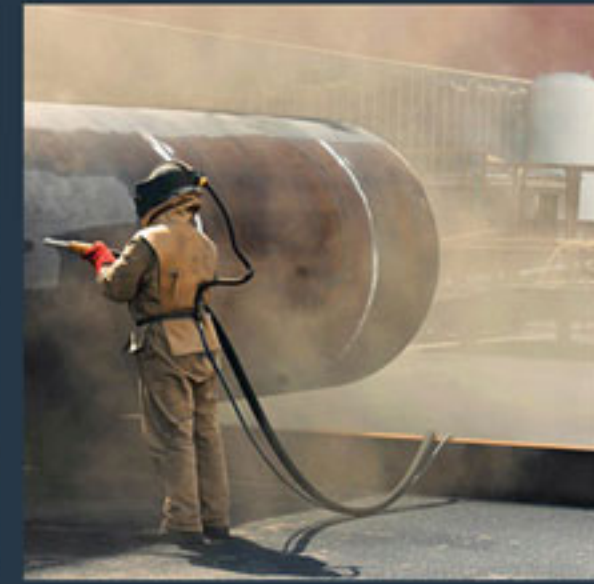
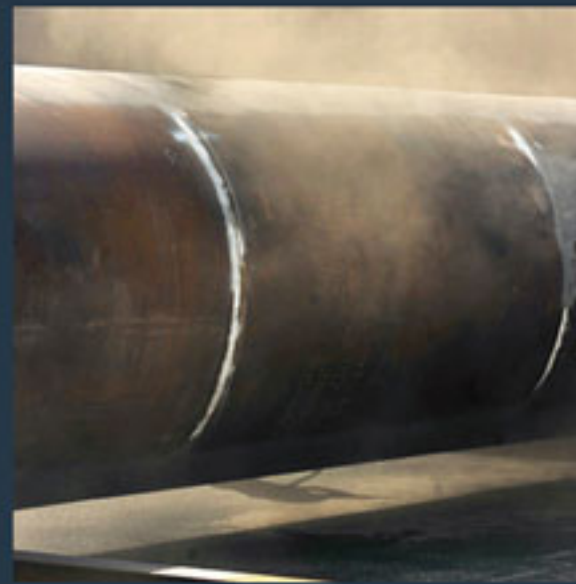
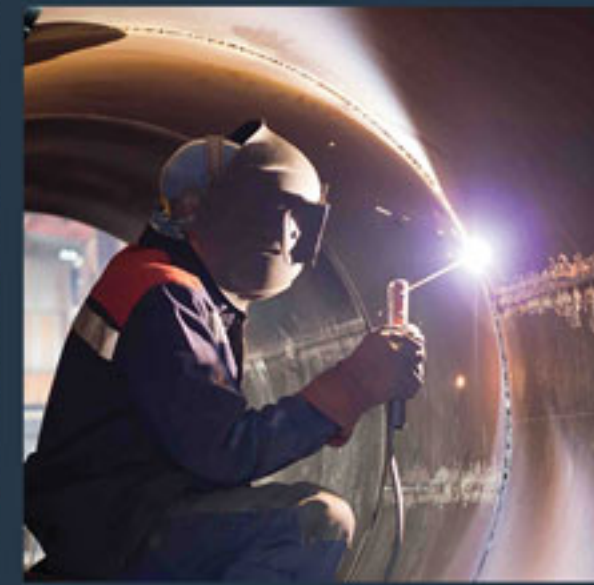


Pressure Vessels

Compressed Air & Nitrogen Gas Services





Make a difference in your project!

Welcome to HATCO!

