



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	02	Page 1 of 6

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

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED
02	15-05-2024	Issued for Approval	S.K.	J.J.	S.K.
01	21-02-2024	Issued for Approval	S.K.	J.J.	S.K.

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Detail Drawings for Pulsation Dampers

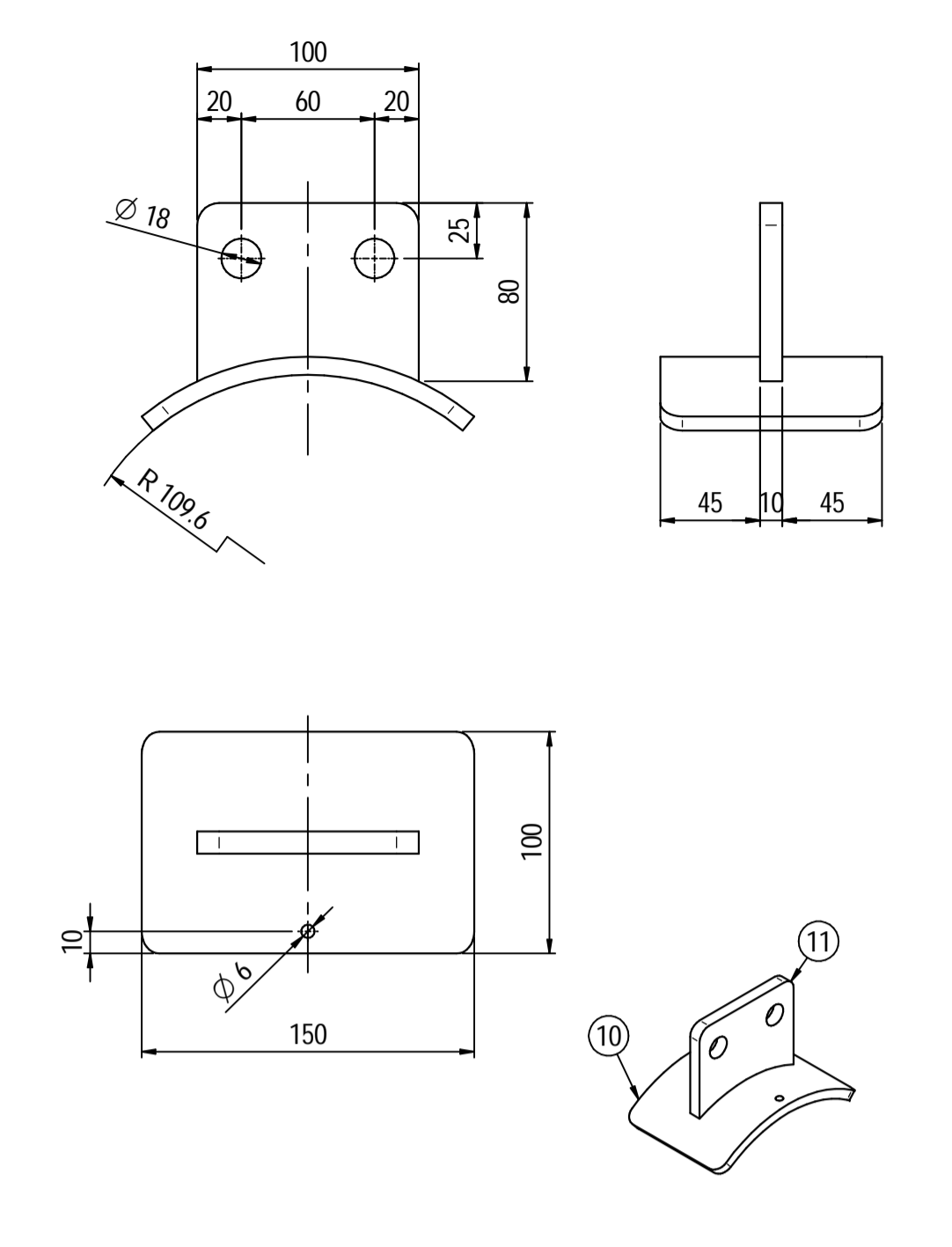
Document No. 17735-23B

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision	Page
N278	VD	6019	ME	DWG	0025	02	Page 2 of 6

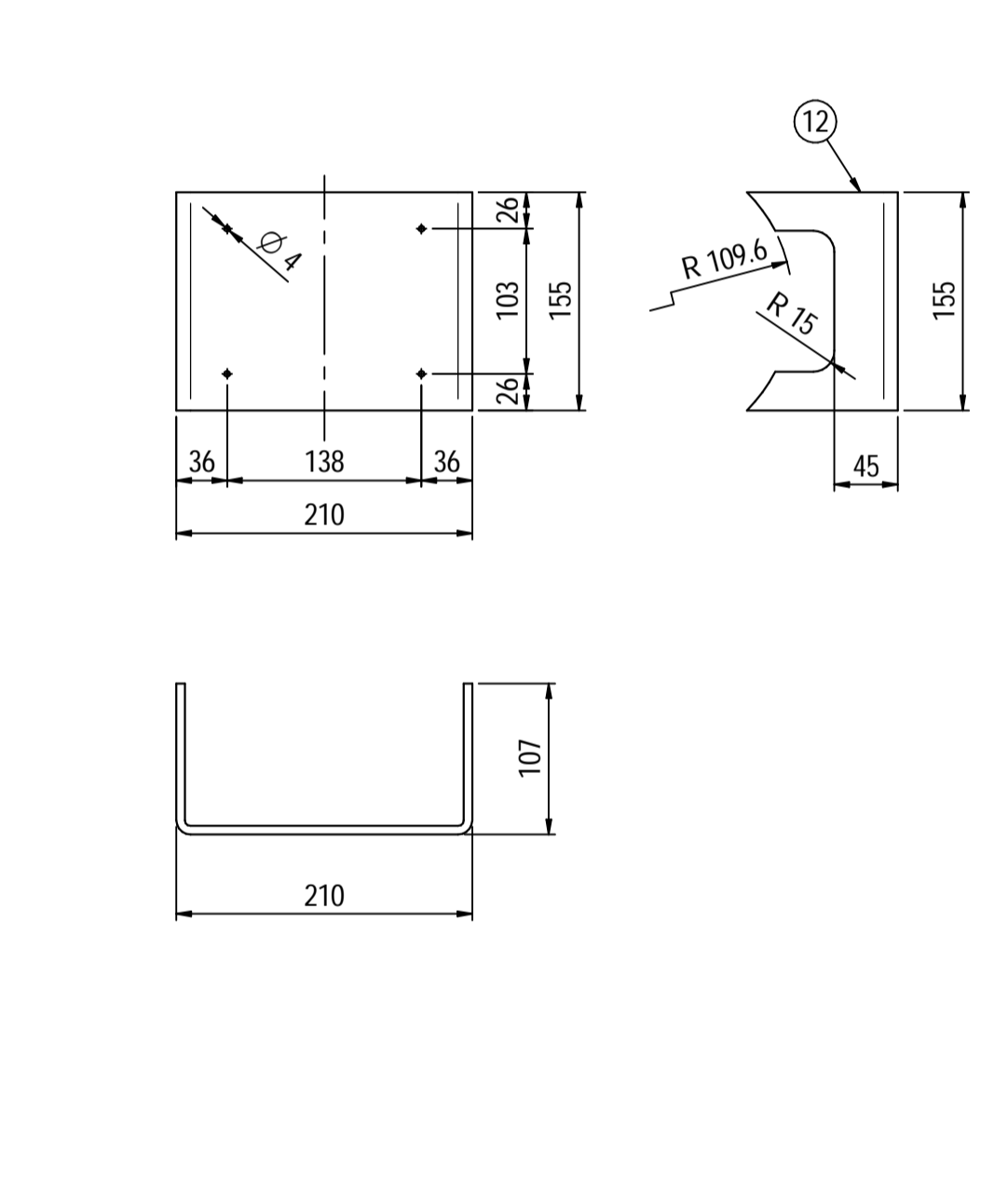
LIST OF REVISED PAGES

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2	X	X				27						52						77					
3	X	X				28						53						78					
4	X	X				29						54						79					
5	X	X				30						55						80					
6	X	X				31						56						81					
7						32						57						82					
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19						44						69						1					
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21						46						71						3					
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25						50						75						7					

