



LIDCO, Pars SEE Zone, Assaluyeh,  
Integrated Methanol and Ammonia  
Plant 3000 MTPD MeOH / 900 MTPD NH3 PROJECT



Detail Drawings for Pulsation Dampers

Document No. 17735-23B

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision	Page
N278	VD	6019	ME	DWG	0025	01	Page 1 of 6

**Airpack B.V. - Air Compressor –  
Integrated Methanol and Ammonia Plant  
17735-COM Detail Drawings for Pulsation Dampers (K020)**

code-2  
M. Vakili

General comment for all drawing:  
Please note that drawing shall be submitted with calculations. (As per agreements in before order, ASME Sec VIII Div.1 calculation to be submitted. ) So, please attach the calculation to this drawing.  
If in reviewing the calculation, any change is required, this drawing shall be revised as well.

01	21-02-2024	Issued for Approval	S.K.	J.J.	S.K.
<b>REV.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>DRAWN</b>	<b>CHECKED</b>	<b>APPROVED</b>

Detail Drawings for Pulsation Dampers

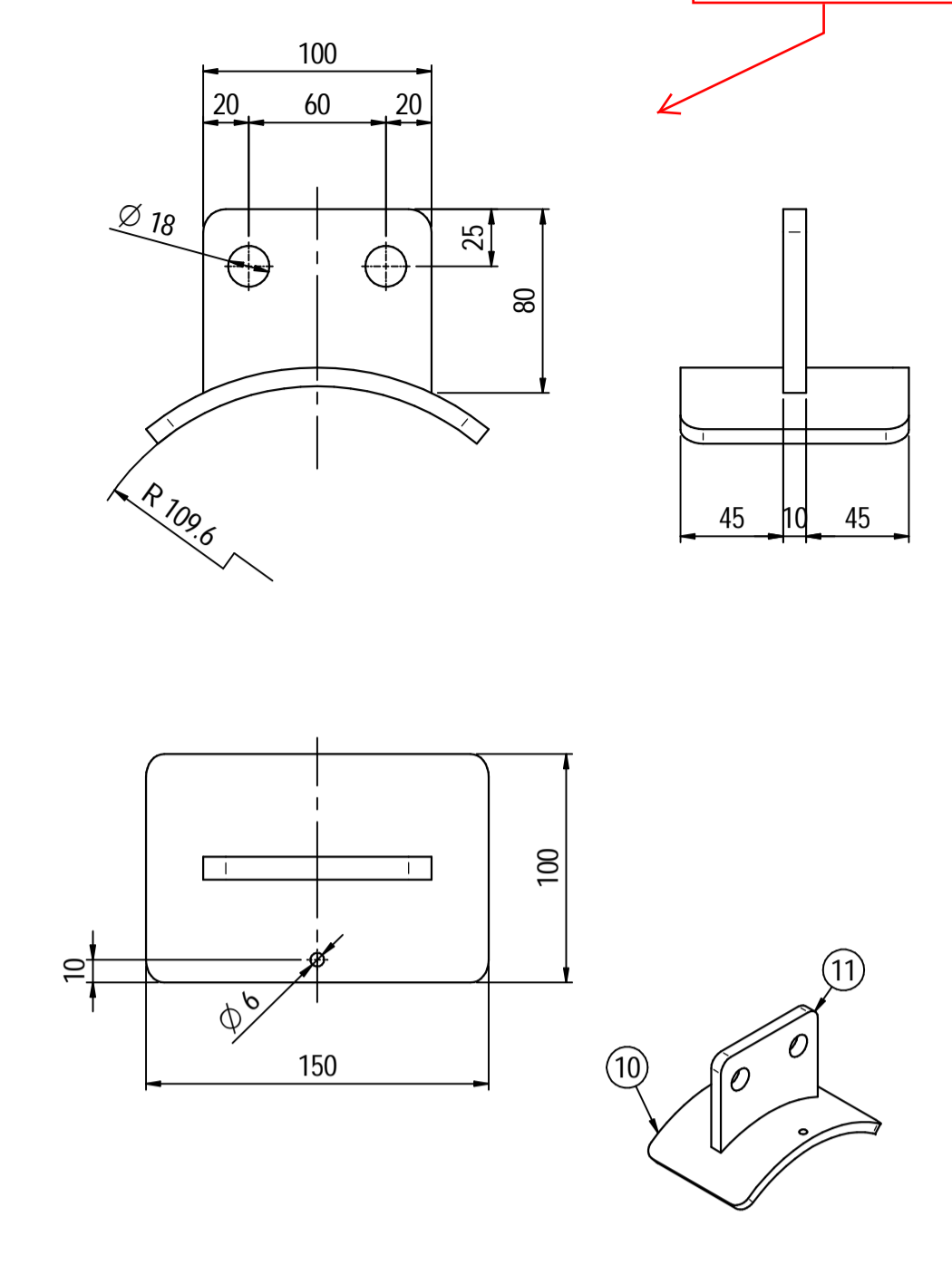
Document No. 17735-23B

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision	Page
N278	VD	6019	ME	DWG	0025	01	Page 2 of 6

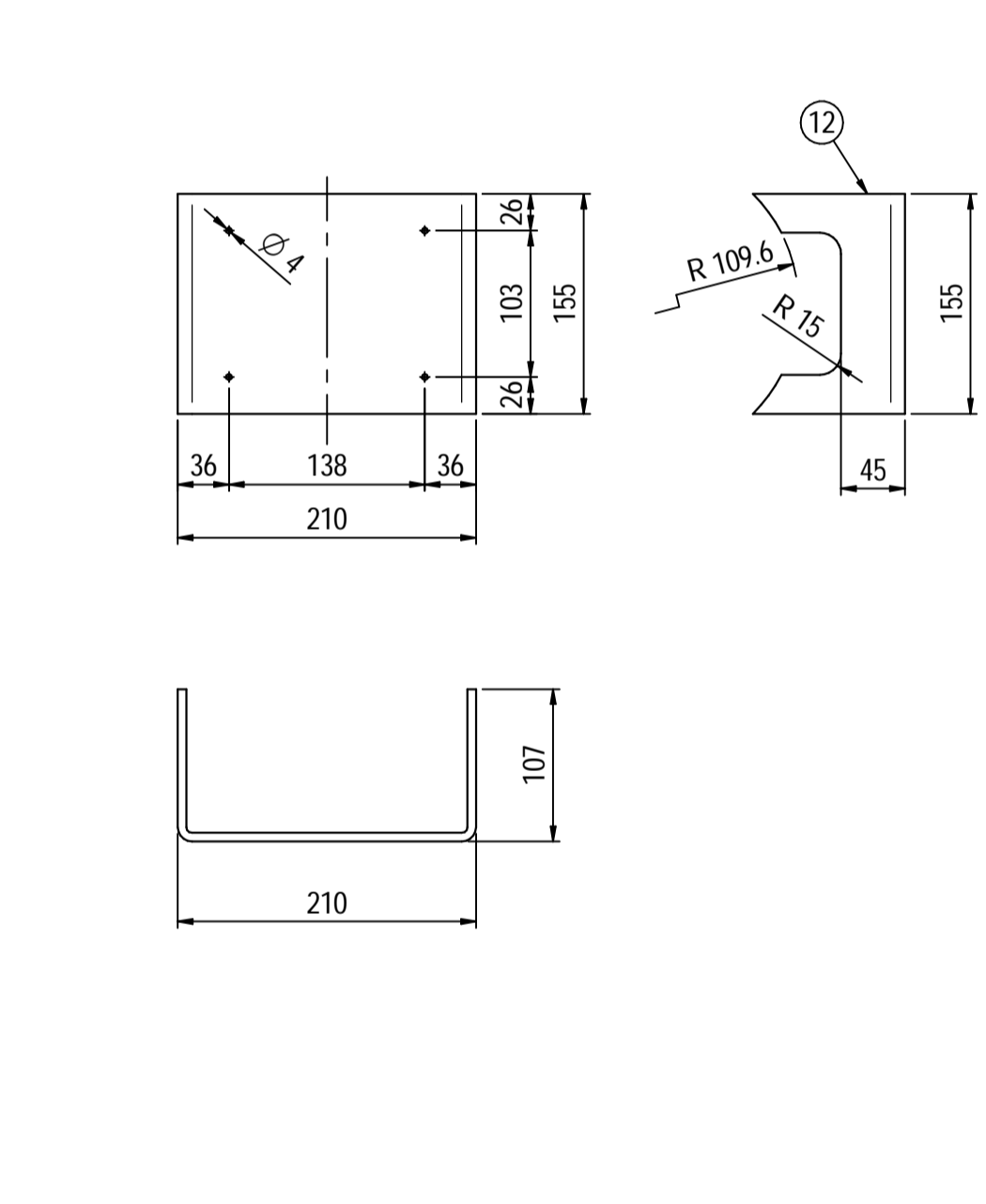
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4	X					29						54						79					
5	X					30						55						80					
6	X					31						56						81					
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25						50						75						7					

