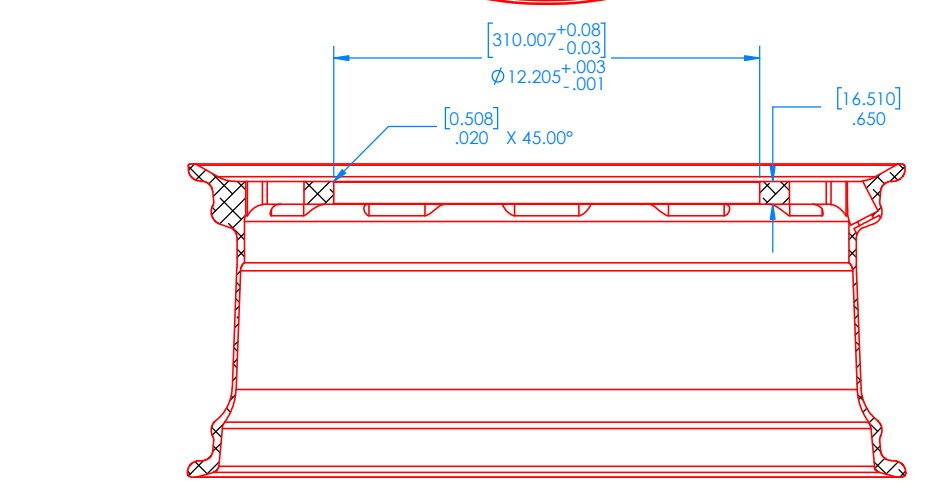
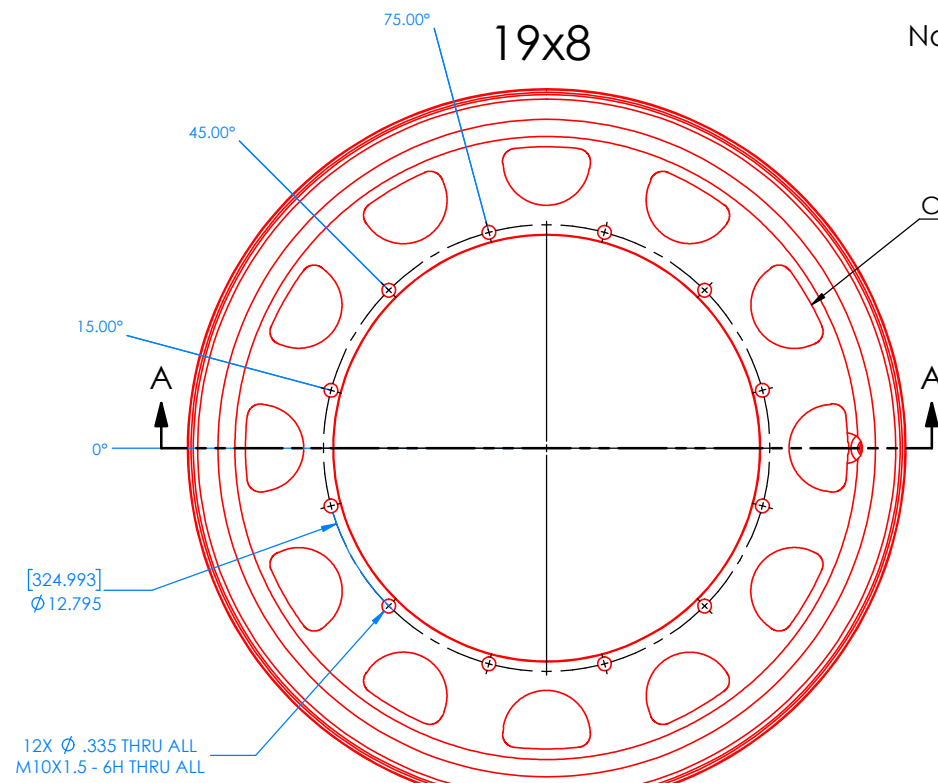


# LW12.8-50 RIM ADAPTER DESIGN GUIDE

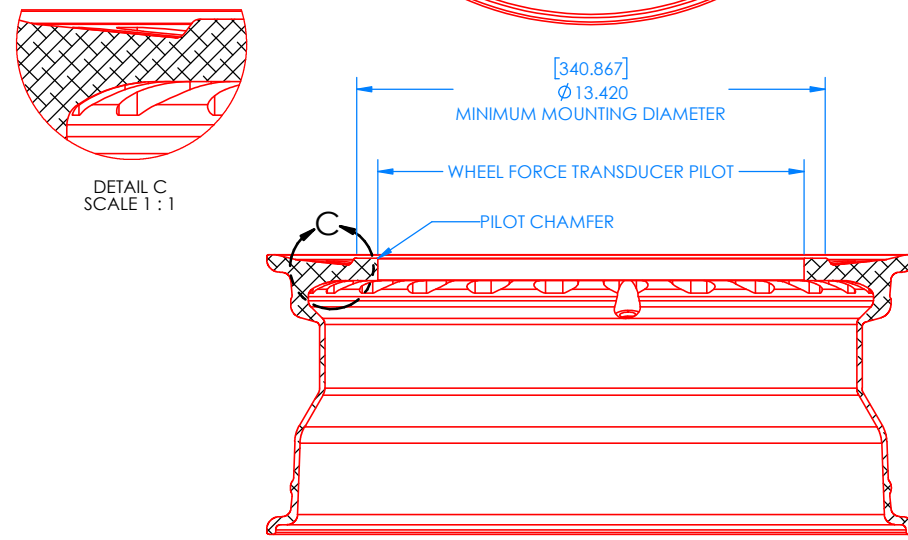
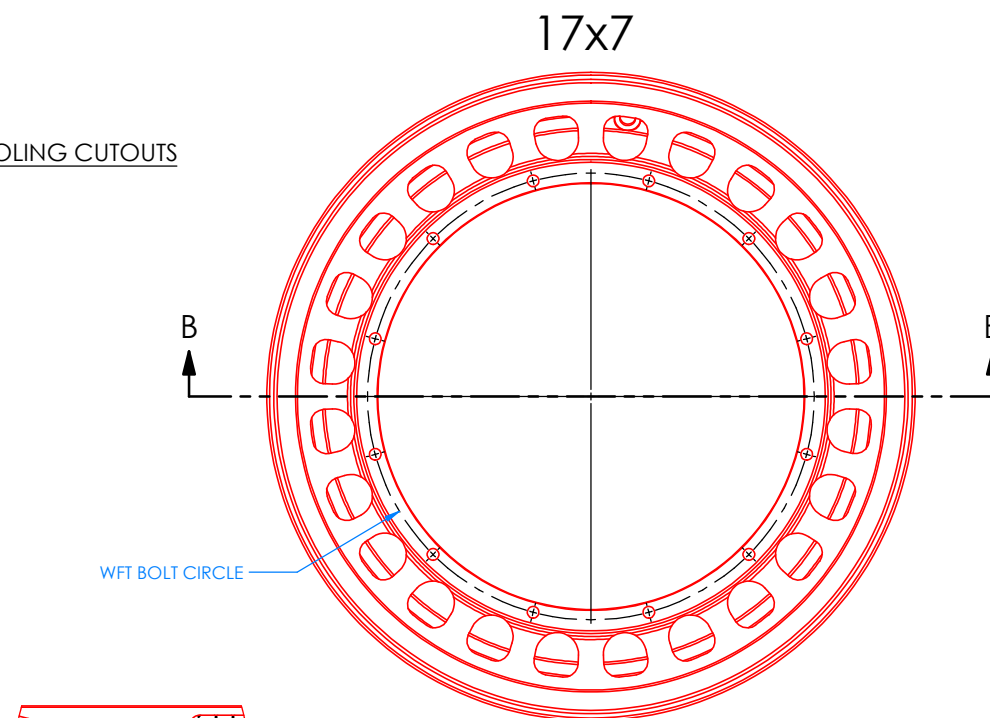
22x9.5

Note: Blue dimensions are CRITICAL and CANNOT change.

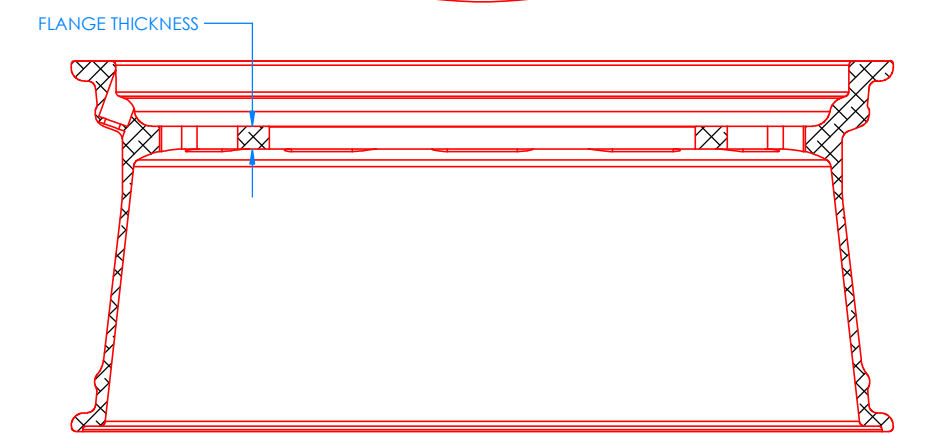
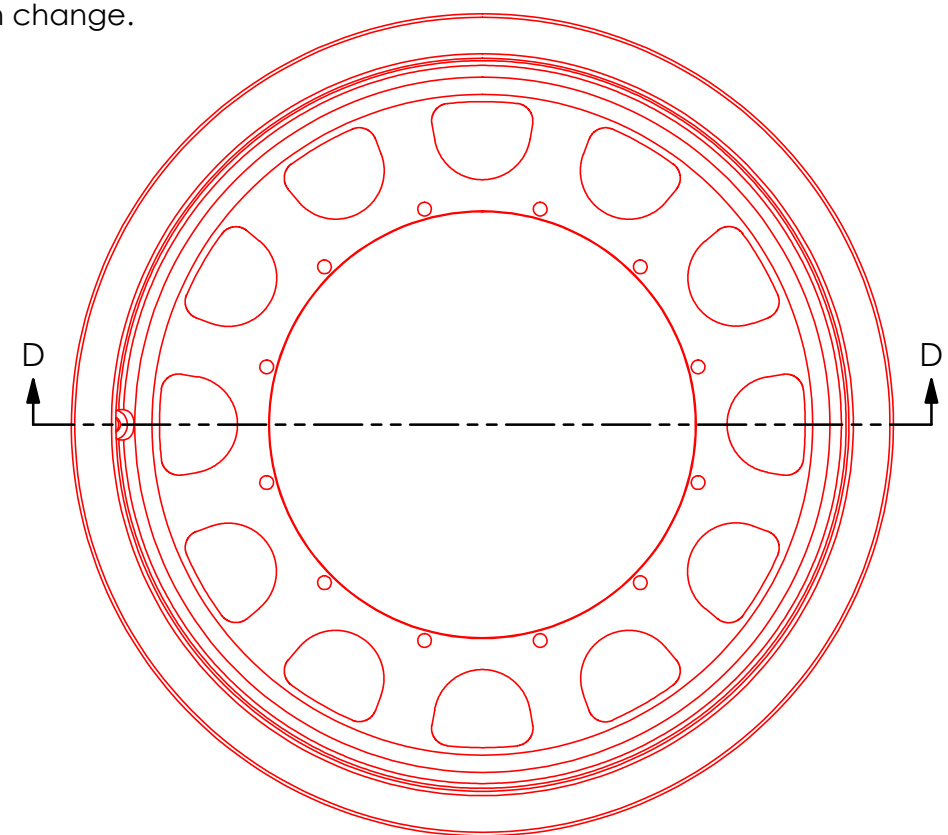
Black dimensions can change.



SECTION A-A



SECTION B-B



SECTION D-D

It is essential that the adapters match the recommended guidelines. This will ensure the system can withstand the rated loads and provide the most accurate results.

Michigan Scientific Corporation (MSC) prefers to use the test vehicle's Original Equipment Manufacturer (OEM) wheel design as the basis of the rim adapter design. If 3D wheel models or drawings of the OEM wheel are not available, MSC recommends using The Tire and Rim Association or ISO standards as a design basis for the tire mounting profile.

MSC machines rim adapters from 6061-T6 aluminum forgings. These forgings have consistent yield strength and hardness throughout. If 'bar stock' or 'billet' is used, the heat treatment may not be consistent through the section, resulting in a lower yield strength and hardness than published. The material must have a yield strength of at least 40 ksi (275 MPa) if the examples above are followed. If a weaker material is used, the thickness of the rim adapter sections will need to increase.

The "COOLING CUTOUTS" allow for airflow to the brakes and reduce the weight of the adapter system. MSC refines the size and shape of the cutouts for each adapter design. Typical cutouts are shown. The pattern of the cutouts should be a multiple of 12, and they should be aligned away from the Wheel Force Transducer (WFT) mounting holes as shown.

The "FLANGE THICKNESS" must be 0.650 in (16.510mm). The M10x1.5 fasteners should pass completely through the flange to ensure complete thread engagement.

MSC verifies all rim and hub adapter assemblies using FEA to simulate the SAE J328 wheel durability standard. This should be done with all adapters to verify the load ratings and fatigue life of the adapters. A LW12.8-50 transducer has a SAE J328 static load rating of 2240 lb (1015 kg). This should not be exceeded. The vertical stiffness of the rim adapter should match that of the adapter MSC used to calibrate the transducer for the best accuracy. Rim adapters under 19 in may need a feature as shown in 'Detail C' to accomplish this. MSC can check your adapter design at no cost. Contact MSC online at [michsci.com/contact-us](http://michsci.com/contact-us) or via phone at 1-231-547-5511.

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DIMENSIONS ARE IN INCHES (MM)		DRAWN	4/7/2020	JPS/aley	
TOLERANCES:		CHECKED			
XXX ±.010		ENG APPR			PRODUCT LINE LW12.8-50
XXX ±.005		MFG APPR			CUSTOMER CODE
XXX ±.001					PROJECT CODE
FRACTIONAL ±					DESCRIPTION Rim Adapter Design Guide
ANGULAR: MACH ±					SIZE DWG. NO. REV
BEND ±					D LW12.8-50 Rim Adapter Design Guide
WEIGHT					SCALE 1:2.75 SHEET 1 OF 2
MATERIAL 6061-T6		PROPERTY AND CONFIDENTIALITY: THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MICHIGAN SCIENTIFIC CORPORATION. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MICHIGAN SCIENTIFIC CORPORATION IS PROHIBITED.			

