



Solutions
in motion



SINGLE STAGE – **INGROUND** INSTALLATION GUIDE

Product **presentation**

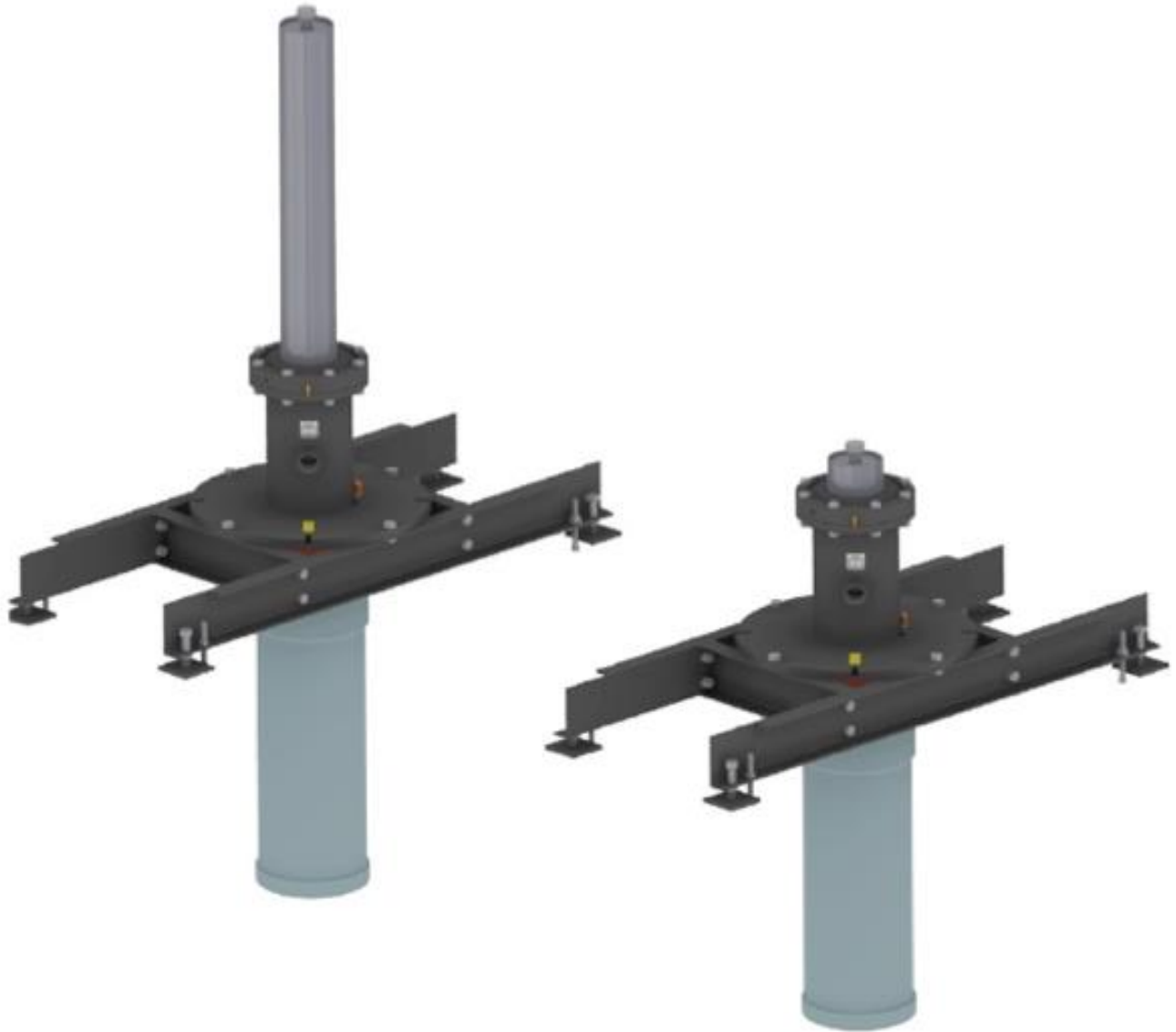
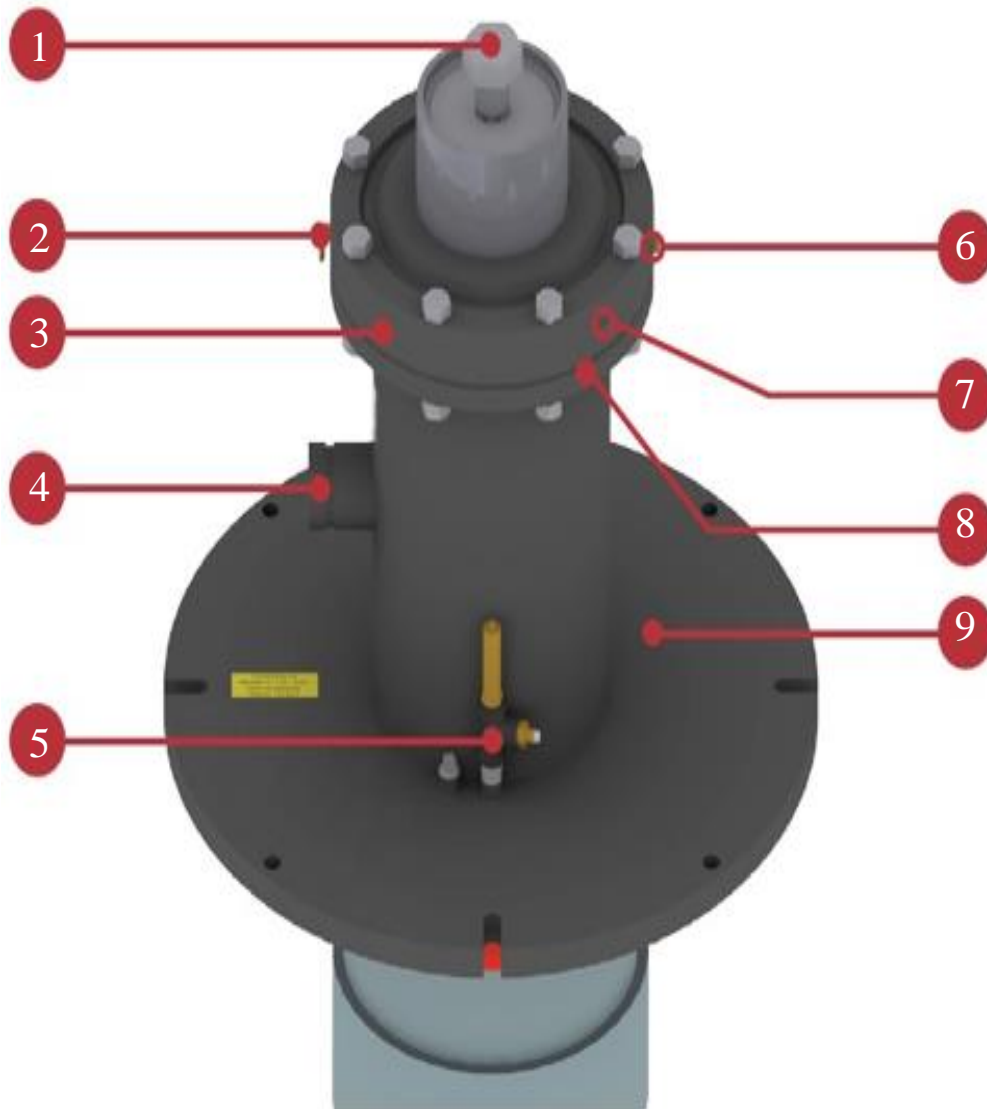


