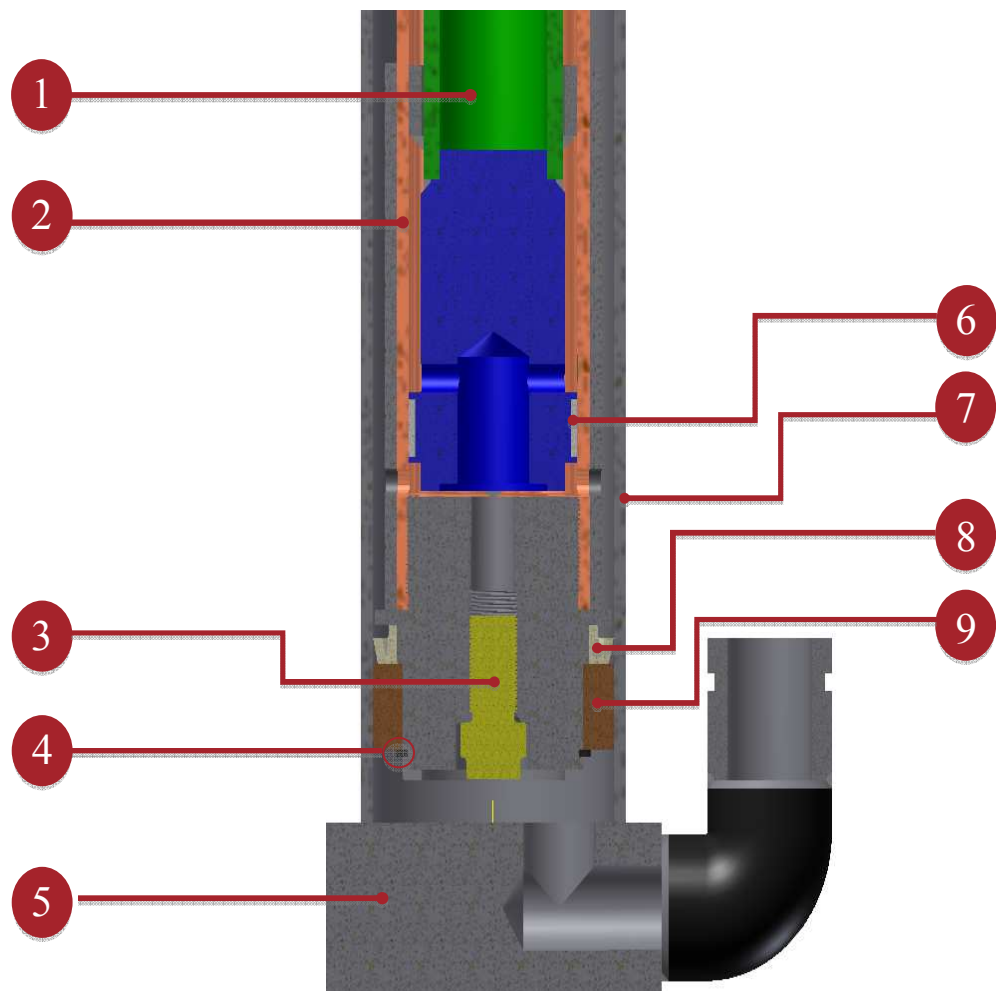
#	Components	Materials
1	Bolt	Steel
2	Wiper (1 st section)	Urethane
3	Seal (1 st section)	Urethane
4	Bleeder (1 st section)	-
5	Wiper (2 nd section)	Urethane
6	90° coupling (2 nd section)	-
7	Bleeder (2 nd section)	-
8	Head (1 st section)	Cast iron

#	Components	Materials
9	Tube or shaft (1 st section)	Steel
10	Head (2 nd section)	Cast iron
11	Wear ring (1 st section)	Nylon
12	O'ring (1 st section)	Buna-N
13	Seal (2 nd section)	Urethane
14	Wear ring (2 nd section)	Nylon
15	O'ring (2 nd section)	Buna-N

If more than 2 sections, the components of the first section repeat for the additional sections.



