



# SHRIRAM PISTONS & RINGS

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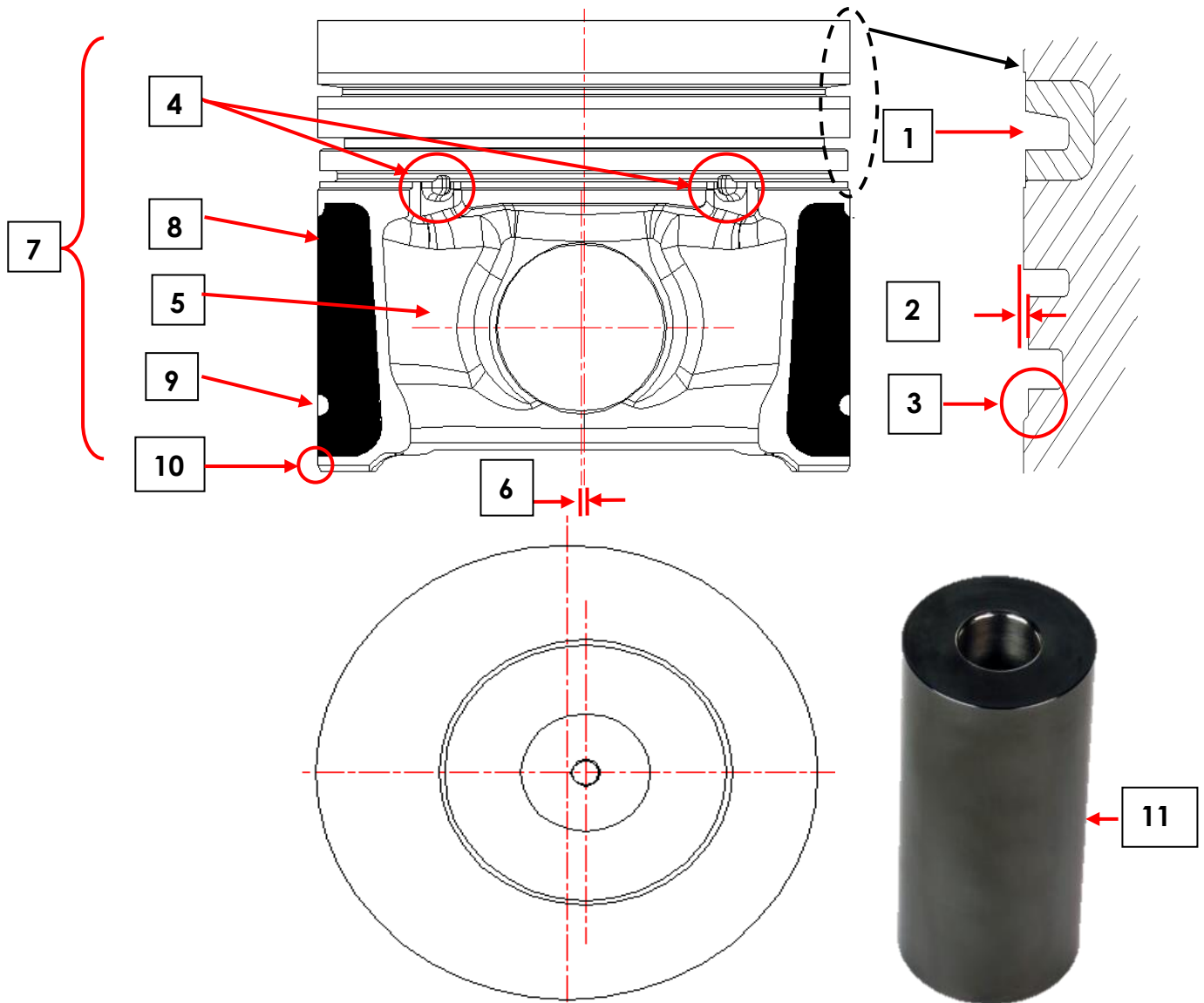
INTRODUCTION CIRCULAR – **MAHINDRA BOLERO PIK-UP/ LCCR BS VI – PISTON SET**

USHA is pleased to launch **Mahindra Bolero Pik-up/ LCCR BS-VI** piston set in its LCV product range.