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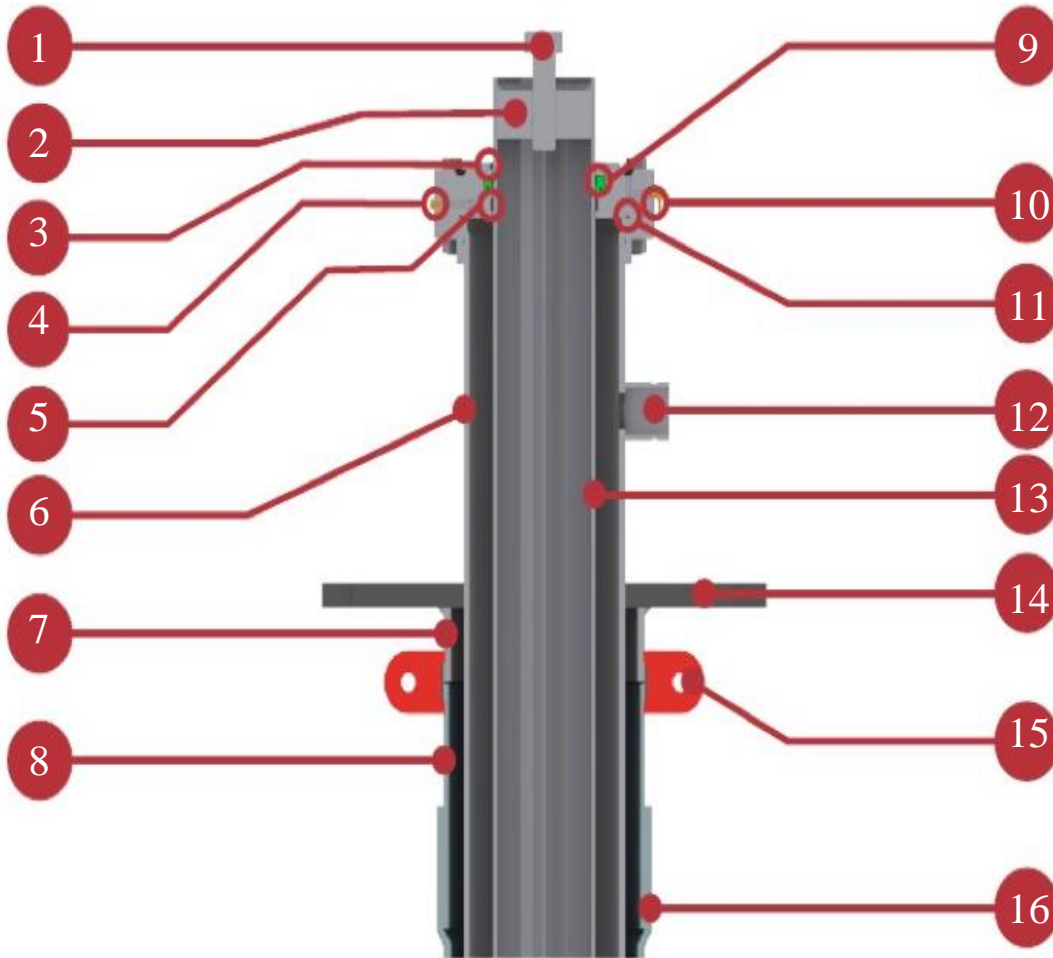
Isometric drawing - **Head**



#	Components	Materials
1	Attachment bolt	Steel
2	Oil recuperator (¼ NPT)	-
3	Head	Steel
4	Oil inlet	Steel
5	Draining plug	-