HATCO is a company specialized in the planning, engineering, design and realization of turnkey, customized solutions for the air and gas compression and separation plants including all exclusive project's services. Since founded in 1997, HATCO brand stands for quality and reliability, but also aim to innovation and development in the future. Thousands of compression packages operating across the country prove our reliability of products for special environments and heavy duty industries and air separation plants. Our aim is to promote a constant improvement about products and we do manufacturing, developing and enhancing, at the same time, the quality of life. Today we are expanding our business and technology to air separation plants (ASUs) and hydrogen purifiers based on Linde technology as the world's leading industrial gas producer. Our wealth of knowledge combined with the continuous dedication to research and experimentation allows us to constantly improve our products and develop innovative and tailor made solutions. HATCO manufacturing factory and warehouses comprise all facilities for production and packaging all kind of compressors with highest quality and favorable delivery time.



Our Capabilities:

► Engineering

HATCO's engineering professionals are highly trained in PV elite, ANSI Analysis, AutoCAD & SolidWorks 3D CAD to support your organization's technical design requirements. With 5 design stations and several Professional Engineers on staff, HATCO is committed to fulfill your organization's custom equipment needs in a timely manner.

We collaborate with you.....

Together, we evaluate the variables, working with you to help eliminate the guesswork typically associated with the solutions.

Whether you fit into a standard product or require a custom solution, our network of specialized manufacturing and systems professionals work with you from concept to final production.

► Fabrication

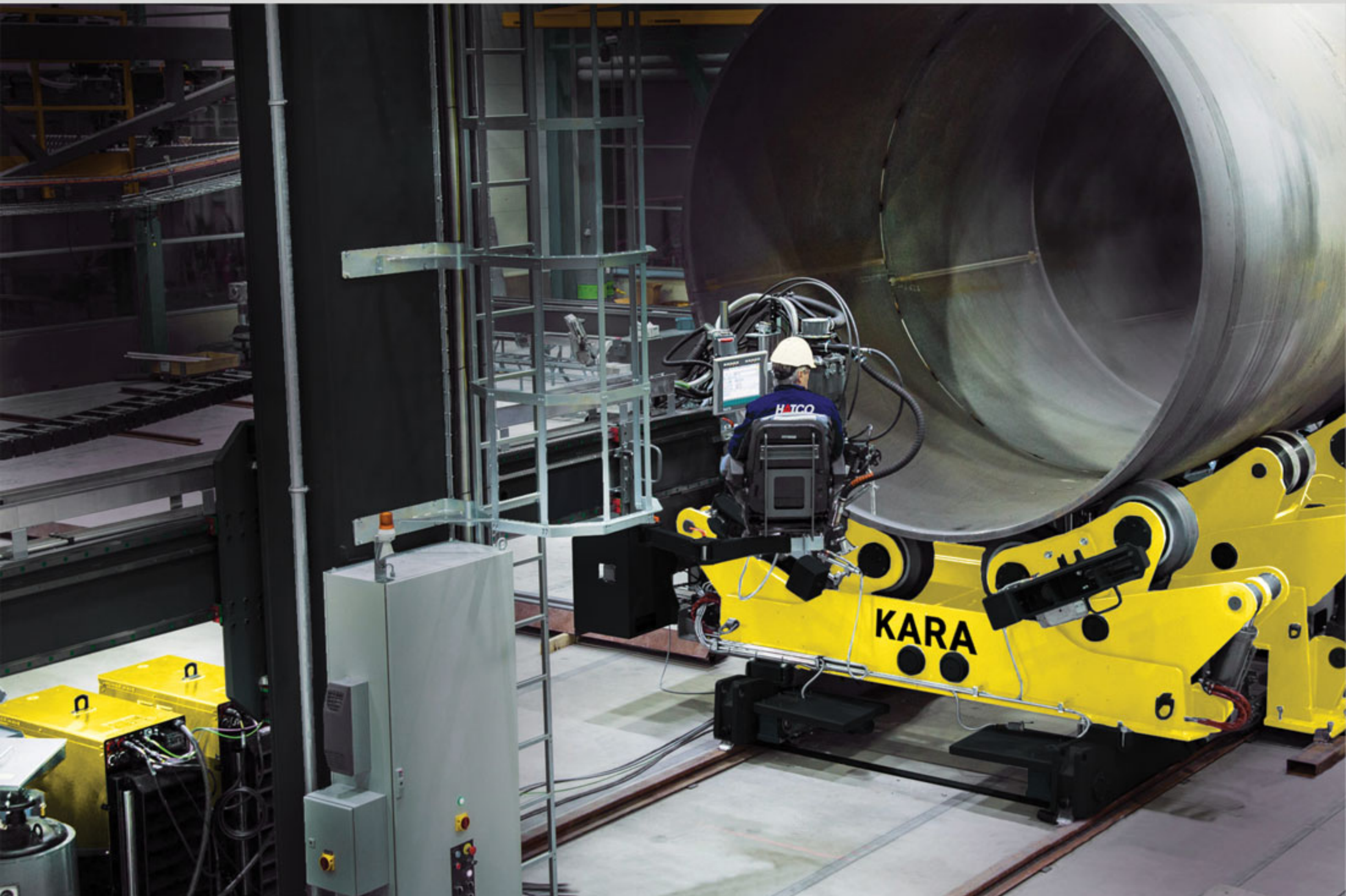
This is a highly advanced facility; located 35 km from Tehran, within five km of international Airport, built on 16,500 sqm fenced yard with a 10,000 sqm covered fabrication shop space which is equipped with 8 overhead cranes, and has 50,000 tons annual production capacity.

