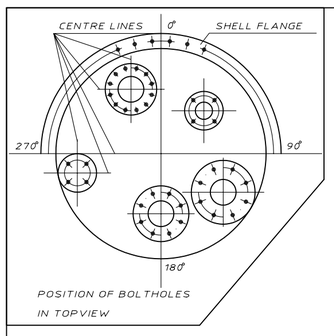
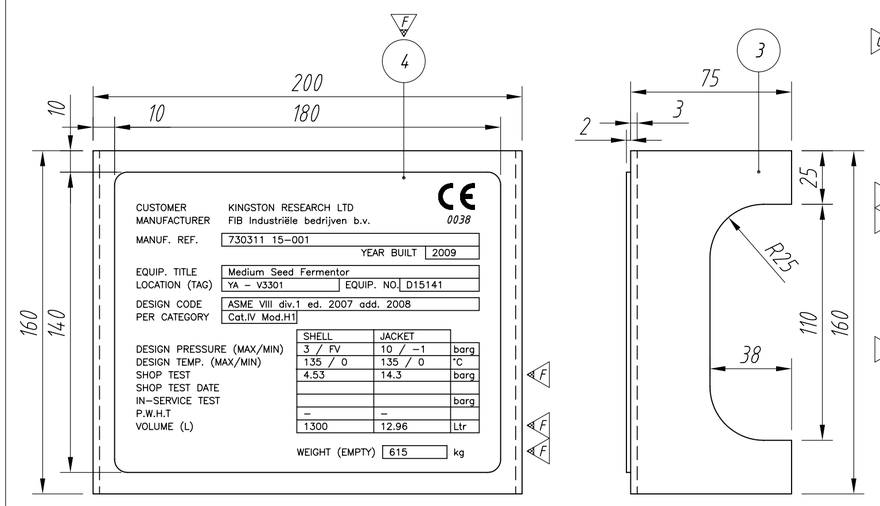
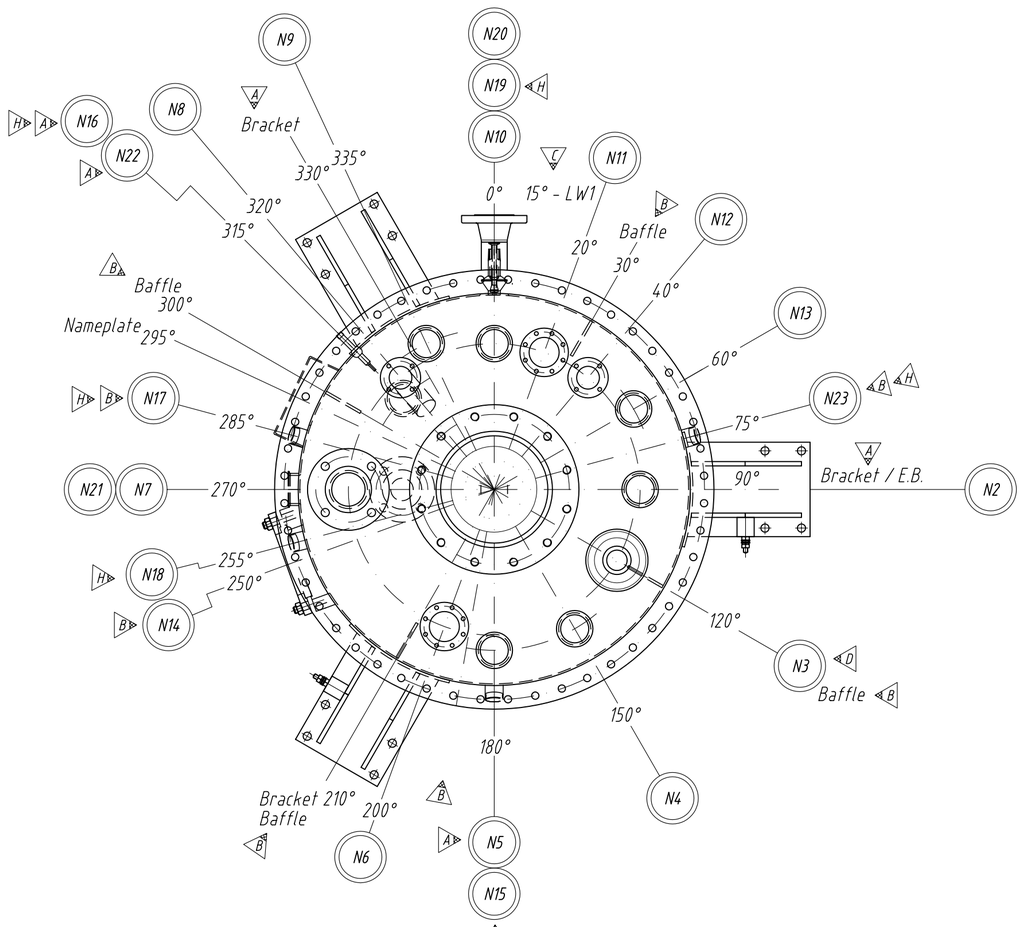
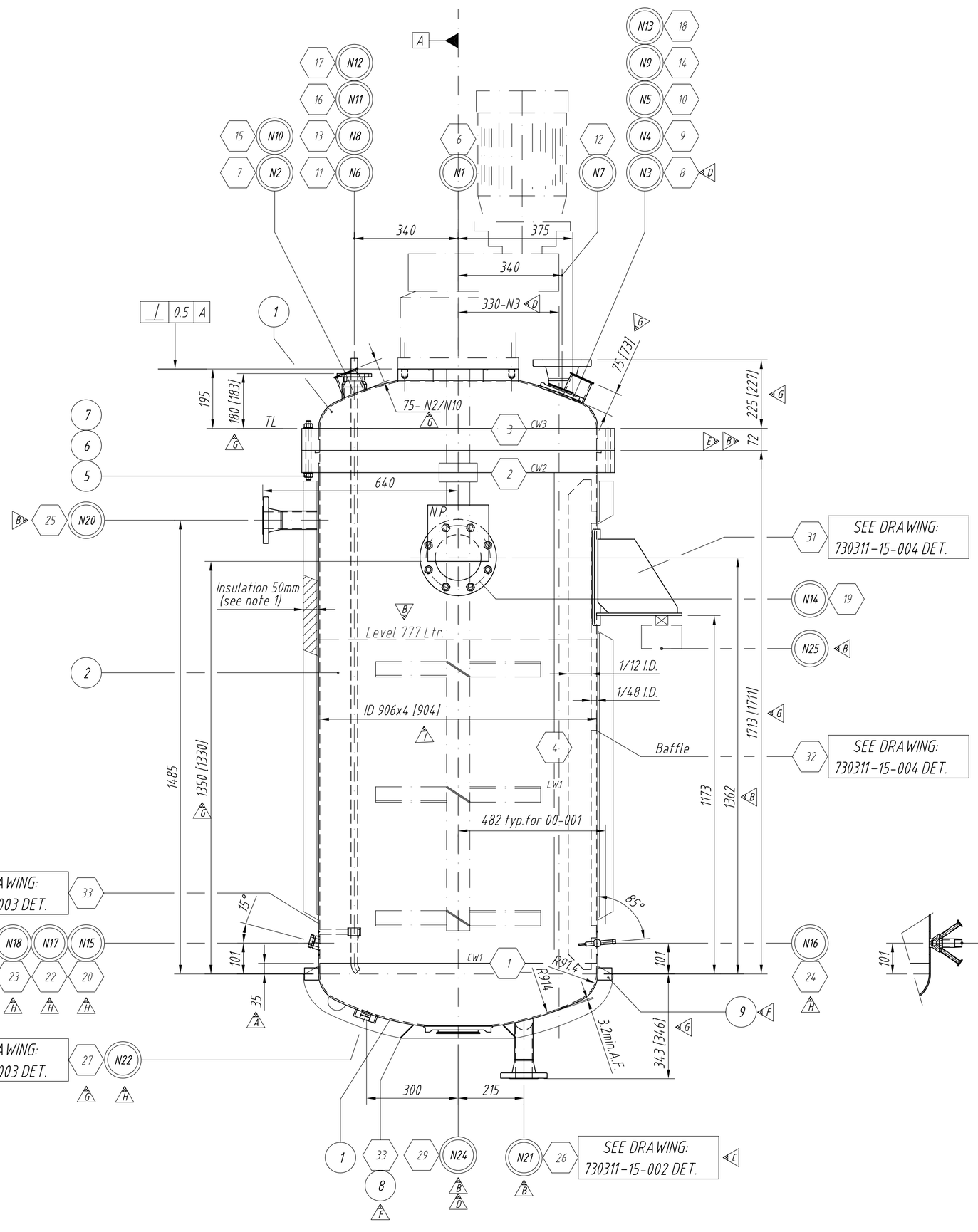