#	Components	Materials
6	Bleeder	-
7	Threaded holes for handling	-
8	Bride	Steel
9	Support	Steel

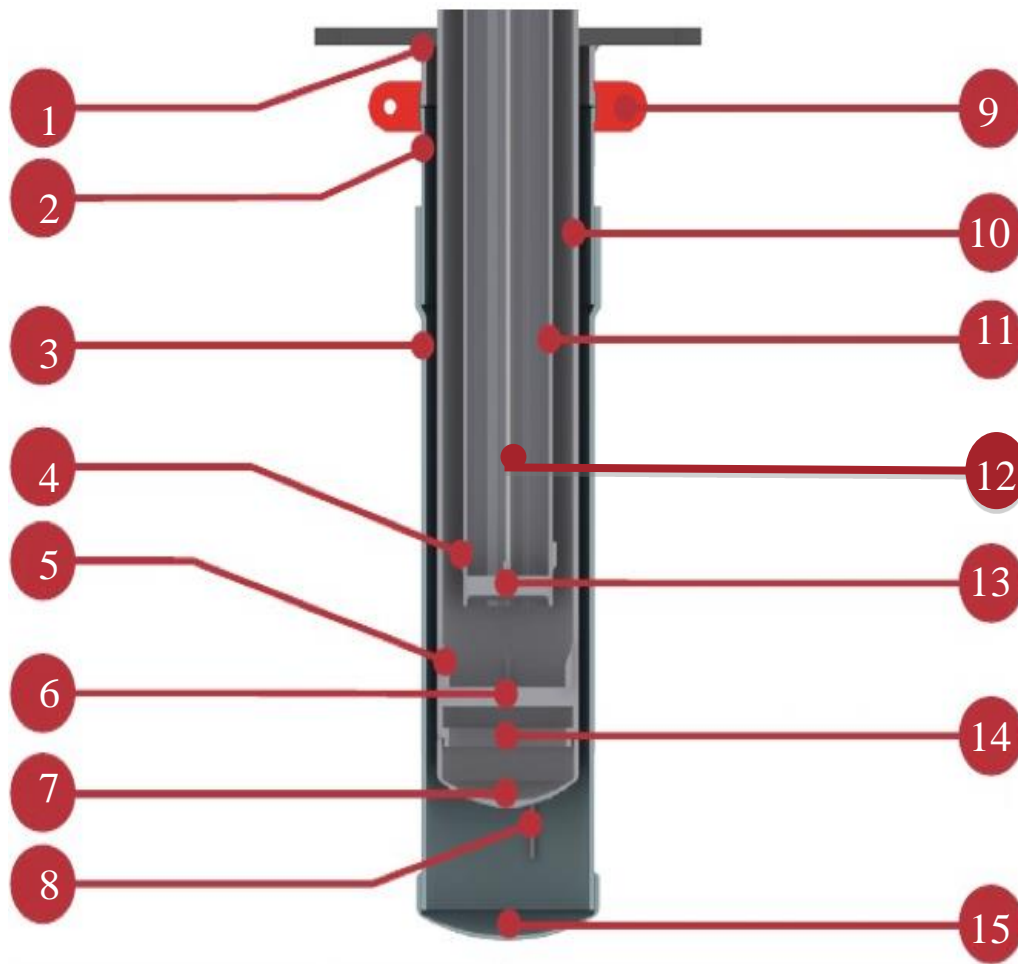
Technical drawing - **Head**



#	Components	Materials
1	Attachment bolt	Steel
2	Attachment	Steel
3	Wiper	Plastic
4	Bleeder	-
5	Wear ring	-
6	Casing	Steel
7	Grooved PVC ring	Steel
8	PVC coupling	Plastic

#	Components	Materials
9	Wear ring	Plastic
10	Oil recuperator	-
11	O'ring	Plastic
12	Oil inlet	Steel
13	Piston	Steel
14	Support	Steel
15	Victaulic coupling	-
16	PVC	Plastic

Technical drawing - **Bottom**



#	Components	Materials
1	Grooved PVC ring	Steel
2	PVC connection	Plastic
3	PVC	Plastic
4	Stop ring	Steel
5	Alignment guide	Steel
6	Bottom of the cylinder	Steel
7	Welding cap	Steel
8	Drain tube	Steel

#	Components	Materials
9	Victaulic coupling	Steel
10	Casing	Plastic
11	Piston	Plastic
12	Alignment cable	Steel
13	Piston end	Steel
14	Casing end	Steel
15	PVC cap	Steel

Product **characteristics**

Capacity & standard dimensions

Capacity

Up to 100 000 lbs

Piston

From 3 1/2" to 17 7/8" (diameter)

Casing

From 6 5/8" to 24" (diameter)

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.

Pit channel **installation**

Hardware

For the pit channel installation

- 4 Widgets 5/8"
- 4 Bevel washers 5/8"
- 4 spring washers 1/2 "
- 4 Nuts 1/2" NC
- 4 Bolts 1/2" NC et 1 1/2" lg
- 4 Plates 1/2" x 4" x 4"

Options

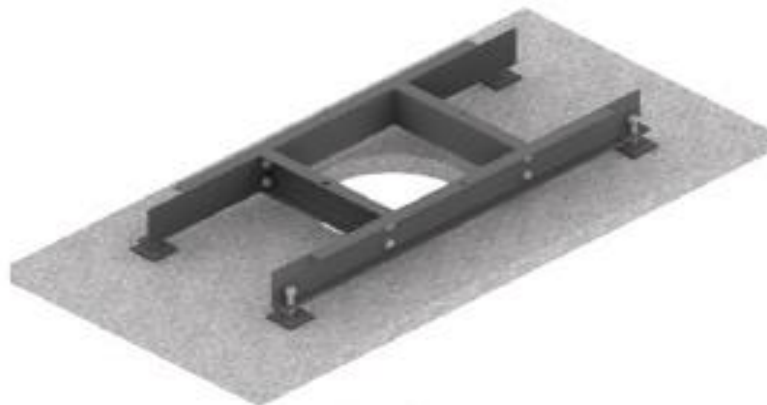
- Buffers
- Bolts

Tools

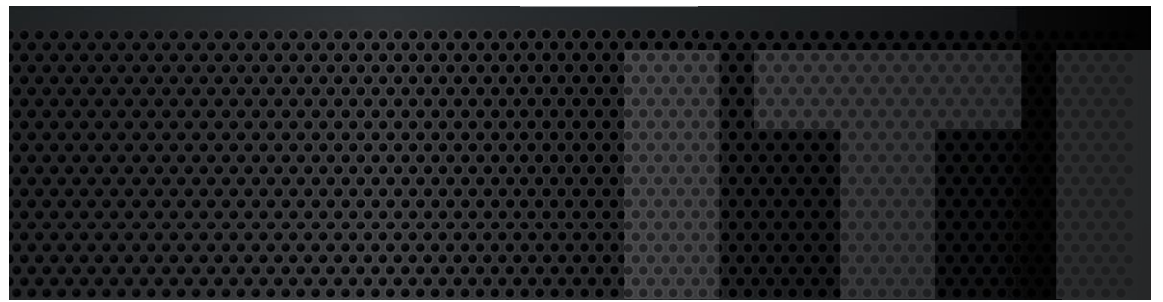
- Keys
- Impact wrench

Procedure

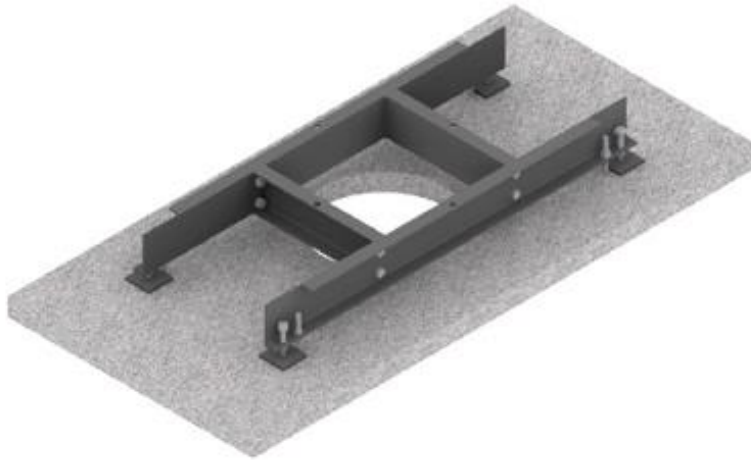
1. Install the bolts at the 4 ends of the pit channel
2. Place the levelling plates around the well
3. Place the pit channel above the well on the levelling plates
4. Center the support opening with the well
5. Put the pit channel at grade by using bolts



6. Mark the anchors positions
7. Drill the openings for the anchors fixation
8. Assemble the anchors devices on the pit channel

