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VesselExpress			

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Calcgen Solutions
Project Specifications

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VesselExpress

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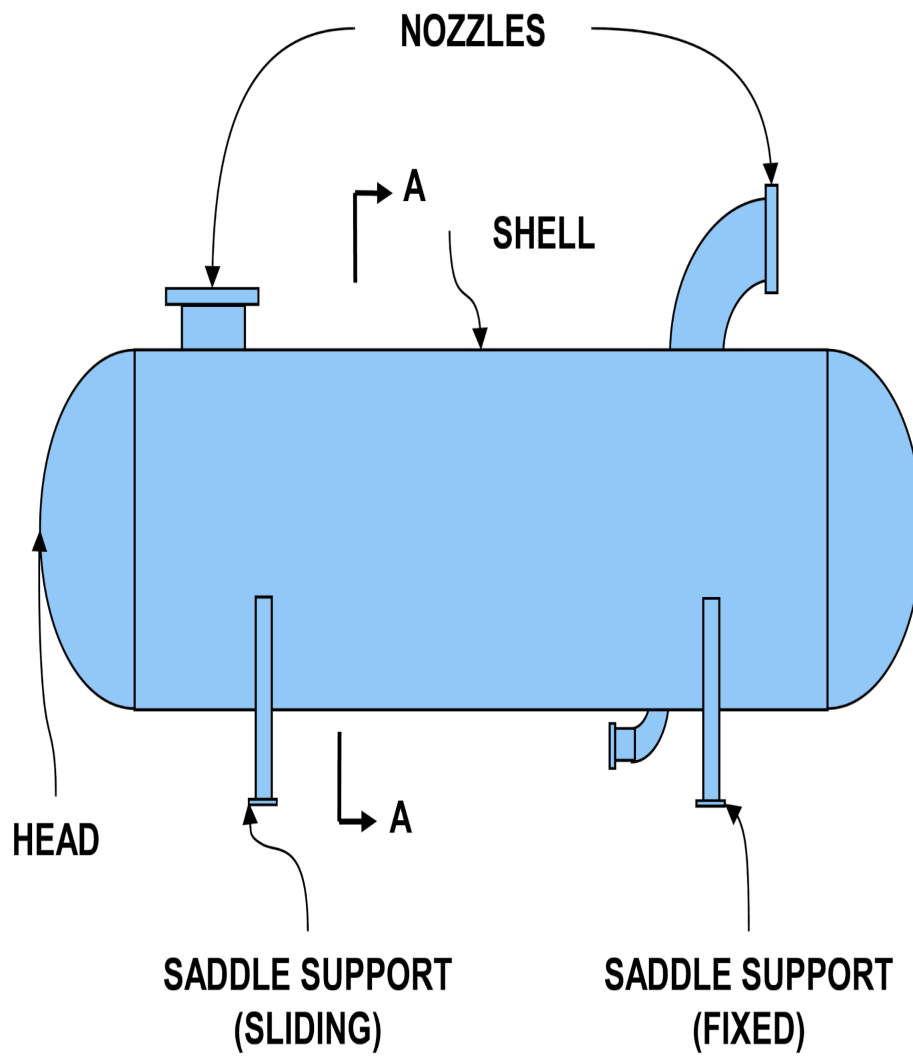
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1.0 Deficiencies Summary

No Deficiencies were found.

2.0 DEFINITION



Technical drawing of a vertical vessel (Fig. 1) showing elevation and dimensions. The vessel has a total height of 4300 units. Key features include:

- Top section: 500-unit diameter, 750-unit height.
- Section 1: 1800-unit diameter, 45+3-unit height.
- Section 2: 1400-unit diameter, 900-unit height.
- Bottom section: 1000-unit height.

The vessel is equipped with various instruments and components:

- Instruments: N2, N6, M2, K3, K4, N1, K1, K2, N5, K5a, K6a, M1, K5b, K6b, N3, and N4.
- Components: DEMISTER, TRUNNION 2x, and TAILLUG 1X.

The vessel is supported by a base with a diameter of Ø2080/1680. The drawing includes a REF. T.L. (Reference True Level) line.

