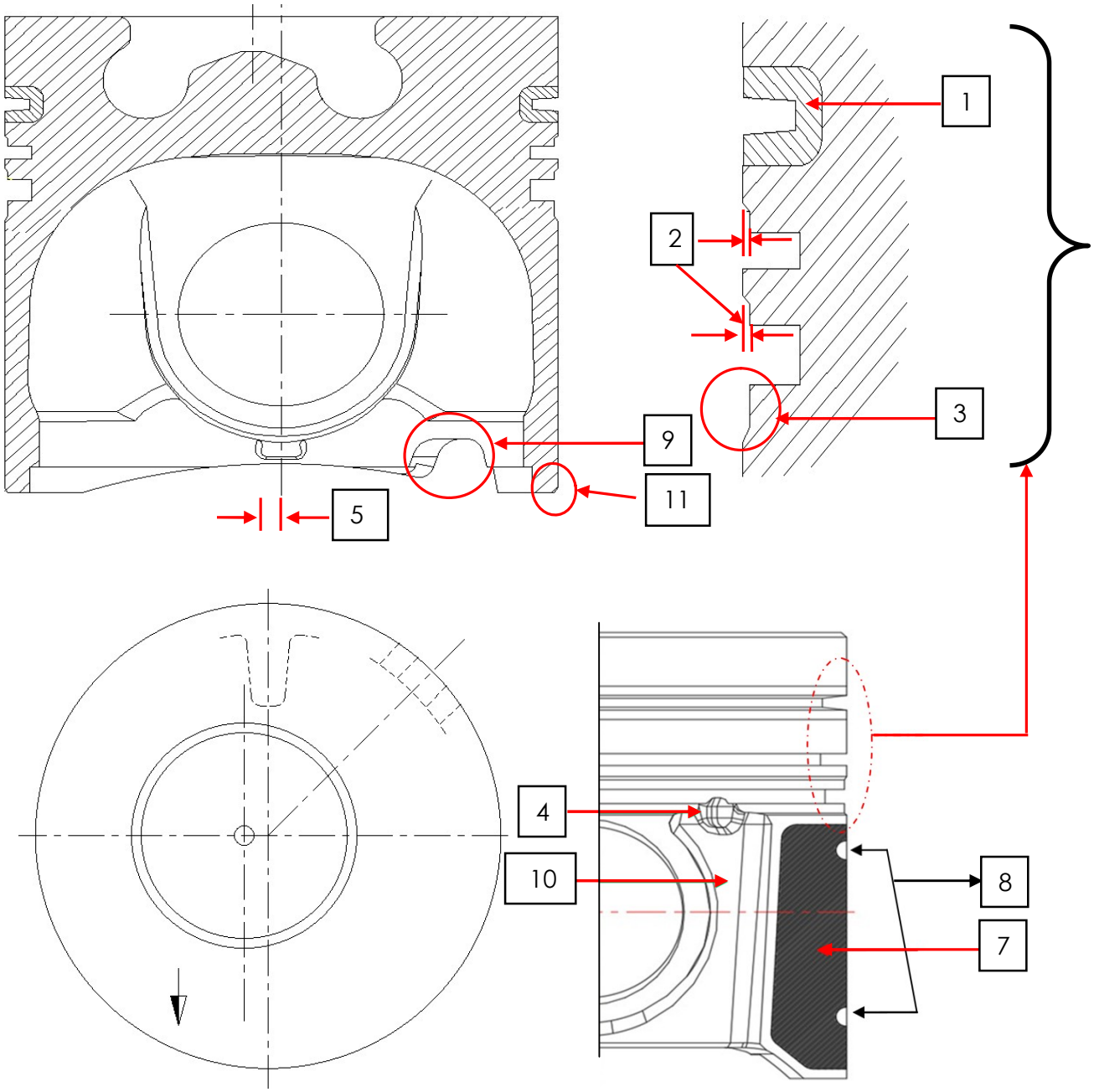
TECHNICAL BULLETIN – TATA 407 SPACIO BS II PISTON SET

USHA is pleased to introduce Tata 407 Spacio BS II piston set in our LCV product range.

USHA Tata 407 Spacio BS II piston set has following special features:

PISTON:-



S. No.	SPECIAL FEATURE	BENEFIT TO CUSTOMER
1)	**HIGH NICKEL WEAR RESISTANT RING CARRIER (RCP):** Top groove of this piston is made of high nickel wear resistant ring carrier insert which is manufactured using centrifugal casting technology.	• Longer life of piston due to negligible wear of top groove.
2)	**STEP CUT IN FIRST & SECOND RING LAND:** First & second ring lands are provided with step cut to provide better seating & stability to top & intermediate compression rings respectively.	• Helps in controlling blow-by & reducing oil consumption.
3)	**"J" CUT:** This piston has been provided with a unique "J" cut below the oil ring groove area.	• "J" cut provides all time lubrication to piston skirt. • No piston seizure in extreme limits of normal working conditions.
4)	**QUICK OIL RETURN SLOTS (QORS):** Two nos. of Quick Oil Return Slots (QORS) are provided on each side of the piston above the pin bore, half in groove & half in window.	• Quick drainage of oil and hence lower oil consumption.
5)	**PISTON- PIN BORE OFFSET**: This 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 & slapping with liner is prevented.	• Reduced engine noise.
6)	**PISTON SURFACE COMPLETELY BONDERISED:**	• Bonderising helps in preventing oxidation of piston. • Also provides porous surface for oil retention & reduction in wear.
7)	**SKIRT COATED WITH NEW 'D-10' COATING:**	• **D-10** permanent coating provides better wear resistance & helps in initial lubrication to avoid piston scuffing/seizure etc.
8)	**MEASURING POINTS ON THE SKIRT:** Two points on both sides of the skirt.	• Provided for easy diameter verification.

9)	**NOTCH FOR OIL COOLING JET:** Provides room for cooling jet nozzle.	• Helps in directing oil flow towards under crown of piston for optimum performance & longer life.
10)	**AS CAST CONVERGENT TYPE PIN BORE RECESS:** This not only provides more space for oil drainage but the unique convergent type design also provides more bearing area to the piston skirt. More bearing area on skirt helps in well guided movement of piston rings.	• Faster oil drainage helps in reducing oil consumption. • Longer life of piston. (Seizure on minor axis is avoided)
11)	**SLIPPER DESIGN**: Slipper design & notch for cooling jet in skirt helps in reducing piston weight. It also provides better guidance for piston movement.	• Improved fuel efficiency. • Better guidance to rings. • Low noise during engine working.

TECHNICAL DATA- USHA TATA 407 SPACIO BS II PISTON SET		
		USHA CODE→L31
Nominal Bore Diameter	**mm**	**97.00**
Piston Diameter	**STD Size mm**	**96.88**
Recommended Piston-Liner Clearance	**mm**	**00.12**
Compression Height	**mm**	**58.50**
Total Height	**mm**	**93.40**
Piston Pin-Pin Bore Clearance	**mm**	**+0.002 to +0.009 (Clearance Fit)**

PISTON RINGS:-

USHA Tata 407 Spacio BS II pistons are compatible with our existing range of rings suitable for Tata 407/609/709 models with the ring groove thickness as below:

Ring	Axial Thickness
1st ring	2.5 mm
2nd ring	2.5 mm
Oil ring	4.0 mm