The HATCO manufacture carbon and stainless-steel pressure equipment used for storage and processing in the compressed-air, cryogenic plants, air-treatment and filtering sectors with standard sizes ranging from 3" diameter @ 3,000 PSI to 200" diameter @ 200 PSI.

Except the above standard listed items, the other similar products are available according to the requirements of the projects.

The latest fabrication technologies are employed at HATCO.

Works, including automated and manual welding, various prefabricated items on-line machines, heat treatment facility, integrated QA/QC systems, certified destructive and non-destructive laboratories of the contracting party, as well as advanced communication technology and an in-house developed ERP system in addition to powerful computer hardware with all associated design, engineering and simulation software.



▷ Welding

HATCO owns and maintains a robust welding program thru a Welding Training Centre and a Certified Mechanical Test Laboratory of the contracting party.

HATCO enables qualification and certification of welding procedures and personnel in pursuant to various welding techniques such as SAW, SMAW, GTAW, GMAW, GTAW Hotwire, ESW Weld Overlay (Incoloy 825, 316L) covering all automated and manual welding under the leadership of certified European Welding Engineers.

HATCO welding procedures are qualified according to ASME Section IX covering the welding of Carbon Steel for Normal and Lower Temperature Service, Heat Resisting Cr and Cr-Ni Stainless Steels, Alloy Steel Quenched and Tempered 9% Nickel, Ferritic Alloy Steel for High Temperature Service (P11, P22, P 91), Ni Base Alloys (Inconel 625, Incoloy 825, Alloy 31, Alloy C276) and Aluminum Alloys (Al 5083).



▷ Painting

Wide variety of custom interior and exterior rust preventative and coatings are available.

External surface treatment performed on all standard vessels.

- In factory standard situation the exterior of all surfaces have been painted with one coat of standard shop primer to serve as a temporary rust preventative. An intermediate coat and a top coat is done to reach optimal durability of the coating.
- In specific projects, after an accurate surface preparation through of the blasting (e.g. SSPC instructions), the products are painted in deference techniques according to the requirements.



► QC Services

HATCO Works utilizes state-of-the-art quality control technology with world class equipment, including TOFD manned by highly qualified personnel to perform various tests, inspections and measurements - in order to meet such international standards and specifications as ASME, ASTM, AWS, EN, API and BS (all according to customer/project requirements) for fabrication and field work of its own, or as a third party service provider to power and petrochemical projects.

