

MD: TS: 08/2022

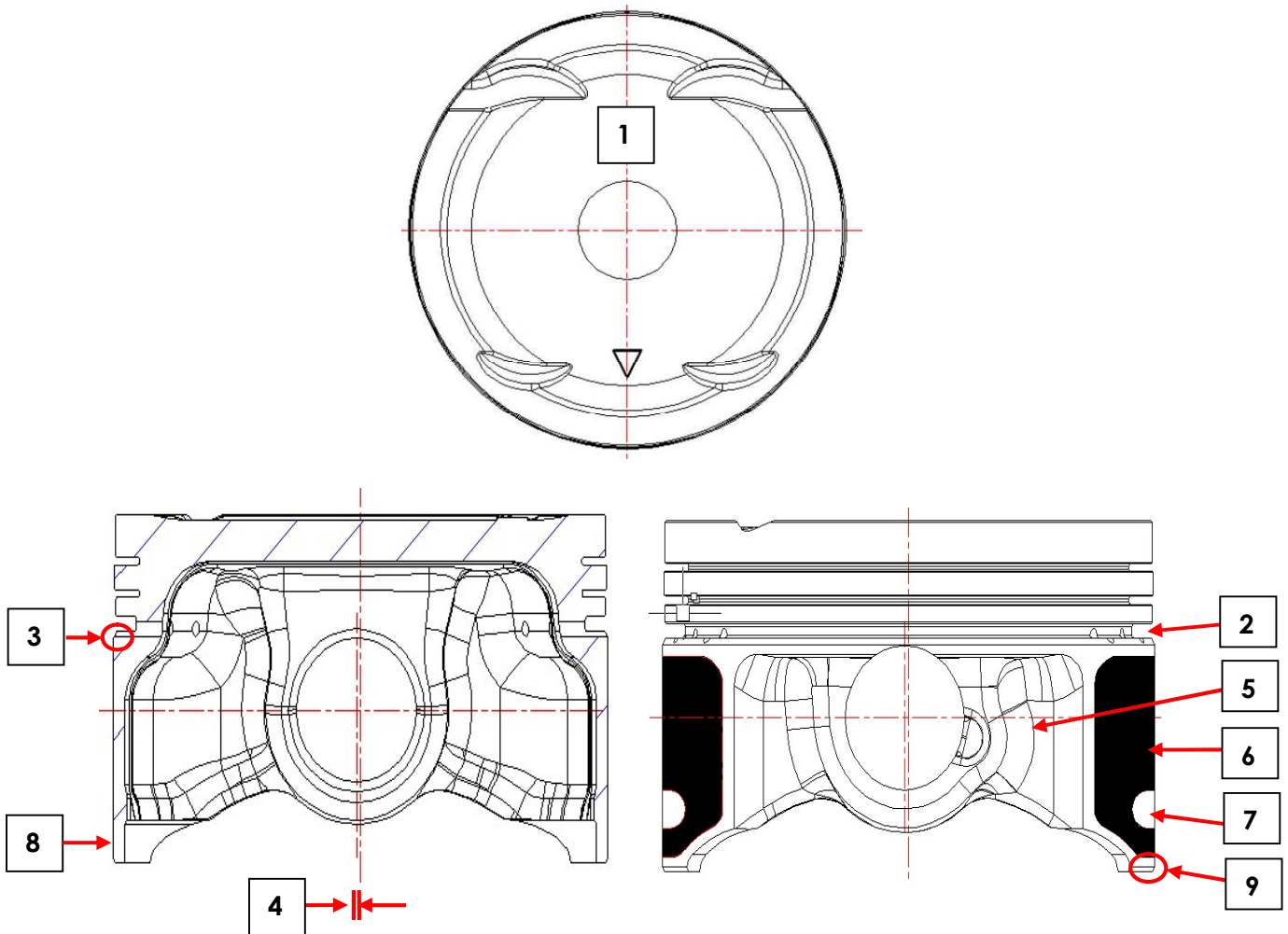
SEP'2021

An update from SHRIRAM PISTONS & RINGS LTD.