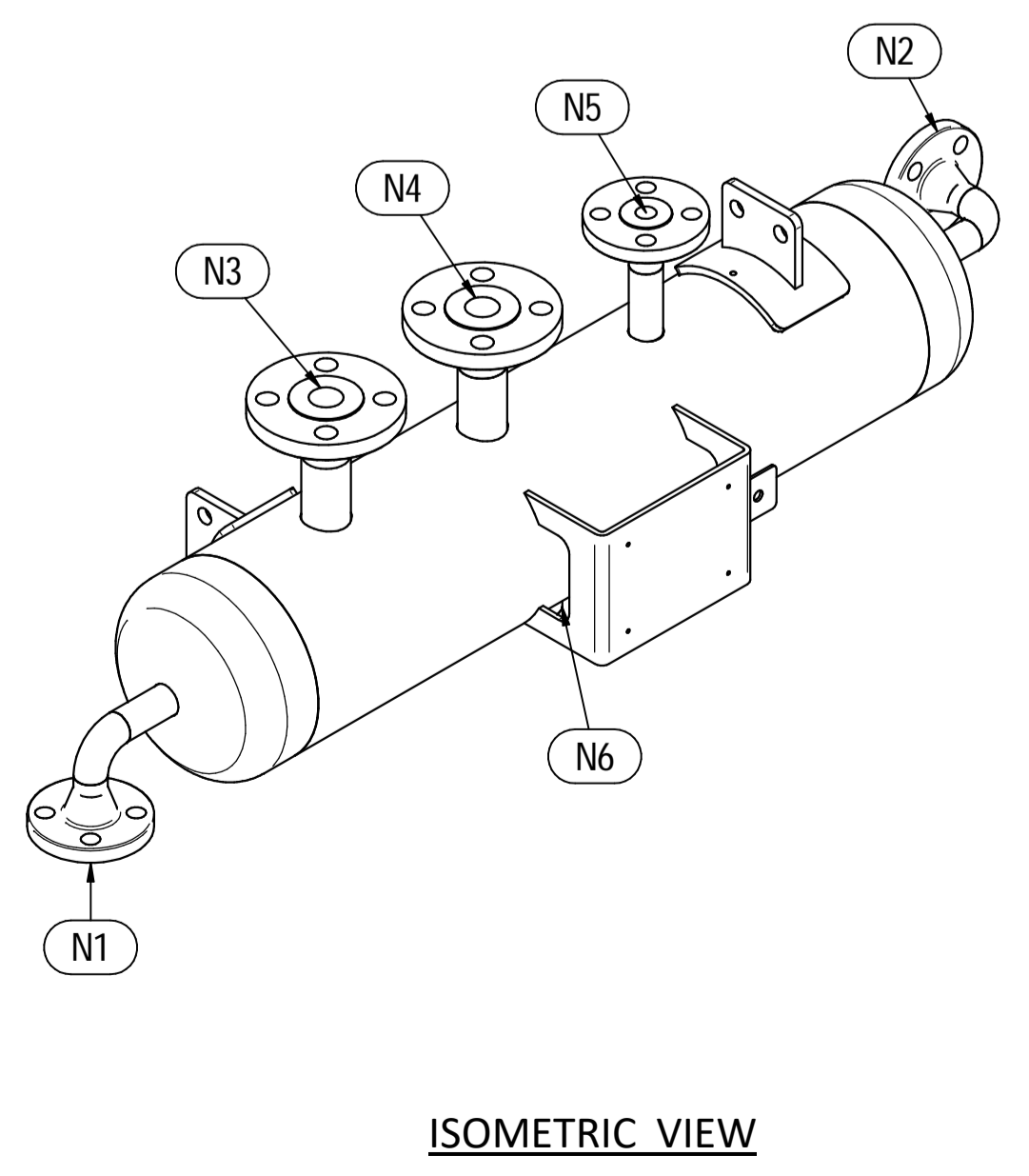
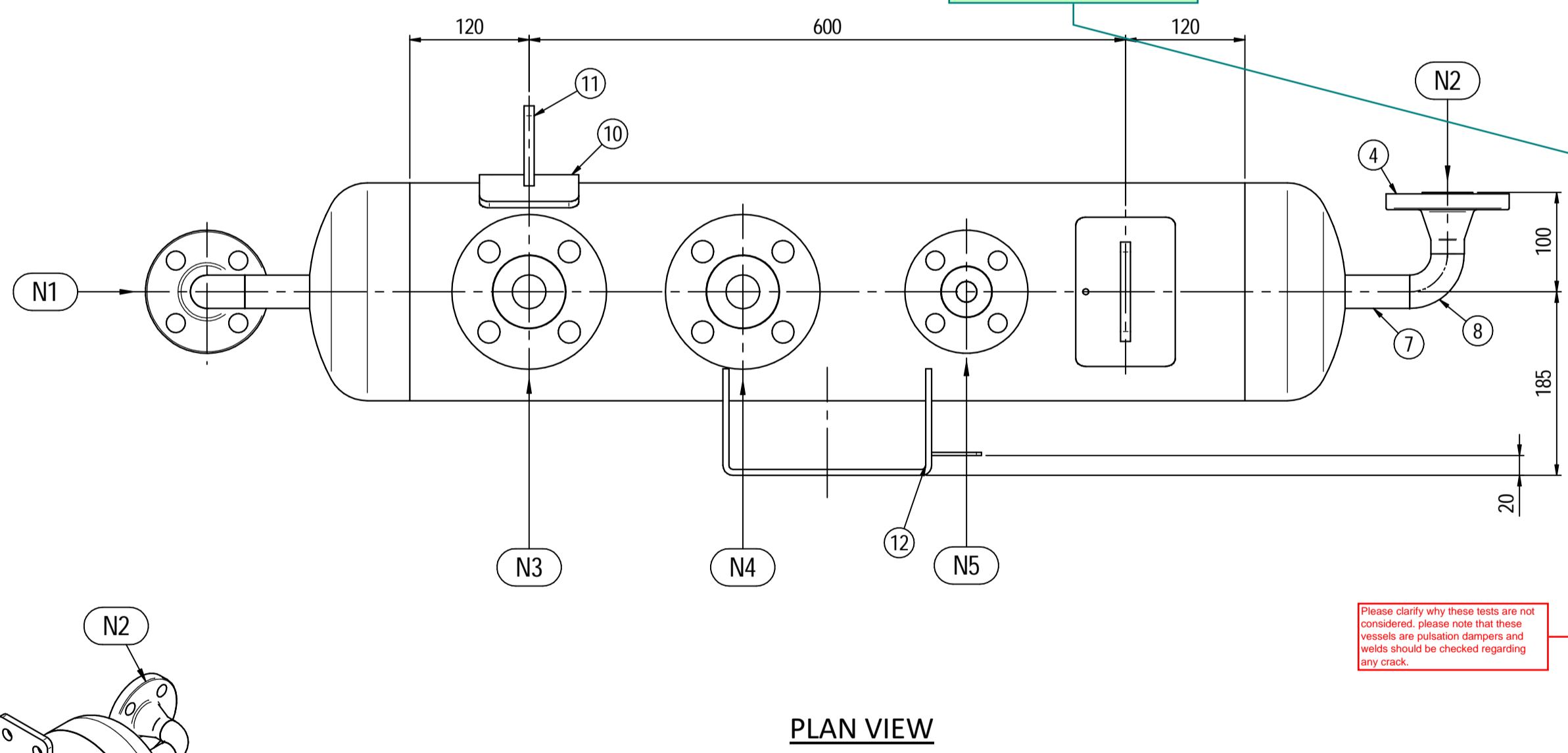
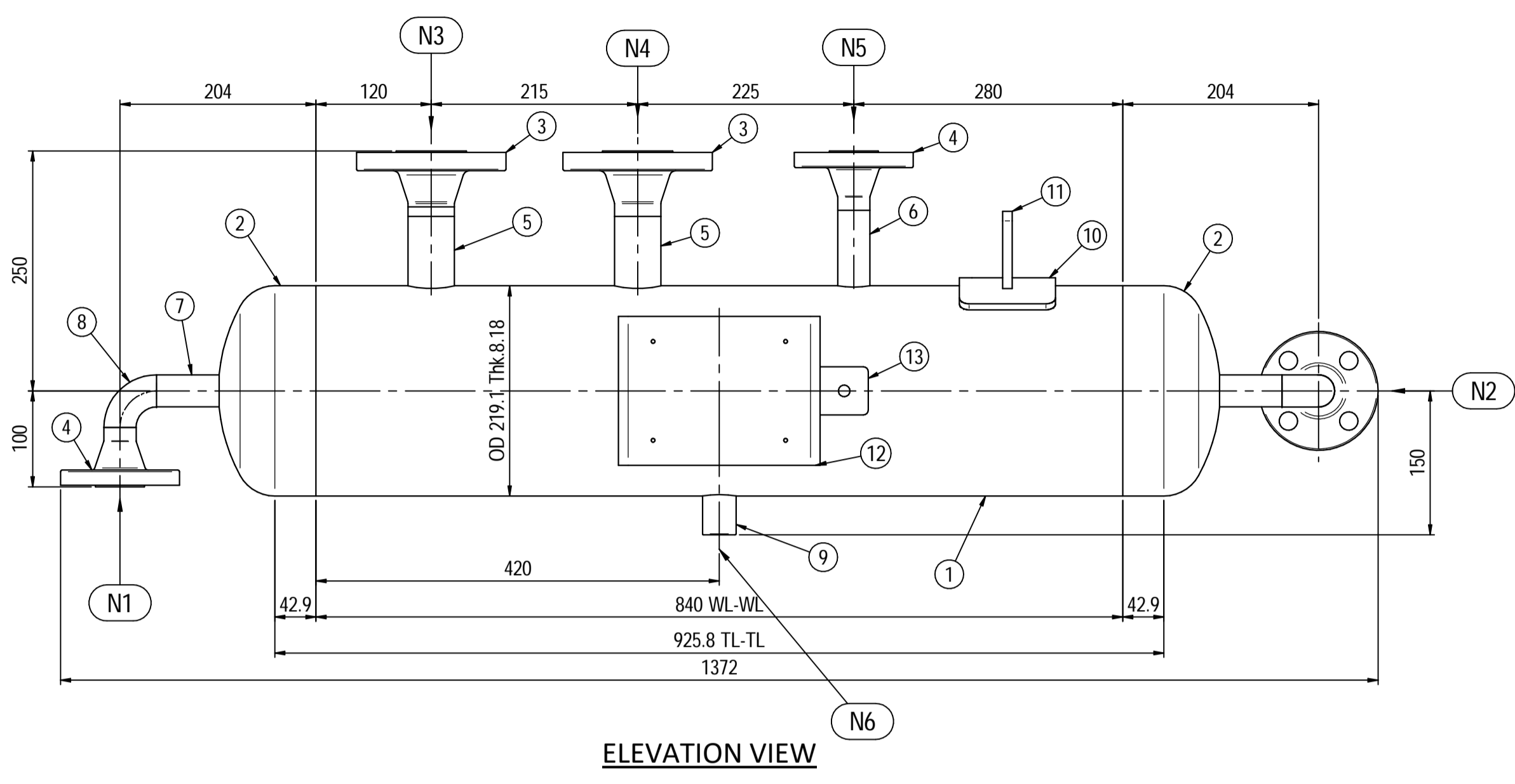
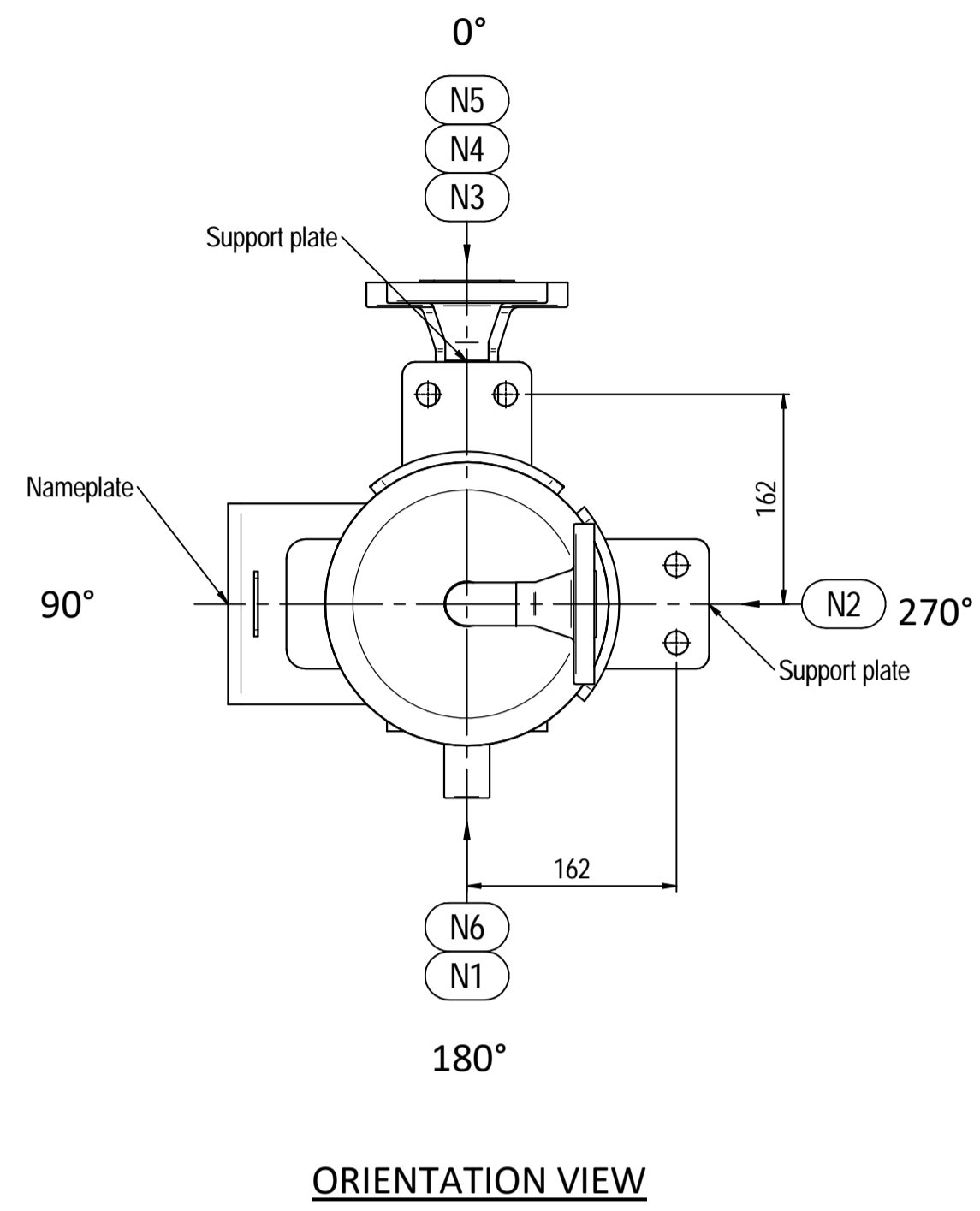
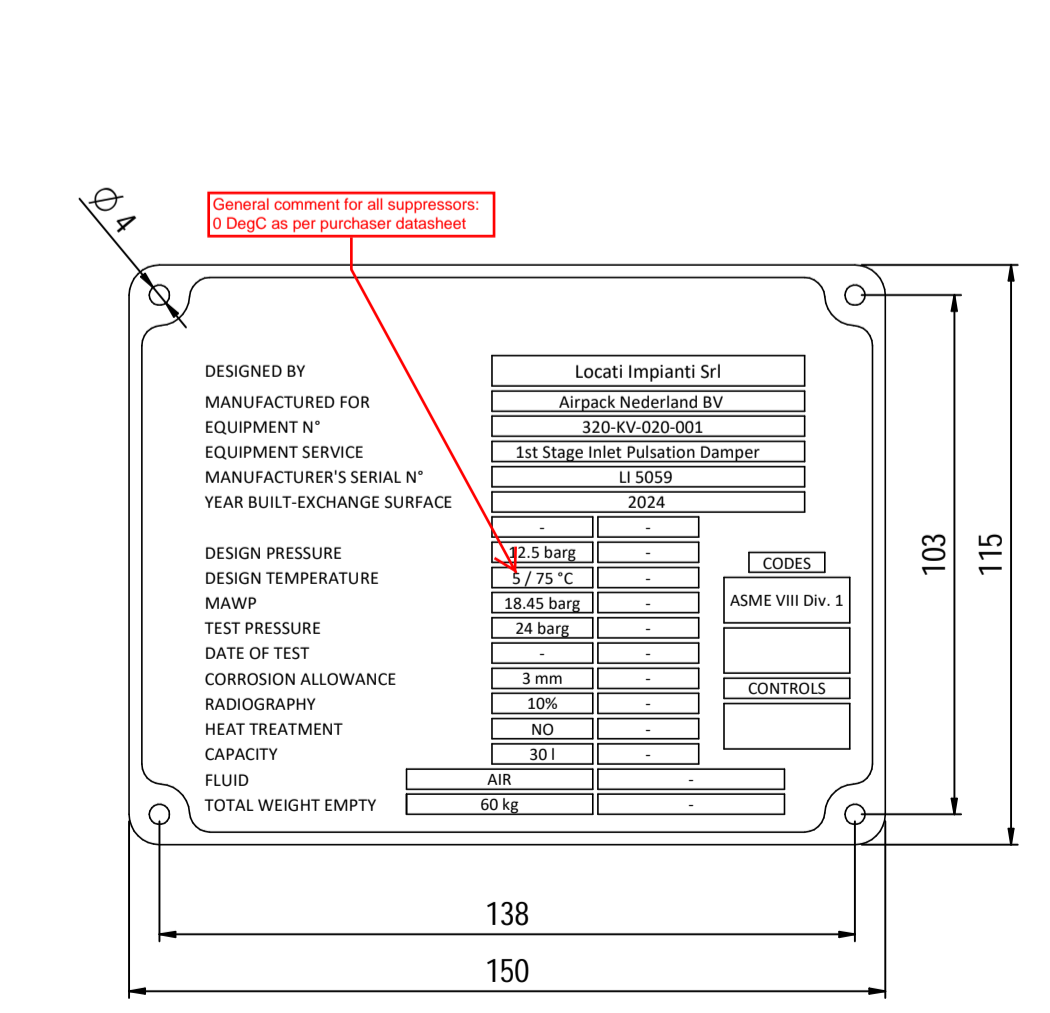
**Supports detail**  
Scale 1 : 3



**Nameplate detail**  
Scale 1:5



**Nameplate detail**  
scale 1:1.5



Pos.	QTY	Description	Material	Cert.
1	1	Shell by Seamless Pipe 8" Sch.40 L=840	SA106 Gr.B	3.1
2	2	Cap 8" Sch.40	SA234 WPB	3.1
3	2	Flange 1 1/2" WN #300 RF Sch160	A105	3.1
4	3	Flange 1" WN #300 RF Sch.160	SA105	3.1
5	2	Seamless Pipe 1 1/2" Sch.160 L=75	SA106 Gr.B	3.1
6	1	Seamless Pipe 1" Sch.160 L=80	SA106 Gr.B	3.1
7	2	Seamless Pipe 1" Sch.160 L=73	SA106 Gr.B	3.1
8	2	Seamless elbow 1" 90° LR Sch160	SA234 WPB	3.1
9	1	Coupling 1/2" NPT #6000	A105	3.1
10	2	Pad by pipe 100 x 150 Thk.8.18	SA106 Gr.B	
11	2	Support plate 100 x 80 Thk.10	SA516 70	
12	1	Nameplate support by plate 403 x 155 Thk.6	SA516 70	
13	1	Earthing plate 50 x 40 Thk.3	A240 TP316L	

- Note:**
- Governing measurement S.I. unless otherwise specified
  - Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation
  - Material: certification 3.1 EN 10204
  - All internal edge shall be rounded off
  - Nozzle flanges in accordance with ASME B16.5: 2020
  - Flange fittings in accordance with ASME B16.9: 2018
  - 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
  - All welds are continuous except where indicate
  - For calculation see document number C230048CLC005
  - The nameplate ise in S5316 and is laser engraved
  - Non corrosive service, no inspection opening per UG-46(a)

