




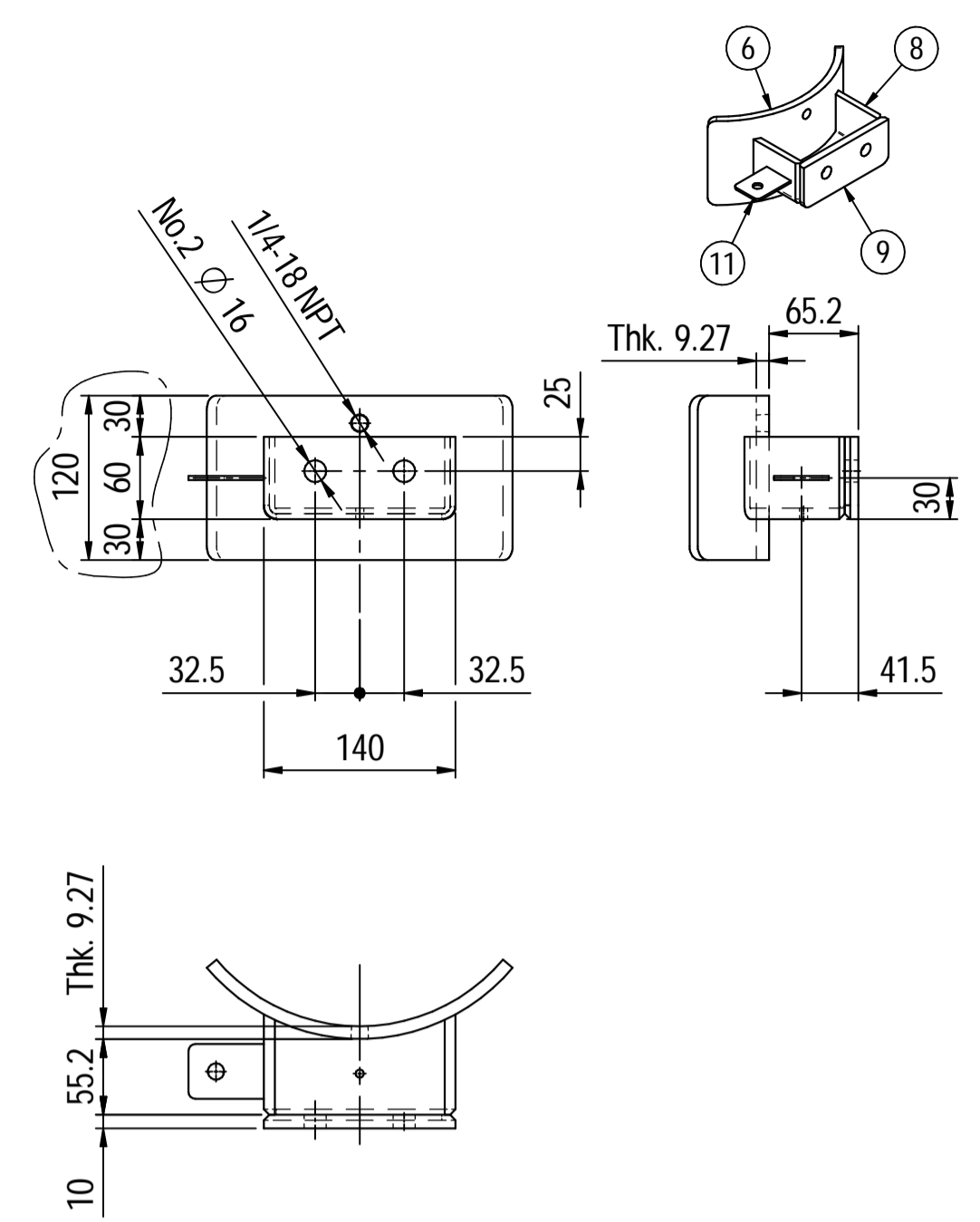


OWNER:  شرکت سست و سویی توهمه ایران (سهامی خاص)	BUSHEHR PETROCHEMICAL COMPANY MEG PLANT						EPC CONTRACTOR:  Chagalesh-Enerchimi-Steam Joint Venture BUPC-MEG PLANT PROJECT				
	PULSATION DAMPER DETAIL DRAWING FOR NITROGEN GAS BOOSTER										
MC :									Project	Area	Phase
Owner Document Number: 17811-23C	BU	20	VD	303	ME	DWG	0079	Rev.:	Page		
								02	1 of 6		

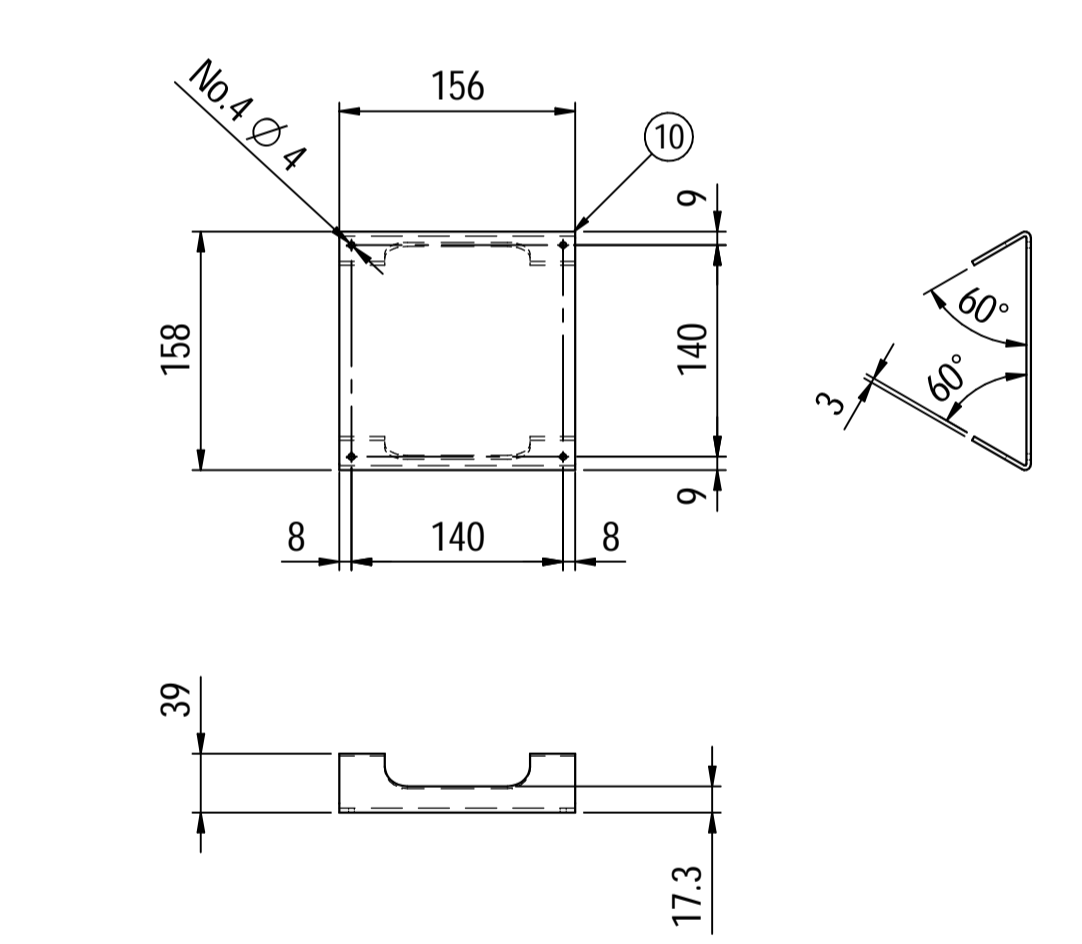
PULSATION DAMPER DETAIL DRAWING FOR NITROGEN GAS BOOSTER

Rev.	Date	Purpose of Issue	Prepared	Checked	Approved	AC Code
02	06/05/2022	For approval	KP	CL	JR	
01	26/04/2022	For approval	KP	CL	JR	
00	06/04/2022	For approval	KP	CL	JR	
				Class: 1		Phase: P

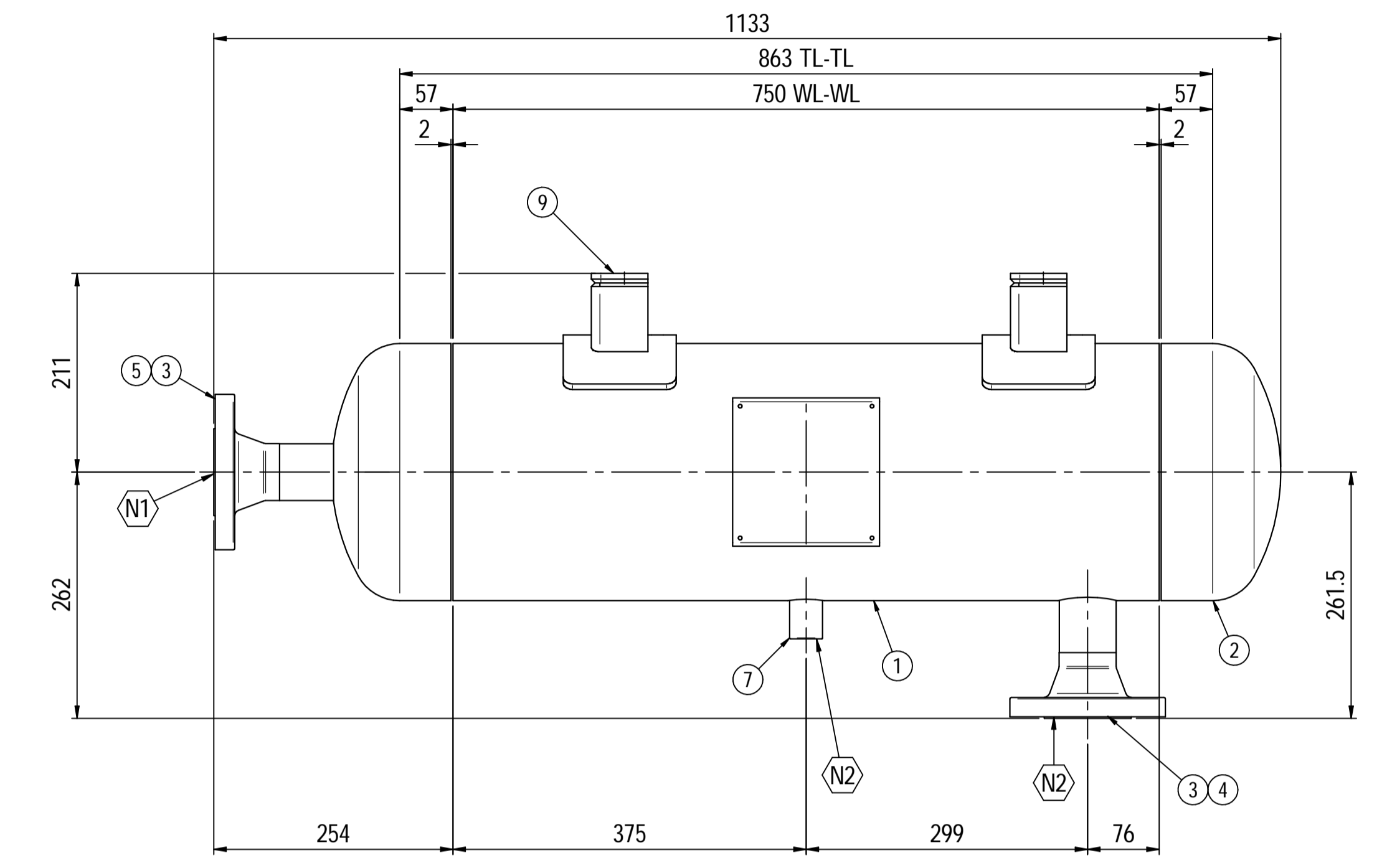
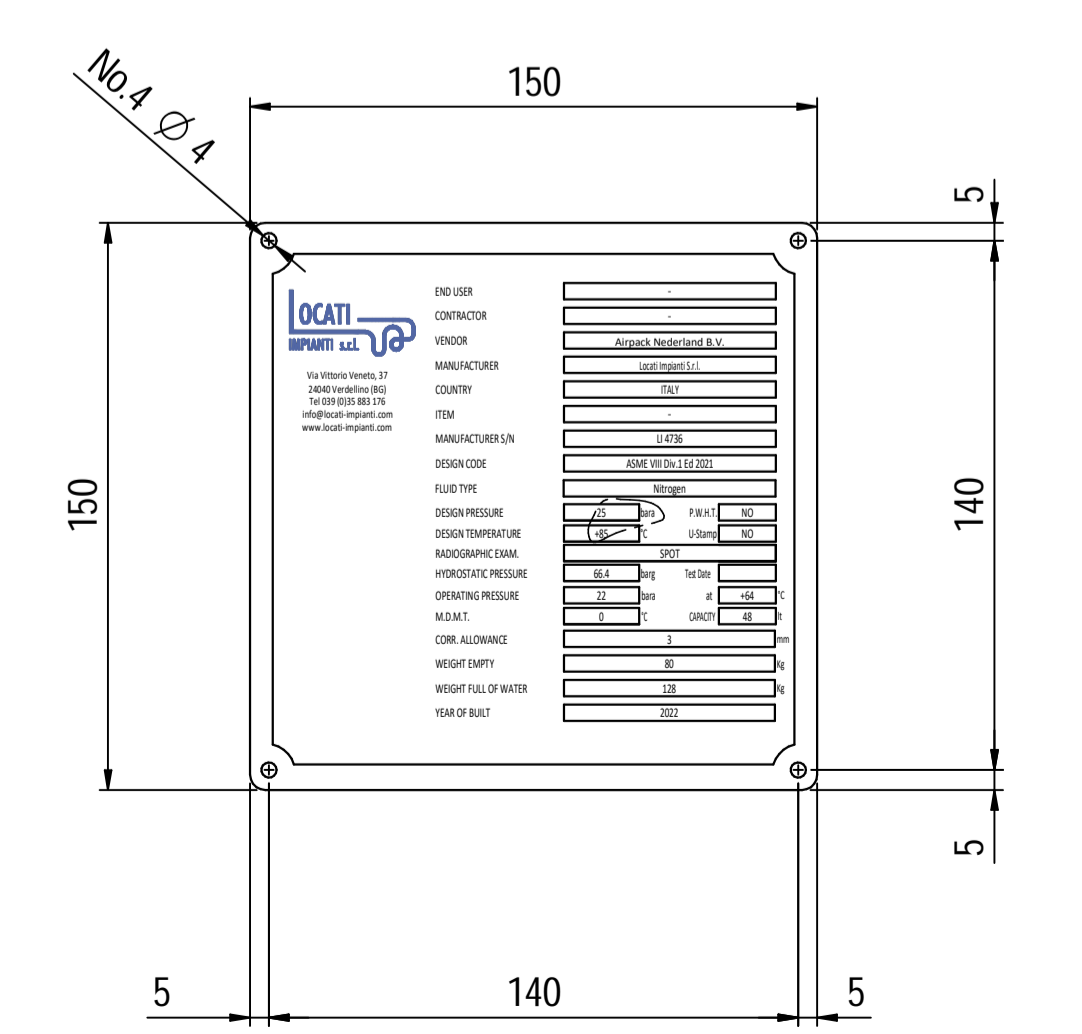
Supports detail



