Final Mechanical Assembly Procedure

Testing and Process-Singapore Well Testing Centre-Vx Spectra

Introduction

This SWI consists of steps for the completion of final wiring and mechanical assembly for Vx Spectra.

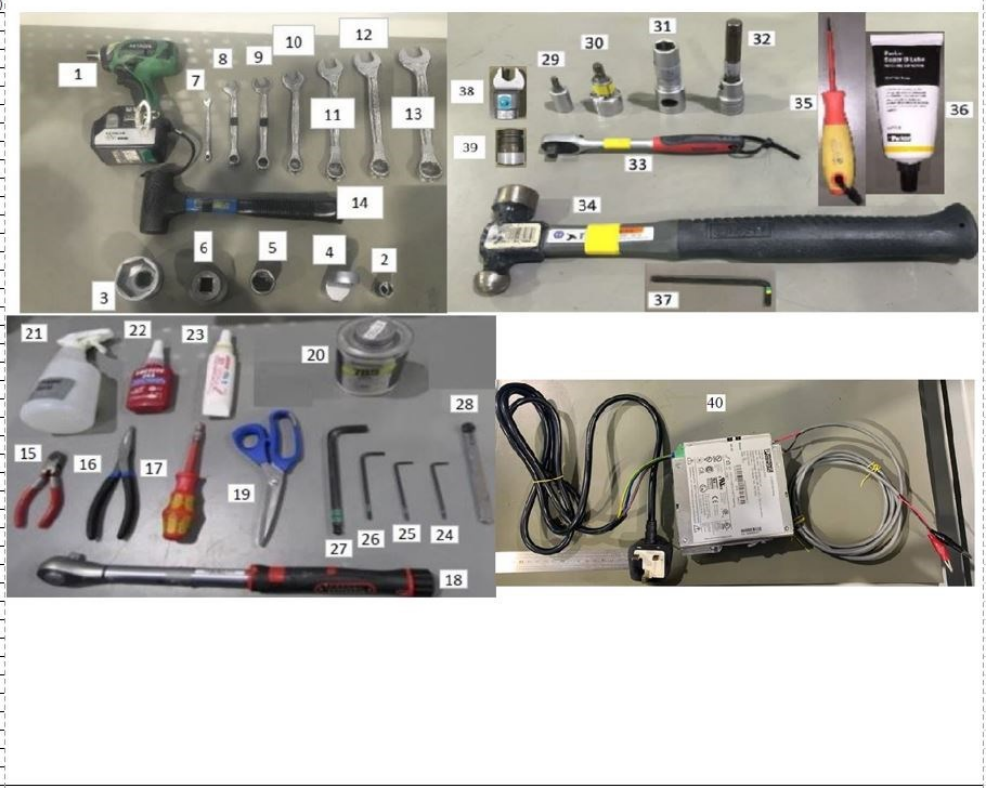
i Do not use loctite on metric threads that require torque. Use Chesterton instead. For all NPT threads use 2 rounds of teflon. For threads take caution to ensure there is no cross threading. Stop and re-assess if there could be a possible cross-theading. Approack Supervisor/ME if required. In the assembly take care during assembly of O-ring or IP gaskets. If these squeez out, stop the process and report to Supervisor/ME.

Steps

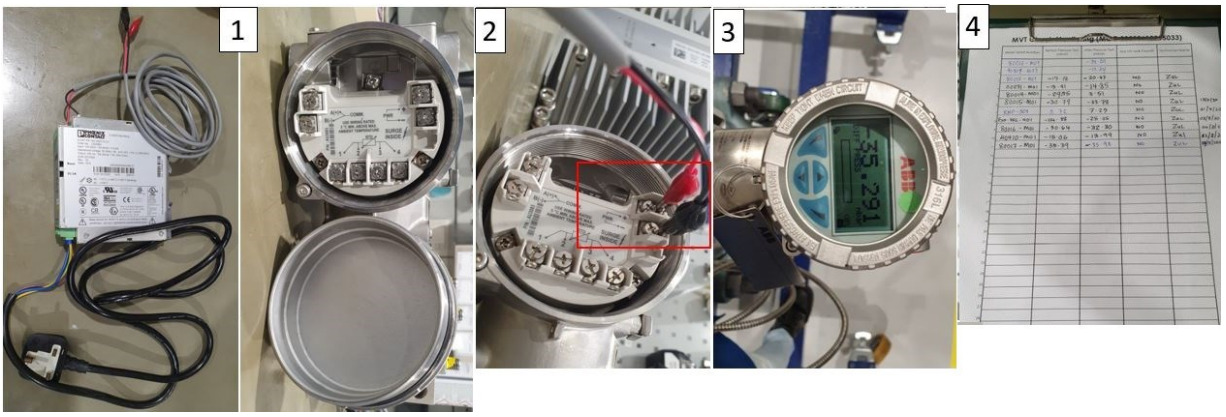
1 Tools needed:

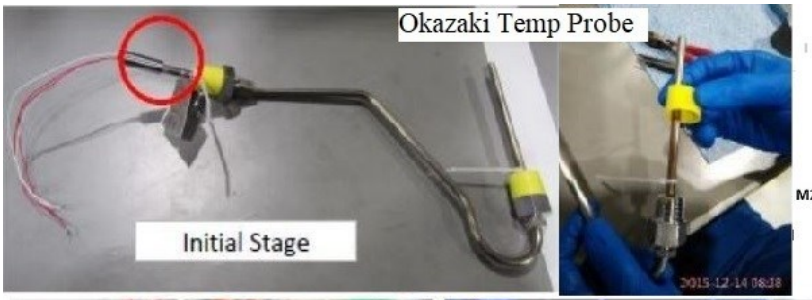
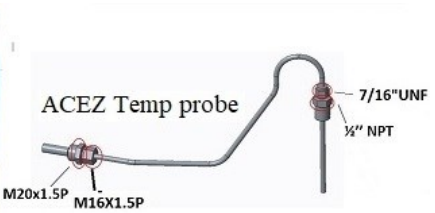
No	Description
1	Impact Wrench (Battery Operated)
2	16mm Socket
3	24mm Open Socket
4	27mm Socket
5	41mm Socket
6	46mm Socket
7	8mm Wrench
8	14mm Wrench
9	16mm Wrench
10	19mm Wrench
11	23mm Wrench
12	24mm Wrench
13	27mm Wrench
14	Mallet
15	Wirecutter
16	Long Nose Plier
17	13mm Philips Screwdriver
18	Torque Wrench
19	Scissor
20	Chesterton 785
21	Alcohol
22	Loctite 242
23	Loctite 577
24	2.5mm Allen Key
25	3mm Allen Key
26	4mm Allen Key
27	10mm Allen Key
28	Feeler Gauge
29	T30 Torx Socket
30	M6 Allen Key Socket
31	1/2 inch Hex Socket
32	M14 Allen Key Socket
33	Socket Wrench
34	Hammer
35	Screw Driver
36	S-lube (O-Ring Lubricator)
37	6mm Allen Key
38	14mm Open Ended Socket
39	19mm Hex Socket
40	MVT power-up test setup
41	7/8 inch wrench
42	9/16 inch wrench
43	19mm Spanner