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
N5	1	TEMPERATURE GAUGE	1 1/2"	48.3	7.14	#300	WN	RF	-	-	8 x 10
N4	1	TEMPERATURE TRANSMITTER	1 1/2"	48.3	7.14	#300	WN	RF	-	-	8 x 10
N3	1	PSV CONNECTION	3/4"	19.05	3.18	#300	WN	RF	-	-	8 x 10
N2	1	AIR OUTLET	1"	33.4	6.35	#300	WN	RF	-	-	8 x 10
N1	1	AIR INLET	1"	33.4	6.35	#300	WN	RF	-	-	8 x 10

ITEM	Qtà	SERVIZI	COMPATIBILITY WITH OTHER VENDOR DOCUMENTS INCLUDING MECHANICAL PART DOCUMENT, DATA SHEET, HOOK UP AND PURCHASED INSTRUMENT IS VENDOR RESPONSIBILITY AND SCOPE. THIS COMMENT INCLUDE FOR ALL PAGES.
FLUIDO	Fluid	Air	COLLAUDO Test
STATO FISICO DEL FLUIDO	Physical state of fluid	Gas	PED
CODICE DI CALCOLO	Construction code	ASME VIII Div. 1 Ed.2021	N/A
PRESSIONE DI ESERCIZIO	Operating pressure	9.5 barg	SERVIZIO LETALE Lethal service
PRESSIONE DI PROGETTO	Design pressure	12.5 barg	X-RAY RT examination
PRESSIONE ESTERNA	External pressure	NO	LIQUIDI PENERANTI Dye penetrant extension
PRESSIONE DI PROVA IDRAULICA	Hydraulic test pressure	24 barg	ULTRASUONI Ultrasonic extension
TEMPERATURA DI ESERCIZIO	Operating temperature	5 + 46 °C	CONTROLLO MAGNETOSCOPICO Magnetic particle examination
TEMPERATURA DI PROGETTO	Design temperature	75 °C	ALLONIE DI SALDATURA Weld tests coupon
SOVRAMEALLO DI CORROSIONE	Corrosion allowance	3 mm	PROCEDIMENTO DI SALDATURA Welding procedure
CAPACITA'	Capacity	32 l	TIPO DI FONDO Head type
EFFICIENZA GIUNTI	Joint efficiency	0.85	FORMATURA FONDO Head form
MAWP @ Design Temperature	MAWP (EXT)	18.45 barg @ +75 °C	PESO A VUOTO Empty weight
MDMT @ MAWP	MDMT @ MAWP	+5 °C @ 18.45 barg	PESO PIENO D'ACQUA Full water weight
TRATTAMENTO TERMICO	P.W.H.T.	NO	DATI DEL VENTO Wind datas
IMPACT TEST	Exemption	NO	DATI SISMICI Seismological datas

00 FIRST ISSUE LG MV MV 03/02/2024

Rev. Descrizione / Description Disegnato/Draw Controllato/Checked Approvato/Approved Data/Date

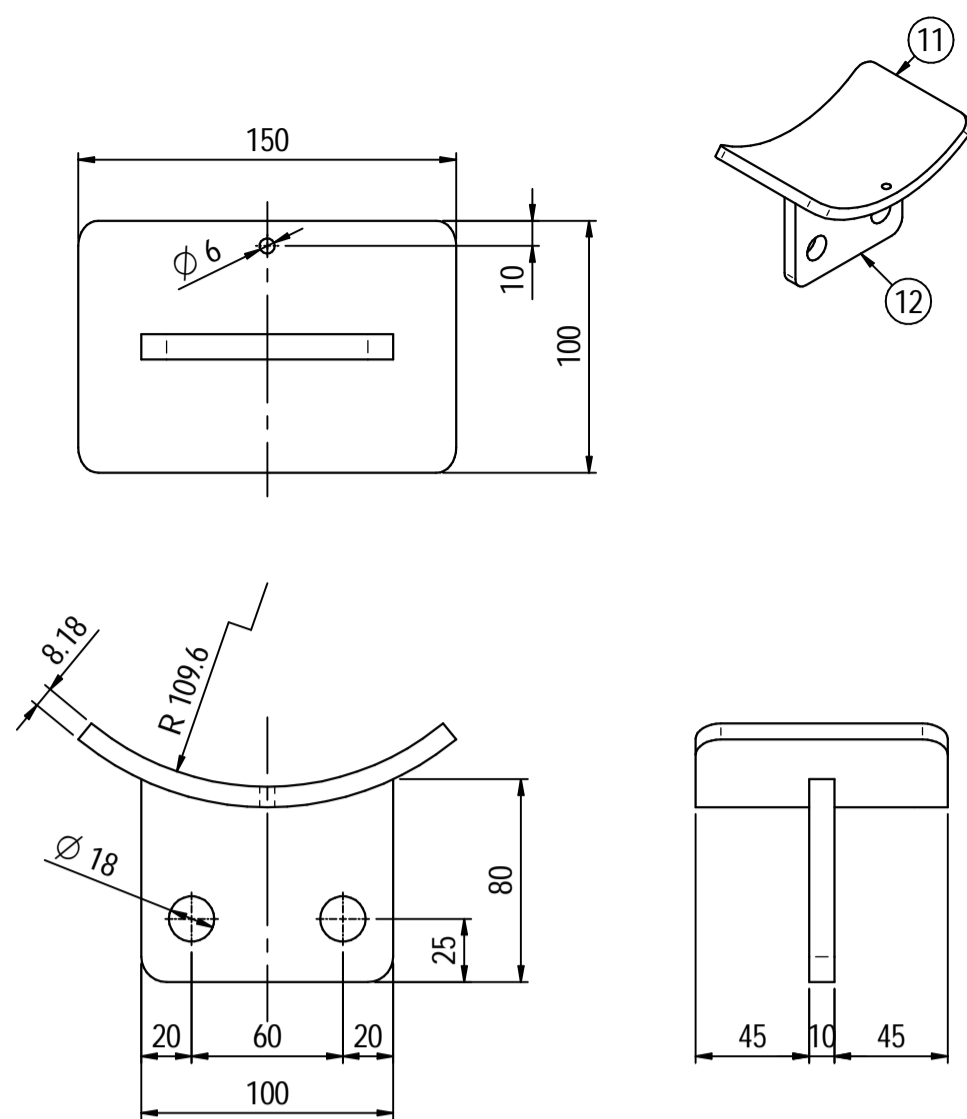
Oggetto/Subject **1st STAGE INLET PULSATION DAMPER**

Scala/Scale	1 : 5	Formato/Size	A1
Comm. N°/Job No.	C230048	Foglio/Sheet	1 - 1
Cliente/Customer	Airpack Netherland B.V.		
Ord. No.	17735-VV-900 (SK)		
Dis. N°/Dwg No.	<b>C230048DWG001</b>	Rev.	00

Locati Impianti Srl - Via Vittoria Veneto, 37 24040 Verdello (BS) Italy - P. +39 (0)35.883.176 Fax +39 (0)35.885.035 - e-mail: info@locatiimpianti.com http: www.locatiimpianti.com

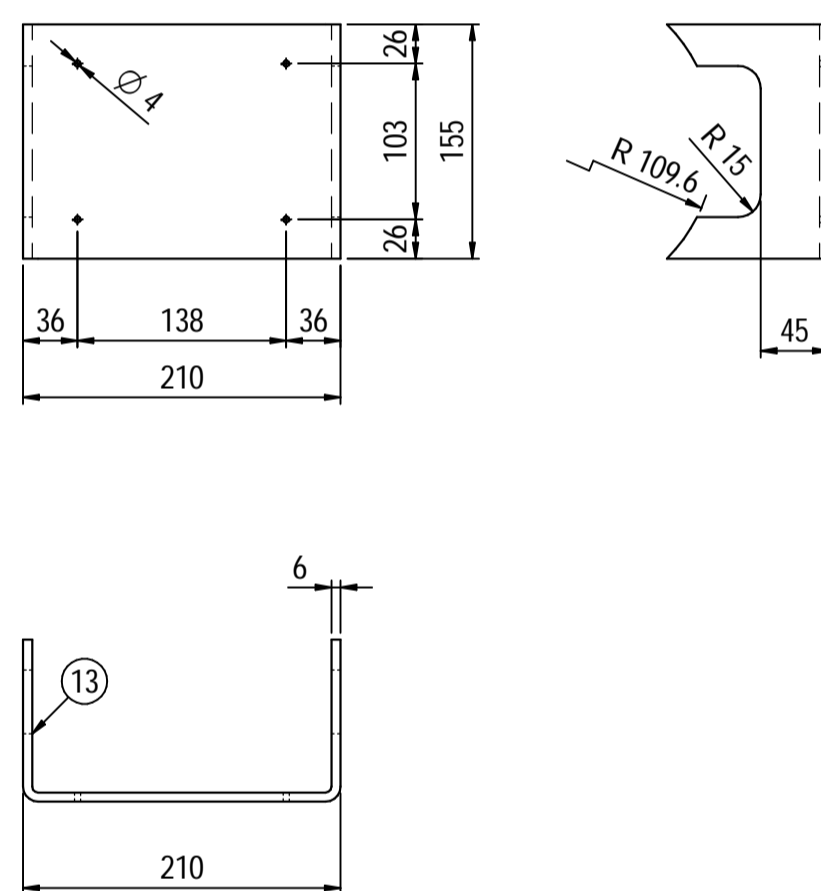
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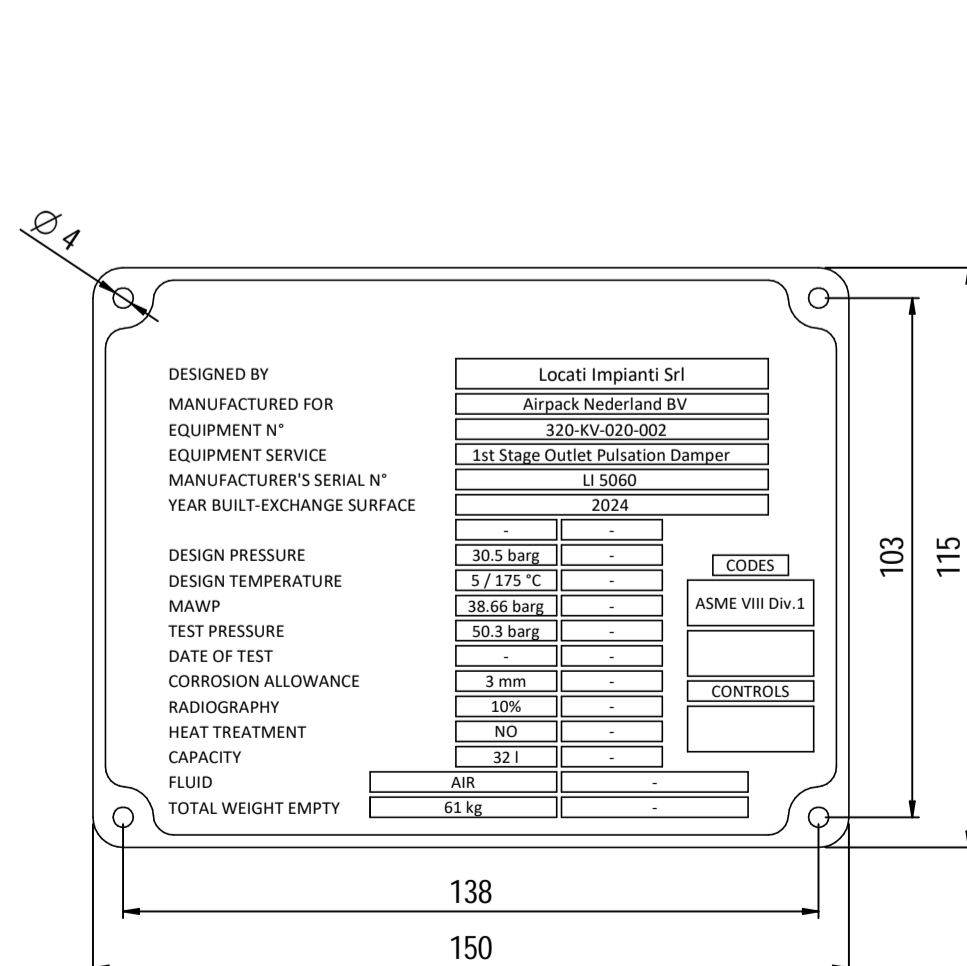
Nameplate detail

