PULSATION DAMPER DETAIL DRAWING FOR NITROGEN GAS BOOSTER

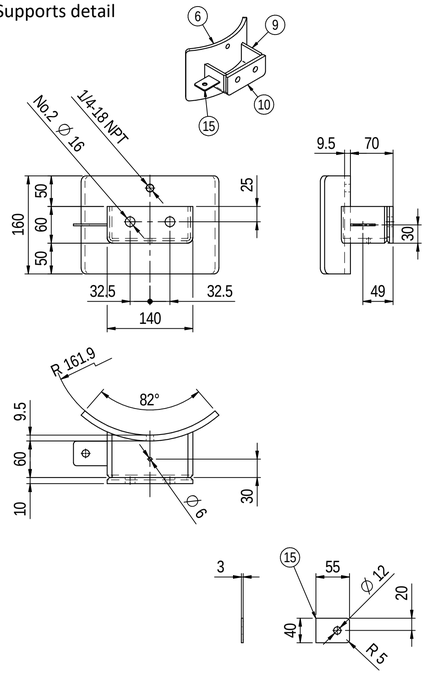
04	03/06/2022	**For approval**	**KP**	**CL**	**JR**	
03	13/05/2022	**For approval**	**KP**	**CL**	**JR**	
02	06/05/2022	**For approval**	**KP**	**CL**	**JR**	
01	26/04/2022	**For approval**	**KP**	**CL**	**JR**	
00	06/04/2022	**For approval**	**KP**	**CL**	**JR**	
Rev.	**Date**	**Purpose of Issue**	**Prepared**	**Checked**	**Approved**	**AC Code**
					Class: 1	**Phase: P**

TABULATION OF REVISED PAGES

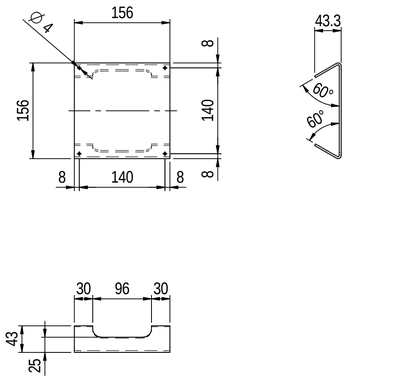
Page	D00	D01	D02	D03	D04
1.	X	X	X	X	X
2.	X	X	X	X	X
3.	X	X	X	X	X
4.	X	X	X	X	X
5.	X	X	X	X	X
6.	X	X	X	X	X
7.					
8.					
9.					
10.					
11.					
12.					