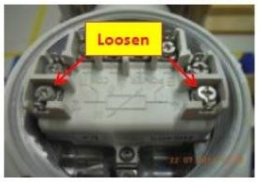
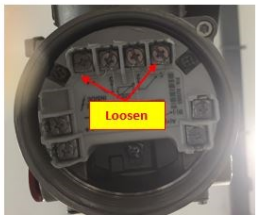
Picture



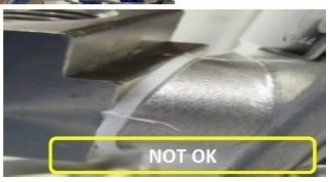
MVT DPV test for MVT

Steps		
	2a	Prepare the 24V power supply and open the MVT cover.
	2b	Connect the RED WIRE of the power supply to the (+) connection of the MVT.
	2c	Connect the BLACK WIRE of the power supply to the (-) connection of the MVT.
	2d	Turn ON the power supply and check the MVT reading (it will take few seconds to refresh).
	2e	Record MVT display reading on the monitoring sheet.
	2f	For 2/3/4/6 inch Vx Spectra, MVT reading shall be with +/- 25 mbar. If MVT reading is not acceptable, stop and raise Test Fail Log in PLQS.
	2g	For 8 inch Vx Spectra, there is no acceptance criteria. Continue with procedure
		
⚠	**Prior to preparing the temperature probe, check that the torque markings at the autoclave, detector/source side, isolation blocks and thermowell are present. Ensure ACEZ probe has black bonded seal at M20 adaptor.**	
Step 3		

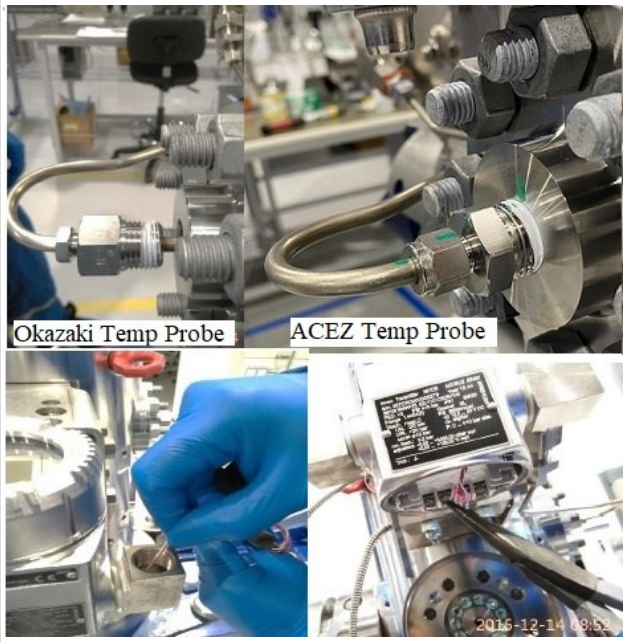
Steps		
	3a	For Okazaki Temp Probe, prepare the probe by removing the yellow protective cover.
	3b	For ACEZ ATEX Temp Probe, ensure all components as per picture.
	3c	For Okazaki, apply clear type heat shrink 60mm length at the starting point of each wire.
	3d	For ACEZ, first apply clear type heatshrink 15mm length at the starting point of each wire and then apply single black heat shrink 45mm length from starting point of wire together.
	3e	Remove the nameplate and tie it back as shown in the picture.
		   
		Please ensure to not over-heat the wires since this might burn the wire insulation. Starting point refers to the point on temp probe where the potting ends and wires are visible.
Step 4		

Steps			
	4a	Insert ferrule onto the wire and crimp by using a crimp tool as shown in the pictures.	 
	4b	Using a 3mm Allen Key, tighten the lock screw on the MVT	
	4c	Open up the MVT cover.	
	4d	Remove the resistor by loosening 2 screws with a 13mm philip head screw driver as shown in the picture.	MVT267  
	4e	Remove the plastic cap at the side of the MVT as shown in the picture.	MVT266  
Step 5			

Steps

5a	Remove the plastic cap at the side of the MVT	
5b	Assemble one 3.75mm IP gasket (102908372) at the 90 degree adaptor thread.	
5c	Apply small amount of chesterton onto the threads of the 90 degree adaptor.	
5d	Assemble the 90 degree adaptor onto the MVT threads.	
5e	Note the starting thread point and then handtighten the 90 degree adaptor.	 
5f	Make a judgement by refering to the 90 degree adaptor assembly guideline as shown in the picture and assess if the final angle can be achieved.	
5g	If not achievable, select a different 90 degree adaptor and perform the assessment.	
5h	If achievable, use a 27mm torque wrench at the shorter side of the adaptor and tighten with progressive torque values as detailed below. Torque Value: Min 8Nm, Max 32Nm and ensure that the required orientation is met.	