Scale 1:5

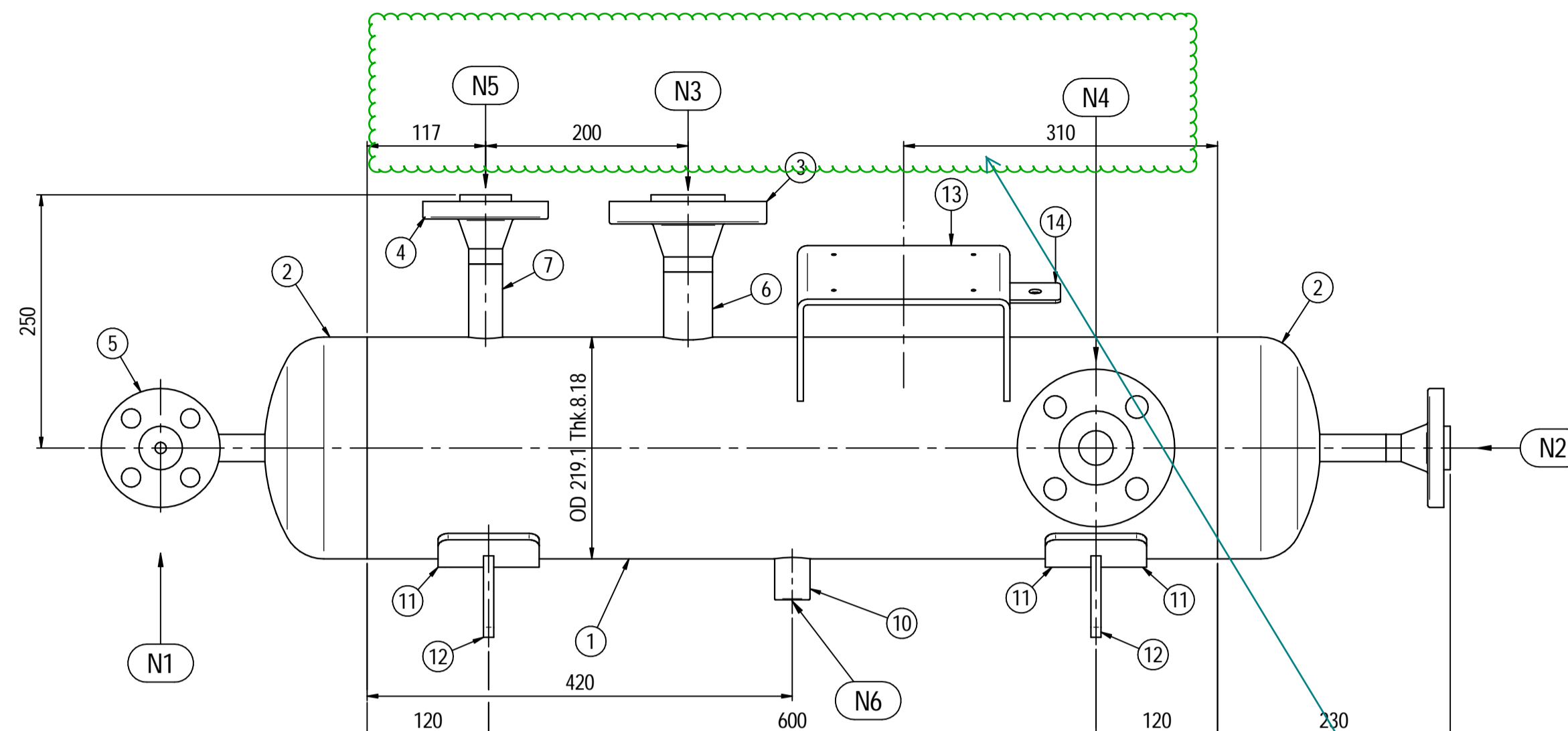
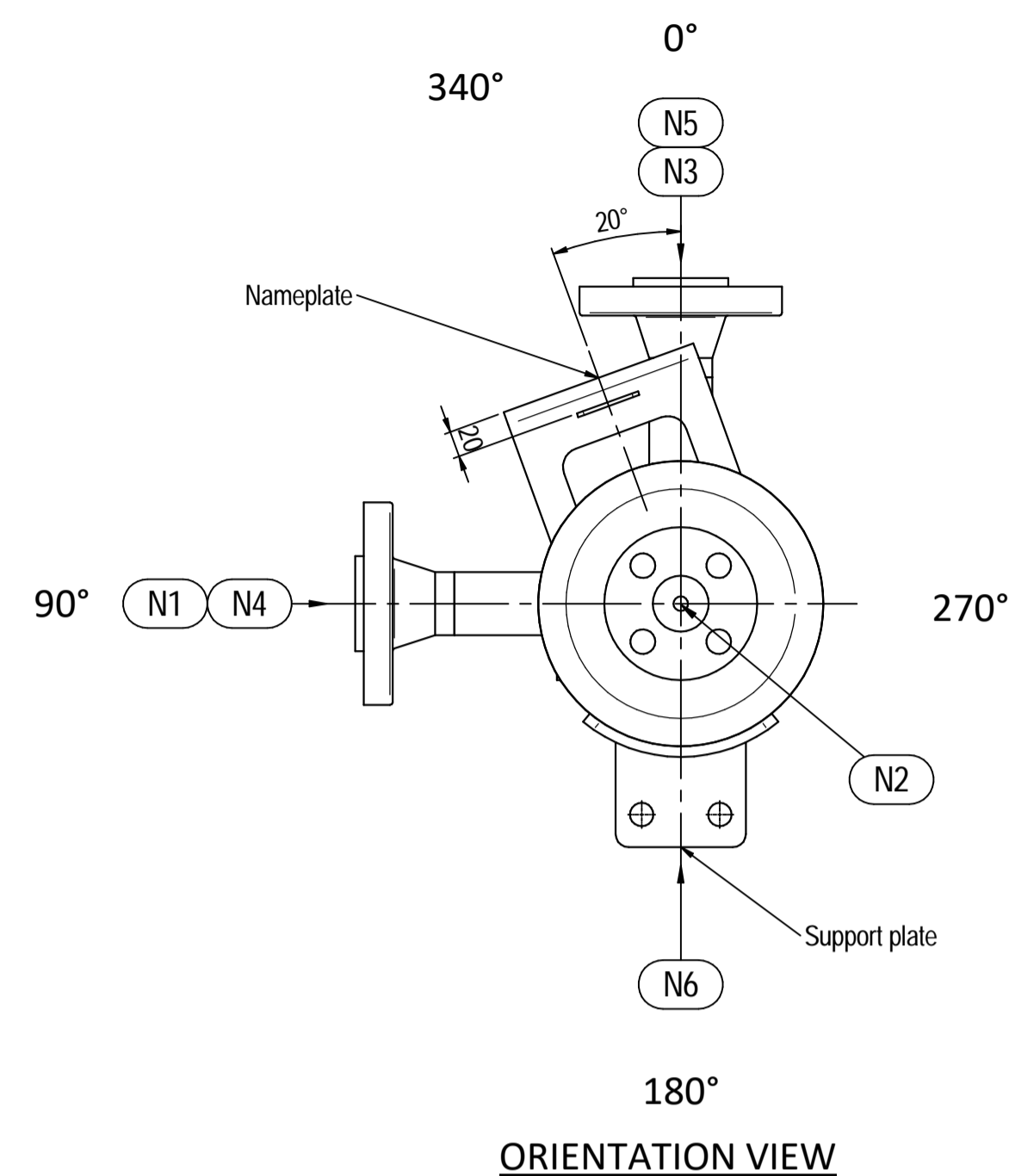


Nameplate detail

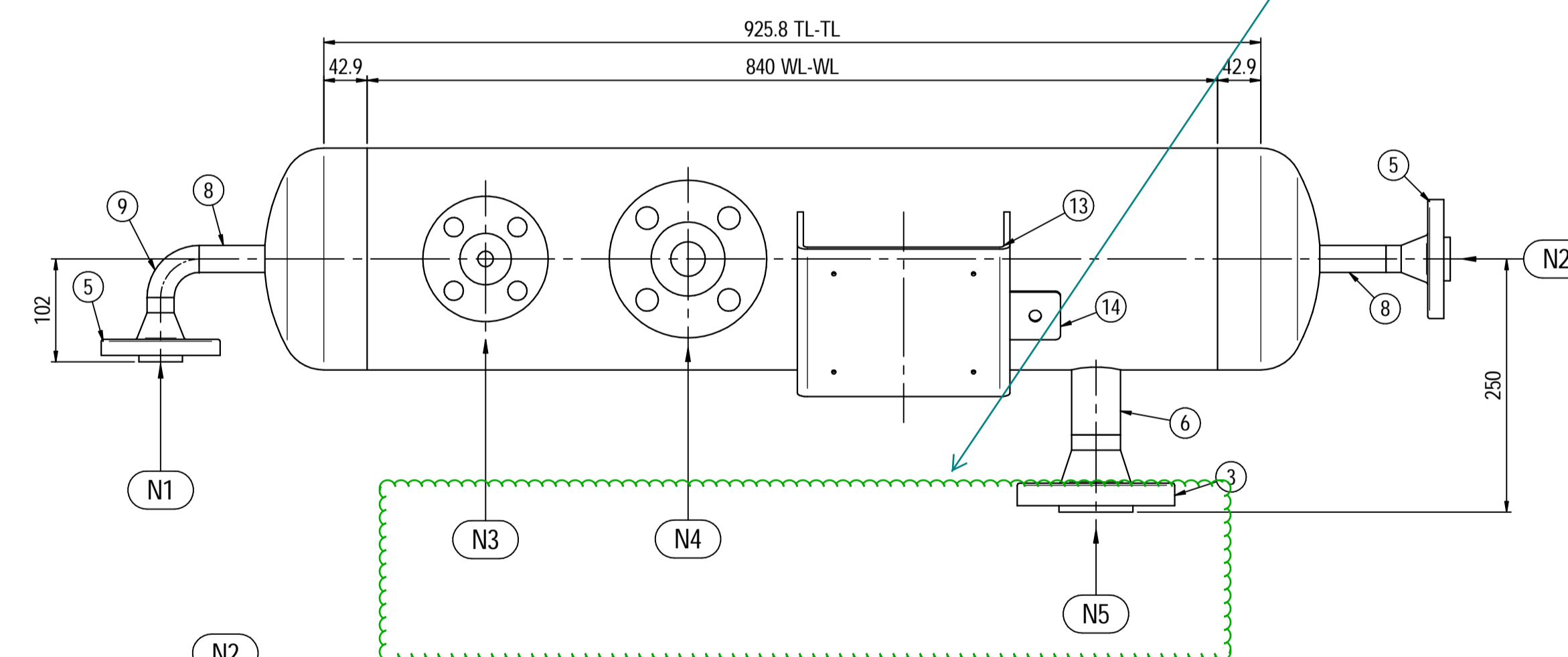
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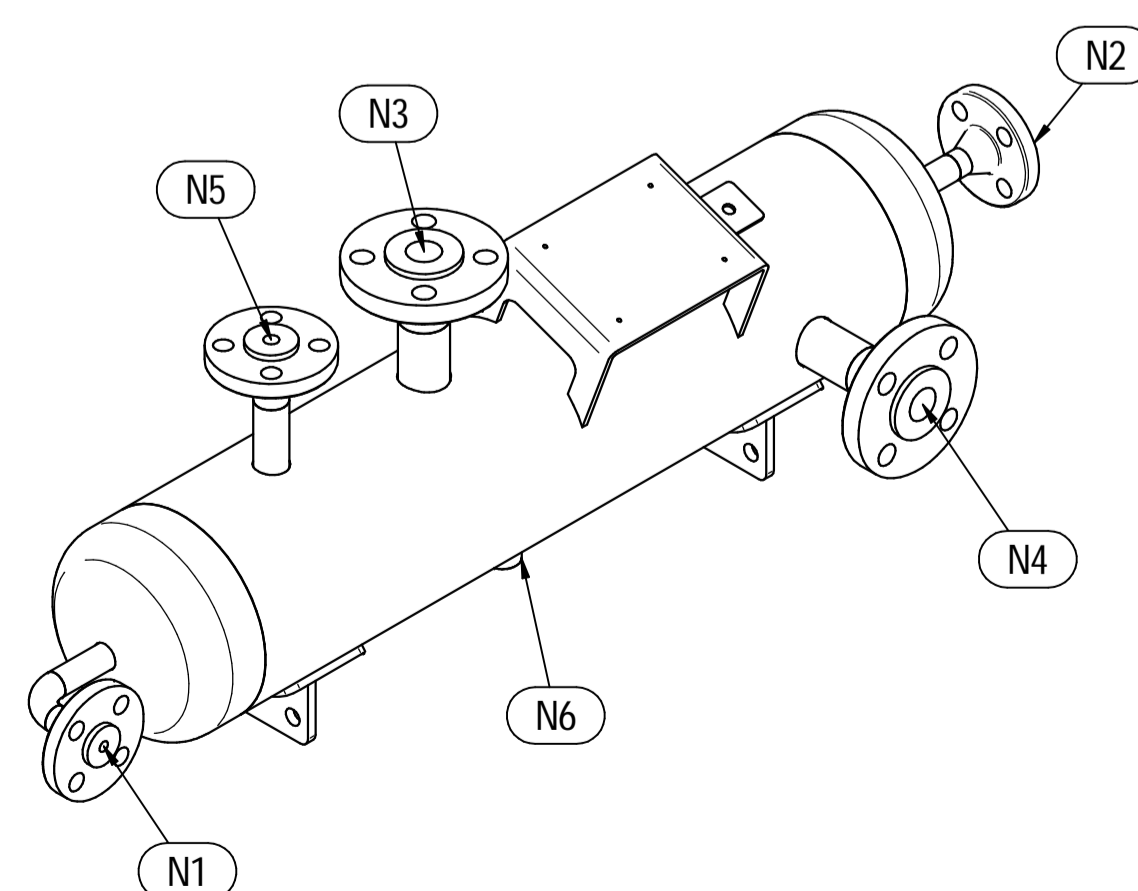
Please refer to the same comments on page 3. We



ELEVATION VIEW



PLAN VIEW



ISOMETRIC VIEW

There are discrepancy between N3/N4/N5

General comments for operating temperature above 60DegC. Please clarify about insulation.

