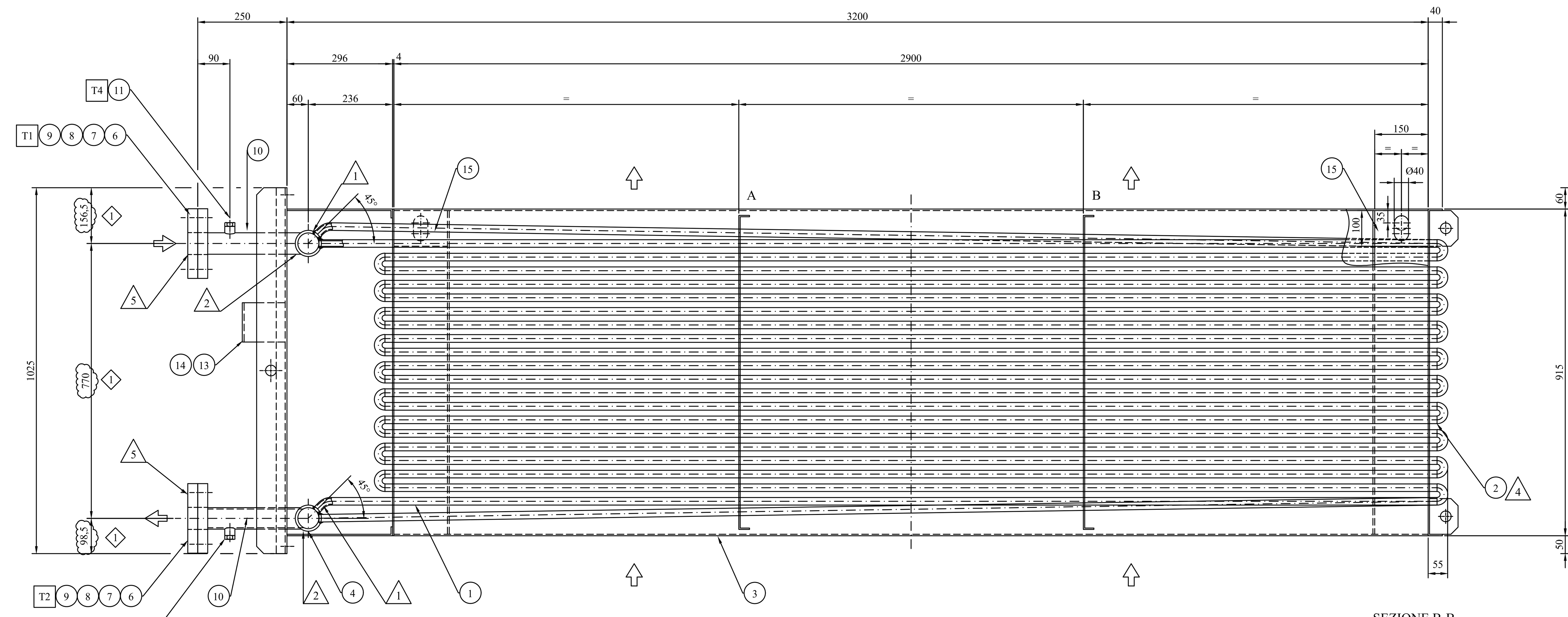
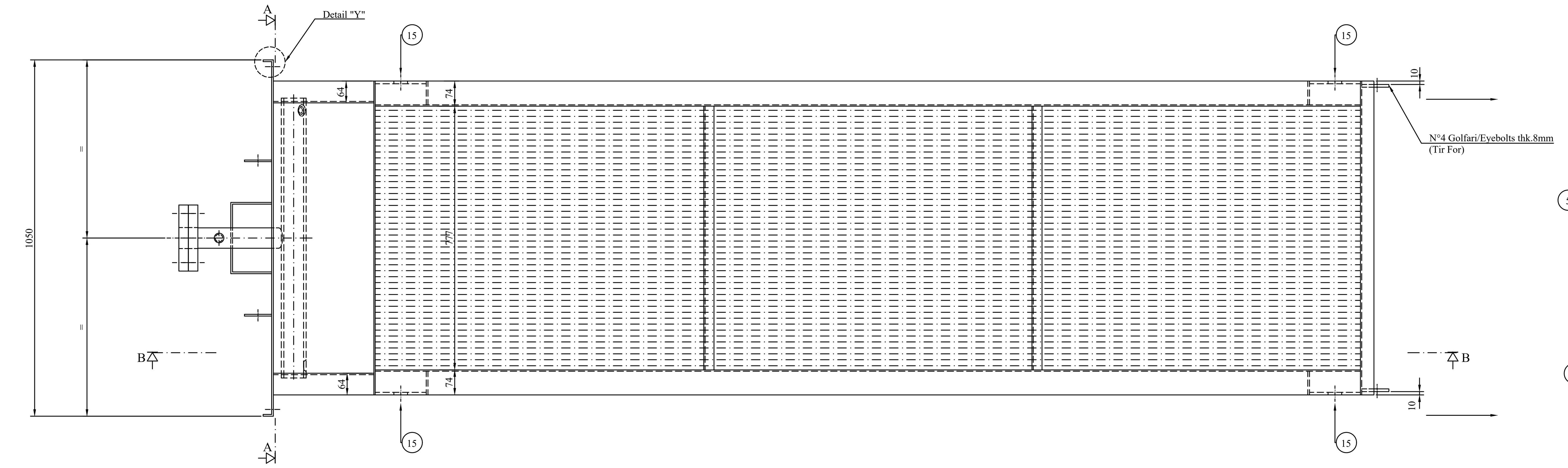