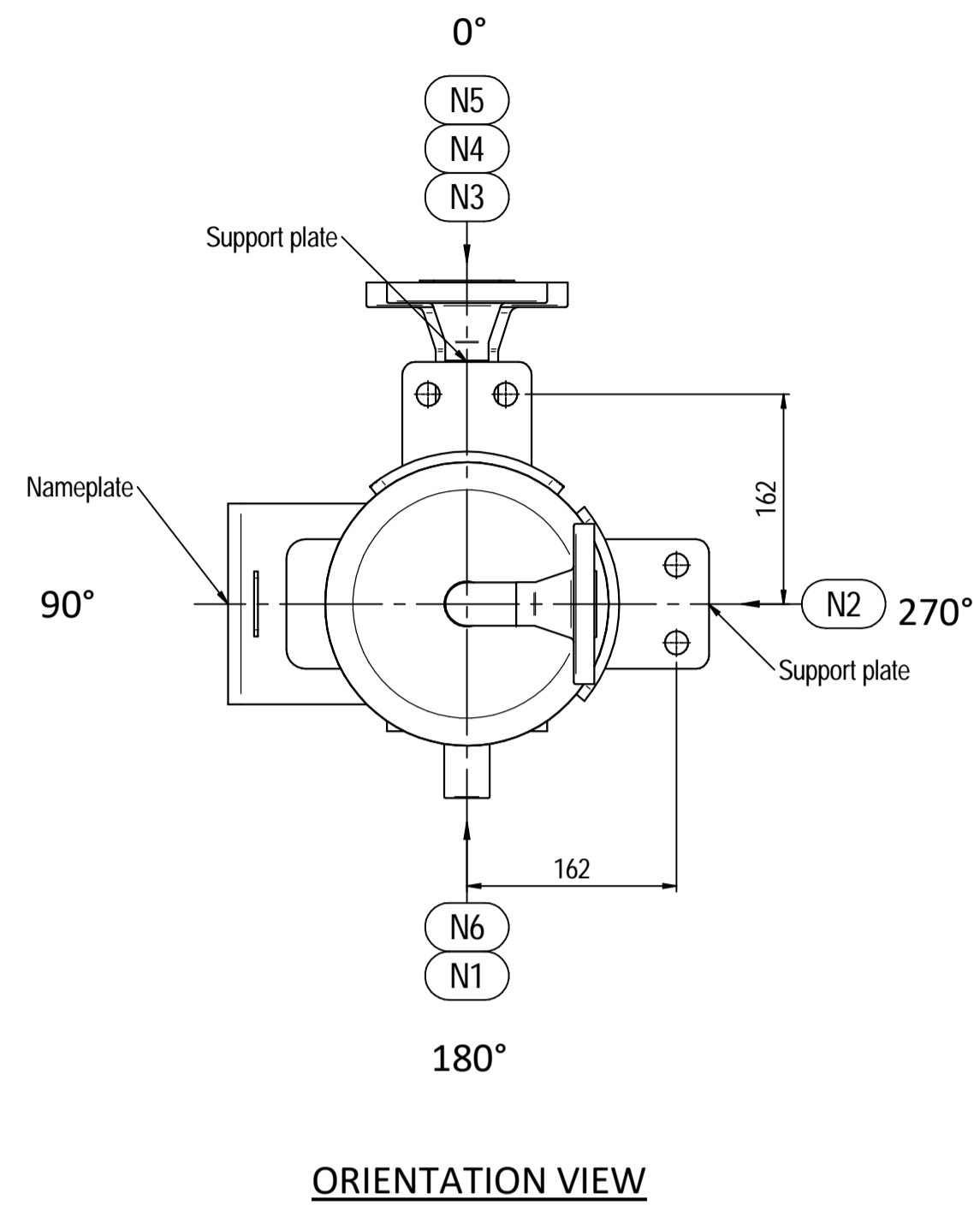
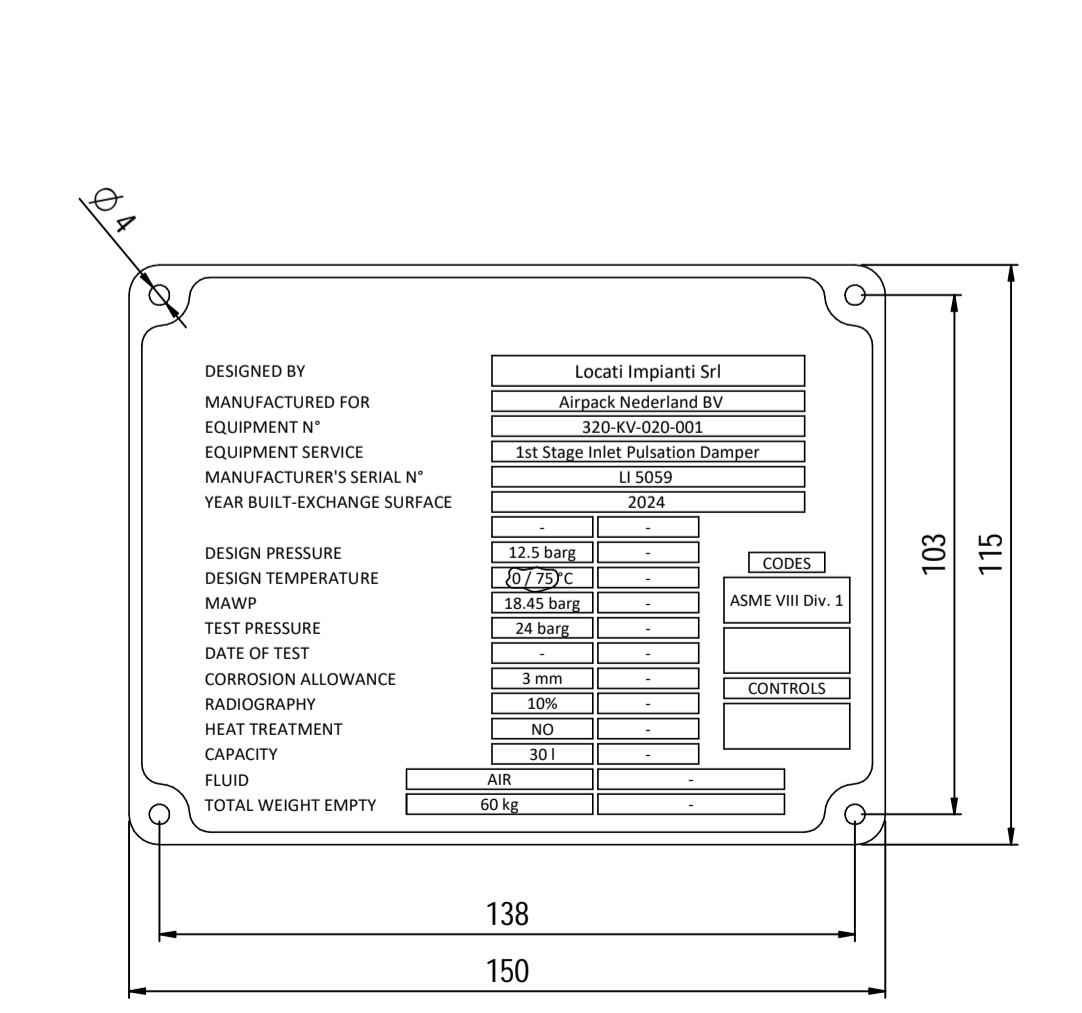
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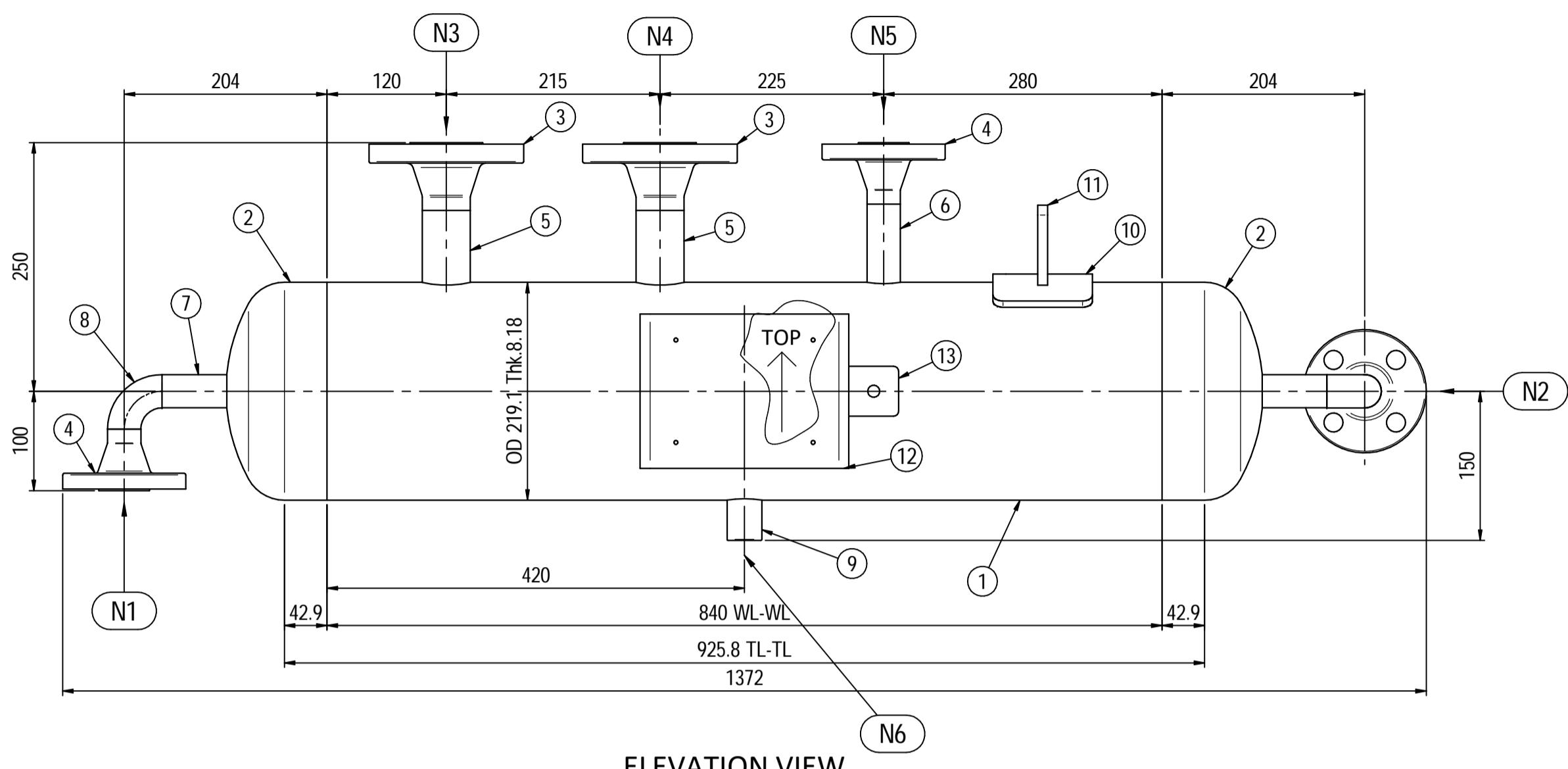
Nameplate detail
Scale 1:5



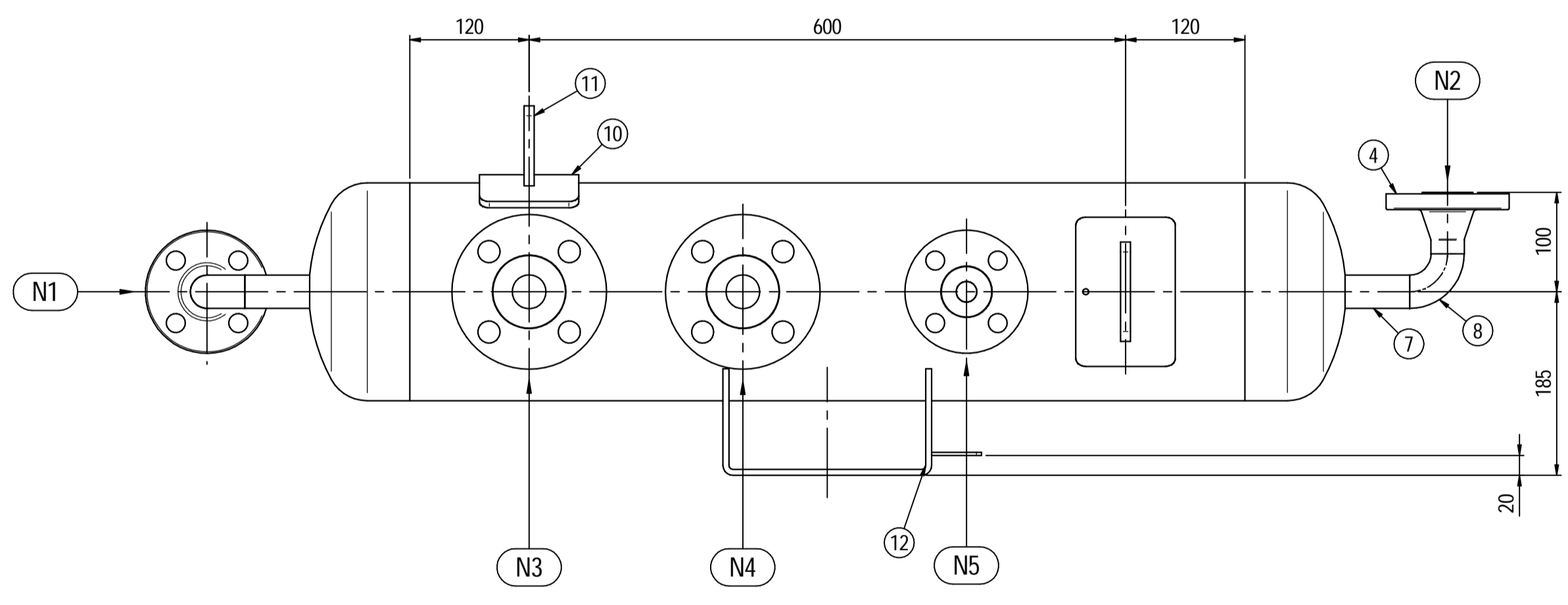
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scale 1:1.5



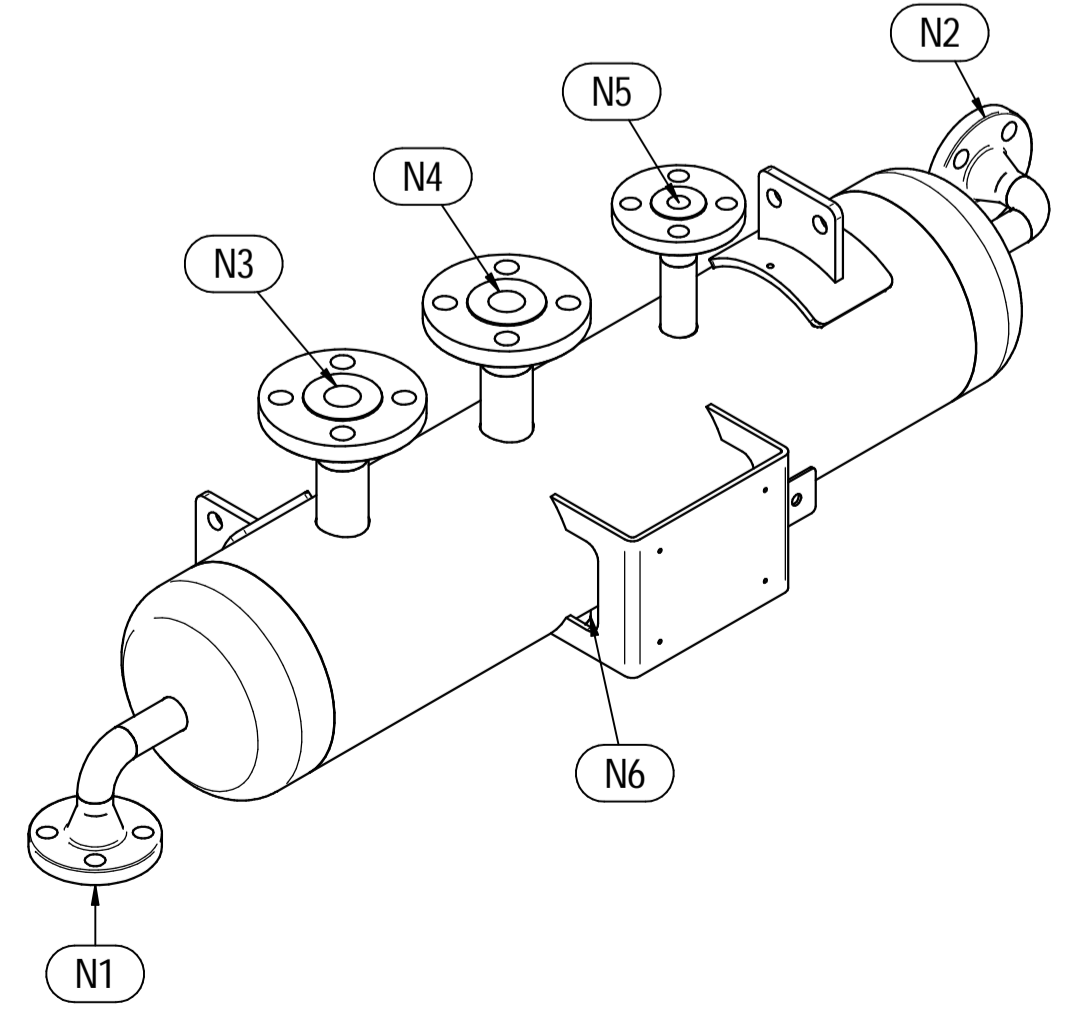
ORIENTATION VIEW



ELEVATION VIEW



PLAN VIEW



ISOMETRIC VIEW

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	SA240 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 use in SS316 and is laser engraved
 - Non corrosive service, no inspection opening per UG-46(a)
 - On support hexagonal bolts DIN 933, class 8.8 shall be use (Airpack scope)

ITEM	QTY	SERVICE	SIZE	PIPE O.D.	THK	RATING	FLANGE TYPE	FACE	O.D.	THK.	Tc
N6	1	DRAIN	1/2"	38.1	8.38	#6000	NPT-F	-	-	-	8 ± 10
N5	1	PSV CONNECTION	1"	33.4	6.35	#300	WN RF	-	-	-	8 ± 10
N4	1	TEMPERATURE GAUGE	1 1/2"	48.3	7.14	#300	WN RF	-	-	-	8 ± 10
N3	1	TEMPERATURE TRANSMITTER	1 1/2"	48.3	7.14	#300	WN RF	-	-	-	8 ± 10
N2	1	AIR OUTLET	1"	33.4	6.35	#300	WN RF	-	-	-	8 ± 10
N1	1	AIR INLET	1"	33.4	6.35	#300	WN RF	-	-	-	8 ± 10

