



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)**

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

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Detail Drawings for Pulsation Dampers

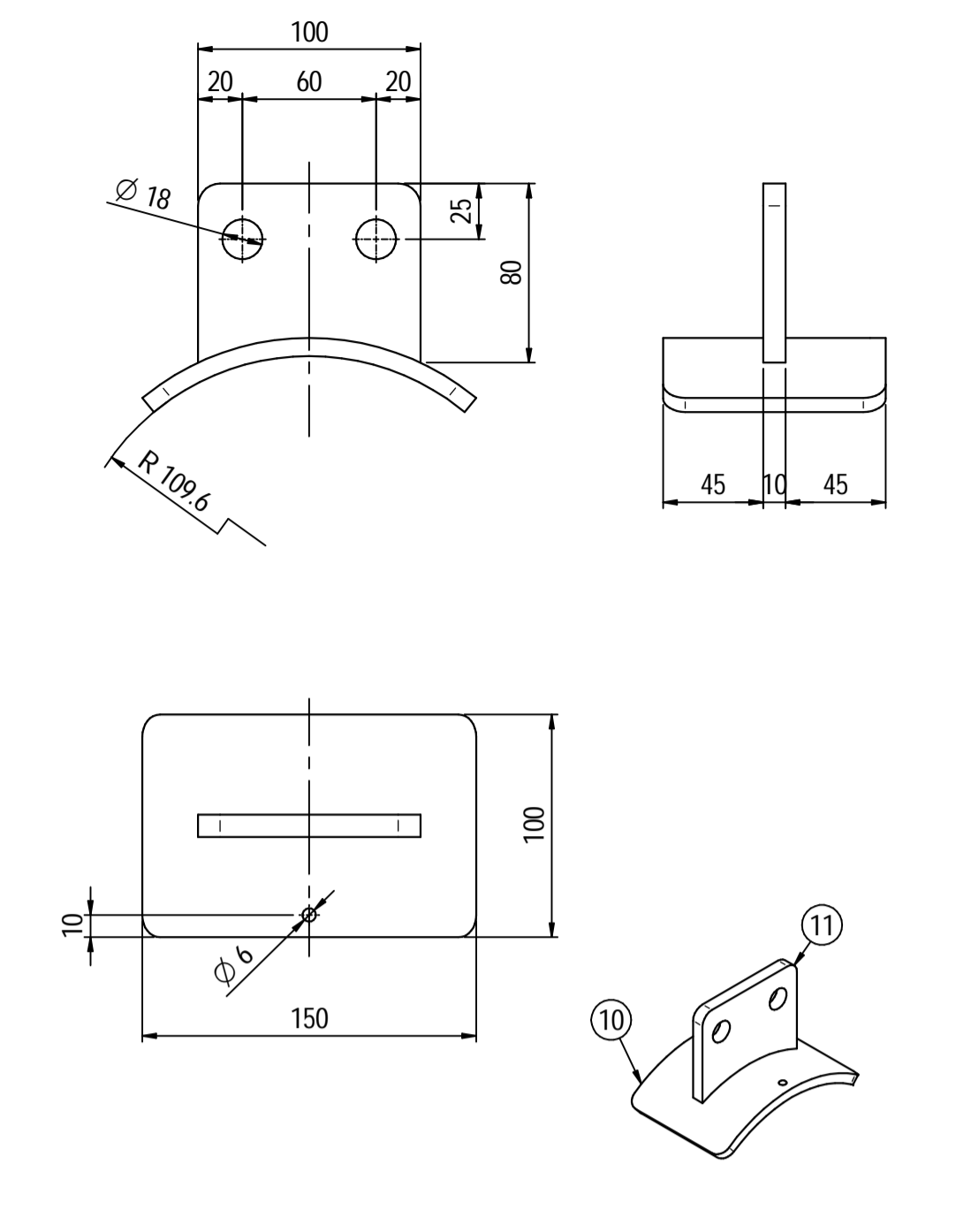
Document No. 17735-23B

Project No.	Vendor Doc.	P.O. No.	Department	Document Type	Serial No	Revision	Page
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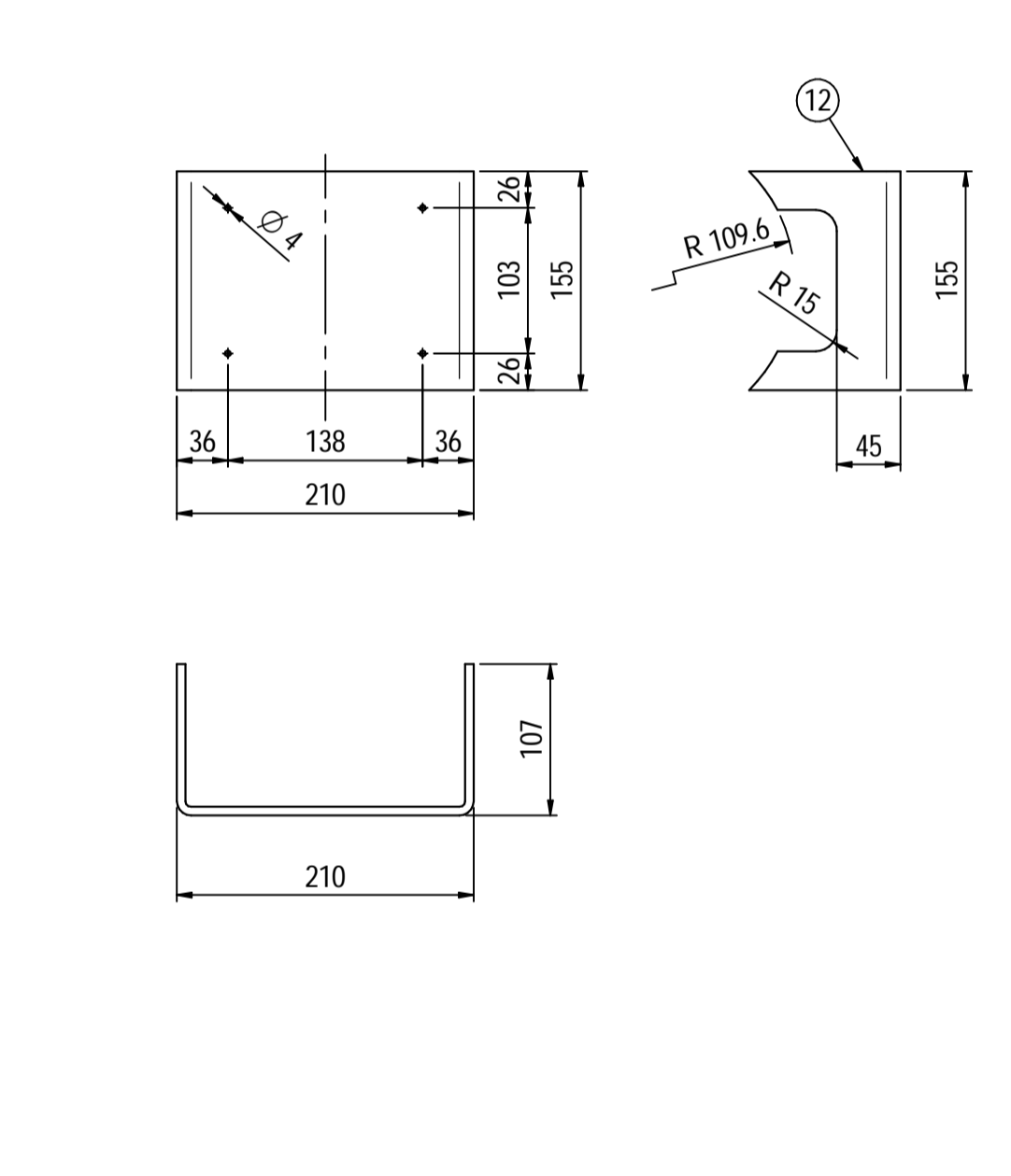
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23						48						73						5					
24						49						74						6					
25						50						75						7					