Page	D00	D01	D02	D03	D04

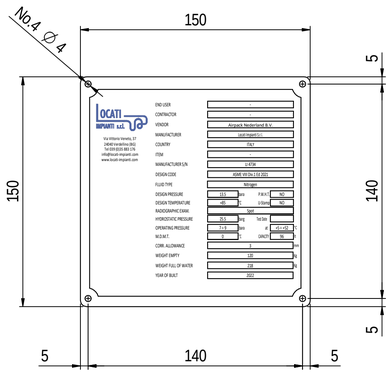
Supports detail

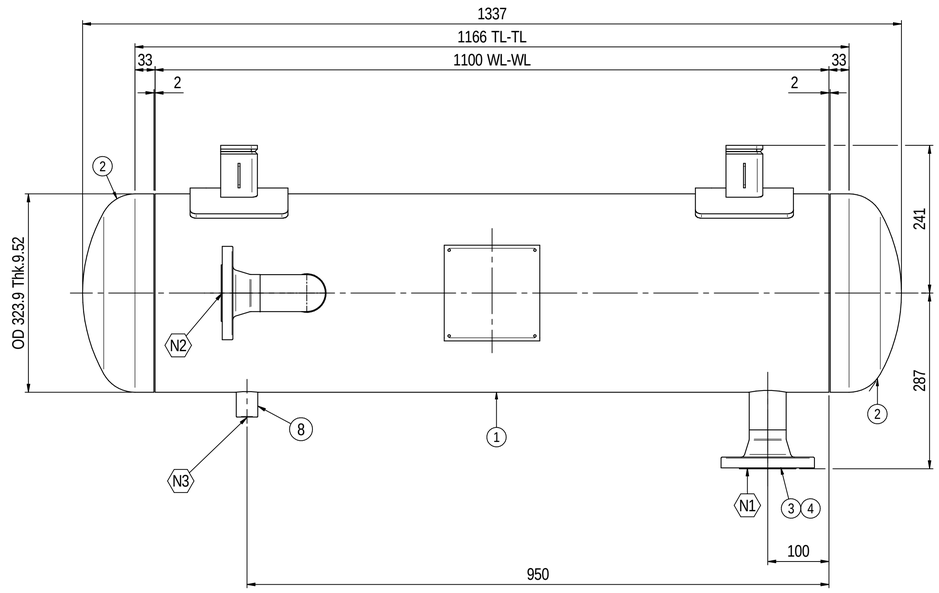


Nameplate detail

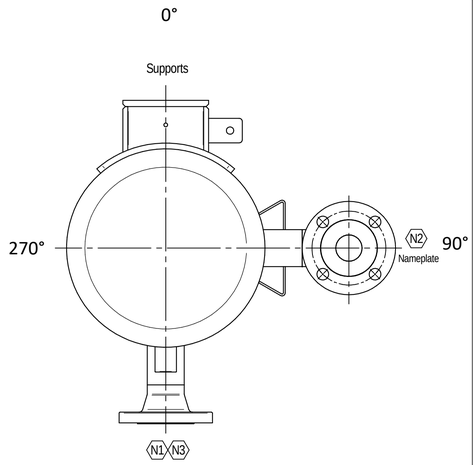


Nameplate detail
scale 1:2

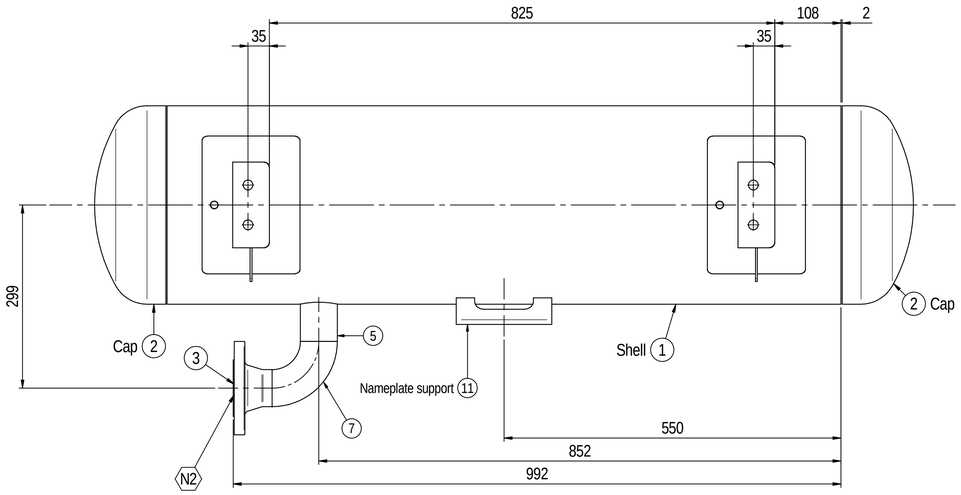




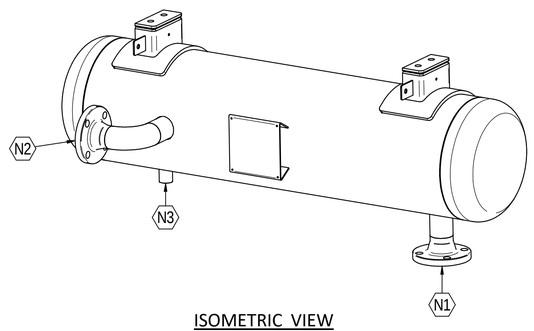
ELEVATION VIEW



ORIENTATION VIEW



PLAN VIEW



ISOMETRIC VIEW

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 ½" 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.

N3	1	DRAIN	½"	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
ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
				PIPE		FLANGE			PAD		
ITEM	Qtà	SERVIZIO	NPS/DN	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	
				TUBO		FLANGIA			RINFORZO		

DATI DI PROGETTO / Design data

FLUIDO *Fluid*	Nitrogen	COLLAUDO *Test*	Lloyd Register
STATO FISICO DEL FLUIDO *Physical state of fluid*	Gas	NATIONAL BOARD REGISTRATION	NO
CODICE DI CALCOLO *Construction code*	ASME VIII Div.1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO *Operating pressure*	7 ÷ 9 bara	SERVIZIO LETALE *Lethal service*	NO
PRESSIONE DI PROGETTO *Design pressure*	13,5 bara (12,5 barg)	X-RAY *RT examination*	Spot (RT3)
PRESSIONE ESTERNA *External pressure*	NO	LIQUIDI PENETRANTI *Dye penetrant extension*	NO
PRESSIONE DI PROVA IDRAULICA *Hydraulic test pressure*	25.5 barg	ULTRASUONI *Ultrasonic extension*	NO
TEMPERATURA DI ESERCIZIO *Operating temperature*	+5 ÷ +52 °C	CONTROLLO MAGNETOSCOPICO *Magnetic particle examination*	NO
TEMPERATURA DI PROGETTO *Design temperature*	+85 °C	TALLONE DI SALDATURA *Weld tets coupon*	NO
SOVRAMETALLO DI CORROSIONE *Corrosion allowance*	3 mm	PROCEDIMENTO DI SALDATURA *Welding procedure*	See doc.C220006WBK013
CAPACITA' *Capacity*	96 l	TIPO DI FONDO *Head type*	CAP
EFFICIENZA GIUNTI *Joint efficency*	0.85	FORMATURA FONDO *Head formed*	HOT
MAWP @ Design Temperature	18.15 barg @ +85 °C	PESO A VUOTO *Empty weight*	120 kg
MAWP(EXT)	NO	PESO IN ESERCIZIO *Operating weight*	120 kg
MDMT @ MAWP	0 °C @ 18.15 barg	PESO PIENO D'ACQUA *Full water weight*	218 kg
TRATTAMENTO TERMICO *P.W.H.T.*	NO	DATI DEL VENTO *Wind datas*	-
IMPACT TEST *Exepmtion*	NO	DATI SISMICI *Seismological datas*	-