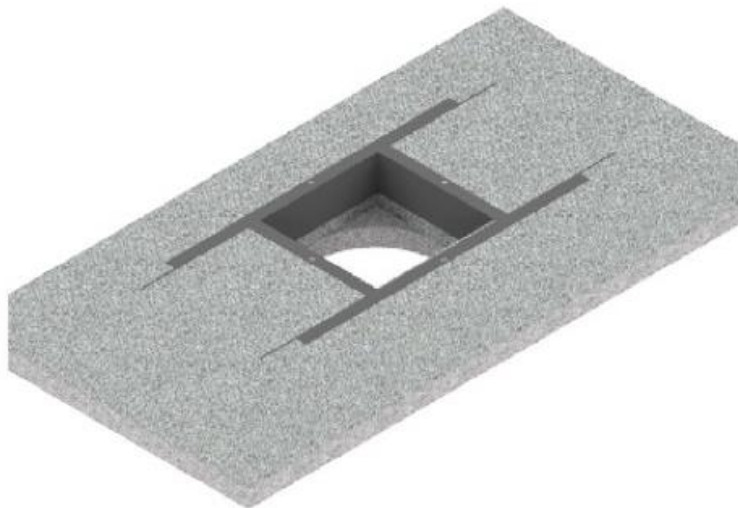


9. Anchor the pit channel



10. Install the pit channel into the concrete

Note: *It is recommended to cover the support in its totality, leaving only the superior ends uncovered.*



“1 piece” jack **installation**

Hardware

For the jack installation

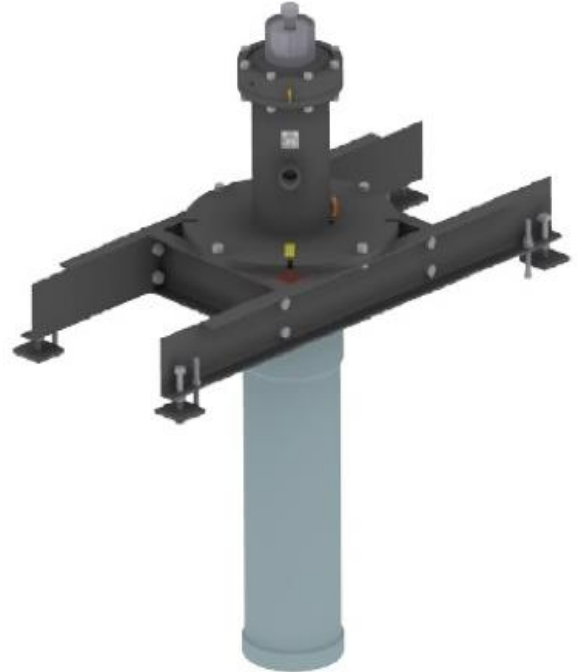
- 1x 90° elbow connector (1/8" NPT)
- 1x Bleeder (1/8" NPT)
- 1x Clear tubing (3/8")
- 1x Roll of Teflon tape

For the PVC drain line installation

- 2x Couplings
- 1x Safety valve (35 PSI)
- 1x Clear tubing (3/8")

Tools

- Hand drill
- Key set
- Needed to pour concrete



Procedure

This particular model of jack requires the preliminary excavation of the well within the elevator.

The following sequence should be performed to ensure a useful life of the product that will meet your expectations:

1. Deposit the cylinder in the well through the pit channel
2. Align the support openings with the pit channel anchors openings

Note *If the cylinder has a travel exceeding twenty (20) feet, a permanent bronze guide (not show) is installed to keep the piston centered in the casing during transport.*

Note *If the cylinder has a travel exceeding twenty (20) feet, temporary rubber guides (not shown) are installed to keep the piston centered in the casing during transport. A **sticker fix near the oil inlet** warns the installer of the presence of these devices and the numbers of guides to remove.*

How to remove protecting guides

To keep the pistons, which have a travel exceeds 20 feet, centered in the casing, the manufacturer install protection guides (rubber or bronze). Rubber guides must be removed where as the bronze guides (rings) are left in the cylinder. It should be clearly specified on the instructions envelope AND on the cylinder itself if the rings must be removed or not.

1. Unscrew the jack head
2. Remove the piston head

Note Pay attention of not damaging the seal and the O'ring.

Note It is recommended to use the two 5/8 "NC threaded holes of the head provided to handle the head safely.

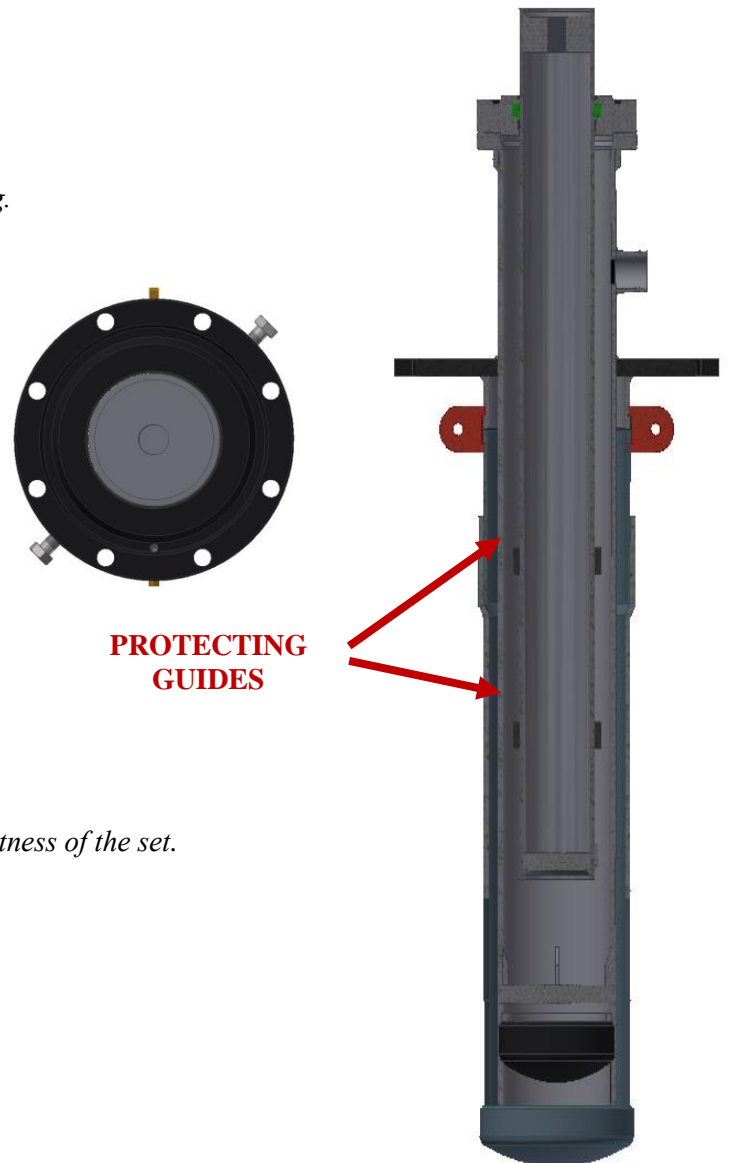
3. Remove the piston from the casing

Note It is better to manipulate the piston by the attachment, using an appropriate size bolt.