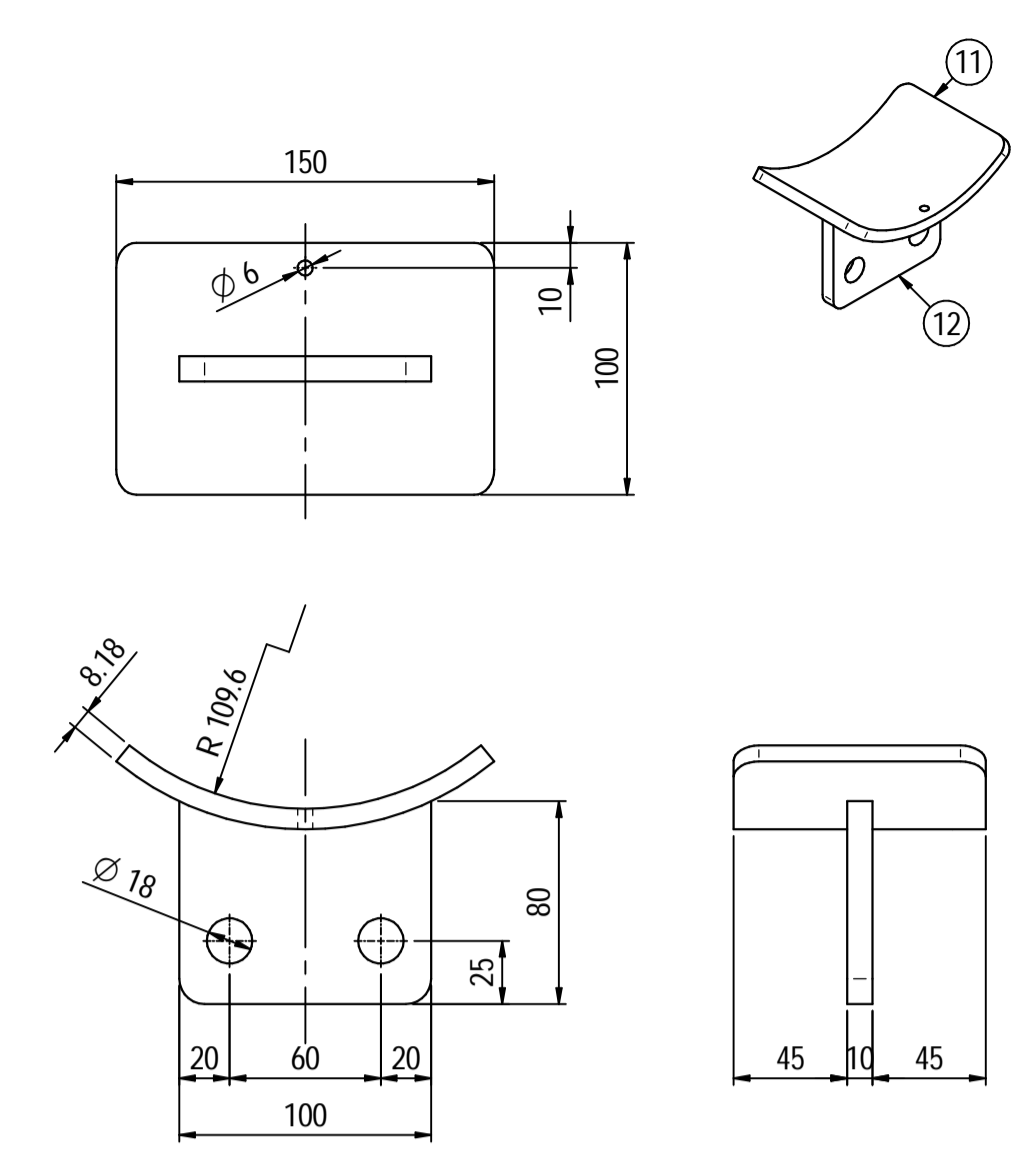
DATI DI PROGETTO / Design data			
FLUIDO	Air	COLLAUDO	Test
STATO FISICO DEL FLUIDO	Gas	TEST	Irqa Inspection Iberia SA
CODICE DI CALCOLO	ASME VIII Div.1 Ed.2021		
PRESSIONE DI ESERCIZIO	9.5 barg	SERVIZIO LETALE	NO
PRESSIONE DI PROGETTO	12.5 barg	X-RAY	RT examination
PRESSIONE ESTERNA	NO	LICUIDI PENETRANTI	NO
PRESSIONE DI PROVA IDRAULICA	24 barg	LICUIDI PENETRANTI	NO
TEMPERATURA DI ESERCIZIO	5 + 46°C	ULTRASUONI	NO
TEMPERATURA DI PROGETTO	75 °C	ULTRASUONI	NO
SOVRAMEZZO DI CORROSIONE	3 mm	ULTRASUONI	NO
CAPACITA'	321	ULTRASUONI	NO
EFFICIENZA GIUNTI	0.85	ULTRASUONI	NO
MAWP @ Design Temperature	18.45 barg @ +75°C	ULTRASUONI	NO
MAWP(EXT)	NO	ULTRASUONI	NO
MDMT @ MAWP	0 °C @ 18.45 barg	ULTRASUONI	NO
TRATTAMENTO TERMICO	NO	ULTRASUONI	NO
IMPACT TEST	NO	ULTRASUONI	NO

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
01	Revised as per Customer comments	LG	MV	MV	11/05/2024
00	FIRST ISSUE	LG	MV	MV	03/02/2024

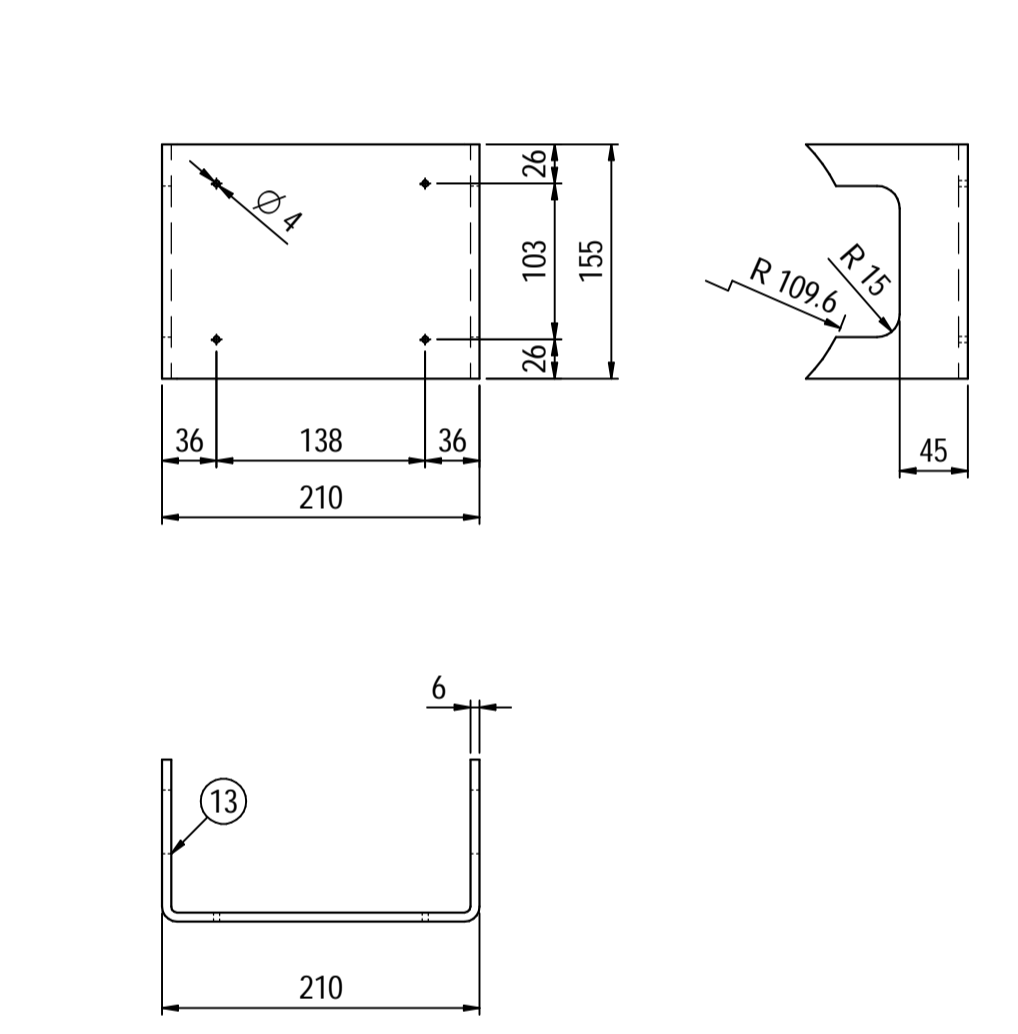
Objetto/Object: **1st STAGE INLET PULSATION DAMPER**

Scala/Scale	1 : 5	Formato/Size	A1
Comm. N°/Job No.	C230048	Foglio/Sheet	1 - 1
Cliente/Customer	Airpack Netherland B.V.		
Ord. No.	17735-VV-900 (SK)		
Dis. N°/Dwg No.	C230048DWG001	Rev.	01