Detail Nameplate





Mechanical data

		Vessel	Jacket	-	
C	Design code	ASME VIII div.1 ed. 2007 add.2008 / PED Cat.IV module H1			
	Inspection	FIB / Client			
	Design pressure Max. / Min.	3 / FV	10 / -1	-	barg
	Design temperature Max. / Min.	135 / 0	135 / 0	-	°C
	Operating pressure Max. / Min.	2 / -1	2 / -1	-	barg
	Operating temperature	120 / 10	120 / 10	-	°C
F	Test pressure (Horz.)	4.53	14.3	-	barg
F	Volume	1.3	see note 15 D	-	m³
	Corrosion allowance	0	0	-	mm
	Joint efficiency	0.85 acc. uw 12 (b)	0.85 acc. uw 12 (b)	-	
	X-ray	spot acc. uw 11 (b)	spot acc. uw 11 (b)	-	%
	[redacted] PED Fluidgroup / Phase	1 / G	1 / G	-	
F	Weight empty (incl. 31 Kg. Insulation)	615	-	-	Kg.
	Weight full of water	1916			Kg.
	Welding method	See WPS			
	Surface treatment SS.	Pickled and passivated			
		-			
	CS	-			
		-			
	Tolerances according	FIB-TOL-002			
	Flange gasket contact face finish	Smooth finish (Ra 3.2-6.3 µm)			

Bolt holes in the flanges to straddle centerlines unless otherwise shown on dwg

Process connection

	Mark	Numb. Req.	Service	Nom. Bore	Pipe	Flange connection
B	N1	1	Agitator Connection	DN250	-	PAD Flange PN10 DIN 28117 Aseptic
A	N2	1	Product inlet	DN50/40	-	Varivent 00-001
D B	N3	1	Antifoam	DN32/25	-	Varivent T housing 221MBL002243G-3
A	N4	1	Sulphuric Acid	DN50/40	-	Varivent 00-001
A	N5	1	Spare	DN50/40	-	Varivent 00-001
A	N6	1	Spraynozzle 1	DN50	60.3x5.13	DIN 11864 aseptic Flange Gea supply
B	N7	1	Grain Inlet	3"	88.9x5.49	WNFF 150# ASME B16.5
A	N8	1	Ventilation	DN50	60.3x5.13	DIN 11864 aseptic Flange Gea supply
A	N9	1	Ammonium hydroxide	DN50/40	-	Varivent 00-001
A	N10	1	Caustic	DN50/40	-	Varivent 00-001
A	N11	1	Spraynozzle 2	DN50	60.3x5.13	DIN 11864 aseptic Flange Gea supply
B	N12	1	Process Air/N2 with dippipe	DN50	60.3x5.13	DIN 11864 aseptic Flange Gea supply
A	N13	1	Chemical x	DN50/40	-	Varivent 00-001
A	N14	1	Sight / Lightglass	DN125	-	DIN 28120 PN10 aseptic 00-015
H A	N15	1	pH transmitter 1	DN25	-	Elscolab Ingold Socket Inclined
H A	N16	1	Temperature	-	-	E&H Weld-in Thermowell
H A	N17	1	pH transmitter 2	DN25	-	Elscolab Ingold Socket Inclined
H A	N18	1	O2 Transmitter 1	DN25	-	Elscolab Ingold Socket Inclined
H A	N19	1	Sample valve	-	-	Keofitt Valve body W9 type T
B	N20	1	Jacket cooling / heating -	2"	60.3x2.77	WNRF 150# ASME B16.5
B	N21	1	Jacket cooling / heating +	2"	60.3x2.77	WNRF 150# ASME B16.5
H A	N22	1	Level Switch Bottom	G 1"	-	Special insert acc. E&H (see note 16)
H B	N23	1	O2 Transmitter 2	DN25	-	Elscolab Ingold Socket Inclined
D B	N24	1	Product outlet	DN80/65	-	Varivent T housing 221MBL002243G-3

Other connection

	Mark	Numb. Req.	Service	Nom. Bore	Pipe	Flange connection
A	N25	3	weight transmitter	-	-	GEA supply

General notes

A	1	Build up: Shell, Rockwool & Aluminiumplate.
	2	Dimple plate at vesselside, and half coil on bottom
	3	All main pressure bearing parts 3.1 cert. EN10204 acc. PED annex 1 Par.4.3
A	4	Finish outside; Pickled and passivated
E		surface finish inside: 2B - Ra: < 0.8 µm
		Welding finish inside: Polished Ra: < 0.8 µm
A	5	Flange N1 "Agitator connection" Machining after welding
A	6	Nameplate acc.: GIS-46-0101 section 7.11.3
B	7	Earthingbosses acc.: GIS-46-0101 section 7.11.5
A	8	All sharp edges inside to be rouned off with R=5
A	9	For all DIN 11864 nozzles the grooved flange is welded on the vessel.
A	10	Head weight for lifting: 145 Kg.
C	11	There are to be no underflush weld caps
C	12	Only materials from a European or North-American origin wil be used
C	13	100% DPI of support and lifting attachment welds
D	14	Refer to aseptic project specification. (BD 2007)
D	15	V halfcoil = 7.17 Ltr, V dimpleplate = 5.79 Ltr, V total = 12.96 Ltr.
H	16	Special insert with process conn. for aseptic E&H G 1 "socked, placed in existing shorted Varivent housing

Reference document list

	Document no.	Document name	Client document no.
B	00-001	Varivent U - Housing 50/40 type Stuts	-
D B	221MBL002243G-3	Varivent T Housing. Flanges	-
B	00-015	Sightglass DN125	-
B	15-002	Dimpleplate with halfcoil	-
	15-003	Nozzle details	-
	15-004	Bracket details	-
	15-200	Strength Calculations	-
	15-250	WPS	-
	15-252	PQR	-
	15-298	Risk Analysis	-
	15-600	Installation Manual	-
	15-900	Test & Inspection plan	-
C	ZA 7	Process data sheet	-

REV. MARK	POS. NO.	NUMB. REQ.	DESCRIPTION / DIMENSION	MATERIAL	CERT.
F	9	6	Plate 4 46x40	A240 316L	3.1
F	8	1	Plate 2 D=376 d=290 h=42 (Cone)	A240 316L	3.1
E	7	96	Washer M16 DIN125A	A4	-
E	6	96	Nut M16 DIN934	A4 DIN267	-
E	5	48	Studbolt M16x200	A4-70 DIN267	M
F	4	1	Nameplate 2 180x140	SS	-
D	3	1	Plate 3 338x160	A240 316L	3.1
B	2	1	Plate 4 1637x2859	A240 316L	3.1
A	1	2	Head HD Id=906 t=3.2min.A.F. h=35 Acc. DIN28011	A240 316L	3.1

AS BUILT STATUS FIB	AS BUILT STATUS CLIENT	AS BUILT STATUS INSP. AUTHORITY
E F G H I J 12-04-2010		

SCALE 1:10	DATE	REMARKS -	
DRAWN A.Hoekstra	19-05-2009	Drawing acc. GEA datasheet YA-V3301 Rev. I A J	
CHECKED G. Bijker	12-04-2010	-	

REVISED
F RvL, 27-11-2009, see rev. marks.
G AH, 20-01-2010, see rev. marks.
H RvL, 04-03-2010, see rev. marks.
I AH, 11-03-2010, see rev. marks.
J RvL, 12-04-2010, see rev. marks.