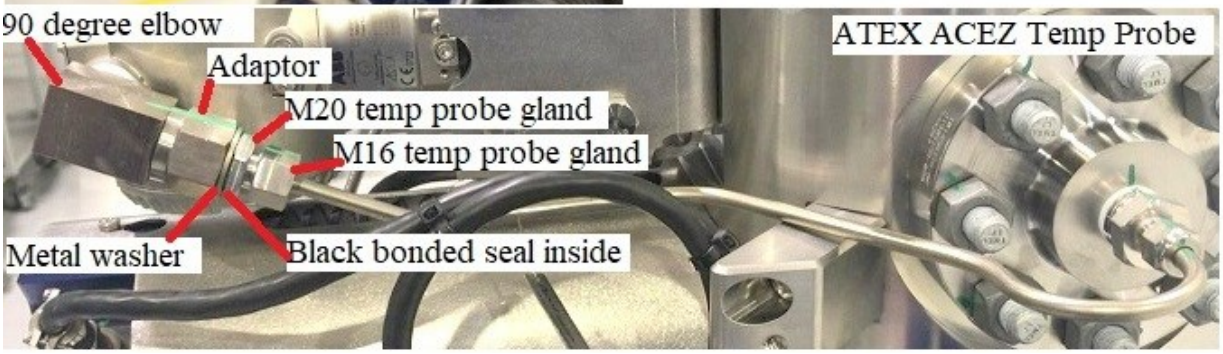
Steps	
i	Make sure the gaskets are in compression, but not over-compressed (refer to OK and NOT OK pics)
i	Do not use loctite for the 90 degree adaptor threads. For torque application on 90 degree adaptor, start with 8Nm and in steps of roughly 5Nm until max of 32Nm. Once alignment is achieved within the 8-32Nm range, this assembly is considered completed.
⚠	**Do not apply chesterton or loctite on the temperature probe gland.**

Step 6 (Okazaki & ACEZ)			
	6a	Take the temperature probe with the gland.	
	6b	Apply 2 rounds of teflon tape around the NPT threads.	
	6c	Insert the tip of the temperature probe into the thermowell.	
	6d	Hand tighten the gland as shown in the picture.	
	6e	At the other end of the temperature probe, slowly insert the 4 wires through the 90 degree adaptor installed in the previous step.	
	6f	Slowly pull the wires out from the MVT with the help of a plier as shown in the picture.	
i	Teflon tape is applied in the opposite direction as the assembly. i.e if assembly part is clockwise then tape will be apllied in anticlockwise. Apply Teflon tape after the first 2 threads.		

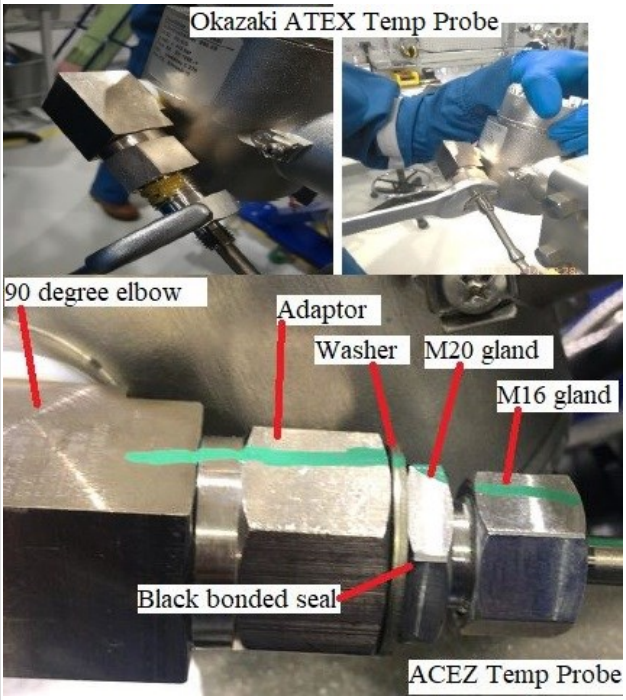
Step 7

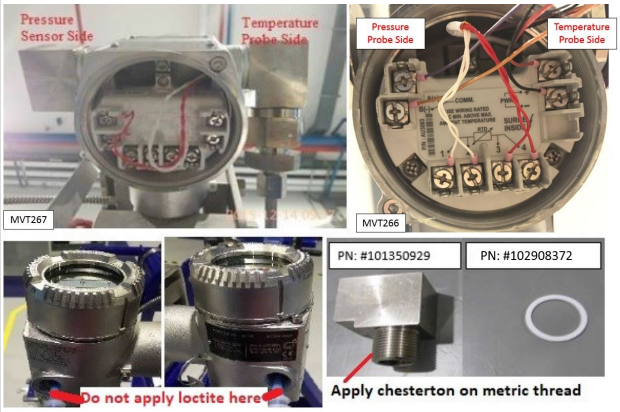
Steps		
	7a	Use a 27mm wrench to hold the 90 degree adaptor at the shorter side and turn to achieve an orientation such that an angle of 20 to 25 degrees to the horizontal is achieved after inserting the tip as shown in the picture.

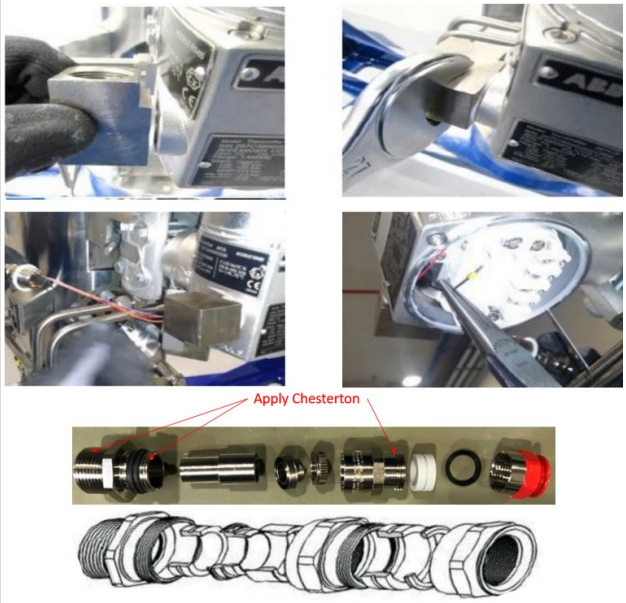
Steps		
	7b	For Okazaki, tighten the 1/2inch gland nearest to the thermowell with a 24mm wrench to achieve minimum 5 threads engagement.
	7c	For ACEZ, tighten the 1/2inch gland nearest to the thermowell with a 7/8inch wrench to achieve minimum 5 threads engagement.
	7d	For Okazaki/ACEZ, Apply Chesterton 785 on the straight adaptor (M25 Male to M25 female) used on the Temp Probe at MVT side. Torque tighten the gland at the 90 degree adaptor to 32.5 Nm using a 27mm open-ended calibrated torque wrench. (Note: Use adapter PN:101350928 and not the gland from temperature probe)