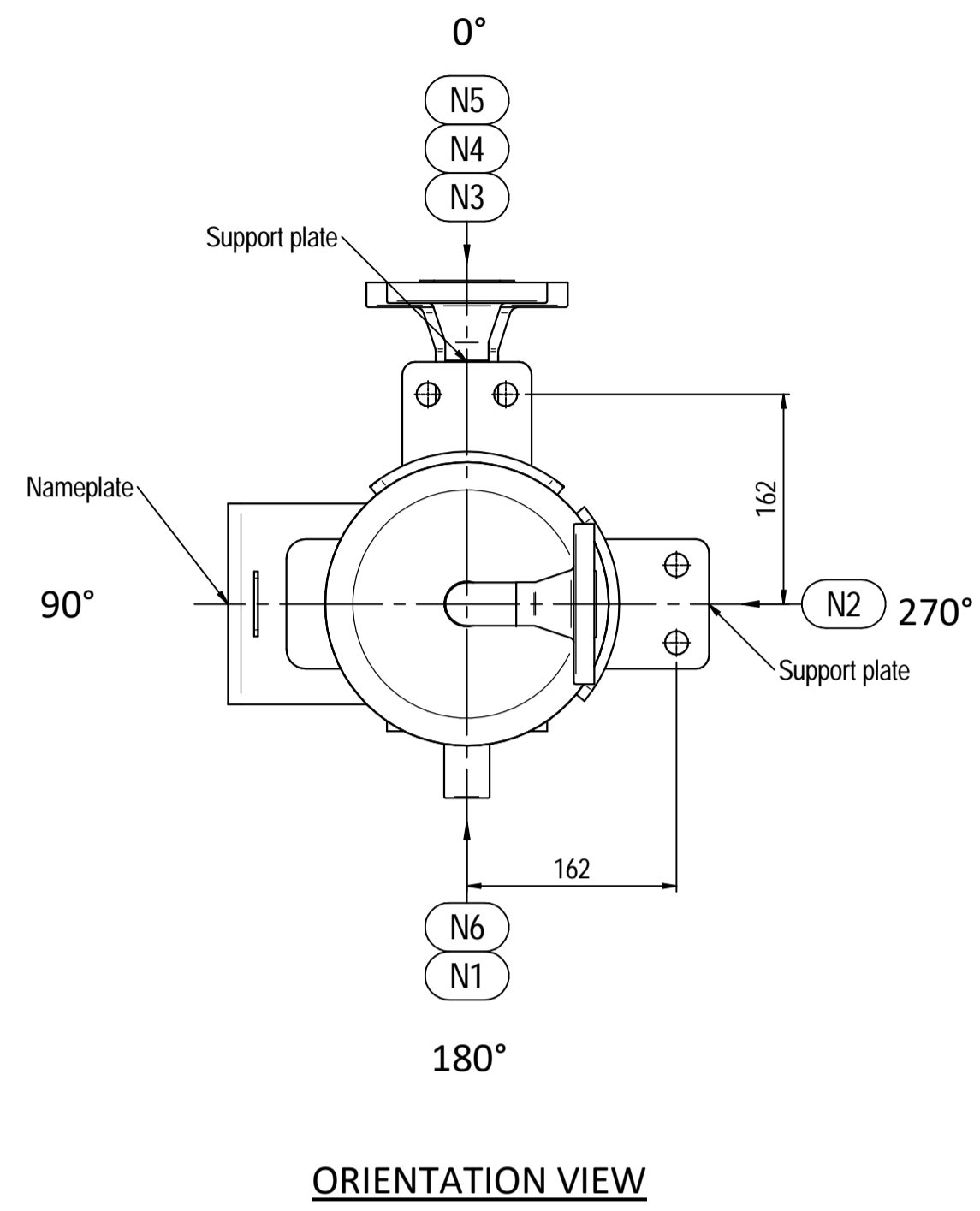
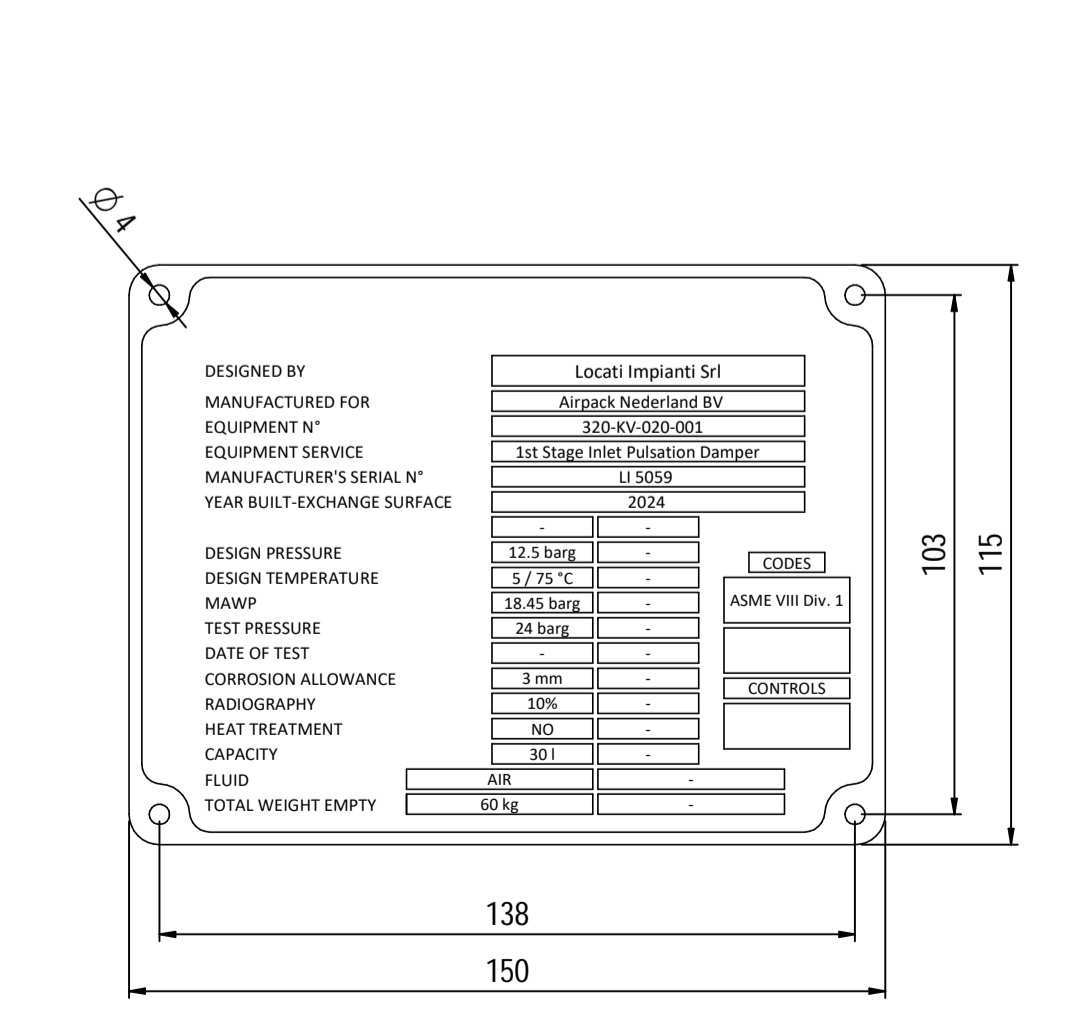
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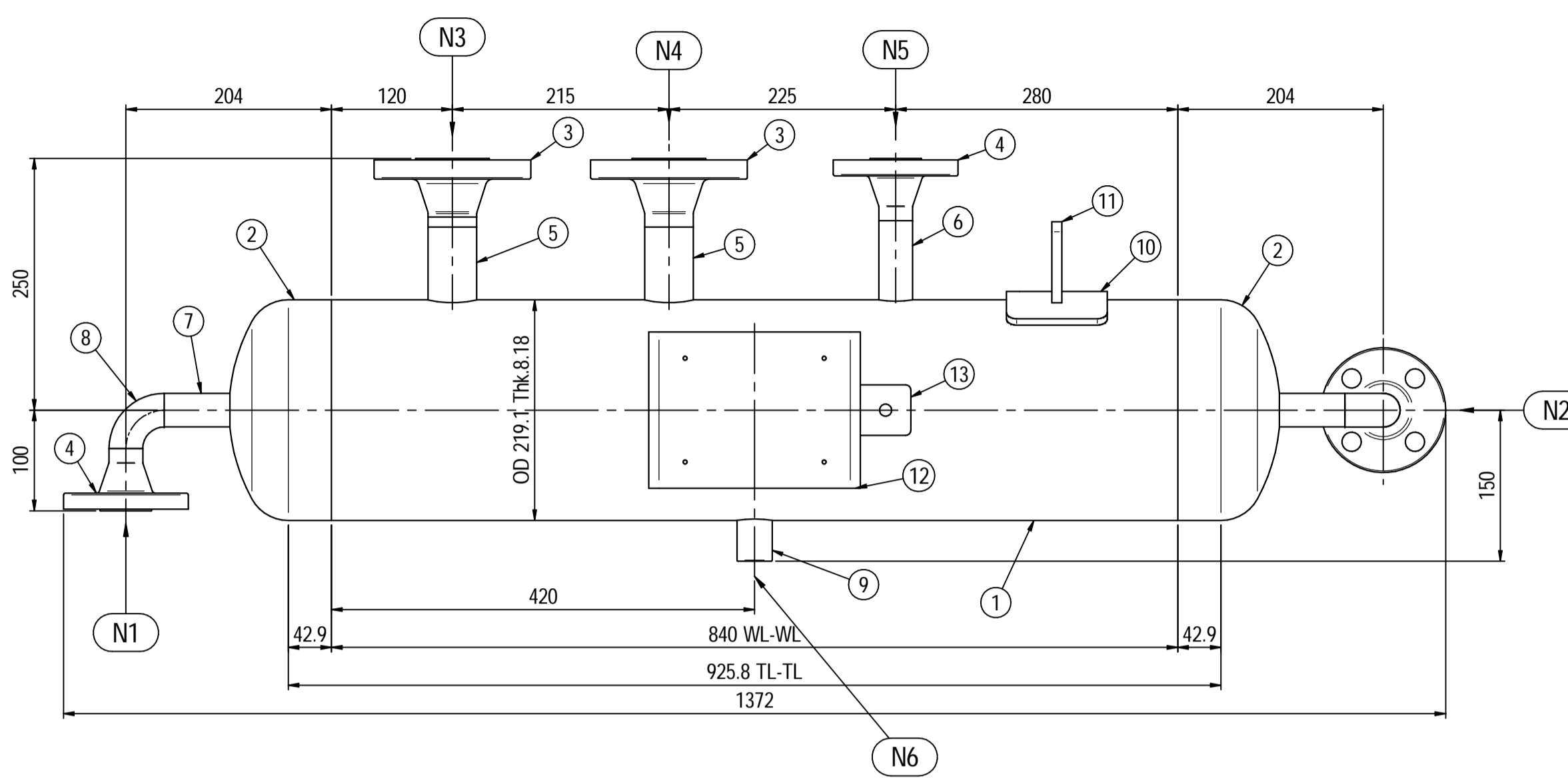
Nameplate detail
Scale 1:5



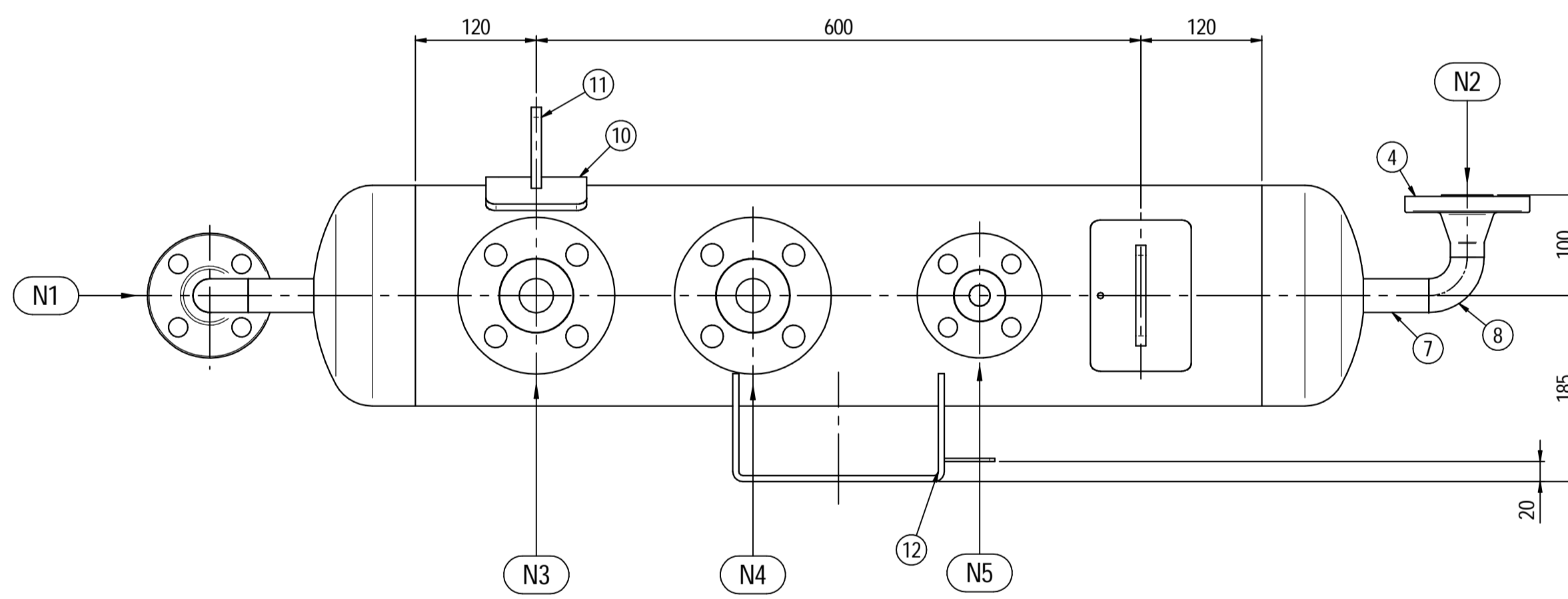
Nameplate detail
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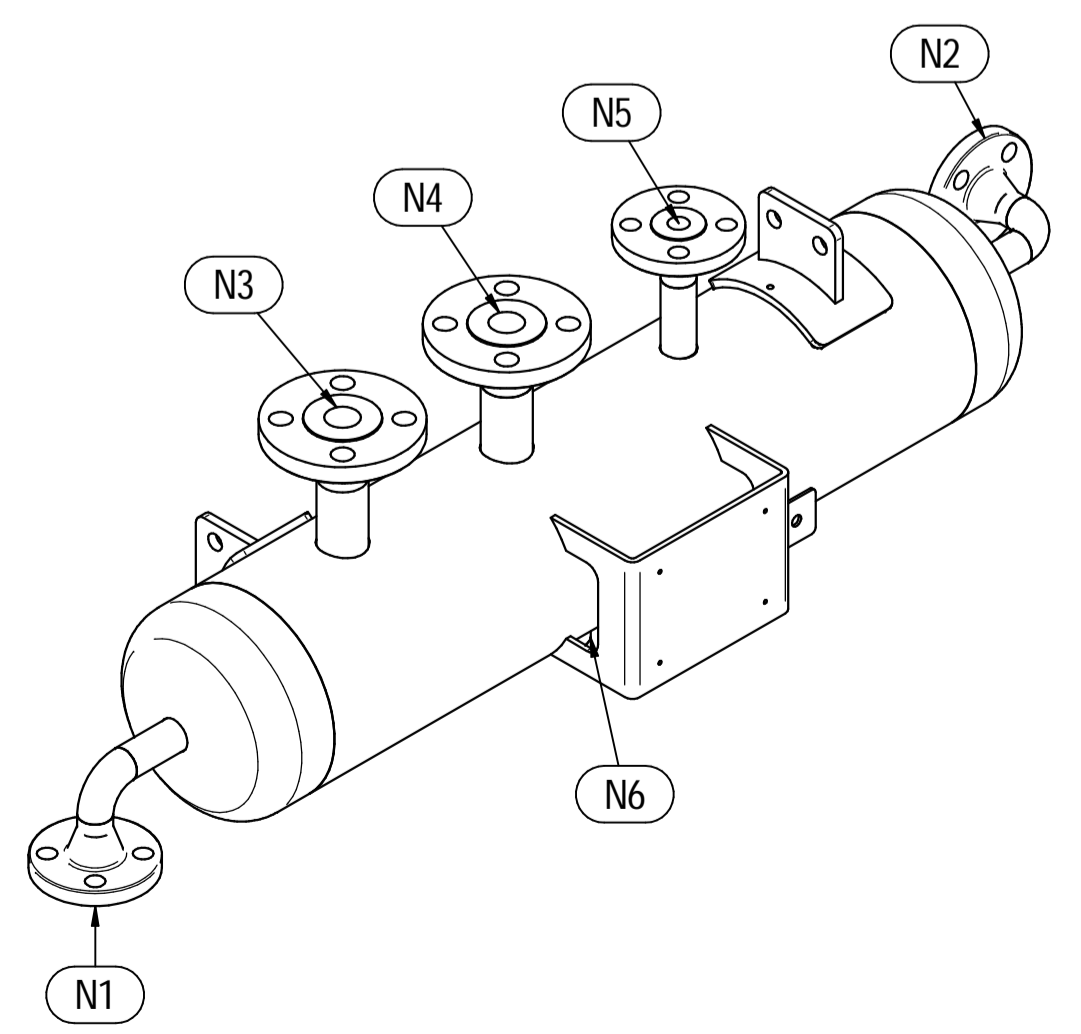
ORIENTATION VIEW



