

## TECHNICAL BULLETIN- TATA 697/407 CPC RING SET

USHA is pleased to introduce **Tata 697/407 CPC ring set** in our HCV/LCV product range.

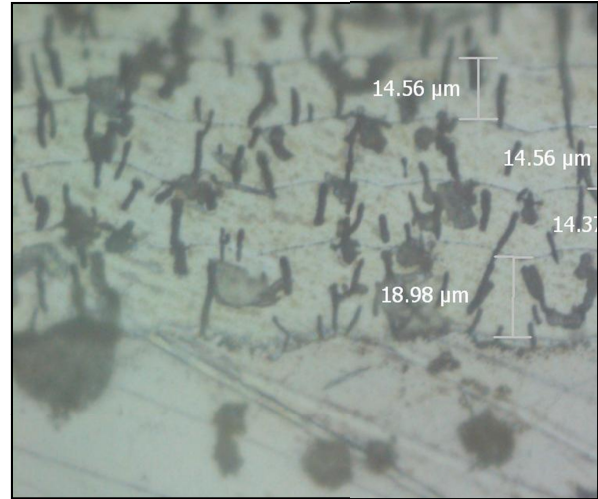
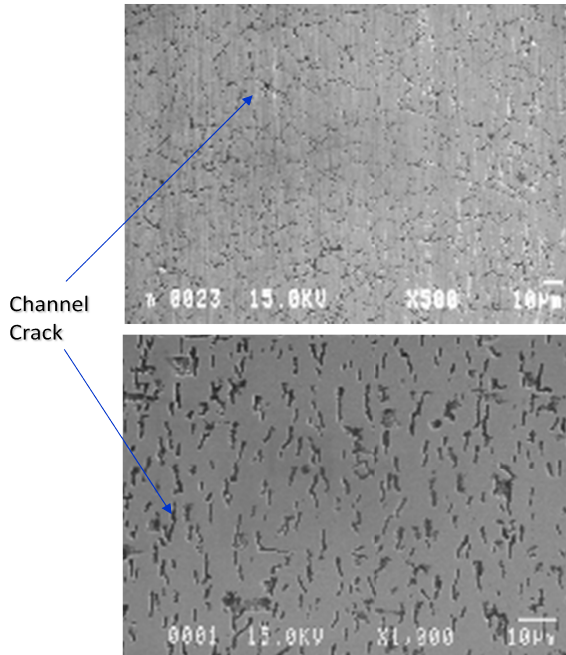
This ring set is applicable for a wide range of Tata 697/407/497 Euro-I & Euro-II models having **4.0 mm oil ring** as per the following list:

- TATA 697 NA/WT/ TC/CMVR
- TATA 407 NA/TC/CMVR/SPACIO
- TATA 608
- TATA 609/709 NA
- TATA 609/709/909/1109 Turbo
- TATA 697/497 E-II

This ring set has following special features:

ITEM	CONFIGURATION	FEATURES	Benefits to Customers
<b>TOP RING</b>	Keystone Special Steel CPC	Special Steel Material (RIK-20A)	Top ring is manufactured using special steel material which has properties similar to steel. This material has good elasticity and hence excellent resistance to twisting & breakage.
		Keystone geometry	Special keystone geometry keeps squeezing out excess oil from inside the groove & hence prevents carbon deposition.
		CPC coating	CPC (Composite Plating of Chrome) is a specialized process of first plating the ring OD with chrome, then creating cracks & then filling up hard particles (Al <sub>2</sub> O <sub>3</sub> ) in these cracks.  This process is repeated many times building one layer above another. CPC rings have higher wear & scuff resistance under all working conditions.
		Parkerising	Ring is also parkerised to provide porous surface for oil retention resulting in better lubrication & hence lesser wear.

### Surface Appearance



### Layered Structure

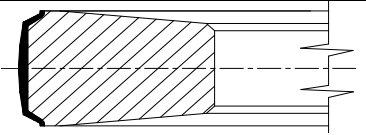
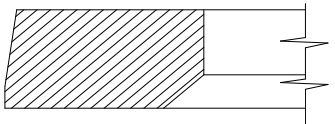
### Cross-section

Above figure depicts the micro cracks developed on ring surface which are then embedded with  $Al_2O_3$  particles to improve bonding strength among successive layers of chrome.

<b>SECOND RING</b>	Reverse Torsion	Taper face with Inside bevel on lower face	<p>Ring has taper at OD &amp; a bevel cut at the lower part of ID. Due this bevel cut, the ring twists negatively during suction stroke and provides better sealing and scraping action.</p> <p>This ring performs dual function. During upward stroke, it act as a compression ring and during downward stroke, it acts as an oil scraper ring.</p> <p>This ring provides excellent control on engine oil consumption.</p>
		Chrome Plating & Parkerising	<p>Chrome plating provides excellent wear &amp; corrosion resistance. Ring is also parkerised to provide porous surface for oil retention resulting in better lubrication &amp; hence lesser wear.</p>

<b>OIL RING</b>	High Tension Profile Ground Spring loaded Conformable	Conformability	Ring is spring loaded which make it capable to conform itself to the varying wear of cylinder liner to ensure perfect sealing & excellent oil scraping.
	Oil Control Ring	Lands Chrome plated & profile ground	Lands are made uniform throughout the periphery for effective sealing & efficient scraping of oil due to sharper scraping edges. Chrome plating provides excellent wear & corrosion resistance.

Technical data of **Tata 697/407 CPC** ring set is as under:-

Ring	Ring Configuration	Axial Ht. (mm)	Closed Gap		Cross Section
			(mm)	(thou)	
Top	Keystone Special Steel CPC	2.5 (nom.)	0.25-0.45	10-18	
Second	Reverse Torsion	2.5	0.40-0.55	16-22	
Oil	HTCR (PGV)	4.0	0.25-0.40	10-16	