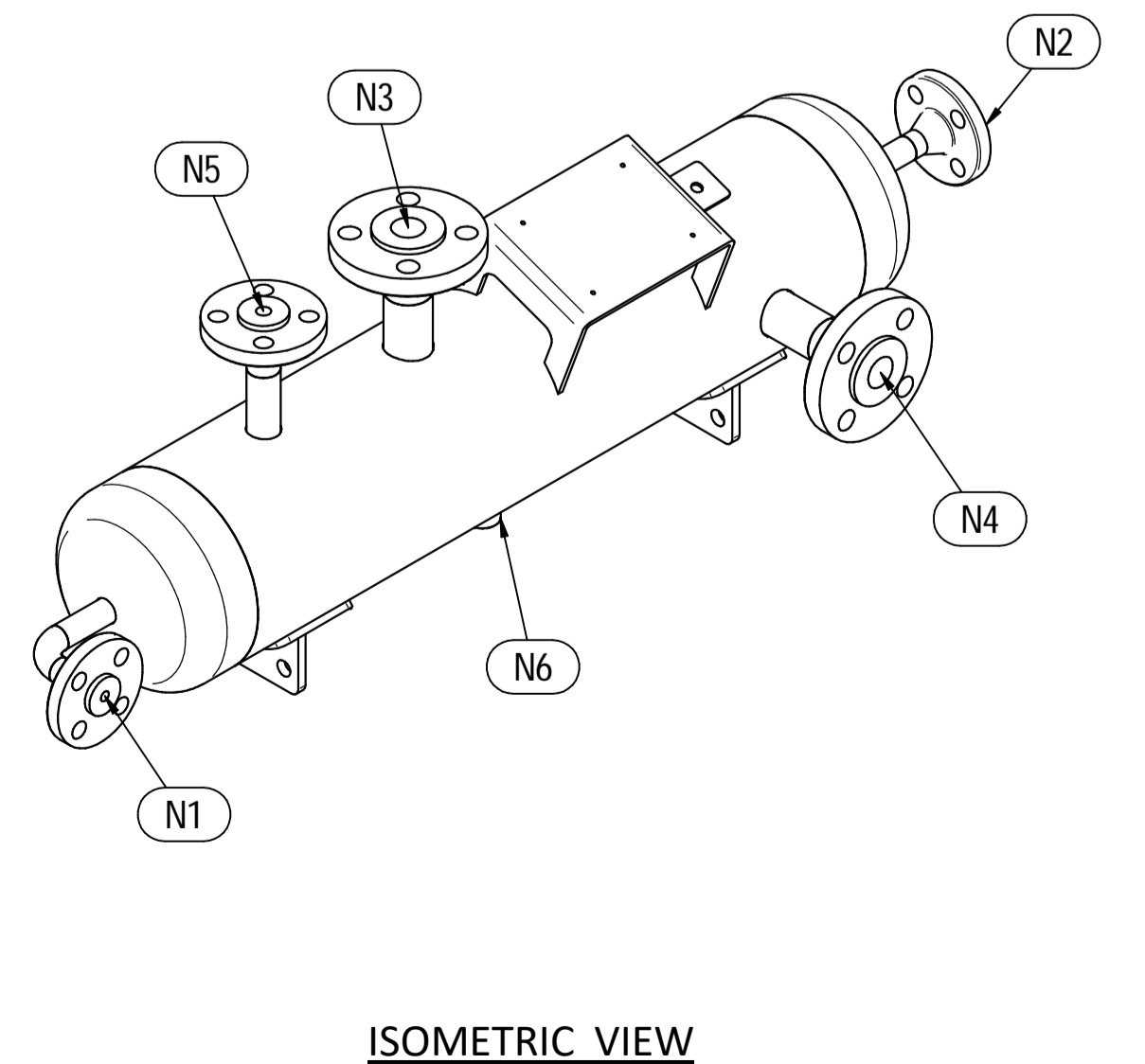
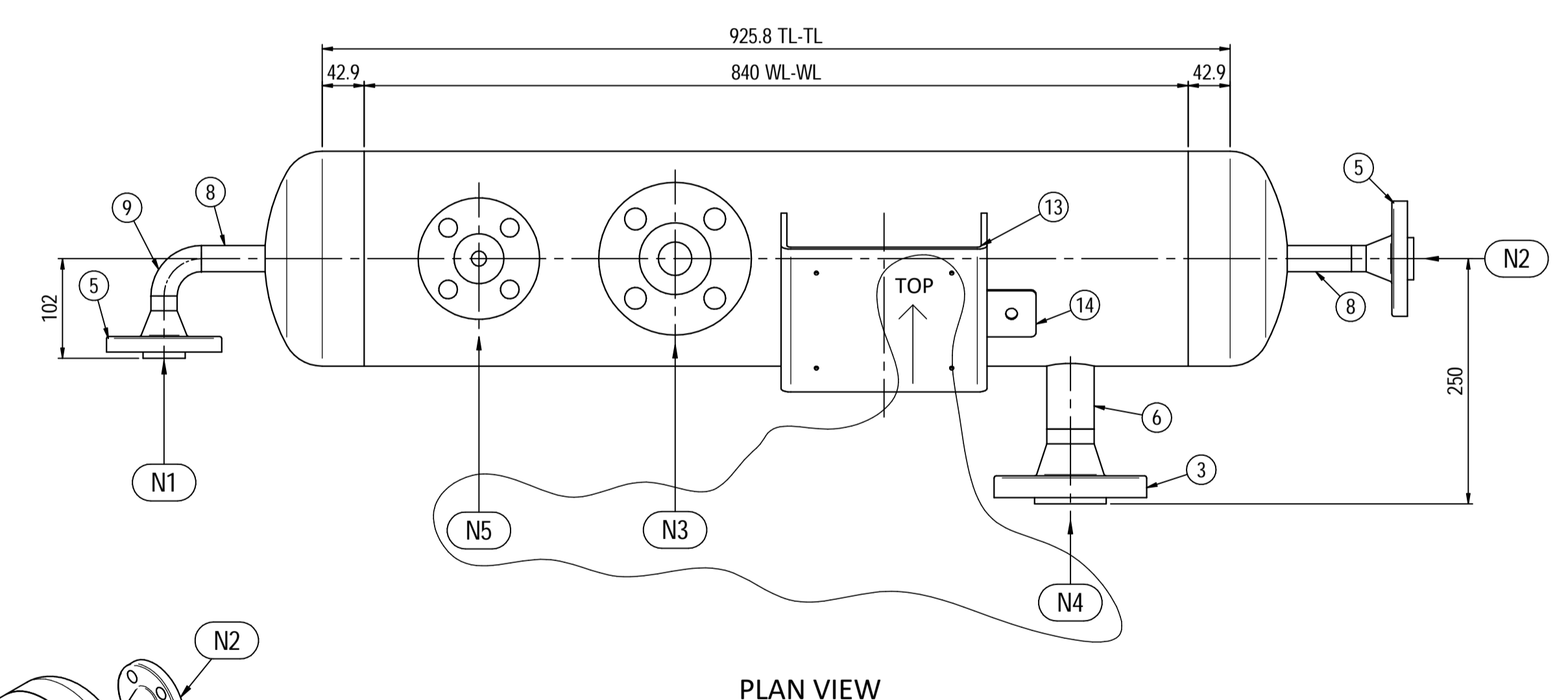
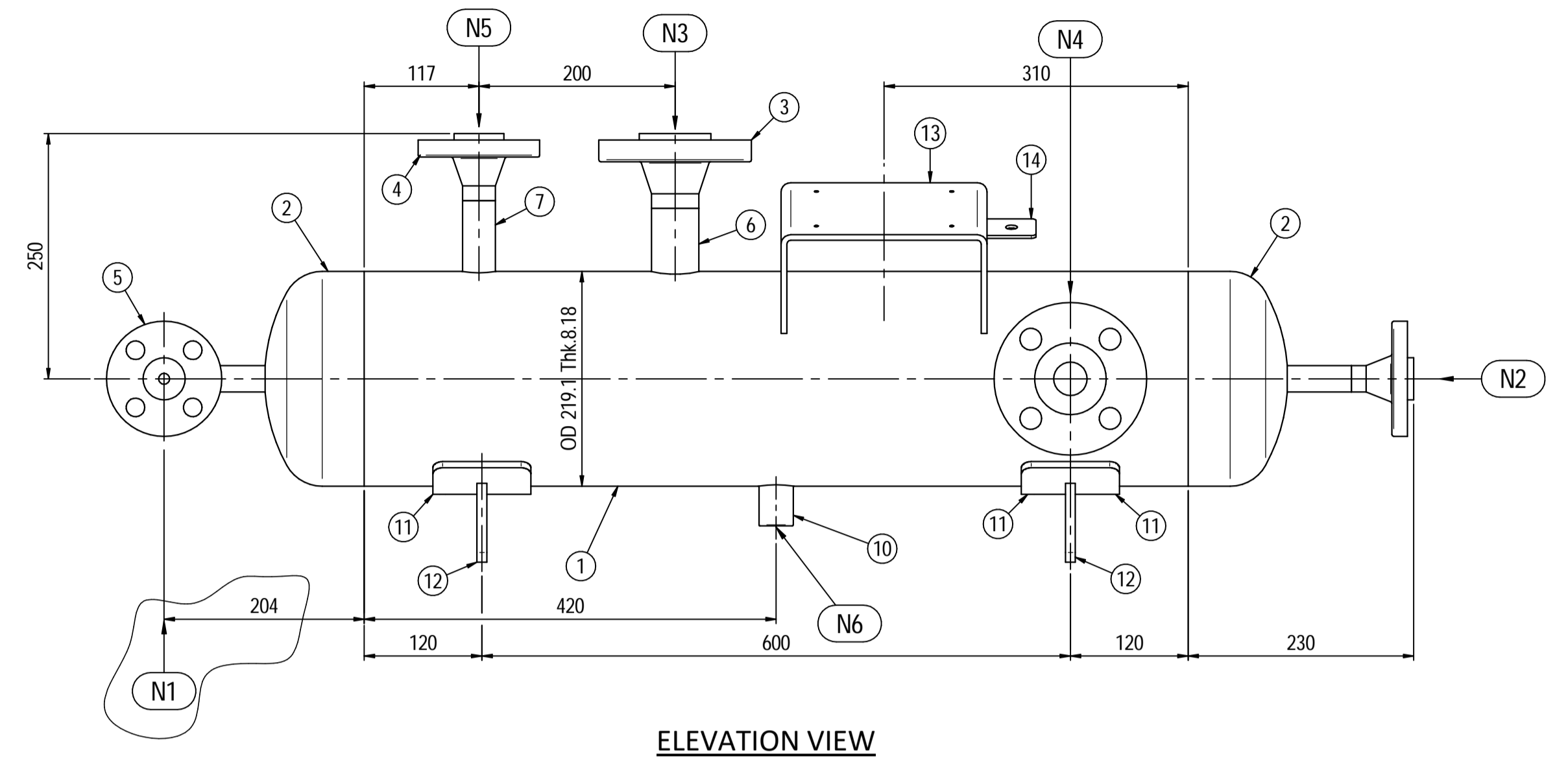
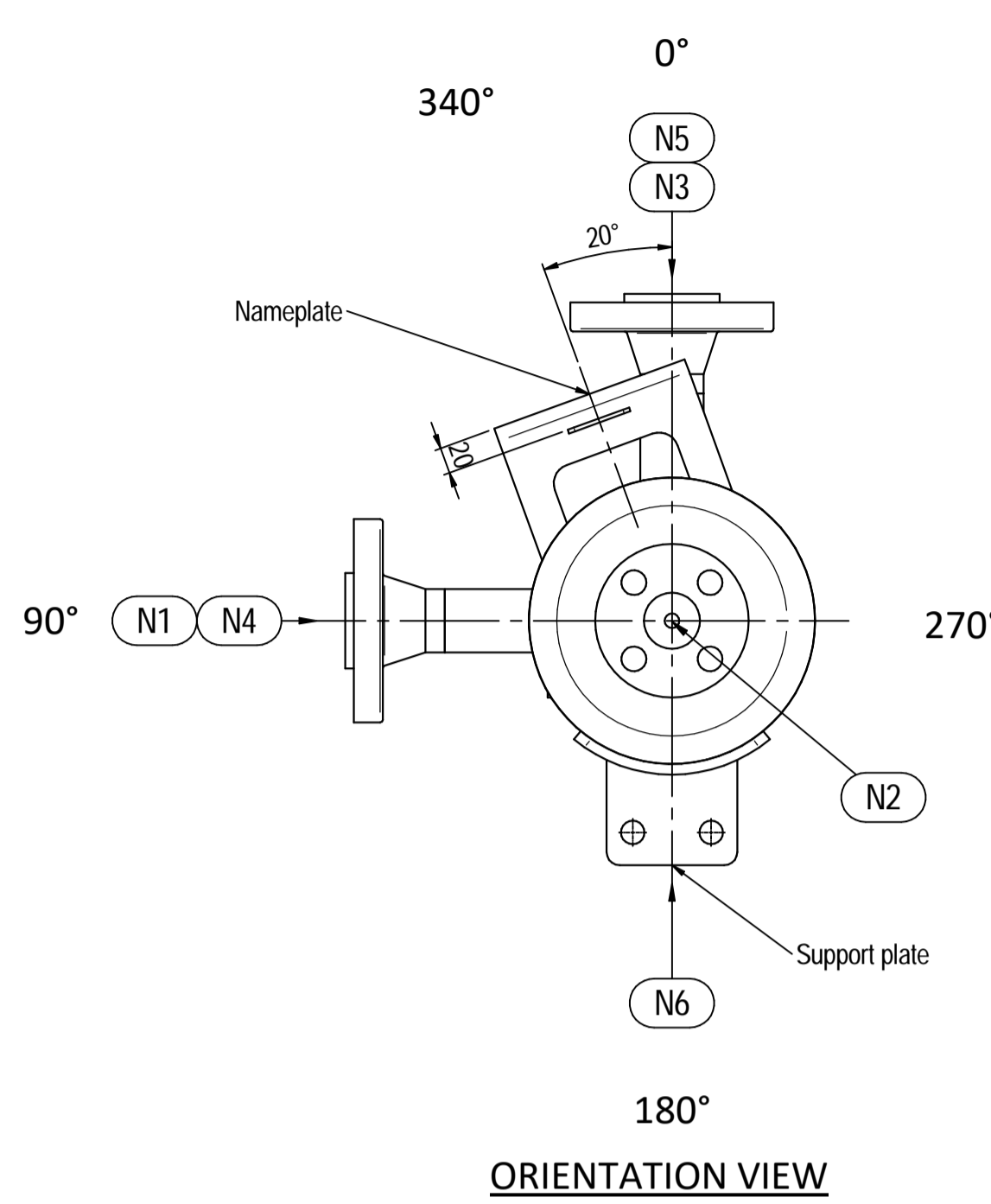
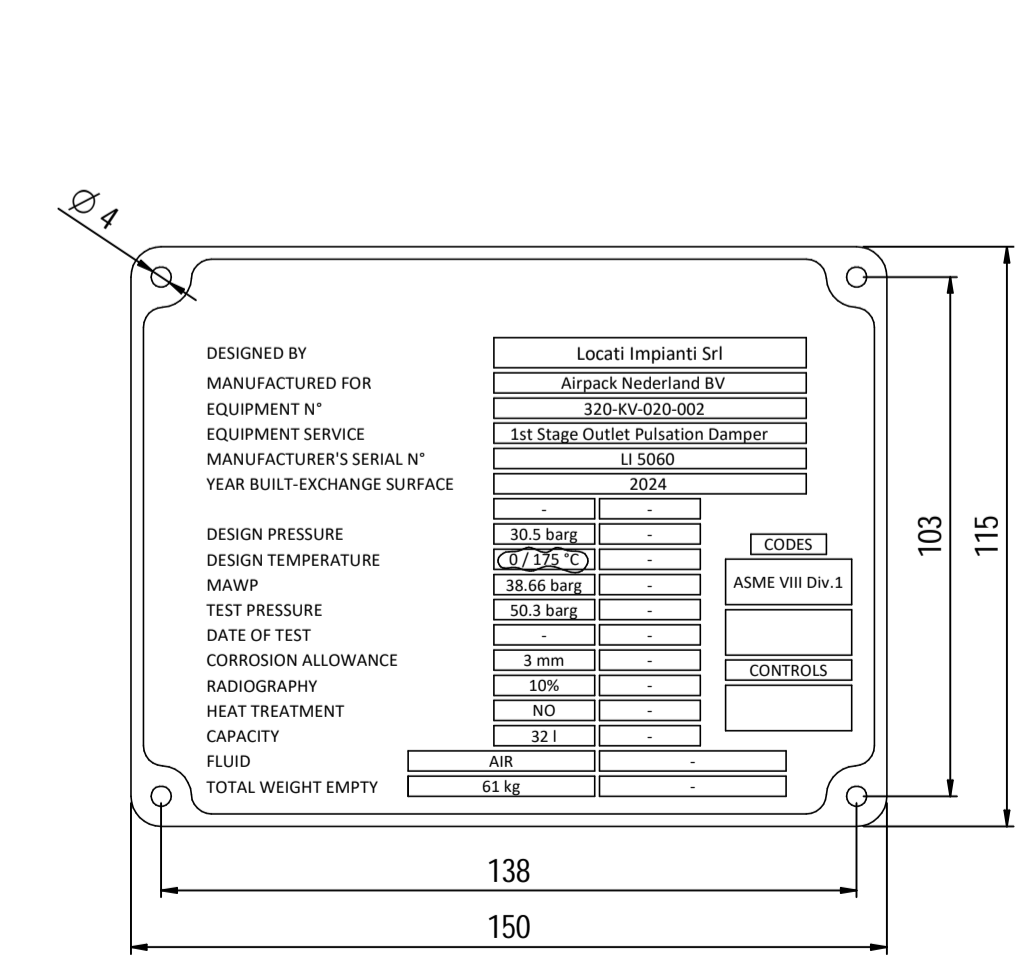
Supports detail
Scale 1 : 3