ELEVATION VIEW



PLAN VIEW



ISOMETRIC VIEW

Pos.	QTY	Description	Material	Cert.
1	1	Shell by Seamless Pipe 8" Sch.40 L=840	SA106 Gr.B	3.1
2	2	Cap 8" Sch.40	SA234 WPB	3.1
3	2	Flange 1½" WN #300 RF Sch160	A105	3.1
4	3	Flange 1" WN #300 RF Sch.160	SA105	3.1
5	2	Seamless Pipe 1½" 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 ½" 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
N6	1	DRAIN	½"	38.1	8.38	#6000	NPT-F	-	-	-	8 ± 10
N5	1	TEMPERATURE GAUGE	1½"	48.3	7.14	#300	WN	RF	-	-	8 ± 10
N4	1	TEMPERATURE TRANSMITTER	1½"	48.3	7.14	#300	WN	RF	-	-	8 ± 10
N3	1	PSV CONNECTION	1"	33.4	6.35	#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	PED
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	PROCEDIMENTO DI SALDATURA	See doc: C230048WBK009
CAPACITA'	32 l	TIPO DI FONDO	CAP
EFFICIENZA GIUNTI	0.85	FORMAZIONE FONDO	HOT
MAWP @ Design Temperature	18.45 barg @ +75 °C	PESO A VUOTO	60 kg
MAWP(EXT)	NO	PESO IN ESERCIZIO	60 kg
MDMT @ MAWP	+5 °C @ 18.45 barg	PESO PIENO D'ACQUA	92 kg
TRATTAMENTO TERMICO	NO	DATI DEL VENTO	-
IMPACT TEST	NO	DATI SISMICI	-

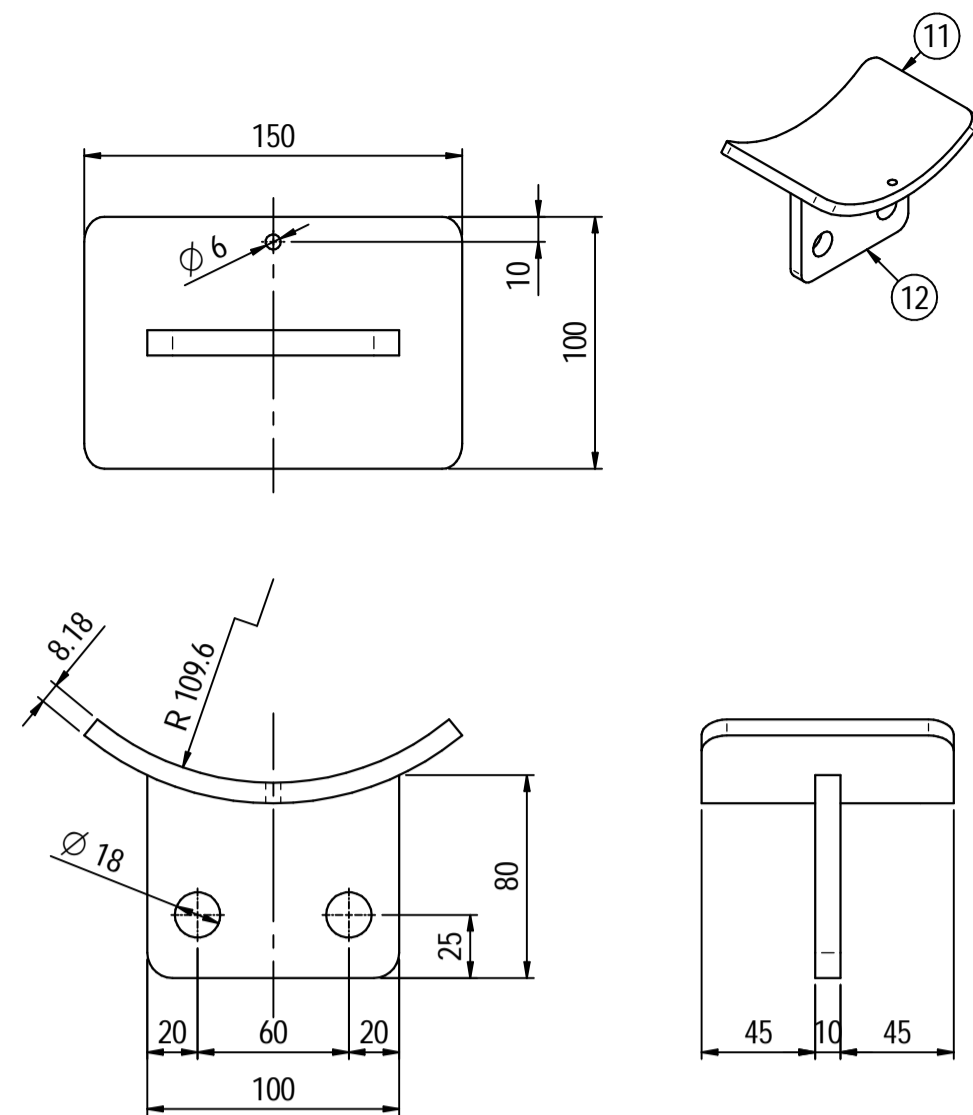
Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
00	FIRST ISSUE	LG	MV	MV	03/2024

Object/Objeto 1st STAGE INLET PULSATION DAMPER

Scale/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

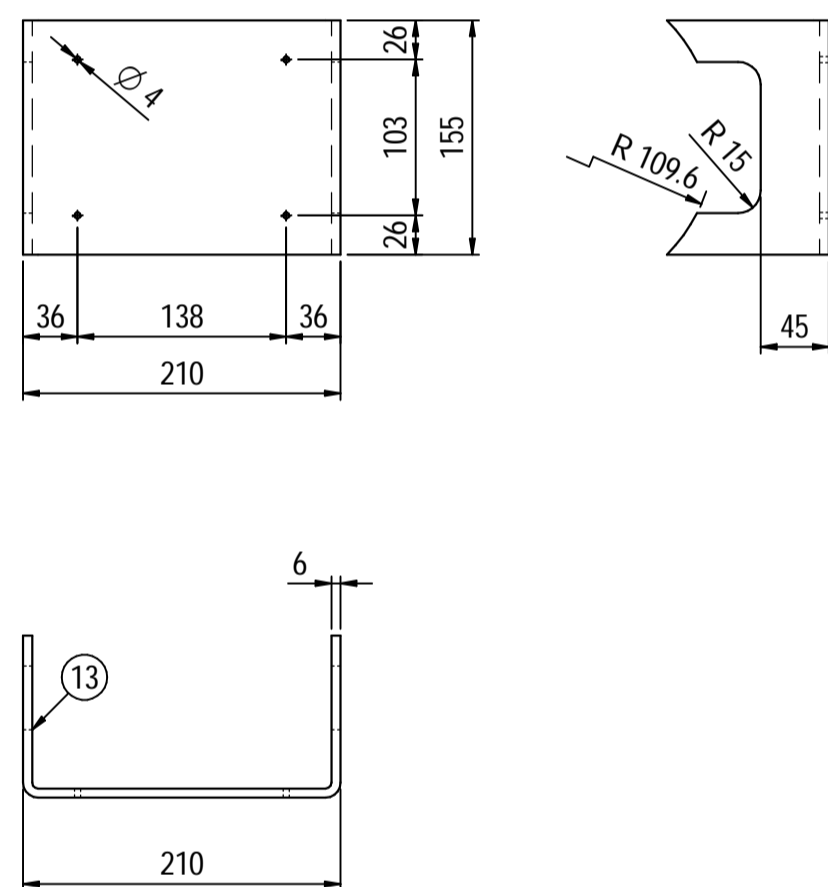
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Scale 1 : 3