PROJECT GEA Process Engineering Nederland BV
BP - ZA 7067 - D15141 A

SUBJECT Medium Seed Fermentor YA - V3301
General Arrangement

ITEM NO. 730311-15
FORM A1
REG.NO. -
DRWG.NO. 730311
SHEET NO. 15-001

FIB industriële bedrijven
EINSTEINWEG 18 8912 AP LEEUWARDEN
POSTBUS 314 8901 BC LEEUWARDEN
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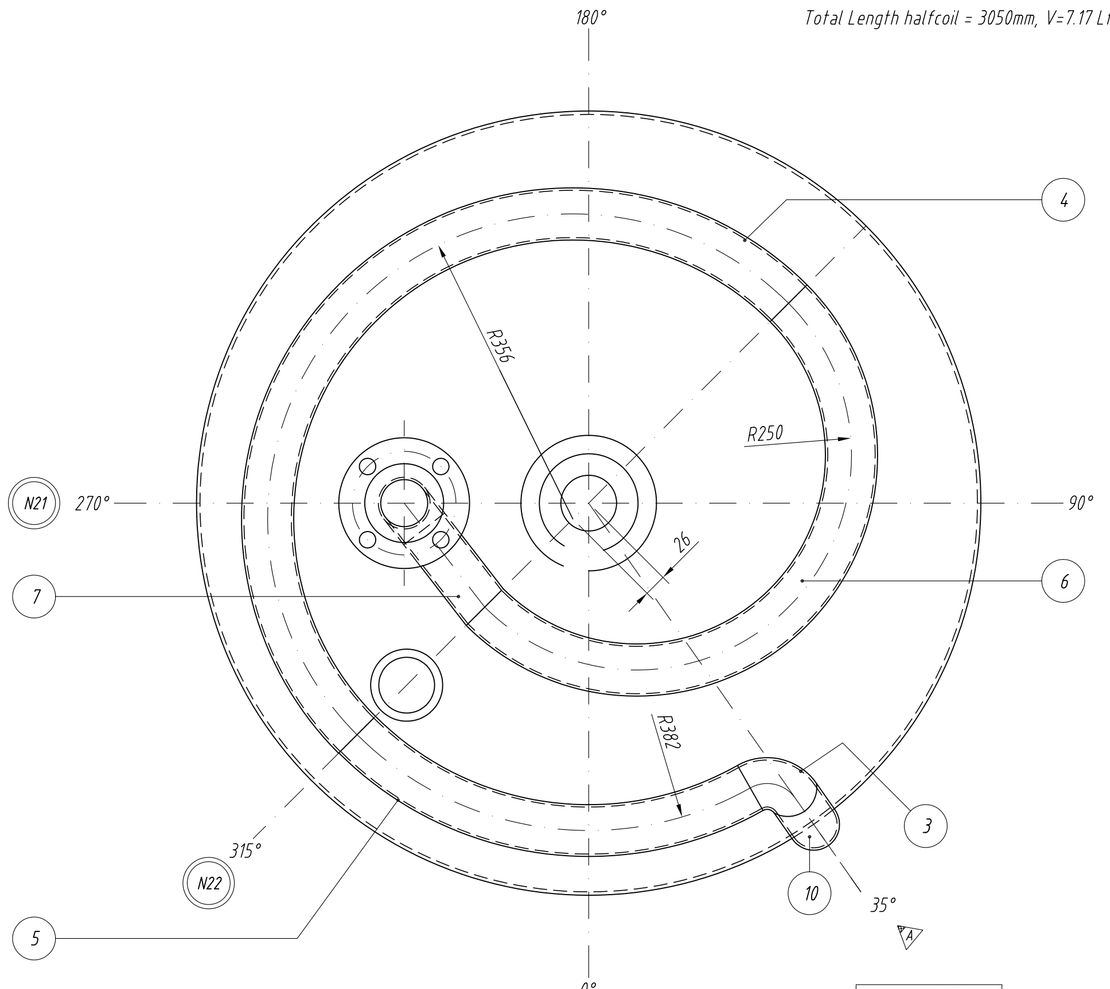
www.fib.nl engineering@fib.nl

