

**FOUR BALL TESTER & PIN ON DISC TRIBOTESTER**

**Photo of Instrument:**



<b>Instrument Name</b>	FOUR BALL TESTERS									
<b>Instrument Model &amp; Serial No.</b>	TE-4B-L 144/2014									
<b>Instrument Make</b>	MAGNUM ENGINEERS									
<b>Category of Instrument</b>	Characterization and Testing									
<b>Description of Instrument</b>	This instrument is used to measure the Coefficient of Friction and Performance of lubricants by measuring the scar diameter.									
<b>Instrument Technical Description and Major Specifications</b> (This Specifications Limited to Major 5)	<table border="1"> <tr> <td>Speed</td> <td>100 to 2000 rpm</td> </tr> <tr> <td>Normal Load</td> <td>0.5 to 800kg</td> </tr> <tr> <td>Leverage Ratio</td> <td>10:1</td> </tr> <tr> <td>Temperature</td> <td>Up to 100°C</td> </tr> </table>		Speed	100 to 2000 rpm	Normal Load	0.5 to 800kg	Leverage Ratio	10:1	Temperature	Up to 100°C
Speed	100 to 2000 rpm									
Normal Load	0.5 to 800kg									
Leverage Ratio	10:1									
Temperature	Up to 100°C									
<b>Application of Instrument</b> (Limited to Major 4 or 5)	1)Performance Wear Preventive Test for fluids and grease 2)Extreme Pressure Test for fluids and grease									
<b>Type of Sample Required for Analysis / Testing</b> (Quantity, Pre-Preparation, State etc.) <b>Guidelines for Sample Submission – User Instructions</b>	Lubricants (100mL) Ball (φ12.7mm Chrome Steel Ball)									
<b>Types of Analysis / Testing</b>	1)Determining the Coefficient of Friction and Wear scar diameter									

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	2)Extreme Pressure Test (for grease and oil)
<b>Faculty In-Charge Name / Email / Contact</b>	Dr. Amit Kumar Singh <a href="mailto:amitsingh@nitc.ac.in">amitsingh@nitc.ac.in</a> 8949362395
<b>Technical Staff Name / Email / Contact</b>	Mr. Eldho P Varghese <a href="mailto:epv76@nitc.ac.in">epv76@nitc.ac.in</a> 9447278215
<b>Location of Instrument</b>	TRIBOLOGY LAB
<b>Other Details</b>	

### User Charges: (per sample):

<b>S.N O.</b>	<b>Type of Analysis / Testing</b>	<b>Internal - within Department of NITC</b>	<b>Internal - Other Departments NITC</b>	<b>External Academic Educational Institutes</b>	<b>National R&amp;D Labs</b>	<b>Industry</b>
1	Determining the Coefficient of Friction and Wear scar diameter	Nil	100	500 + GST (18%)	500 + GST (18%)	1000 + GST (18%)
2	Extreme Pressure Test (for grease and oil)	Nil	100	500 + GST (18%)	500 + GST (18%)	1000 + GST (18%)

Note: Consumables and any other expenditure charges will be as per requirement, if any.

### Slot Booking and Payment Work Flow:

PIN ON DISC TRIBOTESTER

**Photo of Instrument:**



<b>Instrument Name</b>	PIN ON DISC TRIBOTESTER									
<b>Instrument Model &amp; Serial No.</b>	TE-165 143/2014									
<b>Instrument Make</b>	MAGNUM ENGINEERS									
<b>Category of Instrument</b>	Characterization and Testing									
<b>Description of Instrument</b>	The apparatus facilitates the study of friction and wear characteristics in sliding contacts, sliding occurs between the stationary pin and a rotating disc. The normal load, rotational speed, temperature, humidity and wear are the variables to meet the test conditions.									
<b>Instrument Technical Description and Major Specifications</b> (This Specifications Limited to Major 5)	<table border="1"> <tr> <td>Loads</td> <td>Up to 200N</td> </tr> <tr> <td>Speed</td> <td>100 to 2000 rpm</td> </tr> <tr> <td>Specimen</td> <td>Pin Size: <math>\phi</math>3mm to 12mm</td> </tr> <tr> <td>Wear Disc Size</td> <td><math>\phi</math>165mm x 8mm thick</td> </tr> </table>		Loads	Up to 200N	Speed	100 to 2000 rpm	Specimen	Pin Size: $\phi$ 3mm to 12mm	Wear Disc Size	$\phi$ 165mm x 8mm thick
Loads	Up to 200N									
Speed	100 to 2000 rpm									
Specimen	Pin Size: $\phi$ 3mm to 12mm									
Wear Disc Size	$\phi$ 165mm x 8mm thick									
<b>Application of Instrument</b> (Limited to Major 4 or 5)	Pin-on-disc testing is used for material screening, wear characterization, and durability assessment of a pin.									

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<b>Type of Sample Required for Analysis / Testing (Quantity, Pre-Preparation, State etc.)</b> <b>Guidelines for Sample Submission – User Instructions</b>	Specimen	Pin Size: $\phi$ 3mm to 12mm
	Wear Disc Size	$\phi$ 165mm x 8mm thick
<b>Types of Analysis / Testing</b>	Study Friction and Wear Characteristics.	
<b>Faculty In-Charge Name / Email / Contact</b>	Dr. Amit Kumar Singh <a href="mailto:amitsingh@nitc.ac.in">amitsingh@nitc.ac.in</a> 8949362395	
<b>Technical Staff Name / Email / Contact</b>	Mr. Eldho P Varghese <a href="mailto:epv76@nitc.ac.in">epv76@nitc.ac.in</a> 9447278215	
<b>Location of Instrument</b>	TRIBOLOGY LAB	
<b>Other Details</b>		

### User Charges: (per sample):

S.NO.	Type of Analysis / Testing	Internal - within Department of NITC	Internal - Other Departments NITC	External Academic Educational Institutes	National R&D Labs	Industry
1	Study Friction and Wear Characteristics.	Nil	100	500 + GST (18%)	500 + GST (18%)	1000 + GST (18%)

Note: Consumables and any other expenditure charges will be as per requirement, if any.

### Slot Booking and Payment Work Flow: