



MD: TS: 21/SEP'25

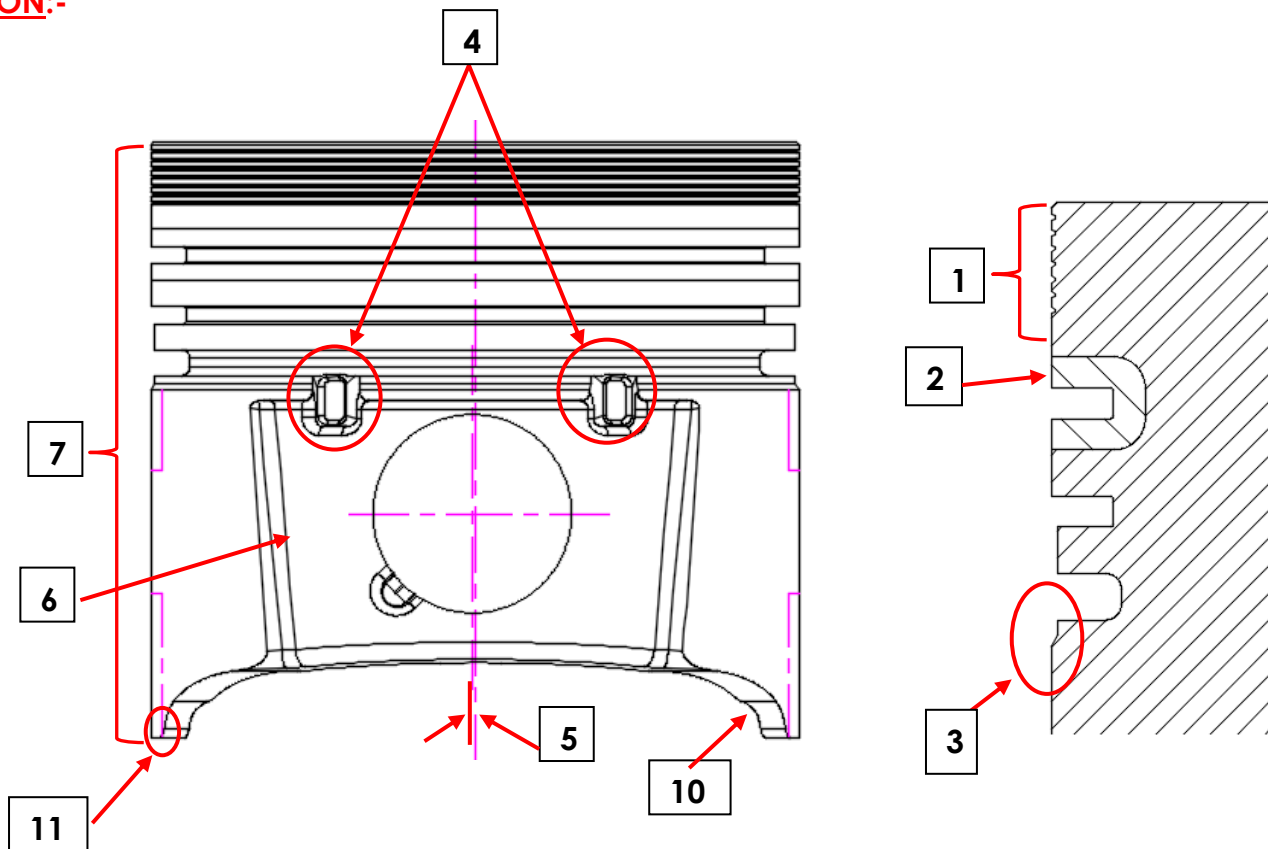
INTRODUCTION CIRCULAR- **TATA ACE (M) SUPER DVM - PISTON ASSEMBLY**

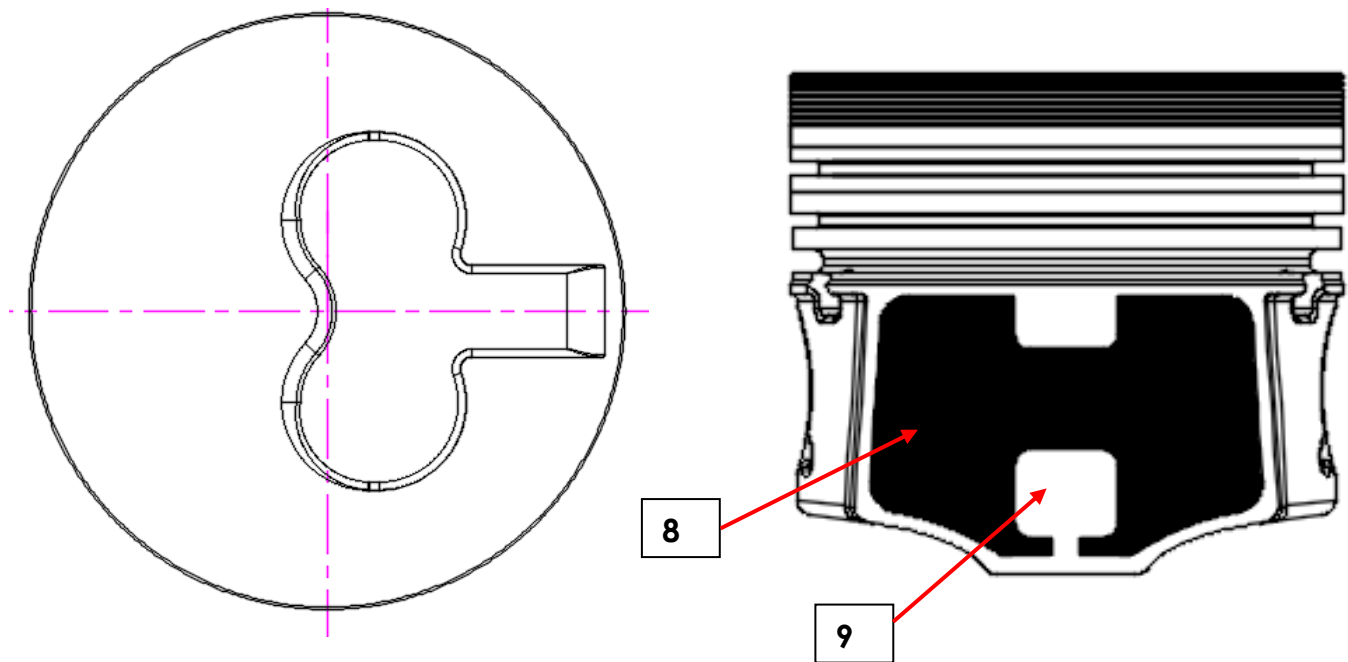
USHA is pleased to launch '**TATA ACE (M) SUPER DVM**' piston assembly in its aftermarket SCV product range.



