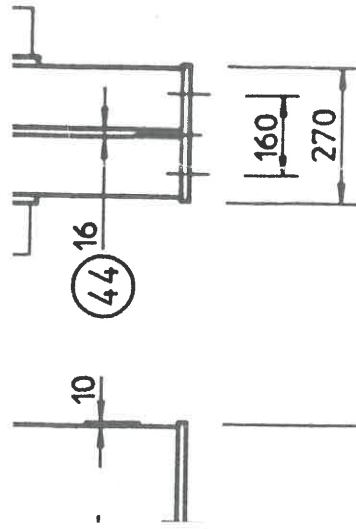
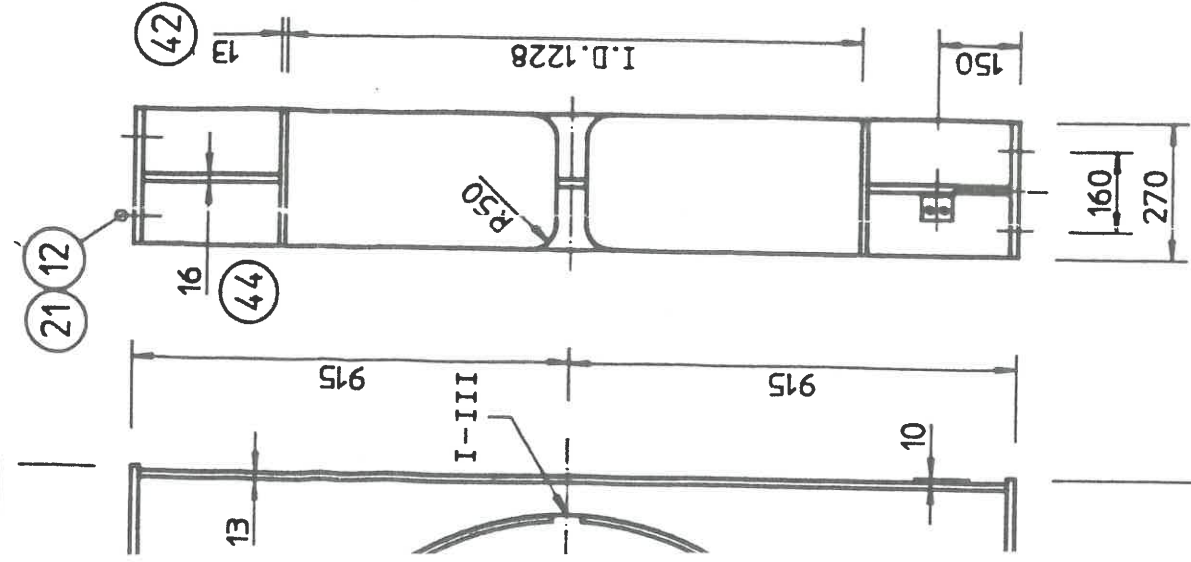
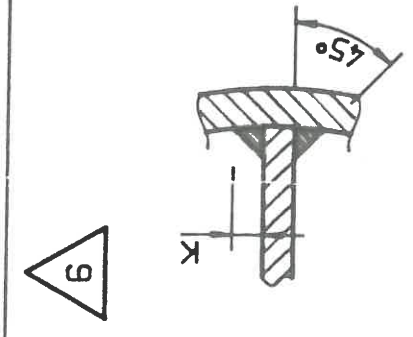
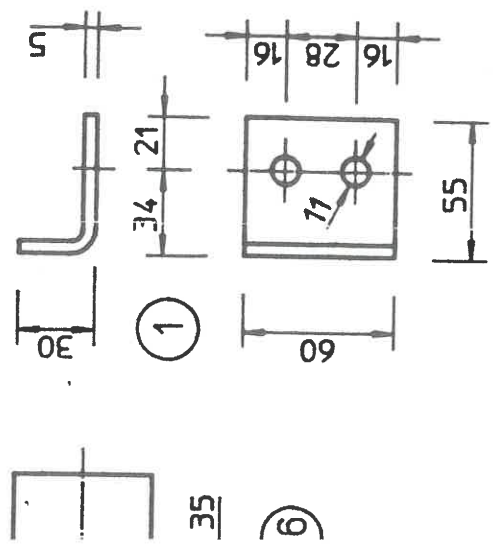