Technical drawing – Bottom



#	Components	Materials
1	Piston	Cast iron
2	2 nd (or last) section	Steel
3	Check valve	Steel
4	Spirolock	Steel
5	Base	Steel

#	Components	Materials
6	Wear ring	Plastic
7	Casing	Steel
8	Seal	Urethane
9	Bronze piston	Bronze

Product **characteristics**

Capacity & standard dimensions

Capacity

Up to 50 000 lbs

1st section

From 1 1/2" to 8"

Number of sections

From 2 to 4

Note *Non-standard sizes are available upon request.*

Fabrication

Conception and fabrication of the products are in accordance with the CSA B44-13 and ASTM A17.1-2013 standards.

Our welding procedures are certified according to the CSA W47.1 standard by the Canadian Welding Bureau (CWB).

Scope

- Dumb-waiter lifts
- Lift for disabled people
- Any other utilisation to suit your needs

Further information

Our cylinders are perfectly adapted to any type of elevator (passenger or merchandise).

This cylinder is proudly made in Quebec (Canada) or South Carolina (United States). It can be delivered to the destination of your choice, anywhere in the world.

Holeless telescopic jack **installation**

Hardware

For the cylinder installation

- 1 x Air bleeder (1/8" NPT)
- 1 x Straight coupling for oil return (1/8" NPT)
- 1 x 90° coupling for oil return (1/8" NPT)
- 1 x Clear tubing $\varnothing 3/8"$, 8' longer than the closed length
- 1 x Roll of Teflon tape

Tools

- Buffers
- Bolts

Holeless telescopic cylinder alignment

1. Temporarily locate the jack's support plate on the pit floor through the centerline of the mounting plate, under the car.
2. Position the jack on the pit support plate, plumb the jack with a level and fix a clamp on the wall of the jack close to the head.
3. Set the plumb line off the rails in the hoist way through the centerline of the platen plate under the car, at the highest possible point.
4. Adjust the wall clamp, so the jack will be centered on the plumb line.
5. Plug the hydraulic feed line to the jack. When installing the telescopic jack, the oil supply line should be connected as quickly as possible to reduce the loss of pre-filled oil.
6. Raise the jack to approximately half the travel and, using plumb line, check that the jack stays on the same centerline as the mounting plate, under the car.

- 
7. Make final adjustments to the pit support plate if the jack is slightly out of plumb.
 8. For safety reasons it is advisable, and in some mandatory, to install a line rupture valve at the inlet port of the jack when a hose is used as the inlet line.
 9. It will be necessary to bleed air from each stage through the air bleeder valve located on each head.

It is important that the actual site conditions are as specified on the layout drawing. Before leaving the job, ensure the total under travel and over travel ratios are specified. Any discrepancy should be noted and corrected before shipping the lift to the customer.

Any small scratches visible on the stages should be polished with very smooth emery (400 grit).

Air bleeding

To assure proper functioning of the jack, it is important to take any air out of it by applying the following procedure:

1. Remove the "Spring Buffers".
2. Lower the car (if already installed) so the jack is completely retracted. Always be sure that the cylinder remains completely retracted.
3. Adjust the safety valve (BPS) (on the control valve of the power unit) from 25 to 50 PSI, so that the system is pressurized without lifting the car.
4. If the minimum of 25 to 50 psi can't be reach, you can manually open the valve and add more BPS.
5. Open the bleeder purge valve of the top section.
6. Start the pumping unit and shut it down as soon as there is no more air coming out of the bleeder. Close the bleeder to prevent unnecessary oil loss.
7. Repeat these two steps for each section, beginning with the top one and finishing with the lowest.
8. Run the cylinder about 5 complete strokes, both extension and retraction, to be sure of its proper functioning.
9. Repeat steps 2 to 6 to verify that there is no air in the cylinder.