Steps			
	For the temp probe gland, ensure that minimum 5 threads engagement is achieved and mark with green marker. (Count the number of threads before and after to ensure minimum 5 threads are engaged)		
	Probe tip shall have surface contact with insdide tip of thermowell to get the correct temperature measurement. You can hear a sound (Metal contact) when the probe touches the thermowell. Do not intermittently push/release the temp probe to check for contact as this will damage the temp probe.Gently and slowly push the probe.		
Step 8			
	8a	For Okazaki, gently and slowly push the tip into the thermowell such that the tip makes contact with the thermowell tip inside and fully tighten the smaller gland with a 14mm wrench as shown in the picture.	 For Both Temp Probes
	8b	For ACEZ, gently and slowly push the tip into the thermowell such that the tip makes contact with the thermowell tip inside, hand tighten the 7/16inch fitting with a 9/16inch wrench and then wrench tight to 1.25 turns.	 For ACEZ Temp Probe Scribe the nut at the 6 o'clock position and wrench-tighten the nut 1 1/4 turns to the 9 o'clock position, holding the body with a back up wrench.
	Ensure that the probe is not loose after tightening.		
Step 9			

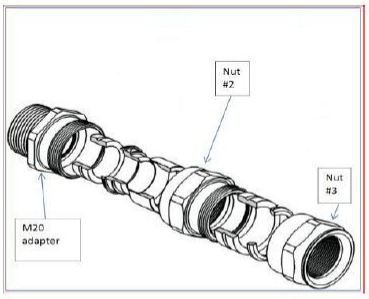
Steps			
	9a	Apply Loctite 577 on the M20 gland at the MVT side. For ACEZ ensure this gland has black bonded seal.	
	9b	For Okazaki, use a 27mm spanner to hold the previous gland from rotating and torque tighten the Temp probe M20 gland to 90Nm using a 27mm open-ended calibrated torque wrench.	
	9c	For ACEZ, use a 27mm spanner to hold the previous gland from rotating, hand tighten the M20 Temp probe gland and then apply 3/4 turn wrench tight using a 27mm open-ended spanner or equivalent.	
	9d	For Okazaki, torque tighten the third smaller gland and M20 temp probe gland to 35Nm using a 14mm open-ended calibrated torque wrench.	
	9e	For ACEZ, hand tighten the M16 nut and then apply 3/4 turn wrench tight using a 19mm open-ended spanner or equivalent.	
i	Before applying the 90Nm, ensure to use a open ended spanner to lock the gland that was previously torqued to 32.5Nm.		
i	All steps that require Loctite silver grade will be replaced with chesterton.		
Step 10			

Steps			
	10a	Connect all Thermometer Probe wires using a 13mm philips screwdriver as shown in the picture	
	10b	Prepare 90 degree adaptor and gasket as shown in the picture.	
	10c	Use chesterton on the 90 degree adaptor/MVT threads.	
i	Do a quick pull test to ensure that the wires do not come off easily after tightening.		
i	Do not apply loctite on the 90 degree adaptor/MVT metric threads.		
Step 11			

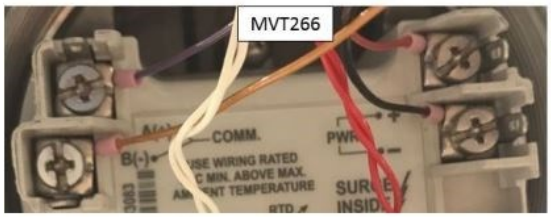
Steps			
	11a	Assemble one 3.75mm IP gasket (102908372) at the 90 degree adaptor thread. Apply small amount of Chesterton onto the threads of the 90 degree adaptor.	
	11b	Install the 90 degree adaptor with the white gasket and hand tight using a 27mm wrench.	
	11c	Ensure that the 3mm IP gasket on the MVT harness cable gland is present and apply a small amount of Chesterton on the cable gland threads. Refer to picture for the locations.	
	11d	Insert wires into the elbow with the help of a long nose plier as shown in the pictures.	
	Verify the Assembled Cable Wire Fiberoptics PN #101507681 from Cell 4F was completed. When using a plier be extra caution not to damage the wire due to any sharp edges within the MVT enclosure.		
	Take note that torque of 12.5Nm is required at adaptor (M20) for MVT side, the nut areas (Nut#2 and Nut #3). Confirm that the gasket/washer at M20 adaptor does not flush out. Confirm that the rubber seal at nut#3 does not pop out.		
Step 12			

Steps

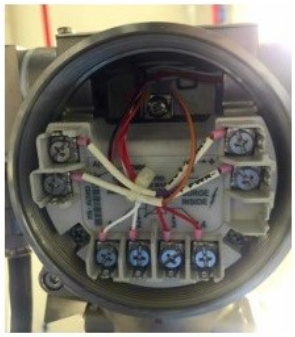
	12a	Install the MVT harness cable gland onto the 90 degree adaptor using 19mm and 24mm wrench as shown in the picture.
	12b	First, apply a torque of 12.5 Nm on the M20 adaptor using a 24mm open-ended calibrated torque wrench.
	12c	If the white gasket flushes out, replace with a new gasket and apply torque in steps of 7Nm, 10Nm, 11Nm and 12.5Nm.
	12d	Apply a torque value of 12.5Nm on the nut #2 using a 19mm open-ended calibrated torque wrench. (Block the M20 adaptor with a normal 24mm wrench to prevent further rotation of the M20 adaptor)
	12e	Finally, apply a torque value of 12.5Nm on the nut #3 using a 19mm open-ended calibrated torque wrench. (Block the nut #2 with a normal 19mm wrench to prevent further rotation of the nut #2)
	12f	Make sure the gaskets are in compression, but not over-compressed (refer to OK and NOT OK pics)



Steps	
i	Due to limitation of torque wrench setting, in order to apply 12.5Nm the torque can be set between 12Nm and 13Nm.
Step 13	
13a	Loosen all 4 screws and refer to the table and picture to make the connections.
13b	Ensure that all the wires inside the MVT are routed and secured in the middle using a cable tie as shown in the picture.