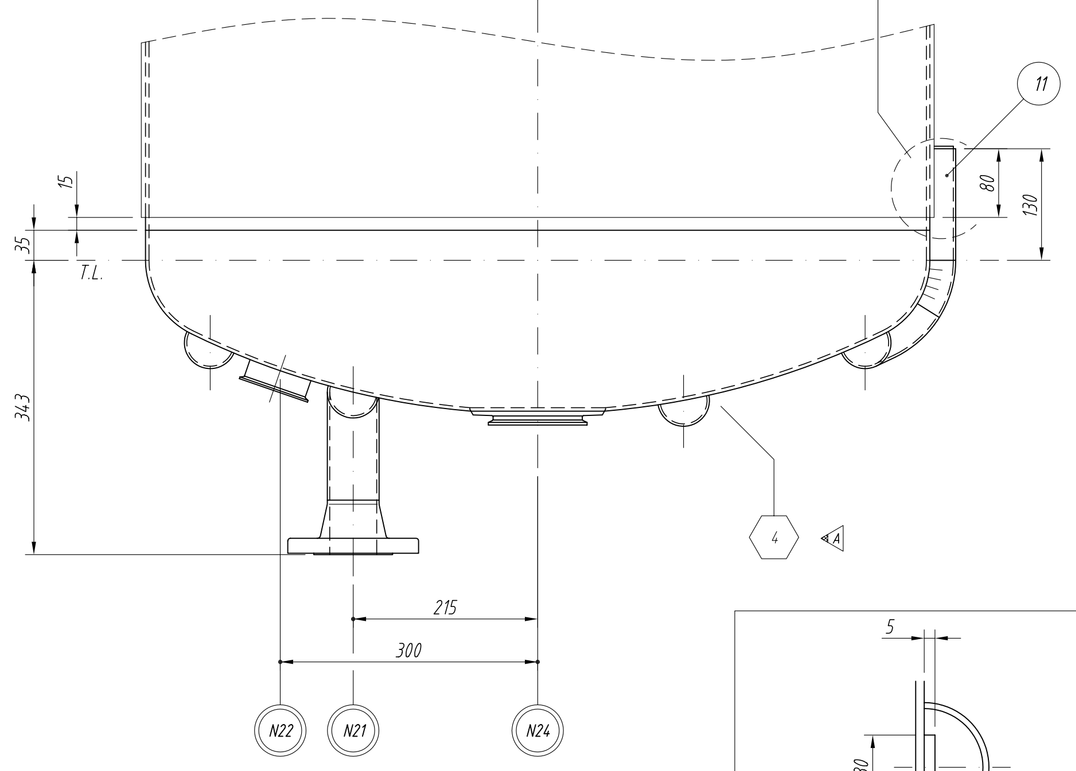
100 mm

Reference document list

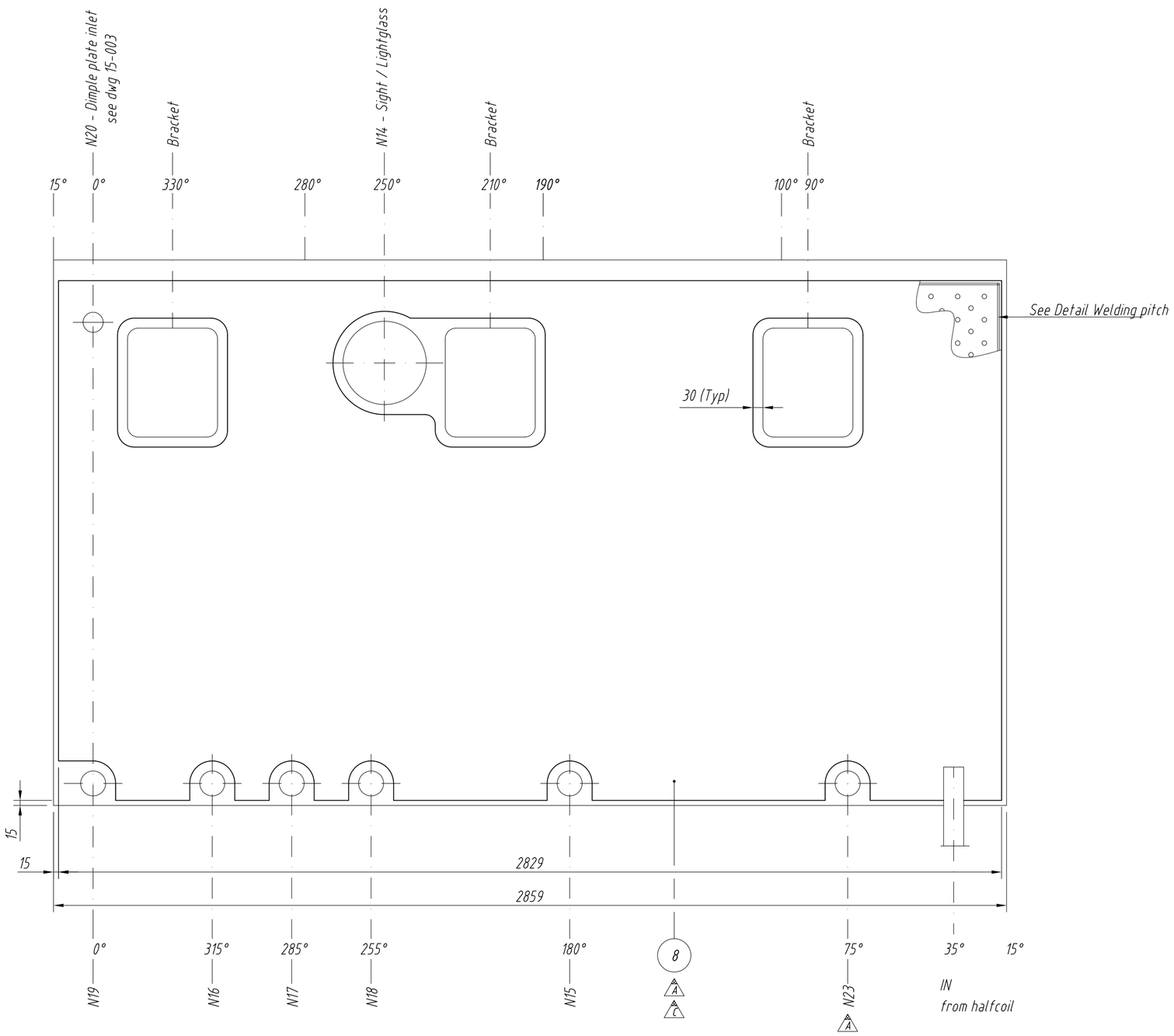
Document no.	Document name	Client document no.
15-975	Welding Document Dimple Plates	-
15-976	Strength Calculations Dimple Plates	-



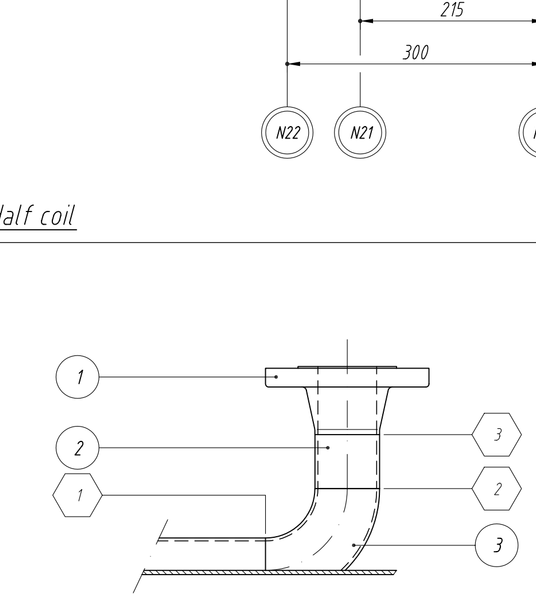
Bottom view



Detail Half coil

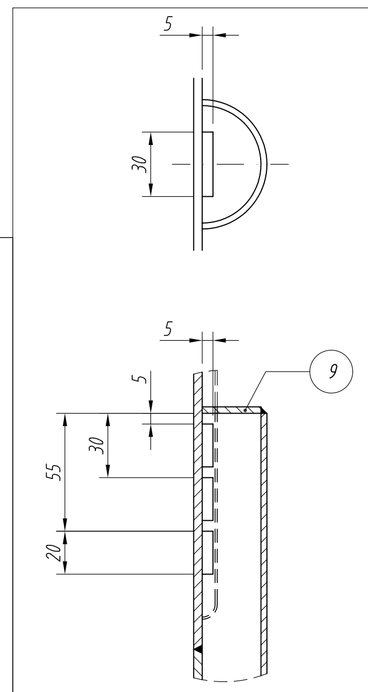


Detail Dimple plate

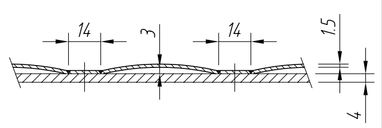


View V

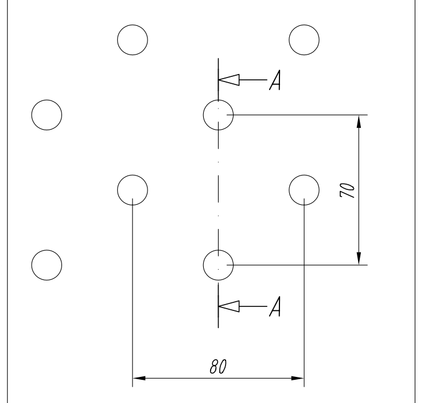
Detail nozzle N21



Detail A



SECTION A–A



Detail Welding pitch

REV MARK	POS NO	NUMB REQ	DESCRIPTION / DIMENSION	MATERIAL	CERT.
A	11	1	Halfcoil 60.3x2.77 L=ca.130	A312TP316L	3.1
A	10	1	Halfcoil 60.3x2.77 L=ca.150	A312TP316L	3.1
	9	1	Plate 3 55x27	A240 316L	3.1
C	8	1	Dimple plate 1.5 2829x1560	A240 316L	3.1
A	7	1	Halfcoil 60.3x2.77 L=94	A312TP316L	3.1
A	6	1	Halfcoil 60.3x2.77 L=790 R=250	A312TP316L	3.1
A	5	1	Halfcoil 60.3x2.77 L=500 R=382	A312TP316L	3.1
A	4	1	Halfcoil 60.3x2.77 L=1120 R=356	A312TP316L	3.1
A	3	2	Elbow D=60.33x2.77 90Gr. LR	A403WP316L	3.1
	2	1	Pipe Welded D=60.33x2.77 L=50	A312TP316L	3.1
	1	1	WNRF Flange 2" 150# ASME B16.5 s=2.77 Sm.Fin.	A182F316L	3.1