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 #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 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	SA240 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 C230048LC006
 - The nameplate ise in SS316 and is laser engraved
 - Non corrosive service, no inspection opening per UG-46(a)
 - On support hexagonal bolts DIN 933, class 8.8 shall be use (Airpack scope)

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	O.D.	THK.	PAD RINFORZO
DATI DI PROGETTO / Design data									
FLUIDO		Air		COLLAUDO		Test			0094 Iqa Inspection Iberia SA
STATO FISICO DEL FLUIDO		Gas		Physical state of fluid		PED			N/A
CODICE DI CALCOLO		ASME VIII Div. 1 Ed.2021		Construction code					
PRESSIONE DI ESERCIZIO		23.3 barg		Operating pressure		SERVIZIO LETALE			NO
PRESSIONE DI PROGETTO		30.5 barg		Design pressure		X-RAY			Spot (10%)
PRESSIONE ESTERNA		NO		External pressure		LIQUIDI PENETRANTI			NO
PRESSIONE DI PROVA IDRAULICA		50.26 barg		Hydraulic test pressure		ULTRASUONI			NO
TEMPERATURA DI ESERCIZIO		157 °C		Operating temperature		CONTROLLO MAGNETOSCOPICO			NO
TEMPERATURA DI PROGETTO		175 °C		Design temperature		TALLORE DI SALDATURA			NO
SOVRAMEALLO DI CORROSIONE		3 mm		Corrosion allowance		PROCEDIMENTO DI SALDATURA			See doc: C230048WBK009
CAPACITA'		32 l		Capacity		TIPO DI FONDO			CAP
EFFICIENZA GIUNTI		0.85		Joint efficiency		FORMATURA FONDO			HOT
MAWP @ Design Temperature		38.66 barg @ +175 °C		MAWP		PESO A VUOTO			61 kg
MAWP(EXT)		NO		MAWP(EXT)		PESO IN ESERCIZIO			61 kg
MDMT @ MAWP		0 °C @ 38.66 barg		MDMT		PESO PIENO D'ACQUA			93 kg
TRATTAMENTO TERMICO		NO		Heat treatment		DATI DEL VENTO			-
IMPACT TEST		NO		Impact test		DATI SISMICI			-

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

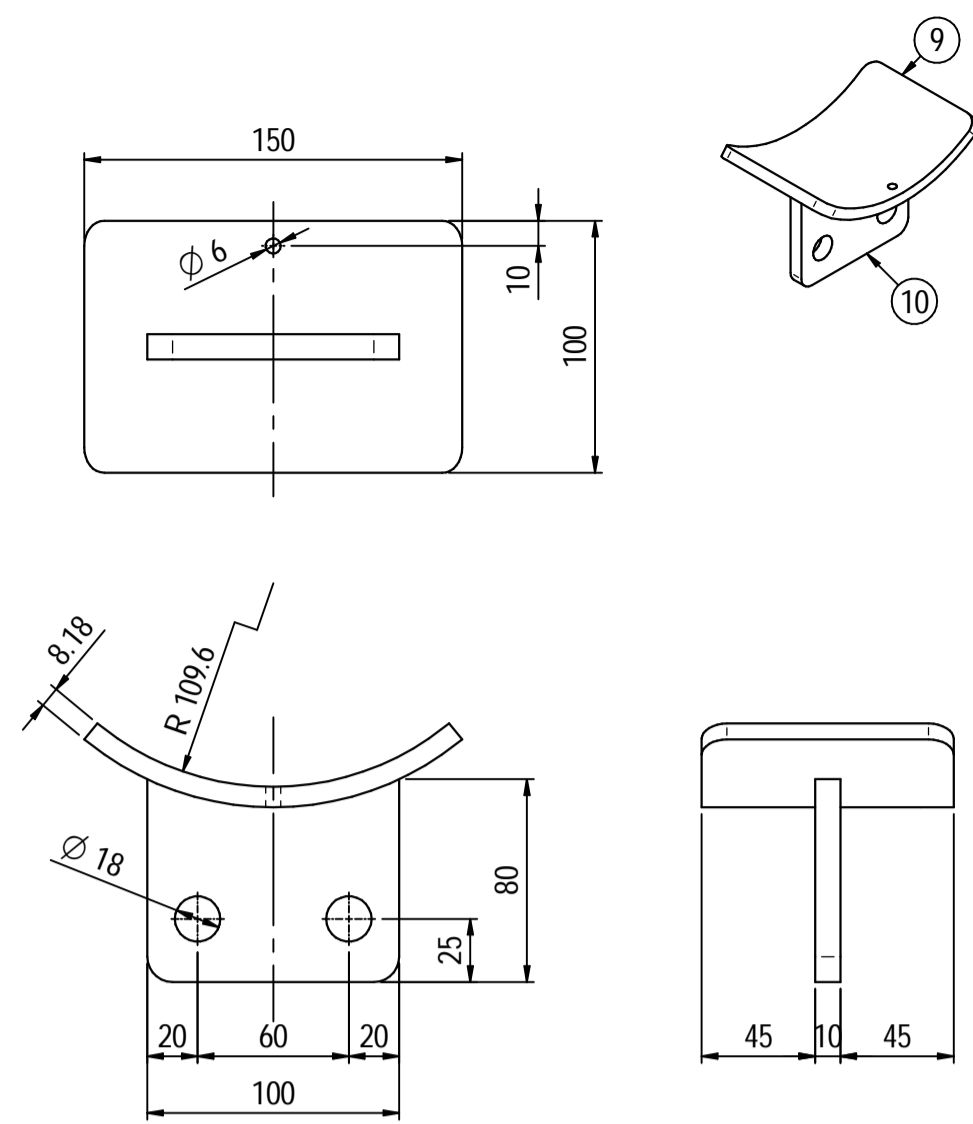
Oggetto/Object: **1st STAGE INLET PULSATION DAMPER**

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

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

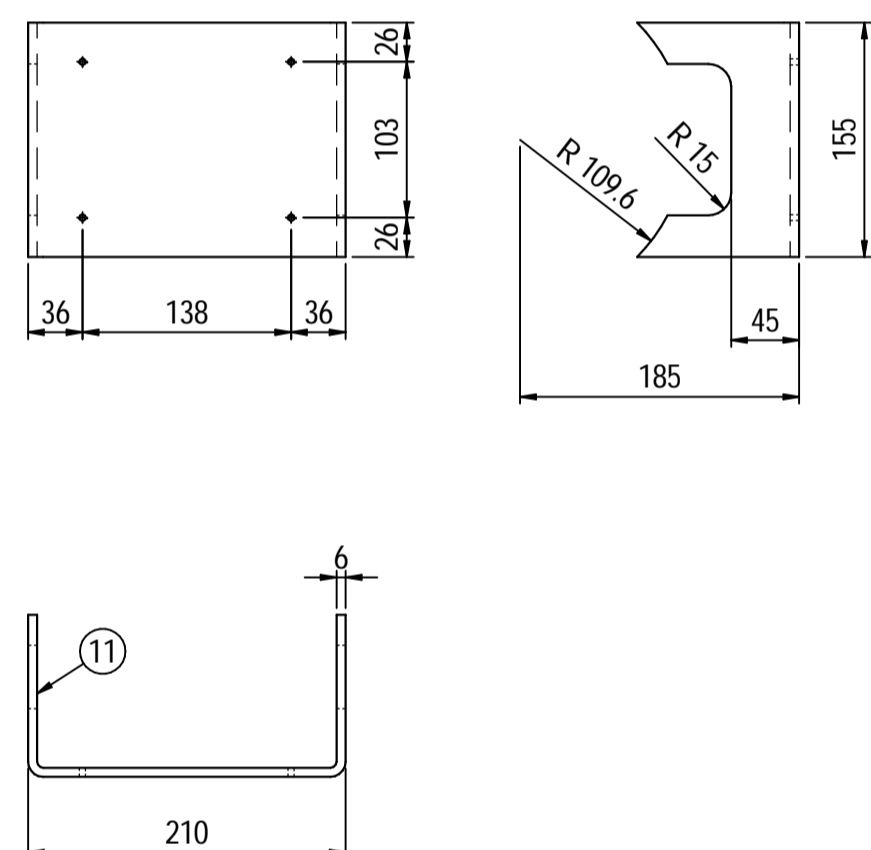
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Scale 1 : 3



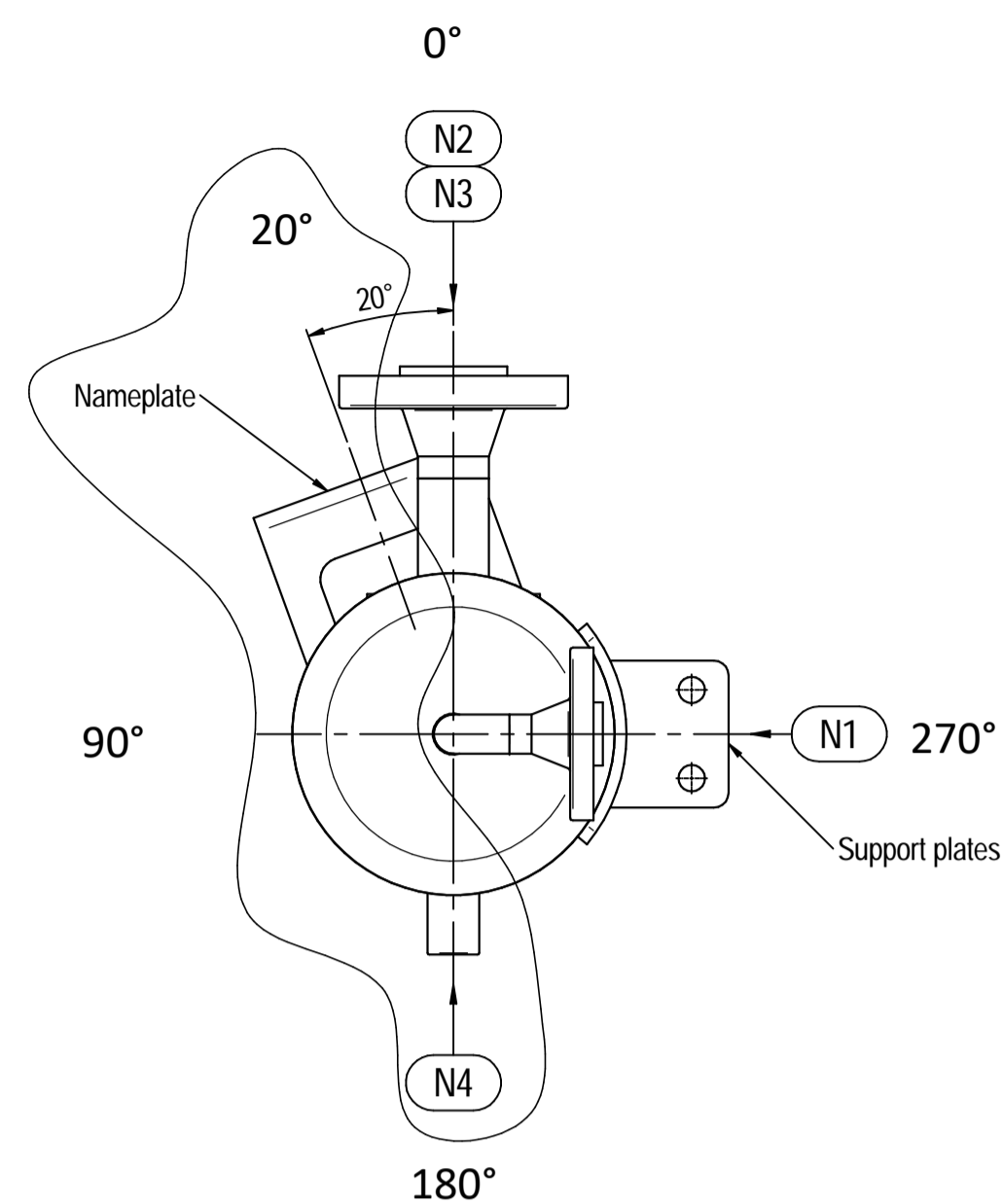
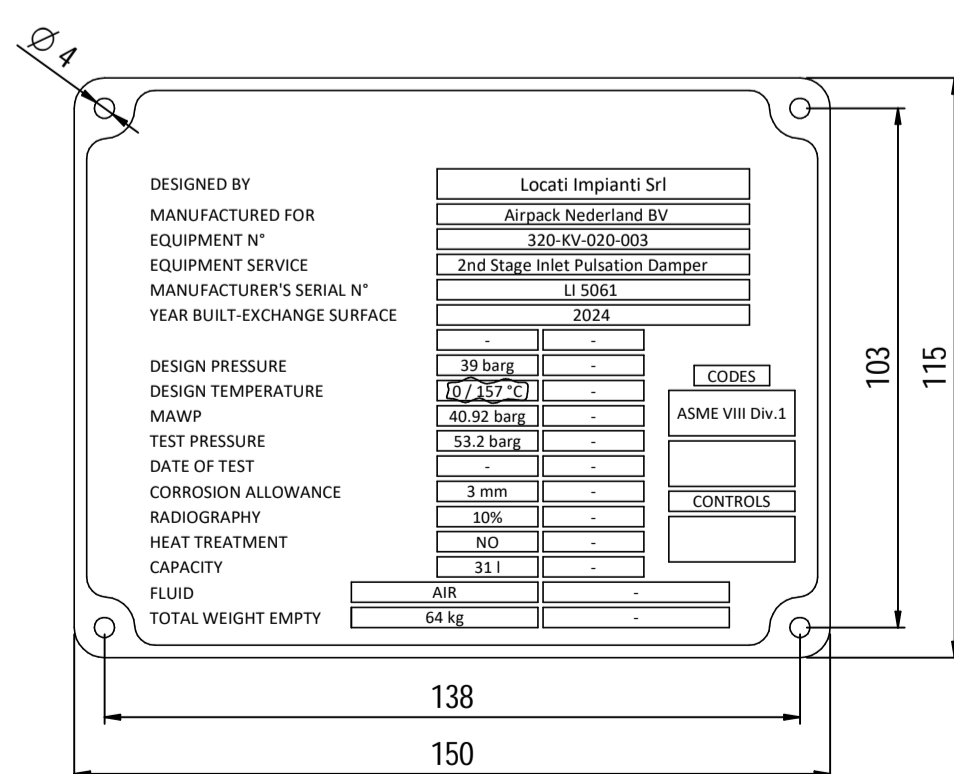
Nameplate detail