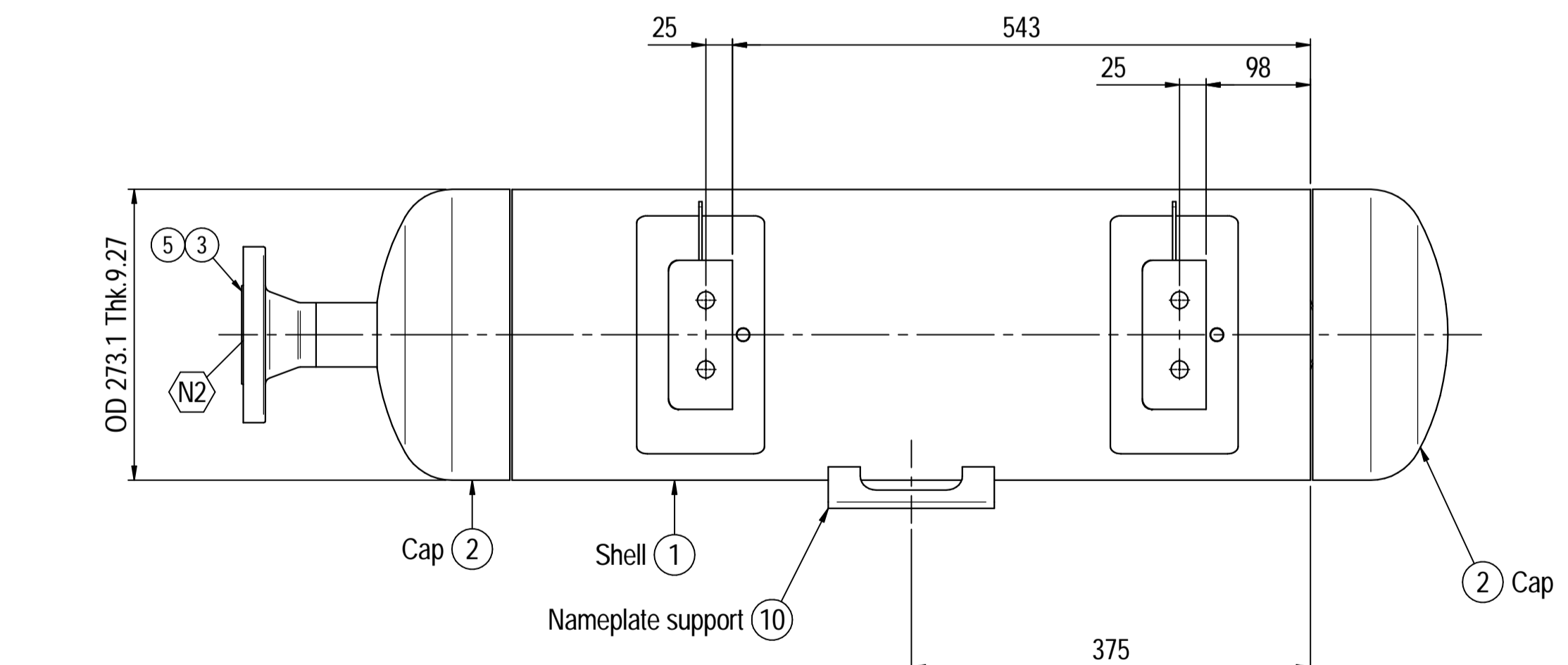
Nameplate detail



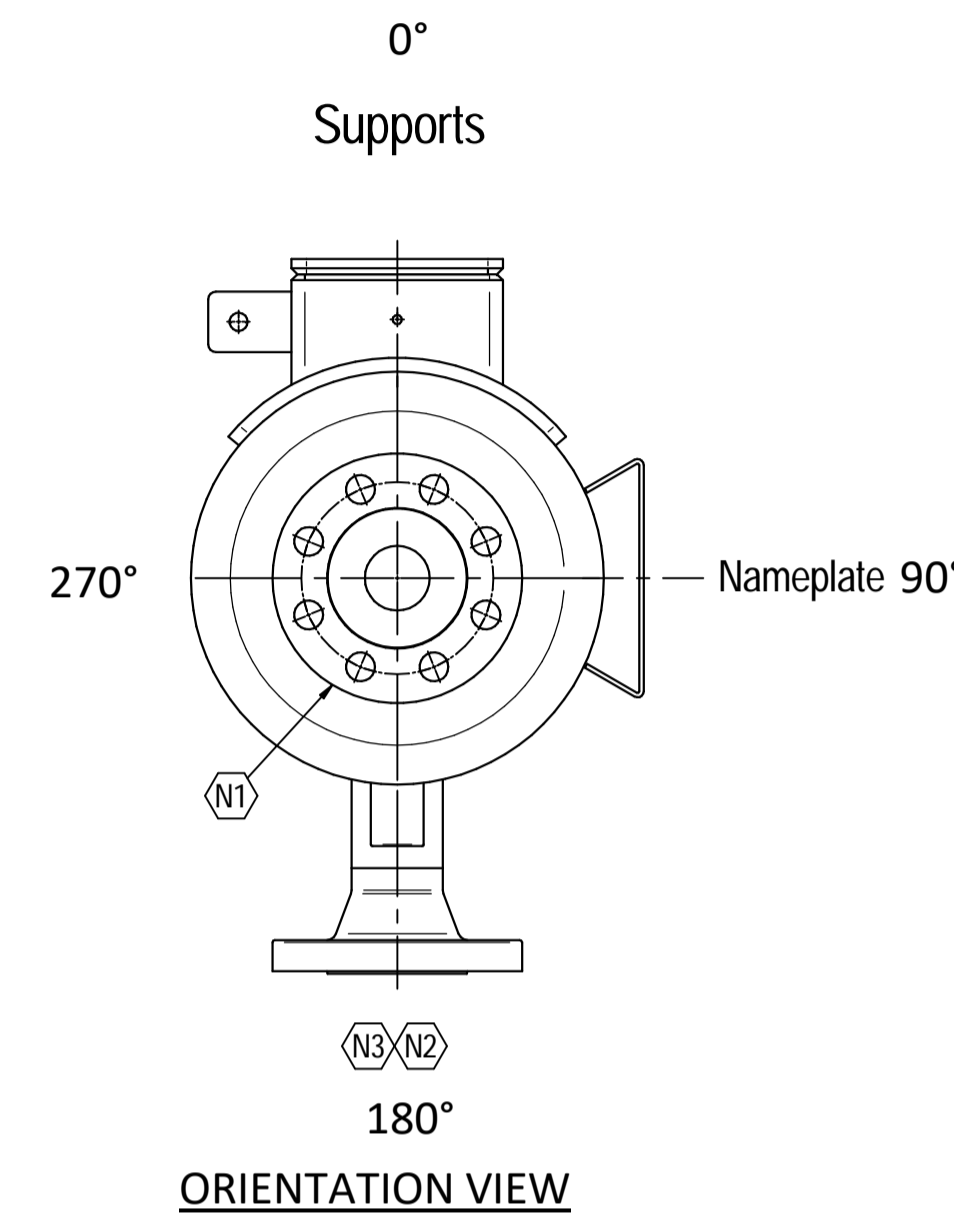
Nameplate detail scale 1:2



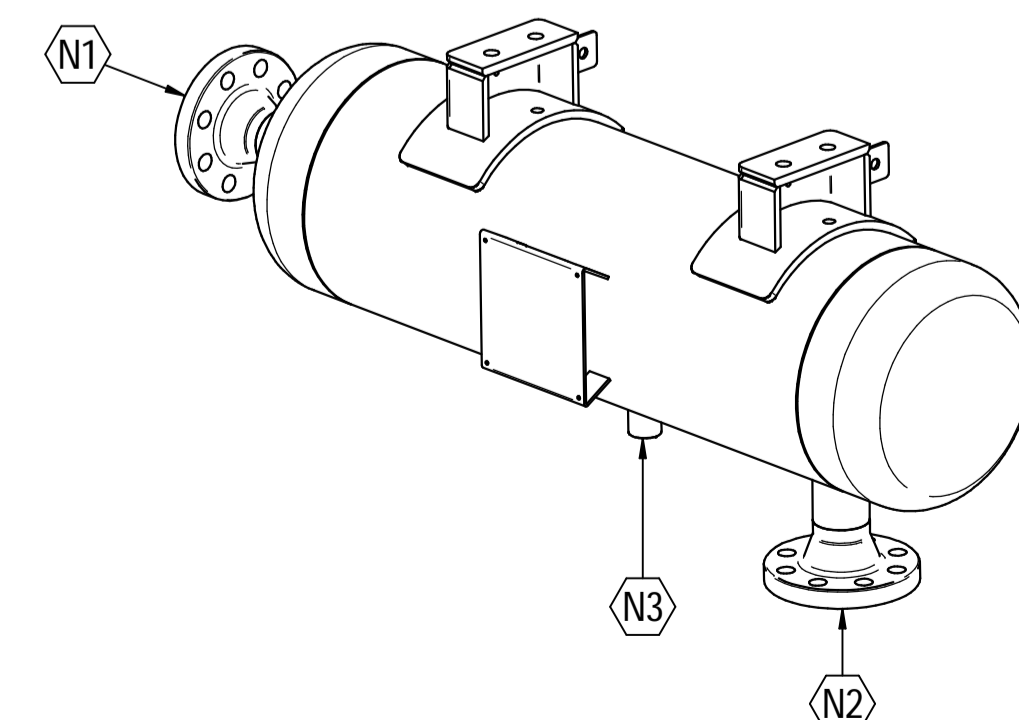
ELEVATION VIEW



PLAN VIEW



ISOMETRIC VIEW scale 1:8



Material List				
Pos.	Q.ty	Description	Mat.	Cert.
1	1	Shell by seamless pipe 10" Sch.STD L=750	SA106 Gr.B	3.1
2	2	Cap 10" Sch40	A234 WPB	3.1
3	2	Flange 2" WN #300 RF Sch.160	A105	3.1
4	1	Seamless pipe 2" Sch160 L=68	A106 GrB	3.1
5	1	Seamless pipe 2" Sch160 L=65	A106 GrB	3.1
6	2	Pad by pipe 10" Sch.STD	A106 Gr.B	3.1
7	1	Coupling 1/2" NPT #6000	A105	3.1
8	2	Plate 74.5x231 Thk.8	A516 70	3.1
9	2	Plate 16x65 Thk.10	A516 70	3.1
10	1	Nameplate support 234 x 156 thk3mm	S275 JR	3.1
11	2	Earthing Plate 55 x 40 Thk.3	A240 TP316L	