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
03	Midified as per Client comments	CM	MV	GL	11/05/2022
02	Midified as per Client comments	CM	MV	GL	15/04/2022
01	Midified straight flange lenght on cap	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

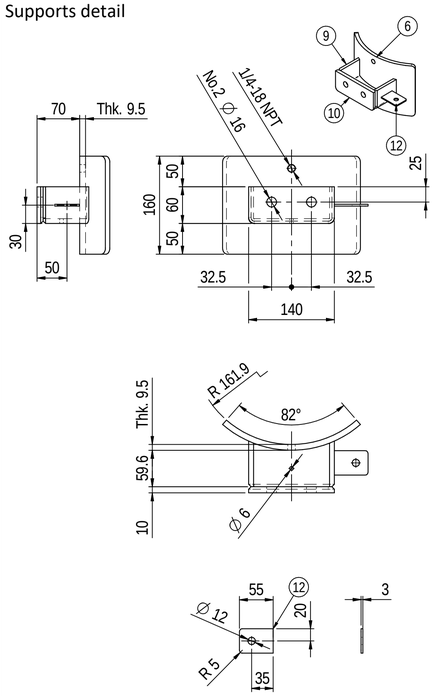
Oggetto/Object: N2 PULSATION DAMPER INLET

LOCATI IMPIANTI s.r.l.

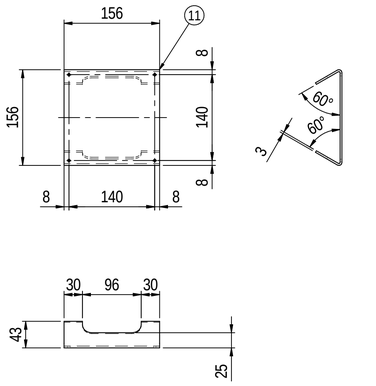
Scala/Scale	1 - 5	Formato/Size	A1
Comm. N°/Job No.	C220006	Foglio/Sheet	1 - 1
Cliente/Customer	Airpack Nederland B.V.		
Ord. No.	18498-VV-0901		
Dis. N°/Dwg No.	C220006DWG003	Rev.	04

Locati Impianti Srl - Via Vittorio Veneto, 37 24040 Verdellino (BG) Italy - Ph. +39.(0)35.883.176 Fax +39.(0)35.885.015 - e-mail: info@locati-impianti.com http: www.locati-impianti.com

