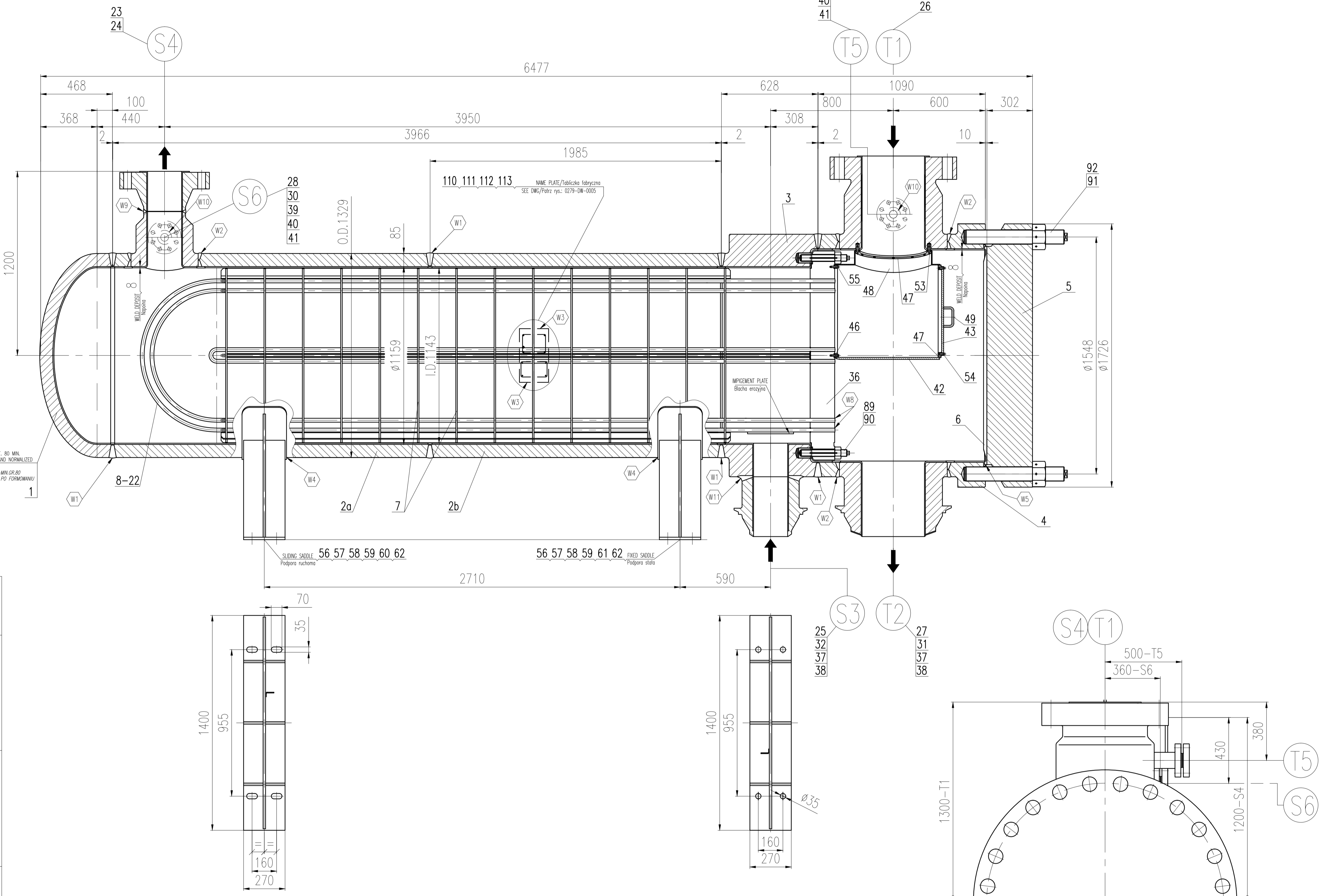


TECHNICAL AND DESIGN DATA / CHARAKTERYSTYKA TECHNICZNA I PARAMETRY APARATU			
DESIGN CODE / PRZEPISY PROJEKTOWE		TEMA-R TYPE / TYP WG. TEMA-R	DIRECTIVE 97/23/EC. (PED) CLASSIFICATION / KLASYFIKACJA WG. PED 97/23/EC
ASME Sec. VIII div.1 2007, A-08, TEMA-R, PED 97/23/EC		DEU	IV 1 FLUID GROUP 1 / 1 MODULE G
No. / Lp.	SPECIFICATION / Wyszczególnienie		
	UNIT / Jedn.miary	SHELL SIDE / Przestrzeń płaszczą	TUBE SIDE / Przestrzeń rurową
OPERATING MEDIUM DATA / CHARAKTERYSTYKA MEDIUM ROBOCZEGO			
1	COMPOSITION OF MEDIUM / PHYSICAL STATE / Rodzaj medium / stan skupienia	-	COLD HYDROCARBON+H2/GAS / GŁOBY WĘGLOWODRÓW+H2/GAZ
2	FLAMMABLE/EXPLOSIVE/TOXIC / Zapalne/wybuchowe/toksyczne	-	Zmny węglowodor/H2/gaz / tak / tak / tak / tak / tak / tak
DESIGN DATA / DANE PROJEKTOWE		TEST DATA / PARAMETRY PRÓBNE	
4	MAX. DESIGN PRESSURE PS / Najw. ciśnienie obliczeniowe PS (naciśn.)	bar(g)	161/F.V. AT 177°C
5	MAX./MIN. DESIGN TEMPERATURE TS / Najw./Najn. temperatura obliczeniowa TS	°C	370/0
6	EXCHANGE SURFACE (GROSS) / Powierzchnia wymiany ciepła	m <sup>2</sup>	282,6
7	PASSES / Ilość biegów	-	1
8	OPERATING PRESSURE / Ciśnienie robocze	bar(a)	-