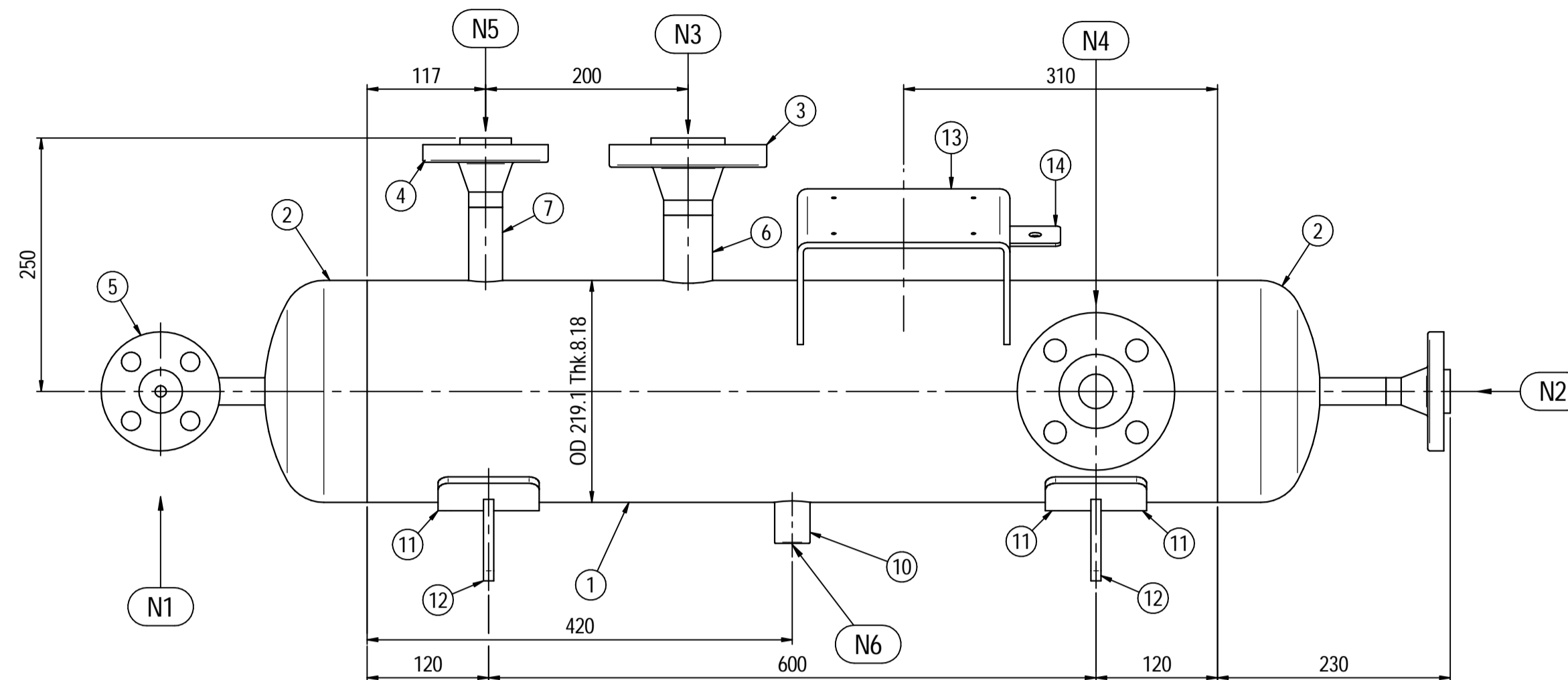
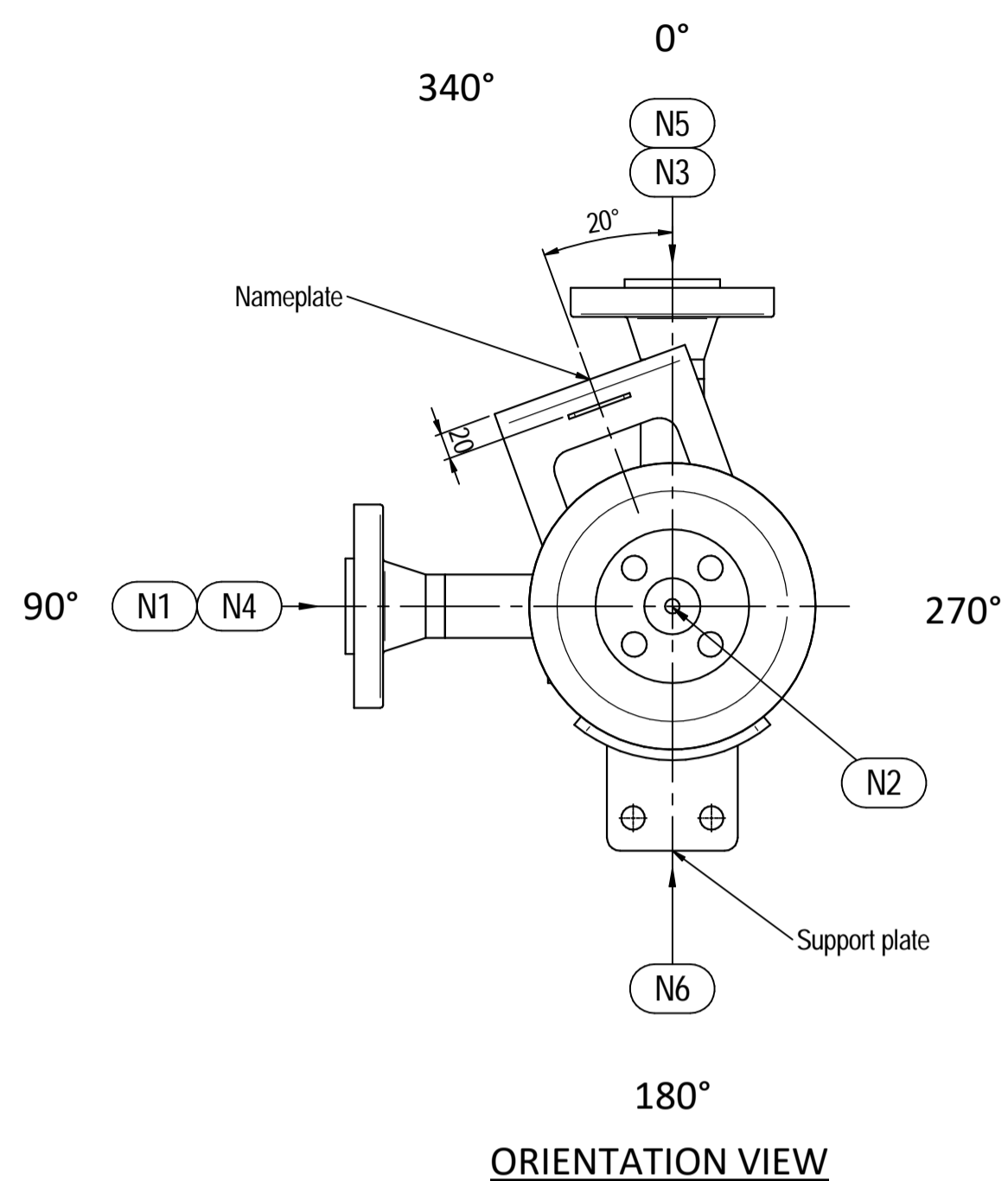
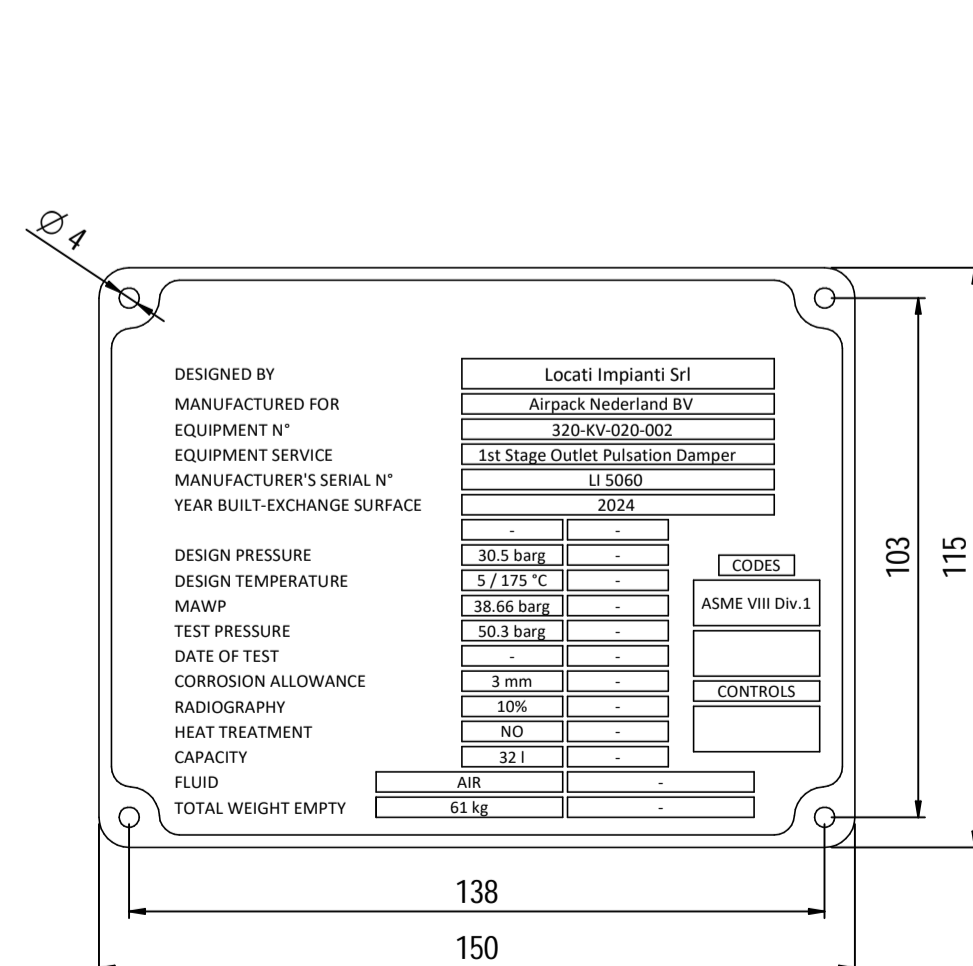
Nameplate detail

Scale 1:5

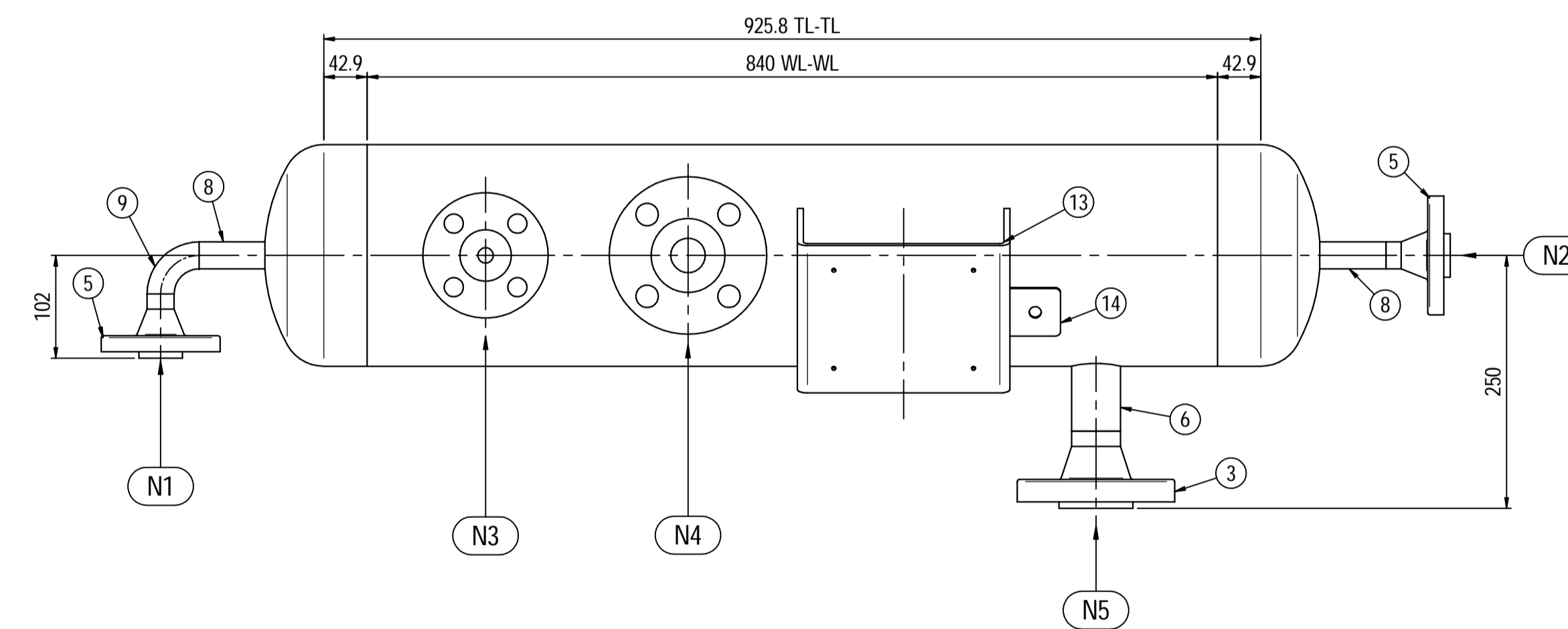


Nameplate detail

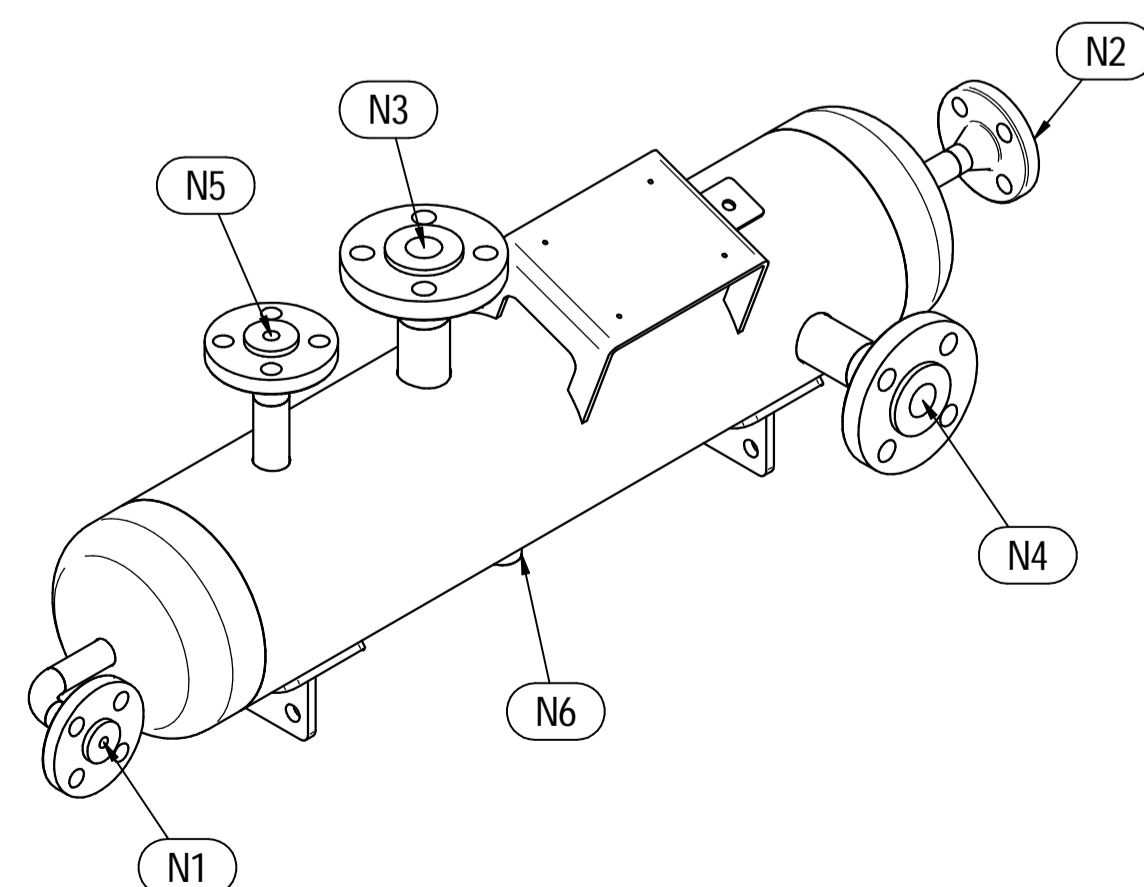
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ELEVATION VIEW