This piston set has following special features:

## **PISTON & PIN:**



Unique features of USHA 'Mahindra Bolero Pik-up/ LCCR BS-VI' piston & pin are as follows:-

SL. NO.	SPECIAL FEATURE	BENEFITS TO CUSTOMER
1)	<p><b>HIGH NICKEL WEAR RESISTANT RING CARRIER (RCP):</b> Top groove of USHA Mahindra Bolero Pik-up/ LCCR BS-VI piston is made of high nickel wear resistant ring carrier insert which is manufactured using latest centrifugal casting technology.</p> <p><b>HALF KEYSTONE TOP RING GROOVE GEOMETRY:</b> Upper flank of top ring groove is having keystone geometry which helps in squeezing out excess oil from inside the groove preventing carbon deposition &amp; sludge formation. Bottom flank is kept flat which enables better seating of ring on groove surface.</p>	<ul style="list-style-type: none"> <li>• Longer life of piston due to negligible wear of top groove</li> <li>• Lesser blow-by towards sump</li> </ul>
2)	<p><b>CUT BACK IN 2ND RING LAND:</b> Piston is provided with a cut back in second ring land for better seating, stability &amp; functioning of intermediate ring.</p>	<ul style="list-style-type: none"> <li>• Helps in controlling blow-by &amp; reducing oil consumption</li> </ul>
3)	<p><b>'J' CUT:</b> A unique 'J' cut is provided just below the oil ring groove area.</p>	<ul style="list-style-type: none"> <li>• Provides all time lubrication to piston skirt</li> <li>• No piston seizure in extreme limits of normal working conditions</li> </ul>
4)	<p><b>QUICK OIL RETURN SLOTS (QORS):</b> Two nos. of Quick Oil Return Slots (QORS) are provided on either side of the piston above pin bore, half in groove &amp; half in window.</p>	<ul style="list-style-type: none"> <li>• Quick drainage of oil, hence low oil consumption</li> </ul>
5)	<p><b>AS CAST HYDRODYNAMIC WINDOW:</b> New hydrodynamic 'As Cast' window designed by our collaborator, not only provides more space for oil drainage, but more skirt area as well.</p>	<ul style="list-style-type: none"> <li>• Faster oil drainage, hence low oil consumption</li> <li>• Seizure on minor axis is avoided, hence longer life</li> </ul>
6)	<p><b>PISTON - PIN BORE OFFSET:</b> This piston is provided with a piston pin bore offset to avoid piston slap. Piston - pin bore offset means, the centre line of piston is slightly offset from the centre line of pin bore. Due to this offset, piston tilts at TDC &amp; BDC smoothly, that prevents slapping with liner.</p>	<ul style="list-style-type: none"> <li>• Reduced engine noise</li> </ul>
7)	<p><b>PISTON SURFACE COMPLETELY BONDERISED:</b></p>	<ul style="list-style-type: none"> <li>• Bonderising helps in preventing oxidation of piston</li> <li>• Also provides porous surface for oil retention, thereby reducing piston wear</li> </ul>

8)	<b>'D-10 COATING' ON PISTON SKIRT:</b> USHA Mahindra Bolero Pik-up/ LCCR BS-VI piston is provided with 'D-10' coating on its skirt.	<ul style="list-style-type: none"> <li>• Helps in initial lubrication &amp; seizure free operation</li> <li>• Better wear resistance</li> <li>• Reduces engine noise</li> </ul>
9)	<b>MEASURING POINTS ON PISTON SKIRT:</b>	<ul style="list-style-type: none"> <li>• Provided for easy diameter verification</li> </ul>
10)	<b>SCRAPPING CHAMFER:</b> A smooth chamfer is provided at the bottom end of the piston skirt.	<ul style="list-style-type: none"> <li>• Helps in regulating oil supply and reduces skirt wear, hence longer life</li> </ul>
11)	<b>DIAMOND LIKE CARBON COATING (DLC) ON GUDGEON PIN :</b> DLC is a PVD like coating done on outer surface of pin for a significant difference & more homogeneous wear pattern.	<ul style="list-style-type: none"> <li>• To prevent wear &amp; scuff on pin</li> <li>• Reduced pin bore wear</li> </ul>

<b>TECHNICAL DATA – 'MAHINDRA BOLERO PIK-UP/ LCCR BS-VI' PISTON</b>		
		<b>USHA CODE → L37</b>
Nominal Bore Diameter	mm	88.90
Piston Diameter	STD Size mm	88.81
Recommended Piston-Liner Clearance	mm	0.09
Compression Height	mm	51.35
Total Height	mm	75.35
Piston Pin length X diameter	mm	67.0 X 28.0
Piston Pin- Pin Bore Clearance	mm	-0.002 to +0.010 (Transition fit)

Above features make USHA 'Mahindra Bolero Pik-up/ LCCR BS-VI' piston set unique, produced to give better performance & longer life especially when fitted with USHA 'IP DVM' rings already available in the market.



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