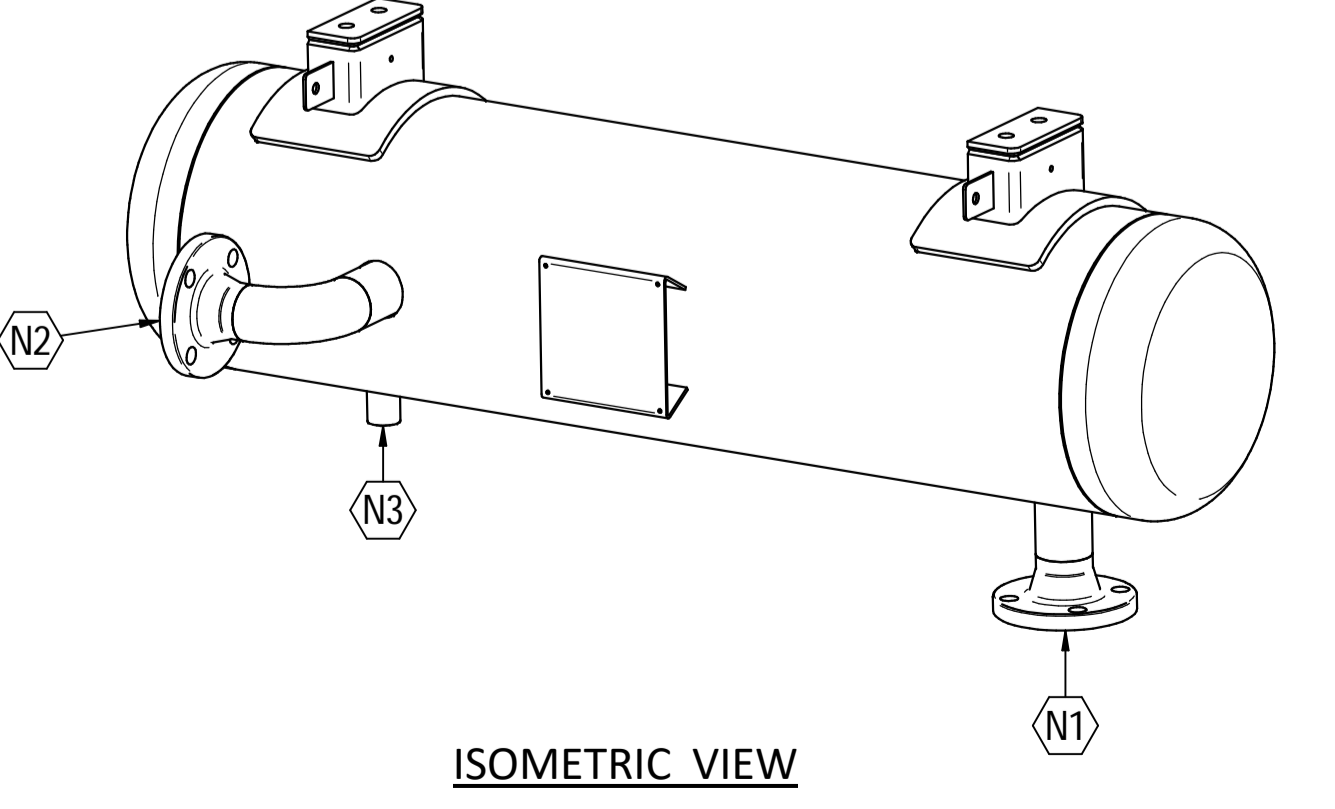
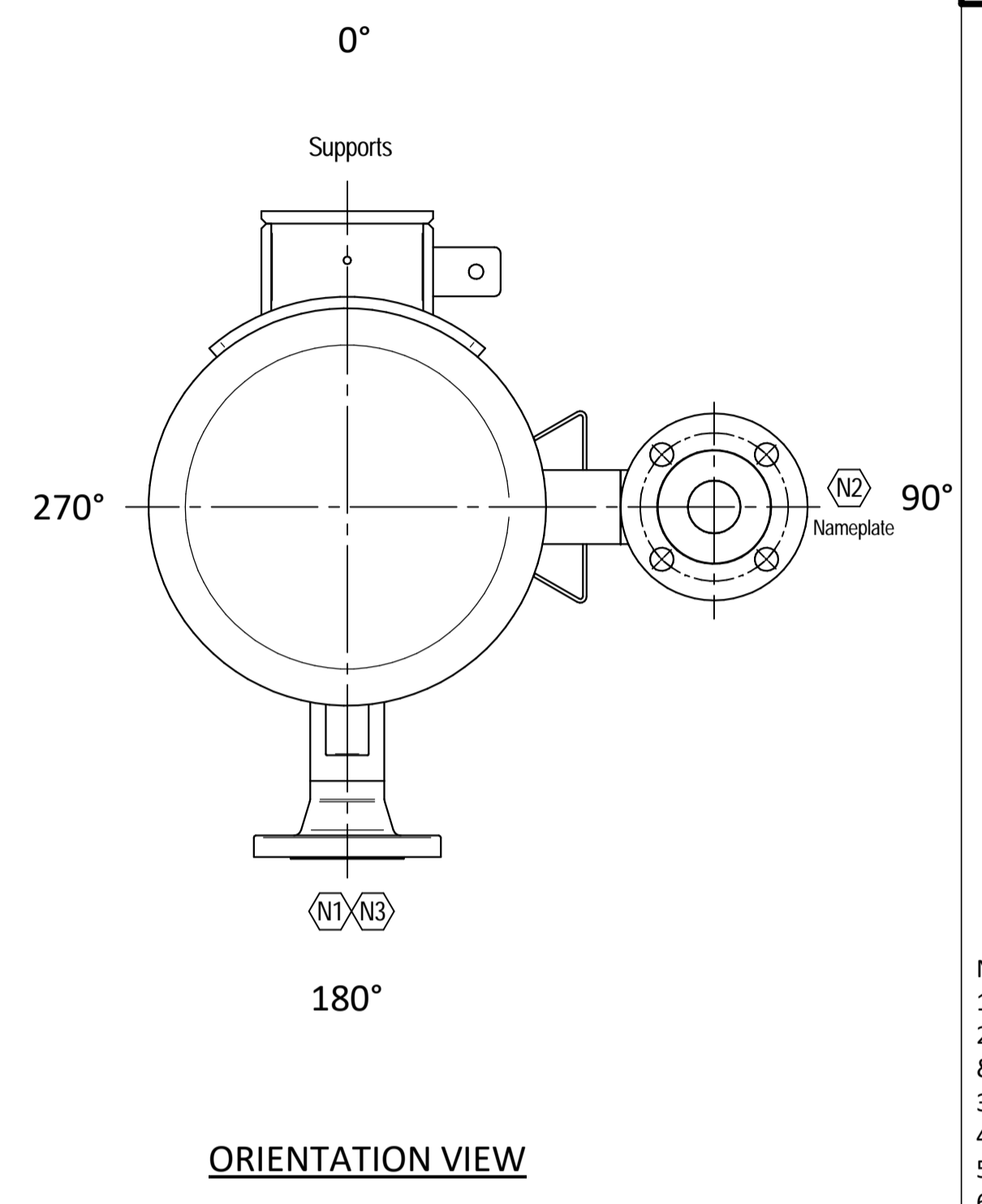
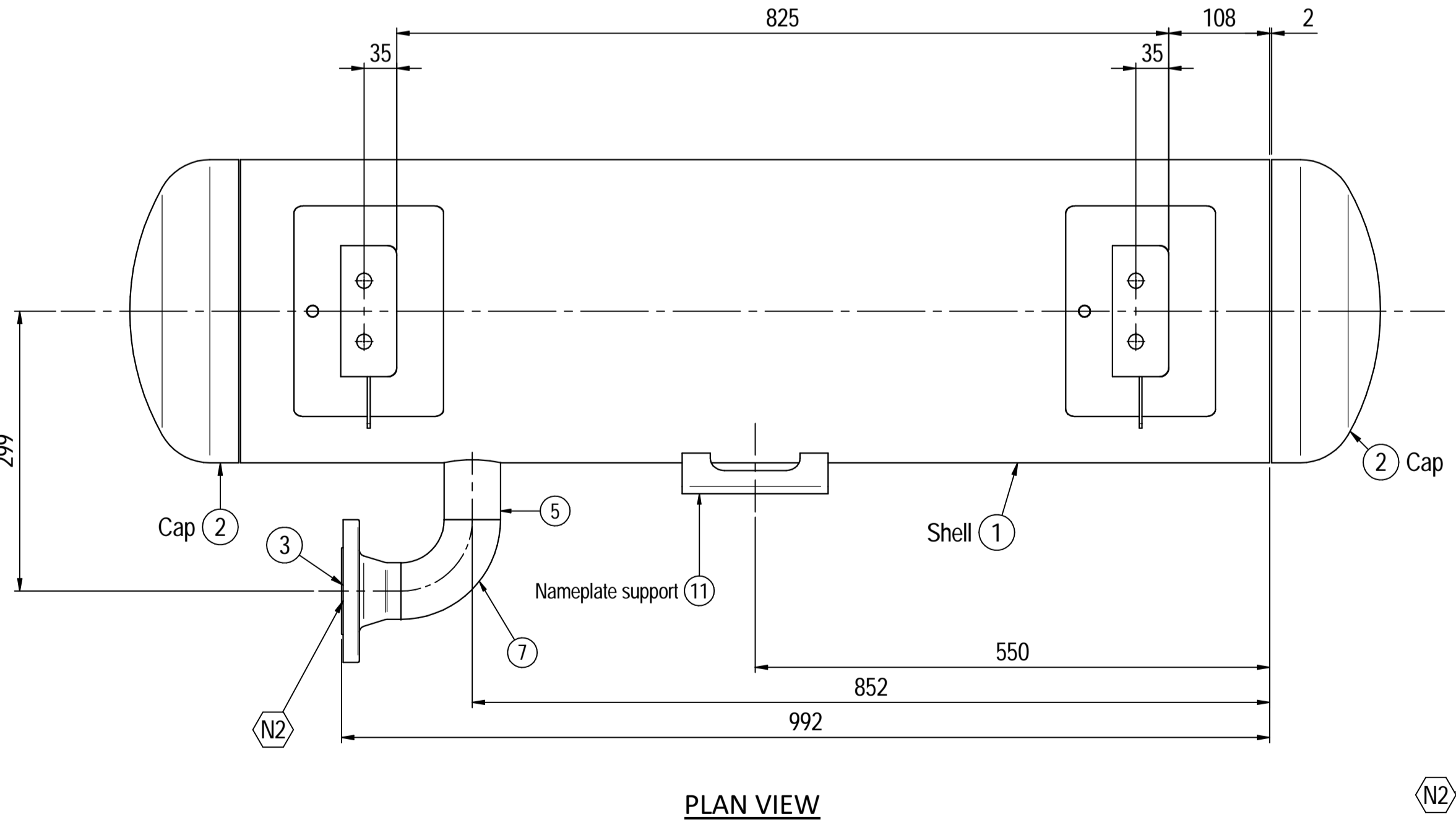
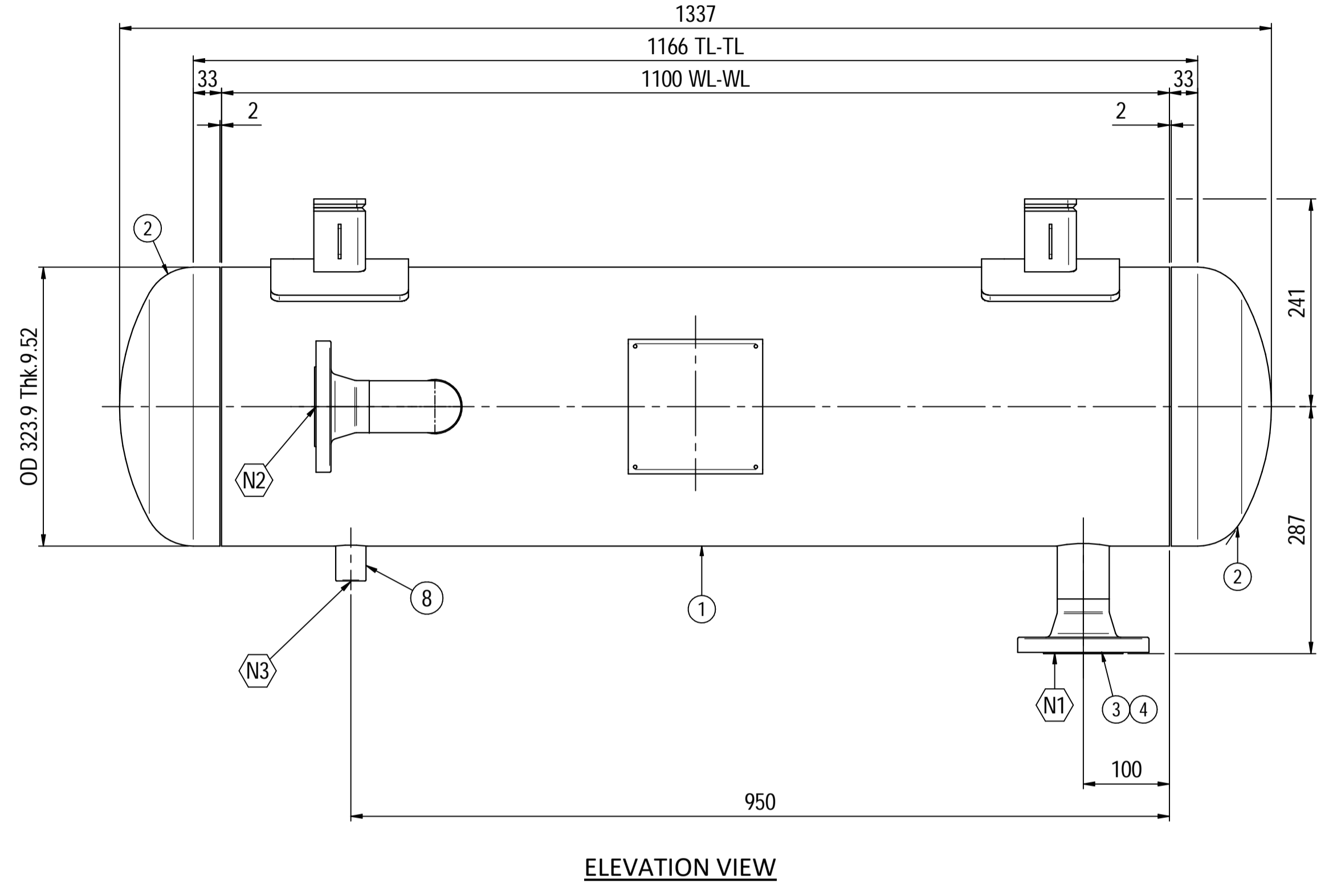
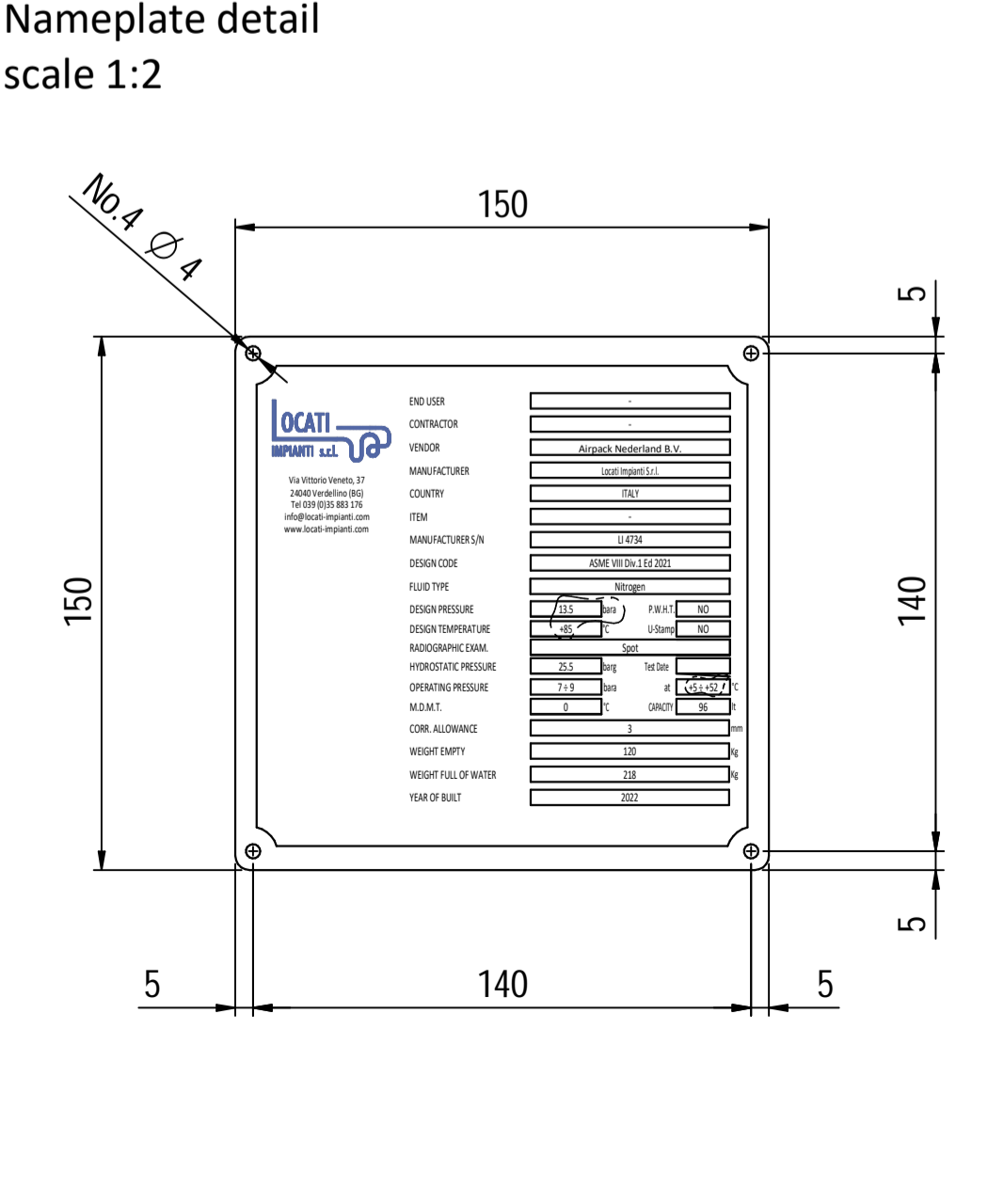
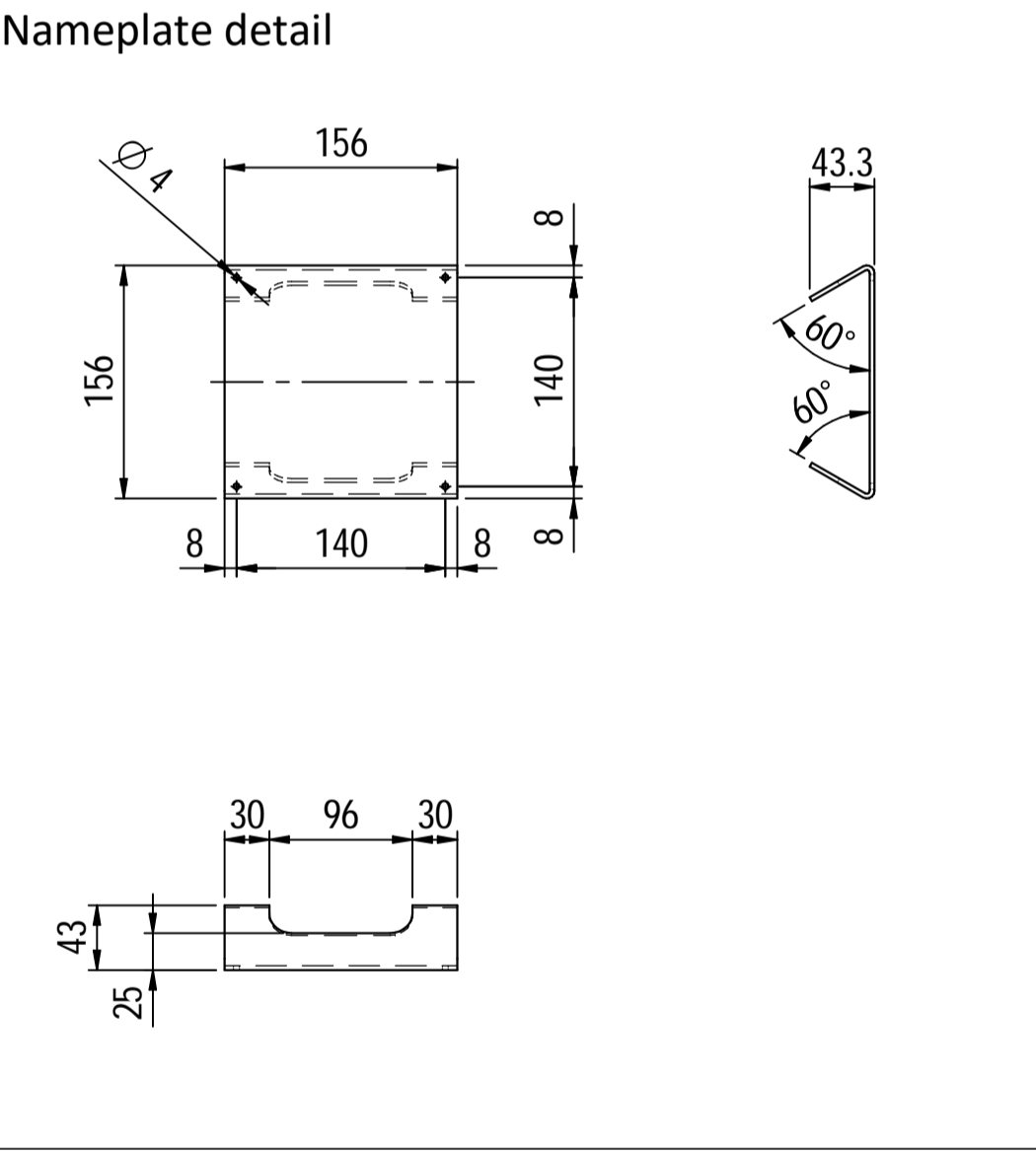
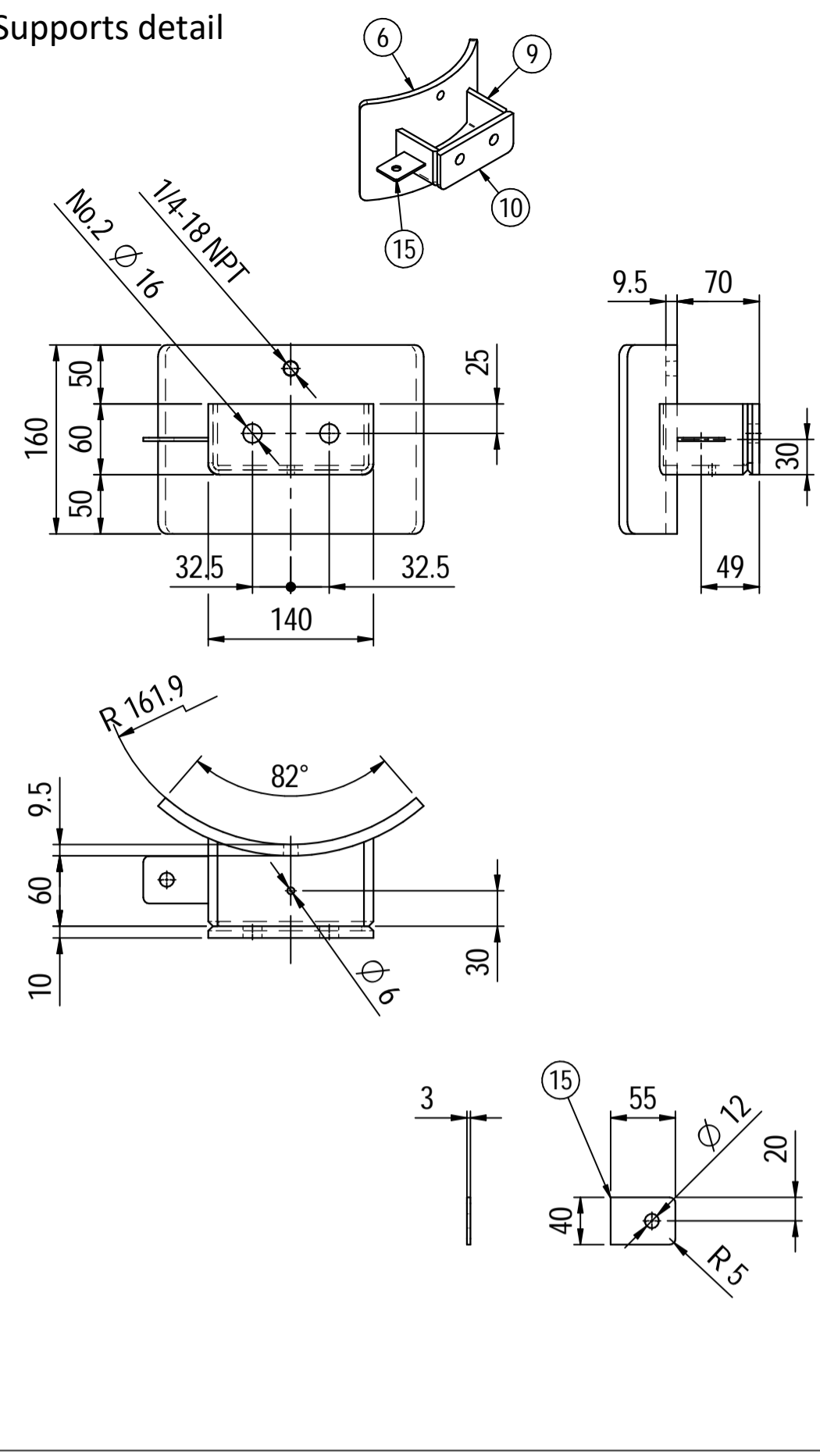
Note:
 1) Governing measurement S.I. unless otherwise specified;
 2) Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation;
 3) Material: certification 3.1 EN 10204;
 4) All internal edge shall be rounded off;
 5) Nozzle flanges in accordance with ASME B16.5: 2013;
 6) Flange fittings in accordance with ASME B16.9: 2012;
 7) The flange dimensions are in accordance to ASME B16.5: 2013;
 8) All fillet welds not detailed on "WELDING MAP" or drawing shall have the weld; throated equal to 0,7 times the minimum thickness to be welded;
 9) All welds are continuous except where indicate;
 10) See document C220006CLC012 for vessel calculation.