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 1½" WN #600 RF Sch.160	SA105	3.1
4	1	Flange 1" WN #600 RF Sch.XXS	SA105	3.1
5	2	Flange ¾" WN #600 RF Sch.XXS	SA105	3.1
6	2	Seamless Pipe 1½" 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 ¾" Sch.XXS L=73	SA106 Gr.B	3.1
9	1	Seamless elbow ¾" 90° LR Sch.XXS	SA234 WPB	3.1
10	1	Coupling ¾" 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
ITEM	Qtà	SERVIZIO	NPS/DN	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	
				PIPE	FLANGE	PAD					
				TUBO	FLANGIA	RINFORZO					
N6	1	DRAIN	½"	38.1	8.38	#6000	NPT-F	-	-	-	8± 10
N5	1	TEMPERATURE GAUGE	1½"	48.3	7.14	#600	WN RF	-	-	-	8± 10
N4	1	TEMPERATURE TRANSMITTER	1½"	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	¾"	26.7	7.82	#600	WN RF	-	-	-	8± 10
N1	1	AIR INLET	¾"	26.7	7.82	#600	WN RF	-	-	-	8± 10

DATI DI PROGETTO / Design data			
FLUIDO	Air	COLLAUDO	0094 Iqa Inspection Iberia SA
Fluid	Gas	Test	N/A
STATO FISICO DEL FLUIDO	Gas	PED	N/A
Physical state of fluid	Gas	PED	N/A
CODICE DI CALCOLO	ASME VIII Div.1 Ed.2021		
Construction code	ASME VIII Div.1 Ed.2021		
PRESSIONE DI ESERCIZIO	23.3 barg	SERVIZIO LETALE	NO
Operating pressure	23.3 barg	Lethal service	NO
PRESSIONE DI PROGETTO	30.5 barg	X-RAY	Spot (10%)
Design pressure	30.5 barg	RT examination	Spot (10%)
PRESSIONE ESTERNA	NO	LIQUIDI PENETRANTI	NO
External pressure	NO	Dye penetrant extension	NO
PRESSIONE DI PROVA IDRAULICA	50.26 barg	ULTRASUONI	NO
Hydraulic test pressure	50.26 barg	Ultrasonic extension	NO
TEMPERATURA DI ESERCIZIO	157 °C	CONTROLLO MAGNETOSCOPICO	NO
Operating temperature	157 °C	Magnetic particle examination	NO
TEMPERATURA DI PROGETTO	175 °C	TALONE DI SALDATURA	NO
Design temperature	175 °C	Weld tehs coupon	NO
SOVRAMEZZO DI CORROSIONE	3 mm	PROCEDIMENTO DI SALDATURA	See doc: C230048WBK009
Corrosion allowance	3 mm	Welding procedure	See doc: C230048WBK009
CAPACITA'	32 l	TIPO DI FONDO	CAP
Capacity	32 l	Head type	CAP
EFFICIENZA GIUNTI	0.85	FORMATURA FONDO	HOT
Joint efficiency	0.85	Head form	HOT
MAWP @ Design Temperature	38.66 barg @ +175 °C	PESO A VUOTO	61 kg
MAWP(EXT)	NO	PESO IN ESERCIZIO	61 kg
MDMT @ MAWP	+5 °C @ 38.66 barg	PESO PIENO D'ACQUA	93 kg
		Full water weight	93 kg
TRATTAMENTO TERMICO	NO	DATI DEL VENTO	-
P.W.H.T.	NO	Wind datas	-
IMPACT TEST	NO	DATI SISMICI	-
Exemption	NO	Seismological datas	-

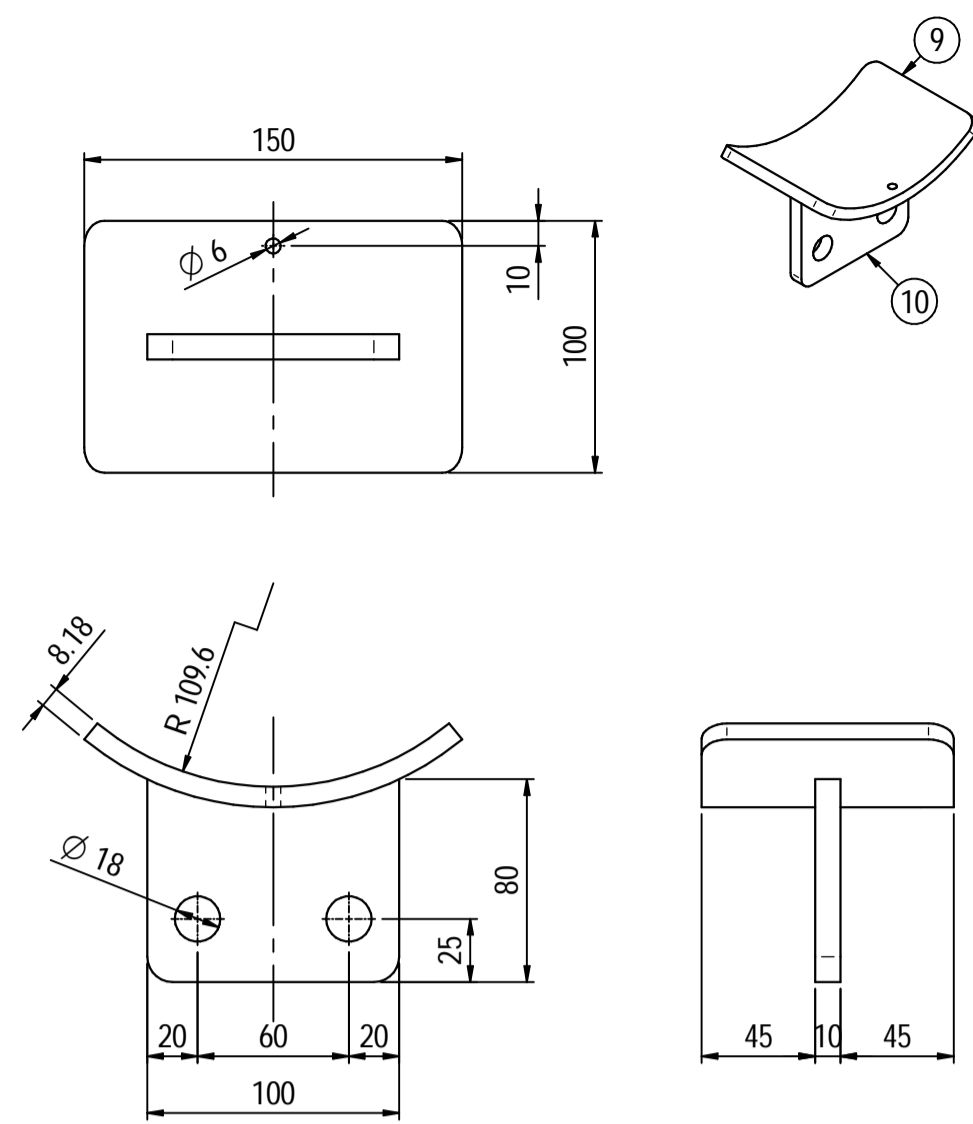
Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
00	FIRST ISSUE	LG	MV	MV	03/02/2024

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

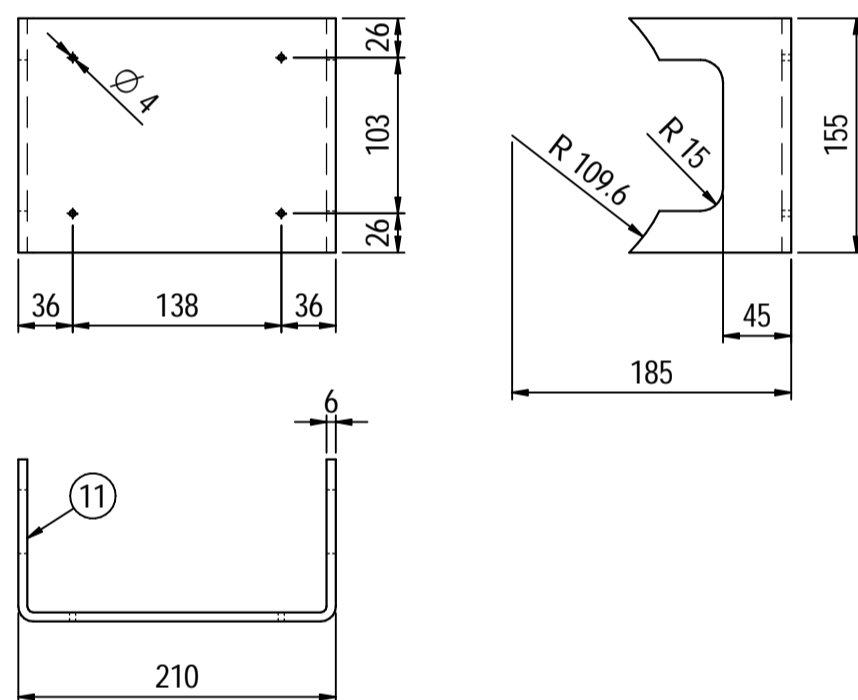
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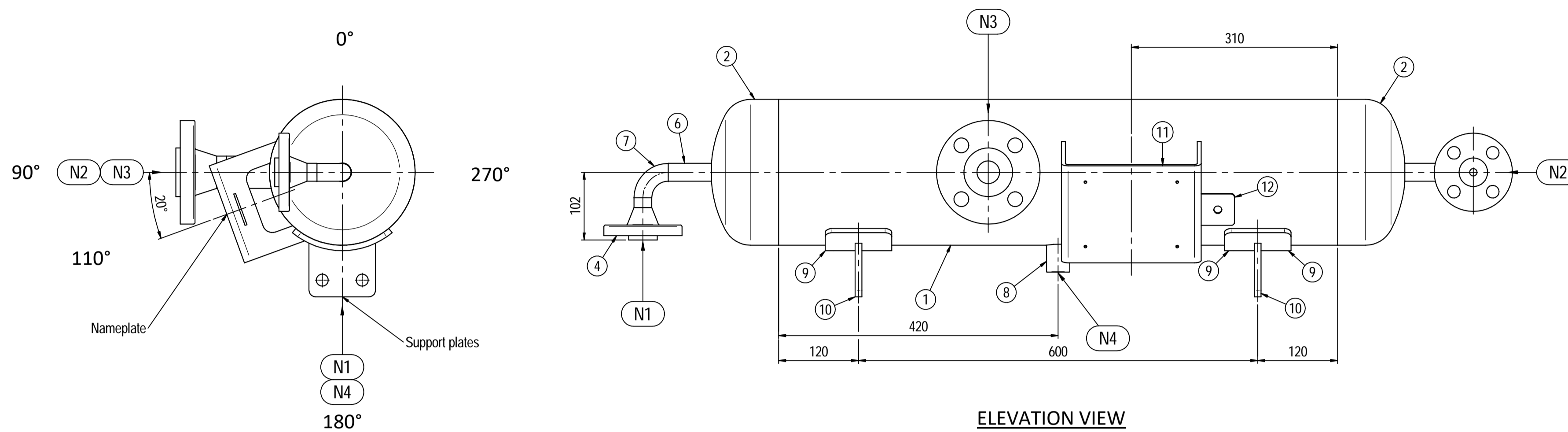
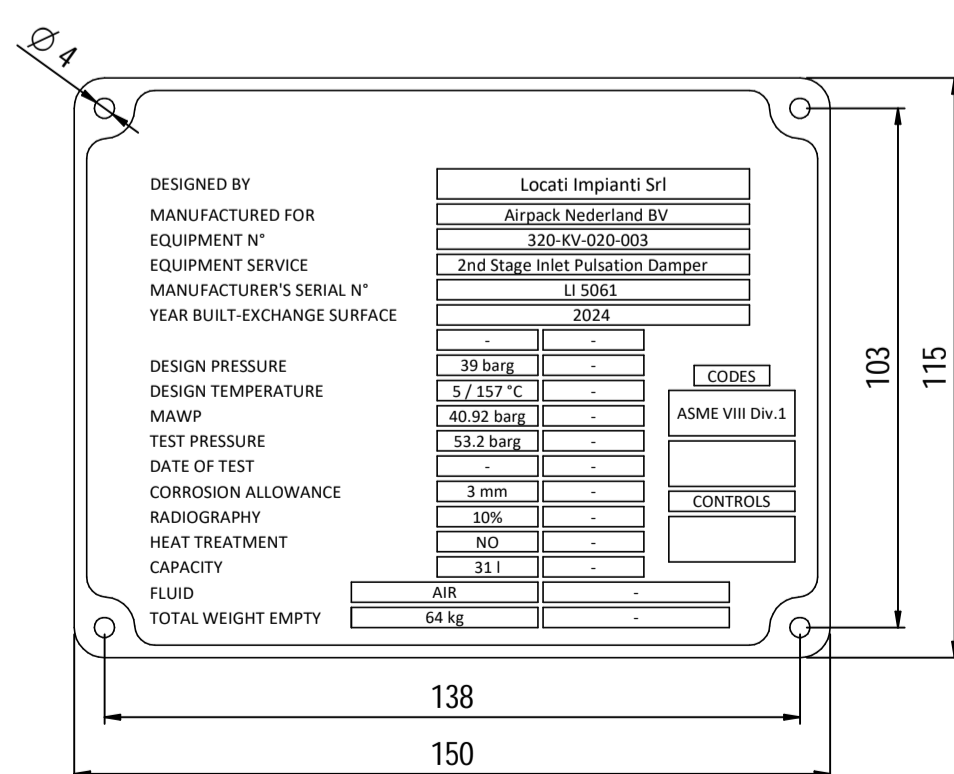
Nameplate detail

