

Appendix I: Design Project Abstract

Product Description:

Complete Design and fabrication of a rolling sample holder mechanism, for friction tester.

Abstract:

A friction tester was designed and build by the ROBOCO research group at Texas State University to study the wear and friction behavior of various rubber samples on different substrates. The machine is currently capable of performing the sliding test. A new rolling sample holder mechanism should be added to the current test setup to study the rolling friction as well. The rolling samples are rubber disks, with the inner-diameter of 3cm, thickness of 1.5 cm, and their outer-diameters vary between 5-10 cm.

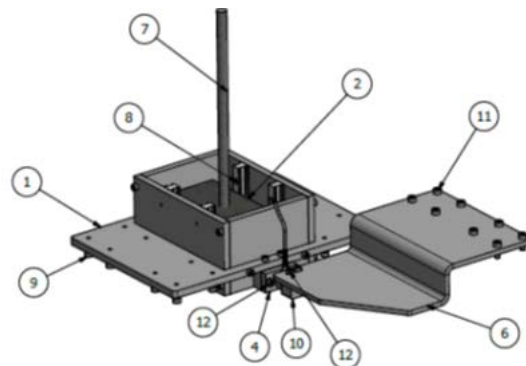
Deliverables:

The project design group will be expected to deliver a working prototype of the rolling sample holder mechanism for the friction tester, validating their proposed solution that meets the following criteria:

Safety: Design shall not introduce or expose the operator to any hazards.

Ergonomics: Interaction with design solution shall not induce fatigue in excess of the current process.

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	SUB ASSEMBLY BOX	
2	1	SUB ASSEMBLY BLOCK TEST	
3	1	SENSOR	DO NOT INCLUDE IN THE QUOTATION
4	1	ADJUSTMENT PLATE 1	
5	4	Danaher-S21H15A +100 Y=20_S2115	THOMSON - RAIL AND CARRIAGE
6	1	UNION PLATE	
7	1	AXIS LOAD	
8	8	ISO 4762 - M4 x 16	Hexagon Socket Head Cap Screw
9	23	ISO 4762 - M6 x 16	Hexagon Socket Head Cap Screw
10	1	ADJUSTMENT PLATE 2	
11	1	ISO 4762 - M6 x 10	Hexagon Socket Head Cap Screw
12	4	ISO 4762 - M5 x 16	Hexagon Socket Head Cap Screw



The sliding sample holder mechanism

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