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
N3	1	DRAIN	1/2"	38.1	8.38	#6000	-	NPT-F	-	-	8.5 + 10
N2	1	AIR OUTLET	2"	60.3	8.74	#300	WN	RF	-	-	8.5 + 10
N1	1	AIR INLET	2"	60.3	8.74	#300	WN	RF	-	-	8.5 + 10

DATI DI PROGETTO / Design data			
FLUIDO	Nitrogen	COLLAUDO	Test
STATO FISICO DEL FLUIDO	Gas	NATIONAL BOARD REGISTRATION	NO
CODICE DI CALCOLO	ASME VIII Div. 1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO	23 bara	SERVIZIO LETALE	NO
PRESSIONE DI PROGETTO	(25bara (26 barg))	X-RAY	RT examination
PRESSIONE ESTERNA	NO	LICUIDI PENETRANTI	NO
PRESSIONE DI PROVA IDRAULICA	66.4 barg	Dye penetrant extension	NO
TEMPERATURA DI ESERCIZIO	+83 °C	ULTRASUONI	NO
TEMPERATURA DI PROGETTO	+85 °C	ULTRASONIC extension	NO
SOVRAMEZZA	3 mm	CONTROLLO MAGNETOSCOPICO	NO
SOVRAMEZZA DI CORROSIONE	3 mm	Magnetic particle examination	NO
CAPACITA'	48 l	TALONE DI SALDATURA	NO
EFFICIENZA GIUNTI	0.85	PROCEDIMENTO DI SALDATURA	See doc: C220006WBK013
MAWP @ Design Temperature	38.12 barg @ +85 °C	TIPO DI FONDO	Head type
MAWP(EXT)	NO	FORMAZIONE FONDO	CAP
MDMT @ MAWP	0 °C @ 38.12 barg	Head form	HOT
TRATTAMENTO TERMICO	NO	PESO A VUOTO	80 kg
P.W.H.T.	NO	PESO IN ESERCIZIO	80 kg
IMPACT TEST	NO	PESO PIENO D'ACQUA	128 kg
Exemption	NO	Full water weight	
		DATI DEL VENTO	
		Wind datas	
		DATI SISMICI	
		Seismological datas	

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
02	Modified as per Client comments	CM	MV	GL	15/04/2022
01	Modified shell length	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

Oggetto/Object N2 PULSATION DAMPER 2nd STAGE DISCHARGE				
Scala/Scale	1 : 5	Formato/Size	A1	
Comm. N°/Job No.	C220006	Foglio/Sheet	1 - 1	
Cliente/Customer	Airpack Nederland B.V.			
Ord. No.	18498-VV-0901			
Dis. N°/Dwg No.	C220006DWG006	Rev.	02	



Material List				
Pos.	Q.ty	Description	Mat.	Cert.
1	1	Shell by seamless pipe 12" Sch.STD L=1100	SA106 Gr.B	3.1
2	2	Reduced cap 12" Sch.STD	SA234 WPB	3.1
3	2	Flange 2" WN 150# Sch160	SA105	3.1
4	1	Seamless pipe 2" Sch160 L=74	A106 GrB	3.1
5	1	Seamless pipe 2" Sch.160 L=73	A106 GrB	3.1
6	2	Pad by pipe 12" Sch.STD	A106 Gr.B	3.1
7	1	Seamless elbow 2" 90° LR Sch160	A234 WPB	3.1
8	1	Coupling 1/2" NPT #6000	A105	3.1
9	2	Plate 74.5x231 Thk.8	A516 70	3.1
10	2	Plate 16x65 Thk.10	A516 70	3.1
11	1	Nameplate support 156x241 Thk.3mm	A516 70	3.1
15	2	Earthing Plate 55 x 40 Thk.3	A240 TP316L	

Note:

- 1) Governing measurement S.I. unless otherwise specified;
- 2) Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation;
- 3) Material: certification 3.1 EN 10204;
- 4) All internal edge shall be rounded off;
- 5) Nozzle flanges in accordance with ASME B16.5: 2013;
- 6) Flange fittings in accordance with ASME B16.9: 2012;
- 7) The flange dimensions are in accordance to ASME B16.5: 2013;
- 8) All fillet welds not detailed on "WELDING MAP" or drawing shall have the weld; throated equal to 0,7 times the minimum thickness to be welded;
- 9) All welds are continuous except where indicate;
- 10) See document C220006CLC009 for vessel calculation.

ITEM	QTY	SERVICE	SIZE	PIPE O.D.	THK	RATING	FLANGE TYPE	FACE	O.D.	THK.	PAD	Tc
N3	1	DRAIN	1/2"	38.1	8.38	#6000	-	NPT-F	-	-	-	8.5 + 10
N2	1	AIR OUTLET	2"	60.3	8.74	#150	WN	RF	-	-	-	8.5 + 10
N1	1	AIR INLET	2"	60.3	8.74	#150	WN	RF	-	-	-	8.5 + 10