Scale 1:5

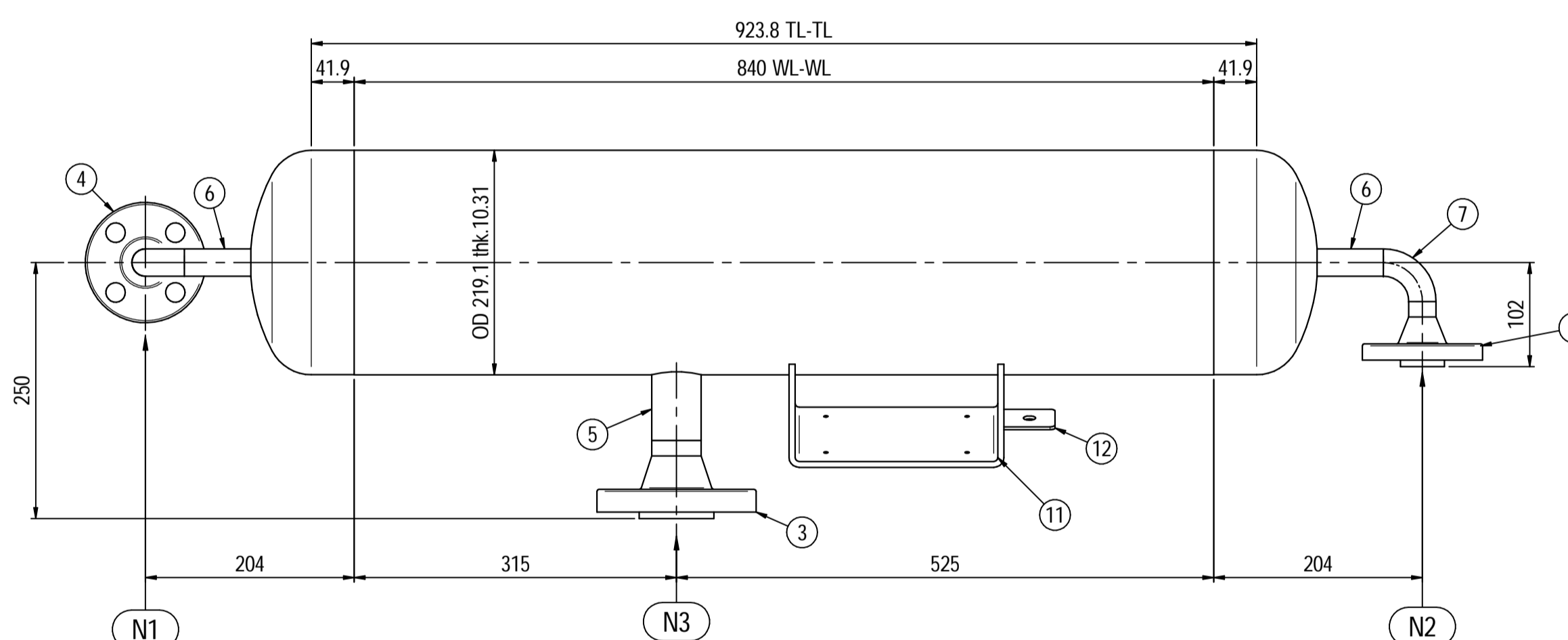


Nameplate detail

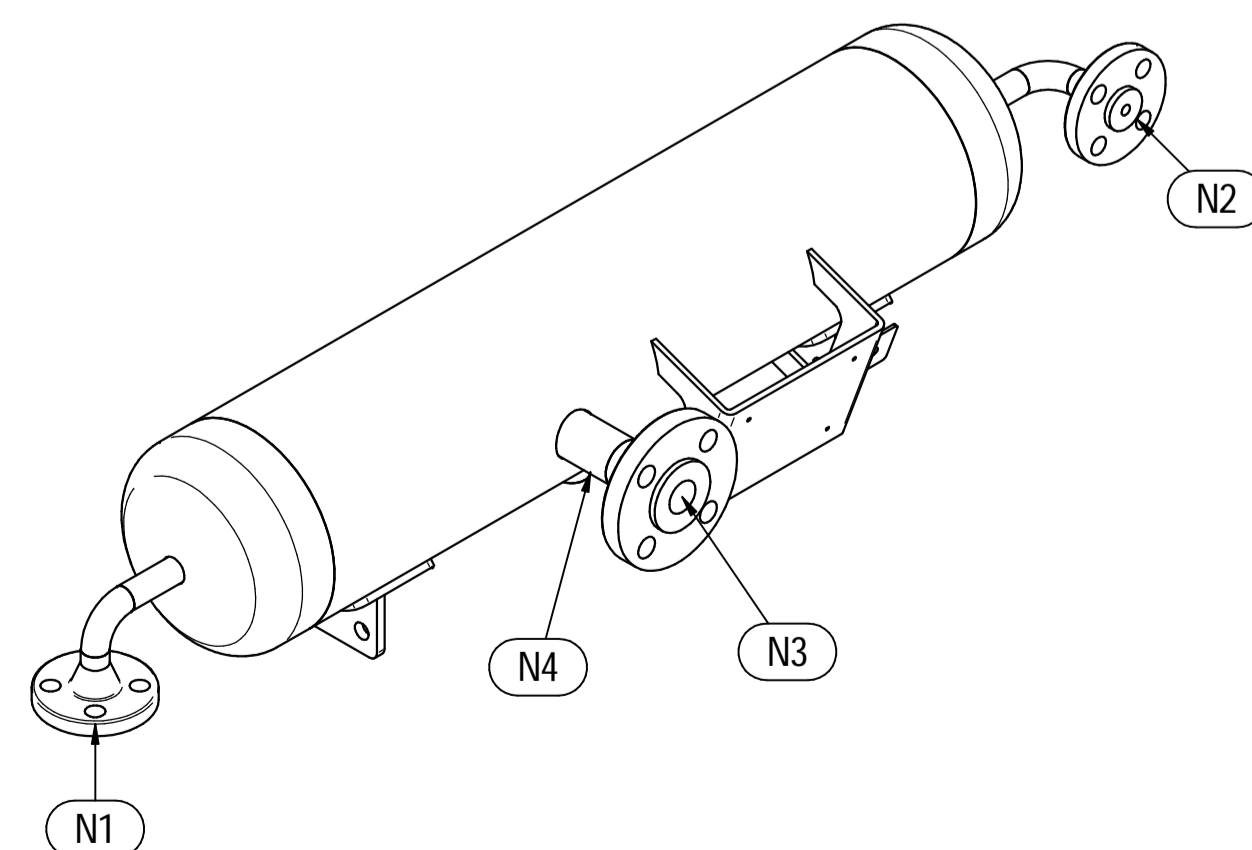
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ELEVATION VIEW



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 1 1/2" WN #600 RF Sch.160	SA105	3.1
4	2	Flange 1/2" WN #600 RF Sch.XXS	SA105	3.1
5	1	Seamless Pipe 1 1/2" Sch.160 L=75	SA106 Gr.B	3.1
6	2	Seamless Pipe 3/4" Sch.XXS L=73	SA106 Gr.B	3.1
7	2	Seamless elbow 3/4" 90° LR Sch.XXS	SA234 WPB	3.1
8	1	Coupling 1/2" 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:**
- 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 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	1/2"	38.1	8.28	#6000	NPT-F	-	-	-	8 ± 10
N3	1	TEMPERATURE TRANSMITTER	1 1/2"	48.3	7.14	#600	WN RF	-	-	-	8 ± 10
N2	1	AIR OUTLET	1/2"	26.7	7.82	#600	WN RF	-	-	-	8 ± 10
N1	1	AIR INLET	1/2"	26.7	7.82	#600	WN RF	-	-	-	8 ± 10

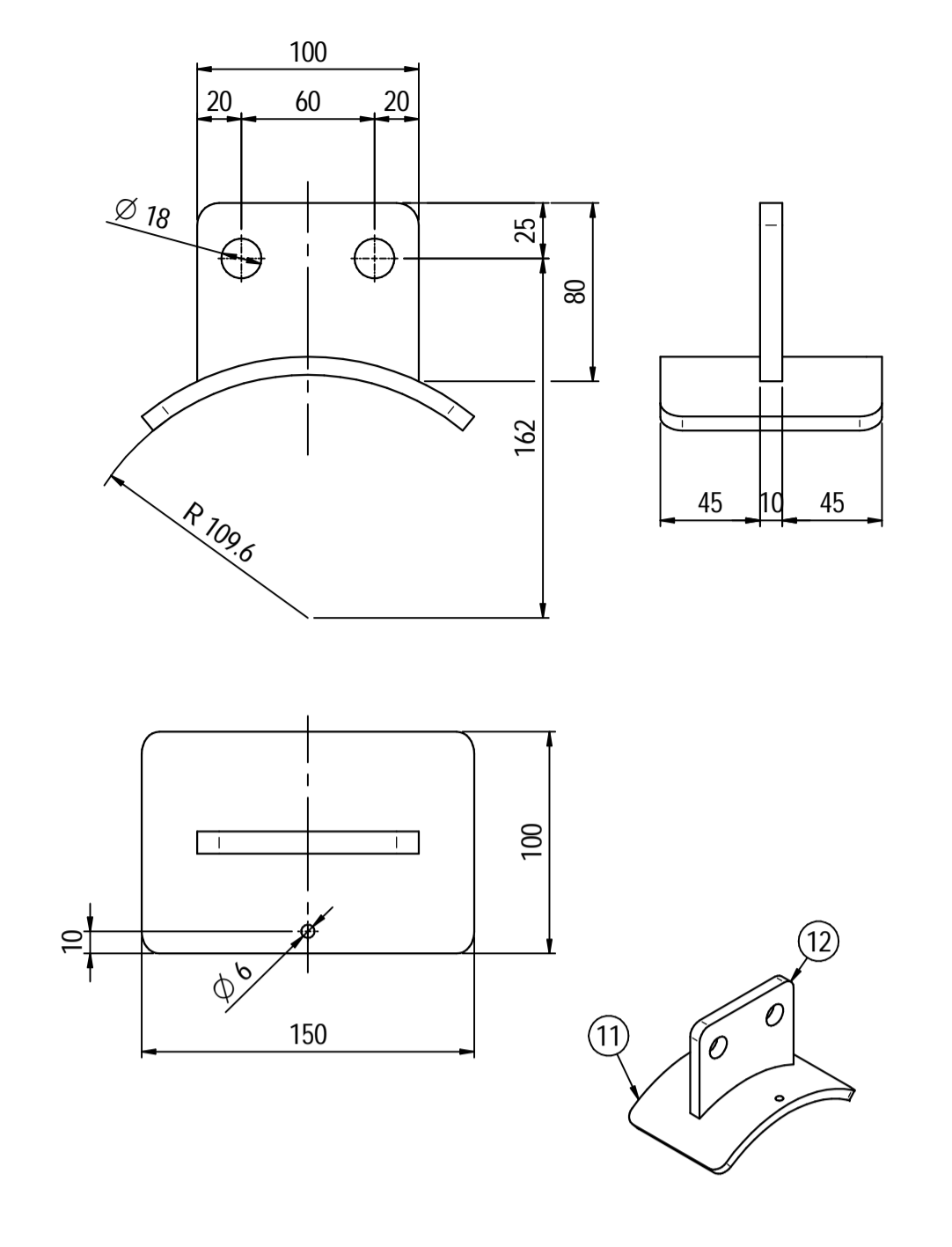
ITEM	Qtà	SERVIZIO	NPS/DN	PIPE TUBO	THK	RATING	FLANGE TYPE	FACE	O.D.	THK.	PAD RINFORZO
DATI DI PROGETTO / Design data											
FLUIDO		Air									COLLAUDO Test
STATO FISICO DEL FLUIDO		Gas									0094 Iqqa Inspection Iberia SA
CODICE DI CALCOLO		ASME VIII Div.1 Ed.2021									PED
PRESSIONE DI ESERCIZIO		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					ALLONIE 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