This piston set has following special features: -

**PISTON:-**





Unique features of USHA '**TATA ACE (M) SUPER DVM**' piston are as follows:

SL. NO.	SPECIAL FEATURE	BENEFITS TO CUSTOMER
1)	<b>SERRATIONS:</b> These are shallow grooves which act as heat dam to reduce heat at the Top groove.	<ul style="list-style-type: none"> <li>Serrations help in preventing Blow-by, thereby reducing chances of Top land Scuffing.</li> </ul>
2)	<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>
3)	<b>'J' CUT:</b> Piston is provided with a unique 'J' cut 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>Faster drainage of excess oil, hence low oil consumption</li> </ul>
5)	<b>PISTON-PIN BORE OFFSET:</b> The piston is provided with a 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 & 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>'Nano-friKS COATING' ON PISTON SKIRT:</b>	<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>SLIPPER DESIGN:</b> Slipper design helps in reducing piston weight.	<ul style="list-style-type: none"> <li>• Improves fuel efficiency</li> <li>• Low noise during engine working</li> </ul>
11)	<b>SCRAPING 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>

<b>TECHNICAL DATA – 'TATA ACE (M) SUPER DVM' PISTON (Ø 75.00 mm)</b>	
<b>USHA CODE→ 122M</b>	
Nominal Bore Diameter	75.00
Piston Diameter	74.95
Recommended Piston-Liner Clearance	0.050
Compression Height	42.95
Total Height	67.95
Gudgeon Pin Length X OD	56.40 X 23.00
All dimensions in 'mm'	



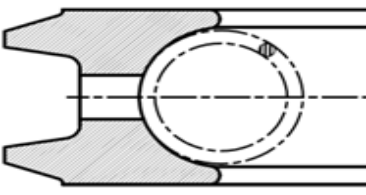
## **PISTON RINGS:-**



This ring set has following special features:

ITEM	CONFIGURATION	FEATURES	BENEFITS TO CUSTOMER
Top Ring	Steel Chrome {HPCR}	Steel Material	Top ring is made up of steel, which possesses good elasticity, excellent resistance to twisting, breakage & wear, hence longer life.
		Chrome Plating	Outer periphery of the ring is chrome plated which provides excellent wear & scuff resistance.
		Parkerising	Side faces of top ring are parkerised to provide porous surface for oil retention resulting in better lubrication, hence lesser wear.
2 <sup>nd</sup> Ring	Taper {T}	Taper face	Ring has a Taper on OD to provide line contact with liner resulting in higher wall pressure, hence better sealing.
		Parkerising	Ring is fully parkerised to provide porous surface for oil retention resulting in better lubrication & lesser wear.
Oil Ring	Diesel Vent 'M' shape (DVM)	Steel Material	Ring is made up of steel for longer life.
		Gas Nitriding (GN)	The ring is gas nitrided to provide wear resistance to all surfaces, hence longer life.
		Highly Conformable	DVM ring has built-in tension and spring beneath makes it highly conformable to the bore wear for better oil scraping.
		Sharp Scraping Ring Lands	The sharp ring lands with high wall pressure ensures better scraping of oil resulting in lower oil consumption.
		Multiple Oil Drainage Slots	Ensure faster drainage of oil.
		Excellent Flatness	Side faces of DVM oil ring remain flat and do not swell as in case of ordinary oil ring, for a free movement in groove.
		Light in Weight	Ring is lighter in weight than ordinary oil ring which reduces fluttering of ring in groove thereby avoids pumping up of oil, hence low oil consumption.

Technical data of 'TATA ACE (M) SUPER DVM' ring set is as under:

TECHNICAL DATA- 'TATA ACE (M) SUPER DVM' RING SET (ø 75.00 mm)						
USHA CODE→ 122M						
Ring	Ring Config.	Axial Thickness (mm)	Closed Gap		Surface Treatment	Cross Section
			(mm)	(Thou)		
Top	HPCR	2.00	0.15 - 0.30	06-12	O.D. Chrome / Parkerising	
2 <sup>nd</sup>	T	2.00	0.15 - 0.30	06-12	Parkerising	
Oil	DVM	3.00	0.15 -0.35	06-14	Gas Nitriding	

Above features make USHA 'TATA ACE (M) SUPER DVM' piston assembly unique, produced to give better performance & longer life.





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