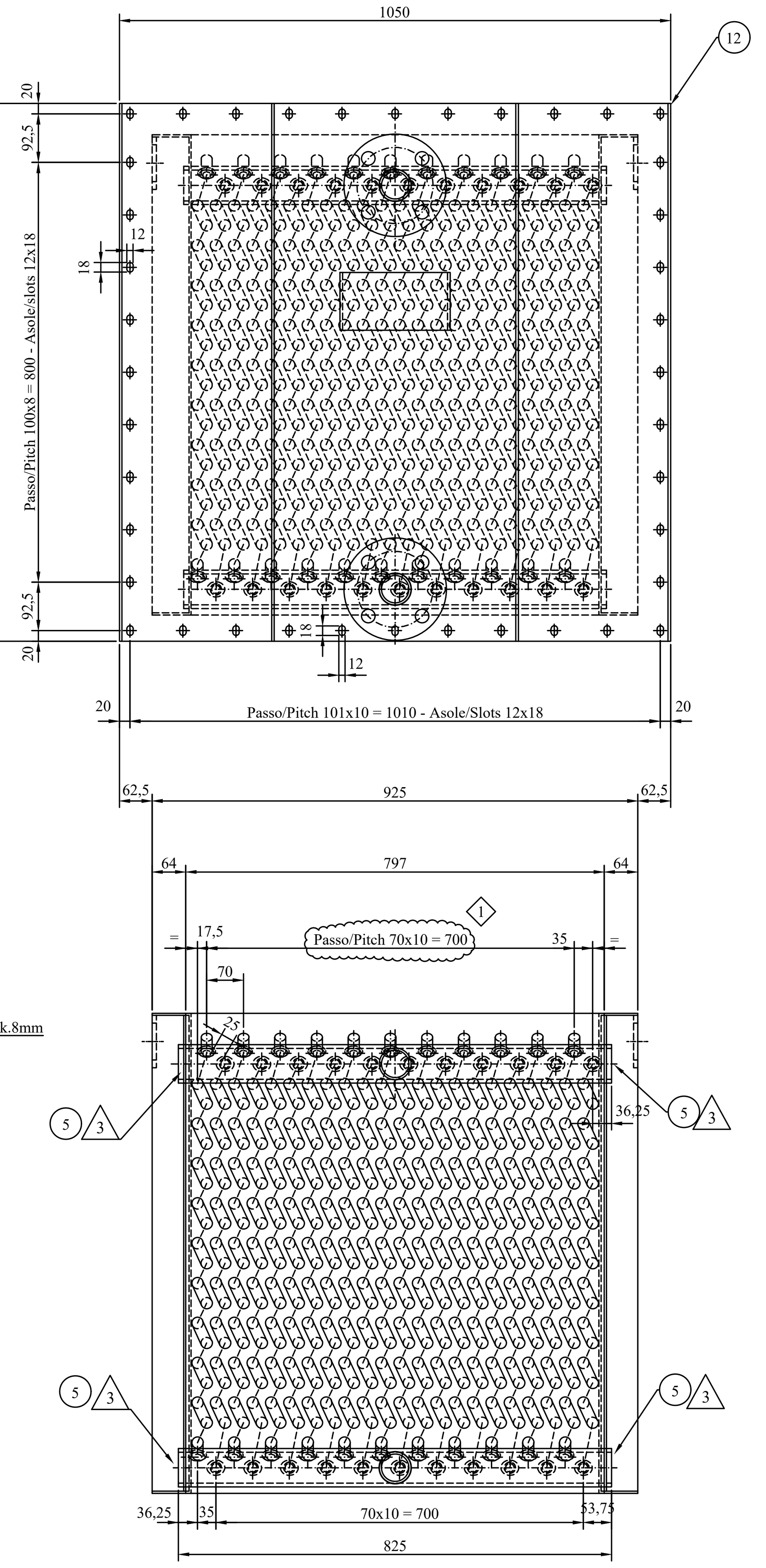