Pos.	QTY	Description	Material	Cert.
1	1	Shell by Seamless Pipe 8" Sch.40 L=840	SA106 Gr.B	3.1
2	2	Cap 8" Sch.40	SA234 WPB	3.1
3	2	Flange 1 1/2" WN #600 RF Sch.160	SA105	3.1
4	1	Flange 1" WN #600 RF Sch.XXS	SA105	3.1
5	2	Flange 3/4" WN #600 RF Sch.XXS	SA105	3.1
6	2	Seamless Pipe 1 1/2" Sch.160 L=75	SA106 Gr.B	3.1
7	1	Seamless Pipe 1" Sch.XXS L=80	SA106 Gr.B	3.1
8	2	Seamless Pipe 3/4" Sch.XXS L=73	SA106 Gr.B	3.1
9	1	Seamless elbow 1/2" 90° LR Sch.XXS	SA234 WPB	3.1
10	1	Coupling 1/2" NPT #6000	A105	3.1
11	2	Pad by pipe 100 x 150 Thk.8.18	SA106 Gr.B	
12	2	Support plate 100 x 80 Thk.10	SA516 70	
13	1	Nameplate support by plate 403 x 155 Thk.6	SA516 70	
14	1	Earthing plate 50 x 40 Thk.3	A240 TP316L	

- Note:
- Governing measurement S.I. unless otherwise specified
  - Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation
  - Material: certification 3.1 EN 10204
  - All internal edge shall be rounded off
  - Nozzle flanges in accordance with ASME B16.5: 2020
  - Flange fittings in accordance with ASME B16.9: 2018
  - 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
  - All welds are continuous except where indicate
  - For calculation see document number C230048CLC006
  - The nameplate ise in SS316 and is laser engraved
  - Non corrosive service, no inspection opening per UG-46(a)

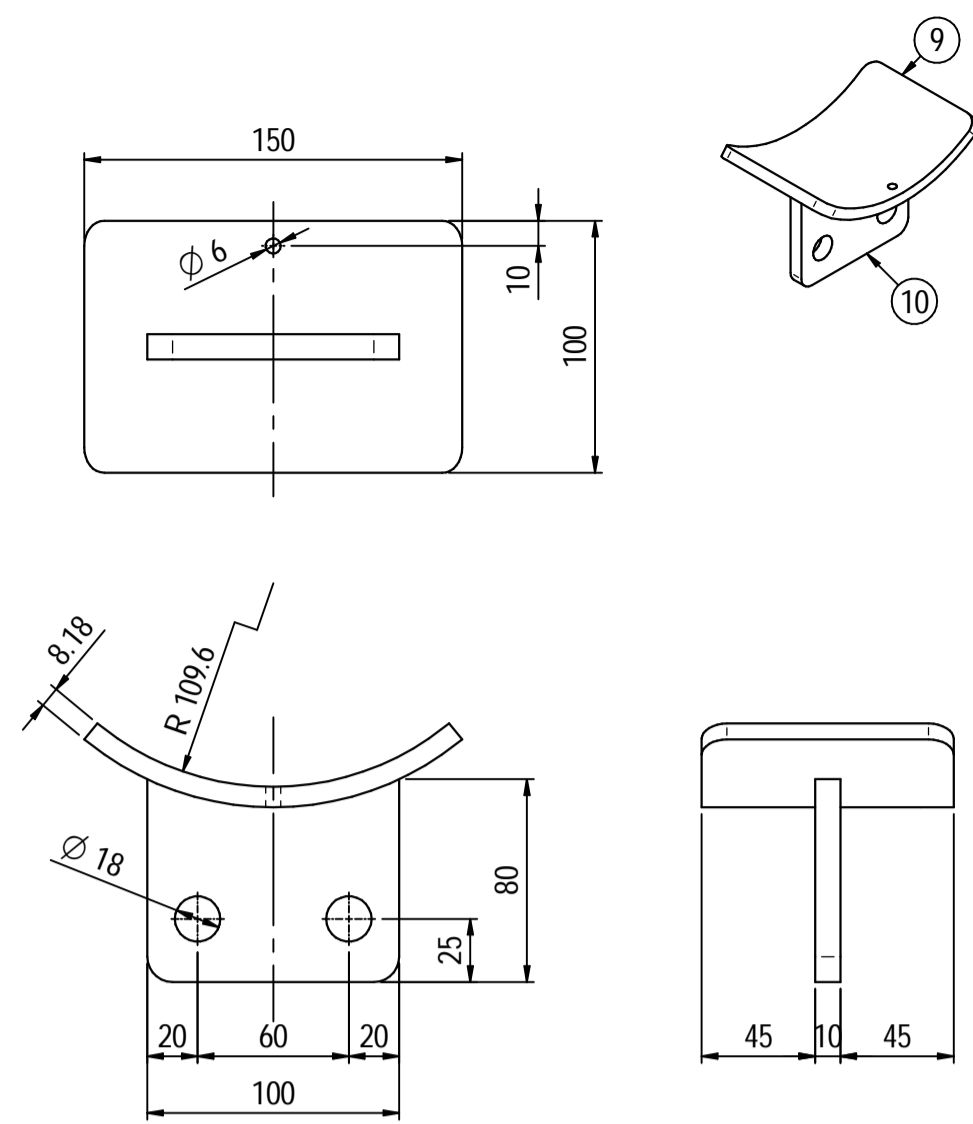
ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
N6	1	DRAIN	1/2"	38.1	8.38	#6000	NPT-F	-	-	-	8± 10
N5	1	TEMPERATURE GAUGE	1 1/2"	48.3	7.14	#600	WN	RF	-	-	8± 10
N4	1	TEMPERATURE TRANSMITTER	1 1/2"	48.3	7.14	#600	WN	RF	-	-	8± 10
N3	1	PSV CONNECTION	1"	33.4	9.09	#600	WN	RF	-	-	8± 10
N2	1	AIR OUTLET	3/4"	26.7	7.82	#600	WN	RF	-	-	8± 10
N1	1	AIR INLET	3/4"	26.7	7.82	#600	WN	RF	-	-	8± 10

ITEM	Qtà	SERVIZIO	NPS/DN	PIPE TUBO	FLANGE	FACE	PAD	O.D.	THK.	RINFORZO
DATI DI PROGETTO / Design data										
FLUIDO		Air		COLLAUDO			0094 Iqa Inspection Iberia SA			
STATO FISICO DEL FLUIDO		Gas		Test			N/A			
CODICE DI CALCOLO		ASME VIII Div. 1 Ed.2021								
PRESSIONE DI ESERCIZIO		23.3 barg		SERVIZIO LETALE			NO			
PRESSIONE DI PROGETTO		30.5 barg		RT examination			Spot (10%)			
PRESSIONE ESTERNA		NO		LIQUIDI PENETRANTI			NO			
PRESSIONE DI PROVA IDRAULICA		50.26 barg		ULTRASUONI			NO			
TEMPERATURA DI ESERCIZIO		157 °C		CONTROLLO MAGNETOSCOPICO			NO			
TEMPERATURA DI PROGETTO		175 °C		WELDING MAP			NO			
SOVRAMETALLO DI CORROSIONE		3 mm		PROCEDIMENTO DI SALDATURA			See doc: C230048WBK009			
CAPACITA'		32 l		TIPO DI FONDO			CAP			
EFFICIENZA GIUNTI		0.85		FORMATURA FONDO			HOT			
MAMP @ Design Temperature		38.66 barg @ +175 °C		PESO A VUOTO			61 kg			
MAMP(EXT)		NO		PESO IN ESERCIZIO			61 kg			
MDMT @ MAMP		+5 °C @ 38.66 barg		PESO PIENO D'ACQUA			93 kg			
TRATTAMENTO TERMICO		NO		DATI DEL VENTO			-			
IMPACT TEST		NO		DATI SISMICI			-			

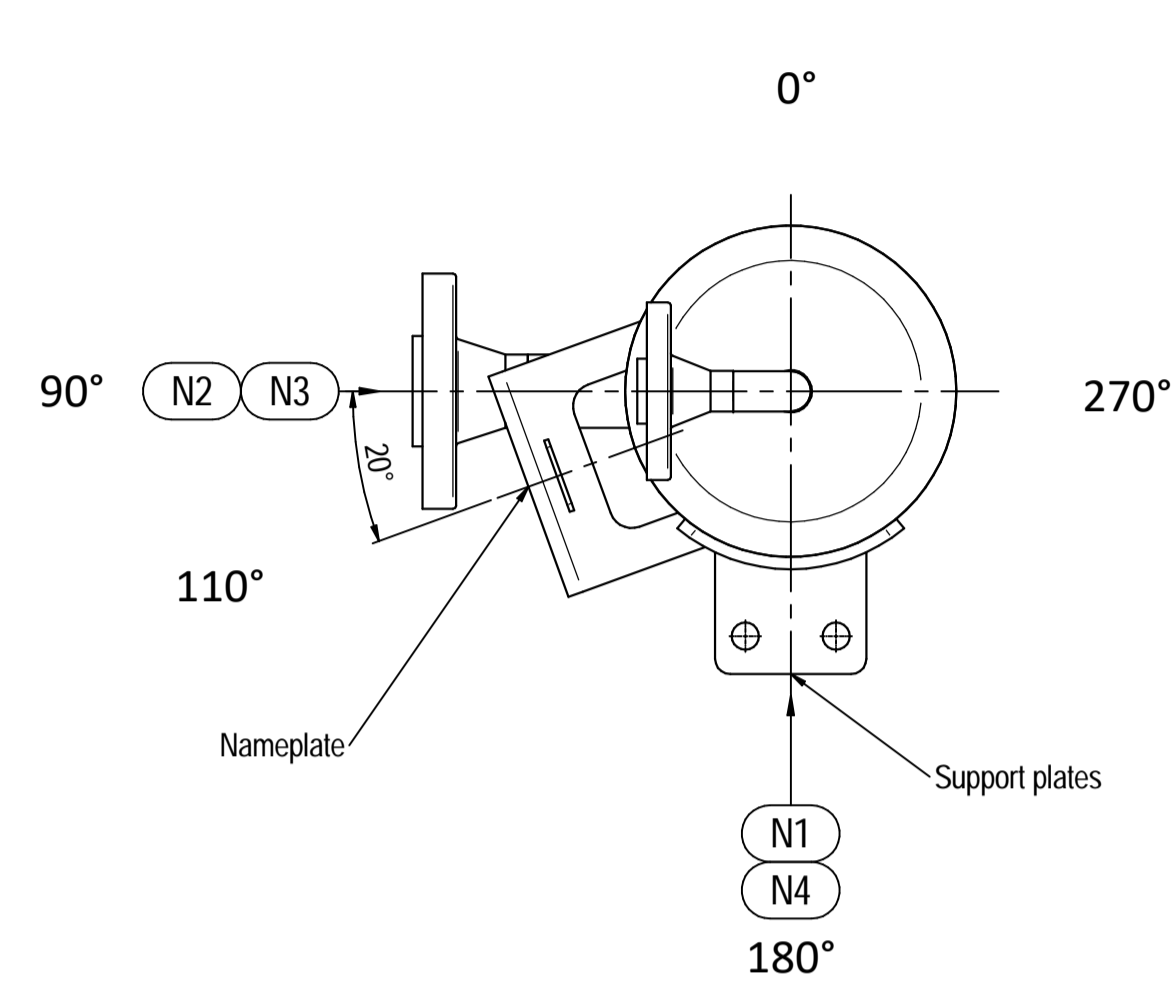
Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
00	FIRST ISSUE	LG	MV	MV	03/02/2024
Oggetto/Object 1st STAGE INLET PULSATION DAMPER					
		Scala/Scale	1 : 5	Formato/Size	A1
		Comm. N°/Job No.	C230048	Foglio/Sheet	1 - 1
		Cliente/Customer	Airpack Nederland B.V.		
		Ord. No.	17735-VV-900 (SK)		
		Dis. N°/Dwg No.	C230048DWG001	Rev.	00

Supports detail

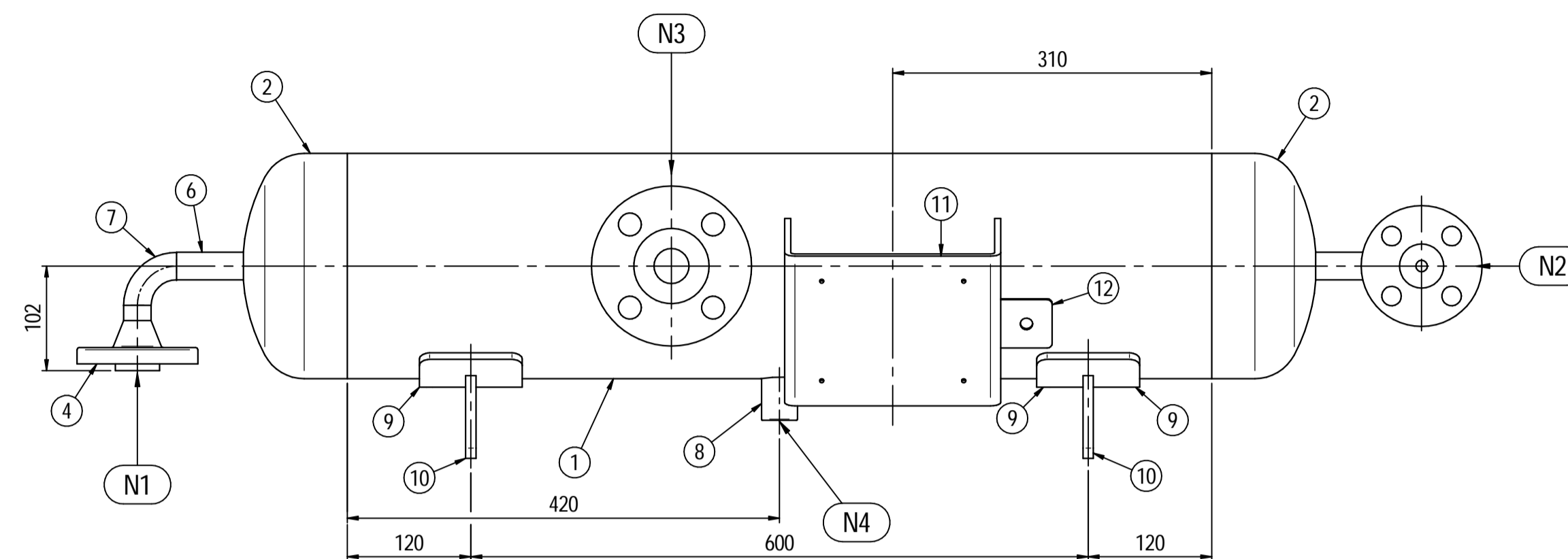
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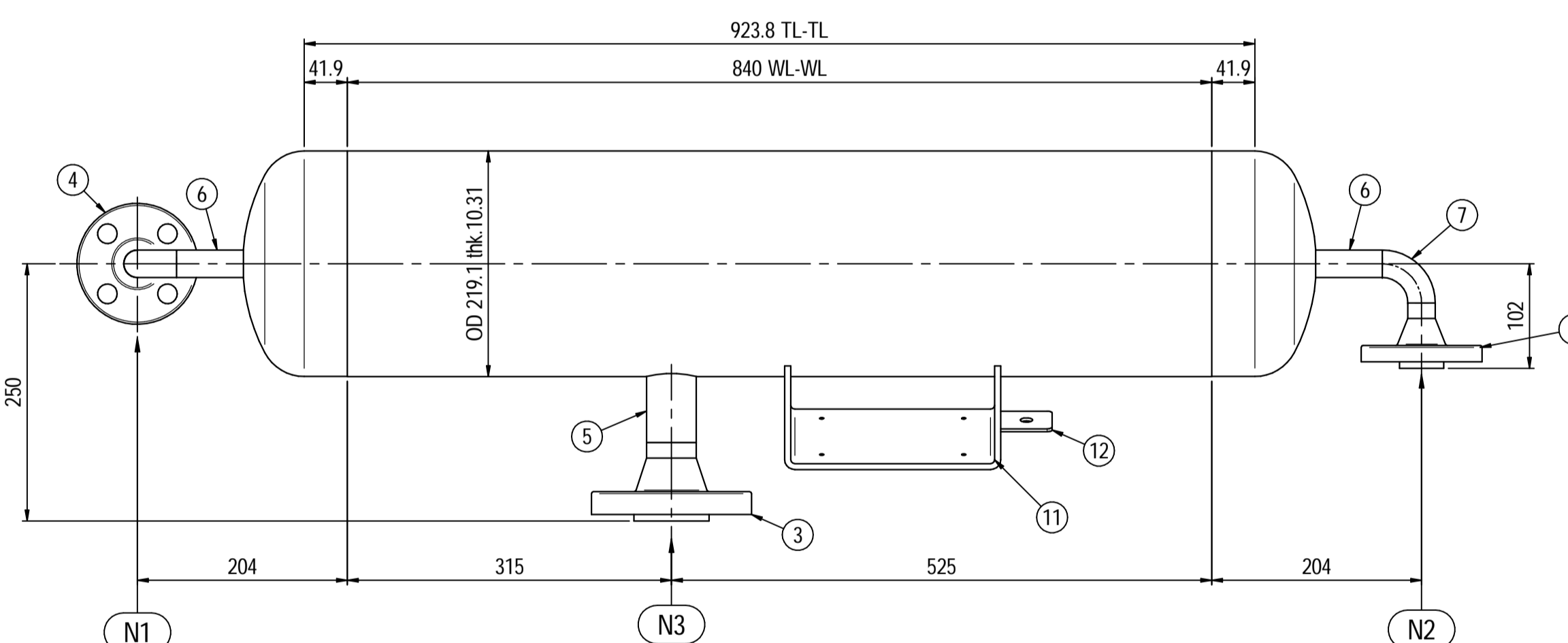
Please refer to the same comments on page 3.