4. Remove the plastic protecting rings
5. Reinsert the piston inside the casing
6. Replace the head on the joint flange

Note It is important to replace the O'ring to insure the tightness of the set.

7. Screw back the head on the jack

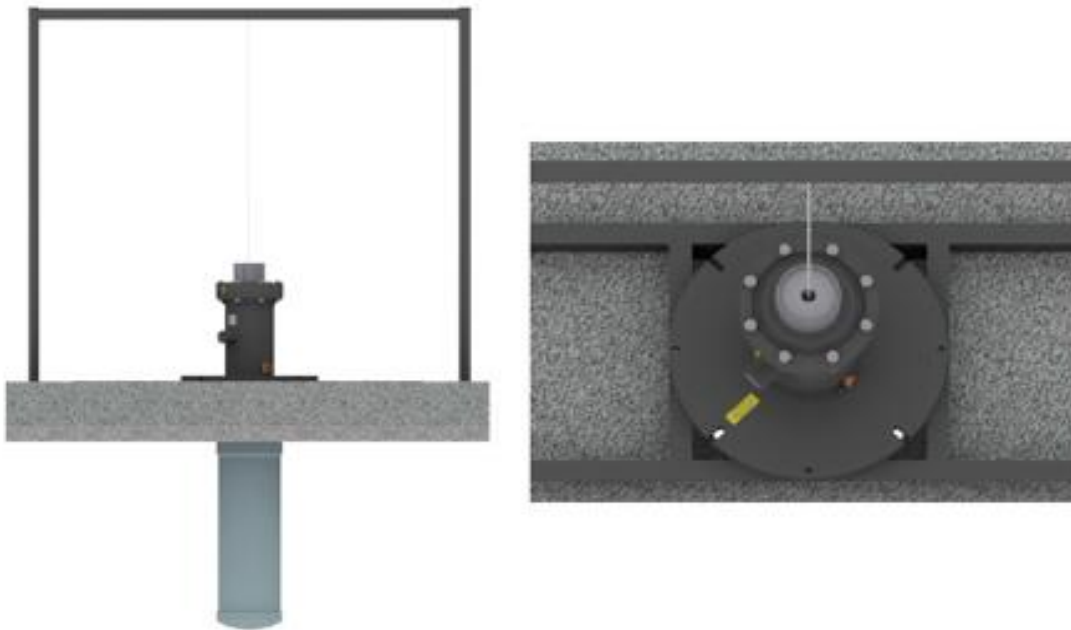


Alignment

1. Make sure you find the central position between the rails
2. Attach the cable at that point

Note *If possible, it is better to attach the cable full length to favour a better alignment.*

3. Tight the cable (getting ready for alignment)
4. Center the alignment cable with the middle of the attachment



Note *The use of wedges would allow to adjust suitably the support so that it's at grade. To make sure that the piston is well in the center of the casing, four (4) adjusters are welded at the bottom of the casing, creating a little gap between the stop tube and themselves. This configuration, with the alignment cable, fixed at the center of the piston, allow a quick and efficient alignment of the jack.*

5. Fix the casing support
6. Take off the alignment cable

“Multi-pieces” jack **installation**

Hardware

For the installation of the recovery sheath (PVC)

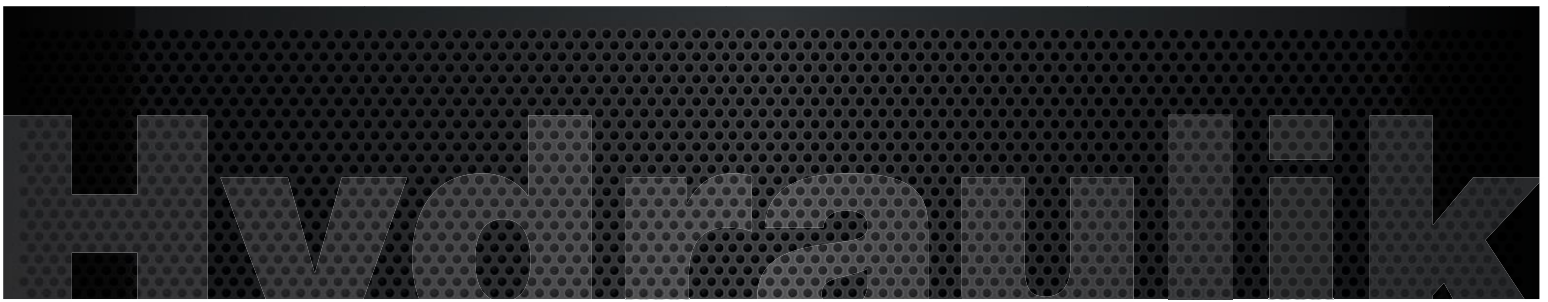
- 2x Coupling
- 1x Square heads plug
- 1x Safety valve (35 PSI)
- 1x Clear tubing (4' lg. X 3/8")
- 1x Clear tubing – scavenging tube (5/32")
- 1x Quick coupling
- 1x Victaulic coupling
- 1x Glue container

For the installation of the head

- 1x Straight coupling - Oil recuperator
- 1x Straight coupling - Back to tank (option)
- 1x Air bleeder (1/8 " NPT)
- 1x Transparent hose (3/8 ")
- 1x Teflon tape

Tools

- 2x Chain Wrench
- 2x Protective ring (for screwing the piston sections)
- Electric tape
- Set of keys
- Requirements to pour concrete



Procedure – Recovery Sheath (PVC or PVC SNAP-FIT without coupling join)

A. Join assembly: PVC

Note To assemble the PVC sheath, start by gluing the cap (A) and a pvc length (B). Then assemble and glue the parts (C) with (B) and finalize with (D) pvc parts. Please note that the pvc length (B) has the pvc join already glued at our facility and ready to assemble with part (C).