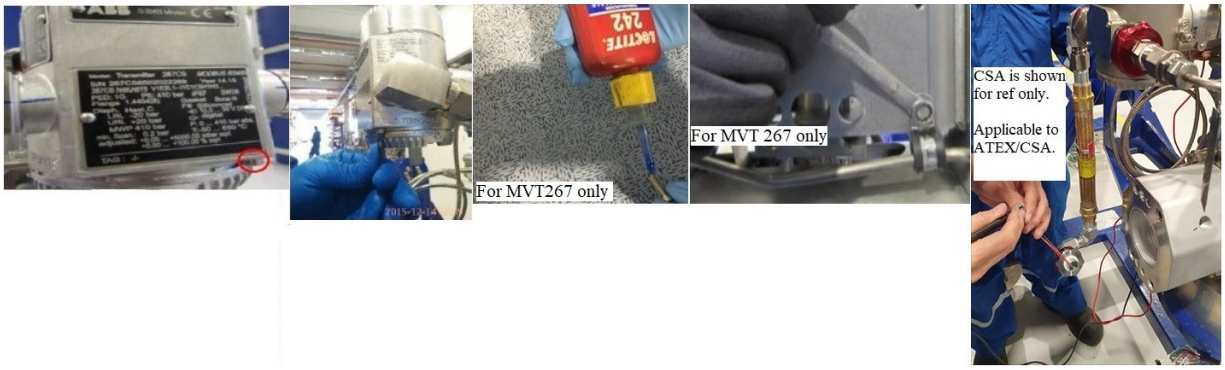
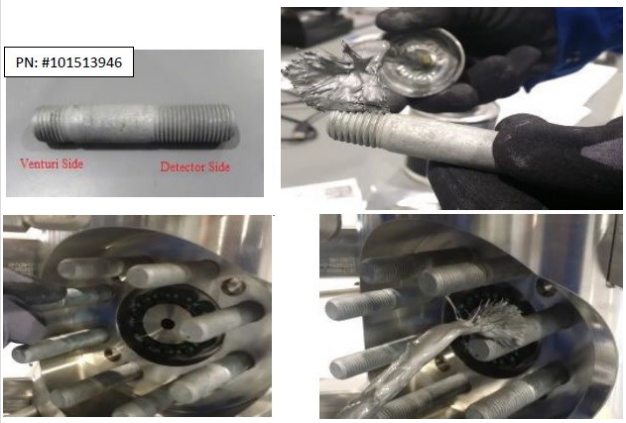


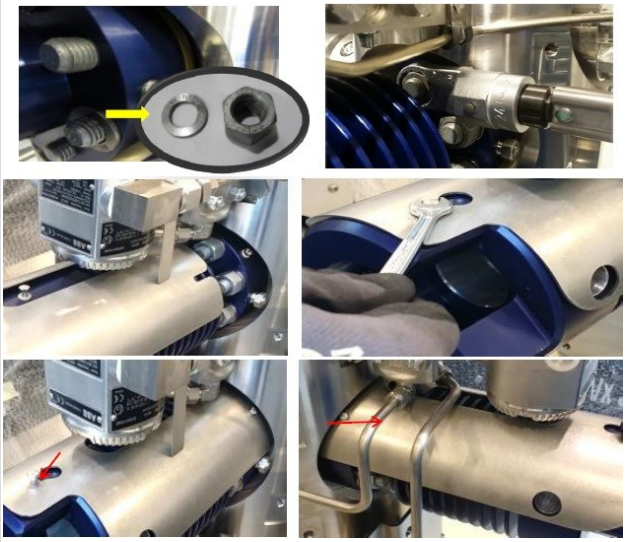
Wire	Terminal	Label Name
BLK	PWR-	MVT_PWR -
RED	PWR+	MVT_PWR +
ORG	COM-	MVT_RS-485 D-
PURP	COM+	MVT_RS-485 D+

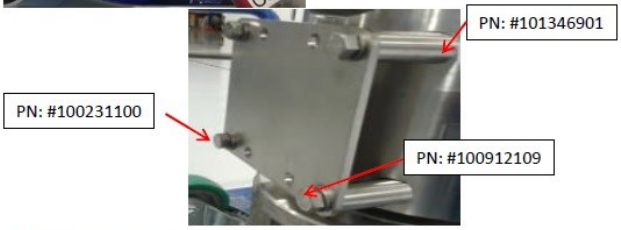


Wires routed and secured with cable tie in middle of MVT housing

i	Make sure each wire is connected in the proper location. Ensure that the wires do not come off easily after tightening by performing a quick pull test.
i	Do a grounding test using multimeter to ensure no wires are shorted/grounded.
Step 14	

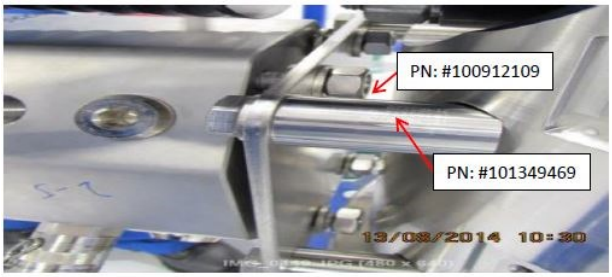
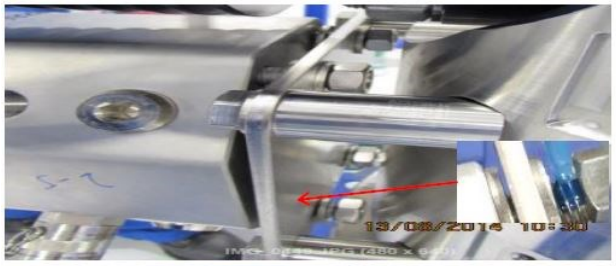
Steps		
	14a	After MVT Wiring was completed, install the MVT cover and secure it by loosening the lock screw using a 3mm Allen Key
	14b	Perform continuity test on the MVT harness to ensure no wires are shorted after the MVT bottom cap installation.
	14c	Apply a thin layer of Loctite 242 on the M5 screw (101231027)
	14d	Only for MVT267 - Install the Rubber Clip (101489750) on the Temp Probe side onto the MVT Bracket using a M5 screw (101231027).
	14e	Tighten using a 8mm wrench
		
