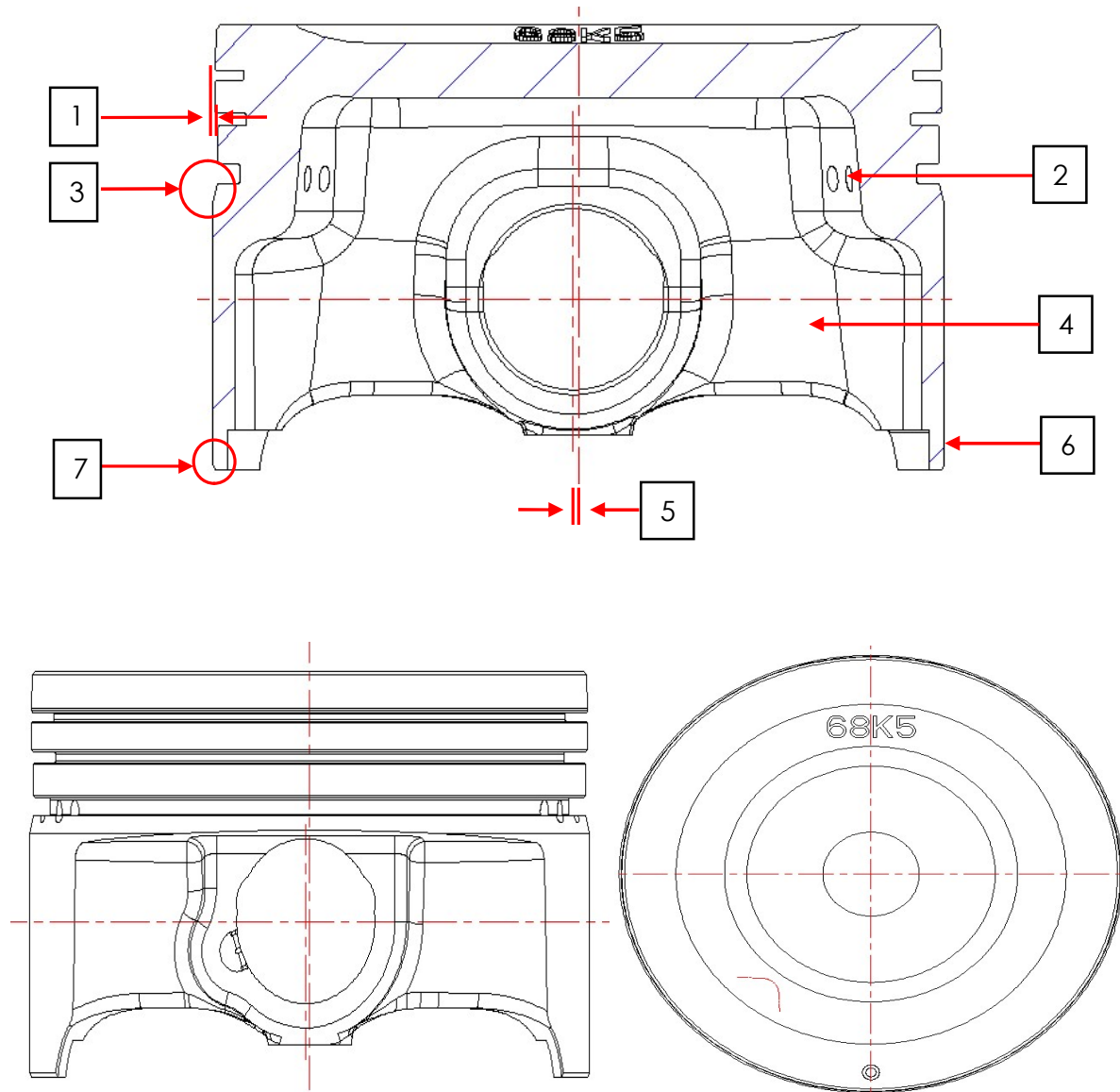


TECHNICAL BULLETIN – MARUTI A STAR/ALTO K10 PISTON ASSEMBLY

USHA is pleased to introduce Maruti A Star/Alto K10 piston assemblies in our car product range.

PISTON:-

USHA Maruti A Star/Alto K10 piston set has following special features:



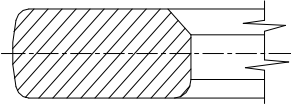
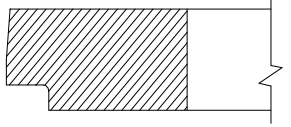
S. No.	SPECIAL FEATURE	BENEFIT TO CUSTOMERS
1)	CUT BACK IN SECOND RING LAND: Second ring land is slightly kept undersize to provide better seating & stability to the first ring.	<ul style="list-style-type: none"> Helps in controlling blow-by & reducing oil consumption.

2)	HOLES IN OIL RING GROOVE: Four through holes are provided on either sides of the oil ring groove.	<ul style="list-style-type: none"> • Faster drainage of excess oil. • Lesser oil consumption.
3)	CHAMFER BELOW OIL RING GROOVE: The piston is provided with an all round chamfer just below the oil ring groove.	<ul style="list-style-type: none"> • This chamfer helps in faster drainage of oil and lubrication of piston skirt. • Avoids piston seizure.
4)	AS CAST RELIEF IN PIN BORE AREA: This piston is provided with as cast relief in pin bore area which helps in better drainage of oil.	<ul style="list-style-type: none"> • Lesser oil consumption. • Improved strength in pin bore area.
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.	<ul style="list-style-type: none"> • Reduced engine noise.
6)	SLIPPER DESIGN: Slipper design in skirt helps in reducing piston weight & provides better guidance for piston movement.	<ul style="list-style-type: none"> • Improved fuel efficiency. • Better guidance to rings. • Low noise during engine working.
7)	BOTTOM CHAMFER: A smooth chamfer is provided at the bottom end of piston skirt which helps in obtaining better hydrodynamic oil film.	<ul style="list-style-type: none"> • Helps in regulating oil supply, reduced skirt wear and hence longer life.

TECHNICAL DATA- USHA MARUTI A STAR/ALTO K10 PISTON SET		
		USHA CODE→C23
Nominal Bore Diameter	mm	73.000
Piston Diameter	STD Size mm	72.975
Recommended Clearance	Piston-Liner mm	0.025
Compression Height	mm	27.300
Total Height	mm	44.300
Piston Pin-Pin Bore Clearance	mm	+0.006 to +0.019 (Clearance Fit)

PISTON RINGS:

USHA Maruti A Star/ALTO K10 pistons are supplied with unique design HPVENT ring sets for low oil consumption & blow-by. These rings are same as those being used for Maruti Swift/D-Zire/Ritz Petrol (K12) engines. The technical details of HPVENT ring set are as follows:-

TECHNICAL DATA- MARUTI A STAR/ALTO K10 RINGS : HPVENT						
						USHA CODE→C03
Ring	Ring Configuration	Axial Thickness (mm)	Closed Gap		Surface Treatment	Cross Section
			(mm)	(Thou)		
Top	Inside Bevel Steel	1.00	0.15-0.28	6-11	Gas Nitrided	
Second	Taper OD Step	1.20	0.28-0.41	11-16	Parkerised	
Oil Ring	RIKVENT	2.00	0.20-0.50 (Rails)	8-20	Gas Nitrided Rails OD Chrome Plated	