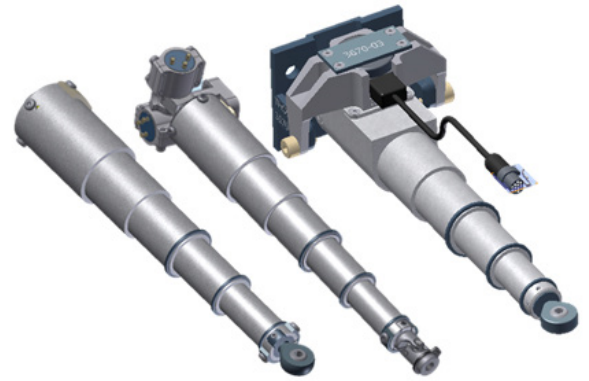


IR-TRACC Tubes In-Out (TIO) Calibration

Publication Date: October, 2015



To meet customer expectations, Humanetics has revised its calibration procedure for the IR-TRACCs (Infra-Red Telescoping Rod for the Assessment of Chest Compression) to increase the quality and accuracy of calibrations. The sensitivity of the IR-TRACC related to the position of individual tubes (in-out error) has been minimized in the new procedure. The Tubes In-Out Calibration Procedure expands on the improvements implemented in the Harmonized Certification Procedure developed in August 2013. The Tubes In-Out (TIO) procedure will be effective for all IR-TRACCs with R4 and R5 revision, including the models as part of the 2D and 3D assemblies. It was implemented in production in September, 2015.

Previous model IR-TRACCs up to R3 revision (part number with R2, R3 or no "R" designation) will continue to be calibrated according the Harmonized procedure in Service Bulletin dated February 2014. At a customer's request, IR-TRACCs up to R3 revision numbers may be calibrated to the new Tubes In-Out procedure. In case of a pass the old revision IR-TRACC meets new specifications. In case R3 or lower revision fails the Tubes In-Out procedure, the user may continue to use the device calibrated according the Harmonized procedure, or a new model number may be purchased.

Background

The IR-TRACC calibration procedure used since the inception of the device did not consider the individual tube positions and any related error was shown as a non-linearity. The Tubes In-Out procedure takes into account tube positions during the calibration and minimizes any remaining error.

Tubes In-Out Displacement Calibration

The displacement calibration data are obtained in two conditions; with tubes in and tubes out at each calibration interval. The TIO calibration template calculates the optimized linearization exponent and linear sensitivity, applying the average voltage of both tube conditions in the relevant range of application. The maximum span of error between tube -in and -out is calculated at each calibration interval and is shown in the calibration sheet. The new pass requirement is now based on the maximum span of error per each calibration interval. Implementation of the new procedure allows Humanetics to produce IR-TRACCs with smaller errors and therefore more accurate results.

Availability Templates and Fixture

The Tubes In-Out calibration templates and test fixture are now offered for sale. Contact your Humanetics Sales Representative for further information.

Implementation

The new procedure was implemented in production September, 2015 on part numbers with R4 or R5 designation.

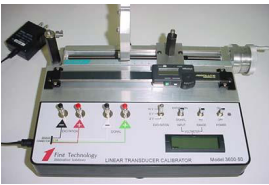

Scope of Tubes In-Out Calibration: displacement calibration for all IR-TRACCs with R4 and R5 revision, including models as part of 2D and 3D assemblies.

(Con't)

Tubes In-Out (TIO) Calibration (Con't)

Equipment: Calibration Fixture part # TE-3700-IRTKIT. The kit includes calibration templates and procedures. Calibration templates and procedures are also available individually (see table below).

Documentation: see table.

Procedure	Fixture	Purpose	Documentation	Service Bulletin
Displacement Calibration 	Fixture TE-3700-IRKIT (or previous model TE-3600)	IR-TRACCs with R4 and R5 revision All models: 1D, 2D, 3D	IR-TRACC Tubes In-Out (TIO) Calibration Template and Written Procedure Part #11428	IR-TRACC Tubes In-Out Calibration October 2015
		IR-TRACCs up to R3 revision All models: 1D, 2D, 3D	IR-TRACC Harmonized Calibration Template and Written Procedure Part #11427	IR-TRACC Harmonized February 2014
Zero-Position Verification 	TH-4000-2D	2D IR-TRACC assembly verification for WorldSID 50 and 5th and Q10	2D IR-TRACC Zero-Position Verification Template and Written Procedure	2D IR-TRACC Zero-Position Verification October 2015
IR-TRACC Absolute Length and Angle Calibration		Obsolete/ replace by zero-position verification	–	IR-TRACC Absolute Length October 2014

(Continued)

Tubes In-Out (TIO) Calibration (Con't)

Recalibration Options

		Tubes in-out IR-TRACC calibration	Harmonised IR-TRACC calibration	Y-axis angle calibration	Z-axis angle calibration	Zero-position 2D or 3D
1	R4 and R5 IR-TRACCs - Single	●				
2	R4 and R5 IR-TRACCs in 2D Assembly	●		●		●
3	R4 and R5 IR-TRACCs in 3D Assembly	●		●	●	●
4	Up to R3 IR-TRACCs* - Single		●			
5	Up to R3 IR-TRACCs* in 2D Assembly		●	●		●
6	Up to R3 IR-TRACCs* in 3D Assembly		●	●	●	●
7	Up to R3 IR-TRACC*- Single including R4-R5 Tubes In-Out (TIO) Calibration Method	●	●			
8	Up to R3 IR-TRACCs* in 2D Assembly including R4-R5 Tube In-Out (TIO) Calibration Method	●	●	●		●
9	Up to R3 IR-TRACCs* in a 3D Assembly including R4-R5 Tube In-Out (TIO) Calibration Method	●	●	●	●	●

* without "R4" or R5" in the model number