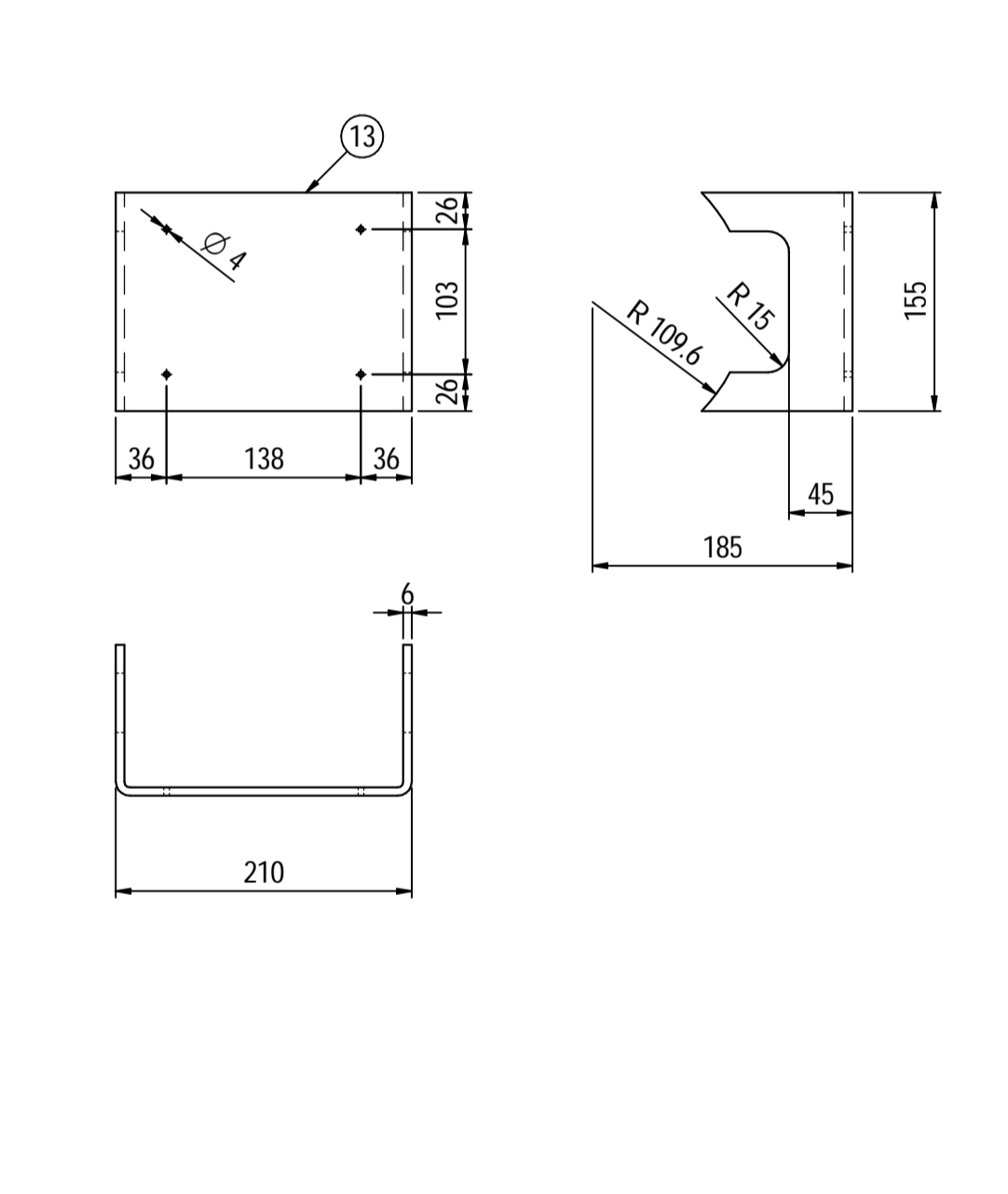
Oggetto/Object **2nd STAGE INLET PULSATION DAMPER**