i	For MVT266, due to the difference in dimension, Rubber Clip PN 101489750 cannot be assembled together with temp probe. For MVT266, this part is not required. If issued to WO, get assistance from ME/Supervisor.	
Step 15		
	15a	Apply a thin film layer of Chesterton 785 on one side of all the studs as shown in the picture.
	15b	Hand tighten stud bolt onto the venturi's detector side as shown in the picture.
	15c	Apply a thin film layer of Chesterton 785 to the other end of the studs as shown in the picture.
		

Steps		
		Ensure that the marking on the studs is visible from the outside.
		Check orientation of the O-Ring and Backup Ring as shown in the picture. Ensure O-ring & backup ring is seated properly.
16		Hold the detector in the horizontal postion and slowly push the detector housing in place as shown in the picture. 
		When pushing the detector check for any sounds. Usually If back-up rings breaks there would be a sound. If any doubt, open-up and double check.
Step 17		
	17a	Insert the washer and apply Chesterton 785 on the stud. 
	17b	Assemble the nuts and tighten using a 24mm wrench in criss-cross pattern.
	17c	Use an open ended socket with calibrated torque wrench set to 76Nm and complete the torquing in the same criss-cross pattern.
	17d	Slide in the detector housing sunshade, assemble the washer and tighten the screws using a 8mm wrench as shown in the pictures.
		Ensure that the detector housing sunshade is placed on top of the washer.
Step 18		

Steps			
	18a	Apply Loctite 242 to the internal thread as shown in the picture.	
	18b	Prepare mounting plate with 4 screws, washer and spacer as shown in the picture.	
	18c	Using a torque wrench, torque to 36 Nm as shown in the picture.	
⚠	**Applicable only for ROTA Connector: Check and confirm there is no visual gap at the ROTA connector-Mounting base interface. This is because the instructed 10Nm is not achievable as wrenchcannot fit into the tight space (ECR 103004946)**		
Step 19			

Steps			
	19a	Insert four screws to the mounting base as shown in the top picture.	
	19b	Insert four washers at the end of the four screws as shown in the top picture.	
Step 20			

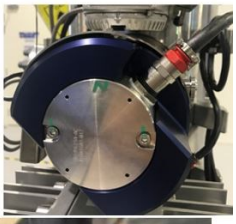
Steps

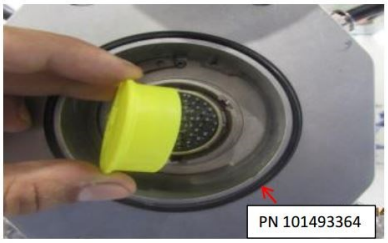
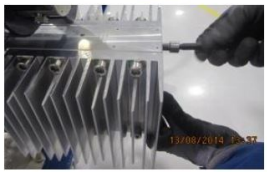
	20a	Mount mounting base to the mounting plate and insert washer with nuts as shown in the picture.	
	20b	Apply Loctite 242 on the 4 screw thread as shown in the picture.	
	20c	Using a 10mm allen key with the help of a 19mm wrench, fully tighten the screw.	
i	During the assembly of the mounting base, first insert the bottom two nuts with washer to hold the mounting base in place during the assembly of the remaining nuts and washers.		

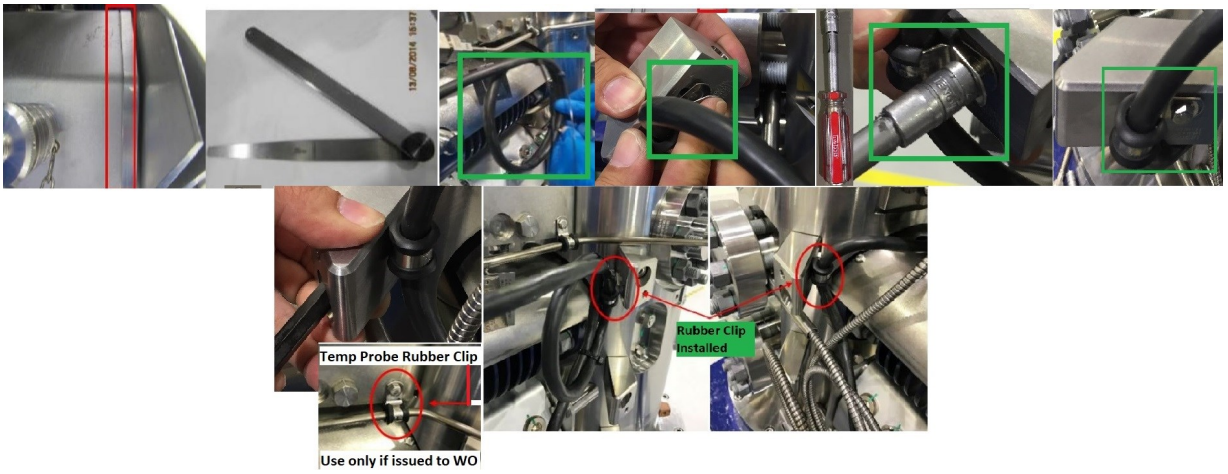
Step 21

Steps			
	21a	Align scintillation pin with detector holder and press in the 2 pins by hand at detector holder side to sit inside the slot.	  
	21b	Double check that all the Co-axial pins are not bended by Install - Remove-Inspect - Install Again process.	
⚠	**ENSURE THAT THE SPRING PLUNGER IS CONFIRMED ENGAGED (FULL ENGAGEMENT) PROPERLY.**		
Step 22			