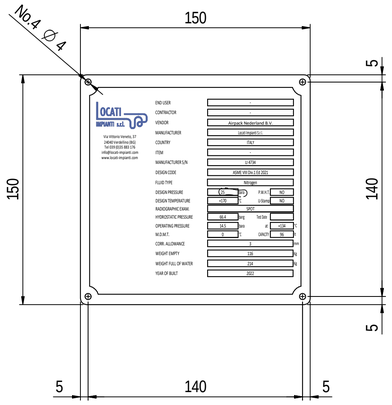
Supports detail

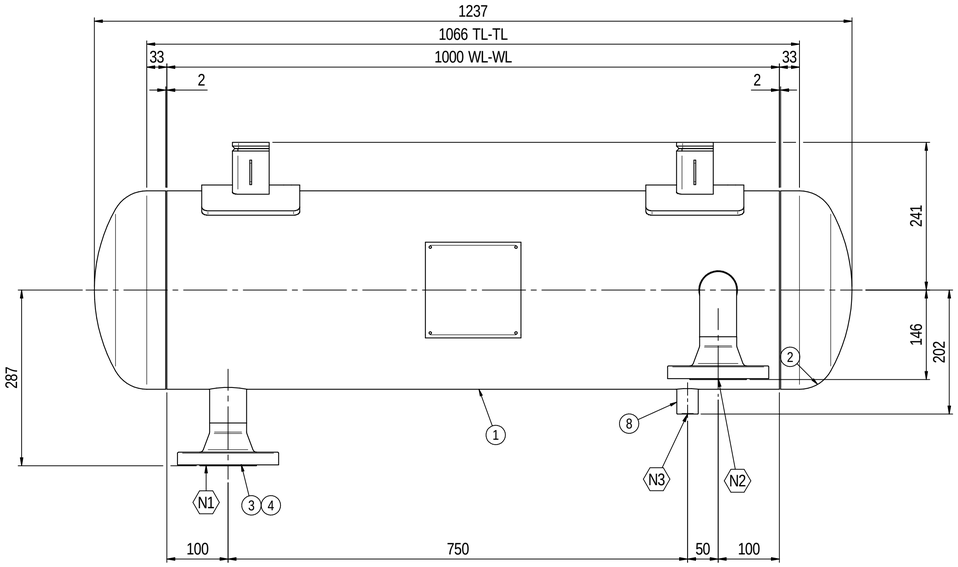


Nameplate detail
scale 1:5

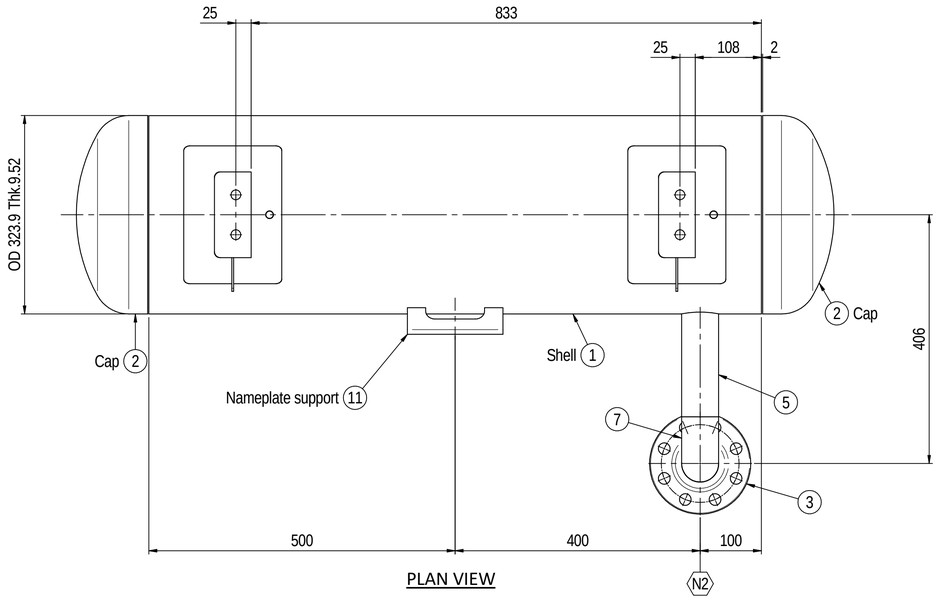


Nameplate detail
scale 1:2

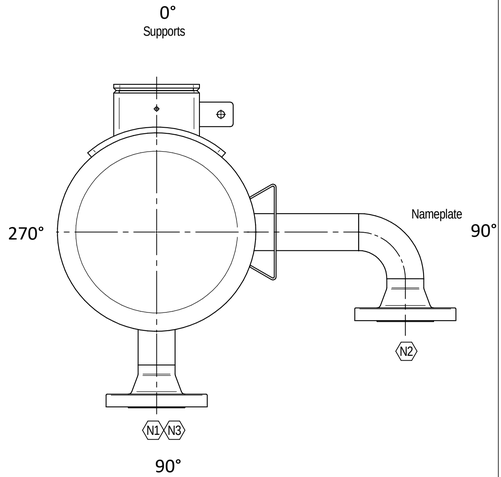




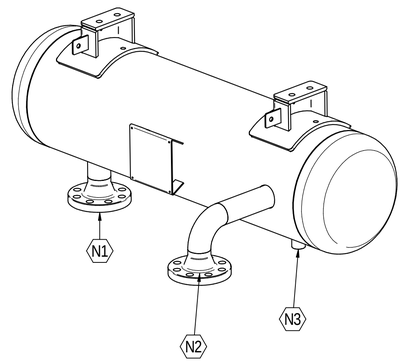
ELEVATION VIEW



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" Sch160	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 Sch160	A234 WPB	3.1
8	1	Coupling ½" 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.

