



# **CRAB CAVITIES – WELDING PROGRESS**

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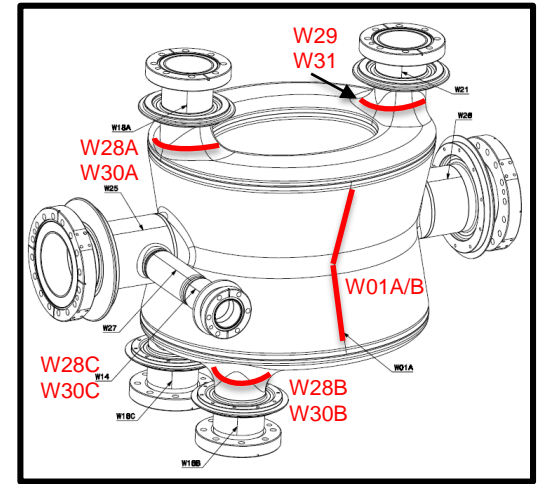
CERN – 31/10/2016

# CAVITY-DQW

## WELDING DURING FORMING

### DIABOLO

W01A/B Longitudinal welds 3 diabolos (6 long.): 2 Cavities+ 1 spare



### LUNETTE

W28A/B/C & W29 Longitudinal “manchette” (x12) + W30A/B/C & W31 circumferential “manchette-Lunette” (x12)

TOP

BOTTOM



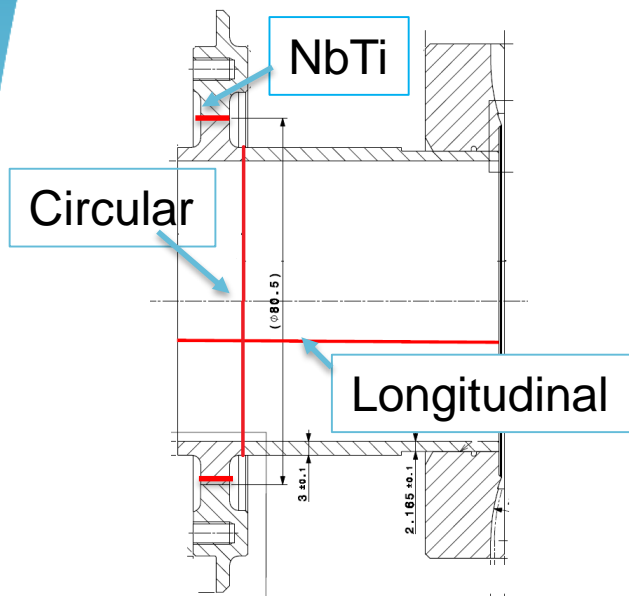
6 Lunettes:

4(Tokyo Denkai): 2 cavities+1 spare  
2(Test - Ningxia)

**100% VISUAL & RADIOGRAPHIC EXAMINATION  
RESULTS SATISFACTORY according EN13919 level B**

# EXTREMITIES-DQW

ALL WELDS FOR EXTREMITIES DONE: 2 cavities + 1 Spare



LONGITUDINAL (x27) - 100% RX



CIRCULAR NbNb (x16) - SPOT RX (25%)



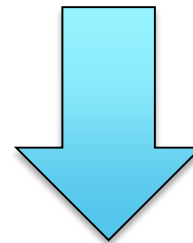
RADIOGRAPHIC EXAMINATION  $\longrightarrow$  SATISFACTORY