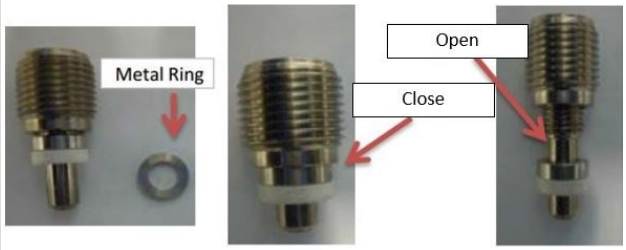
Steps			
	22a	Make sure that the scintillation has fully sit in such that the spring plunger is fully engaged as shown in the picture. Else re-do.	
	22b	Insert O-Ring as shown in the picture.	
Step 23			

Steps			
	23a	Detector holder must always be female port as shown in the picture.	
	23b	Record serial number of scintillation detector on the work order traceability.	
	23c	Install detector holder to the detector housing as shown in the picture.	
Step 24			
	24a	Apply a thin film layer of Chesterton 785 on the screw thread before tightening the 2 screws using a 4mm allen key.	 
	24b	Torque both screws to 2Nm.	 
	24c	Slide the locking pin into the slot and temporary lock it with a cable tie as shown in the picture.	
	24d	Using a 5/8" Hex socket with calibrated torque wrench set to 40.6Nm to torque the autoclave at the detector holder and housing.	

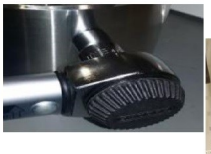
Steps			
	Use clean gloves when handling the scintillation detector, as it is fragile no shocks allowed to this part.		
25	Follow 101589416 to complete nitrogen purging on the MK4		
Step 26			
	26a	Apply S-Lube on the O-ring and assemble on the mounting base.	 
	26b	Remove the yellow Souriau protective cover from the mounting base.	
	26c	Check the protrution of the set screw. The Set screw should be flushed to the area between the plate and ring and should not protrude outside the ring.	  
	26d	Align the MK4 and mount with the help of the 2 guiding pins.	
	26e	Tighten the MK4 with washer and screws using a 10mm allen key as shown in picture.	
	Take a small quantity of S-Lube and apply over the O-ring. Do not apply too much lubricant.		
	For positioning and aligning of the MK4, support the bottom of MK4 with hand. This will help to align threads and prevent cross threads when screw is assembled.		
	Use a 0.09mm feeler gauge to make sure that it does not enter the gap between MK4 and mounting base.		
Step 27			

Steps		
	27a	For detector harness, make a loop and tie with cable tie and for MVT harness no loop is required as shown in picture.
	27b	Apply a thin layer of loctite 242 on one M5 screw (101231027).
	27c	Install the rubber clip on Detector harness and then to the New Machined bracket (Which has 5mm threaded hole) with the M5 screw.
	27d	Assemble/tighten using a Hex socket screw driver as shown in the picture (Alternatively, you can use a 8mm wrench).
	27e	Install the new machined bracket mounting screw and torque to 80Nm using a 10mm hex bit socket with a calibrated torque wrench.
	27f	Apply a thin layer of loctite 242 on the other M5 screw.
	27g	Install the rubber clip on MVT harness and then to the New Machined bracket with the M5 screw and assemble/tighten using a Hex socket screw driver as shown in the picture.
	27h	If Vx Spectra WO is issued with temp sensor rubber clip, secure the temp sensor with the rubber clip and screw onto MVT bracket using Hex socket screw driver as shown in the picture.
	27i	If WO does not have rubber clip for temp sensor, ignore previous step.
		

Steps			
	Ensure that the MVT harness closer to the MVT side is horizontal between the rubber clip and cable gland. Note that temp probe rubber clip is removed from BOM due to compatibility with MVT266. Only install rubber clip for temp sensor if it is issued to WO. Ensure there are total 2 rubber clip on the meter.		
28	Follow Steps 29 to 33 for source housing assembly		
	Ensure that the source housing is placed on a rubber insulation on the table to prevent scratches on the sealing surface		
Step 29			
	29a	Collect and visually inspect and verify the PN according to work order	
	29b	Place the source housing on the table	
	Make sure the metal ring was attached and properly installed.		
Step 30			

Steps			
	30a	Half open the mini valves by hand as shown in the picture.	
	30b	Ensure that the source housing is placed on a table on a rubber insulation sheet to prevent scratches on the sealing surfaces.	
	30c	Manually install the valve using a M6 allen key.	
	30d	Torque the gland nut with a M6 socket with a calibrated torque wrench to 20Nm.	
31		Tighten the valve stem slightly with a T30 Torx socket using a socket wrench	
		Take care of pinch points while hammering and use proper gloves.	
Step 32			

Steps			
	32a	Place the warning label on the source housing taking the lock pin thread hole as a guide	
	32b	Place rivet as shown with the help of a plier.	
	32c	Slightly hammer the rivet to keep it in place and repeat the process for the other 2 rivets.	
	32d	Once all 3 rivets are partially secure, hammer completely to fix the rivets permanently.	
	Do not over hammer to avoid damage to painting. Esure that the rivets are properly fixed. Else rework.		
	While using the press fixture, take care of pinch points.		
Step 33			

Steps			
	33a	Place the plug into the gland as shown.	       
	33b	Install the autoclave plug to the purging port and torque using 1/2" Hex socket with a calibrated torque wrench to 27.5Nm	
	33c	Apply loctite 242 before screwing the lock holder to the source housing.	
	33d	For locking plate, place the pins so that it is perpendicular to the plate.	
	33e	Use the Press Fixture to press the dowel pins into the locking plate as shown in the picture.	
	Required value is 27.1 Nm. Due to limitation of setting, use 27.5 Nm.		
34	Follow steps 35 to 37 for source housing installation		
	Do not install the source housing O-ring at Final Mech. O-ring is to be installed only after FAT is completed.		
Step 35 - Only for Final Mech prior to FAT			

