ITI HYDRAULIK
3611 ROUTE 346
STE-JULIENNE, QC
CANADA, J0K2T0

TEL: (450) 831-3229
FAX: (450) 831-2219
www.ITIHYDRAULIK.com

CYLINDER REPLACEMENT SURVEY SHEET

DATE: _____

CUSTOMER: _____

CONTACT: _____

TEL.: _____ FAX: _____

REFERENCE/PROJECT: _____

_____

PISTON DIAMETER MUST BE MEASURED WITH MINIMUM 3 DIGITS (EX: 5,437)

A ∅ PISTON : ___ ___ . ___ ___ ___

B ∅ CASING : _____

C PISTON STICK OUT : _____
(WHEN THE CAR IS ON THE FIRST FLOOR)

D HEAD THICKNESS : _____

E HEAD HEIGHT: _____
(HEIGHT FROM TOP OF HEAD TO PIT FLOOR)

F ∅ OIL INLET : _____
VIC NPT MALE NPT FEMALE

G OIL INLET HEIGHT: _____

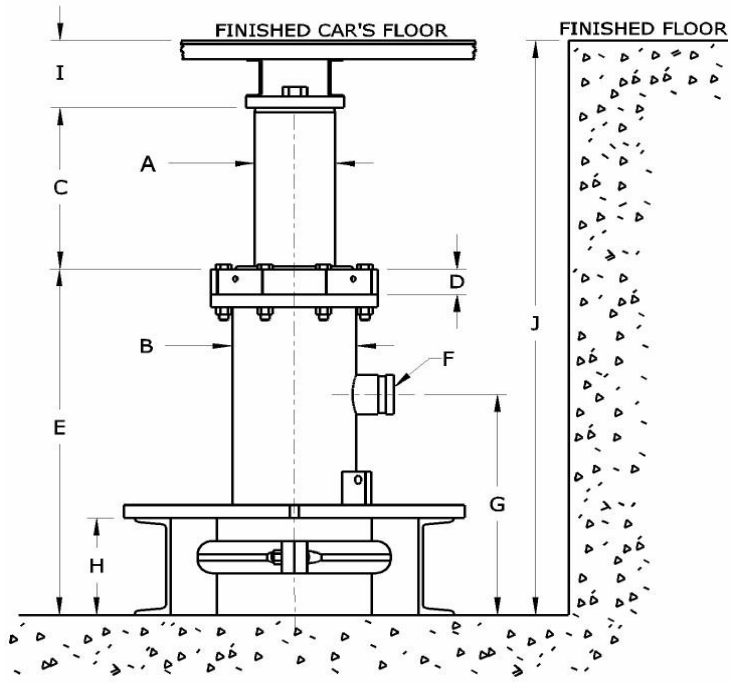
H PIT CHANNEL HEIGHT : _____

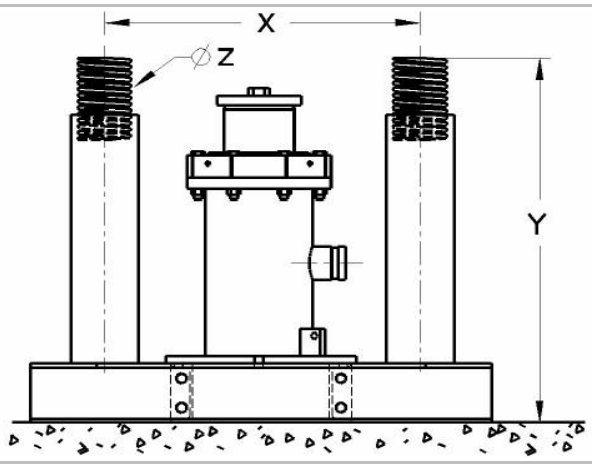
I PLATFORM THICKNESS: _____
(INCLUDING FINISH FLOOR, BOLSTER AND PLATEN PLATE)

J PIT DEPTH: _____

K PISTON PORTION REMAINING: _____
INSIDE JACK FULLY EXTENDED

L TOP OVER TRAVEL: _____





X CENTERLINE : _____
OF BUFFERS

Y BUFFER HEIGHT: _____

Z ∅ SPRING: _____

CAPACITY: _____

CAR WEIGHT: _____

GROSS LOAD: _____
(INCLUDING CAPACITY)

SPEED: _____ RPM

TRAVEL: _____
(FLOOR TO FLOOR)

PISTON LENGHT: _____
(PISTON LENGHT = C+TRAVEL + k +L)

NUMBER OF PIECE(S): _____

MAX PIECE LENGHT: _____

☐ THREADED WITH WELDING
☐ THREADED WITHOUT WELDING
(ONLY AVAILABLE FOR ∅ CAISING 6 5/8 AND 8 5/8)
☐ WELDED
☐ BOLTED

	YES	NO
FOLLOWERS GUIDES	☐	☐

ITEMS TO REPLACE

	YES	NO
BUFFER & SPRINGS	☐	☐
NEW PIT CHANNEL	☐	☐
NEW HEAD	☐	☐
NEW PISTON	☐	☐
PVC _____	☐	☐
TAPE COAT	☐	☐
HEAD DOUBLE SEAL	☐	☐

APPROVE:

_____

DATE: _____

NOTES: _____

_____

_____

Print | Submit by Email

HOW TO FILL THE SURVEY SHEET

It is important to complete the survey sheet with the most data as possible. Our ability to provide proper equipment depends upon the completeness and accuracy of the data that you furnish. The following is the dimension explantion to help you get good values. We strongly recommend reading it, at least once. Also, you will find suggested ways to proceed to fill the entire survey sheet. Of course, there are several ways to do it but here are simple and effective procedures to follow.

