

GORE FLAT PATTERN — 12 OFF, t5 · SCALE 1:10

HARD-STAMP GORE No. + HEAT No.
INSIDE FACE, THIS ZONE ONLY

$\theta = 20^\circ + s/1000 \text{ rad}$
 $w(\theta) = 1000 \cdot \sin\theta \cdot (\pi/12)$

PLATE GRAIN || MERIDIAN

523.6 (S5 = EQUATOR)

244.35 TYP STATION PITCH

STA	s (mm)	2w (mm)	θ (°)
S0*	0	179.1	20.0
S1	244.3	292.8	34.0
S2	488.7	389.1	48.0
S3	733.0	462.3	62.0
S4	977.4	508.0	76.0
S5 =EQ	1221.8	523.6	90.0
S6	1466.1	508.0	104.0
S7	1710.5	462.3	118.0
S8	1954.8	389.1	132.0
S9	2199.2	292.8	146.0
S10 =END	2443.5	179.1	160.0

* S0 = THE 20° END (START OF s). TEMPLATES AT S2 / S5 / S8.

FORMING & FIRST ARTICLE

- Cold press-form gores on an R1000 form die; bump forming or English wheel acceptable at this quantity.
- 316L springback: trial roll R970-R985, over-form, verify on templates.
- FIRST ARTICLE'S DATE: _____ ONE _____

· SCRIBE STATIONS S1-S10 + CL MERIDIAN LIGHTLY, INSIDE FACE ONLY — NO PUNCH OR SCRIBE ON THE MIRROR (OUTSIDE) FACE.
FIGURED WIDTHS ARE NET; THE DYE CUT PROFILE INCLUDES 1/8-3/16R WELDED EDGE FOR SUBKAGE. END EDGES SQUARE NOM. TRIM TO THE CARBIM AT FIT-HUT FILE 3000 Flat x-f(1/1-1).

* S0 = THE 20° END (START OF s). TEMPLATES AT S2 / S5 / S8.

1. Cold press-form goes on an R1000 form die; bump forming or English wheel acceptable at this quantity.
2. 316L springback: trial roll R970-R985, over-form, verify on templates.
3. FIRST ARTICLE CHECK: part ONE gone, check on swed templates at S2/55/58 plus a longitudinal template (chord 800). Ply or MDF, working edge ± 0.3 , labeled with the station. Gap ± 0.5 before batch release.
4. After welding: out-of-roundness, 3 latitudes $\times$ 24 posns; R_OUT 1000 ± 3 (SH05 Q1).
5. Fit-up: go seam edge offset ± 0.5 ; tack balanced 180° opposing with the purge in place. Dressed seams ± 0.03 proud/recessed, blend ≥ 7 —FILM-GOVERNED (SH15 note 1), acceptance SH05 Q11.

TOP CAP — PLAN (1 OFF) · SCALE 1:15

BOTTOM CAP SECTION WITH INTERNAL DOUBLER COLLAR · SCALE 1:5

3. FIRST ARTICLE GAGE: form ONE gore, check on sweep templates at S2/S5/S8 plus a longitudinal template (chord 800). Ply or MDF, working edge ± 0.3 , labelled with the station. Gap ≤ 0.5 before batch release.

4. After welding: out-of-roundness, 3 latitudes $\times$ 24 posns; R_OUT 1000 ± 3 (SH05 Q1).

5. Fit-up: gore seam edge offset ≤ 0.5 ; tack balanced 180° opposing with the purge in place. Dress seams ≤ 0.03 proud/recessed, blend ≥ 7 — FILM-GOVERNED (SH15 note 1), acceptance SH05 Q11.

PROHIBITED — INTERNAL STIFFENING

· NO INTERNAL STIFFENING RINGS, RIBS, FOAM OR MASS FILL. THE 5 mm SHELL IS VERIFIED ADEQUATE WITHOUT THEM AND STIFFENERS WILL PRINT THROUGH THE #8 MIRROR.