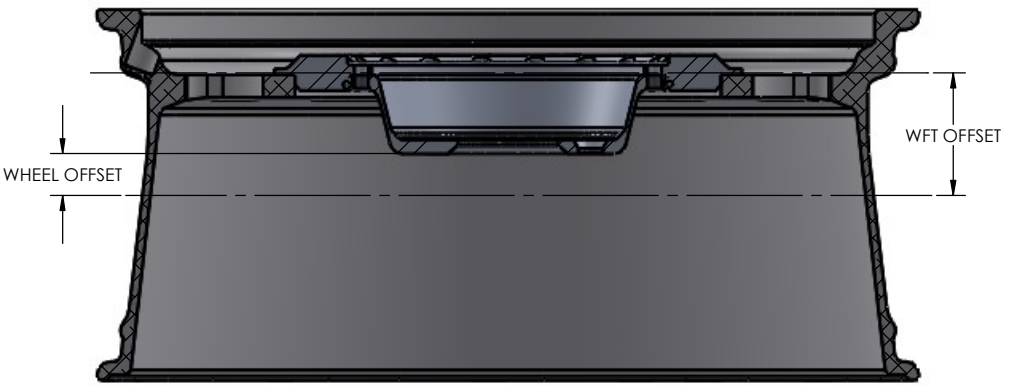
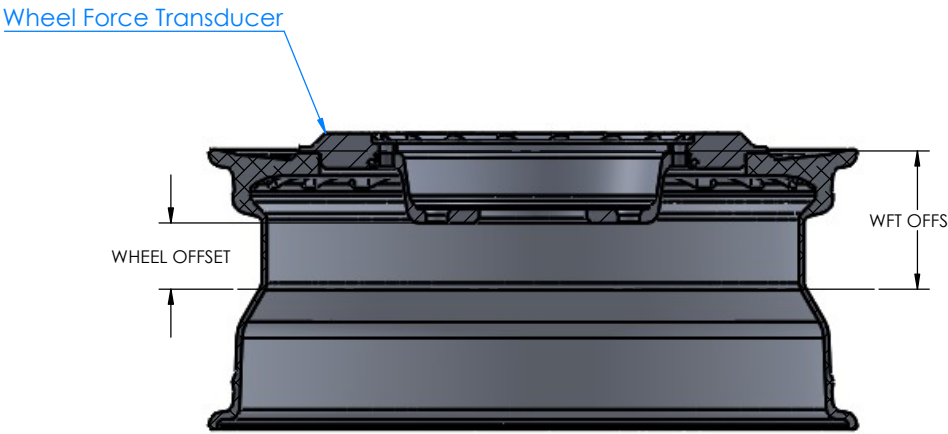
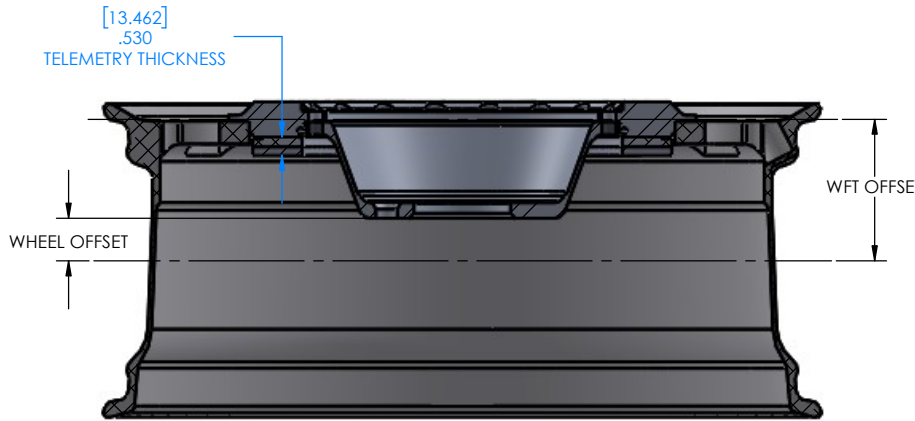