Major parts of measure to take are in the pit, when the car is on first floor. This way, it is possible to get all the measurements from A to K and X to Z.

Piston diameter (A)

The best way to mesure it, is with a diameter measuring tape, a micrometer or a calliper. Precision is very important here, this is why it is really not recommended to measure it with a usual measuring tape.

Why: ***It is very important to get the diameter of the piston with a minimum of 3 decimal digits accuracy.*** *Seal must be tight enough to avoid oil loss.*

Casing diameter (B)

The way to measure the casing diameter is the same as previously stated for the piston. The diameter must be measured under the head.

Piston stick out (C)

This measure is the height from the top of the head to the extremity of the piston **when the car is on first floor**. It should **NOT** be confused with the height when the car is on the buffer or completely closed.

Why: This information is needed to get the " runby " and to calculate the complete piston lenght.

Head thickness (D)

This is the measure from the top of the head to the casing. There is a visible separation between the head and the larger top of the casing.

Why: This value is needed to build a new head if neccessary, to determine the right casing lenght and also to evaluate the remaining piston lenght (K).

Head height (E)

This is the height from the pit floor to the top of the head. It is the height of the visible casing part that is not in ground with the head. The measure must be from the pit floor, **NOT from the top of pit channel.**

Why: This information is essential to fix the support at the right height and allow the same positions travel.

Oil inlet diameter (F)

There are three types of oil inlet available: VIC, NPT MALE and NPT FEMALE. Sometimes, the diameter value is written on the pipe.

Why: This information is important to fit with the actual oil pipe line.

Oil inlet height (G)

This is the measure from the center of the inlet to the pit floor, **NOT the top of the pit channel.**

Why: This measure is needed to fit with the actual oil pipe line.

Pit channel height (H)

This is the measure from the top of the pit channel to the pit floor. The support thickness is **NOT** included in the value.

Why: This measure is important to fix the supports position and ensure the same travel positions of the piston.

Platform tihckness (I)

This measure is the height from the top piston limit to the finished car's floor, normally containing the platen plate, the bolster and the finished car's floor. Sometimes, the measure isn't easily accessible. It's possible to calculate it by substracting the head height and the piston stick out to the pit depth (I = J - E - C). to verify the data, it is strongly suggested to measure it, not calcul it.

Why: This value is important to calculate the stick out of the piston when it is completely closed (not supported on buffer) and the "runby".

Pit depth (J)

The pit depth is simply the height from the finished building's first floor to the pit floor.

Why: This value is also important to identify the " runby " and verify that the other measures are consistent.

Centerline of buffers (X)

This is the distance between the centerline of buffers.

Why: This information is important if a new pit channel is needed and to evaluate the support diameter.

Buffer height (Y)

This is the height from the top of the buffer to the pit floor, **NOT the top of the pit channel.** Be sure the buffers are **NOT** compressed.

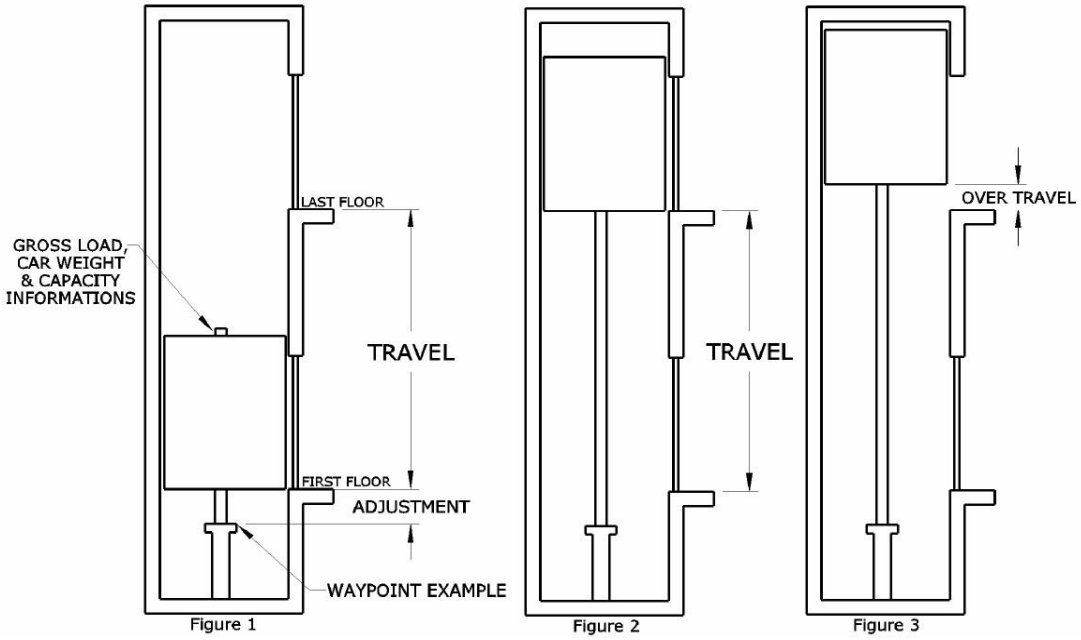
Why: It is important to have the right value to respect code rules and calculate the " runby".