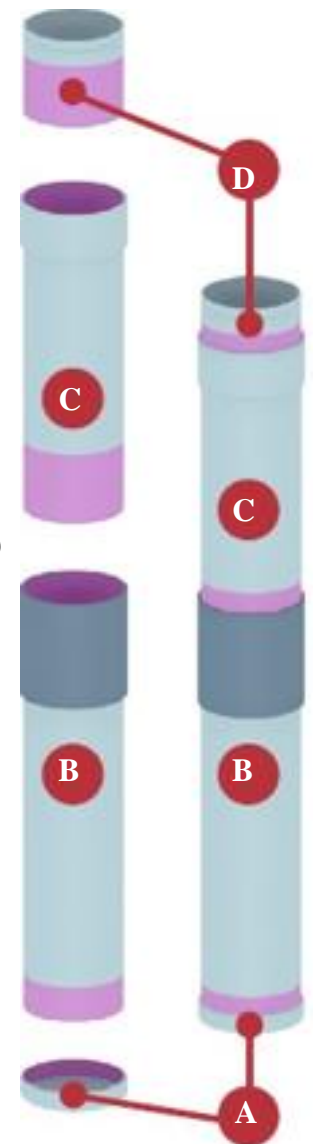
1. Apply generously PVC glue on both internal and external surfaces to be glued (purple)

Note Glue one join at the time, otherwise the glue might dry too soon.

2. Cover the whole length of the section to be glued, extend about 2 inches.
3. Assemble both sections to be glued
4. Hold them in place until the immobilization of the piece
5. Clean excess of glue with a brush, in a way to make a nice joint
6. Let dry for 4 to 8 hours before handling
7. Repeat steps 1 to 6 for each joints (including pvc cap at the end and pvc tube at the top)

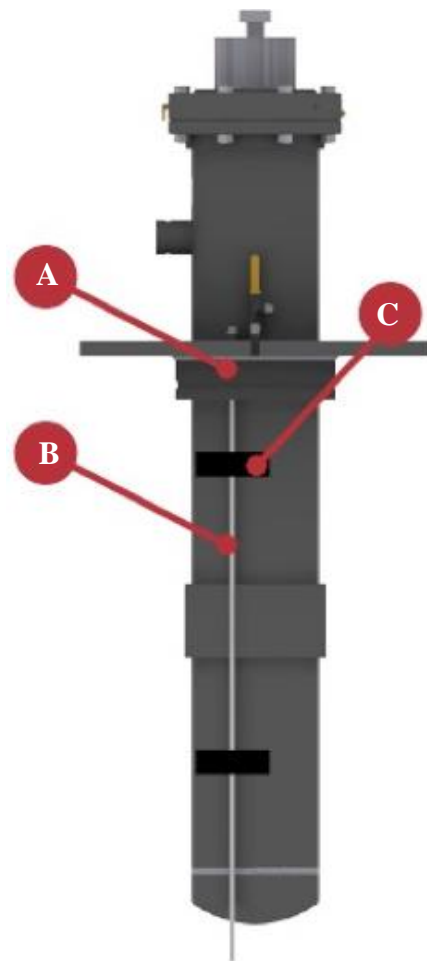
PVC installation

1. Install the rubber ring on the PVC section (connector)
2. Slide the casing in the PVC
3. Split the rubber ring evenly on the ring (casing) and the connector
4. Install the Victaulic coupling to close the system



Scavenging tube installation

1. At the lower end of the rod identified with an “R”
2. Screw the quick coupling (a) under the support
3. Attach firmly the scavenging tube (b) to the quick coupling (a)
4. Unroll the scavenging tube (b) along the cylinder
5. Put electric tape (c) approximately every 4 feet
6. Let the tube exceeds about 3 inches below the welded cap



PVC drain installation

1. At the upper end of the rod identified with a “V”
2. Screw the safety valve in a T coupling
3. Screw the square head plug in the 90° end of the T coupling
4. Screw the threaded hose coupling in the T coupling
5. Screw the assembly in the casing support

Casing **assembly**

Hardware

- 1x Straight connector (for oil drip)
- 1x Straight connector – Return to tank (option)
- 1x Bleeder (1/8" NPT)
- 1x Clear tubing (3/8")
- 1x Roll of Teflon tape

Tools

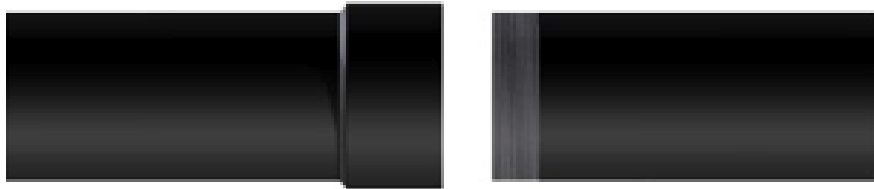
- Hoist
- Clamp piston
- Chain wrench
- Hydraulic oil or anti-seize (ex. Loctite # C5-4)
- Sand paper (320 or 400 grit)

Procedure

Please note that on this type of cylinder an alignment cable is not necessary. Angle parts named alignment gib, center the piston when this one is in contact with the end of the casing (totally closed).

“Screw” casing joints (Important needs to be WELD)

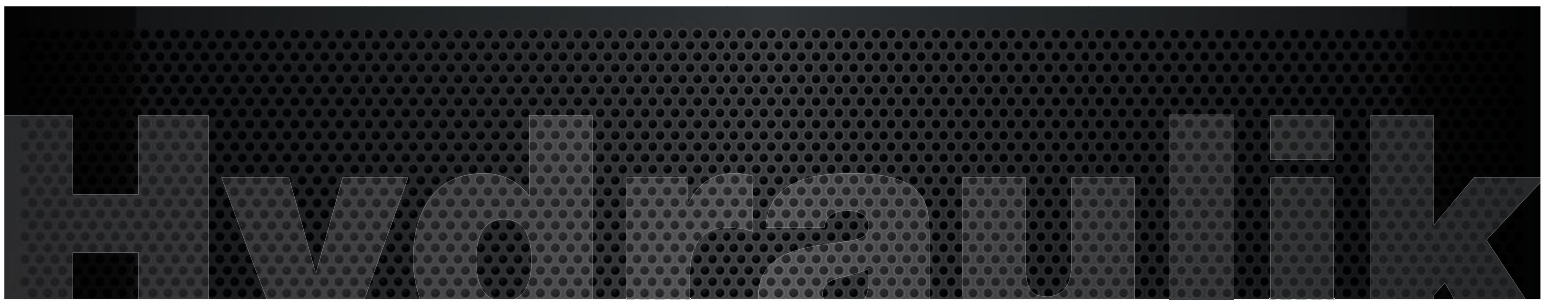
1. Install the bottom of the casing near its final location
2. Unpack the ends to install
3. Apply the anti-seize grease on the threads
4. Place the casing section to screw over the assembly



5. Make sure that the sections is lined up with the bottom assembly before trying to screw the pieces together
6. Screw the piece of the casing in place to align the screw indicators