AS BUILT STATUS FIB | AS BUILT STATUS CLIENT | AS BUILT STATUS INSP. AUTHORITY

0 | A | B | C | D | E | 20-01-2010

SCALE	1:10
DRAWN	A. Hoekstra
CHECKED	G. Bijker
DATE	29-07-2009
	20-01-2010
REMARKS	-
	-
	-

REVISED
A AH, 18-09-2009 see rev. marks.
B AH, 16-10-2009 see rev. marks.
C AH, 13-11-2009 see rev. marks.
D AH, 16-11-2009 see rev. marks.
E AH, 20-01-2010 see rev. marks.

PROJECT: GEA Process Engineering Nederland BV
BP - ZA 7067 - D15141

SUBJECT: Medium Seed Fermentor YA - V3301
Dimpleplate with halfcoil

ITEM NO. -

FORM A1 | REG.NO. - | DRWG.NO. 730311 | SHEET NO. 15-002

FIB industriële bedrijven
EINSTEINWEG 18 8912 AP LEEUWARDEN | POSTBUS 314 8901 BC LEEUWARDEN | TEL. 058 294 59 45 FAX 058 212 57 42 | www.fib.nl engineering@fib.nl

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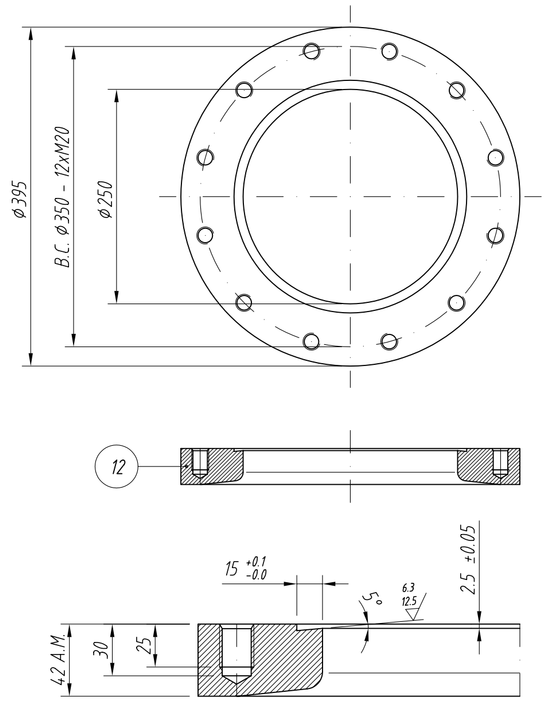
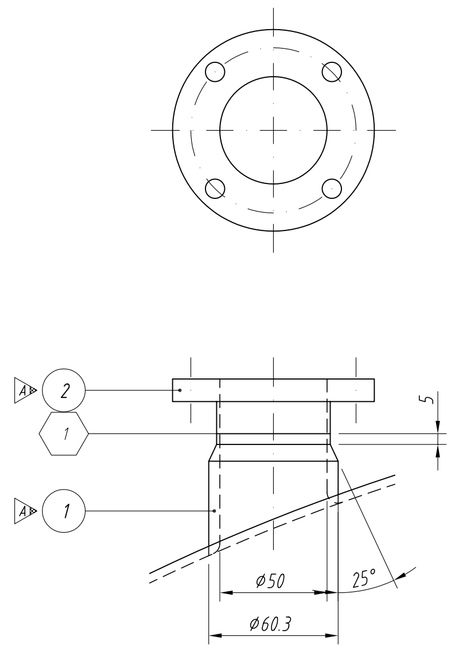
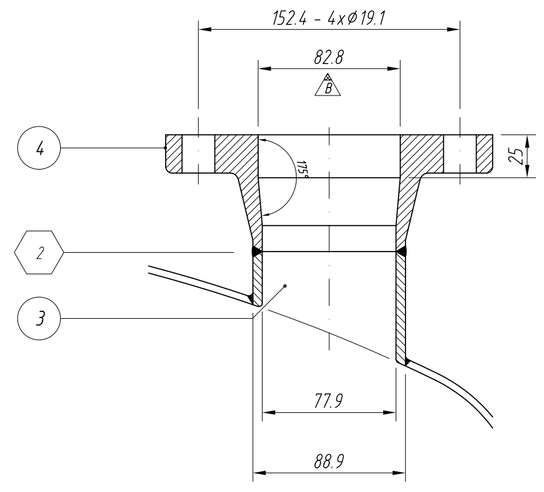