Set of shim (45)
THK.1-2-3-4-5



EARTHING LUG



R3

LIST VALID FOR TWO

17	Nuts 'T2-T3'	16+10	.	.	.	DN 3/4" UNC
16	Nuts 'ST-TT'	48+10	.	.	.	DN 3/4" UNC
15	Nuts 'SP-TP'	48+10	.	.	.	DN 3/4" UNC
14	Nuts 'S2-S3'	24+10	.	A 194 Gr. 2H	.	DN 3/4" UNC
13	Stud Bolts (FL. HEAD)	120+12	.	A 193 Gr. B7M	.	DN 1" UNC L-300
12	Stud bolts for saddles	8	.	A 193 Gr. B7	.	DN 1-1/8" 8UN L-120
11	Stud Bolts (SHELL-COVER)	200+20	.	.	.	DN 3/4" UNC L-310
10	Stud Bolts (CHANNEL)	176+18	.	.	.	DN 3/4" UNC L-340
9	Stud Bolts (CHANNEL-FL. COVER)	120+12	.	.	.	DN 3/4" UNC L-225
8	Stud Bolts 'T2-T3'	8+5	.	.	.	DN 3/4" UNC L-110
7	Stud Bolts 'ST-TT'	24+5	.	.	.	DN 3/4" UNC L-95
6	Stud Bolts 'SP-TP'	24+5	.	.	.	DN 3/4" UNC L-85
5	Stud Bolts 'S2-S3'	12+5	ASTM A 193 Gr. B7			DN 3/4" UNC L-130
4	Plug	2	AISI 304			DN 1-1/8" 8UN
3	Name Plate	2	AISI 304			SEE DWG. 10692-T1
2	Impingement Plate	2	AISI 304			300 x 300 Thk. 5
1	Earthing lug	4	AISI 304			THK. 5
POS.	DENOMINATION	QUANTITY	MATERIALS			DIMENSIONS (SEE NOTE '4')

MATERIAL TESTING SYMBOLS ☐ MATERIALS WITHOUT CERTIFIED ☒ MAT'S WITH CERTIFIED

TEMA TYPE AES HOR. 1194 x 6000

DESIGN DATA		SHELL SIDE	TUBE SIDE
DESIGN CODE	ASME VIII Div.1 1992 Ed. Incl. Add. 1993 \ TEMA 'R' 1988 Ed. Incl. Emenda 1991 \ API Std. 660 5 th Ed. June 1993		
INSPECTION AUTHORITY	SNAMPROGETTI - UDT		
DESIGN AT TOP	MPa	1.91	1.29
OPERATING	MPa	1.61	0.6
HYDRAULIC TEST	MPa	2.91	1.935
PNEUMATIC TEST (SEE NOTE '6')	MPa	--	--
DESIGN	(SEE NOTE '9')	--	--
OPERATING (SEE NOTE '16')	INLET °C	49	32
	OUTLET °C	38	43
NATURE	(SEE NOTE '17')	HYDROGEN HYDROCARBON	COOLING WATER
PHYSICAL STATE		LIQ.	LIQ.
SPECIFIC WEIGHT	Kg/dm ³	0.55	1
TOXICITY			
INFLAMMABILITY			
WIND PRESSURE : U.S.G. 1981 Edition		--	--
EARTHQUAKE : U.S.G. 1981 Edition		--	--
MAGNETIC PART. INSPECTION		NO	NO
JOINT EFFICIENCY	SHELL HEAD	0.85	0.85
X-RAY TEST	SHELL % SPOT HEAD-SHELL % FULL	1	--
ACCEPTABILITY GRADE			
DYE PENETRANT TEST	%	NO	NO
WELD TEST PIECES	SHELL HEADS	NO	NO
POSTWELD HEAT TREATMENT		YES	YES
CORROSION ALLOWANCE	mm	5	3
No OF PASSES		1	8
INSULATION THK.	mm	NO	NO
BOX CAPACITY	m ³	4.145 (10)	1.92 (10)
TOTAL EXTERNAL SURFACE (EXCLUDING SUPPORTS) m ²		28.5 (10)	
WEIGHTS (10)			
EMPTY	FULL OF WATER	TUBE BUNDLE	OPERATING
1988 Kg.	25865 Kg.	9828 Kg.	Kg.