Scale 1:5

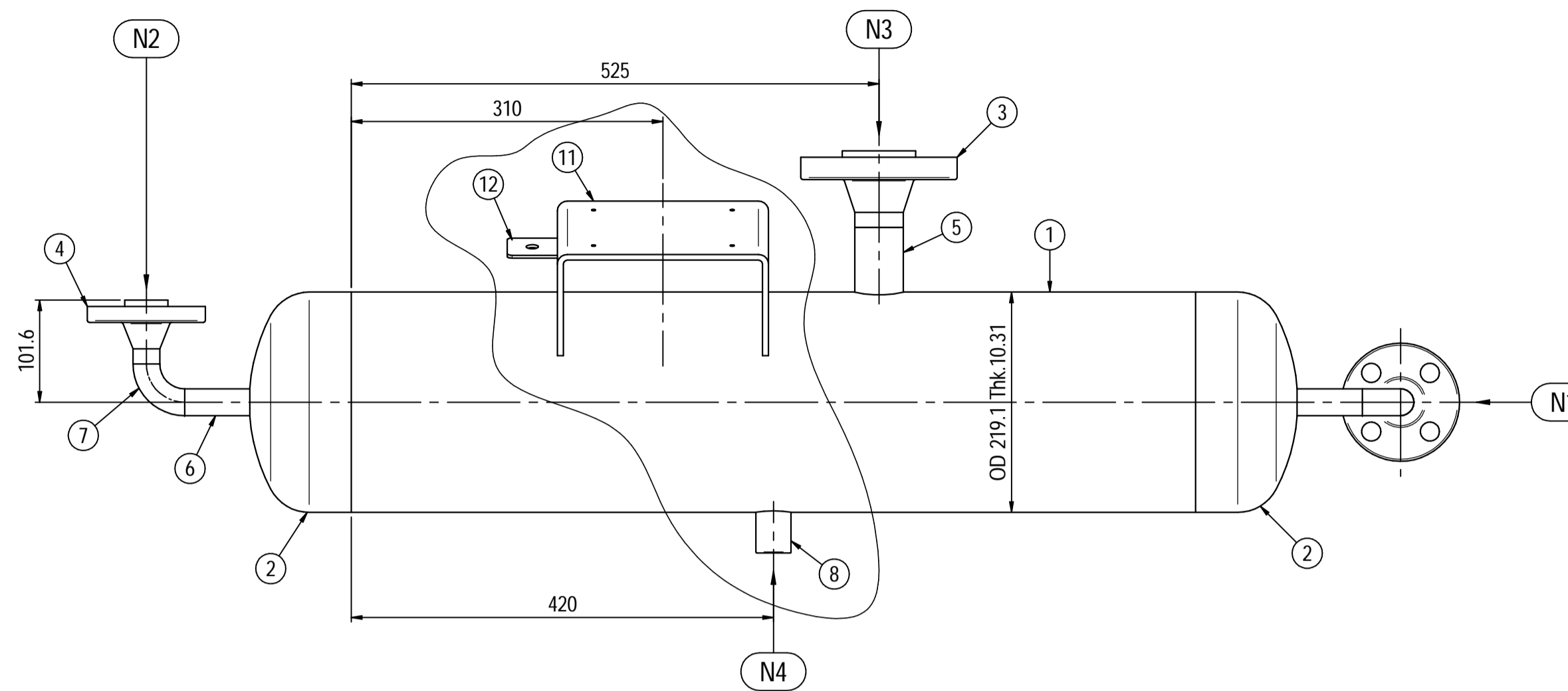


Nameplate detail

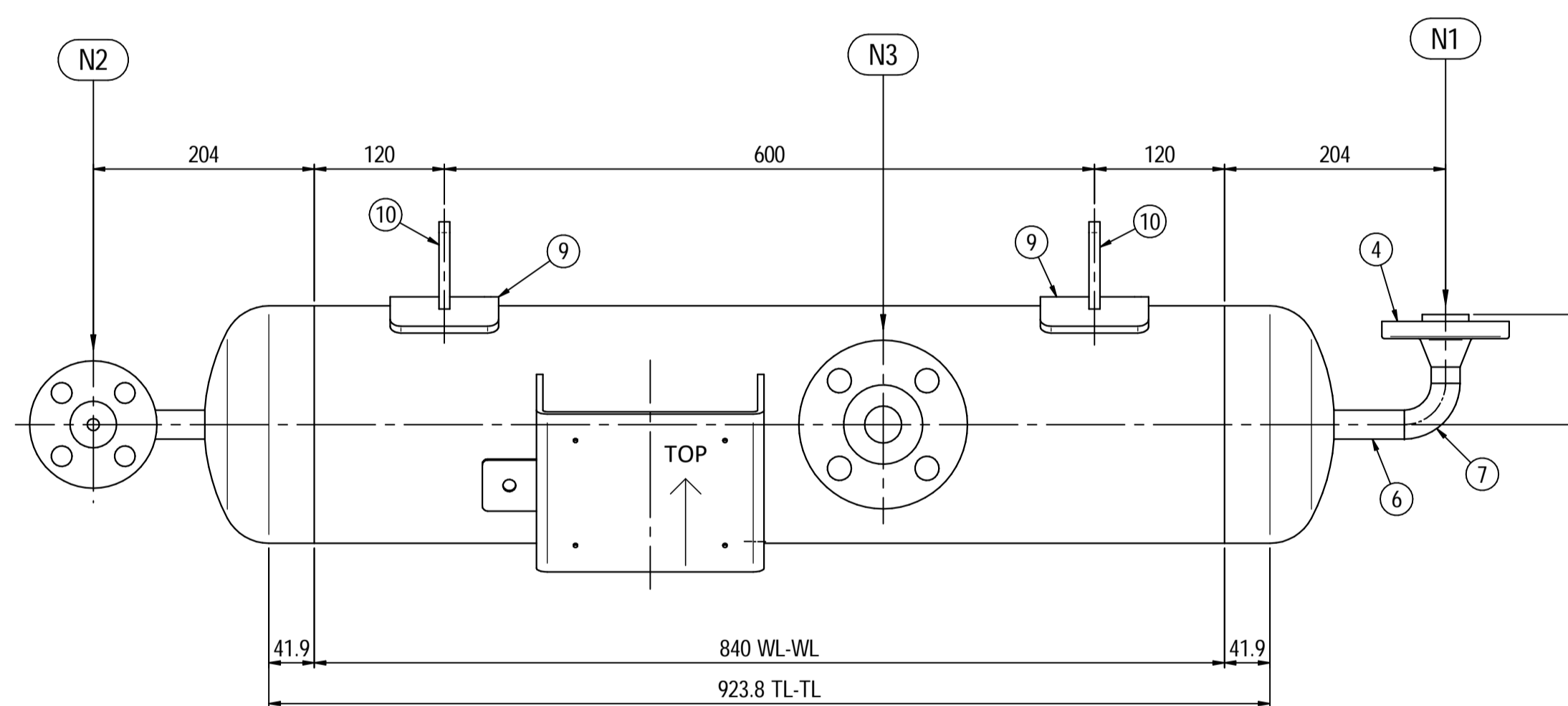
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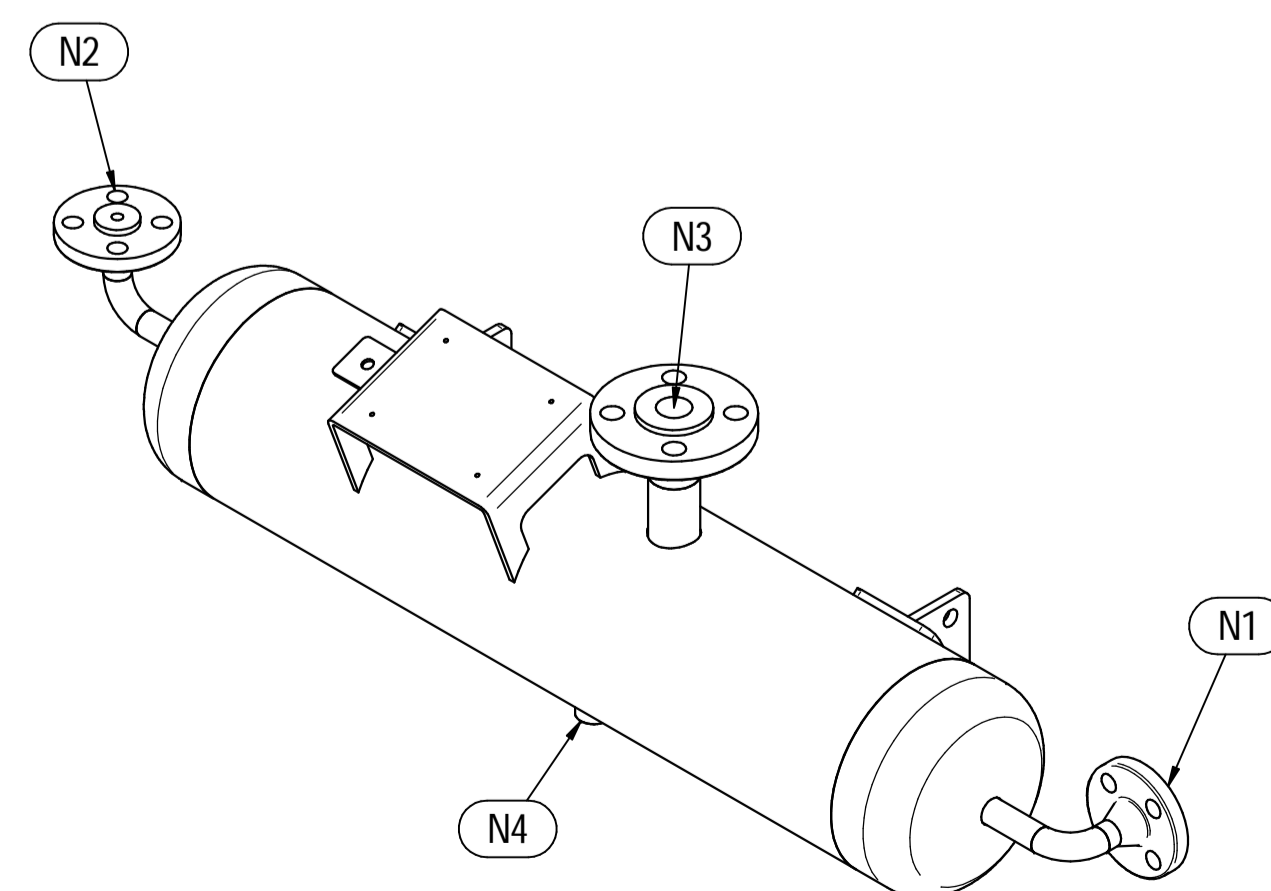
ORIENTATION VIEW



ELEVATION VIEW



PLAN VIEW



ISOMETRIC VIEW

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	SA240 TP316L	

Note:

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- All welds are continuous except where indicate
- For calculation see document number C230048CLC007
- The nameplate use in SS316 and is laser engraved
- Non corrosive service, no inspection opening per UG-46(a)
- On support hexagonal bolts DIN 933, class 8.8 shall be use (Airpack scope)

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
N4	1	DRAIN	¾"	38.1	8.28	#6000	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