SEZIONE B-B
SECTION B-B



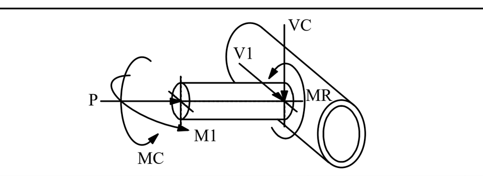
PIANTA
PLAN



SEZIONE A-A
SECTION A-A

Tolleranza generale di lavorazione (ISO 2768) Dimensioni lineari General allowance Linear dimensions									
Grado di precisione / Degree of accuracy	Oltre/Above	0.5	3	6	30	120	400	1000	2000
	Fino a/Up to	3	6	30	120	400	1000	2000	
C	Scostamenti Deviations	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	±4

Tolleranza generale di lavorazione (ISO 2768) Dimensioni angolari General allowance Angular dimensions									
Grado di precisione / Degree of accuracy	Oltre/Above		10	50	120	400			
	Fino a/Up to	10	50	120	400				
C	Scostamenti Deviations	±1°30'	±1°	0°30'	±0°15'	±0°10'			



50	71	71	121	511	511	667
D.N.	MC	M1	MR	VC	V1	P
N°size	MOMENTI(Nm) moments (Nm)			FORZE(N) forces(N)		

CARICHI MAX.SUI BOCCHELLI max.allowable nozzle loads

OGGETTO	*Item*	
NORME DI CALCOLO	*Design specification*	EN 13445 - 2014/68/UE
APPROVAZIONE	*Approval*	0496
OVALIZZAZIONE	*Ovalization*	-
MATERIALI	*Material specification*	EN13445-2
SALDATURE	*Welding specification*	EURONORM
TALLONE	*Sample*	-
PROVE SULLE SALDATURE	*Welding test*	(100% PT ON HEADER) EN 13445-5 (100% LP SU COLLETT.) EN 13445-5
PROCEDIMENTO DI SALDATURA	*Welding process*	vedi/see WPS
QUALIFICA PROCEDIMENTO	*Process qualification*	EN 15614-1/EN 288
QUALIFICA SALDATORI	*Welder qualification*	EN ISO 9606-1
ELETTRODI	*Electrodes*	vedi/see WPS
TRATTAMENTO TERMICO	*Heat treatment*	-

PESO A VUOTO shell and bundle weight	PESO FASCIO 1/2 bundle weight 1/2	PESO PIENO ACQUA weight full of Water	SUPERFICIE LATO TUBI surface 1/2/3/4/5	TEMA TYPE
kg 2150	kg	kg 2420	m^2 85.4	-