- a - NOTES FOR CONSTRUCTION**
- The construction of the vessel shall be in accordance with Snamprogetti reference supply SPEC.00-RA-E-23052 Rev.1
 - All dimensions are in millimeters unless otherwise indicated.
 - Unless otherwise indicated, all flanges on shell and heads have staggered holes straddling the main axis shown on drawing.
 - Nozzle flange must be in accordance with (ANSI B 16.5).
 - Nozzle neck from pipe must be in accordance with (ANSI B 34.10).
 - Thread nuts must be in accordance with (ANSI B 1.1-2A).
 - Thread must be in accordance with (ANSI B 1.1-2B).
 - Material of body gaskets for teels shall be as in operating cond.
 - Reinforcing pad to have 1.4" threaded hole tapped for ANSI B1.20.1 pads to air test at 0.03 MPa and checked with soap test for leaks after test hole must be fill with grease.
 - The finish on nozzle flange gasket surface shall be :
SHELL SIDE SMOOTH FINISH 125 AARH
TUBE SIDE SMOOTH FINISH 125 AARH
SHELL SIDE 125 to 250 AARH
TUBE SIDE 125 to 250 AARH
 - Joint and tolerances for girth flanges shell and tubes in according to STD. SC. GEN. 7112 rev.1
 - Minimum design metal temperature : Shell side -30 °C at 0.1 MPa
Tube side -30 °C at 0.1 MPa
 - Weight and heat transfer surface are referred to one shell.
 - Material of body gaskets shall be :
SOFT IRON JACKETED ASBESTOS FREE
 - Gasket material for shell side interconnecting nozzles & blind flange shall be :
SPIRAL WOUND AISI 316 + GRAPHITE (98% carbon minimum no binders 100 PPM leachage chlorides maxium).
 - INNER RING IN AISI 316 AND OUTER RING IN CARBON STEEL.
 - Gasket material for tube side interconnecting nozzles & blind flange see SPEC. 00-GA-E-60602 (TYPE 12 A 30).
 - Garfite sheet S (GARLOCK).
 - Material with MIC TEST according to NACE Std. HR 01 75-94 (APPLICABLE TO SHELL SIDE ONLY).
 - Material according to NACE Std. HR 01 75-94 (APPLICABLE TO SHELL SIDE ONLY).
 - Max operating temperature : SHELL SIDE 49 °C
TUBE SIDE 43 °C
 - Shell side concentration : H2-0.08 % MOL, H2S-27.44 % MOL/TOTAL.
- b - BOLT TIGHTENING AXIAL LOAD**
- POS. 9 : F = -52.3 KN, M = -0.226 KN.M (Moment in Hydr. T.)
POS. 10 : F = -53.0 KN, M = -0.228 KN.M (Moment in Hydr. T.)
POS. 11 : F = -53.5 KN, M = -0.23 KN.M (Moment in Hydr. T.)
POS. 13 : F = -56.4 KN, M = -0.318 KN.M (Moment in Hydr. T.)
- c - PAINTING SYSTEM**
- PREPARATION : Sandblasting type Sa 2-1/2
ANTICORR. PRIMER : Inorganic zinc-rich silicate
with solvent D.F.T. 75 microns

Snamprogetti	JOB 300000 PETROCHEMIA PLOCK SA	REV.	DATE	SIGNATURE
	DWG / SPC N 2-RE-A-23960	0	27.6.95	Ghezzi
	HYDROCRACKING PLANT Sh-1 of 1	1	10.8.95	Balconi
	CONTRACT N° PL/0101 44124-94-5645	2	2.11.95	Balconi

REQUIRED QUANTITY	1	SURFACE FOR EXCH. (10) m ²	401	SERIAL (R.)	0/8400-01	YEAR BUILT	1996	N & A JOB	1551/95.9
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OFFICINE MECCANICHE nicola albia srl MILANO - ITALY		DATE	27-Jun-95	DWG. NR.	10692	SHEET	1	OF	1
CUSTOMER	PETROCHEMIA PLOCK S.A.	REV.		DESCRIPTION		DATE		SIGN	
PROJEGOT	PLOCK - POLAND	0		ISSUED FOR APPROVAL		27-6-95		Ghezzi	
UNIT	HYDROCRACKING PLANT	1		ISSUED FOR FIRST APPROVAL		10-8-95		BALCONI	
SERVICE	DEBUTANIZER TRIM CONDENSER WYMIENNIK CIEPŁA	2		MODIFIED THK. FLANGE POS. 6B		2-11-95		BALCONI	
ITEM	2-E-12 A/B								

PROPRIETÀ DEL PRODOTTO RISERVATA AI TITOLARI DI LEGGE	PURCHASER ORDER	300000\PLR\00029	DERIVED BY DWG.	2-RE-B-23231 Rev. 2
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