9	MAXIMUM ALLOWABLE WORKING PRESSURE / Najwyższe dopuszczalne ciśnienie robocze	bar(g)	152,3
10	OPERATING TEMPERATURE IN/OUT / Temperatura robocza wlot/wylot	°C	201/293
11	TOTAL VOLUME / Objętość całkowita	L	3200
12	TUBE BUNDLE WEIGHT / Masa wkładu rurowego	kg	~7250
13	EMPTY WEIGHT / Masa pustego aparatu	kg	~38000
14	WEIGHT-FULL WATER / Masa aparatu wypełnionego wodą	kg	~43900
15	OPERATING WEIGHT / Masa robocza aparatu	kg	~43900
16	MINIMUM DESIGN METAL TEMP. AT M.A.W.P. / Minimalna temperatura obliczeniowa metalu	°C	0
17	TUBESHEET TOT. CORROSION / Całkowity nadatek korozyjny ściany sitowej	mm	0
18	CORROSION ALLOWANCE / Nadatek korozyjny	mm	0
19	JOINT EFFICIENCY / Współczynnik złącza	-	1
20	X-RAY EXAMINATION RT / Radiografia	-	100%
25	INSPECTION AND TESTING / Badania i testy	-	-
26	WIND VELOCITY / Prędkość wiatru	-	N/A
29	THERMAL INSULATION / Izolacja termiczna	mm	110
SHLL SIDE IN H2 SERVICE/STRONA PŁASZCZĄ-SERWIS WODOROWY			
TEST DATA / PARAMETRY PRÓBNE			
30	HYDROSTATIC TEST PRESSURE PT - SHOP / Ciśnienie próbné PT - warsztat	bar(g)	230,2
31	WATER TEMPERATURE AT TEST PRESSURE / Temp. próby ciśnieniowej	°C	15-40