## ➤ Nb-NbTi WELDS

BEAM PIPE, HOM'S & FPC Nb-NbTi in 8mm  $\longrightarrow$  6.4mm after machining



**100% VISUAL & 25% RADIOGRAPHIC EXAMINATION RESULTS SATISFACTORY according EN13919 level B EXCEPT IN 2 ANTENNA PIECES**



ANTENNA Nb-NbTi for extremities in 4mm

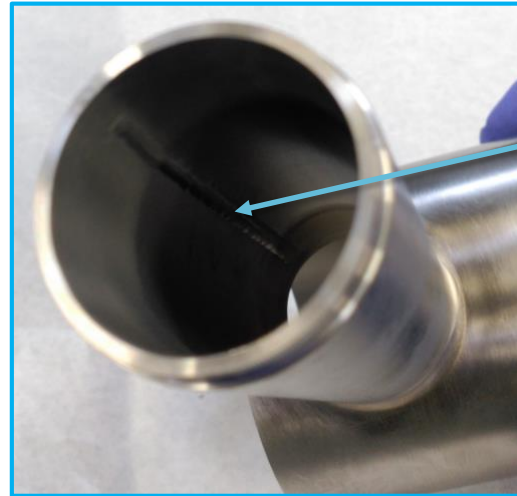


1 local defect found in the overlap  
Undercut measured: 1.7mm

“Compacite” weld: Very good

Leak test done: SATISFACTORY

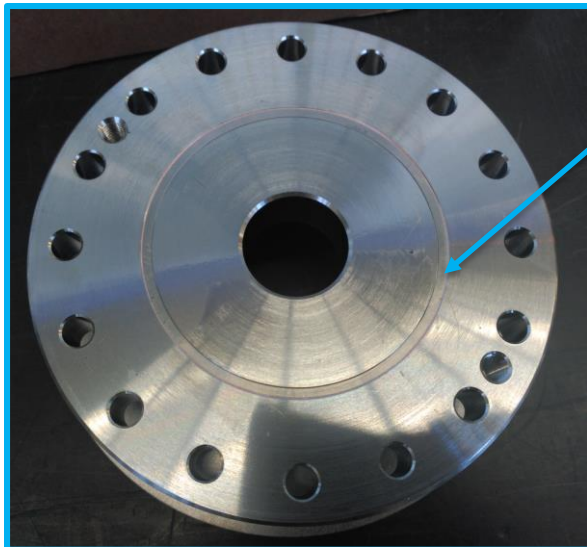
➤ PICK-UP ANTENNA (2+1 SPARE)



EXCESS WELD PENETRATION  
MEASURED 0.3mm  
SMOOTH INTERNAL SURFACE

➤ BRAZING S.S flange-NIOBIUM

BEAM PIPE PIECES (X4) DONE

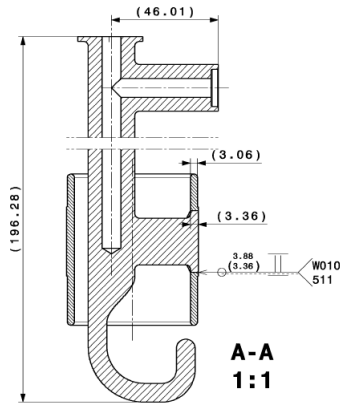


VISUAL INSPECTION SATISFACTORY

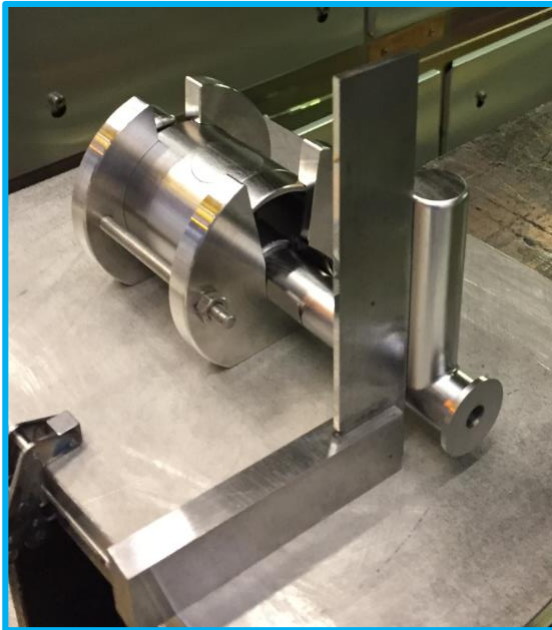


# HOM-DQW

W010 FOR ALL PIECES (X8) DONE



Tooling for welding



Maximum excessive weld metal penetration measured 0.3mm



Manual Polishing on-going to remove some spatters and smooth the internal surface



***Thanks for your attention  
Questions???***

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