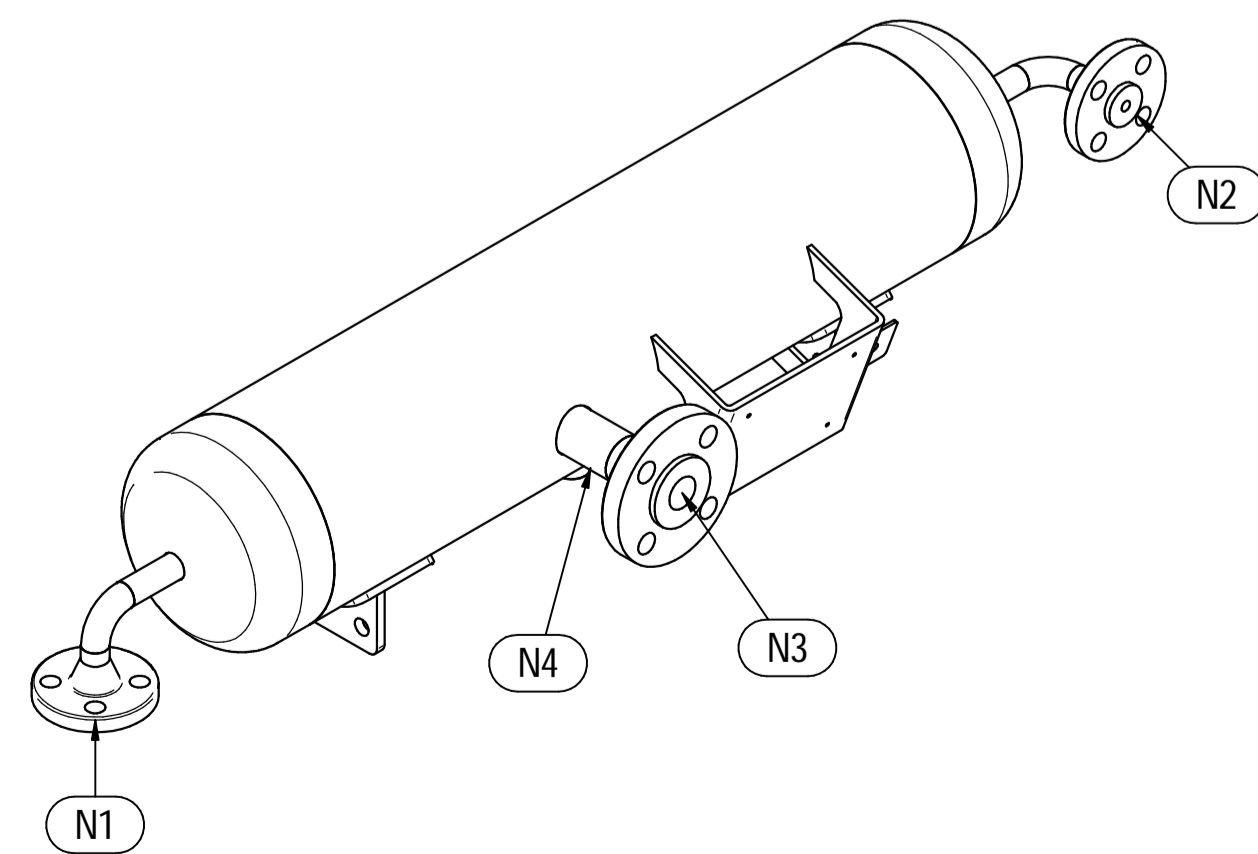
ORIENTATION VIEW



ELEVATION VIEW



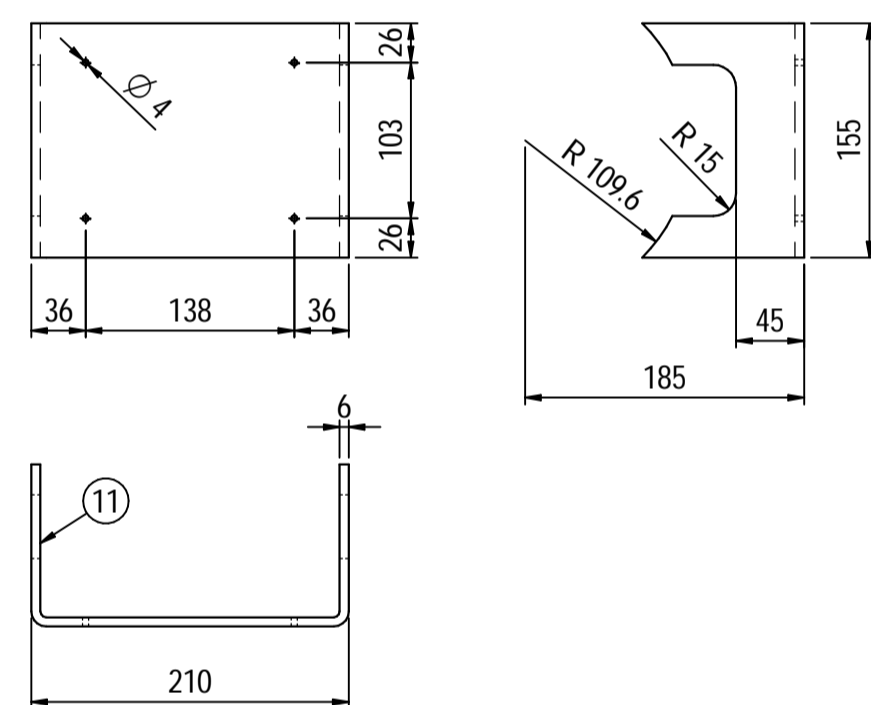
PLAN VIEW



ISOMETRIC VIEW

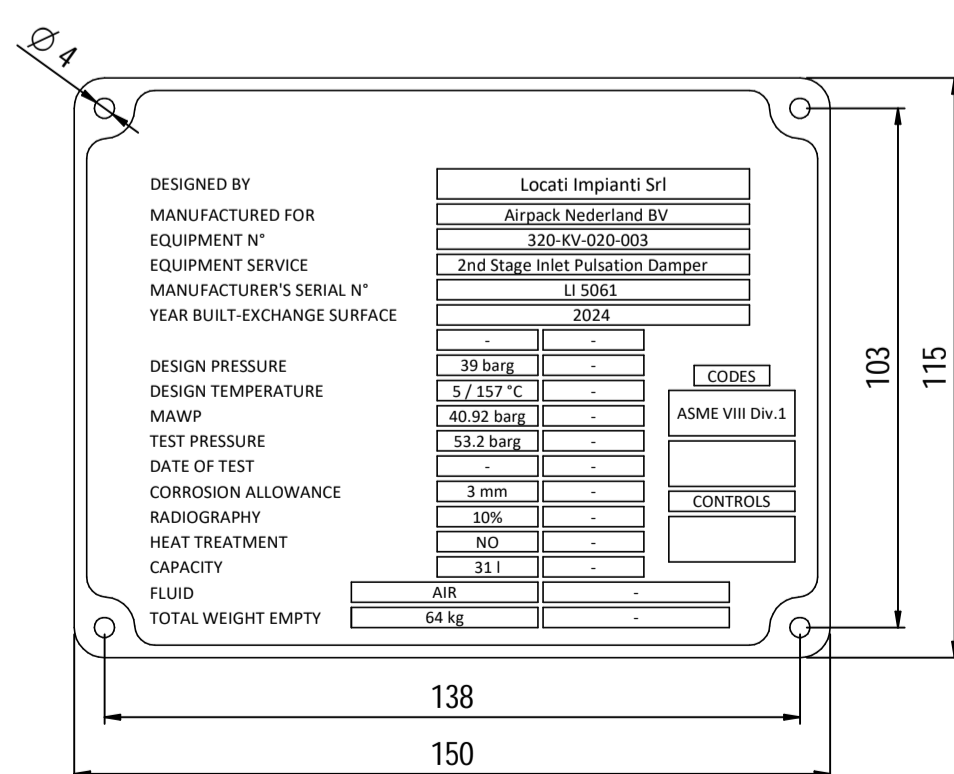
Nameplate detail

Scale 1:5



Nameplate detail

scale 1:1.5



Pos.	QTY	Description	Material	Cert.
1	1	Shell by Seamless Pipe 8" Sch.60 L=840	SA106 Gr.B	3.1
2	2	Cap 8" Sch.60	SA234 WPB	3.1
3	1	Flange 1½" WN #600 RF Sch.160	SA105	3.1
4	2	Flange ¾" WN #600 RF Sch.XXS	SA105	3.1
5	1	Seamless Pipe 1½" Sch.160 L=75	SA106 Gr.B	3.1
6	2	Seamless Pipe ¾" Sch.XXS L=73	SA106 Gr.B	3.1
7	2	Seamless elbow ¾" 90° LR Sch.XXS	SA234 WPB	3.1
8	1	Coupling ½" NPT #6000	A105	3.1
9	2	Pad by pipe 100 x 150 Thk.8.18	SA106 Gr.B	
10	2	Support plate 100 x 80 Thk.10	SA516 70	
11	1	Nameplate support by plate 403 x 155 Thk.6	SA516 70	
12	1	Earthing plate 50 x 40 Thk.3	A240 TP316L	

- Note:
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  - Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation
  - Material: certification 3.1 EN 10204
  - All internal edge shall be rounded off
  - Nozzle flanges in accordance with ASME B16.5: 2020
  - Flange fittings in accordance with ASME B16.9: 2018
  - 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
  - All welds are continuous except where indicate
  - For calculation see document number C230048CLC007
  - The nameplate ise in SS316 and is laser engraved
  - Non corrosive service, no inspection opening per UG-46(a)

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
N4	1	DRAIN	¾"	38.1	8.28	#600	NPT-F	-	-	-	8 ± 10
N3	1	TEMPERATURE TRANSMITTER	1½"	48.3	7.14	#600	WN RF	-	-	-	8 ± 10
N2	1	AIR OUTLET	¾"	26.7	7.82	#600	WN RF	-	-	-	8 ± 10
N1	1	AIR INLET	¾"	26.7	7.82	#600	WN RF	-	-	-	8 ± 10

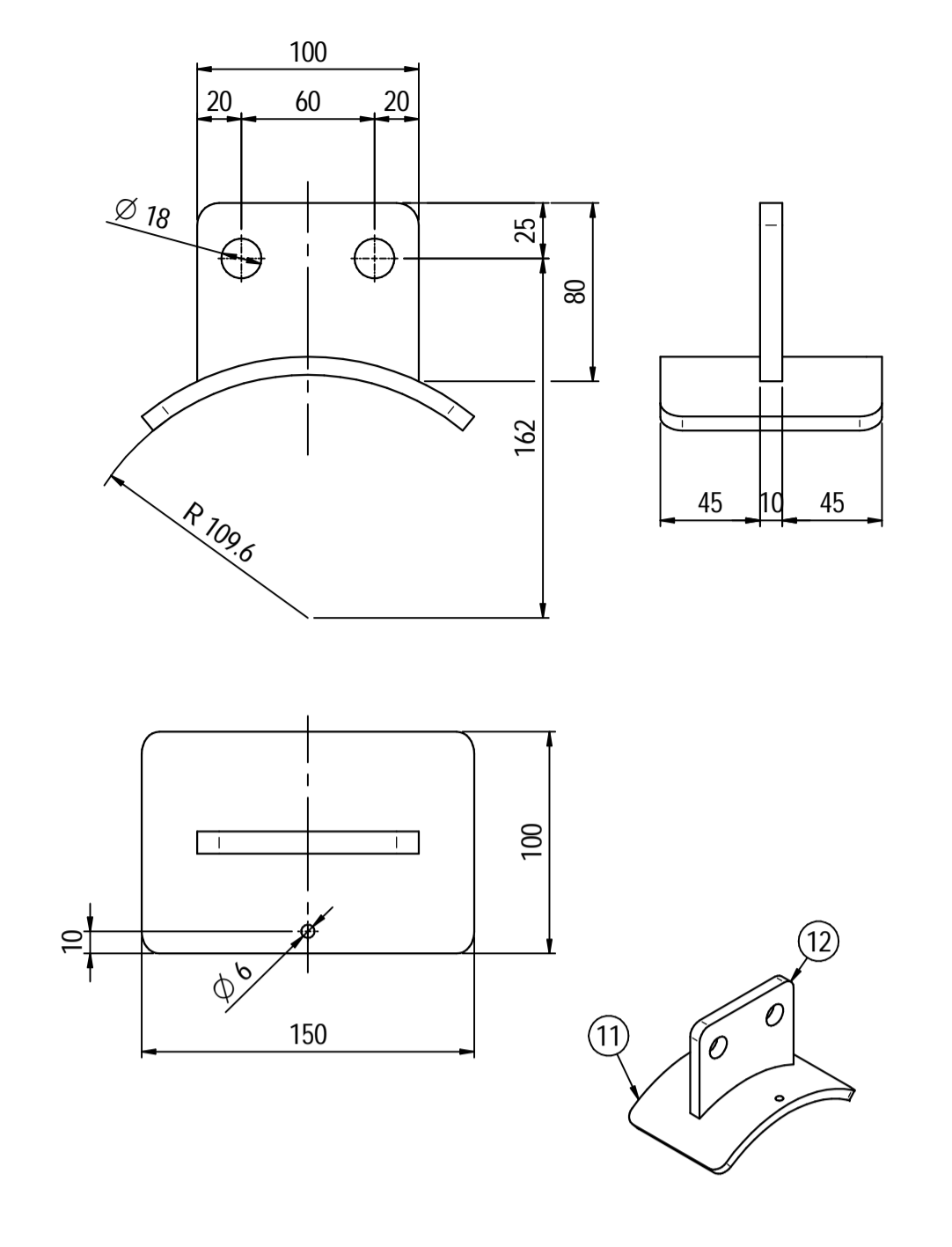
ITEM	Qtà	SERVIZIO	NPS/DN	PIPE TUBO	THK	RATING	FLANGE TYPE	FACE	O.D.	THK.	PAD RINFORZO
DATI DI PROGETTO / Design data											
FLUIDO		Air									COLLAUDO Test
STATO FISICO DEL FLUIDO		Gas									0094 Iqqa Inspection Iberia SA
CODICE DI CALCOLO		ASME VIII Div.1 Ed.2021									PED
PRESSIONE DI ESERCIZIO		22.1 barg					SERVIZIO LETALE				NO
PRESSIONE DI PROGETTO		39 barg					X-RAY RT examination				Spot (10%)
PRESSIONE ESTERNA		NO					LICUIDI PENETRANTI				NO
PRESSIONE DI PROVA IDRAULICA		53.2 barg					ULTRASUONI				NO
TEMPERATURA DI ESERCIZIO		60 °C					CONTROLLO MAGNETOSCOPICO				NO
TEMPERATURA DI PROGETTO		157 °C					ALLORNE DI SALDATURA				NO
SOVRAMEALLO DI CORROSIONE		3 mm					PROCEDIMENTO DI SALDATURA				See doc: C230048WBK009
CAPACITA'		311					TIPO DI FONDO				CAP
EFFICIENZA GIUNTI		0.85					FORMATURA FONDO				HOT
MAWP @ Design Temperature		40.92 barg @ +157 °C					PESO A VUOTO				64 kg
MAWP(EXT)		NO					PESO IN ESERCIZIO				64 kg
MDMT @ MAWP		+5 °C @ 40.92 barg					PESO PIENO D'ACQUA				95 kg
TRATTAMENTO TERMICO		NO					DATI DEL VENTO				-
IMPACT TEST		NO					DATI SISMICI				-