N3	1	DRAIN	¾"	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

ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
				PIPE		FLANGE			PAD		
ITEM	Qtà	SERVIZIO	NPS/DN	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	
				TUBO		FLANGIA			RINFORZO		

DATI DI PROGETTO / Design data

FLUIDO *Fluid*	Nitrogen	COLLAUDO *Test*	Lloyd Register
STATO FISICO DEL FLUIDO *Physical state of fluid*	Gas	NATIONAL BOARD REGISTRATION	NO
CODICE DI CALCOLO *Construction code*	ASME VIII Div. 1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO *Operating pressure*	14.5 bara	SERVIZIO LETALE *Lethal service*	NO
PRESSIONE DI PROGETTO *Design pressure*	25 bara (24 barg)	X-RAY *RT examination*	Spot (RT3)
PRESSIONE ESTERNA *External pressure*	NO	LIQUIDI PENETRANTI *Dye penetrant extension*	NO
PRESSIONE DI PROVA IDRAULICA *Hydraulic test pressure*	66.4 barg	ULTRASUONI *Ultrasonic extension*	NO
TEMPERATURA DI ESERCIZIO *Operating temperature*	+134 °C	CONTROLLO MAGNETOSCOPICO *Magnetic particle examination*	NO
TEMPERATURA DI PROGETTO *Design temperature*	+170 °C	TALLONE DI SALDATURA *Weld tets coupon*	NO
SOVRAMETALLO DI CORROSIONE *Corrosion allowance*	3 mm	PROCEDIMENTO DI SALDATURA *Welding procedure*	See doc.C220006WBK013
CAPACITÀ *Capacity*	96 l	TIPO DI FONDO *Head type*	CAP
EFFICIENZA GIUNTI *Joint efficency*	0.85	FORMATURA FONDO *Head formed*	HOT
MAWP @ Design Temperature	33.46 barg @ +170 °C	PESO A VUOTO *Empty weight*	116 kg
MAWP(EXT)	NO	PESO IN ESERCIZIO *Operating weight*	116 kg
MDMT @ MAWP	0 °C @ 33.46 barg	PESO PIENO D'ACQUA *Full water weight*	214 kg
TRATTAMENTO TERMICO *P.W.H.T.*	NO	DATI DEL VENTO *Wind datas*	-
IMPACT TEST *Exepmtion*	NO	DATI SISMICI *Seismological datas*	-

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
03	Modified as per Customer comments	CM	MV	GL	11/05/2022
02	Alligned 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

LOCATI IMPIANTI s.r.l.

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.	C220006DWG004	Rev.	04

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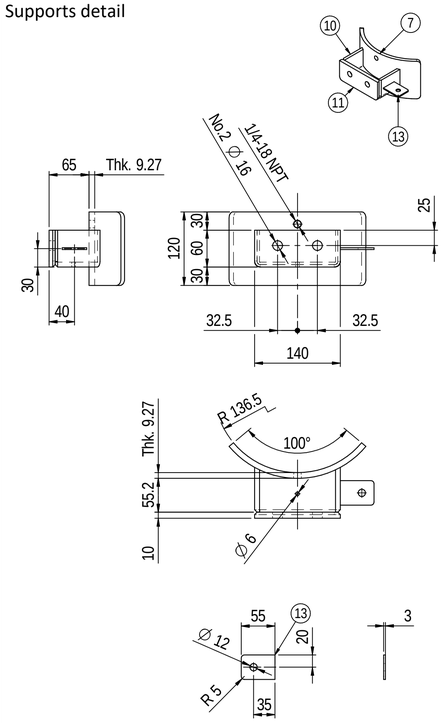
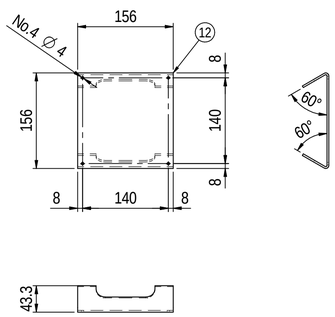
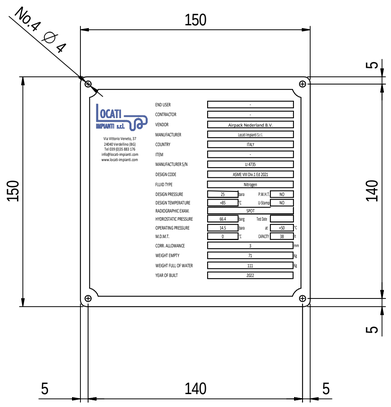
Supports detail