HATCO QC section include a total of 6 QA/QC staff including 5 engineers and Level I, II, III NDT and Europe PED 97/23/EC qualified personnel. The NDE equipment include (but not limited to) Automated Ultrasonic Testing equipment (TOFD, RASTER) up to 340 mm, Digital Radiography System with phosphorus imaging plate (DRS), RT (4 X-ray, 5 Gamma), UT (3 Manual), MT (dry / wet visible, fluorescent), PT (wet visible, fluorescent), portable devices for ferrite content measurements, spectral analysis and PMI, metal hardness (HV, HB, HRb, HRC), thickness and conductivity measurements, coating film thickness, surface roughness, gloss and adhesion measurements and Holiday tests laser surface and laser distance measurements, optical inspection devices, temperature measurement.

Other services provided by HATCO QC department includes; mechanical test equipment for tensile testing, bending testing and impact testing (from room temperature to below -196 °C), crack depth measurement, leak test with ultra-probe, vacuum box testing (up to -760 mmHg) and weight measurement/center of gravity determination.

Special Projects

We closely cooperate with our customers during activities of research and development, supporting their quality and specification requirements with a view to ideal product integration in the system where our vessels are to be installed.

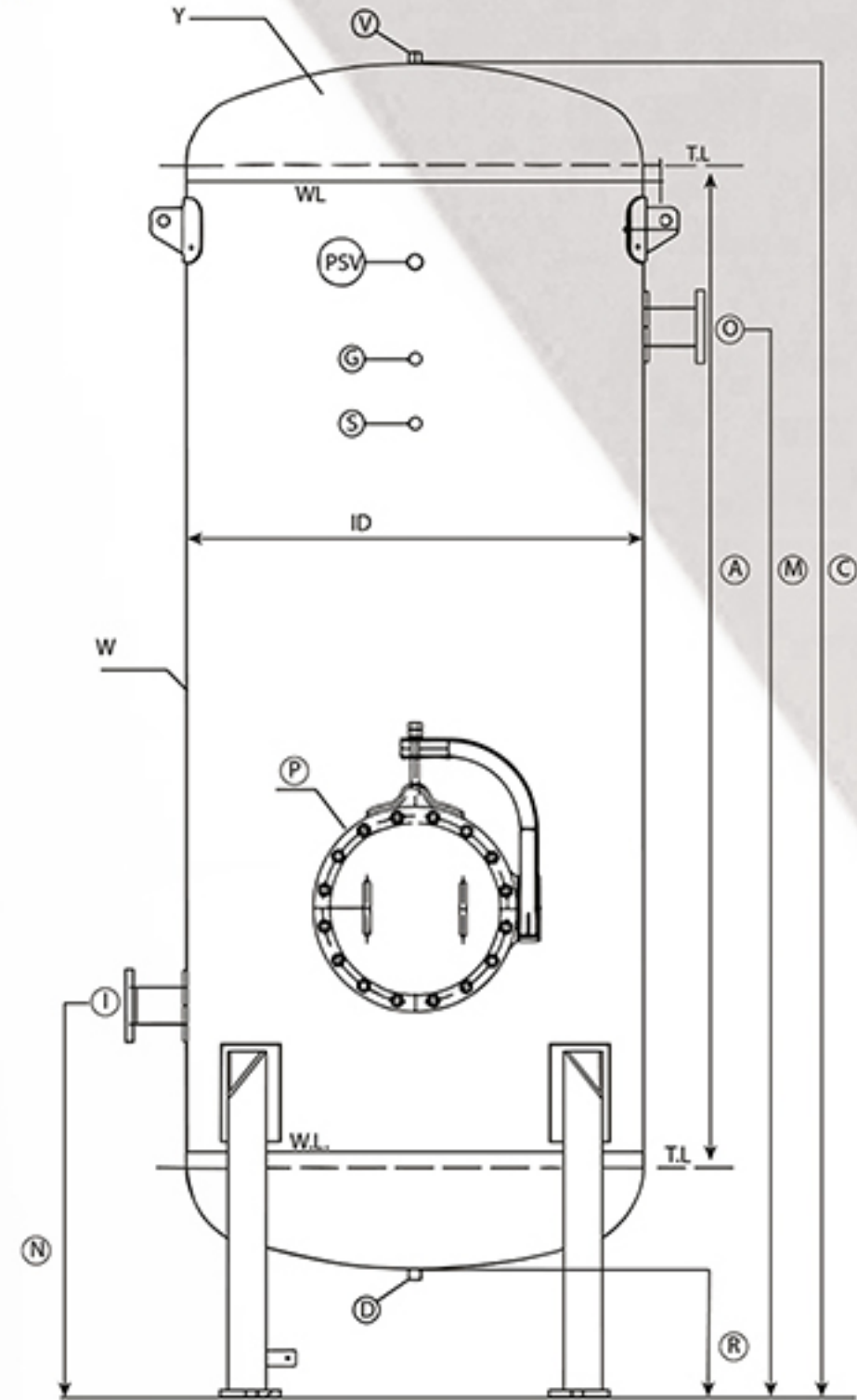
We ensure the utmost care and attention to customized design projects in accordance with customer specifications and instructions, e.g., special item mounting requirements, manual welding or customized coating.