IDENTIFICAZIONE	*identification*			
N° DI FABBRICA	*Serial number*		24278 (LINE 1) - 24279 (LINE 2)	
ANNO DI COSTRUZIONE	*Year of manifacture*		2017	
QUANTITA' APPARECCHI RICH.	*Quantity required*		2	
CATEGORIA/MODULO	*Category/Module*			IV/H1
PRESSIONE DI PROGETTO	*Design pressure*	bar(g)	0.15	63
PRESSIONE DI ESERCIZIO	*Working pressure*	bar(g)		
PRESSIONE DI PROVA	*Test pressure*	bar(g)		101.3
TEMPER. PROGETTO	*Design temperature*	°C	0/+210	0/+285
TEMPER. ESERCIZIO (IN/OUT)	*Working temperature*	°C	+66/+190	+265.2/+265.2
CONTENUTO/STATO FISICO	*Contents/Physic state*		ARIA/AIR	VAPORE STEAM
CAPACITA'	*Capacity*	lt	-	270
SUPERFICIE	*Surface*	m^2		85.4
EFFICIENZA GIUNTI	*Joint Efficiency*			VEDERE CALCOLI /SEE CALCULATION
SOVRASPESSORE DI CORROSIONE	*Corrosion allowance*	mm	0	0
COLLAUDO	*Test by*			
DATI DI PROGETTO	design data		LATO MANTELLO shell side	POS.1 LATO TUBI 1 tube side 1

SIGLA Pos.	DN size	TIPO type	SERIE rating	FACCIA facing	TRONCHETTO nozzle	SPORG. distances	RINFORZO reinforcement	SERVIZIO service
T4	1/2"	NPT	3000	-	-	-	-	SFIATO/VENT
T3	1/2"	NPT	3000	-	-	-	-	SCARICO/DRAIN
T2	50	EN 1092-1 TYPE 01-A	PN100	-	Ø60.3x3.91	-	-	USCITA CONDENSA/OUTLET CONDENSATE
T1	50	EN 1092-1 TYPE 01-A	PN100	-	Ø60.3x3.91	-	-	INGRESSO VAPORE/STEAM INLET

ELENCO CONNESSIONI - list of connections

REV	DATE	DESCRIPTION DESCRIZIONE	DES.	APP.
3				
2				
1	15/03/17	ISSUED FOR CONSTRUCTION 1	VA	RM
0	01/03/17	ISSUED FOE APPROVAL	VA	RM

BATTERIA A VAPORE DI RICAMBIO (ARIA PRIMARIA)
SPEAR PART STEAM AIR HEATER (PRIMARY AIR)
TITLE /TITOLO

UNITERM

DRW. DIS.N° 16351

EMPTY WEIGHT/ PESO A VUOTO Kg 2150 ~ | scale 1:10 | JOB/COMMESSA 17021 | PIECES/PEZZI 2

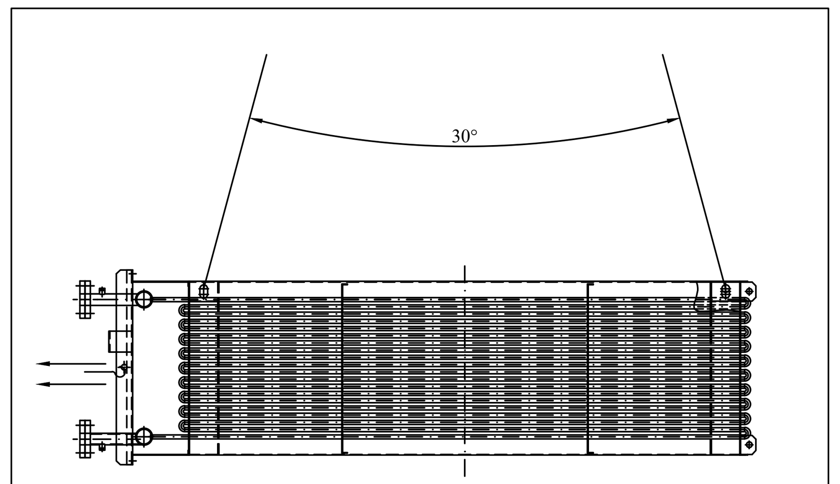
Questo disegno è nostra proprietà e non deve venire consegnato o mostrato a terze persone nè in originale nè in copie (Art.1153,53 C. C. 298 C. P.)