NOTE - ALL DIMENSION IN MILLIMETERS

5.0 OUTPUT REQUIRED

6.0 VESSEL CALCULATIONS

Cylinder1

Calculations for Internal Pressure

Thickness of Cylindrical Shell as per UG-27

$$t = (P \cdot R) / (S \cdot E - 0.6 \cdot P) = (40.0 \cdot 25.0) / (20.0 \cdot 1.0 - 0.6 \cdot 40.0) = -250.0 \text{ in}$$

$$t = -250.0 + \text{Corrosion Allowance} = -250.0 + 60.0 = -190.0 \text{ in}$$

Cylinder2

Calculations for Internal Pressure

Thickness of Cylindrical Shell as per UG-27

$$t = (P \cdot R) / (S \cdot E - 0.6 \cdot P) = (40.0 \cdot 25.0) / (20.0 \cdot 1.0 - 0.6 \cdot 40.0) = -250.0 \text{ in}$$

$$t = -250.0 + \text{Corrosion Allowance} = -250.0 + 30.0 = -220.0 \text{ in}$$

MAWP

Weight of Pressure Vessel (entire Weight)

Center of Gravity with Fluid or without fluid

Nozzle Schedule Table

An outline drawing

AREA

		Abbreviation	Unit
0	km ²		square kilometer
1	m ²		square meter
2	dm ²		square decimeter
3	cm ²		square centimeter
4	mm ²		square millimeter
5	ha		hectare
6	a		are
7	ca		centiare
8	mile ²		square mile
9	in ²		square inch
10	yd ²		square yard
11	ft ²		square foot
12	ro		rood
13	acre		acre
14	nautical mile ²		square nautical mile

TEMP

		Abbreviation	Unit
0	°C		Celsius
1	°F		Fahrenheit
2	K		Kelvin
3	°Ré		Reaumur
4	°N		Newton
5	°Ra		Rankine

ANGLE

		bbreviation	Unit
0	°		Degree
1	grad(gon)		Grad
2	Angular mil		Angular mil
3	'		Minute of arc
4	rad		Radian
5	"		Second of arc

DISTANCE

		Abbreviation	Unit
0	km		kilometer
1	m		meter
2	dm		decimeter
3	cm		centimeter
4	mm		millimeter
5	mi		mile
6	in		inch
7	ft		foot
8	yd		yard
9	nautical mile		nautical mile

FREQUENCY

		Abbreviation	Unit
0	Hz		Hertz
1	KHz		Kilohertz
2	MHz		Megahertz
3	GHz		Gigahertz

MAX

[illegible]

PIPE

	4	0.125	0.405	0.307	10S	0.049	0.1863
0	5	0.125	0.405	0.269	40	0.068	0.2447
1	6	0.125	0.405	0.269	STD	0.068	0.2447
2	7	0.250	0.540	0.410	10	0.065	0.3297
3	8	0.250	0.540	0.410	10S	0.065	0.3297
4	9	0.250	0.540	0.364	40	0.088	0.4248
5	10	0.250	0.540	0.364	STD	0.088	0.4248

PRESSURE

	Abbreviation	Unit
0	psi	Pound Per Square Inch
1	in Hg	Inch of Mercury
2	mm Hg	Millimeters of Mercury
3	ft H2O	Ftch of Mercury
4	in H2O	Milimeters of Mercury
5	torr	Torr
6	atm	Atmosphere
7	bar	Bar
8	mbar	millibar
9	kg / cm2	kg per square centimeter
10	kPa	kilopascal
11	Pa	pascal

WEIGHT

	Abbreviation	Unit
0	t	tonne
1	kg	kilogram
2	hg	hectogram
3	g	gram
4	dg	decigram
5	cg	centigram
6	mg	milligram
7	µg	microgram
8	carat	carat
9	grain	grain
10	oz (av)	ounce avoirdupois
11	lb (av)	pound avoirdupois
12	cwt(UK)	long hundredweight
13	cwt(US)	short hundredweight
14	ton(UK)	long ton
15	ton(US)	short ton
16	st(UK)	stone

SPEED

	Abbreviation	Unit
0	km/h	kilometer per hour
1	m/s	meter per second
2	mph	mile per hour

VOLUME

	Abbreviation	Unit
0	m ³	cubic meter
1	dm ³	cubic decimeter
2	cm ³	cubic centimeter
3	l	liter
4	dl	deciliter
5	cl	centiliter
6	ml	milliliter
7	fl oz(UK)	fluid ounce(UK)
8	fl oz(US)	fluid ounce(US)
9	in ³	cubic inch
10	ft ³	cubic foot
11	yd ³	cubic yard
12	gal(UK)	gallon uk
13	gal(US)	gallon us
14	bbl	petroleum barrel
15	pt(imp)	pint(UK)
16	pt(US fl)	fluid pint(US)
17	pt(US dry)	dry pint(US)