For your convenience, HATCO's standard Air and Nitrogen Receiver data are available for download.

General information for factory standard models

1 Design Data				
1.1	Service: Air/ Nitrogen			
1.2	Service type: Non-toxic			
1.3	Design Code: ASME Sec. 8 Div.1		Code Stamp: N/A	
1.4	Stress relieving: As per	Jacket/Coil: N/A	Post weld heat treatment: N/A	
2 Mechanical Data				
2.1 Body (Shell/Head)				
2.1.1	Design pressure (Internal / External)	1.2 > O.P.	bar g	
2.1.2	Operating pressure (Internal / External)	As request	bar g	
2.1.3	Operating temperature	Max 55°C	°C	
2.1.4	Hydro Test pressure	1.3 > D.P.	bar g	
2.1.5	Minimum Hydro Test temperature	5	°C	
2.1.6	Corrosion Allowance	1.5	mm	
2.2 Layout		2.2.1 Loads		
2.2.1	Type of Vessel	Vertical	Basic wind speed	160 Km/hr.
2.2.2	Vessel Inside Diameter	Pls. See Table 2	Earthquake factor / Zone	1.25 / UBC 97, Zone 4
2.2.3	Tan / Tan	Pls. See Table 2	Base Shear (wind/earthquake)	[197 / 135] Kg-f
2.2.4	Overall height / length	Pls. See Table 2	Base Moment (wind/earthquake)	[91 / 109] Kg-m
2.2.5	Shell thickness	Pls. See Table 2	2.2.7 Weight	
2.2.6	Head thickness	Pls. See Table 2		
2.2.7	Type of supports	4 Leg / Skirt	Fabrication: -----	Operating: -----
2.2.8	Insulation type / thickness: N/A	Erection: -----	Shop Hydro Test: -----	
3 Material Data				
3.1	Shell	A 516 Gr.70	Bolts (external)	A 193 Gr. B7
3.2	Heads	A 516 Gr.70	Nuts (external)	A 194 Gr. 2H
3.3	Nozzle flanges	A 105	Bolts (internal)	N/A
3.4	Nozzle necks/ Manhole Neck	A 106 Gr. B / A 516 Gr.70	Nuts (internal)	N/A
3.5	Nozzle pads	A 516 Gr.70	Gaskets (external)	Asbestos free
3.6	Couplings	A 105	Fittings	N/A
3.7	Supports (pads)	A 516 Gr.70	Supports (legs)	A 36 or Equal
3.8	Lifting Lugs / Lifting Lug Pads	A 283 C / A 516 Gr.70		
3.9	Anchor Bolts	A 36		
4 Painting Data				
4.1	Surface Preparation : SSPC Approval	SA 2 1/2		
4.2	Internal Coating: 3 layers	50-70 Microns Primer Zinc Rich Epoxy	50-70 Microns MIO	100 Microns Epoxy Top Coat
4.3	External Coating: 3 layers	50-70 Microns Primer Zinc Rich Epoxy	50-70 Microns MIO	100 Microns Alkyd Top Coat



