

B — AZIMUTH RING (PLAN) · SCALE 1:20

ID	JOINT	PARTS	TYPE / SIZE	WPS	5817	NDE	REF
W1-W12	Gore meridian butts, seams at AZ 15 + 30k	P-01a x 12	Sq. groove 15 GTAW both sides (or 60° V)	01	B	100 % PT; Q11 flush	SH02/31
C1	Top cap circumferential, polar 20°	P-01b / P-01a	Square groove 15, purged	01	B	100 % PT	SH02/31
C2	Bottom cap circumferential, backed	P-01c / P-01a	60° V from outside on the P-02 backing	01	B	100 % PT	SH02/32
D1	Doubler inner edge fillet r242	P-02 / P-01c	4 fillet, copper chill outside	01	C	100 % PT	SH32
D2, D3	Doubler segment butts AZ 90 / 270	P-02 / P-02	Full-pen butt t8, ground flush	01	C	100 % PT	SH32
K1	Crown port: riser tip to top cap	P-08 / P-01b	3 fillet all round, structural + seal	01	B	100 % PT + leak	SH03 D1
R1	Crown spool butt. 110 below the crown	P-08a / P-08	Full-pen butt, purged	01	B	100 % PT + hydro 360 kPa	SH36
R2	Riser foot butt at -399 (SITE)	P-08 / P-09b	Full-pen butt, purged	01	B	100 % PT + hydro	SH37
R3	Spool to elbow (SITE)	P-09b / P-09c	Full-pen butt, purged	01	B	100 % PT + hydro	SH37
R4	Elbow to run; run to stub ends (SITE)	P-09c / d / e	Full-pen butts, purged	01	B	100 % PT + hydro	SH37
B1	Bellows boss ring to cap OUTER face	P-08b / P-01c	4 fillet all round	01	C	100 % PT + leak	SH36
B2	Bellows upper collar to boss bottom face	P-16 / P-08b	3 seal weld all round	01	C	PT + leak 0.5 bar	SH36
B3	Bellows lower collar to riser at -155	P-16 / P-08	2 seal weld all round, low heat	01	C	PT + leak 0.5 bar	SH36
B4	Drain-plug boss ½ BSP, cap outer face r100 AZ 90	CRC-V / P-01c	3 fillet all round	02	C	PT	SH31 note
H1, H2	Weep telltales Ø10 PCD 150 (holes)	P-01c	Drilled, deburred — no weld	—	—	Visual	SH31
S1	Skirt longitudinal seam AZ 90	P-03 / P-03	Full-pen butt 110, flush both faces	01	B	100 % PT	SH33
S2	Skirt cope to shell, r300 all round	P-03 / P-01a.c	Filletts both sides, 13 eff.	01	B	100 % PT	SH04 D7
S3	Skirt to base flange	P-03 / P-04	4.5 fillet both sides	02	C	100 % PT	SH04 D8
G1	Bonding boss M8 on the skirt O/S	CRC-V / P-03	Stud weld	02	—	1/10 bend + continuity	SH07 D12
G2	Breather boss ½ BSP, skirt 1/5 AZ 270 z ~150	316L / P-03	3 fillet all round	01	C	PT	SH33 note
F1-F4	Lift bosses (welded option)	CRC-V / P-04	Full-pen, faced after	02	C	PT	SH34
E1-E3	Jacking pads on the embed ring	CRC-V / P-05	4 fillet all round	04	C	PT	SH35
T1-T9	Stay tabs to shell inside face	P-15c / P-01a	3 fillet on the 60 edge	01	C	PT + Q15 print check	SH32
N1-N9	Rod to collar	P-15a / P-15b	3 fillet all round	01	D	Visual	SH32
X1-X3	Cartridge spider to sleeve	P-10	1.5 fillet	01	D	Visual	SH36
TR1-24	Tray frames: deck, upstands, sides, foot	P-11 x 24	3 fillets	01	D	Visual + 10 % PT	SH38
SR1	Support ring butt AZ 90	P-13	Full-pen butt FB 30 x 30	01	C	PT	SH38
PO1-4	Post foot and cap	P-12 x 4	3 fillet all round x 2	01	D	Visual	SH38
A1	Saddle to gussets	P-09a	5 fillet both sides	03	C	PT	SH37
A2	Gussets to base plate	P-09a	5 fillet both sides	03	C	PT	SH37
A3	Anchor legs to base plate	P-09a	Full-pen plug + fillet	03	C	PT	SH37

WPS	PROCESS - FILLER	JOINTS	KEY VARIABLES
01	GTAW - ER316L	316L-316L: shell, riser, skirt, stays, trays	≤0.8 kJ/mm on T5, interpass ≤150 °C, purge O ₂ ≤50 ppm
02	GTAW - ERNiCrMo-3	316L-CRC-V 1.4529: S3, bosses, bushes, G1	Low heat, interpass ≤100 °C
03	GTAW - ER2209	Duplex-duplex: bracket P-09a	0.5-1.5 kJ/mm, ferrite 30-60 %
04	GTAW - ER2209	CRC-V-duplex: jacking pads E1-E3	As WPS-03; PT after 48 h

3. SH02 mandatory sequence governs. Tabs T1-T9 are welded BEFORE closure with print-through control (copper chill, ≤ 0.8 kJ/mm); distortion survey after every gear pair; the sphere closes last at C2 with full back-purge.
2. Every seam under the film: ≤ 0.2 proud after grinding, ≤ 0.03 after polishing, hydrotest with the Q11 gauge (SH05).
3. PT to ISO 3452-1, acceptance ISO 23277 2X; ISO 5817 level per the register. Hydrotest of the pressure path at 360 kPa (F-12).

REV	DATE	DESCRIPTION	BY
D	2026-08-05	CONCEALED SKIRT ANCHORAGE, RESERVOIR + PLANT, PEBBLE COLLECTOR	NX
E	2026-08-20	REV D.2 ALIGNMENT + VISUAL QA CORRECTIONS	NX
F	2026-09-03	LOGO ENGRAVING ADDED (SH15); SHEET COUNT 14 -> 15	NX
G	2026-09-05	AUDIT CLOSE-OUT: CART 082 RF, SLOT 24, 24 TRAYS, DN80	NX
G.2	2026-09-06	PART DRAWINGS SH30-38; SLOTS AZ22.5; DOUBLER R995	NX
G.3	2026-09-06	SH37 BRACKET, SH42 WELD MAP, P-16 BELLOW; IFF	NX

SPA-F-SH42 — WELD MAP AND WELD REGISTER

DRAWN: NaXief Eng.		CHECKED: NX 2026-09-06	APPROVED: I. NAZEEF 2026-09-06	STATUS: IFF REV G.3
DATE: 2026-09-06	REV: G.3	UNITS: mm	SCALE: AS NOTED	A3 · SHEET 25/25

ISSUED FOR FABRICATION — REV G.3 · HOLD POINTS PER SH42



BALLOON LETTERS WITHOUT A NUMBER STAND FOR THE WHOLE GROUP IN THE REGISTER (W = W1-W12, T = T1-T9 ...). JOINT GEOMETRY IS ON THE SHEET NAMED IN THE REGISTER — THIS SHEET ASSIGNS WPS, QUALITY LEVEL AND NDE.