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

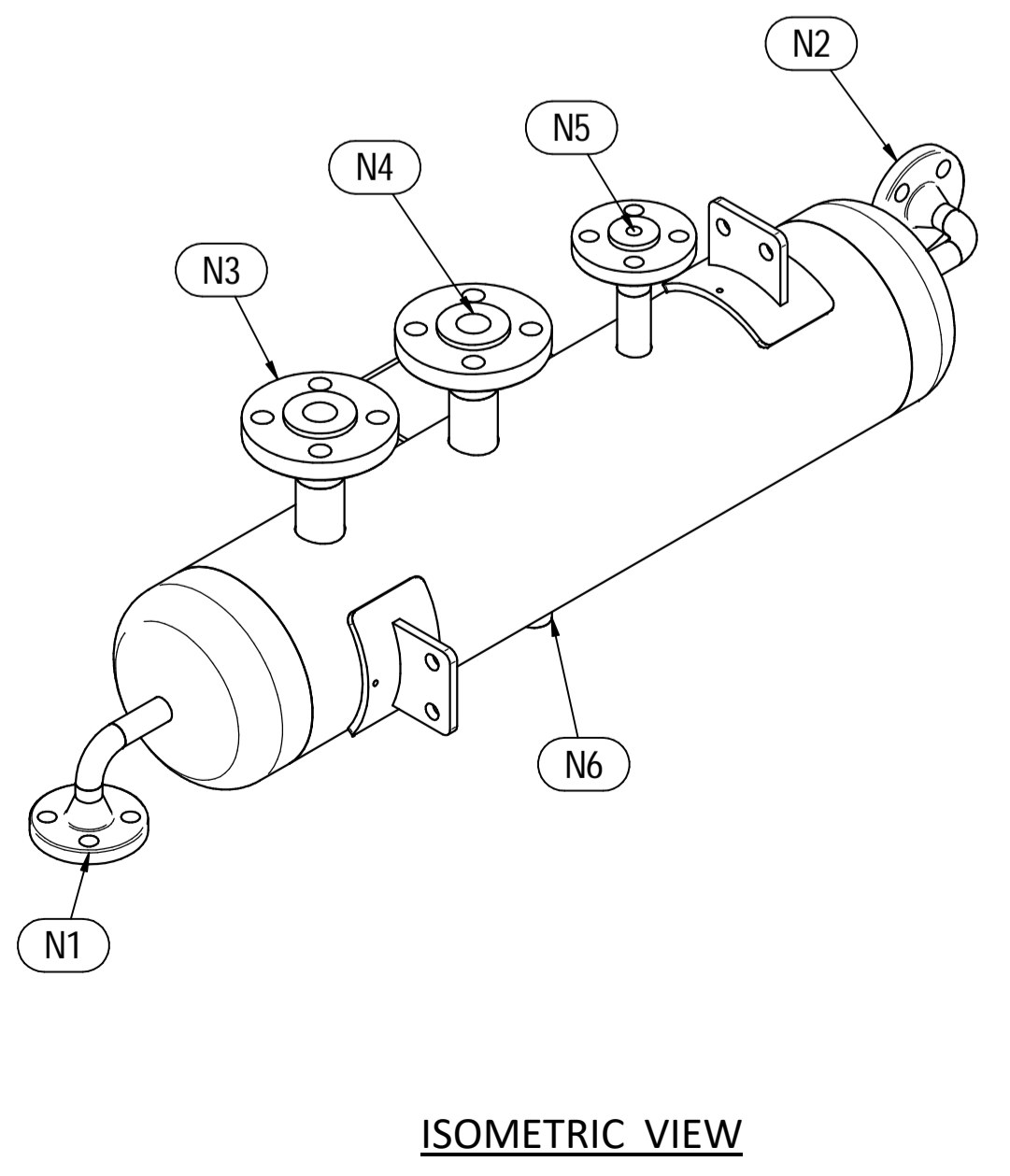
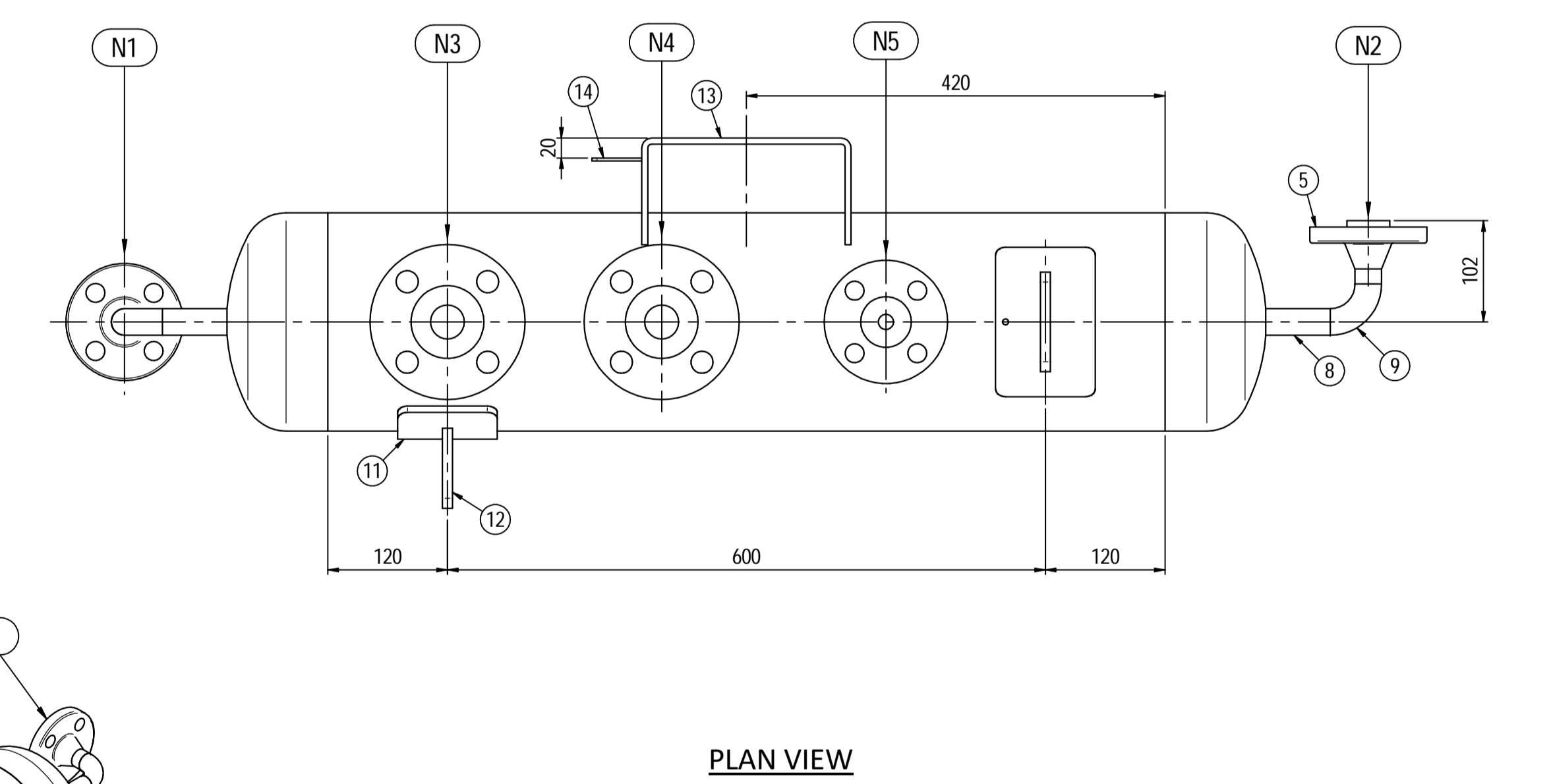
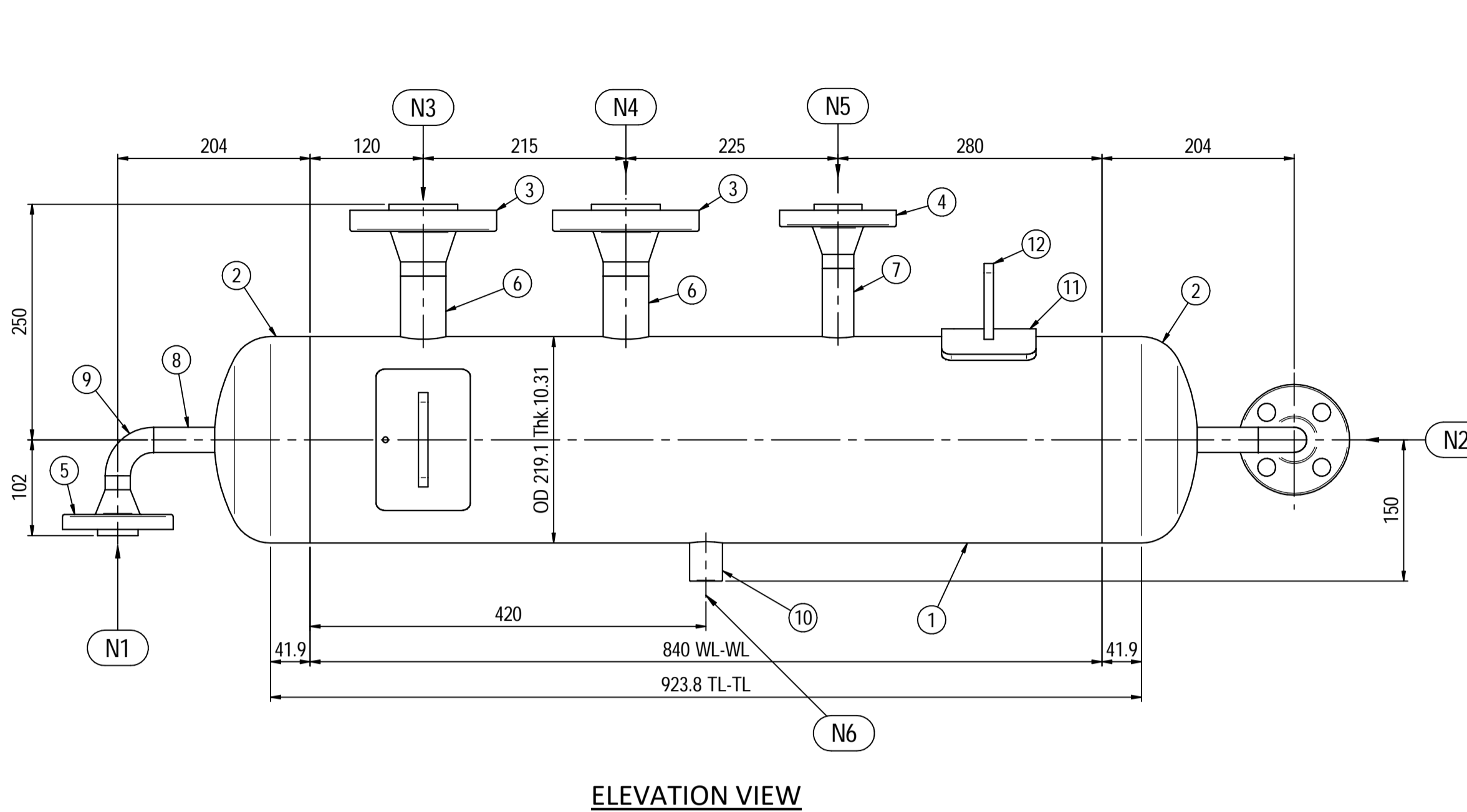
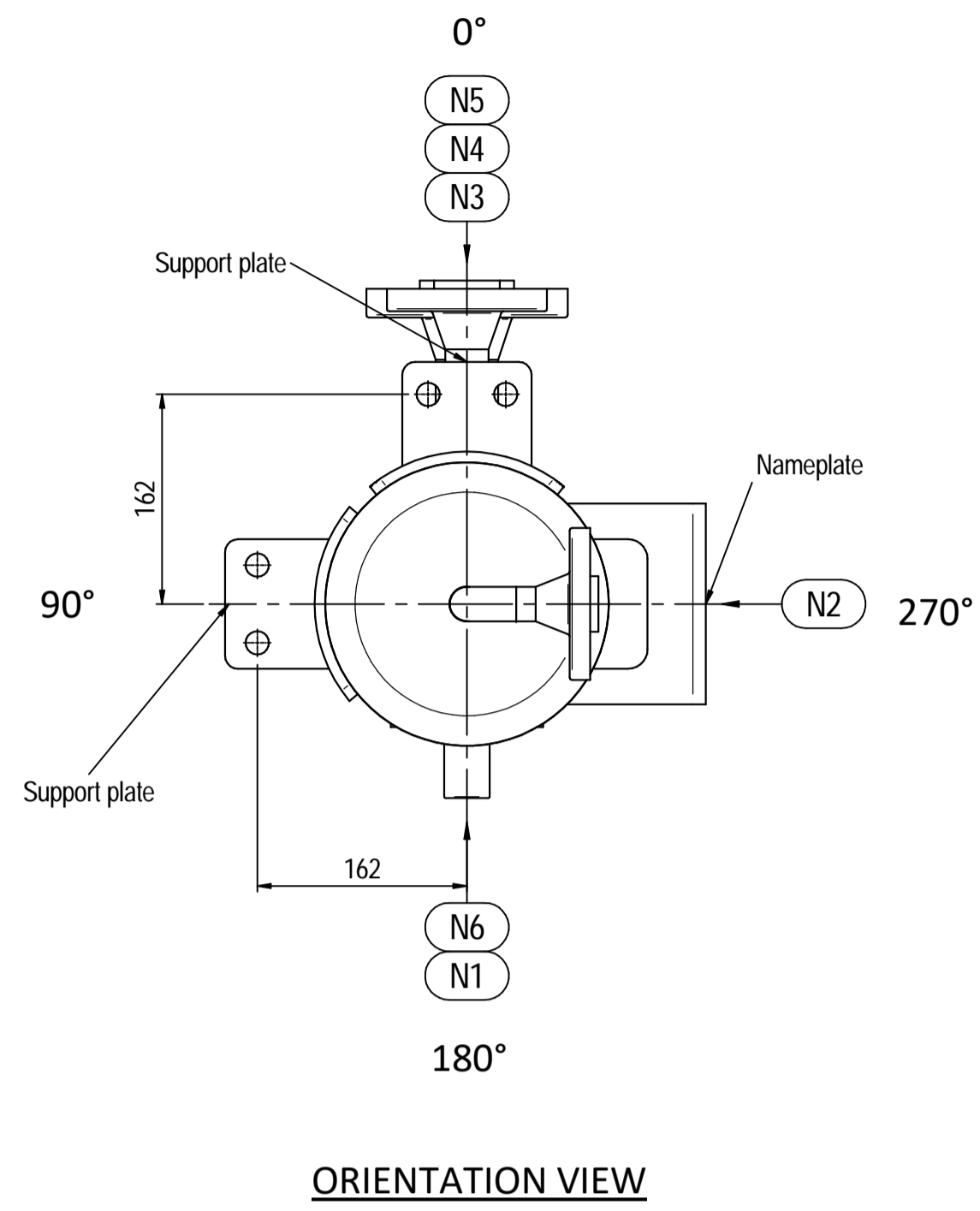
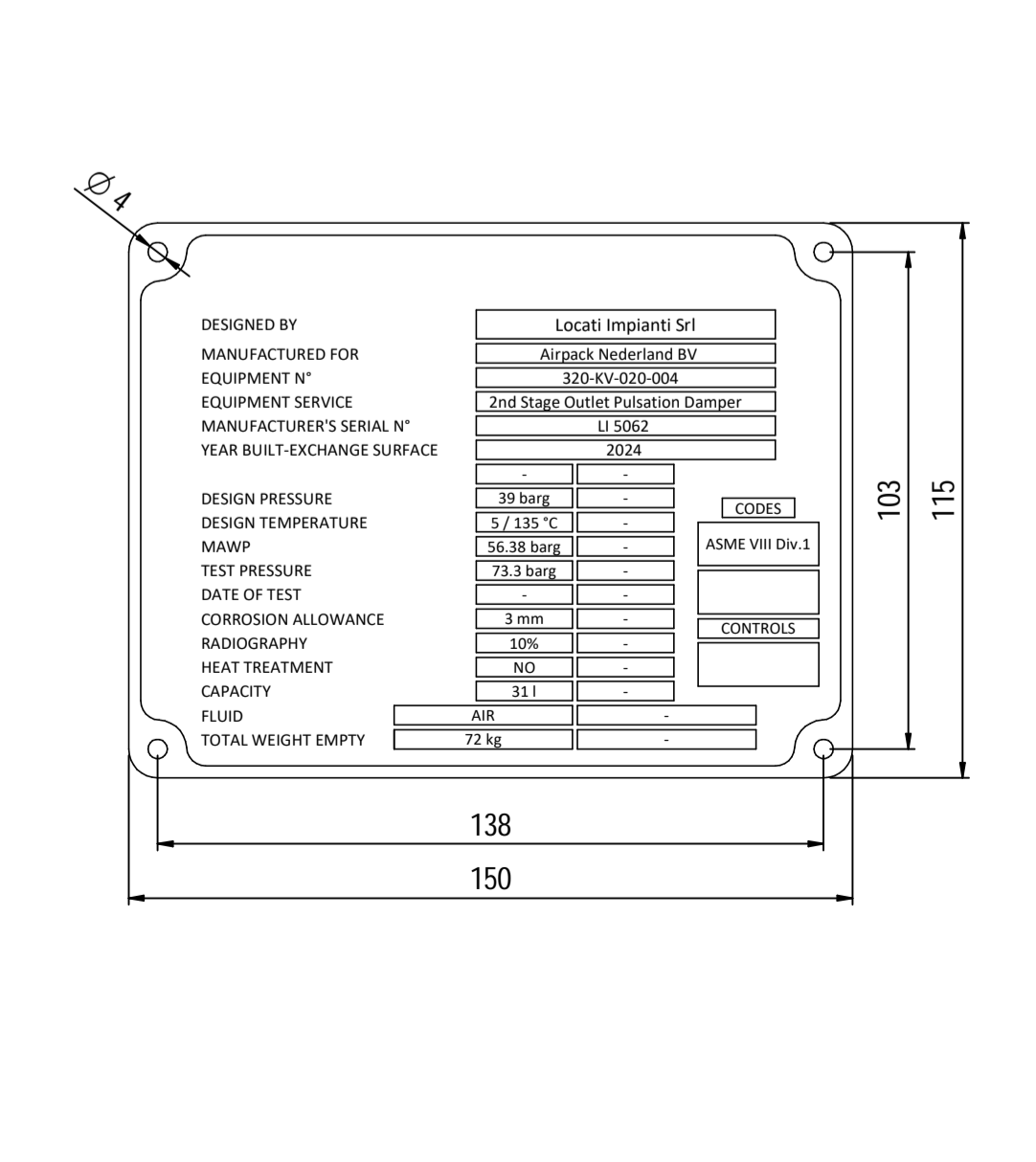
Supports detail
Scale 1 : 3



Nameplate detail
Scale 1:5



Nameplate detail
scale 1:1.5



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	3/4"	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	THK	RATING	FLANGE TYPE	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		Lethal service					NO
PRESSIONE DI PROGETTO		39 barg		X-RAY		RT examination					Spot (10%)
PRESSIONE ESTERNA		NO		LICUIDI PENETRANTI		Dye penetrant extension					NO
PRESSIONE DI PROVA IDRAULICA		73.3 barg		ULTRASUONI		Ultrasonic extension					NO
TEMPERATURA DI ESERCIZIO		116°C		CONTROLLO MAGNETOSCOPICO		Magnetic particle examination					NO
TEMPERATURA DI PROGETTO		135°C		TALLONE DI SALDATURA		Weld tests coupon					NO
SOVRAMETALLO DI CORROSIONE		3 mm		PROCEDIMENTO DI SALDATURA		Welding procedure					See doc: C230048WBK009
CAPACITA'		311		TIPO DI FONDO		Head type					CAP
EFFICIENZA GIUNTI		0.85		FORMATURA FONDO		Head formasi					HOT
MAWP @ Design Temperature		56.38 barg @ +135°C		PESO A VUOTO		Empty weight					72 kg
MAWP(EXT)		NO		PESO IN ESERCIZIO		Operating weight					72 kg
MDMT @ MAWP		+5°C @ 56.38 barg		PESO PIENO D'ACQUA		Full water weight					103 kg
TRATTAMENTO TERMICO		NO		DATI DEL VENTO		Wind datas					-
IMPACT TEST		NO		DATI SISMICI		Seismological datas					-

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					
		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.	00