GENERAL VIEW

Model	Actual Volume (Lit.)	Specifications (Dimensions & Thicknesses (mm) / Connections (inch))																		
		@ Operating Pressure																		
		8 bar g			10 bar g			12 bar g			8 bar g			10 bar g			12 bar g			
A	C	ID	R	N	M	G	S	PSV	V	D	P	I/O	Y	W	Y	W	Y	W	Y	W
SAT 500	500	1000	2100	700	400	700	1600	1/2	1/2	1/2	1/2	1/2	NA	1	6	5	6	6	8	6
SAT 1000	950	1400	2100	900	400	700	1600	1/2	1/2	1/2	1/2	1/2	NA	1	8	6	8	6	8	8
SAT 1500	1450	1900	2650	950	400	900	2100	1/2	1/2	3/4	1/2	1/2	16	1.1/2	8	6	8	8	10	8
SAT 2000	2000	1900	2700	1100	450	950	2150	1/2	1/2	3/4	1/2	1/2	16	2	8	6	8	8	10	10
SAT 2500	2630	1900	3200	1250	450	950	2650	1/2	1/2	3/4	1/2	1/2	16	2	8	8	10	8	10	10
SAT 3000	3000	2400	3700	1250	450	950	3100	1/2	1/2	3/4	1/2	1/2	16	2	8	8	10	8	10	10
SAT 4000	4000	2900	3050	1300	500	1000	2500	1/2	1/2	3/4	1/2	1/2	16	4	8	8	10	10	12	10
SAT 5000	5000	3000	3800	1400	500	1000	3200	1/2	1/2	1	1/2	1/2	16	4	10	8	10	10	12	12
SAT 6000	6000	3900	4300	1370	500	1000	3800	1/2	1/2	1	1/2	1/2	16	4	10	8	10	10	12	10
SAT 8000	8000	4400	4650	1500	550	1100	3900	1/2	1/2	1	1/2	1/2	16	4	10	8	10	10	12	10
SAT 10000	10000	4500	5820	1600	485	1850	4850	1/2	1/2	1	3/4	1/2	18	4	10	8	12	10	12	12
SAT 12000	12000	4500	5820	1720	485	1850	4850	1/2	1/2	1	3/4	1/2	20	4	10	10	12	10	14	12
SAT 15000	15000	4900	6295	1850	405	1850	5350	1/2	1/2	1	3/4	1/2	20	6	10	10	12	10	14	12
SAT 20000	20000	5900	8105	2000	1085	2595	7095	1/2	1/2	1	3/4	1/2	20	6	12	10	12	12	15	15
SAT 25000	25000	5200	7400	2300	940	2720	4920	1/2	1/2	2x1	3/4	1/2	24	6	14	12	15	12	18	15
SAT 30000	30000	6500	8770	2300	990	2780	6580	1/2	1/2	2x1	3/4	1/2	24	6	14	12	16	12	18	15
SAT 35000	35000	6900	7400	2400	940	2720	4920	1/2	1/2	2x1	3/4	1/2	24	6	14	12	16	14	18	15
SAT 40000	40000	7300	9590	2500	970	2780	6080	1/2	1/2	2x1	3/4	1/2	24	6	15	12	16	14	18	16
SAT 50000	50000	7200	9990	2800	1470	3280	8180	1/2	1/2	2x1	3/4	1/2	24	6	16	14	18	14	22	18
SAT 55000	55000	8000	10790	2800	1470	3280	8180	1/2	1/2	2x1	3/4	1/2	24	6	16	14	18	14	22	18

1. Dimension "A" is W.L. to W.L. distance.
2. Corrosion allowance is 1.5mm for all vessels.
3. For shell ID greater than 2000mm, head thickness (Before forming) shall be checked by factory.

Our experienced engineering team is always available to identify and meet all customer's requirements.

HATCO

Compression & Separation

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