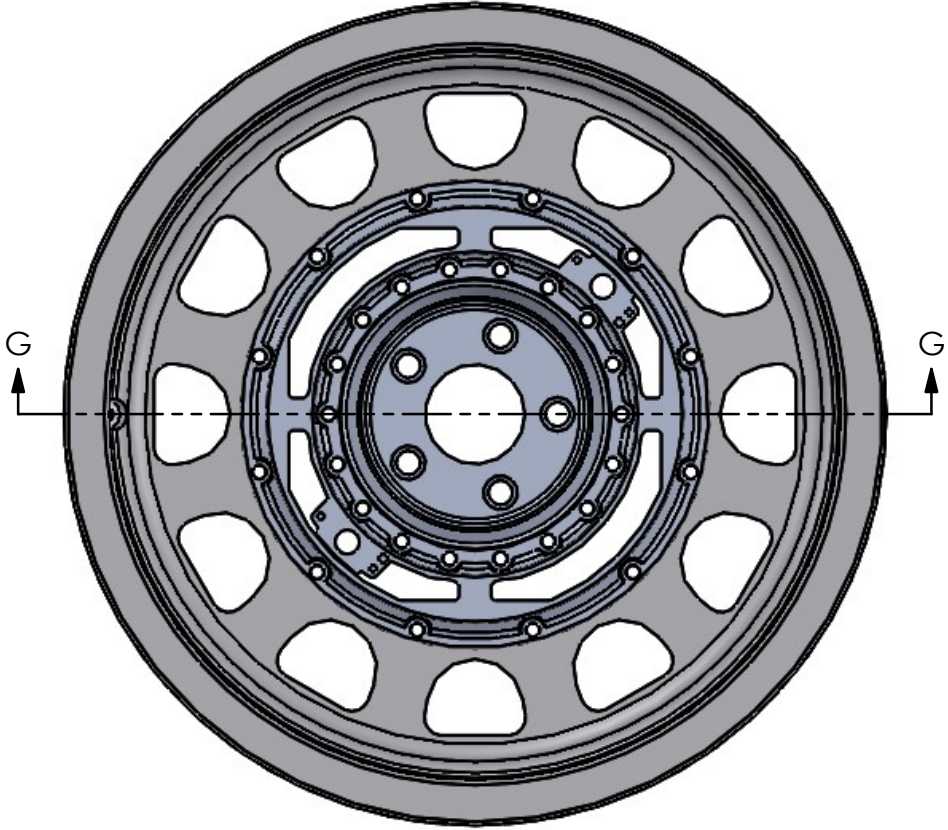
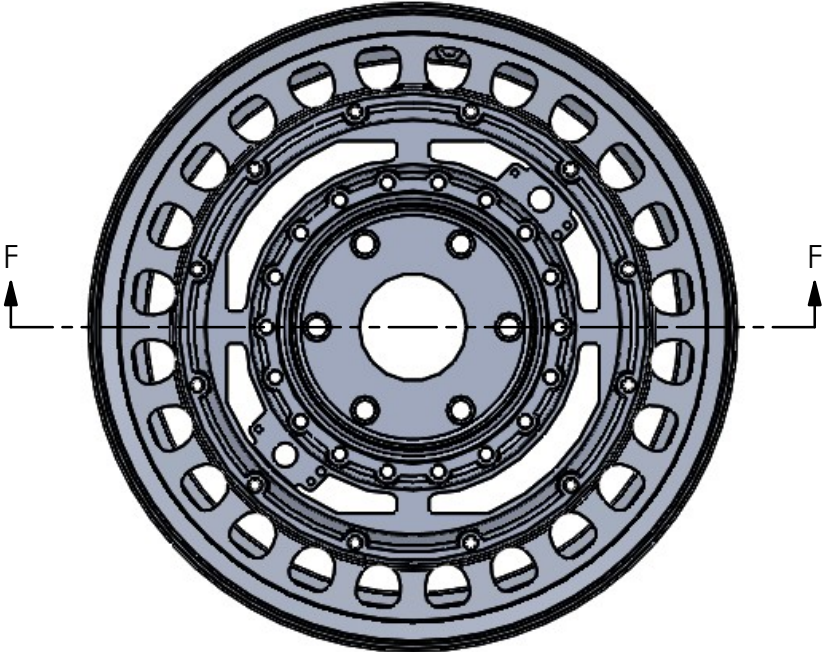
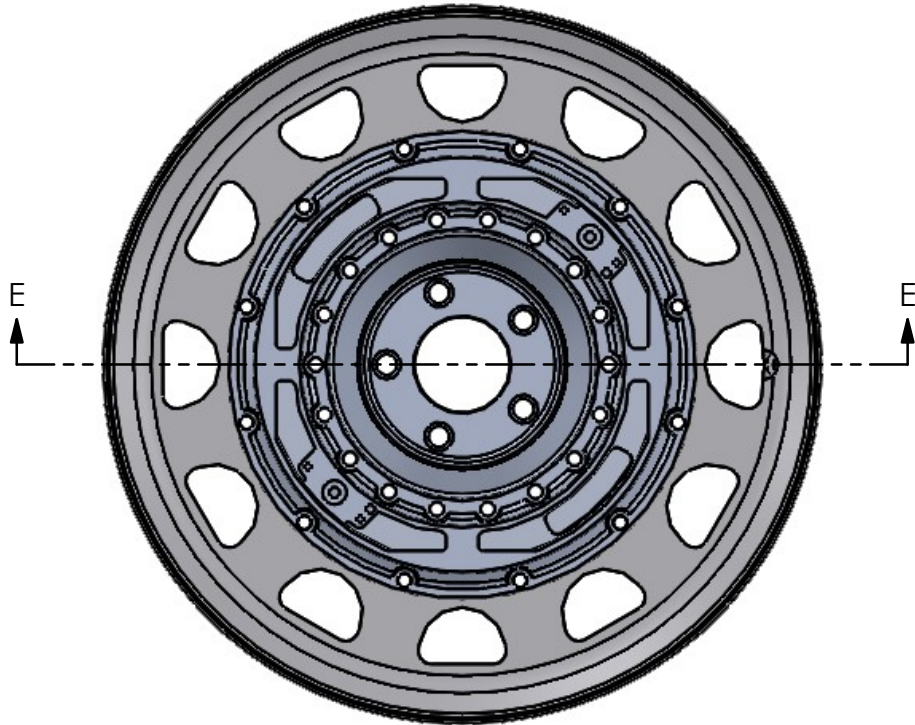
# LW12.8-50 RIM ADAPTER DESIGN GUIDE