MANUFACTURER UNITERM SRL via Cilea - 20090 Cologno Monzese-ITALY		
ITEM		
SERIAL No/YEAR		24278 /2017
DESIGN TEMP./TS	C°	0/+285
DESIGN PRESS./PS	bar (g)	63
TEST PRESS./PT	bar (g)	101.3
FLUID/GROUP		STEAM
CAPACITY/V.	L	270
OUTPUT	kw	1537
TARE MASS	kg	2150

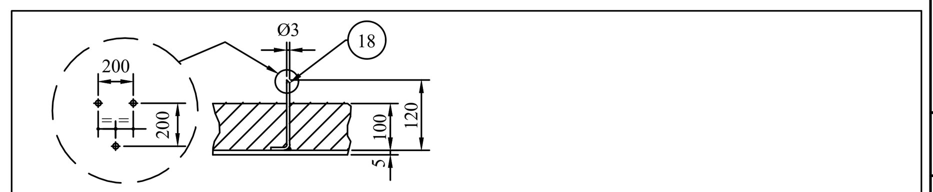
14 LINE 1

MANUFACTURER UNITERM SRL via Cilea - 20090 Cologno Monzese-ITALY		
ITEM		
SERIAL No/YEAR		24279 /2017
DESIGN TEMP./TS	C°	0/+285
DESIGN PRESS./PS	bar (g)	63
TEST PRESS./PT	bar (g)	101.3
FLUID/GROUP		STEAM
CAPACITY/V.	L	270
OUTPUT	kw	1537
TARE MASS	kg	2150

14 LINE 2



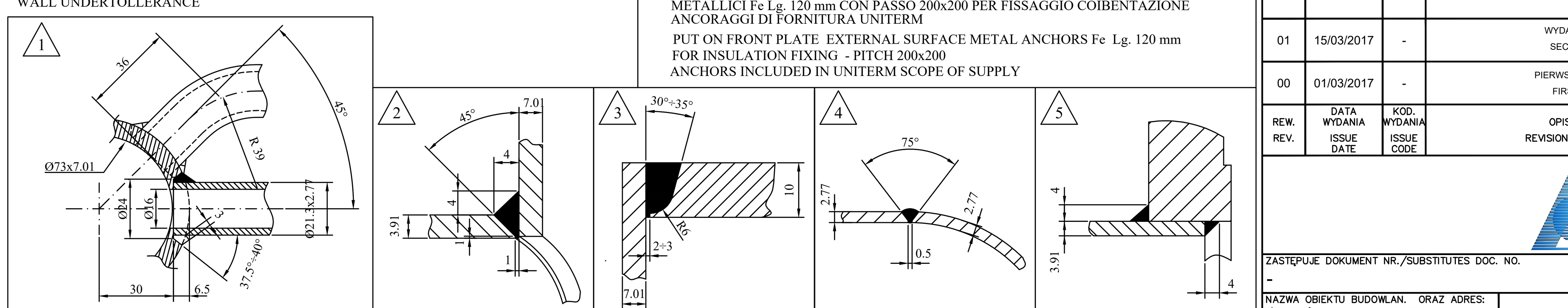
SCHEMA DI SOLLEVAMENTO
LIFTING SKETCH



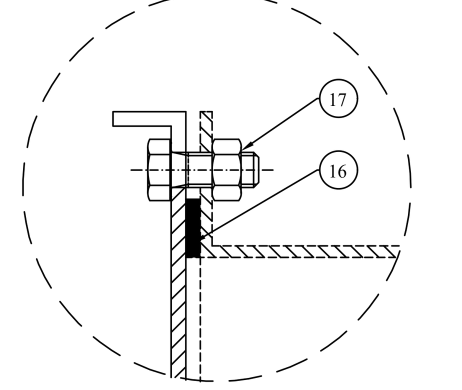
PREDISPORRE SULLA SUPERFICIE ESTERNA DEL PANNELLO FRONTALE ANCORAGGI METALLICI Fe Lg. 120 mm CON PASSO 200x200 PER FISSAGGIO COIBENTAZIONE ANCORAGGI DI FORNITURA UNITERM

PUT ON FRONT PLATE EXTERNAL SURFACE METAL ANCHORS Fe Lg. 120 mm FOR INSULATION FIXING - PITCH 200x200 ANCHORS INCLUDED IN UNITERM SCOPE OF SUPPLY