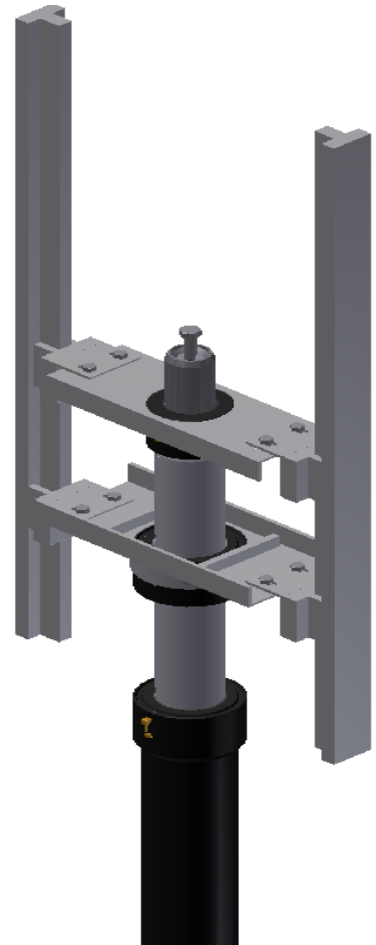
If two people are bleeding the jack, it is possible to open all the bleeders at one since one person stays at the power unit whereas the other closes the bleeder. A mechanic alone will have to bleed the sections one at a time.

It is possible that at some point your telescopic cylinder is desynchronized. Desynchronization may be caused by leaking seals or a malfunction of the check valve. The venting procedure can resynchronize the telescopic cylinder since it "resets" the distribution of oil volumes between the sections.

Followers **guides**

Follower guides provide an additional safety method to prevent buckling of the jack. Its assembly procedure is as follows.

1. Align the cylinder using the information shown previously
2. Install a follower guide on the head of the second biggest section of the jack
3. Repeat the same step for all sections with a smaller diameter
4. Install the car on the jack
5. Install a pair of shoes on each bracket
6. Install brackets on both sides of the follower guides
7. Run the jack up and down a few times
8. Make adjustments, if necessary



Twin jacks

Whenever two jacks are used for a single elevator, the oil inlet should divide into identical sections. Otherwise, the difference of friction (or restriction) between the sections could cause an unbalance of the loads between the cylinders. If for some reason, it is impossible to have identical paths, the use of an oil divider is to be considered. Increasing the diameter of the pipe used also helps.



Maintenance **program**

Monthly verification

- Verify the seals
- Verify the oil level
- Verify the oil quality
- Verify if there are leaks on the line

Note *If the seals need to be replaced often, the surface of the piston should be carefully inspected as it can be damaged, wearing the seals prematurely.*

Annual verification

- Verify the line strainers
- Verify the piston surface

Seal replacement

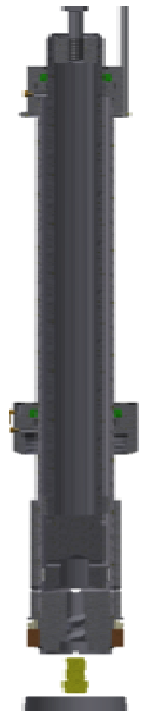
1. Lift the cabin up high enough to be able to remove the heads.
2. When the cabin is held securely, turn off the main switch.
3. Unscrew the bolts located above the piston.
4. Open the manual valve (gate valve) until the jack is completely collapsed; there should be no pressure in the jack.
5. Shut off the manual valve (gate valve) to the jack so the oil remains in the reservoir.
6. Open the bleeder on each head.
7. Disconnect the oil recuperator.
8. To facilitate the installation of the heads, mark with a pencil initial position of the head with a line on the head and on the piston.
9. Remove the heads by using two chain vise-grips.
10. Unscrew (CCW) the head while holding the piston with the other chain vise-grip.
11. It is important to put electric tape on the threads of the tubes to prevent damaging the seals when you put them in.
12. Unscrew the brass gland, remove the old joints, put the new ones and lubricate abundantly.
13. Screw back the gland to the maximum without letting any gap between the gland and the head.
14. Re-install the heads and tighten them up to the pencil mark.
15. Bleed the air in the jack, following the steps described in the venting the synchronized telescopic jack section shown previously
16. Re-install the hose to recuperate the oil on the straight or 90° coupling

