



## SHRIRAM PISTONS & RINGS

MD: TS: 33/MAR'23

INTRODUCTION CIRCULAR – **TATA 497 TCIC BS-IV – PISTON SET**

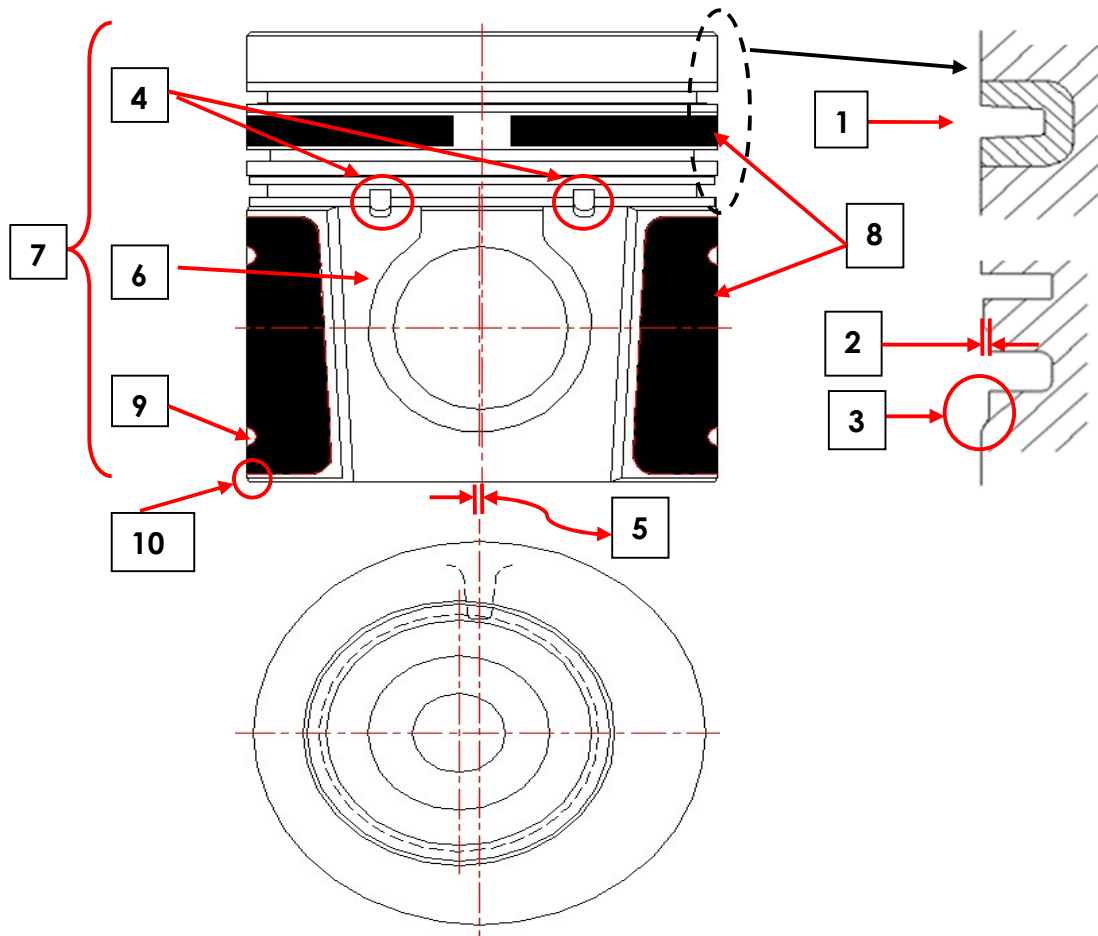
USHA is pleased to launch **Tata 497 TCIC BS-IV** piston set in its LCV product range.

This piston set is applicable for **Tata 709, 810, 909, 1010 & ULTRA 812, 912, 1014, 1412** models.



This piston set has following special features:

### PISTON:



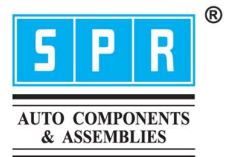
Unique features of USHA 'Tata 497 TCIC BS-IV' piston are as follows:-

SL. NO.	SPECIAL FEATURE	BENEFITS TO CUSTOMER
1)	<b>HIGH NICKEL WEAR RESISTANT RING CARRIER (RCP):</b> Top groove of this piston is made of high nickel wear resistant ring carrier insert which is manufactured using latest centrifugal casting technology.	<ul style="list-style-type: none"> <li>• Longer life of piston due to negligible wear of top groove</li> </ul>
2)	<b>STEP CUT IN SECOND RING LAND:</b> Second ring land is provided with a step cut for better seating & stability of intermediate compression ring.	<ul style="list-style-type: none"> <li>• Helps in controlling blow-by &amp; reducing oil consumption</li> </ul>
3)	<b>'J' CUT:</b> A unique 'J' shaped cut is provided just below the oil ring groove area.	<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)	<b>QUICK OIL RETURN SLOTS (QORS):</b> Two nos. of Quick Oil Return Slots (QORS) are provided on either side of piston above the pin bore, half in groove & half in window.	<ul style="list-style-type: none"> <li>• Quick drainage of oil, hence low oil consumption</li> </ul>
5)	<b>PISTON - PIN BORE OFFSET:</b> Piston is provided with a piston pin bore offset to avoid piston slap. Piston pin bore offset means that the centre line of piston is slightly offset from the centre line of pin bore. Due to this offset, piston tilts at TDC & BDC smoothly, that prevents slapping with liner.	<ul style="list-style-type: none"> <li>• Reduced engine noise</li> </ul>
6)	<b>AS CAST CONVERGENT WINDOW:</b> This not only gives more space for oil drainage but the unique convergent type design also provides more bearing area to piston skirt, which helps in guiding piston rings' movement.	<ul style="list-style-type: none"> <li>• Faster oil drainage, hence low oil consumption</li> <li>• Seizure on minor axis is avoided, hence longer piston life</li> </ul>
7)	<b>PISTON SURFACE COMPLETELY BONDERISED:</b>	<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 wear</li> </ul>
8)	<b>'D-10 COATING' ON 1<sup>ST</sup> RING LAND &amp; PISTON SKIRT:</b> USHA Tata 497 TCIC BS-IV piston is provided with 'D-10' coating on its first ring land & skirt.	<ul style="list-style-type: none"> <li>• Helps in initial lubrication &amp; seizure free operation</li> <li>• Better wear resistance &amp; reduced 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, reduces skirt wear &amp; hence longer life</li> </ul>

**TECHNICAL DATA – 'TATA 497 TCIC BS-IV' PISTON**

		<b>USHA CODE → L33</b>
Nominal Bore Diameter	mm	97.00
Piston Diameter	STD Size mm	96.89
Recommended Piston-Liner Clearance	mm	00.11
Compression Height	mm	65.25
Total Height	mm	99.25
Piston Pin Length X OD	mm	80.0 X 36.0
Piston Pin- Pin Bore Clearance	mm	+0.009 to +0.015 (Clearance fit)

Above features make USHA 'Tata 497 TCIC BS-IV' piston set unique, produced to give better performance & longer life especially when fitted with USHA 'MOLY PLATINUM BS-III SSM' ring set having axial thickness as **3.0-2.50-3.0 mm** respectively.



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