TOP CAP — PLAN (1 OFF) · SCALE 1:15

BOTTOM CAP SECTION WITH INTERNAL DOUBLER COLLAR · SCALE 1:5

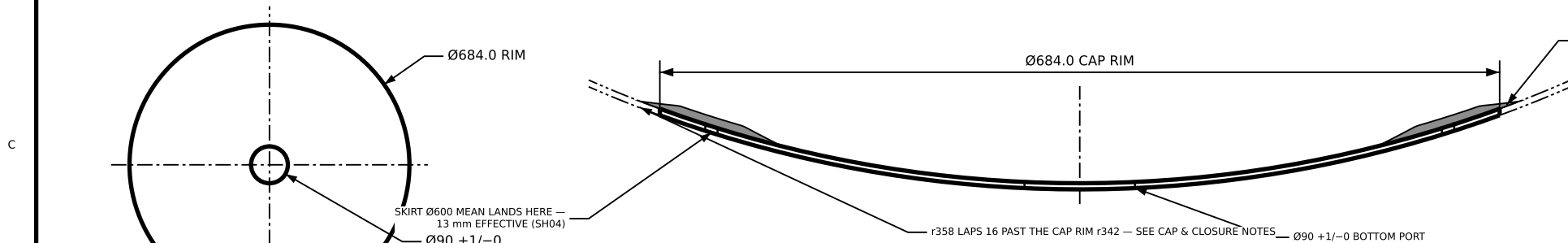
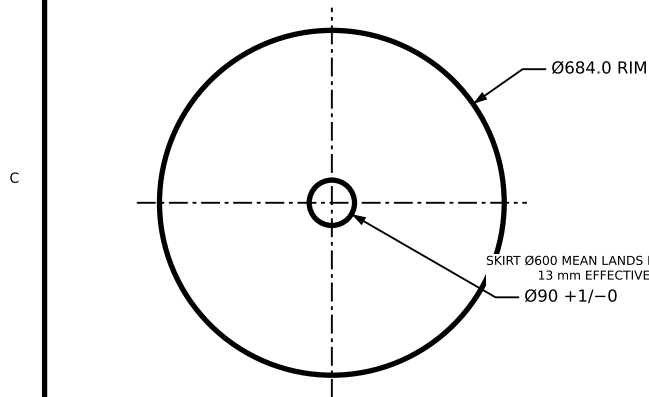
3. FIRST ARTICLE GAGE: form ONE gore, check on sweep templates at S2/S5/S8 plus a longitudinal template (chord 800). Ply or MDF, working edge ± 0.3 , labelled with the station. Gap ≤ 0.5 before batch release.

4. After welding: out-of-roundness, 3 latitudes $\times$ 24 posns; R_OUT 1000 ± 3 (SH05 Q1).

5. Fit-up: gore seam edge offset ≤ 0.5 ; tack balanced 180° opposing with the purge in place. Dressed seams ≤ 0.03 proud/recessed, blend ≥ 7 — FILM-GOVERNED (SH15 note 1), acceptance SH05 Q11.

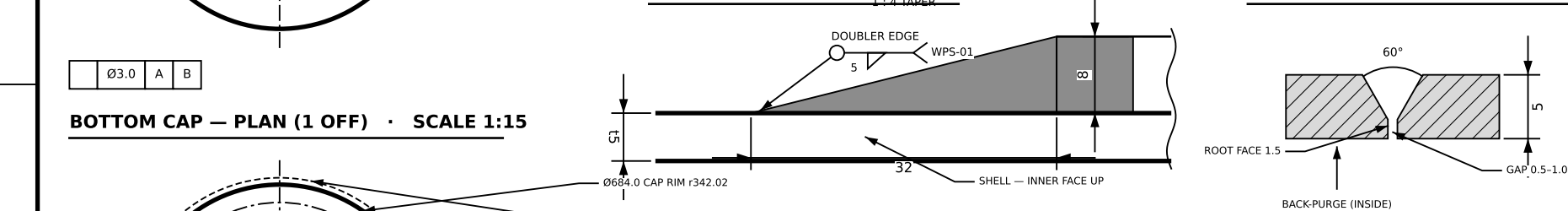
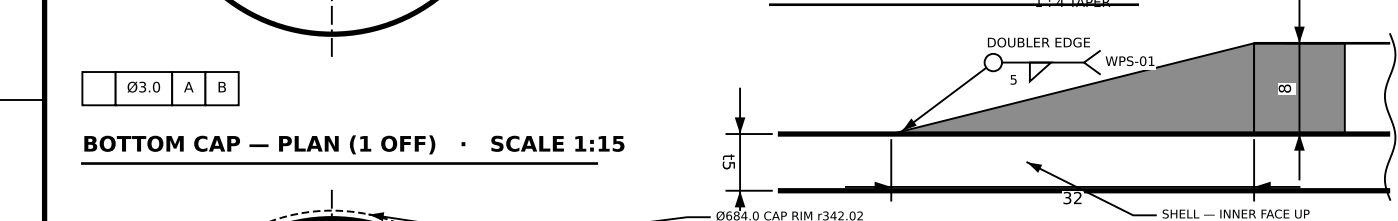
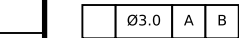
PROHIBITED — INTERNAL STIFFENING

· NO INTERNAL STIFFENING RINGS, RIBS, FOAM OR MASS FILL. THE 5 mm SHELL IS VERIFIED ADEQUATE WITHOUT THEM AND STIFFENERS WILL PRINT THROUGH THE #8 MIRROR.