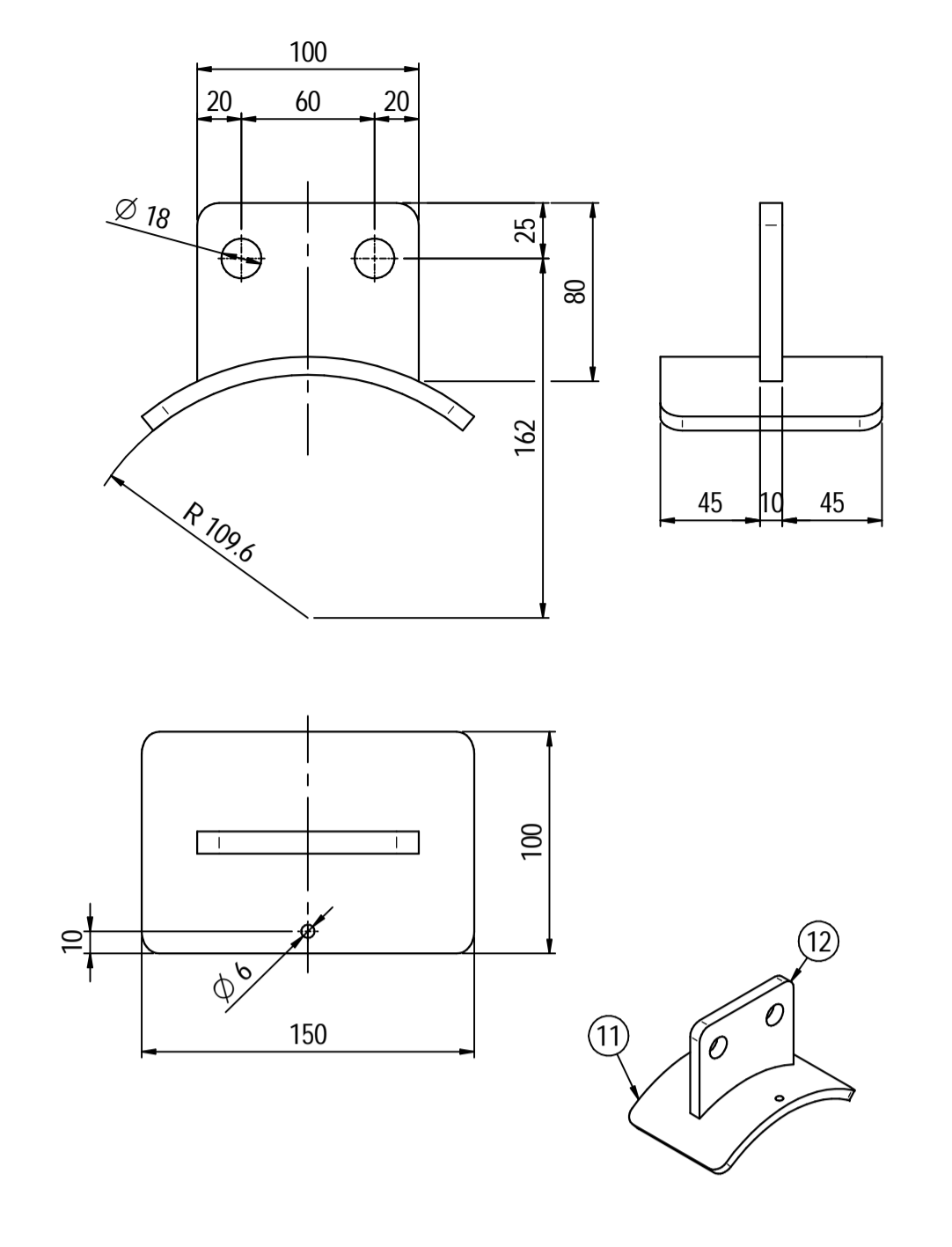
ITEM	Qtà	SERVIZIO	NPS/DN	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	RINFORZO
DATI DI PROGETTO / Design data											
FLUIDO		Air									
STATO FISICO DEL FLUIDO		Test									
CODICE DI CALCOLO		ASME VIII Div.1 Ed.2021									
PRESSIONE DI ESERCIZIO		22.1 barg					SERVIZIO LETALE				NO
PRESSIONE DI PROGETTO		39 barg					X-RAY				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					MAGNETIC PARTICLE EXAMINATION				NO
SOVRAMEZZA DI CORROSIONE		3 mm					PROCEDIMENTO DI SALDATURA				See doc: C230048WBK009
CAPACITA'		31 l					TIPO DI FONDO				CAP
EFFICIENZA GIUNTI		0.85					FORMAZIONE 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		0 °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
01	Revised as per Customer comments	LG	MV	MV	11/05/2024
00	FIRST ISSUE	LG	MV	MV	03/02/2024

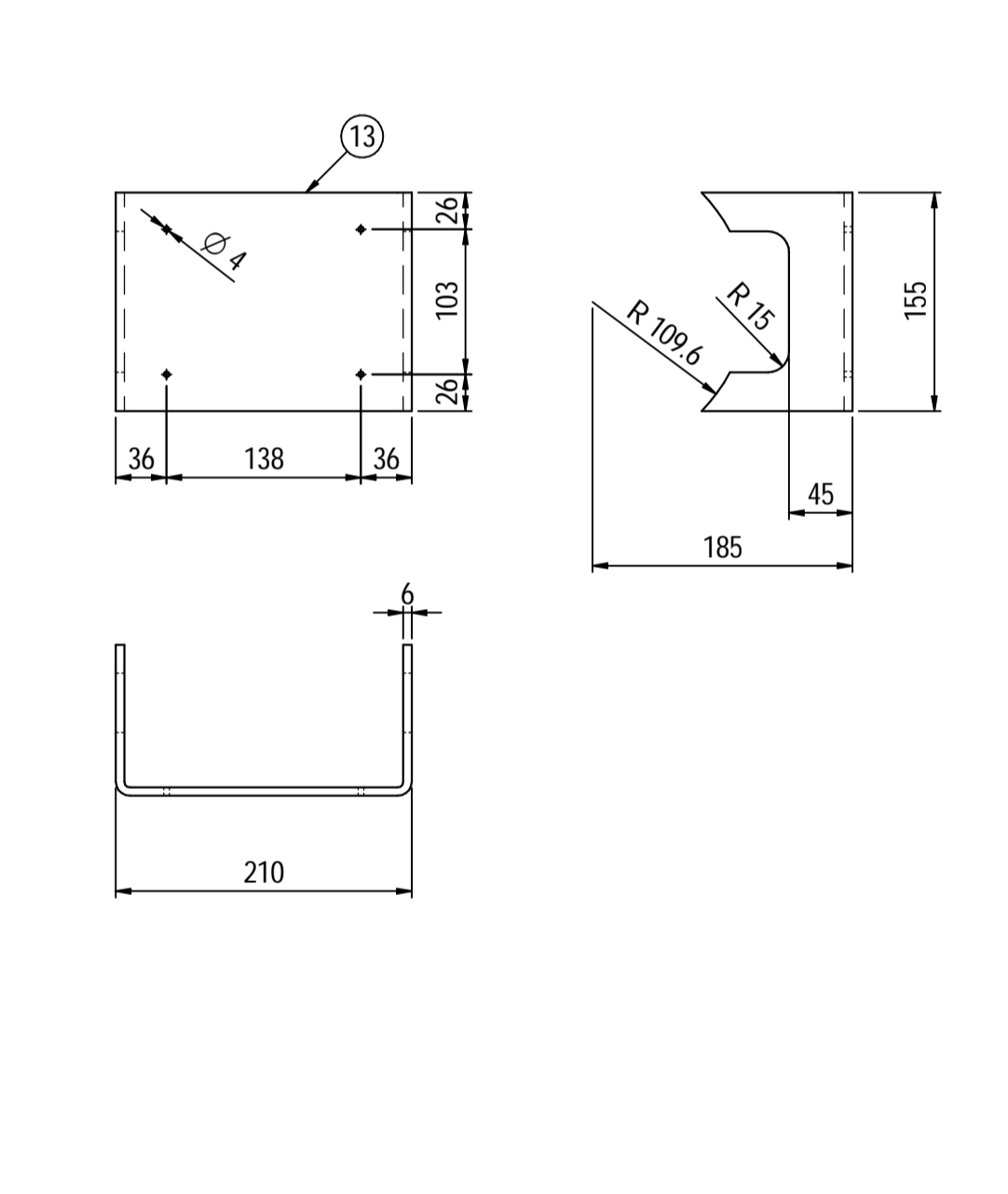
Oggetto/Object: 2nd STAGE INLET PULSATION DAMPER