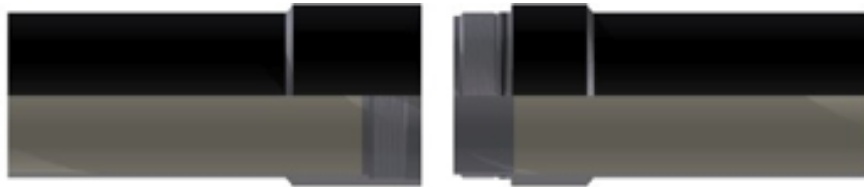
Note *The maximal distance between the two screwing indicator is 1/2”.*

7. **Weld** the joint to assure the tightness
8. Repeat steps 2 to 7 until the installation of the upper part



“No weld” casing joints

1. Install the bottom of the casing near the jack’s final location
2. Unpack the ends to install
3. Check O-rings’ conditions
4. Apply the anti-seize grease on the threads
5. Place the casing section to screw over the assembly



6. Make sure that the section is lined up with the bottom assembly before trying to screw the pieces together
7. Screw the piece of casing in place to align the screw indicators



Note *The maximal distance between the two screwing indicator is 1/2”.*

8. Repeat steps 2 to 6 until the installation of the upper piece

“Multi-pieces” piston **assembly**

Hardware

- 1x Attachment bolt piston

Tools

- Hoist
- Clamp piston
- 2x Strap wrench
- 2x Covering rings
- Hydraulic oil or anti-seize (ex. Loctite # C5-4)
- Electric tape
- Sand paper (320 or 400 grit)
- Key set
- Needed to pour concrete

Procedure

Before proceeding to the piston assembly in “multi-sections”, it is best to place the sections in the order taking into account the direction (up/down) of the sections. To protect the sections, it is important to rest them horizontally on pieces of wood, to avoid threads damages. Ribbons of colours are applied to the ends of the piston for easy identification.

1. Unpack only the lower part of the top section (3” long)

Note *It is very important to keep the sponge in the tube*

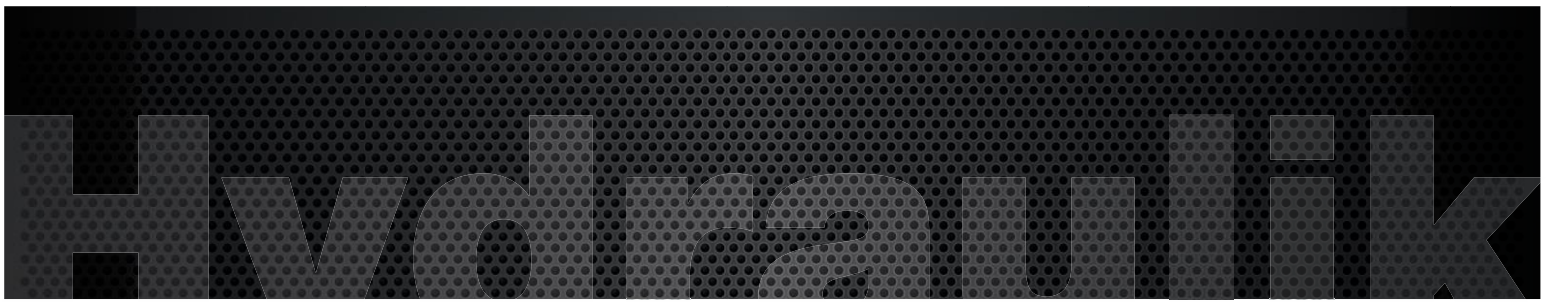
2. Unpack the top of the bottom corresponding section (3” long)

Note *it is important to check carefully if the joint is not damaged (contact surfaces, threads, outside the tube, edges...)*

3. Clean contact surfaces and the threads on the ends of 2 sections to screw
4. Check O-rings’ conditions
5. Apply oil on the threads and contact surface of the two sections
6. Align the two sections



Note *The bolt on the top section can be used to handle and lift sections. If the bolt of the upper section is inconsistent with the drilling of the joint, a proper size bolt will be supplied with the bottom section’s piston joint.*



7. Screw the sections until the screw marks are lined up

Note *The maximum difference between the two screw marks is 1/4". Be careful that the weight of the top section doesn't lie on the threads.*

8. Use sandpaper to smooth out the joint surface

Note *To check the surface quality of the joint, just run a nail over the joint. The joint is considered to be good when you are no longer able to feel a bump at the joint location.*

9. Repeat steps 1 to 8 for each of the joints to the top of the piston assembly
10. Unwrap the protective paper being careful not to damage the piston

Loctite application **instructions**

- 1) Add Anti-seize on the thread of the union joint and screw the plunger piece until there is a gap of 1'' between the two plunger faces.
- 2) Clean Anti-seize from the faces and the union joint. These parts need to be clean and dry before applying the Loctite 620.
- 3) Apply the provided Loctite on piston joint, creating a 1/4'' cord. Apply once above the o'ring and once on the black wear ring guide. See image below.



- 4) Sand the joint.
- 5) Let dry for 60 minutes. Cure time before piston operation is 24 hours.
- 6) Continue screwing the pieces until the gap between faces has been eliminated and the arrow scratch marks are aligned..

Note A Loctite bottle will last for approx. 45'' worth of 1/4'' cord.

Maintenance **program**

Monthly verification

- Verify the seals
- Verify the oil level
- Verify the oil quality
- Verify if there are no 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 strainers

Seal replacement

1. Attach the cabin as high as possible, high enough to be able to remove the head and change the joints.
2. Once the car is held securely, close the main switches.
3. Unscrew the bolt above the piston retaining the cabin.
4. Open the manual valve to relieve pressure until the cylinder fully collapses.
5. Close the ball valve on the power unit to keep the oil in the tank.
6. Disconnect the hose on the head (return to the tank)
7. Remove the head by using two chain wrenches, one on the head and one on the flange. Just turn the head counter clockwise.
8. Remove the old joint and install the new joint by thoroughly greasing every surface.
9. Remove the old O'ring and install the new O'ring by thoroughly greasing every surface.
10. Reinstall the head.
11. Close the manual valve.
12. Reconnect the hoses on the head.
13. Open the ball valve on the power unit and open the main switches.
14. Get the piston to lift slightly to rate a pressure inside the jack.
15. Open the bleeder until the oil drips out and then close it.
16. Attach the piston to the cabin with the bolt.
17. Try the cylinder by making it go up and down 5 times.

Note *Pay special care to O'rings.*

Drainage of PVC coating

The PVC coating protects the cylinder against deterioration due to electrolysis and rust cause by damp and corrosive environment. A condensation builds up at the same inside the PVC coating, so it is very important to drain it regularly.