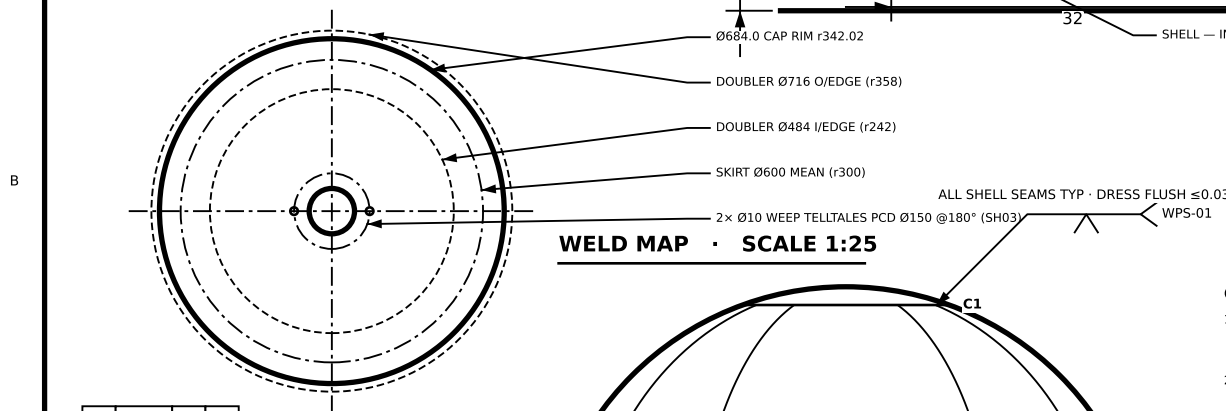


DOUBLER EDGE • SCALE 1.5:1

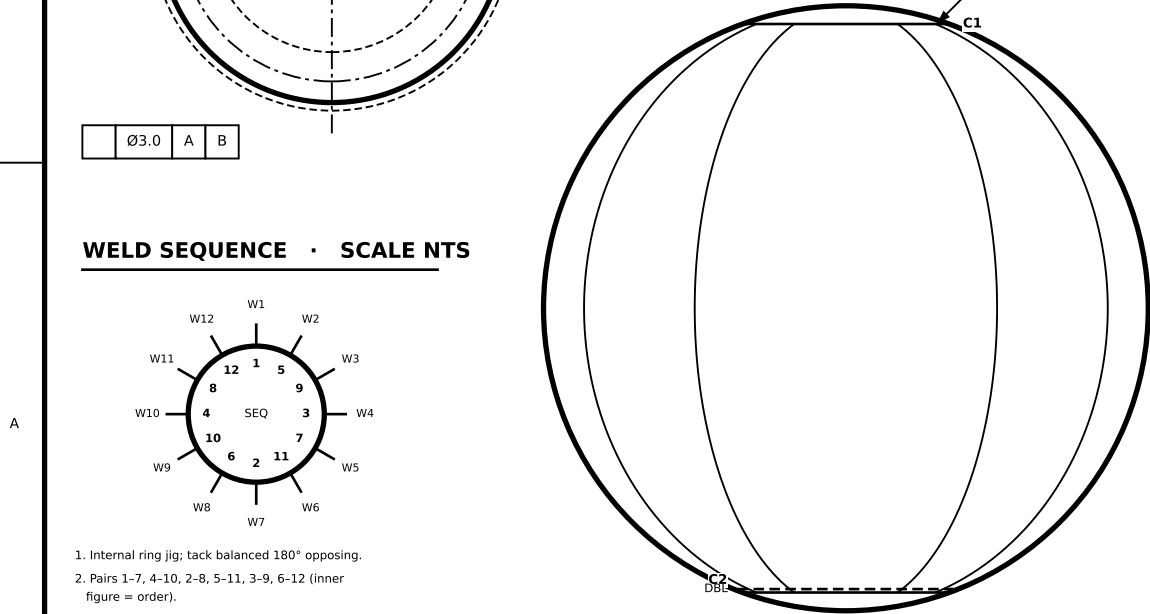
DOUBLER EDGE • SCALE 1.5:1



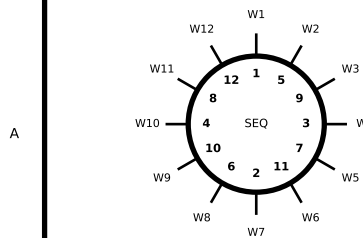
BOTTOM CAP — PLAN (1 OFF) · SCALE 1:15



WELD MAP • SCALE 1:25



WELD SEQUENCE · SCALE NTS



1. Internal ring jig; tack balanced 180° opposing.
2. Pairs 1-7, 4-10, 2-8, 5-11, 3-9, 6-12 (inner figure = order).
3. Interpass $\leq 150^{\circ}\text{C}$. Cap seams C1/C2 LAST.
4. Dress ≤ 0.2 proud, 100 % PT (SH05); blend to ≤ 0.03 before polish (Q11).

CAP & CLOSURE NOTES

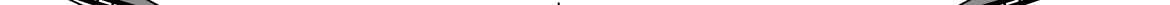
-
- CAP & CLOSURE NOTES**
1. TOP CAP IDENTICAL EXCEPT: NO DOUBLER, NO WEEPS. Both caps spun to R1000 O/S from a Ø698.1 blank (cap_blank.dxf); holes drilled after spinning. Crown rise 60.3 ref.
 2. SEAM C2 — the doubler outer 16 mm laps the cap/gore seam. Weld the doubler to the cap over r242-330 ONLY; the r330-358 band is left unfused and acts as permanent backing to C2, which is then a backed full-penetration butt made from outside.

W8 W7 W6

CNC CUT DATA (1:1 mm)

1. Internal ring jig; tack balanced 180° opposing.

PROHIBITED — INTERNAL STIFFENING

- 
- PROHIBITED — INTERNAL STIFFENING**
- NO INTERNAL STIFFENING RINGS, RIBS, FOAM OR MASS FILL. THE 5 mm SHELL IS VERIFIED ADEQUATE WITHOUT THEM AND STIFFENERS WILL PRINT THROUGH THE #8 MIRROR.

DOUBLER EDGE · SCALE 1.5:1 **SHELL BUTT PREP · SCALE 2:1** **IMPACT — THE THRESHOLD IS ENERGY**

- DOUBLER EDGE · SCALE 1.5:1**
1/4 TAPER