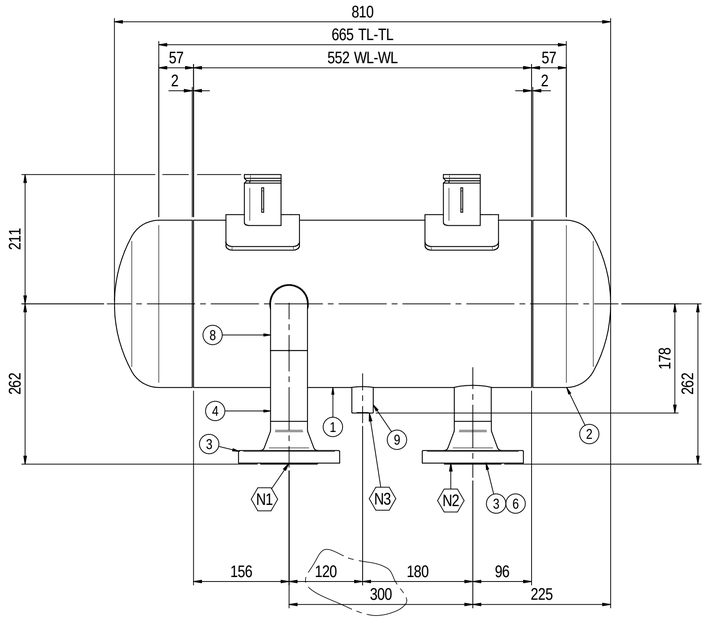


Nameplate detail

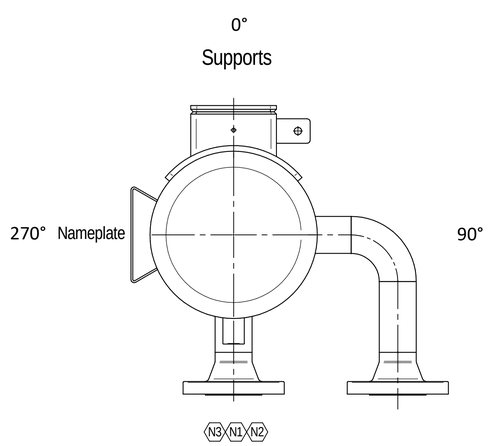


Nameplate detail
scale 1:2

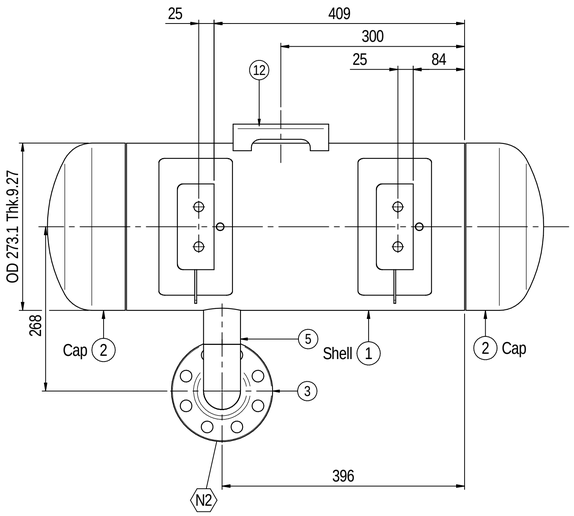




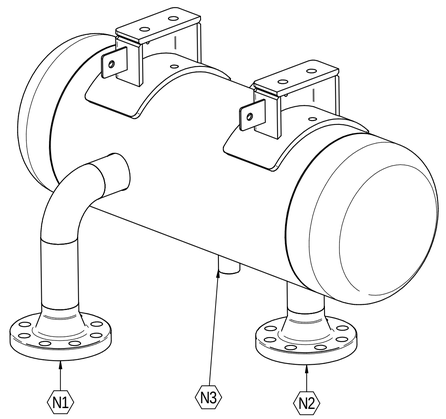
ELEVATION VIEW



ORIENTATION VIEW



PLAN VIEW



ISOMETRIC VIEW

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 ½" 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	

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 C220006CLC011 for vessel calculation.

N3	1	DRAIN	½"	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
ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc
				PIPE		FLANGE			PAD		
ITEM	Qtà	SERVIZIO	NPS/DN	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	
				TUBO		FLANGIA			RINFORZO		

DATI DI PROGETTO / Design data			
FLUIDO *Fluid*	Nitrogen	COLLAUDO *Test*	Lloyd Register
STATO FISICO DEL FLUIDO *Physical state of fluid*	Gas	NATIONAL BOARD REGISTRATION	NO
CODICE DI CALCOLO *Construction code*	ASME VIII Div.1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO *Operating pressure*	14.5 bara	SERVIZIO LETALE *Lethal service*	NO
PRESSIONE DI PROGETTO *Design pressure*	25 bara (24 barg)	X-RAY *RT examination*	Spot(RT3)
PRESSIONE ESTERNA *External pressure*	NO	LIQUIDI PENETRANTI *Dye penetrant extension*	NO
PRESSIONE DI PROVA IDRAULICA *Hydraulic test pressure*	66.4 barg	ULTRASUONI *Ultrasonic extension*	NO
TEMPERATURA DI ESERCIZIO *Operating temperature*	+50 °C	CONTROLLO MAGNETOSCOPICO *Magnetic particle examination*	NO
TEMPERATURA DI PROGETTO *Design temperature*	+85 °C	TALLONE DI SALDATURA *Weld tets coupon*	NO
SOVRAMETALLO DI CORROSIONE *Corrosion allowance*	3 mm	PROCEDIMENTO DI SALDATURA *Welding procedure*	See doc.C220006WBK013
CAPACITA' *Capacity*	38 l	TIPO DI FONDO *Head type*	CAP
EFFICIENZA GIUNTI *Joint efficency*	0.85	FORMATURA FONDO *Head formed*	HOT
MAWP @ Design Temperature	38.12 bar @ +85°C	PESO A VUOTO *Empty weight*	71 kg
MAWP(EXT)	NO	PESO IN ESERCIZIO *Operating weight*	71 kg
MDMT @ MAWP	0 °C @ 38.12 bar	PESO PIENO D'ACQUA *Full water weight*	111 kg
TRATTAMENTO TERMICO *P.W.H.T.*	NO	DATI DEL VENTO *Wind datas*	-
IMPACT TEST *Exepmtion*	NO	DATI SISMICI *Seismotogical datas*	-