Buffer diameter (Z)

The buffer diameter can easily be taken on top of them.

Why: this value is necessary only if new spring buffers are needed.

Capacity, car weight, speed and gross load



These values are usually written on the inside wall of the elevator or on the top beam over the elevator (see figure 1). The gross load must include the capacity.

Why: These values are important to calculate the " runby ", the buffers compression and the right wall thickness of casing and piston needed.

Travel

This is the entire elevation floor to floor like shown in the previous figure 1 and 2. To measure the rise, floor to floor, hook the tape under the car when it is on the first floor and make the elevator raise to the last floor. A good way to get te measure, is to take a waypoint, as seen in figure 1, which gives the adjustment for the first floor. With the measure at the same waypoint when the car is to the last building's floor, substract the ajustment to it. That allows hooking the measuring tape anywhere under the car.

It can also be measured by travelling over the elevator where it can be controlled. It is suggested to start from the top and go down when hooking the measuring tape on the last floor. Usually, you can't access the first floor from the car's roof. The missing height must be measured and calculate from the travel.

Why: The travel is important to calculate the piston lenght and determine the casing lenght.

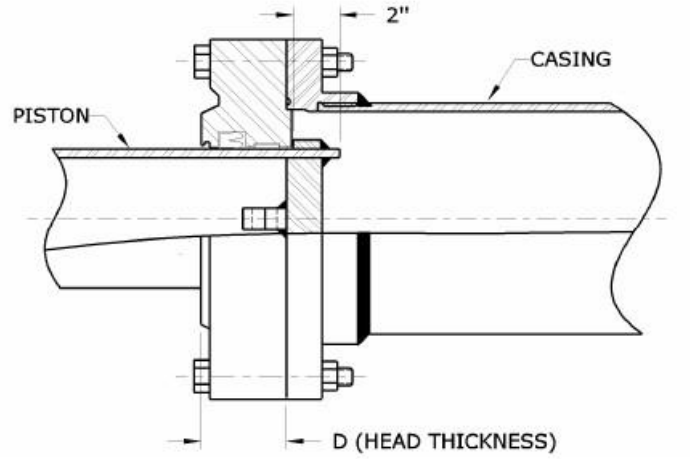
Top over travel (L)

The over travel is the height from the finished last building's floor to the finished car's floor when the piston is fully extended. See figure 3.

Why: This value is important to identify the piston lenght of the new casing.

Piston portion remaining inside jack fully extended (K)

This measure is the remaining lenght of the piston when it is fully extended. This part is not visible but it can be estimated with the thickness of the head, ITI Hydraulik models are built like the following figure and the remained piston lenght is approximately 2 inches plus the head thickness. K ≈ 2 + D



Why: This value is important to get the exact piston lenght.

Piston lenght

The piston lenght contains Piston stick out (C), Travel (floor to floor), top over travel (L) and the portion remaining inside the jack fully extended (K).

There are several ways to get the piston lenght. However, we strongly suggest obtaining it by two different ways. It can be easily calculated with previous values already measured (C + Travel + K + L = Piston lenght) It is also possible to fully measure it in one operation by hooking the tape under the car and let the car go until top over travel. The measure must be read approximately 2 inches under the head of the piston portion remaining inside the jack (K). If the measuring tape is hooked somewhere on the car's platform, this height has to be removed to get the top piston limit.

Another good way is to disassembled the entire piston and measure all parts of the piston. It is longer in time, but much more precise even if the piston portion remaining inside the jack (K) is unknown.

Maximum piece lenght

This value must be evaluated to know how long the casing part can be to bring them to the elevator place without problem. By determining the best path to carry the casing, the smallest space is the maximum allowable lenght by the building. Worse places are usually in corridor's corner or close doors.

Number of piece(s)

This value depends on the maximum piece lenght allowable in the building. The piston's complete lenght divided by the maximum piece lenght will give the number of piece(s). It is important to round the integer up to the next number.

Joint type

There are 4 types of joints: Threaded with or without welding, welded only, and bolted. Threaded with welding is only available for casing diameter 6 5/8 and 8 5/8.

Why: This information is only needed if the casing is not built in one piece.