SHELL BUTT PREP · SCALE 2:1

60°

FABRICATION SEQUENCE – MANDATORY

- WELD MAP · SCALE 1:25**

DOUBLER Ø716 O/EDGE (r358)

DOUBLER Ø484 I/EDGE (r242)

SKIRT Ø600 MEAN (r300)

2x Ø10 WEEP TELTALS PCD Ø150 @180° (SH03)

ALL SHELL SEAMS TYP · DRESS FLUSH ≤0.03

WPS-01

BACK-PURGE (INSIDE)

· SQUARE GROOVE (GTAW BOTH SIDES) PERMITTED AT T5
 — WPS-01. DRESS ≤0.2 PROUD AFTER WELDING, THEN BLEND TO ≤0.03 BEFORE POLISH (Q11).

FABRICATION SEQUENCE — MANDATORY

 1. MACHINE THE BASE FLANGE SOFFIT FLAT.
 2. WELD THE FLANGE TO THE SKIRT.
 3. RE-MACHINE THE FLANGE SOFFIT FLAT — the only stage at which it is a manageable turned part.
 4. WELD THE SKIRT/FLANGE ASSEMBLY TO THE LOOSE BOTTOM CAP, INTERNAL COPPER CHILL. The doubler collar is already welded to that cap.
 5. CLOSE THE SPHERE LAST (SEAM C2) WITH FULL ARGON BACK-PURGE.
 6. GRIND FLUSH TO ≤0.03 (FORMING & FIRST ARTICLE), THEN POLISH.
 7. MARK EACH PART WITH ITS SH05 PIECE MARK BEFORE RELEASE — LOW-STRESS VIBRO-ETCH OR LASER, CONCEALED FACE. NO HARD STAMPING.

1. TOP CAP IDENTICAL EXCEPT: NO DOUBLER, NO WEEPS. Both caps spun to R1000 O/S from

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 FB, 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 BELLOWES; IFF	NX

SPA FOUNTAIN – B7 SPA, MALDIVES

SPA-F-SH02 — SHELL FABRICATION — GORES, CAPS, WELD MAP

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 2/25							

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

WORK TO FIGURED DIMENSIONS · ISO 2768-mK U.O.S.