Steps			
	35a	Visually inspect pre-assembled source housing, screws, lockplate and washer and verify PN accoding to work order	
	35b	Apply chesterton 785 evenly on all threads using cotton swab for all studs (Apply around the nut bearing areas and threads).	
	35c	Place the O-ring inside a clear zip lock bag and paste it onto the plastic cap at the Venturi outlet.	
	35d	After source is assembled, mount the source housing together with 4xM16 screws as shown.	
	35e	Hand tighten the 4 screws to ensure starting thread enter the threaded hole to prevent cross thread.	
	35f	Use M16 Hex bit socket with impact wrench and complete torqueing of the 4 screws in a criss-cross pattern.	
i	If source is installed, ensure that the locking plate is in place and secured using Hazmat locks (Source housing and detector) as per picture including the hazard label.		
⚠	**Ensure that the O-ring is in place and does not slip and fall-off during the assembly of source housing. Take a photo with the unit serial number to show that washer was placed inside the source housing and O-ring is installed properly on the venturi and upload to PLQS.**		

Step 36 - Source Housing Assy after FAT

Steps

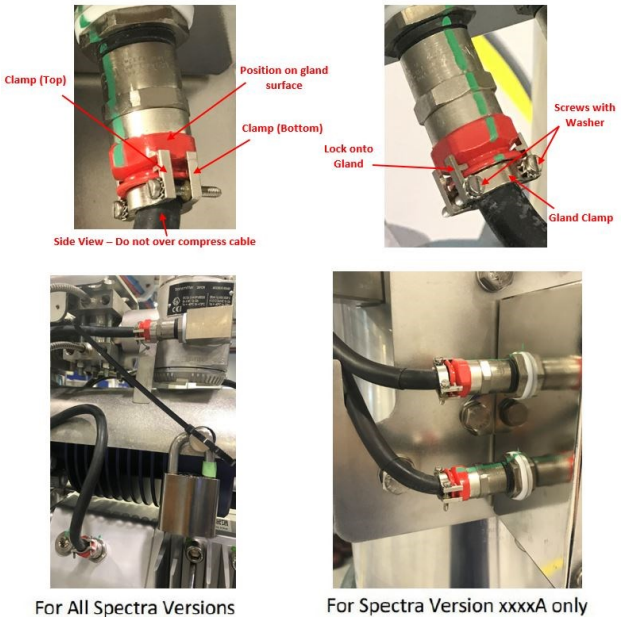
	36a	Put washer inside a clear zip lock bag and tape to the inside of the source housing and mark the Venturi serial number on it.	

Steps			
	36b	To install the O-ring on the Venturi first use a cotton swab to take small quantity of S-lube and apply around the O-ring groove.	
	36c	Assemble the O-ring into the groove and make sure it sits properly in the groove by using hand over the sirface of the O-ring.	
	36d	Mount the source housing together with M16 screws as shown in the picture.	
	36e	Install 4xM16 screws and handtighten to ensure the starting threads enter properly to prevent cross-thread.	
	36f	Use M16 Hex bit socket with the impact wrench and complete torqueing of the 4 screws in a criss-cross pattern.	
	36g	Once the 4 screws are torqued, assemble the other screws in the same way.	
	36h	Place locking plate on the source housing and lock it with a cable tie as shown.	
i	Remove the source as per Source uninstallation SWI. Take note that the source housing shall be removed after FAT is completed.		

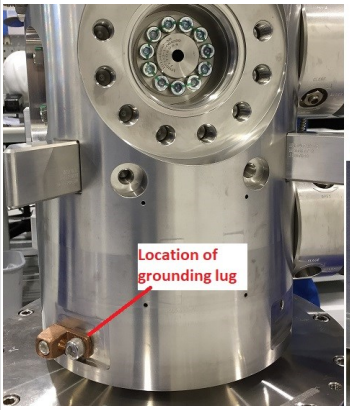
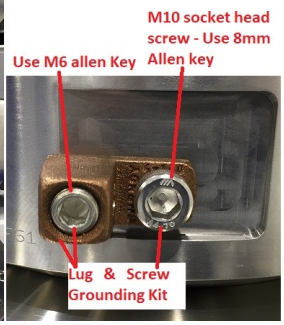
Steps	
	**If cable is tighten too much, the surface will become oval. Do not tighten less than 4.5 turns. Acceptable to max 5 turns. Picture shows approximate length of screw after tightening.**

Step 37 - Gland Clamp installation

Steps

	37a	The gland clamp consists of two halfs (Top and bottom as shown)	 For All Spectra Versions For Spectra Version xxxxA only

Steps			
	37b	Apply loctite 242 on the screws and insert the screws with washer on the top part, place it on the cable gland as shown.	
	37c	The clamp should rest on the gland surface as shown (Position on gland surface).	
	37d	Screw the screws into the bottom half using a screw driver (The top part does not have threads. Only the bottom half has threads for screw to engage)	
	37e	Screw (Using screw driver) until the clamp touches the cable OD.	
	37f	Adjust the cable and screw (Visually ensure that both screws are equally screwed)	
	37g	Screw 4.5 turns (1 turn=360 degree rotation of screw) using screw driver.	
	37h	For xxxxA version Spectra, check whether the 5 clamps are properly assembled and then assemble 3 gland clamps as shown.	
	37i	For xxxxxE version Spectra,check whether the 3 clamps are properly assembled and then assemble 1 gland clamp.	
Step 38 - Applicable only for xxxxE Version Vx Spectra			

Steps			
	38a	Apply Loctite 242 on the threads of M10 socket head screw.	 
	38b	Install grounding lug using the above socket head screw in the lower unused hole on the junction box bracket which is located under the thermowell.	
	38c	Align the lug in horizontal direction facing towards DAFC MK4 mounting base	
	38d	Handtighten the screw using 8mm allen key.	
	38e	Using a 6mm alley key, hand-tighten the bolt in the lug preventing it from loosening	
i	When using hand tighten ensure that the lug does not drop off accidentally		
Step 39: Applicable only for ROTA Connector.			
	39a	Check the assembled ROTA Connector onto the mounting base.	
	39b	Confirm that there is no visual gap at the ROTA connector-Mounting base interface.	
	Result: The Final Mechanical assembly is complete.		

END OF STANDARD WORK INSTRUCTION

This symbol means that the equipment cannot be discarded in a rubbish-bin. At its end of life, the equipment and/or its components must be treated, following Schlumberger Environmental procedures, in compliance with Schlumberger QHSE Policy and applicable laws and regulations on waste management.