- TOLLERANZA SUI TUBI (-12.5%)
  WALL UNDERTOLLERANCE



N.B.: GLI SPESSORI INDICATI A DISEGNO SONO QUELLI NOMINALI; LE TOLLERANZE DI LAVORAZIONE PREVISTE SONO IN ACCORDO CON IL CODICE DI COSTRUZIONE DEL MATERIALE NOTE		N.B.: ON DRAWING ARE INDICATED THE NOMINAL THICKNESSES THE TOLERANCES ARE ACCORDING WITH MATERIAL CONSTRUCTION CODE NOTES
6	- VERNICIATURA ESTERNA SOLO PIASTRA FRONTALE : Sa 2,5 + Zincante inorganico 75µm - TECTYL SU FASCIO TUBIERO	- PAINTING ONLY FRONT PLATE OF EXTERNAL SURFACE : Sa 2,5+Inorganic zinc 75µm - TECTYL ON TUBE BUNDLE
5	TUTTE LE SALDATURE DEVONO ESSERE CONTINUE	ALL WELDED JOINTS MUST BE SEAM WELDED
4	SALVO DIVERSA INDICAZIONE TUTTE LE QUOTE SONO IN mm.	UNKESS OTHERWISE INDICATED,ALL DIMENSION ARE IN MM.
3	PROTEGGERE PER LA SPEDIZIONE I BOCCHELLI E LE ALETTE	ALL NOZZLES FACING AND FINS SHALL BE PROTECTED DURING SHIPMENT
2	PRIMA DELLA SPEDIZIONE L'APPARECCHIO DEVE ESSERE VUOTATO E PULITO	BEFORE SHIPMENT THE UNIT SHALL BE DRAINED AND CLEANED
1	LA FORATURA DELLE FLANGE DEVE RISULTARE FUORI DAGLI ASSI PRINCIPALI DELL'APPARECCHIO.	NOZZLE AND MAIN FLANGE BOLTS HOLES SHALL BE OUT OF MAIN AXIS.



TYPICAL DETAIL "Y"
GASKET PLACEMENT
SHELL SIDE
DETTAGLIO TIPICO
POSIZIONAMENTO GUARNIZIONE
LATO MANTELLO

POS.	N.	DENOMINAZIONE	description	MATERIALE material	DIMENSIONI dimensions	C. R.
18	25~	SPILLI PER COIBENTAZIONE	*METAL ANCHORS FOR INSULATION FIXING*	Fe	lg.120	⦶
17	40+40+80	VITI+DADI+RONDELLE(RICAMBIO)	*SCREWS+NUTS+WASHERS(SPARE PART)*	c.l 8.8 zinc/galvanized	M10x30	⦶
16	4.2m	GUARNIZIONE LATO ARIA(RICAMBIO)	*SHELL SIDE GASKET(SPARE PART)*	SILESJ SILICONE	⊠ 20x6	⦶
15	4	GOLFARI	*EYEBOLTS*	S275 J0	thk.8	⦶
14	1	TARGA DATI	*NAME PLATE*	AISI 316L	thk.1	⦶
13	1	SUPPORTO TARGA	*NAME PLATE SUPPORT*	S275 J0	thk.5	⦶
12	1	PIASTRA FRONTALE	*FRONT PLATE*	S275 J0	thk.5	⦶
11	2	MEZZO MANICOTTO+TAPPO	*HALF COUPLIN + PLUG*	P250 GH - EN 10222-2	Ø1/2" NPT 3000	◐
10	2	BOCCHELLO	*NOZZLE*	P265 GH TC1	Øe60.3x3.91	◐
9	2	GUARNIZIONE	*GASKET*	GRAFOIL+INOX	x DN50 PN100	⦶
8	8	DADI	*NUTS*	42 Cr Mo4+QT	M24	◐
7	8	VITI	*BOLTS*	42 Cr Mo4+QT	M24x90	◐
6	4	FLANGIA EN1092-1	*FLANGE EN1092-1*	P250 GH - EN 10222-2	DN50 PN100 - TIPO 01-A	◐
5	4	FONDELLI	*FLAT HEAD*	P355NH	thk.10	◐
4	2	COLLETTORE	*HEADER*	P265 GH TC1	Øe73x7.01 ◇1	◐
3	-	CASING	*CASING*	S275 J0	thk. 4mm	⦶
2	418	CURVE	*ELBOWS*	P265 GH ◇1	Øe21.3x2.77△42	◐
1	440	TUBO SCAMBIATORE	*EXCHANGE TUBE*	P265 GH ◇1	Øe21.3 x 2.77	◐