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
04	Modified as per Client commnets	CM	MV	GL	11/05/2022
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 lenght	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

Oggetto/Object: N2 PULSATION DAMPER 2nd STAGE SUCTION

LOCATI IMPIANTI s.r.l.

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.	04

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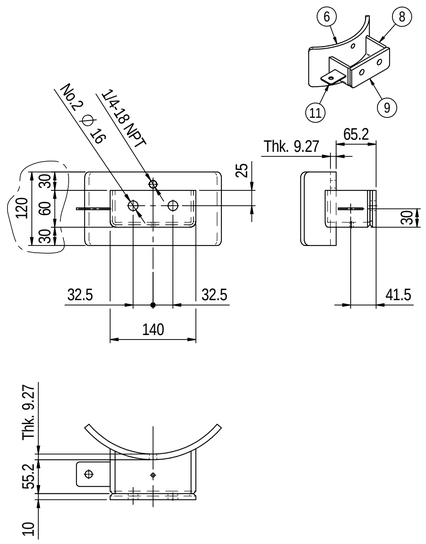
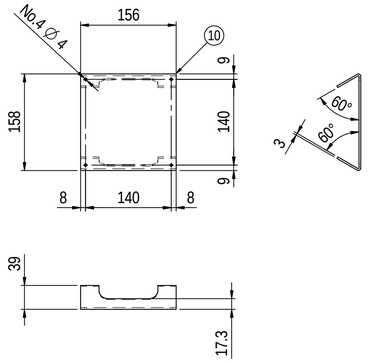
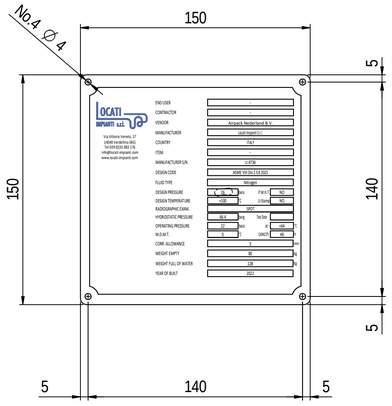
Supports detail