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
00	FIRST ISSUE	LG	MV	MV	03/02/2024

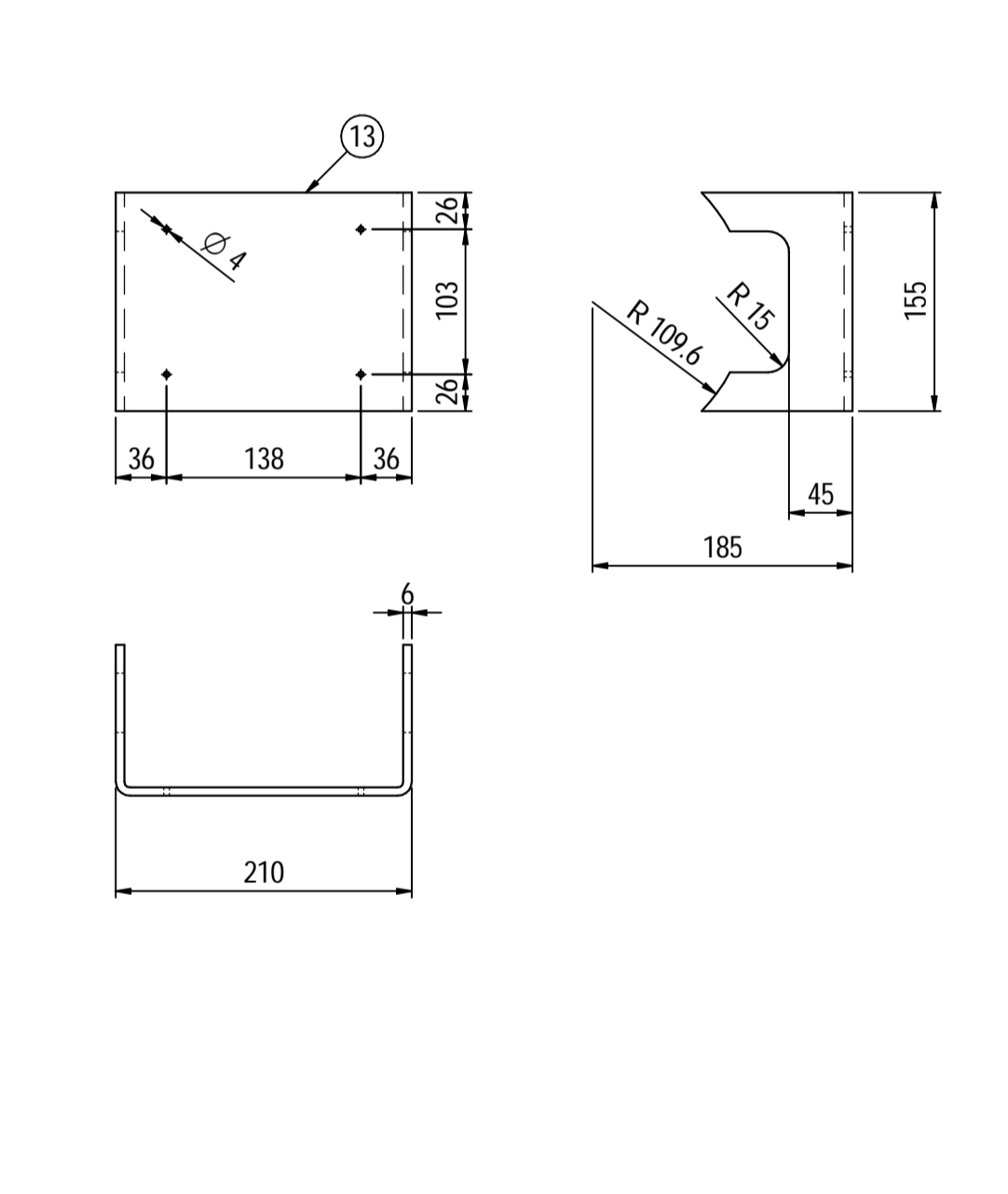
Oggetto/Object: 2nd STAGE INLET PULSATION DAMPER

Scala/Scale	1 : 5	Formato/Size	A1
Comm. N°/Job No.	C230048	Foglio/Sheet	1 - 1
Cliente/Customer	Airpack Nederland B.V.		
Ord. No.	17735-VV-900 (SK)		
Dis. N°/Dwg No.	C230048DWG003	Rev.	00