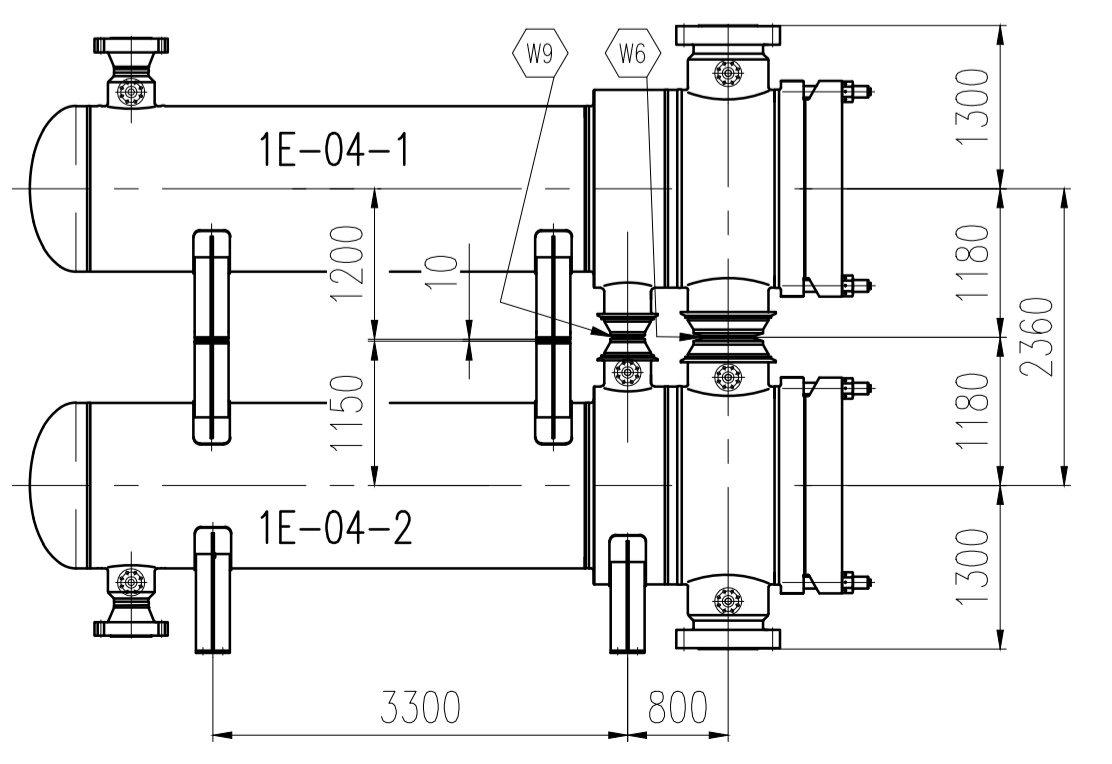
MARK		QUANTITY	SERVICE	NOZZLES TABLE / TABELA KRÓCCÓW	REMARKS
Opis	Ilość	Przeznaczenie	Symbol	Remarks	Uwagi
S6	1	NEUTR. CONN. / Połączenie neutralne	2" 1500#	LWN-RF	With blind flange / Z kołnierzem zaśl.
S4	1	OUTLET / Wylot	10" 1500#	WN-RF	SELF REINF.
S3	1	INLET / Wlot	10" 1500#	B.W.	SELF REINF.
T5	2	NEUTR. CONN. / Połączenie neutralne	2" 1500#	LWN-RF	With blind flange / Z kołnierzem zaśl.
T2	2	OUTLET / Wylot	16" 1500#	B.W.	SELF REINF.
T1	2	INLET / Wlot	16" 1500#	LWN-RF	SELF REINF.

MIN. ALLOWABLE NOZLE LOAD IN [kN] OR [kNm] / MIN. DOPUSZCZALNE OBCIĄŻENIE KRÓCCÓW W [kN] LUB [kNm]		T1, T2	S3, S4
SYMBOL OF LOAD / SYMBOL OBCIĄŻENIA	F <sub>c</sub>	11,7	9,6
	F <sub>l</sub>	15,8	13
	F <sub>A</sub>	-15,8	-13
	M <sub>L</sub>	12,2	8,6
	M <sub>c</sub>	9,4	6,5
	M <sub>T</sub>	14	9,8

REFERENCE DWG. & DOC. LIST/RYSUNKI I DOK. ZWIĄZANE			
DOCUMENT No. / Nr dokumentu	TITLE / Tytuł	DOCUMENT No. / Nr dokumentu	TITLE / Tytuł
0279-SC-0002	STRENGTH CALCULATIONS / Obliczenia wytrzymałościowe	0279-DW-0009	NOZZLES / Króćce
0279-BM-0004	BILL OF MATERIAL / Spis materiałów	0279-DW-0010	CHAMBER / Komora
0279-DW-0005	WELDING DETAILS / Detale spoin	0279-DW-0011	CHAMBER BAFLE / Przegroda komory
0279-DW-0006	NAME PLATE AND BRACKET / Tabliczka fabryczna i wspornik	0279-DW-0012	BOLTS / Śruby
0279-DW-0007	SADDLES / Podpory	0279-DW-0053	DIAPHRAGM / Diafragma
0279-DW-0008	TUBE BUNDLE / Wkład rurowy		