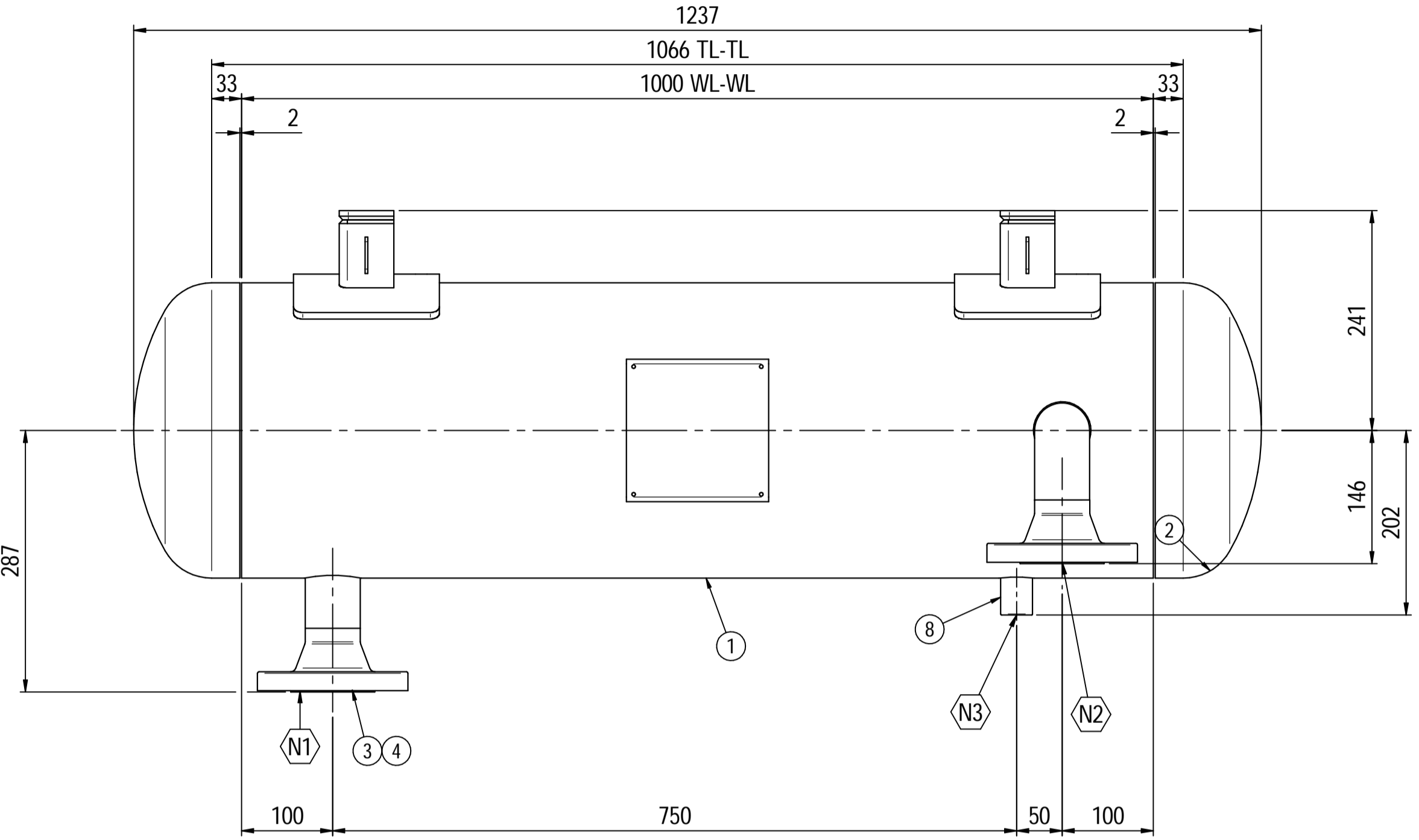
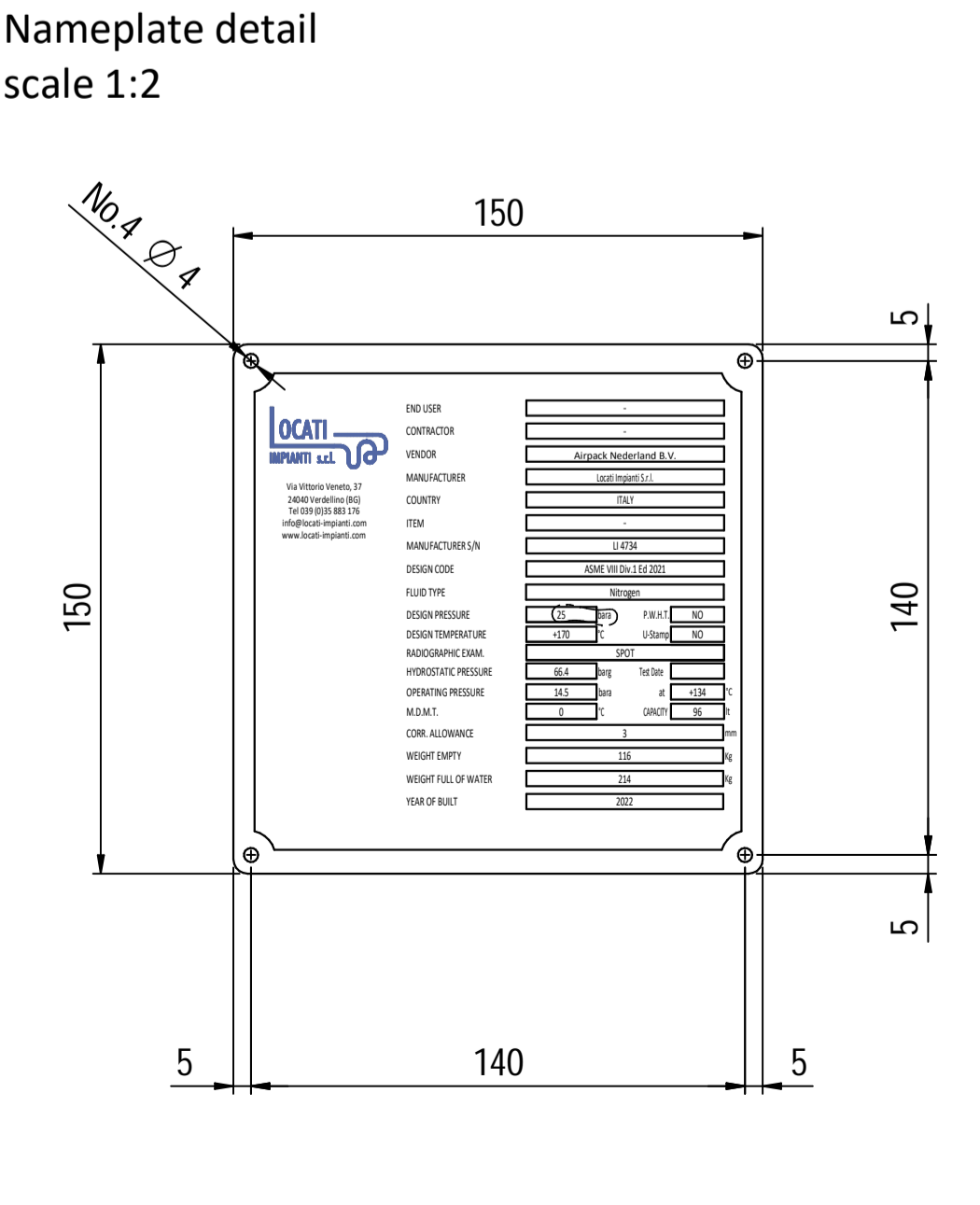
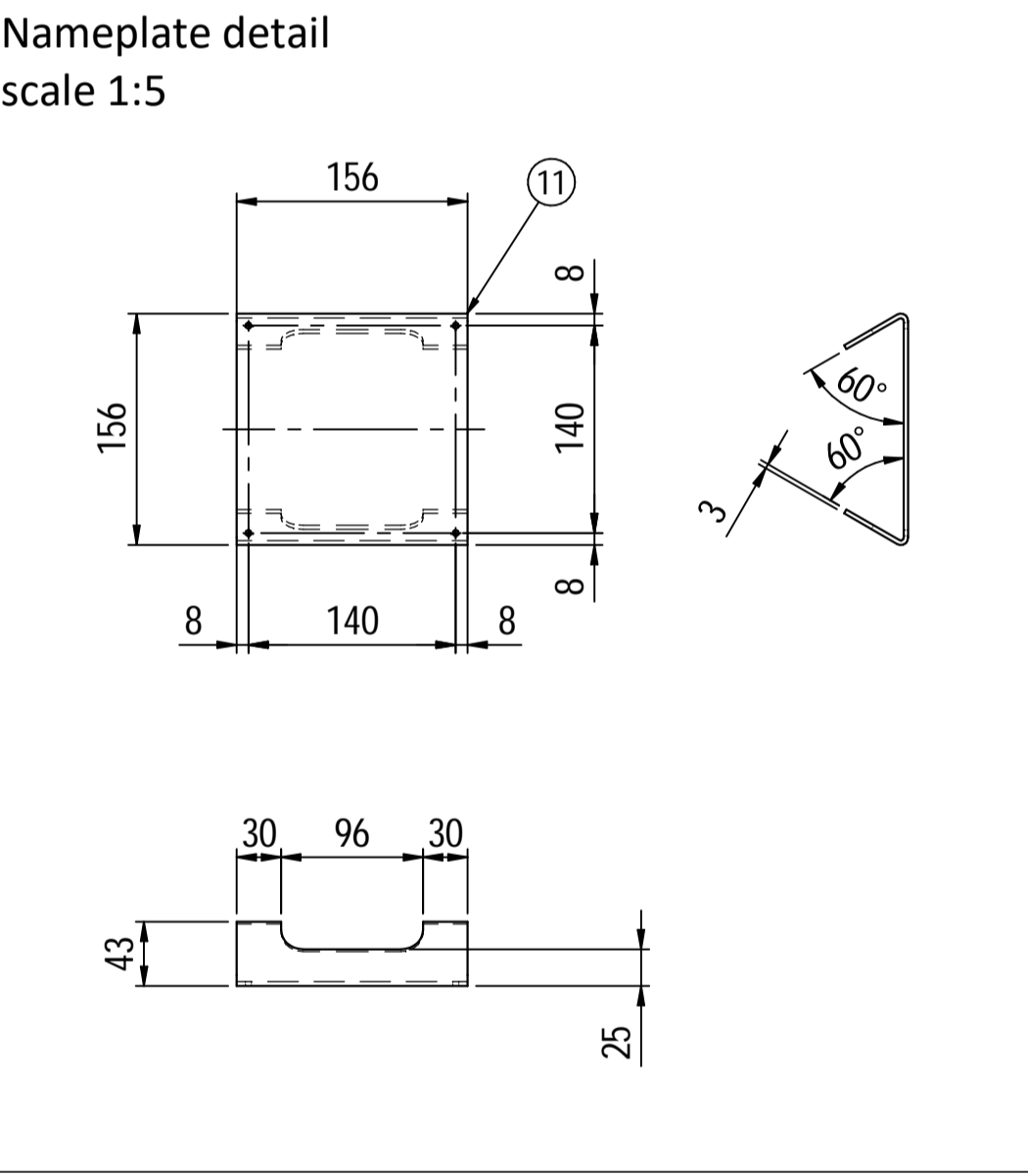
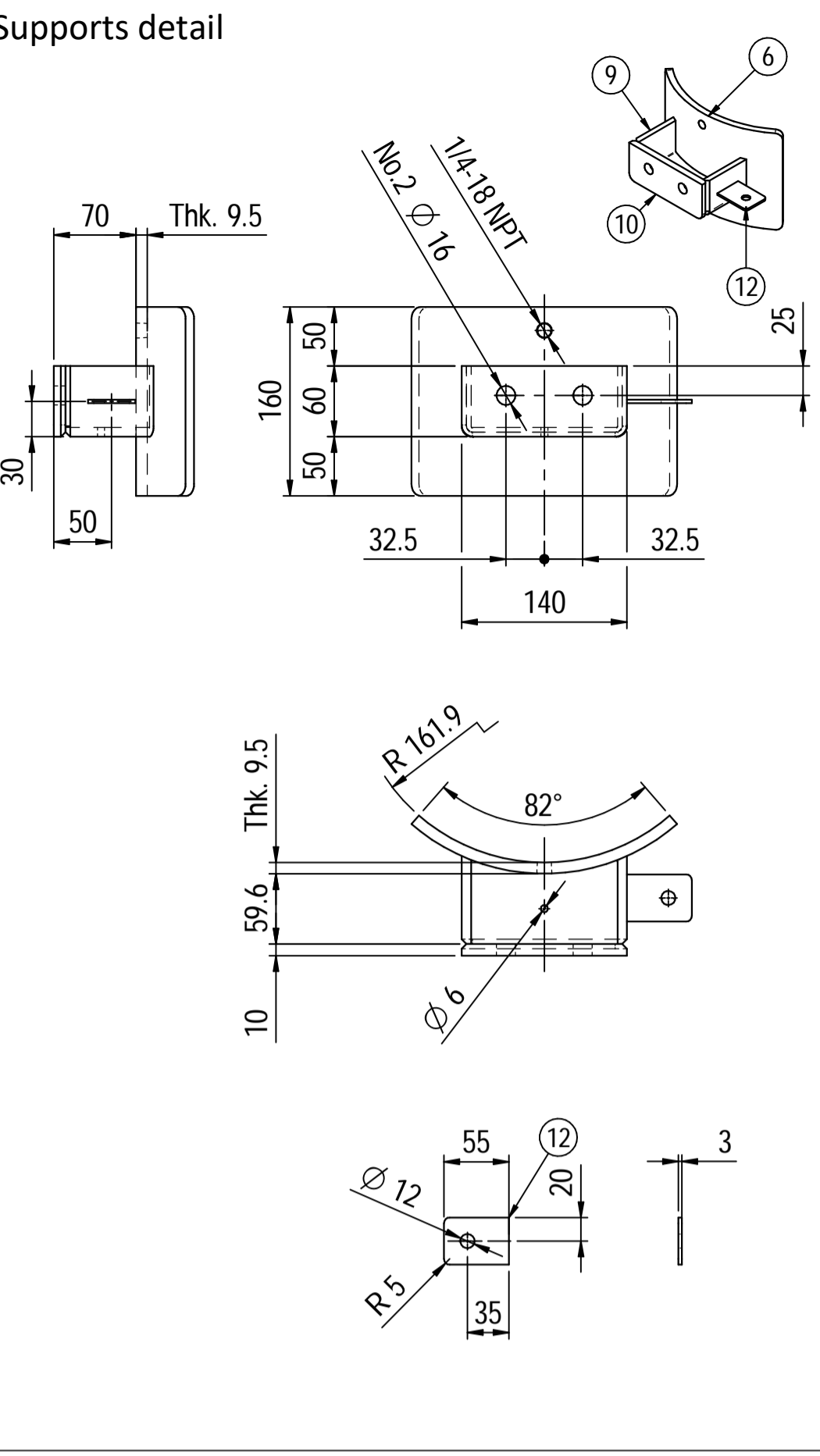
DATI DI PROGETTO / Design data			
FLUIDO	Nitrogen	COLLAUDO	Lloyd Register
STATO FISICO DEL FLUIDO	Gas	Test	
CODICE DI CALCOLO	ASME VIII Div. 1 Ed.2021	NATIONAL BOARD REGISTRATION	NO
PRESSIONE DI ESERCIZIO	7 + 9 bara	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI PROGETTO	13.5 bara (14.5 barg)	SERVIZIO LETALE	NO
PRESSIONE ESTERNA	NO	Lethal service	
PRESSIONE DI PROVA IDRAULICA	25.5 barg	EXTERNAL PRESSURE	NO
TEMPERATURA DI ESERCIZIO	+5 + +52 °C	LICUIDI PENETRANTI	NO
TEMPERATURA DI PROGETTO	+85 °C	Dye penetrant extension	
SOVRAMETALLO DI CORROSIONE	3 mm	ULTRASUONI	NO
CAPACITA'	96 l	Hydraulic test pressure	
EFFICIENZA GIUNTI	0.85	ULTRASONI	
MAWP @ Design Temperature	18.15 barg @ +85 °C	CONTROLLO MAGNETOSCOPICO	NO
MDMT @ MAWP	0 °C @ +18.15 barg	Magnetic particle examination	
TRATTAMENTO TERMICO	NO	TEMPERATURE DI SALDATURA	NO
IMPACT TEST	NO	Weld tests coupon	
		PROCEDIMENTO DI SALDATURA	See doc: C220006WBK013
		Welding procedure	
		TIPO DI FONDO	CAP
		Head type	
		FORMATURA FONDO	HOT
		Head form	
		PESO A VUOTO	120 kg
		Empty weight	
		PESO IN ESERCIZIO	120 kg
		Operating weight	
		PESO PIENO D'ACQUA	218 kg
		Full water weight	
		DATI DEL VENTO	
		Wind datas	
		DATI SISMICI	
		Seismological datas	

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
02	Modified as per Client comments	CM	MV	GL	15/04/2022
01	Modified straight flange length on cap	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