Note *Pay special care to O'rings.*

Check valve replacement

The following is the general procedure to change the check valve. These instructions show a 2 sections telescopic jack but the procedure is the same no matter the number of sections.

1. Lift the car up to have enough space to remove the entire section of the jack.
2. When the car is held securely, close the main switches.
3. Unscrew the bolt that holds the piston to the car.
4. Open the manual valve until the piston is fully retracted. There should not be any pressure left in the jack.
5. Close the ball valve on the line leading to the jack to prevent any oil to come from the reservoir.
6. Install a chain block under the car, as centered as possible, and tie the chain around the head of the section where the replacement should be.
7. Remove the bleeder on the head just below and screw the 1/8" NPT fitting connected to a hose. While lifting the upper sections, oil will be ejected through this hose. You can recuperate it in a clean recipient.
8. Lift the previously tied section until the stopper ring reaches the head with the hose. Then, lower the sections of about one inch and unscrew this head. Once the head has been unscrewed, lift the sections until you have enough room to remove the check valve.
9. Remove the check valve by using a 15/16" or 3/4" socket. Some oil will come out this way; recuperate it in a clean recipient.





10. Install the new check valve and tighten it well.
11. Verify if the seals have not been damaged and replace them if it's necessary.
12. Insert the sections back in the cylinder and make sure that they are well centered. Screw back the head taken off previously as soon as possible for better alignment. There is no need to screw it very tight at this moment.
13. Just before the jack reaches a completely retracted position, unscrew the same head again to fill the jack with the recuperated oil. Then, screw the head firmly. Another option is simply to put the oil back in the power unit. Do not forget in this case to have the heads firmly screwed. Moreover, a pressure will have to be maintained on the piston to allow the oil to fill the jack.
14. Re-install the bleeder taken off previously.
15. Attach the piston to the car.
16. Follow the procedure described further to resynchronize the jack.



Warranty policy

A ONE-YEAR warranty is applicable on all our products, starting on shipping day, from our plant. This warranty is applicable on all manufacturing defaults, which include material and the workers, as long as the product is being used for the purposes it has been designed and recommended for, and has been properly installed by qualified personnel.

Any request for warranty will require an authorization from the ITI HYDRAULIK (Industries Tournebo Inc.) Sales Department. Following our written authorization, a return date will be established. The customer will be responsible for the shipping of the product to our factory as well as his return. The same wrapping precautions, as the original reception, will have to be respected. Any material judged defective, will, pending our decision, either be repaired or replaced at no cost.

Claims for indirect damages, loss of time, modification or adjustment unapproved by ITI HYDRAULIK (Industries Tournebo Inc.), interrupted maintenance, vandalism and improper handling during transport will not be applicable. Our responsibility is limited to defective material only.

Notices, technical support and recommendations are supply for free by the manufacturer. They are intended to help people who possess skills and knowledge in the domain and who will use them at their own risk. The manufacturer will not assume any responsibility for damages, which occurs while equipment is in use by the customer.

Upon receipt of the jack, the elevator company will assume all responsibilities and charges, from delivery date and after, regarding to injuries, diseases, deaths, damages and destruction of property caused from misuse of the equipment sold by ITI HYDRAULIK (Industries Tounebo Inc.).

ITI HYDRAULIK
Solutions in motion

Priority Client

Since 20 years, the ITI engineers had access to tools and to state-of-the-art formations of the industry. It is this continues training that allows us to provide you with quality products that will meet your needs. Furthermore, we are the leaders regarding delivery deadlines.



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