**GENERAL NOTES / UWAGI OGÓLNE**

- REQUIREMENTS APPLYING TO THE MATERIALS, WELDS, CONSTRUCTION, MANUFACTURING, TESTING AND MARKING ACCORDING TO DIRECTIVE 97/23/EC AND ASME VIII DIV.1 SHALL APPLY. ADDITIONAL REQUIREMENTS SHALL BE INDICATED IN THE DRAWING.
- CONSTRUCTION TOLERANCES SHALL BE AS FOLLOWS:
- ALL BOLT HOLES OF FLANGES ON SHELL AND HEADS SHALL STRADDLE MAIN AXIS OF THE VESSEL UNLESS OTHERWISE INDICATED.
- ALL WELDING SHALL BE COATED WITH A SUITABLE RUST PREVENTIVE GRAZE, AND ALL OPENINGS MUST BE PROTECTED BY METAL COVERS FOR WAREHOUSING.
- ALL MACHINING SHALL BE FINISHED TO THE DIMENSIONS SHOWN AND ALL DIMENSIONS SHALL BE CHECKED BY MAGNETIC PARTICLE EXAM. AFTER FINISHING.
- ALL SPACES BETWEEN EXTERIOR EDGES AND HOLE EDGES SHALL BE DEBURRED AND ROUNDED OFF.
- ALL SHELL INTERNAL WELDS SHALL BE SMOOTH GRINDED.
- ALL DIMENSIONS ARE GIVEN IN MM, UNLESS OTHERWISE SHOWN.
- FOR TUBE SHEET:
- DESIGN DIFFERENTIAL PRESSURE 55,07 bar - TEST DIFFERENTIAL PRESSURE 55,07 bar
- MAX. PERMISSIBLE OUT OF ROUNDNESS OF SHELL AND CHANSEL:
- SHELL 1,5 mm - CHANSEL 1,5 mm
- USE THE BOLTS FOR GADGETS ASSEMBLED(POSEJAZKA) BEFORE PUTTING IN OPERATION.
- HEAT TREATMENT OF SHELL AND CHANSEL AT THE TEMPERATURE OF 600 ± 10°C. MAX. HOLDING TIME 230 MINUTES. (EXCLUDED TUBE BUNDLE).
- BEFORE WELDING ALL EDGES AND OPENING FOR NOZZLES SHALL BE FULLY CHECKED WITH MAGNETIC PARTICLE EXAM.
- ALL WELDS SHALL BE FULLY CHECKED WITH MAGNETIC PARTICLE EXAM. BEFORE BACK COUING.
- ALL WELDS INTERESTED BY WELD OVERLAY SHALL BE CHECKED WITH MAGNETIC PARTICLE EXAM. BEFORE EXECUTION OF WELD OVERLAY.
- ALL WELDS FOR WHICH IS NOT POSSIBLE TO EXECUTE X-RAY EXAM. SHALL BE MAGNETIC PARTICLE TESTED BEFORE H.T.
- ALL WELDS SHALL BE FULLY CHECKED ON OUTSIDE WITH MAGNETIC PARTICLE EXAM. AFTER HEAT TREATMENT.
- ALL WELD OVERLAYS SHALL BE 100% OF POSTWELD LEAD TESTED AFTER HEAT TREATMENT.
- CARRY OUT AFTER HEAT TREATMENT HARDNESS CHECK - VALUE < 240 HB
- FOR WELDING CHECK THE FERROUS CONTENT - VALUES MUST BE WITHIN 3% AND 12% AFTER H.T. AND RECORD THE VALUES.
- CHECK WITH MAGNETIC PARTICLE EXAM. ON EXTERNAL SURFACE OF HEAD IN THE ZONE OF HIGHER BENDING.
- ALL BOX INTERNAL SURFACES SHALL BE PROSED AND PICKLED.
- FOR TEMPORARY SUPPORT WELDED TO THE PRESSURE PARTS. AFTER REMOVAL THE WELD SHALL BE SMOOTH GRINDED AND FULLY CHECKED WITH MAGNETIC PARTICLE EXAM. BEFORE HEAT TREATMENT.
- ALL FORINGS SHALL BE CHECKED WITH MAGNETIC PARTICLE EXAM. AFTER MACHINING AS PER PN-EN 10228-1
- MARK ON THE SHELL THE TANGENT LINE AND THE MAIN AXIS.
- NOTES FOR HYDROSTATIC TEST SHALL CONFORM TO PN-EN 10228-1 OF CHLORIDE MAX OR SHALL HAVE CORROSION INHIBITORS
- PROVIDE ADEQUATE SURFACES TO PERFORM THE MATERIAL STRUCTURAL EXAMINATION BY CARBON REPLICA AT FOUR POINTS AT EACH NOZZLE. WELDING AND TWO POINTS AT EACH MAIN WELDING.
- ANTI-CORROSION PROTECTION: SURFACE PREPARATION: SANDBLASTING SA 2-1/2 WG PN-ISO 8501-1, SURFACES OF CARBON STEEL SHALL BE PRIMERED. PRIMER PAINT - GALVASOL 19 - 1x75µm, FINISH PAINT - OLEREM SSP - 2x220µm.



**HYDROGEN SERVICE/SERWIS WODOROWY**  
 POSTWELD HEAT TREATED - DO NOT WELD AND HAMMER / APARAT OBRÓBIONY CEPLIENIE - SPAMIANIE I UDERZANIE ZABRONIONE