HOUSTON POLYTANK

INSTALLATION GUIDE

Important: If these instructions are not followed while installing tank(s) into your plant, we are not responsible for damage that happens due to negligence to these instructions and your warranty will be null and void.

EXPANSION JOINTS

Plastic tanks are influenced by thermal expansion and contraction due to changes in the temperature. The coefficient of expansion in plastic is greater than metal by 19 times. One should avoid restrictions due to hard plumbing. Using expansion joints will allow the tank to expand and contract without causing abnormal forces on the plastic. Expansion joints also isolate the tank and its fittings from vibrations (which are harmful) from pumps, valves, etc.

SPRING SUPPORTS

Heavy valves, pumps, heaters and plumbing can cause excess weight on the tanks/fittings. In general, plastic can crack when continuous extensive force is on it. The spring supports are placed under the valves, pumps, etc. to support the load to the ground to avoid continuous weight on fittings. The resistance of the springs allows vertical movement during thermal expansion and contraction. The spring supports need to be designed to carry the load of valves, pumps, etc. during expansion and contraction.

TIE DOWN ANCHORS (Hand Tightened Only)

Plastic tanks are influenced by thermal expansion and contraction due to changes in the temperature. Because of this, the tie down anchors should only be hand tightened/snug. Tie down anchors should never be torqued. Torqueing the tie downs will break the plastic anchors.

VENTING/PRESSURE

Our plastic tanks are built for atmospheric pressure only. Proper venting alleviates pressure and vacuum from developing in the tank when being filled and emptied. Ensure your tank vent is properly set up. The tank cannot exceed a maximum of 0.1 PSI.

DO NOT REDUCE/RESTRICT VENTING, possible catastrophic tank failure can happen.

1. Ensure vent lines are clean and clear of restrictions.
2. Minimize using 90-degree bends on your vent line.
3. Do not plumb multiple vents into one common line.

VENTING/PRESSURE

Tanker Filling:
At the end of filling the tank during line purge, a tanker becomes a large supply of compressed air at approximately 10-30 PSIG. The method of delivery from the tanker impacts the volume of air delivered to the tank. A vent size 2" in diameter larger than the fill is sufficient to handle delivery but may not handle the volume of air at the end of filling during a line purge from the tanker. Please ensure to have a tank filling procedure that allows the purged air to escape according to the vent design. Venting capacity must equal or exceed Air Cubic Feet per Minute (ACFM) from the tanker for adequate air displacement and margin of safety.

VENT WITH TANKER FILLING

Tanker Discharge	Inlet/Fitting Size	Minimum Vent Size
2"	2"	6"
3"	2"	6"
3"	3"	8"
3"	4"	8"

VENT WITH TANKER FILLING, SCRUBBER APPLICATION:

Tanker Discharge	Inlet/Fitting Size	Minimum Vent Size
2"	2"	6"
3"	2"	8"
3"	3"	10"
3"	4"	10"

*Scrubber should be in close proximity to the tank(s).

FULL FACE GASKETS

All flanges need to have the full face of the flange gasketed (gasket no less than 3/16" thick) with 80 duro. Or less. Ensure the gasket is compatible with the contents of the tank.

HARDWARE

Fittings should not be in direct contact with our plastic flanges. Washer and lock washers are required. Ensure the hardware is compatible with the contents of the tank.

TORQUE

All bolt connections to the tank must be torqued according to the guidelines provided below.

EXAMPLES OF ESTIMATED BOLT TORQUE TO SEAL HDPE & PP FLANGE FACES:

IPS NOMINAL PIPE SIZE	NUMBER OF BOLTS	MINIIMUM LUBED TORQUE (FT-LBS)	MAXIMUM LUBED TORQUE (FT-LBS)
2”	4	20	30
3”	4	20	30
4”	8	20	30
6”	8	30	40
8”	8	30	40
10”	12	50	60
12”	12	50	60
Top Manway 24”	8-10	20	30
Side Manway 24”	20-24	75	125

TIGHTENING SEQUENCE

Number the bolts in rotation around the Lap-Joint Flange circumference in a clockwise order, beginning with the first bolt at the top in the nominal 12:00 position, the second being the next bolt to the right, the third being the next bolt to the right, etc. until all bolts are numbered sequentially.

Following the table below, tighten the given bolt number to the desired torque value for the given round of tightening as specified below.

NUMBER OF BOLTS	CRISS-CROSS PATTEREN TIGHTENING SEQUENCE
4	1-3-2-4
8	1-5-3-7 >> 2-6-4-8
12	1-7-4-10 >> 2-8-5-11 >> 3-9-6-12
16	1-9-5-13 >> 3-11-7-15 >> 2-10-6-14 >> 4-12-8-16
20	1-11-6-16 >> 3-13-8-18 >> 5-10-15-20 >> 2-12-7-17 >> 4-14-9-19
24	1-13-7-19 >> 4-16-10-22 >> 2-14-8-20 >> 5-17-11-23 >> 3-15-9-21
28	1-15-8-22 >> 4-18-11-25 >> 6-20-13-27 >> 2-16-9-23 >> 5-19-12-26 >> 7-21-14-28 >>
32	1-17-9-25 >> 5-21-13-29 >> 3-19-11-27 >> 7-23-15-31 >> 2-18-10-26 >> 6-22-14-30 >>
36	1-2-3 >> 19-20-21 >> 10-11-12 >> 28-29-30 >> 4-5-6 >> 22-23-24 >> 13-14-15 >> 31-32-

The crisscross bolt tightening sequence and multi-round tightening are necessary to counteract the flange / bolt elastic interaction.