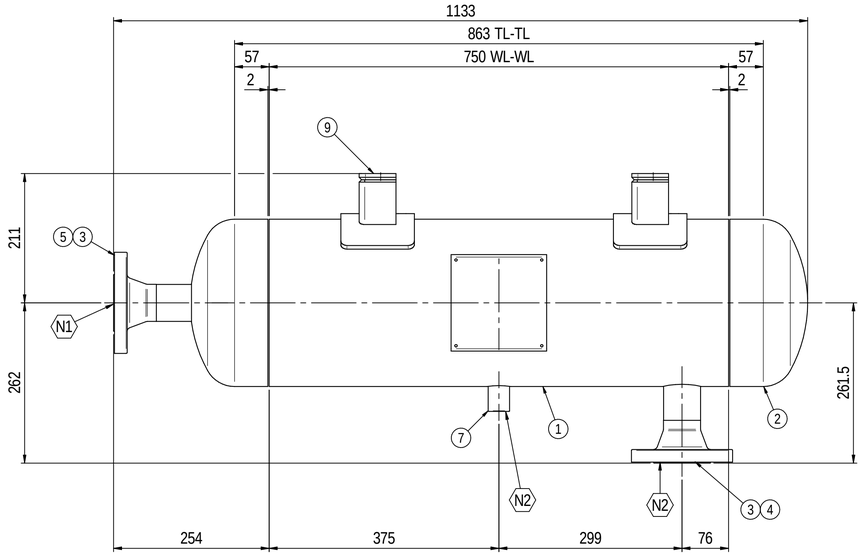


Nameplate detail

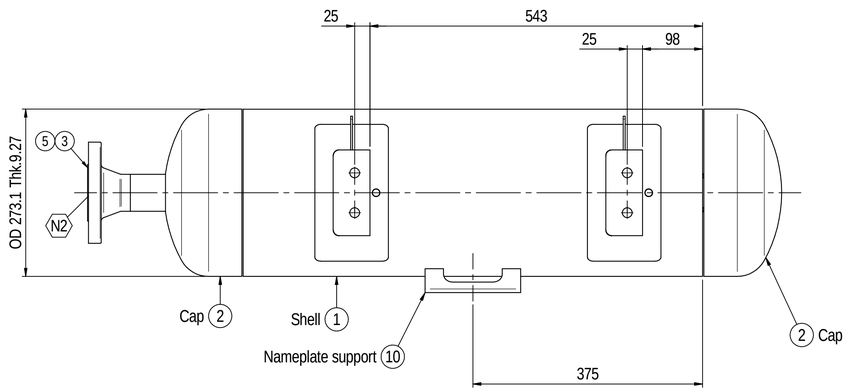


Nameplate detail
scale 1:2

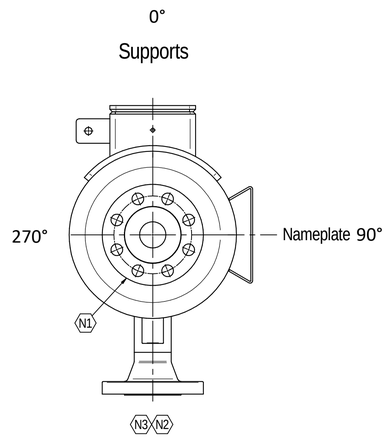




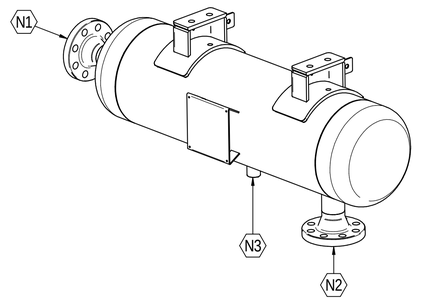
ELEVATION VIEW



PLAN VIEW



ORIENTATION 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 ½" 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.

N3	1	DRAIN	½"	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	
ITEM	QTY	SERVICE	SIZE	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.	Tc	
				PIPE		FLANGE			PAD			
ITEM	Qtà	SERVIZIO	NPS/DN	O.D.	THK	RATING	TYPE	FACE	O.D.	THK.		
				TUBO		FLANGIA			RINFORZO			

DATI DI PROGETTO / Design data			
FLUIDO *Fluid*	Nitrogen	COLLAUDO *Test*	Lloyd Register
STATO FISICO DEL FLUIDO *Physical state of fluid*	Gas	NATIONAL BOARD REGISTRATION	NO
CODICE DI CALCOLO *Construction code*	ASME VIII Div.1 Ed.2021	CANADIAN REGISTER NUMBER	NO
PRESSIONE DI ESERCIZIO *Operating pressure*	23 bara	SERVIZIO LETALE *Lethal service*	NO
PRESSIONE DI PROGETTO *Design pressure*	26bara (25 barg)	X-RAY *RT examination*	Spot(RT3)
PRESSIONE ESTERNA *External pressure*	NO	LIQUIDI PENETRANTI *Dye penetrant extension*	NO
PRESSIONE DI PROVA IDRAULICA *Hydraulic test pressure*	66.4 barg	ULTRASUONI *Ultrasonic extension*	NO
TEMPERATURA DI ESERCIZIO *Operating temperature*	+83 °C	CONTROLLO MAGNETOSCOPICO *Magnetic particle examination*	NO
TEMPERATURA DI PROGETTO *Design temperature*	+100 °C	TALLONE DI SALDATURA *Weld tets coupon*	NO
SOVRAMETALLO DI CORROSIONE *Corrosion allowance*	3 mm	PROCEDIMENTO DI SALDATURA *Welding procedure*	See doc.C220006WBK013
CAPACITÀ *Capacity*	48 l	TIPO DI FONDO *Head type*	CAP
EFFICIENZA GIUNTI *Joint efficency*	0.85	FORMATURA FONDO *Head formed*	HOT
MAWP @ Design Temperature	38.12 barg @ +100 °C	PESO A VUOTO *Empty weight*	80 kg
MAWP(EXT)	NO	PESO IN ESERCIZIO *Operating weight*	80 kg
MDMT @ MAWP	0 °C @ 38.12 barg	PESO PIENO D'ACQUA *Full water weight*	128 kg
TRATTAMENTO TERMICO *P.W.H.T.*	NO	DATI DEL VENTO *Wind datas*	-
IMPACT TEST *Exepmtion*	NO	DATI SISMICI *Seismological datas*	-

Rev.	Descrizione / Description	Disegnato/Draw	Controllato/Checked	Approvato/Approved	Data/Date
04	Modifed design pressure	CM	MV	GL	03/06/2022
03	Modifed as per Client comments	CM	MV	GL	11/05/2022
02	Modifed as per Client comments	CM	MV	GL	15/04/2022
01	Modifed shell lenght	CM	MV	GL	30/03/2022
00	FIRST ISSUE	CM	MV	GL	16/03/2022

Oggetto/Object: N2 PULSATION DAMPER 2nd STAGE DISCHARGE

LOCATI IMPIANTI s.r.l.

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.	04

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