At the upper end of the rod identified with an “R” on the support plate

1. Remove the square head cap
2. Connect a 1/8 NPT fitting in this inlet
3. Connect the flexible hose (supplied), to the 1/8 NPT fitting
4. Connect it to a recuperation container (5 gallons container)

At the upper end of the rod identified with an “V” on the support plate

5. Screw the fittings to a tee fitting as shown below
6. Connect it to an air pressure device of a maximum 25 PSI
7. Blow until only air comes out of the hose
8. Reinstall the caps



Warranty policy

GUARANTEE

1. ITI HYDRAULIK warrants to the original purchaser that this Product is free from any defects in materials or workmanship and agrees to repair or replace, in its sole discretion, any Product found to be defective during the period of **one year** from the date of delivery to the customer.
2. This warranty is only given to the original purchaser and comes into force on the delivery date of the Product.
3. The delivery date is the date of assumption of responsibility of the Product, ascertained by the bill of lading of the carrier.
4. Any part of this Product deemed, after reasonable evaluation by ITI HYDRAULIK, to be defective in workmanship or materials, will be repaired or replaced, free of charge for parts and labor, by ITI HYDRAULIK.

LIMITATION OF WARRANTY

5. This quality guarantee covers any defect in the manufacture or materials of the sold Product provided that:
 - (a) the Product is used for the purpose for which it is designed, intended and recommended by ITI HYDRAULIK;
 - (b) the Product has been installed and maintained by qualified personnel; and
 - (c) the maintenance recommended by ITI HYDRAULIK has been carried out by qualified personnel.
6. This warranty does not cover claims for damages, direct or indirect, for loss of time, or caused by a Product modification, Product tampering or Product adjustment made by or for the Buyer and not previously approved by ITI HYDRAULIK.
7. This warranty does not cover Product that has been damaged through abuse, neglected, lack of maintenance or failure to maintain the Product pursuant to the instructions in the user manual provided by ITI HYDRAULIK.
8. This warranty does not cover repairs necessitated by normal wear and tear of the Product or the use of unapproved parts and accessories with the Product or that are harmful to its proper functioning, performance or durability. In addition, this warranty excludes: consumable materials – hydraulic fluids, etc.
9. This warranty does not cover damage caused during transport, installation, maintenance or return of the Product. The Buyer shall promptly notify ITI HYDRAULIK in writing sent by mail, fax or registered mail when a defect is discovered, with a detailed explanation of the alleged defects. ITI HYDRAULIK will not assume and therefore will not pay any amount related to the elements mentioned above.
10. This warranty can not be relinquished, transferred or assigned to a third party; it is granted exclusively to the original purchaser of the Product. In the event that the Product is sold, transferred or otherwise disposed of, this warranty becomes void immediately for all legal purposes.

SUITABILITY OF THE PRODUCT

11. ITI HYDRAULIK complies with the manufacturing standards applicable to the Product sold. States and localities are governed by codes and regulations pertaining to construction, installation and use standards, which may differ from one region to another. ITI HYDRAULIK cannot be held responsible for the conformity of the Product with the application of these codes, standards, regulations; the Buyer is solely and exclusively responsible for this compliance before the confirmation of the order.

STORAGE OF THE PRODUCT

12. Storage of ITI HYDRAULIK products is not recommended for a period longer than 1 month; a horizontal position of the Product for a period of time greater than one month, may cause oil leakage. Any temporary storage requires a dry place, protected from theft, moisture, extreme heat and cold. Damage and defects caused by improper storage, stacking or handling are not covered by this warranty.

RETURNS OF MERCHANDISE

13. Any request to return the Product must be authorized prior to shipment by ITI HYDRAULIK Technical Services. Following an authorization from ITI HYDRAULIK, a return number is assigned and must be indicated on the outer packaging of the Product return packaging. The same packing criteria as at the original packing receipt must be utilized. The customer is responsible for transporting the return of the Product to the specified ITI HYDRAULIK factory. A Product found to be defective after inspection by ITI HYDRAULIK may, in our sole discretion, be repaired or replaced at no charge. A credit request for any product return must be authorized by ITI HYDRAULIK and is subject to a 35% restocking fee, plus initial shipping costs.

TECHNICAL SERVICE

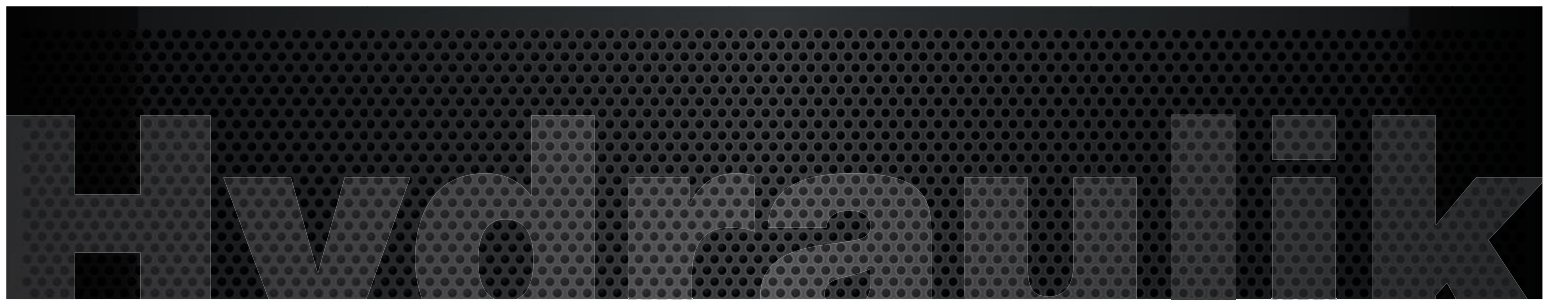
14. ITI HYDRAULIK provides free installation manuals on its website and technical assistance on its Products. This information is intended for people with knowledge and skills in this area who will use it at their own risk. ITI HYDRAULIK assumes no liability for damage caused by anyone using these manuals.

PRICES OF PRODUCTS

15. Product prices are subject to change without notice.

FORCE MAJEURE

16. From the date of delivery, the buyer assumes all liability and costs inherent to the Product. ITI HYDRAULIK shall not be considered in default in the performance of its obligations hereunder if such performance is delayed, withheld or prevented as a result of a fortuitous event or force majeure. Force majeure is any cause that ITI HYDRAULIK could not reasonably have foreseen and against which it could not have protected itself. Force majeure includes, but is not limited to, any fortuitous event, injury, illness, accident, death, destruction of property, use of the Product sold, natural disaster, strike, partial or complete stoppage of work, lockout, fire, riot, intervention by civil or military authorities, acquiescence with the regulations or orders of any governmental authority and warfare (declared or not).



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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