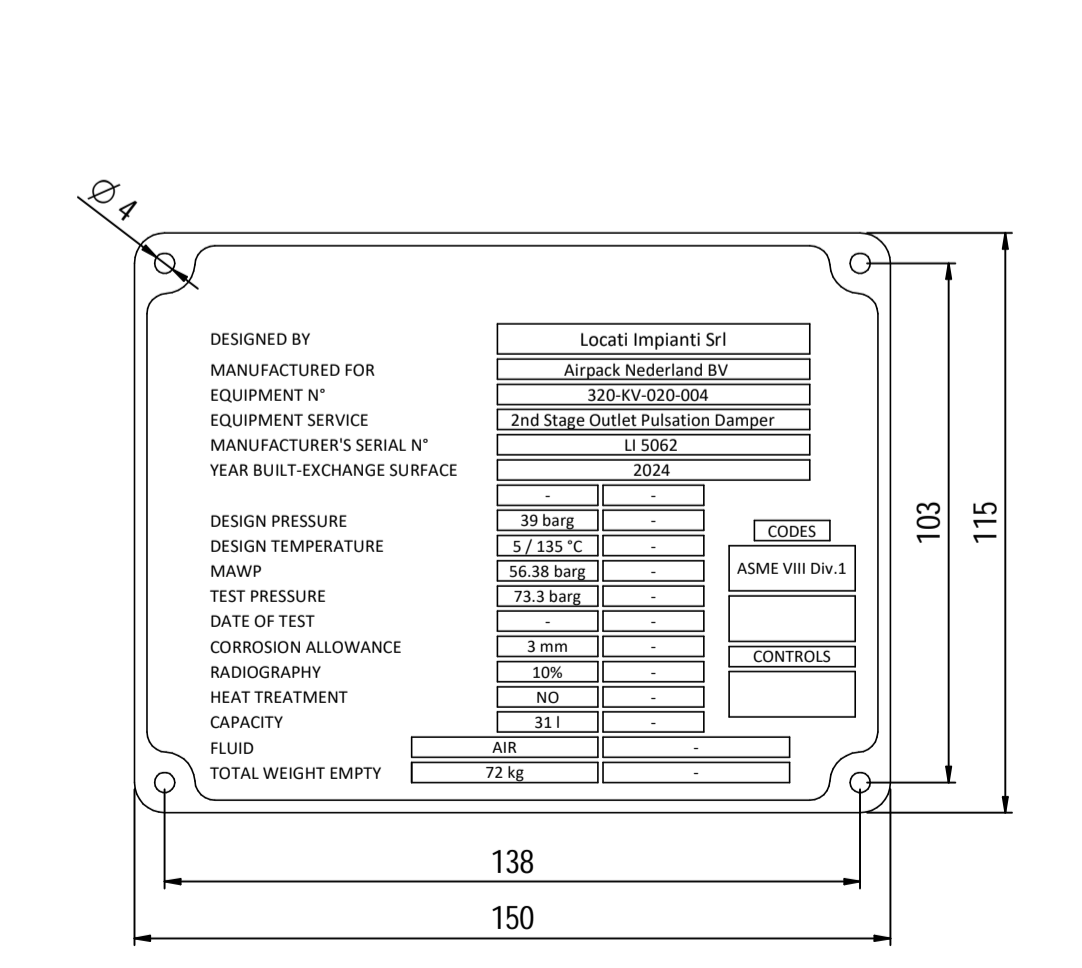
**Supports detail**  
Scale 1 : 3



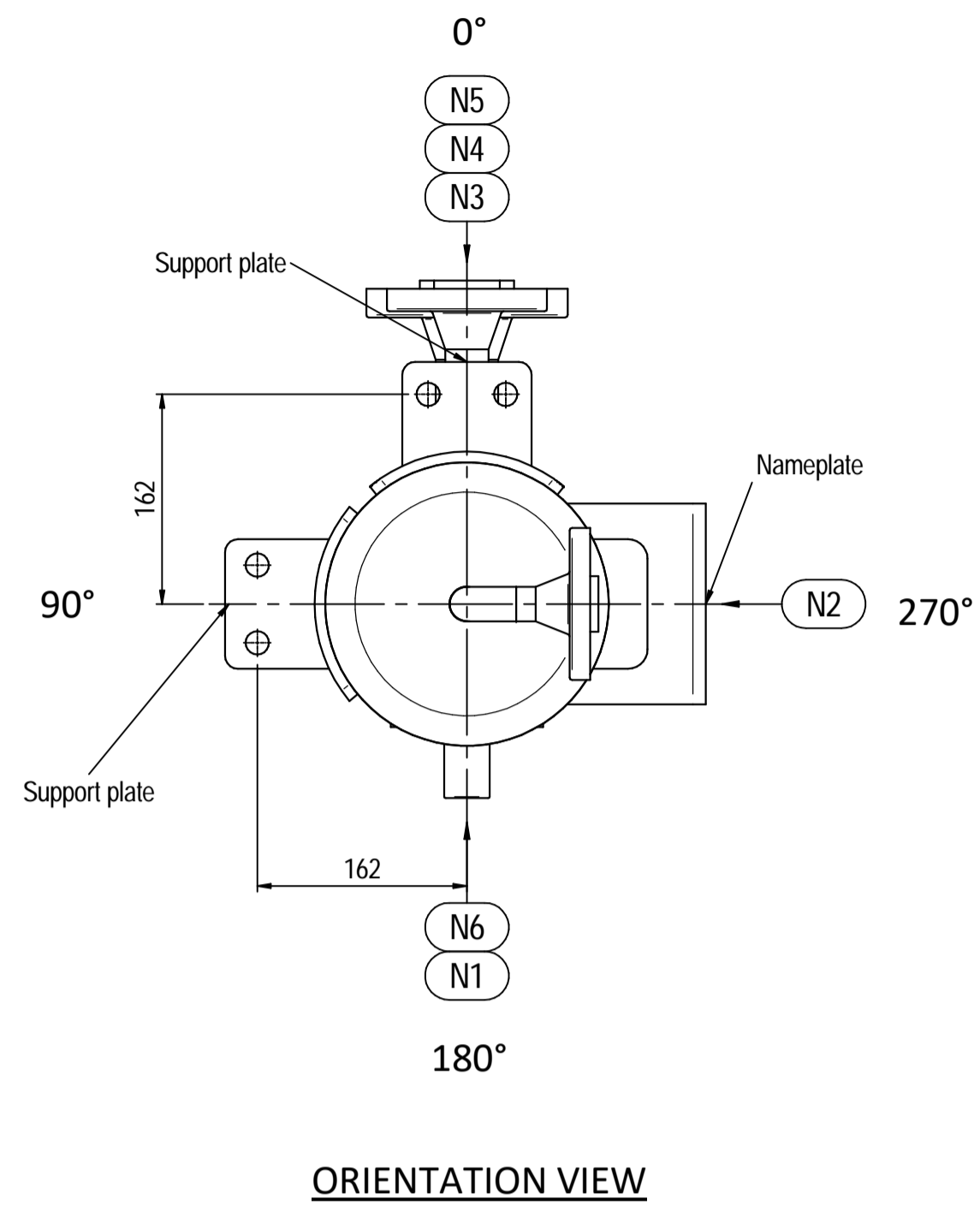
**Nameplate detail**  
Scale 1:5



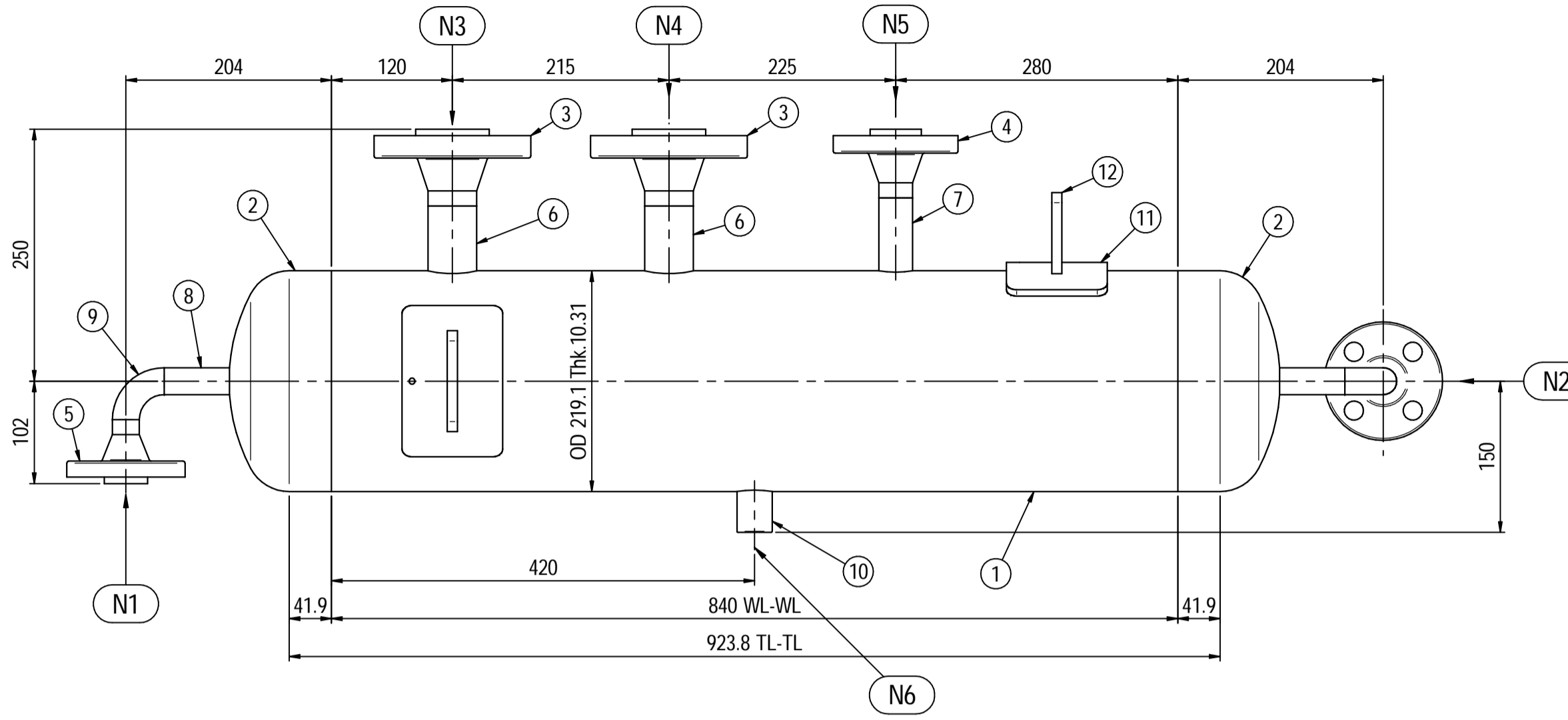
**Nameplate detail**  
scale 1:1.5



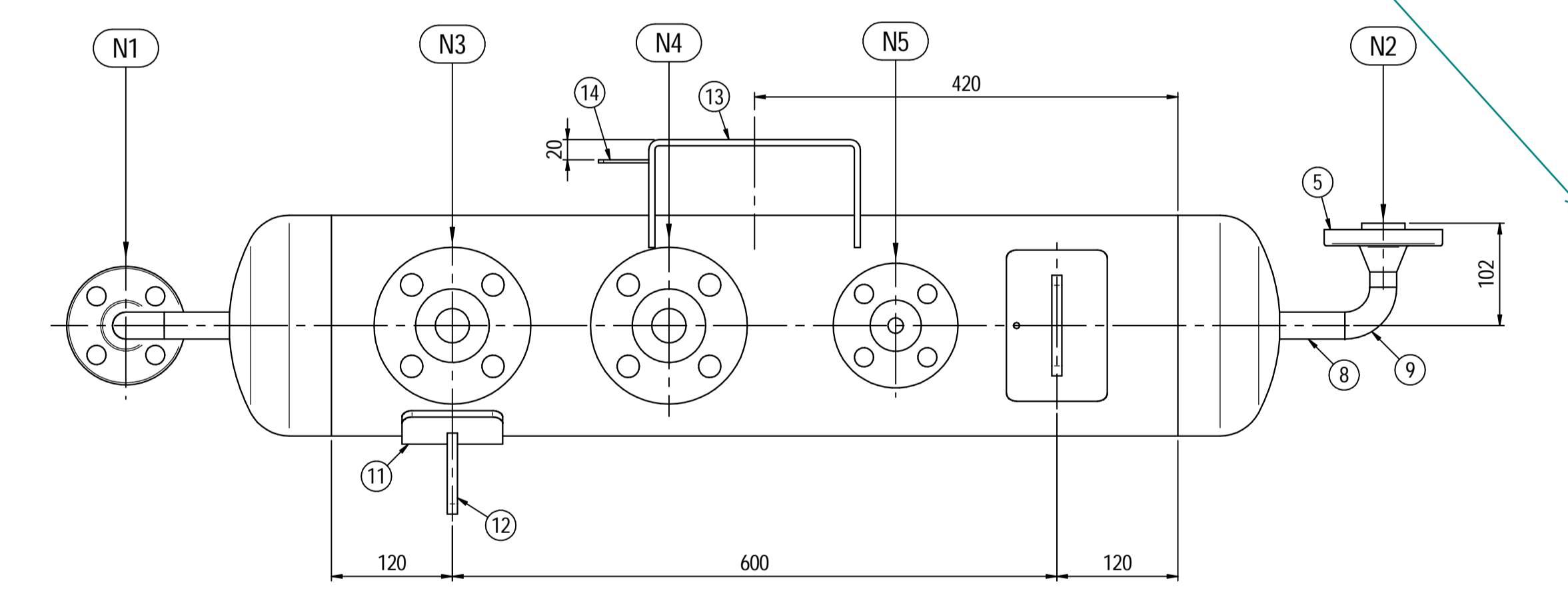
Please refer to the same comments on page 3.



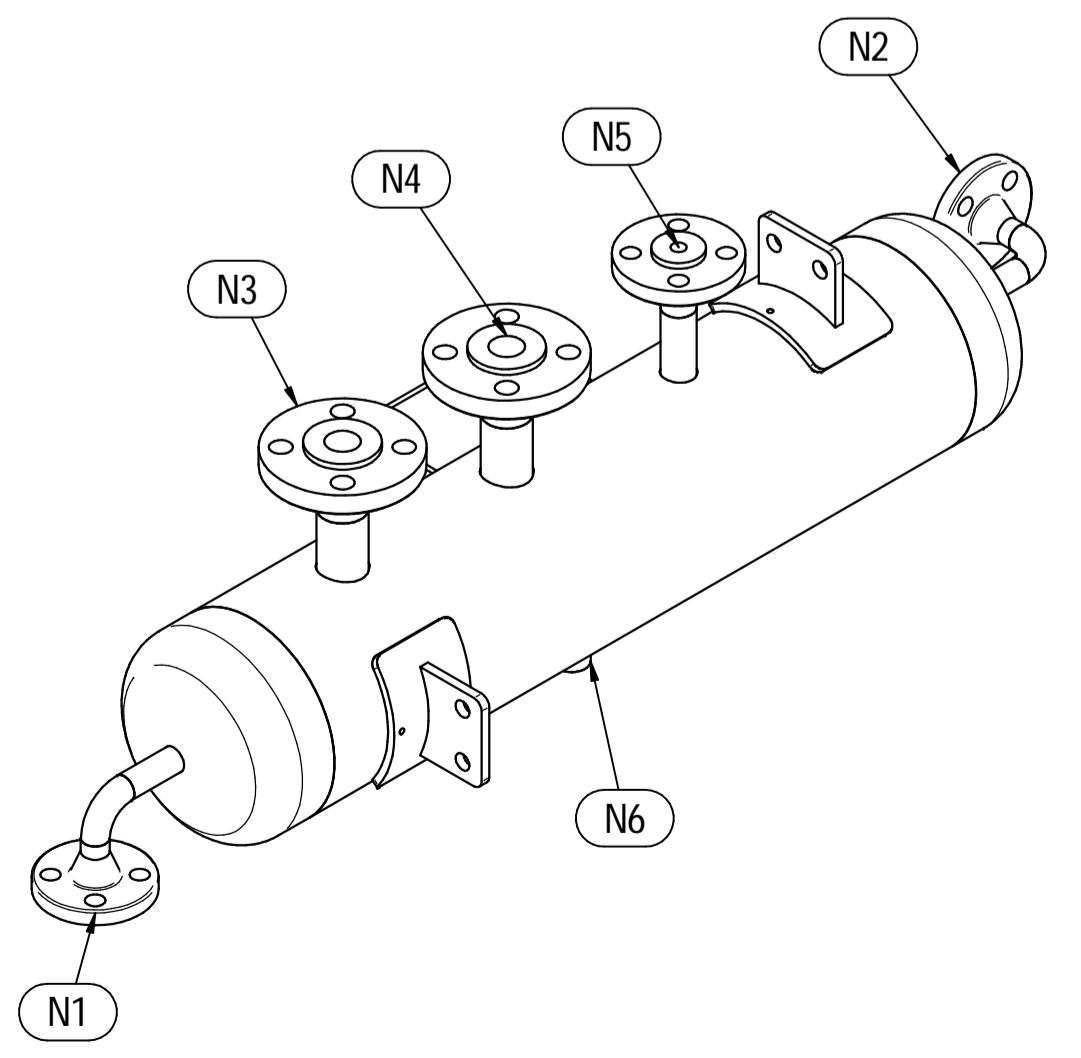
**ORIENTATION VIEW**



**ELEVATION VIEW**



**PLAN VIEW**



**ISOMETRIC VIEW**

As per Elevation view TG and TT should be N3 and N4

Pos.	QTY	Description	Material	Cert.
1	1	Shell by Seamless Pipe 8" Sch.60 L=840	SA106 Gr.B	3.1
2	2	Cap 8" Sch.60	SA234 WPB	3.1
3	2	Flange 1 1/2" WN #600 RF Sch.160	SA105	3.1
4	1	Flange 1" WN #600 RF Sch.XXS	SA105	3.1
5	2	Flange 3/4" WN #600 RF Sch.XXS	SA105	3.1
6	2	Seamless Pipe 1 1/2" Sch.160 L=75	SA106 Gr.B	3.1
7	1	Seamless Pipe 1" Sch.XXS L=80	SA106 Gr.B	3.1
8	2	Seamless Pipe 3/4" Sch.XXS L=73	SA106 Gr.B	3.1
9	2	Seamless elbow 3/4" 90° LR Sch.XXS	SA234 WPB	3.1
10	1	Coupling 3/4" NPT #6000	A105	3.1
11	2	Pad by pipe 100 x 150 Thk.8.18	SA106 Gr.B	
12	2	Support plate 100 x 80 Thk.10	SA516 70	
13	1	Nameplate support by plate 403 x 155 Thk.6	SA516 70	
14	1	Earthing plate 50 x 40 Thk.3	A240 TP316L	

- Note:
- Governing measurement S.I. unless otherwise specified
  - Flange bolt holes have to be straddled from main vessel center line in plan & vertical & horizontal centreline in elevation
  - Material: certification 3.1 EN 10204
  - All internal edge shall be rounded off
  - Nozzle flanges in accordance with ASME B16.5: 2020
  - Flange fittings in accordance with ASME B16.9: 2018
  - 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
  - All welds are continuous except where indicate
  - For calculation see document number C230048CLC008
  - The nameplate ise in SS316 and is laser engraved
  - Non corrosive service, no inspection opening per UG-46(a)

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
N6	1	DRAIN	1/2"	38.1	8.38	#6000	NPT-F				8±10
N5	1	TEMPERATURE GAUGE	1 1/2"	48.3	7.14	#600	WN	RF			8±10
N4	1	TEMPERATURE TRANSMITTER	1 1/2"	48.3	7.14	#600	WN	RF			8±10
N3	1	TEMPERATURE TRANSMITTER	1 1/2"	48.3	7.14	#600	WN	RF			8±10
N2	1	AIR OUTLET	3/4"	26.7	7.82	#600	WN	RF			8±10
N1	1	AIR INLET	3/4"	26.7	7.82	#600	WN	RF			8±10

ITEM	Qtà	SERVIZIO	NPS/DN	PIPE TUBO	FLANGE FLANGIA	FACE	O.D.	THK.	RINFORZO
DATI DI PROGETTO / Design data									
FLUIDO		Air		COLLAUDO		Test			0094 Iqqa Inspection Iberia SA
STATO FISICO DEL FLUIDO		Gas		Test		PED			N/A
CODICE DI CALCOLO		ASME VIII Div.1 Ed.2021							
PRESSIONE DI ESERCIZIO		30 barg		SERVIZIO LETALE		NO			
PRESSIONE DI PROGETTO		39 barg		X-RAY		RT examination			Spot (10%)
PRESSIONE ESTERNA		NO		LICUIDI PENETRANTI		NO			
PRESSIONE DI PROVA IDRAULICA		73.3 barg		ULTRASUONI		NO			
TEMPERATURA DI ESERCIZIO		116°C		CONTROLLO MAGNETOSCOPICO		NO			
TEMPERATURA DI PROGETTO		135 °C		WELD TEST COUPON		NO			
SOVRAMEZZA DI CORROSIONE		3 mm		PROCEDIMENTO DI SALDATURA		See doc: C230048WBK009			
CAPACITA'		311		TIPO DI FONDO		CAP			
EFFICIENZA GIUNTI		0.85		FORMAZIONE FONDO		HOT			
MAMP @ Design Temperature		56.38 barg @ +135°C		PESO A VUOTO		72 kg			
MAMP(EXT)		NO		PESO IN ESERCIZIO		72 kg			
MDMT @ MAMP		+5 °C @ 56.38 barg		PESO PIENO D'ACQUA		103 kg			
TRATTAMENTO TERMICO		NO		DATI DEL VENTO					
IMPACT TEST		NO		DATI SISMICI					

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
00	FIRST ISSUE	LG	MV	MV	03/02/2024
Oggetto/Object: 2nd STAGE OUTLET PULSATION DAMPER					

LOCATI IMPIANTI S.r.l. logo and technical specifications: Scale/Scale 1:5, Comm. N°/Job No. C230048, Cliente/Customer Airpack Nederland B.V., Ord. No. 17735-VV-900 (SK), Dis. N°/Dwg No. C230048DWG004, Rev. 00.