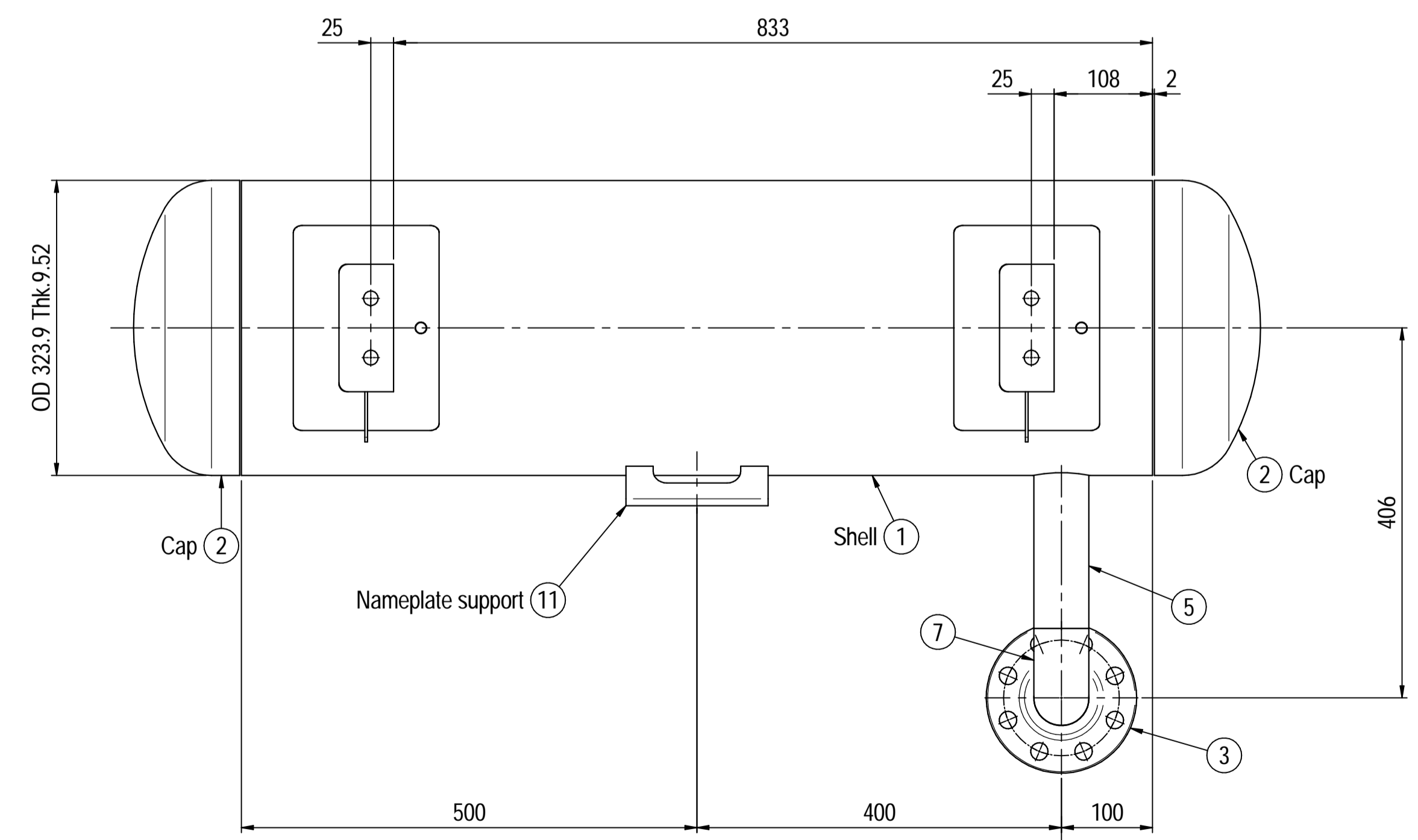
Objetto/Object: **N2 PULSATION DAMPER INLET**

Scala/Scale	1 : 5	Formato/Size	A1
Comm. N°/Job No.	C220006	Foglio/Sheet	1 - 1
Cliente/Customer	Airpack Nederland B.V.		
Ord. No.	18498-VV-0901		
Dis. N°/Dwg No.	C220006DWG003	Rev.	02

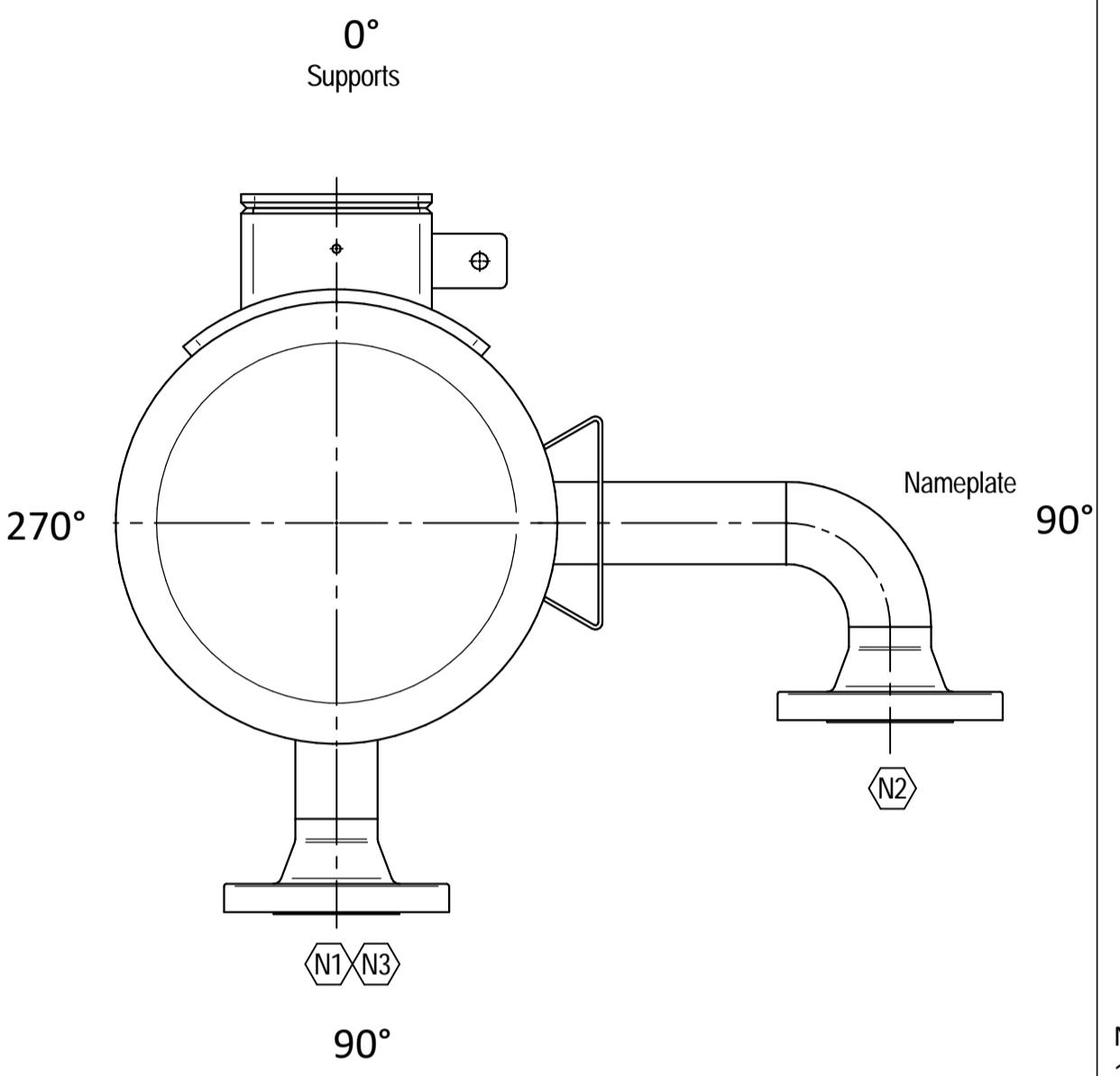
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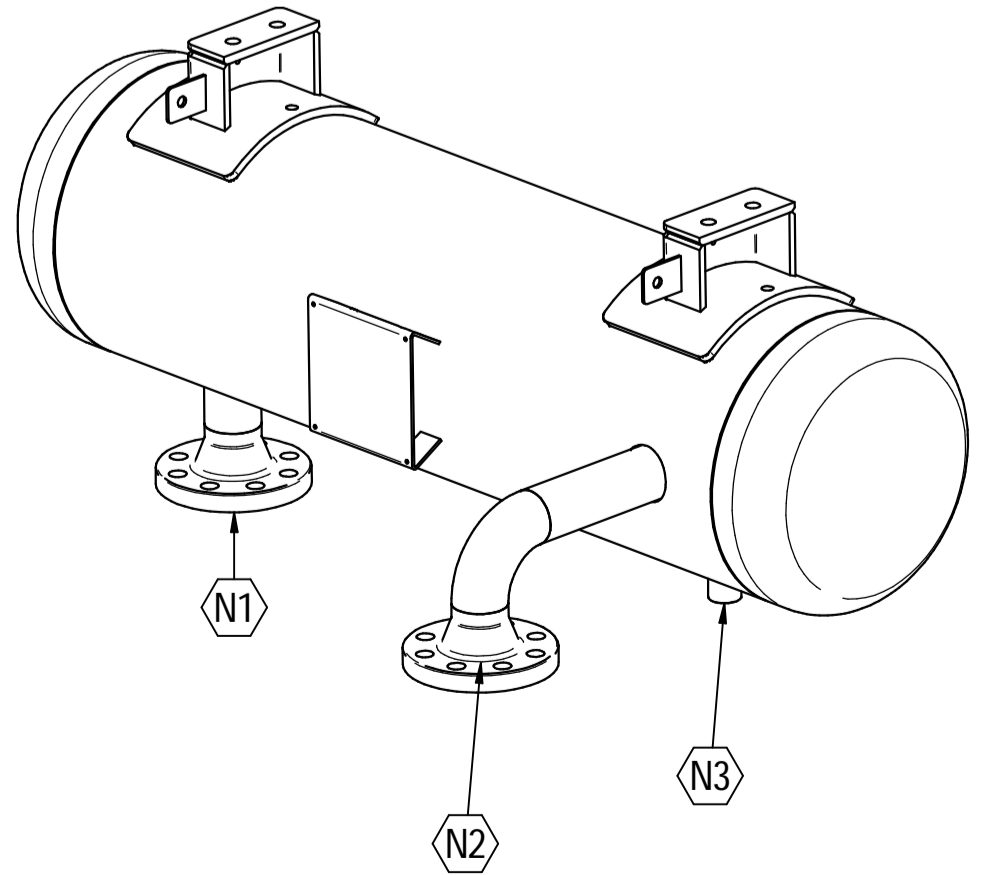
ELEVATION VIEW



PLAN VIEW



ORIENTATION VIEW



ISOMETRIC VIEW scale 1:8

Material List					
Pos.	Q.ty	Description	Mat.	Cert.	
1	1	Shell by pipe 12" Sch.STD L=1000	SA106 Gr.B	3.1	
2	2	Reduced cap 12" Sch.STD	SA234 WPB	3.1	
3	2	Flange 2" WN #300 RF Sch.160	A105	3.1	
4	1	Seamless pipe 2" Sch.160	A106 GrB	3.1	
5	1	Seamless pipe 2" Sch.160	A106 GrB	3.1	
6	2	Pad by pipe 12" Sch.STD	A106 Gr.B	3.1	
7	1	Seamless elbow 2" 90° LR Sch.160	A234 WPB	3.1	
8	1	Coupling 1/2" NPT #6000	A105	3.1	
9	2	Plate 74.5x231 Thk.8	A516 70	3.1	
10	2	Plate 16x65 Thk.10	A516 70	3.1	
11	1	Nameplate support 156x241 Thk.3mm	A516 70	3.1	
12	2	Earthing Plate 55 x 40 Thk.3	A240 TP316L		