Detail Nozzle N1

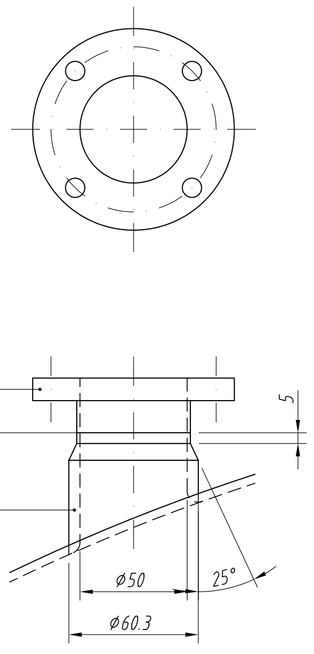
acc. DIN 2527 DN 250 PN 10



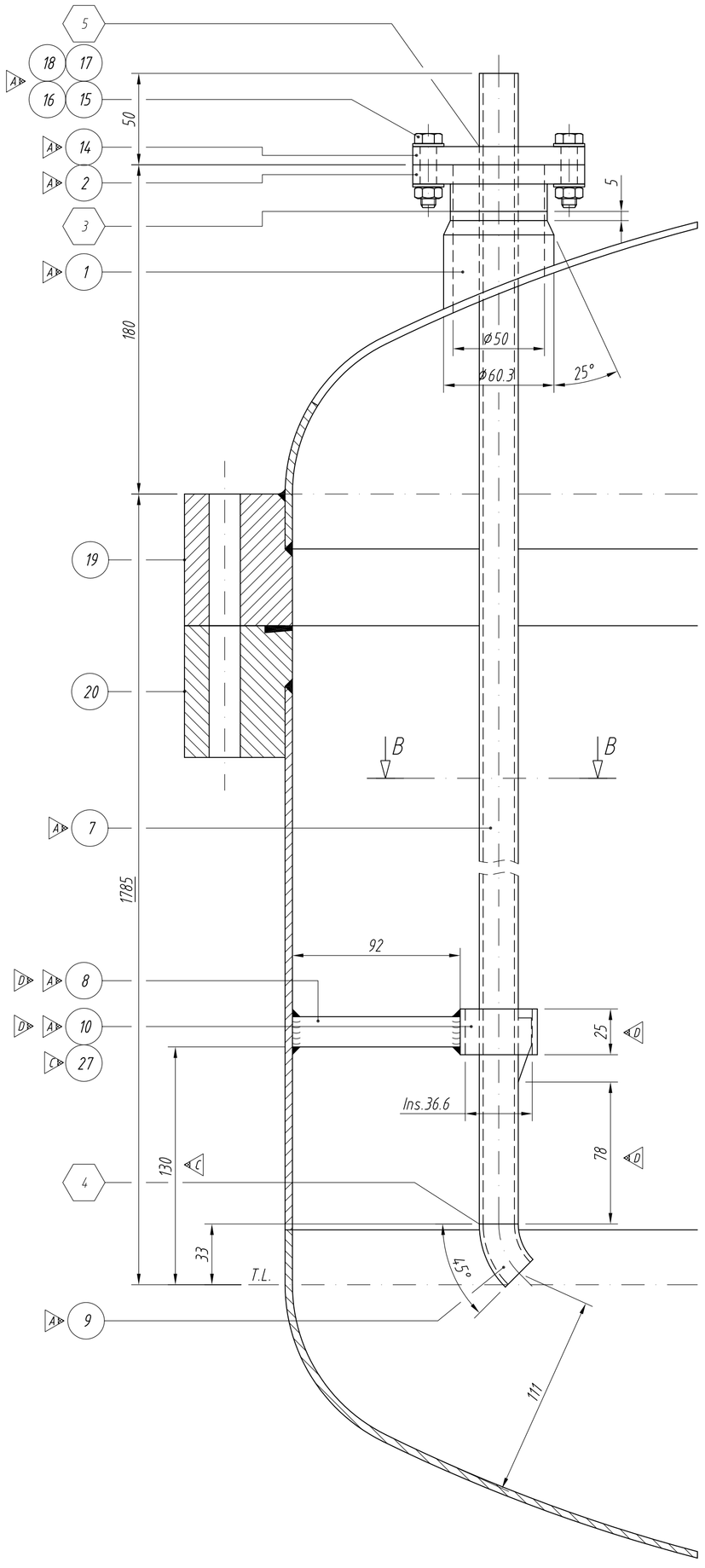
Detail Nozzle N6 ◁A



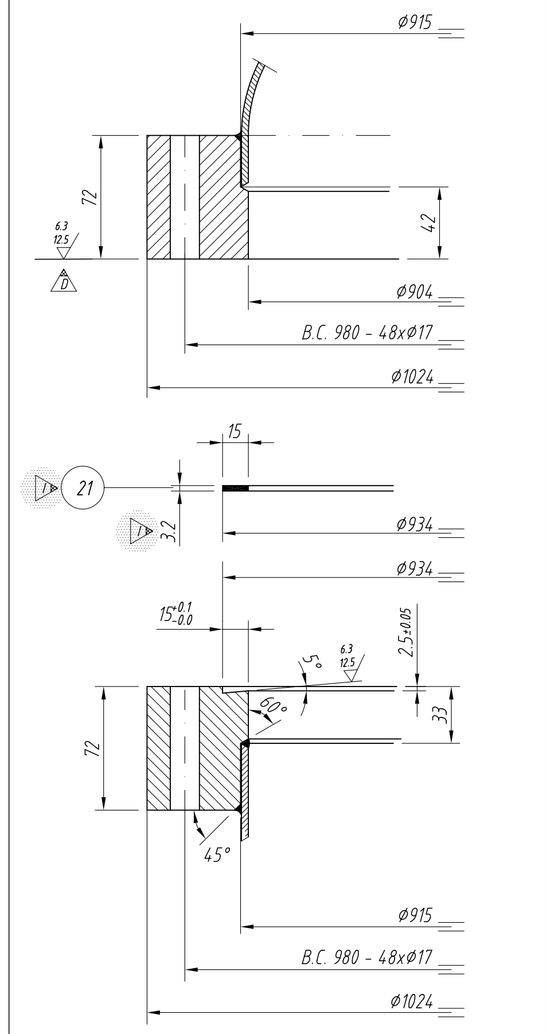
Detail Nozzle N7 ◁A



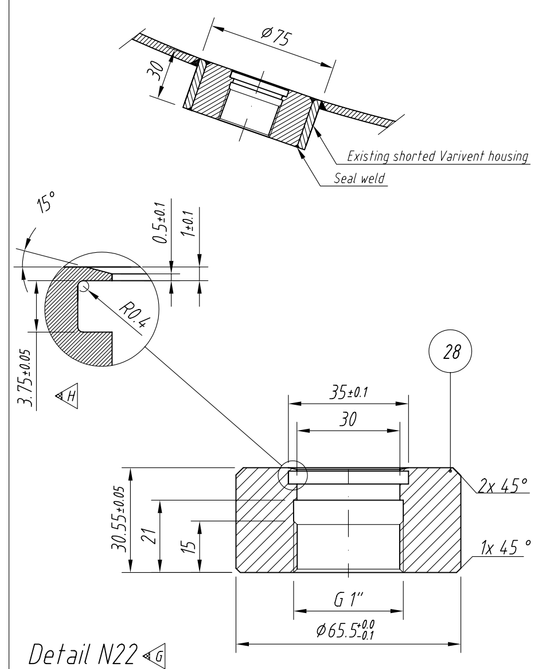
Detail Nozzle N8 ◁A



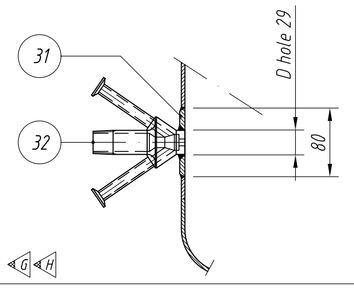
Detail Nozzle N12



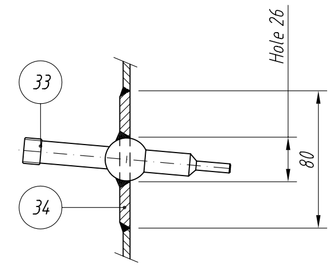
Detail Shell Flange



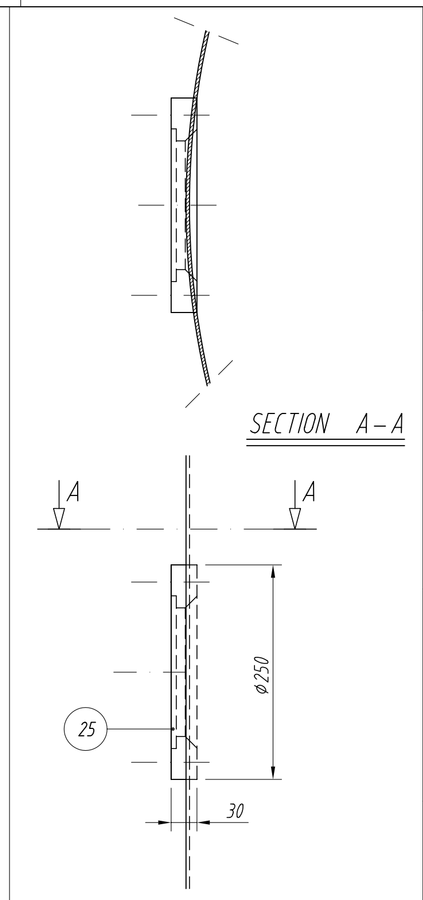
Detail N22 ◁G



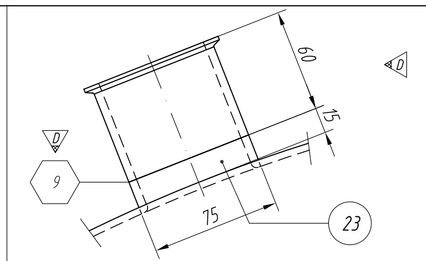
Detail N19 ◁G ◁H



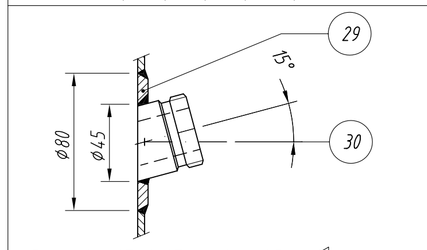
Detail N16 ◁G ◁H



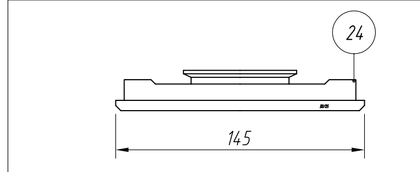
Detail N14



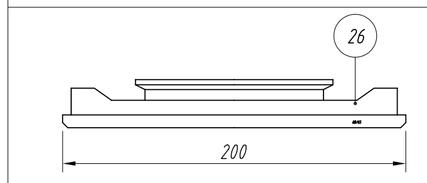
Detail N2, N4, N5, N9, N10, N13



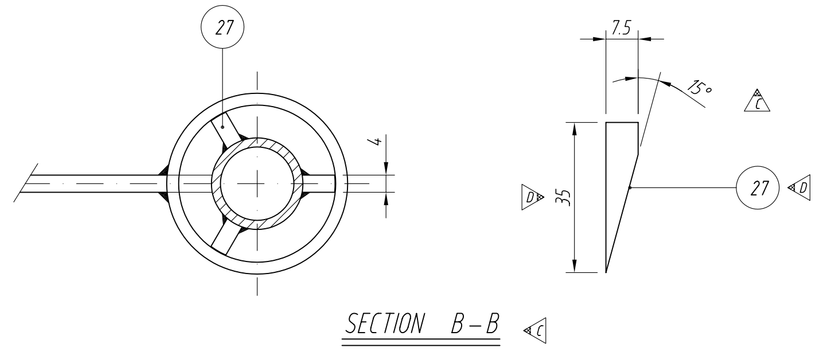
Detail N15, N17, N18, N23 ◁G



Detail N3



Detail N24



SECTION B – B ◁C

REV	POS	NUMB	DESCRIPTION / DIMENSION	MATERIAL	CERT.
H	34	1	Plate 6 D=80xd=26	A240 316L	3.1
H	33	1	E&H Weld-in Thermowell Ø25	A479 316L	3.1
G	32	1	Sample nozzle Keofitt Valve body W9 type T	A479 316L	3.1
H	31	1	Plate 6 D=80xd=29	A240 316L	3.1
G	30	4	Weld-in socket DN25 - G1 1/4" Elscolab Ingold Socked Inclined	A479 316L	3.1
H	29	4	Plate 6 D=80xd=45	A240 316L	3.1
H	28	1	Bar D=70B.M. L=30	A479 316L	3.1
D	27	3	Plate 4 35x7.5	A240 316L	3.1
C	26	1	Varivent T Housing DN 80/65 see Process Connection	A479 316L	3.1
C	25	1	Sightglass DN125 PN 10 acc. DWG 00-015	A479 316L	3.1
C	24	1	Varivent T Housing DN32/25 see Process Connection	A479 316L	3.1