## ASSEMBLY VIEW

19x8 with TELEMETRY

17x7

22x9.5



SECTION E-E

SECTION F-F

SECTION G-G

It is essential that the adapters match the recommended guidelines. This will ensure the system can withstand the rated loads and provide the most accurate results.

The "WFT OFFSET" is the distance from the centerline of the rim to the centerline of the transducer. The "WFT OFFSET" should be as small as possible to reduce the moment load on the WFT. The WFT and adapters need at least 0.15 in (3.8 mm) of clearance to the brake and suspension components to prevent interference. See the drawing for additional clearance required for telemetry WFT systems.

MSC verifies all rim and hub adapter assemblies using FEA to simulate the SAE J328 wheel durability standard. This should be done with all adapters to verify the load ratings and fatigue life of the adapters. A LW12.8-50 transducer has a SAE J328 static load rating of 2240 lb (1015 kg). This should not be exceeded. MSC can check your adapter design at no cost. Contact MSC online at [michsci.com/contact-us](http://michsci.com/contact-us) or via phone at 1-231-547-5511.

3D models and 2D drawings of the LW12.8-50 are available for download on MSC's website. ([michsci.com](http://michsci.com))

Note: Blue dimensions are CRITICAL and CANNOT be changed.  
Black dimensions can be changed.

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TOLERANCES: XXX ±.010 XXX ±.005 XXX ±.011 FRACTIONAL ± ANGULAR: MACH ± BEND ±	DRAWN	4/7/2020	JPSaley
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			DESCRIPTION: Rim Adapter Design Guide
			SIZE: DWG. NO. LW12.8-50 Rim Adapter Design Guide
			SCALE: 1:2.75
			REV
			SHEET 2 OF 2