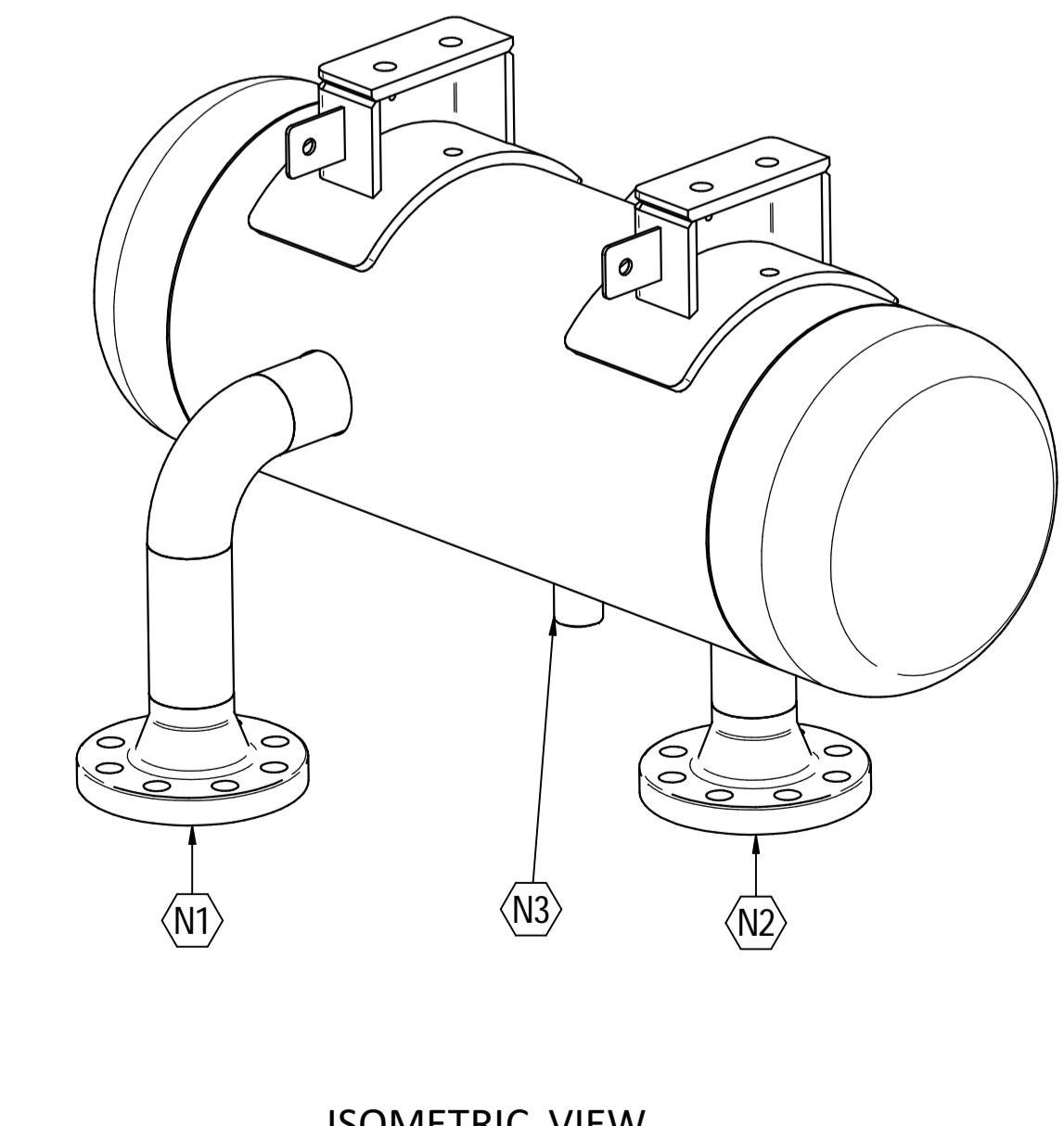
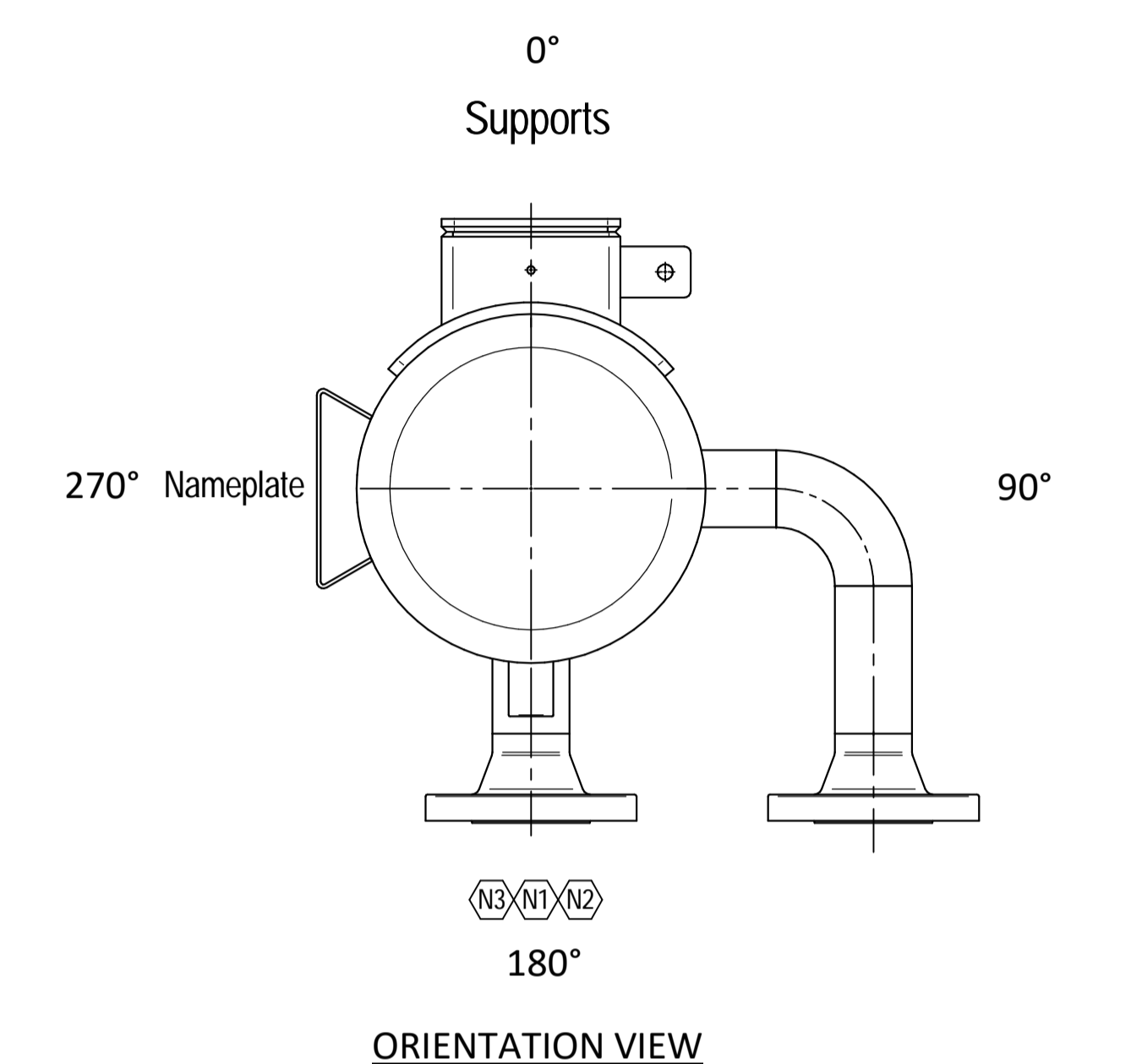
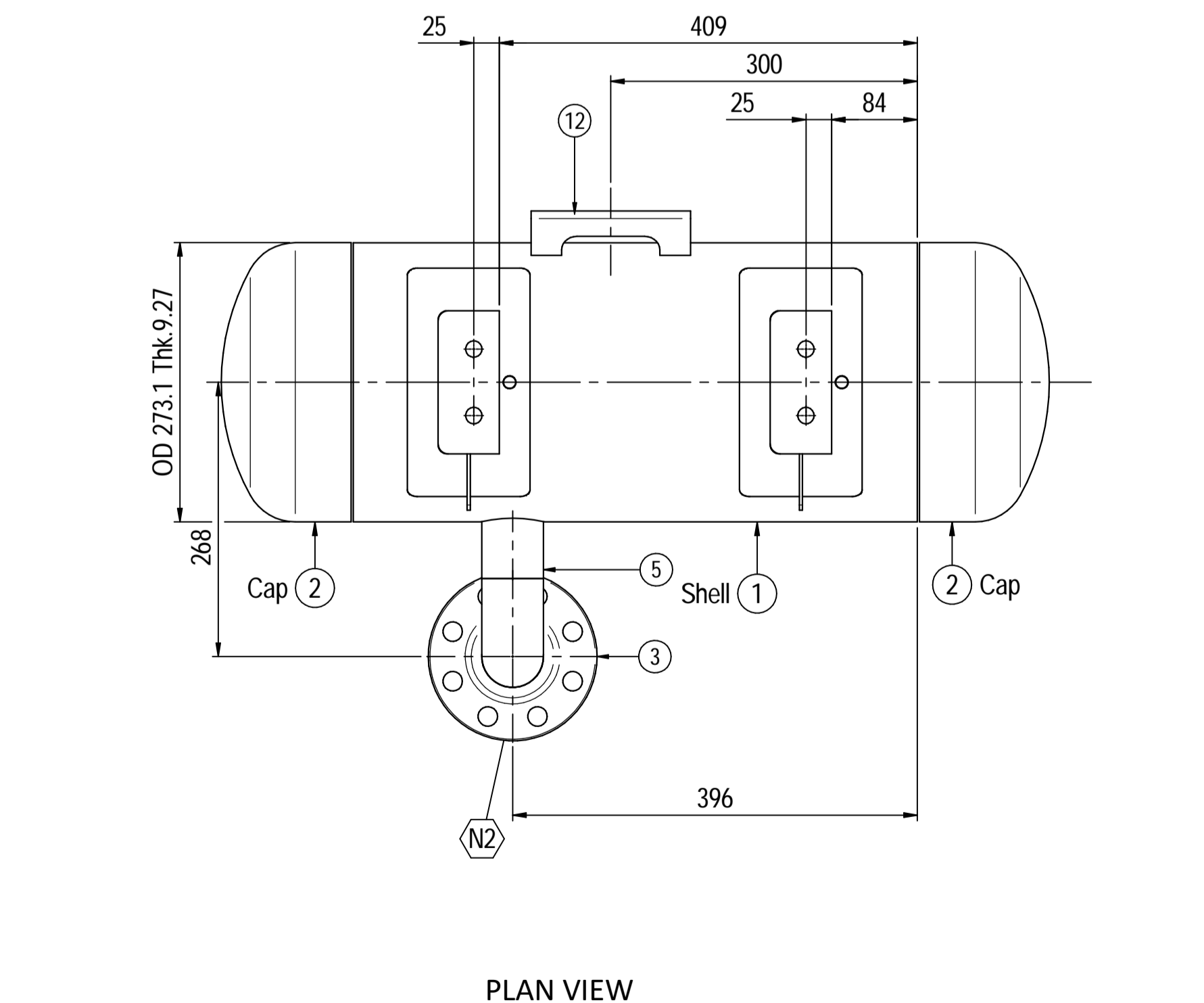
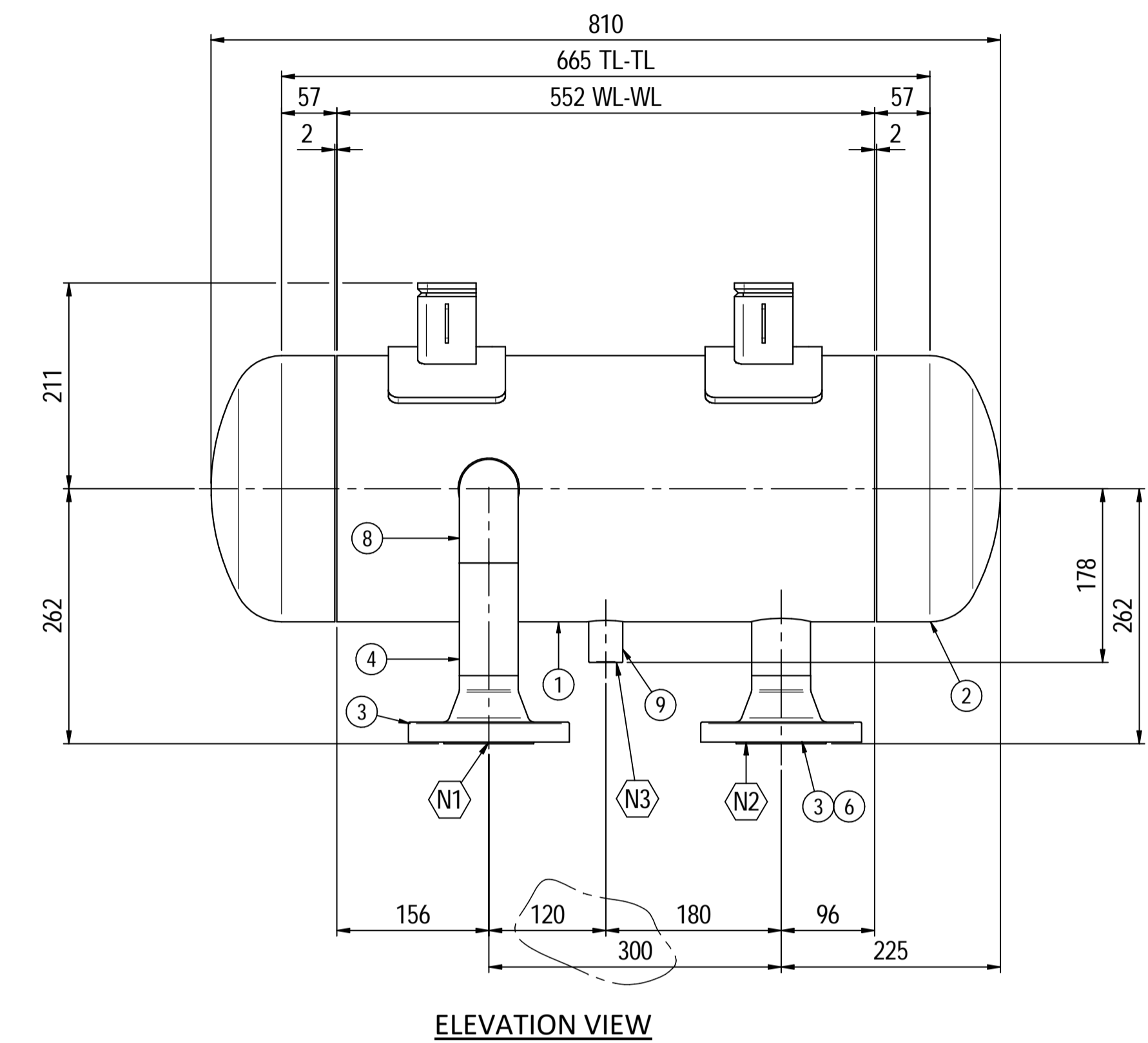
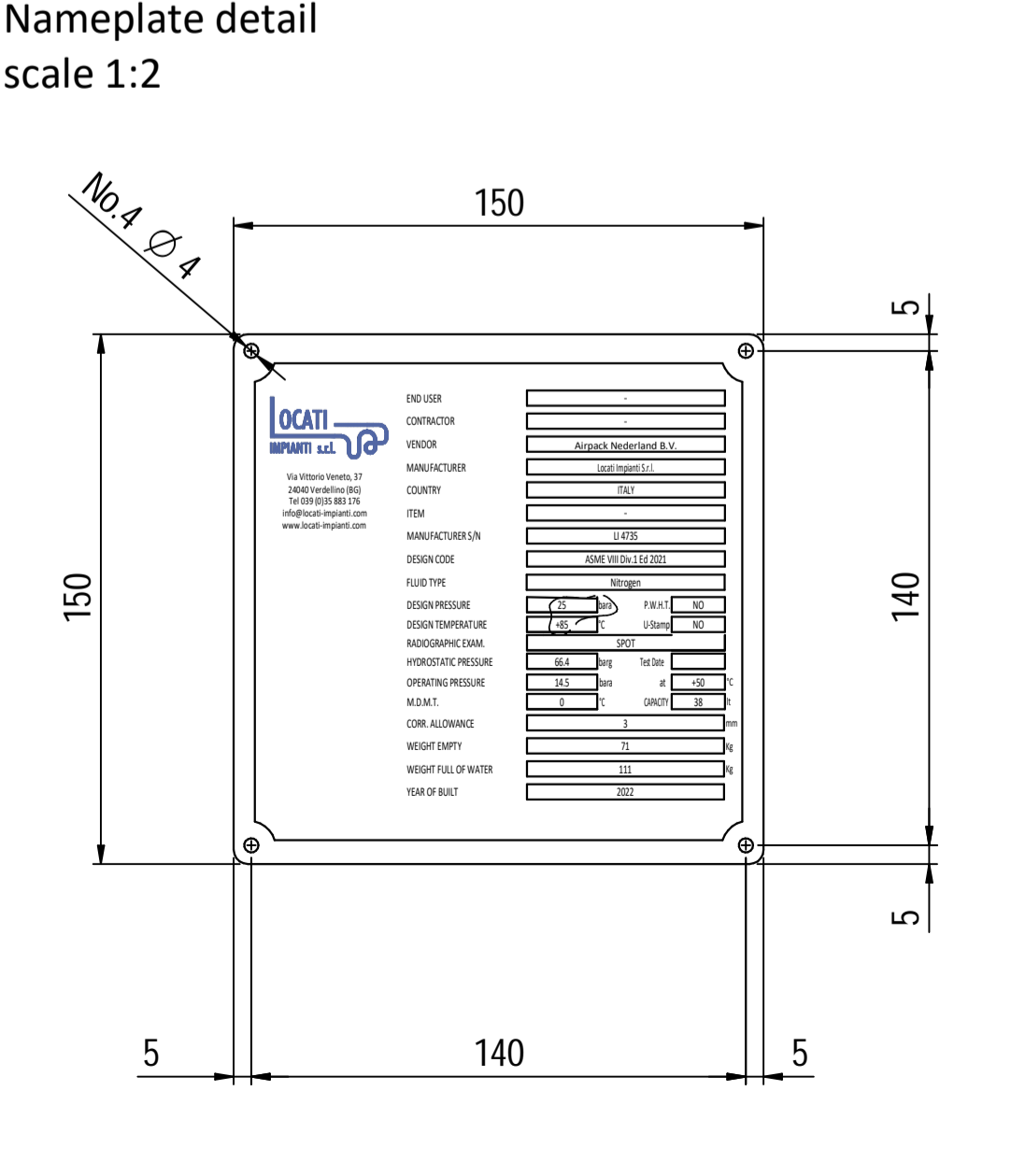
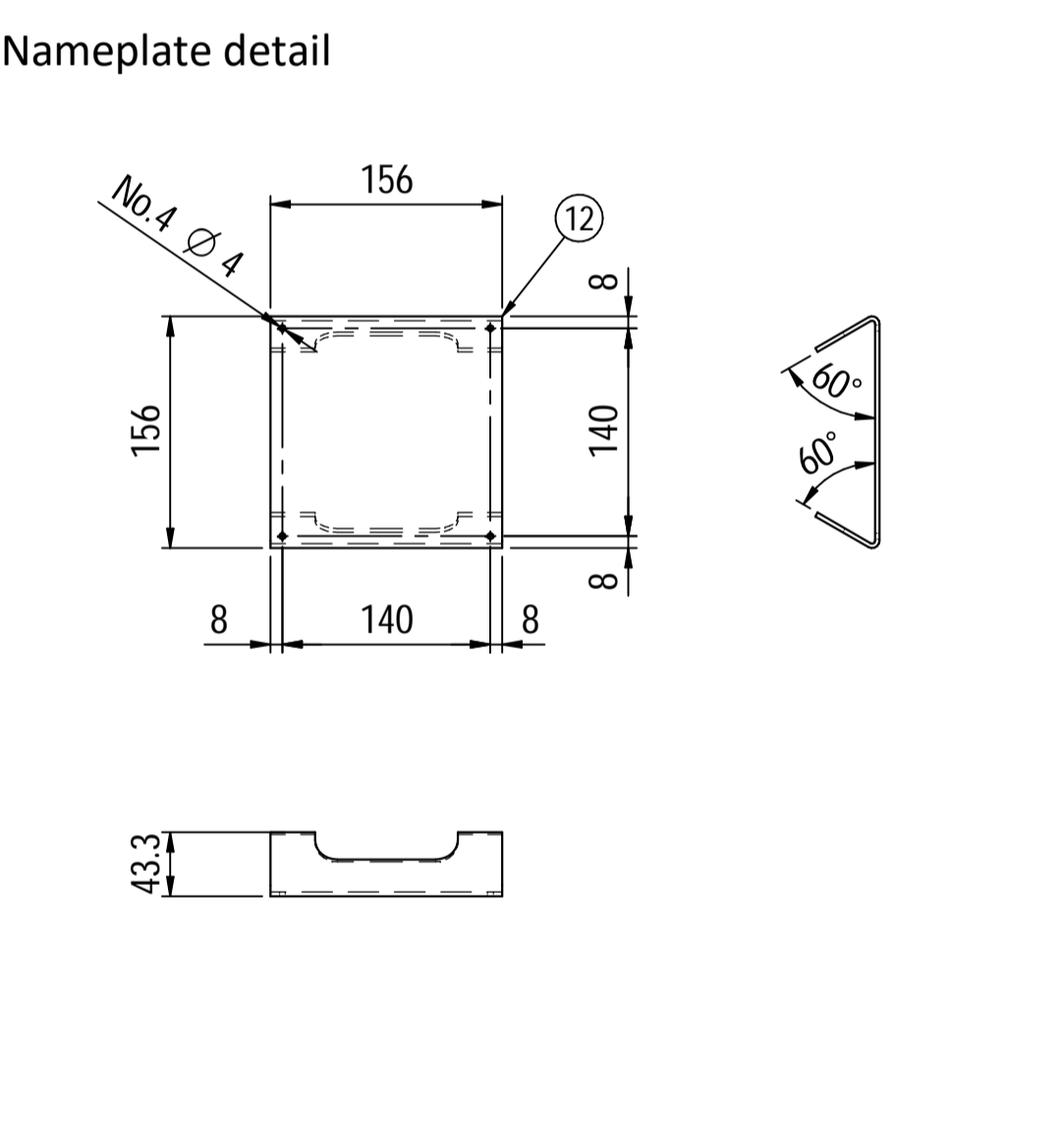
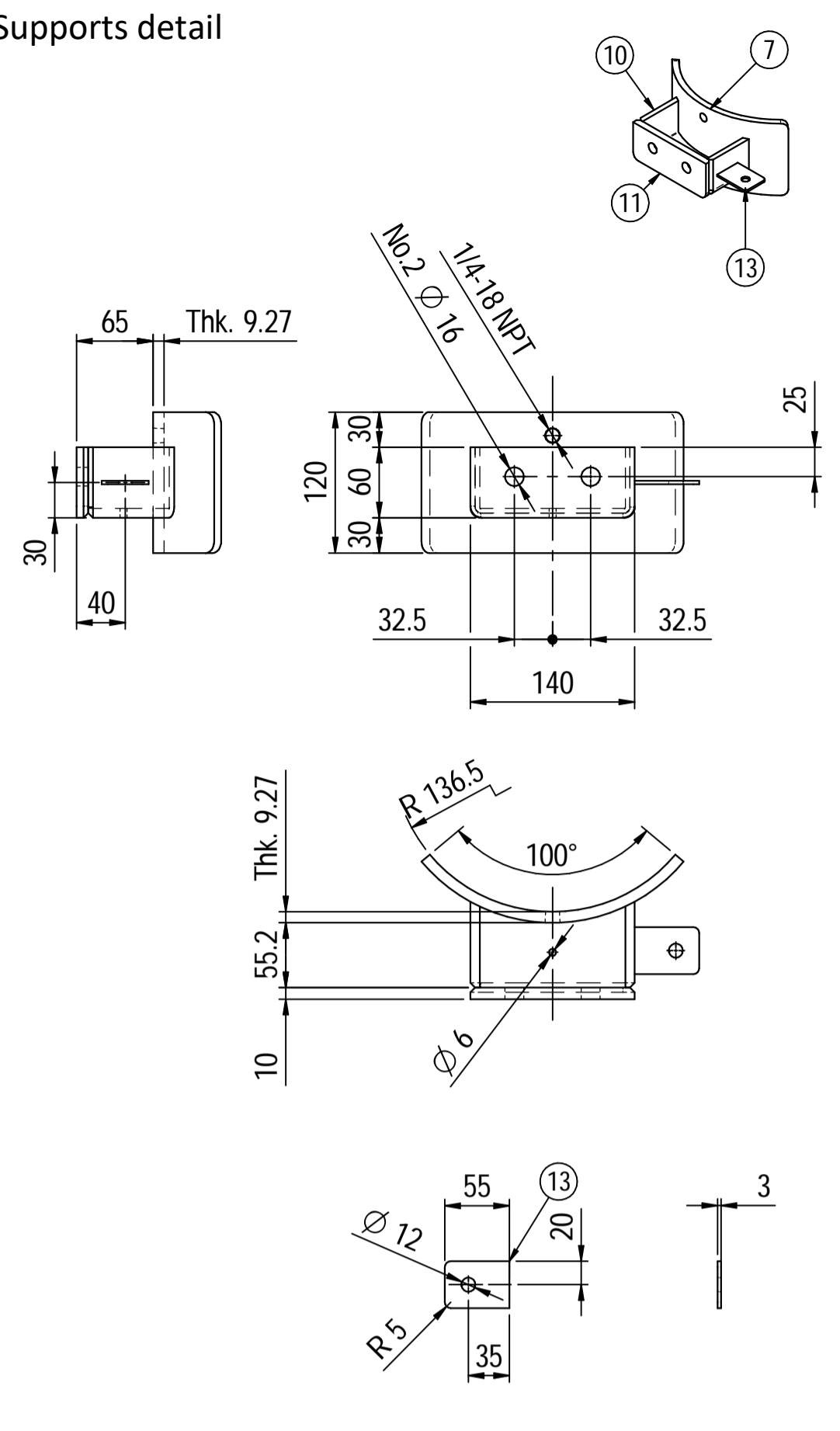
Note:
 1) Governing measurement S.I. unless otherwise specified;
 2) Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation;
 3) Material: certification 3.1 EN 10204;
 4) All internal edge shall be rounded off;
 5) Nozzle flanges in accordance with ASME B16.5: 2013;
 6) Flange fittings in accordance with ASME B16.9: 2012;
 7) The flange dimensions are in accordance to ASME B16.5: 2013;
 8) All fillet welds not detailed on "WELDING MAP" or drawing shall have the weld; throated equal to 0,7 times the minimum thickness to be welded;
 9) All welds are continuous except where indicate;
 10) See document C220006CLC010 for vessel calculation.