C	23	7	Varivent Nozzle DN 50/40 acc. DWG 00-001	A479 316L	3.1
A	22	1	WNRF Flange 2" 150# ASME B16.5 s=2.77 Sm.Fin.	A182F316L	-
I	21	1	Gasket D=934 d=904 - 3.2 mm	EPDM	-
C	20	1	Forged ring D=1024 A.M. d=904 A.M. H=72 A.M.	A182 316L	3.1
C	19	1	Forged ring D=1024 A.M. d=904 A.M. H=72 A.M.	A182 316L	3.1
C	18	1	O-Ring DN50 DIN11864 - GEA supply	EPDM	3.1
A	17	4	Nut M8 DIN934	A2 DIN267	-
A	16	8	Washer M8 DIN125A	A2	-
A	15	4	Bolt M8x35 DIN933	A2-70 DIN267	-
A	14	1	Blindflange DN50 DIN11864 - GEA supply	A182F316L	3.1
A	13	1	Pipe Welded D=60.33x2.77 L=120	A312TP316L	3.1
	12	1	Plate 45 D=395xd=250	A240 316L	3.1
D	10	1	Pipe Welded D=42.26x2.77 L=25	A312TP316L	3.1
A	9	1	Elbow D=21.34x2.11 45Gr. LR	A403WP316L	3.1
D	8	1	Plate 4 92x20	A240 316L	3.1
A	7	1	Pipe Welded D=21.34x2.11 L=1982	A312TP316L	3.1
	4	1	WNFF Flange 3" 150# ASME B16.5 s=5.49	A182F316L	3.1
	3	1	Pipe Welded D=88.9x5.49 L=67	A312TP316L	3.1
A	2	4	Flange DN50 DIN11864 - GEA supply	A182F316L	3.1
A	1	4	Pipe Welded D=60.33x5.54 L=57	A312TP316L	3.1

AS BUILT STATUS FIB | AS BUILT STATUS CLIENT | AS BUILT STATUS INSP. AUTHORITY 24-03-2010

E F G H I J

SCALE	1:5	DATE	REMARKS -
DRAWN	A. Hoekstra	02-06-2009	-
CHECKED	G. Bijker	24-03-2010	-

PROJECT: GEA Process Engineering Nederland BV
BP - ZA 7067 D15141

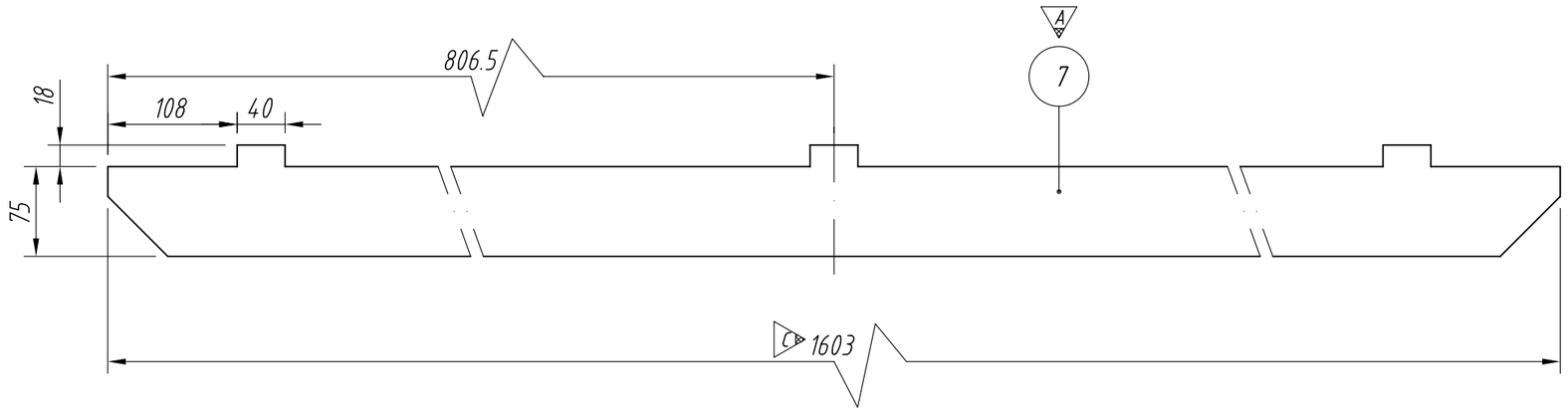
SUBJECT: Medium Seed Fermentor YA - V3301
Nozzle detail

REVISED
F AH, 23-02-2010, see rev. marks.
G AH, 04-03-2010, see rev. marks.
H AH, 11-03-2010, see rev. marks.
I AH, 24-03-2010, see rev. marks.