● MATER. COLLAUDATO tested material ◐ MATER. CON CERTIFICATI certificated material ⦶ MATER. NON COLLAUDATO no tested material

DOKUMENT DOSTAWCY - DO ZATWIERDZENIA Supplier's Document - Approval Status	
ZATWIERDZONY Approved	
ZATWIEDZONY JAK SKORYGOWANO Approved as corrected	
NIE ZATWIERDZONY Not Approved	
NIE WYMAGA ZATWIEDZIENIA Approval not required	

ZATWIERDZENIE PRZEZ TM.E NIE ZWALNIA DOSTAWCY Z OBOWIĄZKU WYPEŁNIENIA ZOBOWIĄZAŃ KONTRAKTOWYCH I Z OBOWIĄZKÓW Z NICH WYNIKAJĄCYCH.

TM.E. approval does not exempt the supplier from observing the contractual obligations and from his consequent responsibilities.

INFRASTRUKTURA I ŚRODOWISKO NARODOWA STRATEGIA SPÓJNOŚCI — ProNatura — UNIA EUROPEJSKA FUNDUSZ SPÓJNOŚCI

REW. REV.	DATA WYDANIA ISSUE DATE	KOD. WYDANIA ISSUE CODE	OPIS REWIZJI REVISION DESCRIPTION	PRZYGOTOWANY PRZEZ PREPARED BY	SPRAWDZONY PRZEZ CHECKED BY		ZATWIERDZONY PRZEZ APPROVED BY
01	15/03/2017	-	WYDANIE DRUGIE SECOND ISSUE	-	-	-	-
00	01/03/2017	-	PIERWSZE WYDANIE FIRST ISSUE	-	-	-	-

AUTORYZACJA WYDANIA/APPROVAL ISSUE

SOTER

ZASTĘPUJE DOKUMENT NR./SUBSTITUTES DOC. NO.	ZLECENIE NR./JOB NO.	WYDANY PRZEZ/ISSUED BY
-	10168	-

NAZWA OBIEKTU BUDOWLAN. ORAZ ADRES: /OBJECT'S NAME AND ADDRESS: ZAKŁAD TERMICZNEGO PRZEKSZTAŁCANIA ODPADÓW KOMUNALNYCH BYDGOSZCZ, UL. Ernsta Petersona 22, DZ. NR 2/101, 2/108 OBRĘB 0133

INWESTOR//INVESTOR

ProNatura

Międzygminny Kompleks Unieszkodliwiania Odpadów ProNatura Sp. z o. o.

Budowa Zakładu Termicznego Przekształcania Odpadów Komunalnychdla Bydgosko-Toruńskiego Obszaru Metropolitalnego

PROJEKT WYKONAWCZY
TYTUŁ/TITLE

PRIMARY AIR HEATER EXCHANGER (SPEAR PART STEAM AIR HEATER) LINE 1 - LINE 2

POCHODZĄCH OD/DERIVATED FROM
-

KLASYFIKACJA CLASSIFICATION	KOMPLEKS PLANT	SYSTEM	JEDN. FUNK. FUN. UN.	TYP DOK. DOC. TYPE	FORMAT/SIZE	SKALA/SCALE
	S F	S 2 5	L 1-2	C C D	A1	1:10

DOKUMENT NR./DOCUMENT NO.	STRONA/SHEET	Z/OF
10168EVMD028	1	1

PROJEKTANT PROWADZĄCY:
SPECJALNOŚĆ:
NR UPRAWNIEŃ:

PROJEKTANT:
SPECJALNOŚĆ:
NR UPRAWNIEŃ:

SPRAWDZAJĄCY:
SPECJALNOŚĆ:
NR UPRAWNIEŃ:

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