USHA[®] is pleased to launch 'TVS Apache RTR 160cc 4V' piston assembly in its Bi-wheeler range.

This piston assembly has following special features :-

PISTON :-



Unique features of USHA 'TVS APACHE RTR 160cc 4V' pistons are as follows:-

SL. NO.	SPECIAL FEATURE	BENEFITS TO CUSTOMER
1)	AS CAST CROWN :- USHA Apache RTR 160cc 4V piston has as cast crown i.e. no machining is done on the crown. This results in better grain structure which increases strength, heat resistance etc.	<ul style="list-style-type: none"> Improves piston life
2)	OIL HOLES IN RING GROOVE :- This piston is provided with 10 nos. of oil holes, half in oil ring groove & half in skirt on either side.	<ul style="list-style-type: none"> Faster drainage of excess oil Reduced oil consumption
3)	CHAMFER AT BOTTOM FLANK OF OIL RING GROOVE :-	<ul style="list-style-type: none"> Better drainage of oil Reduces skirt wear

4)	PISTON - PIN BORE OFFSET :- USHA Apache RTR 160cc 4V 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 & prevents slapping with liner.	<ul style="list-style-type: none"> • Reduced engine noise
5)	AS CAST RELIEF IN PIN BORE AREA :- The piston is provided with as cast relief in pin bore area which avoids chances of seizure on minor axes & also helps in faster drainage of oil towards sump.	<ul style="list-style-type: none"> • Longer life • Low oil consumption
6)	'NANO-FRIKS COATING' ON PISTON SKIRT :- USHA Apache RTR 160cc 4V piston is provided with 'Nano-friKS' coating on its skirt.	<ul style="list-style-type: none"> • Helps in initial lubrication & seizure free operation • Better wear resistance • Reduces engine noise
7)	MEASURING POINTS ON PISTON SKIRT :-	<ul style="list-style-type: none"> • Provided for easy diameter verification
8)	SLIPPER DESIGN :- Slipper design helps in reducing piston weight & provides better guidance to piston movement.	<ul style="list-style-type: none"> • Improved fuel efficiency • Better guidance to rings • Low noise during engine working
9)	SCRAPPING CHAMFER :- A smooth chamfer is provided at the bottom end of the piston.	<ul style="list-style-type: none"> • Helps in regulating oil supply, reduces skirt wear & hence longer life

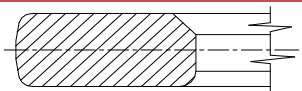
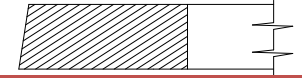
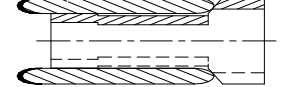
TECHNICAL DATA – 'TVS APACHE RTR 160cc 4V' PISTON

		USHA CODE → S46
Nominal Bore Diameter	mm	62.000
Piston Diameter	STD Size mm	61.980
Recommended Piston-Liner Clearance	mm	00.020
Compression Height	mm	20.500
Total Height	mm	36.500
Piston Pin- Pin Bore Clearance	mm	+0.004 to +0.015 (Clearance fit)

PISTON RINGS :-

USHA 'TVS APACHE RTR 160cc 4V' piston is supplied with a unique 'HPVENT' ring set, same as that of TVS Apache 160cc, for low oil & fuel consumption. The technical details of 'HPVENT' ring set are as under :-

TECHNICAL DATA – 'TVS APACHE RTR 160cc 4V' – 'HPVENT' RINGS

Ring	Ring Configuration	Axial Thickness (mm)	Closed Gap		Surface Treatment	Cross Section
			(mm)	(Thou)		
Top	Inside Bevel Steel	0.80	0.20-0.35	08-14	Gas Nitrided	
Second	Taper Special Steel	0.80	0.35-0.50	14-20	Parkerised	
Oil Ring	RIKVENT	1.50	0.20-0.70 (Rails)	08-28	Rails Chrome Plated/ Parkerised	



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