ITEM	QTY	SERVICE	SIZE	PIPE		FLANGE		PAD		Tc
				O.D.	THK	RATING	TYPE	FACE	O.D.	
N3	1	DRAIN	1/2"	38.1	8.38	#6000	-	NPT-F	-	8.5 + 10
N2	1	AIR OUTLET	2"	60.3	8.74	#300	WN	RF	-	8.5 + 10
N1	1	AIR INLET	2"	60.3	8.74	#300	WN	RF	-	8.5 + 10

DATI DI PROGETTO / Design data			
FLUIDO	Nitrogen	COLLAUDO	Test
STATO FISICO DEL FLUIDO	Gas	NATIONAL BOARD REGISTRATION	NO
CODICE DI CALCOLO	ASME VIII Div. 1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO	14.5 bara	SERVIZIO LETALE	NO
PRESSIONE DI PROGETTO	25 bara (26 barg)	R-RAY	RT examination
PRESSIONE ESTERNA	NO	LICUIDI PENETRANTI	NO
PRESSIONE DI PROVA IDRAULICA	66.4 barg	ULTRASUONI	NO
TEMPERATURA DI ESERCIZIO	+134 °C	CONTROLLO MAGNETOSCOPICO	NO
TEMPERATURA DI PROGETTO	+170 °C	WELDING MAP	NO
SOVRAMEALLO DI CORROSIONE	3 mm	PROCEDIMENTO DI SALDATURA	See doc: C220006WBK013
EFFICIENZA GIUNTI	0.85	FORMAZIONE FONDO	CAP
MAWP @ Design Temperature	33.46 barg @ +170 °C	PESO A VUOTO	116 kg
MDMT @ MAWP	0 °C @ 33.46 barg	PESO PIENO D'ACQUA	214 kg
TRATTAMENTO TERMICO	NO	DATI DEL VENTO	-
IMPACT TEST	NO	DATI SISMICI	-

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
02	Aligned design pressure with datum	CM	MV	GL	15/04/2022
01	Modified strenght lenght on cap	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

Oggetto/Object: N2 PULSATION DAMPER 1st STAGE DISCHARGE
 Scala/Scale: 1 : 5
 Comm. N°/Job No.: C220006
 Cliente/Customer: Airpack Nederland B.V.
 Ord. No.: 18498-VV-0901
 Dis. N°/Dwg No.: C220006DWG004
 Rev. 02



Material List					
Pos.	Q.ty	Description	Mat.	Cert.	
1	1	Shell by seamless pipe 10" Sch.STD L=552	SA106 Gr.B	3.1	
2	2	Cap 10" Sch40	A234 WPB	3.1	
3	2	Flange 2" WN #300 RF Sch.160	A105	3.1	
4	1	Seamless pipe 2" Sch160 L=115.5	A106 GrB	3.1	
5	1	Seamless pipe 2" Sch160 L=69	A106 GrB	3.1	
6	1	Seamless pipe 2" Sch160 L=68	A106 GrB	3.1	
7	2	Pad by pipe 10" Sch.STD	A106 Gr.B	3.1	
8	1	Seamless elbow 2" 90° LR Sch160	A234 WPB	3.1	
9	1	Coupling 1/2" NPT #6000	A105	3.1	
10	2	Plate 74.5x231 Thk.8	A516 70	3.1	
11	2	Plate 16x65 Thk.10	A516 70	3.1	
12	1	Nameplate support 156x241 Thk.3mm	A516 70	3.1	
13	2	Earthing Plate 55 x 40 Thk.3	A240 TP316L	3.1	

Note:
 1) Governing measurement S.I. unless otherwise specified;
 2) Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation;
 3) Material: certification 3.1 EN 10204;
 4) All internal edge shall be rounded off;
 5) Nozzle flanges in accordance with ASME B16.5: 2013;
 6) Flange fittings in accordance with ASME B16.9: 2012;
 7) The flange dimensions are in accordance with ASME B16.5: 2013;
 8) All fillet welds not detailed on "WELDING MAP" or drawing shall have the weld; throated equal to 0,7 times the minimum thickness to be welded;
 9) All welds are continuous except where indicate;
 10) See document C220006CLC011 for vessel calculation.

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	FLANGE TYPE	FACE	O.D.	THK.	Tc
N3	1	DRAIN	1/2"	38.1	8.38	#6000	-	NPT-F	-	-	8.5 ± 10
N2	1	AIR OUTLET	2"	60.3	8.74	#300	WN	RF	-	-	8.5 ± 10
N1	1	AIR INLET	2"	60.3	8.74	#300	WN	RF	-	-	8.5 ± 10

DATI DI PROGETTO / Design data			
FLUIDO	Nitrogen	COLLAUDO	Test
STATO FISICO DEL FLUIDO	Gas	NATIONAL BOARD REGISTRATION	NO
CODICE DI CALCOLO	ASME VIII Div. 1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO	14.5 bara	SERVIZIO LETALE	NO
PRESSIONE DI PROGETTO	25 bara (26 barg)	X-RAY	RT examination
PRESSIONE ESTERNA	NO	LICUIDI PENETRANTI	NO
PRESSIONE DI PROVA IDRAULICA	66.4 barg	Dye penetrant extension	NO
TEMPERATURA DI ESERCIZIO	+50 °C	ULTRASUONI	NO
TEMPERATURA DI PROGETTO	+85 °C	Hydraulic test pressure	NO
SOVRAMEALLO DI CORROSIONE	3 mm	CONTROLLO MAGNETOSCOPICO	NO
CAPACITA'	38 l	Magnetic particle examination	NO
EFFICIENZA GIUNTI	0.85	WELDING MAP	NO
WAWP @ Design Temperature	38.12 bar @ +85 °C	PROCEDIMENTO DI SALDATURA	See doc: C220006WBK013
WAWP(EXT)	NO	TIPO DI FONDO	CAP
MDMT @ MAWP	0 °C @ 38.12 bar	FORMAZIONE FONDO	HOT
TRATTAMENTO TERMICO	NO	Head form	NO
P.W.H.T.	NO	PESO A VUOTO	71 kg
IMPACT TEST	NO	PESO PIENO D'ACQUA	111 kg
Exemption	NO	Full water weight	NO
		DATI DEL VENTO	NO
		Wind datas	NO
		DATI SISMICI	NO
		Seismological datas	NO

03	Modified as per Client commnets	CM	MV	GL	15/04/2022
02	Modified as per Customer commnets	CM	MV	GL	02/04/2022
01	Modified shell length	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022
Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
Oggetto/Object N2 PULSATION DAMPER 2nd STAGE SUCTION					
		Scala/Scale	1 : 5	Formato/Size	A1
		Comm. N°/Job No.	C220006	Foglio/Sheet	1 - 1
		Cliente/Customer	Airpack Nederland B.V.		
		Ord. No.	18498-VV-0901		
		Dis. N°/Dwg No.	C220006DWG005	Rev.	03