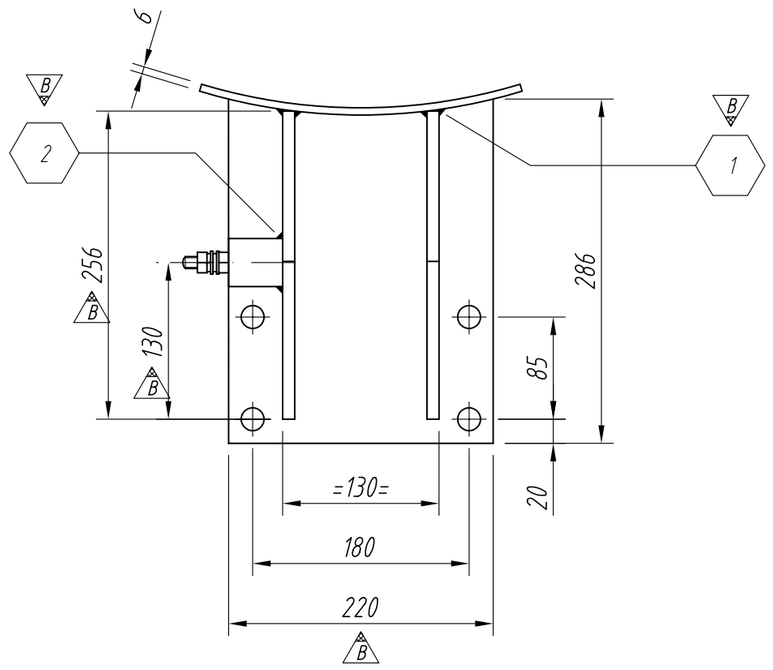
ITEM NO. 730311-15
REG.NO. -
DRWG.NO. 730311
FORM A1
SHEET NO. 15-003

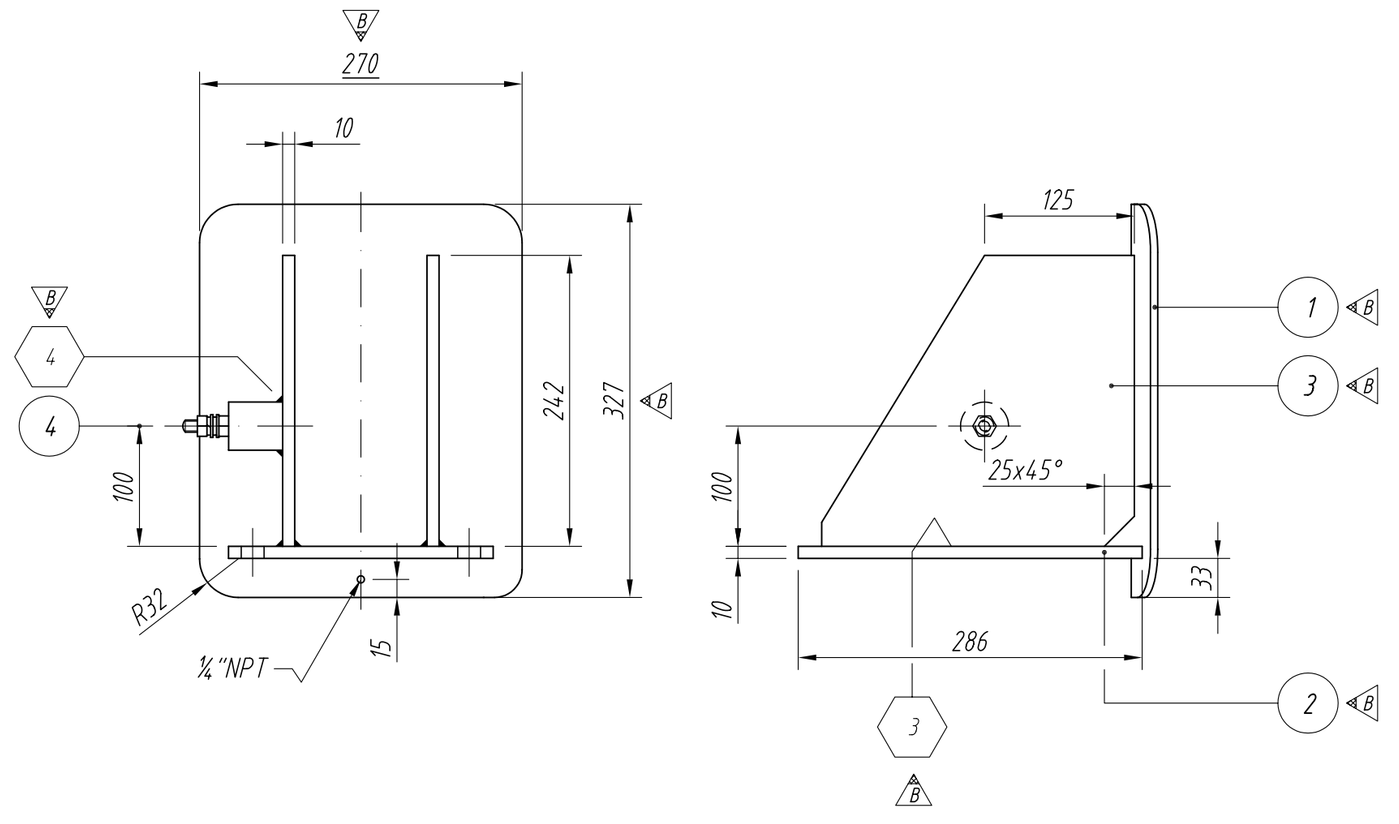
100 mm

FIB industriële bedrijven
EINSTEINWEG 18 8912 AP LEEUWARDEN | POSTBUS 314 8901 BC LEEUWARDEN | TEL. 058 294 59 45 FAX 058 212 57 42 | www.fib.nl engineering@fib.nl



Detail Baffle position 30°, 120°, 210° & 300° A





Detail Bracket DIN28083 Size 4

All welds ⊿ a=0.7xt

Unless other wise noted

REV MARK	POS NO	NUMB REQ.	DESCRIPTION / DIMENSION	MATERIAL	CERT.
B	7	4	Plate 10 1603x93	A240 316L	3.1
C	4	2	Earthingboss	SS / Brass	-
C	3	6	Plate 10 256x242	A240 304L	3.1
B	2	3	Plate 10 286x220	A240 304L	3.1
B	1	3	Plate 6 327x270	A240 316L	3.1

AS BUILT STATUS FIB | AS BUILT STATUS CLIENT | AS BUILT STATUS INSP. AUTHORITY

0 | A | B | C | D 20-01-2010 | E

SCALE 1:5 | DATE | REMARKS -

DRAWN K vd Haring | 02-06-2009 | -

CHECKED G. Bijker | 20-01-2010 | -

REVISED
A RvL, 17-08-2009, see rev. marks.
B AH, 18-09-2009, see rev. marks.
C AH, 16-10-2009, see rev. marks.
D AH, 20-01-2010, see rev. marks.
E -

PROJECT GEA Process Engineering Nederland BV
BP - ZA 7067 - D15141

SUBJECT Medium Seed Fermentor YA - V3301
Bracket / lugs

ITEM NO. -

FORM A2 | REG.NO. - | DRWG.NO. 730311 | SHEET NO. 15-004

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100 mm