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.	01

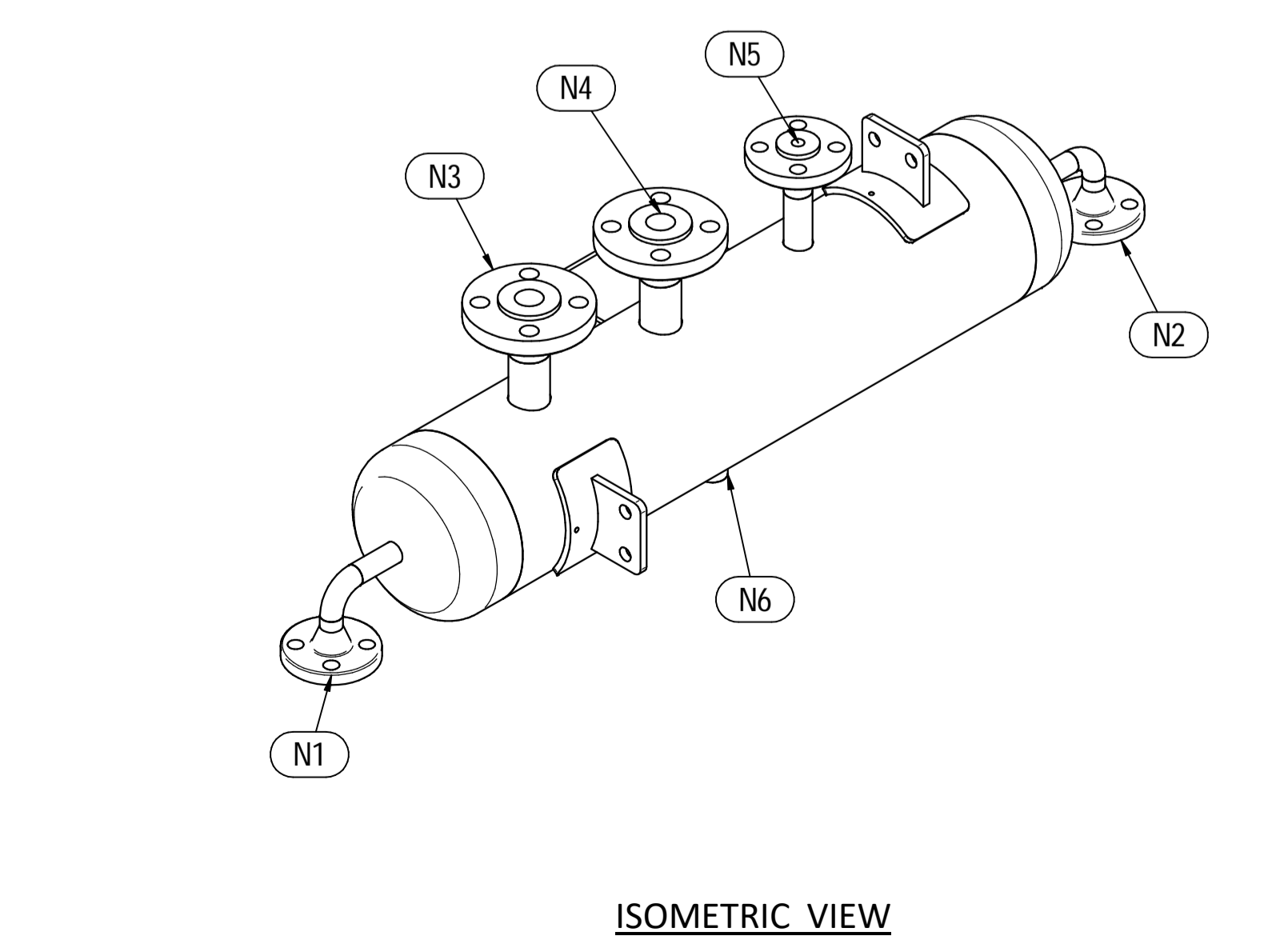
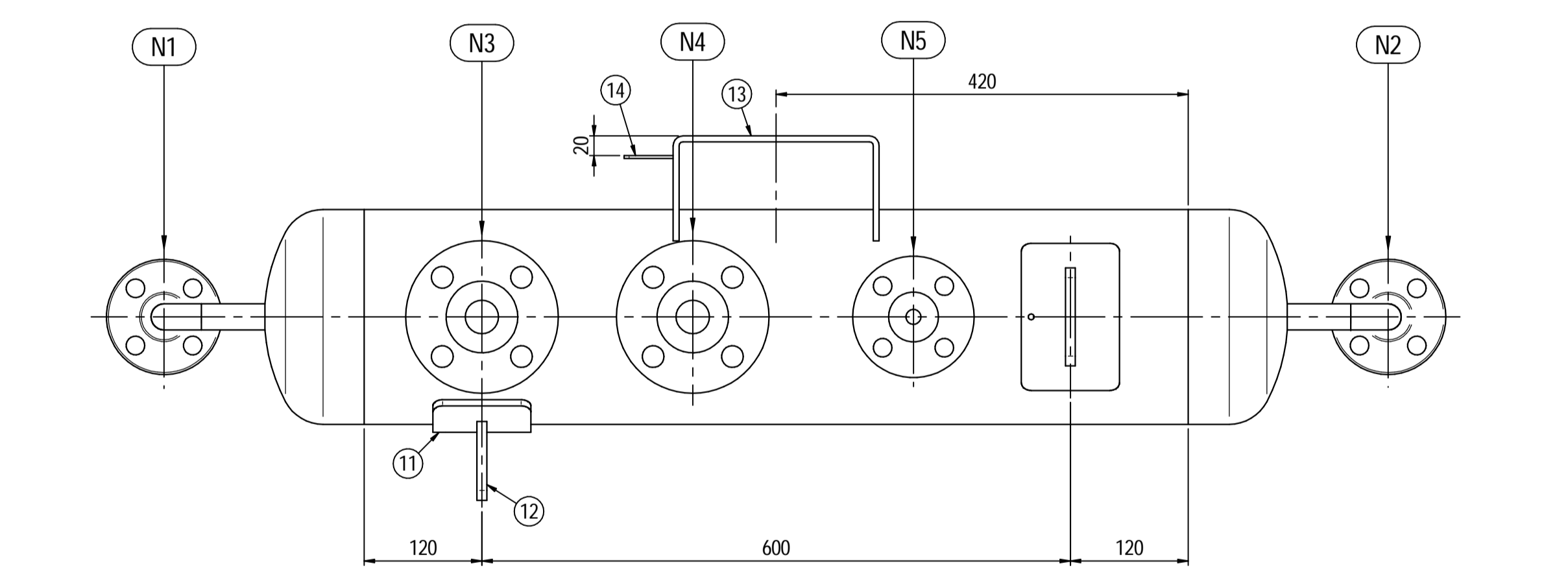
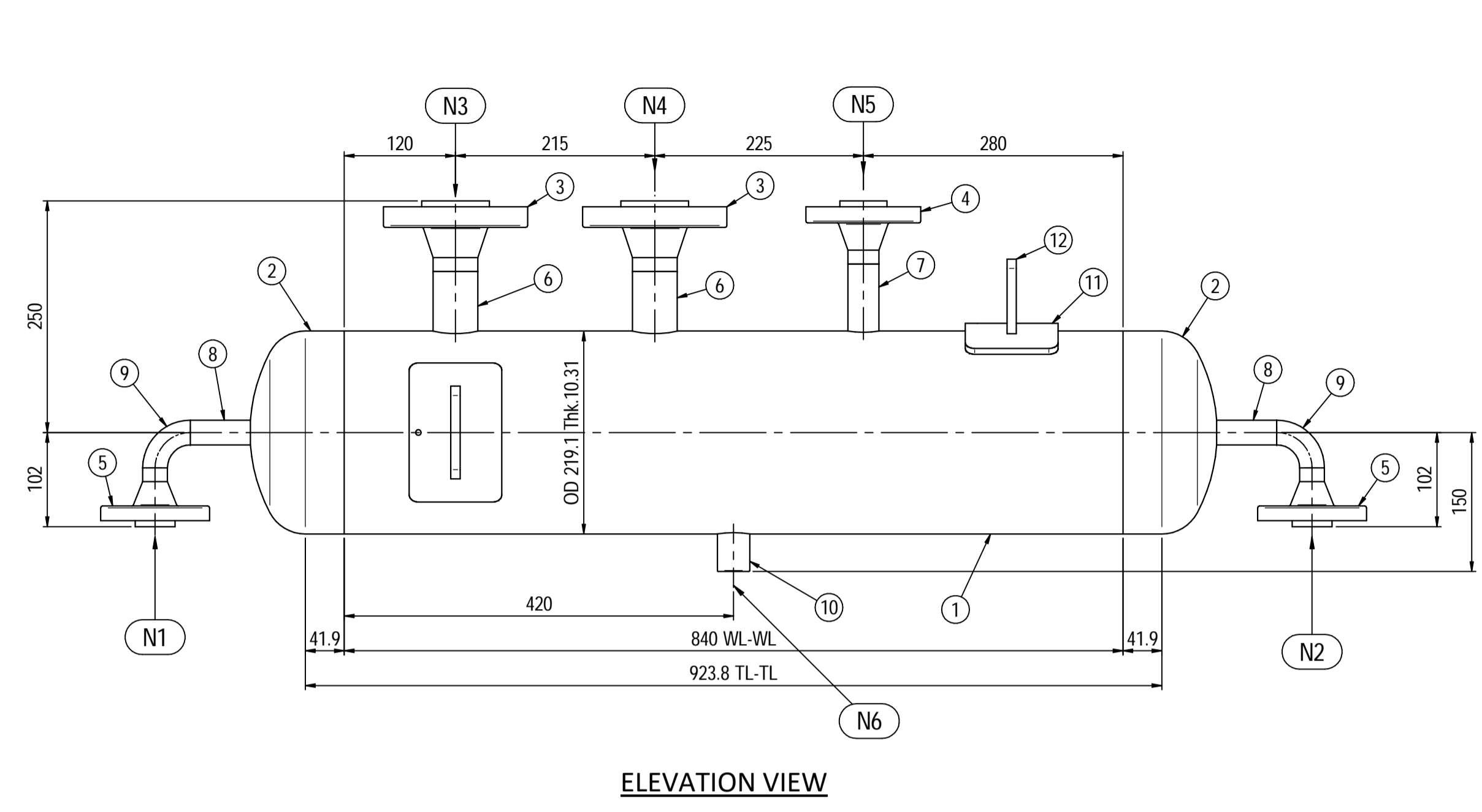
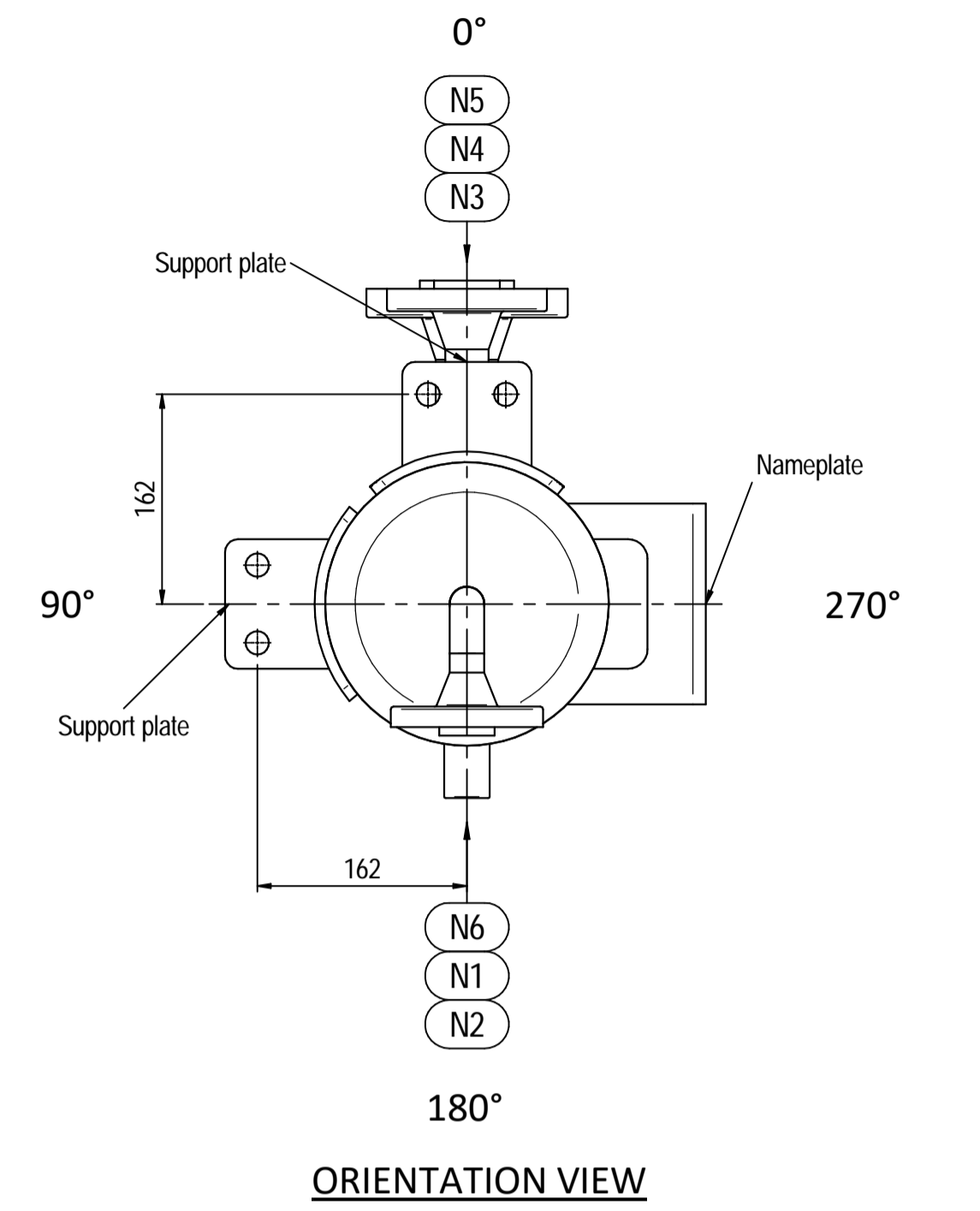
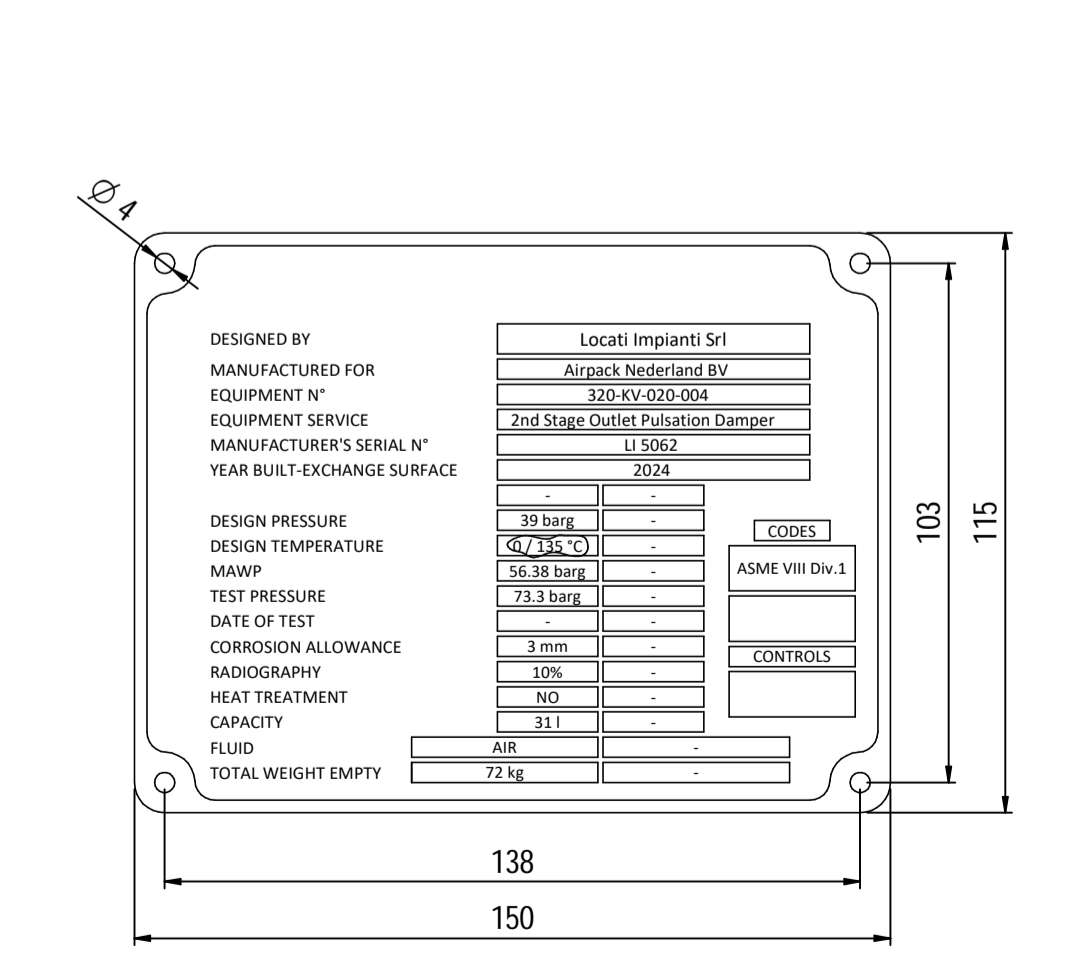
Supports detail
Scale 1 : 3



Nameplate detail
Scale 1:5



Nameplate detail
scale 1:1.5



Pos.	QTY	Description	Material	Cert.
1	1	Shell by Seamless Pipe 8" Sch.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	SA240 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 S5316 and is laser engraved
 - Non corrosive service, no inspection opening per UG-46(a)
 - On support hexagonal bolts DIN 933, class 8.8 shall be use (Airpack scope)

ITEM	QTY	SERVICE	SIZE	PIPE O.D.	THK	RATING	FLANGE TYPE	FACE	O.D.	THK.	Tc
N6	1	DRAIN	1/2"	38.1	8.38	#6000	NPT-F	-	-	-	8 ± 10
N5	1	PSV CONNECTION	1"	33.4	9.09	#600	WN RF	-	-	-	8 ± 10
N4	1	TEMPERATURE TRANSMITTER	1 1/2"	48.3	7.14	#600	WN RF	-	-	-	8 ± 10
N3	1	TEMPERATURE GAUGE	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 O.D.	THK	RATING	FLANGE TYPE	FACE	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		30 barg					SERVIZIO LETALE				NO
PRESSIONE DI PROGETTO		39 barg					X-RAY				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
SOVRAME TALLO 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		56.38 barg @ +135 °C					PESO A VUOTO				72 kg
MAWP(EXT)		NO					PESO IN ESERCIZIO				72 kg
MDMT @ MAWP		0 °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
01	Revised as per Customer comments	LG	MV	MV	11/05/2024
00	FIRST ISSUE	LG	MV	MV	03/02/2024

Oggetto/Object: **2nd STAGE OUTLET 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.	C230048DWG004	Rev.	01

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