

TECHNICAL BULLETIN- TATA INDIGO MANZA/FIAT LINEA

PISTON ASSEMBLY

USHA is pleased to introduce **Tata Indigo Manza/ Fiat Linea** piston assembly in our Car product range.

This piston assembly is applicable to Fiat Multijet 90 HP engine.

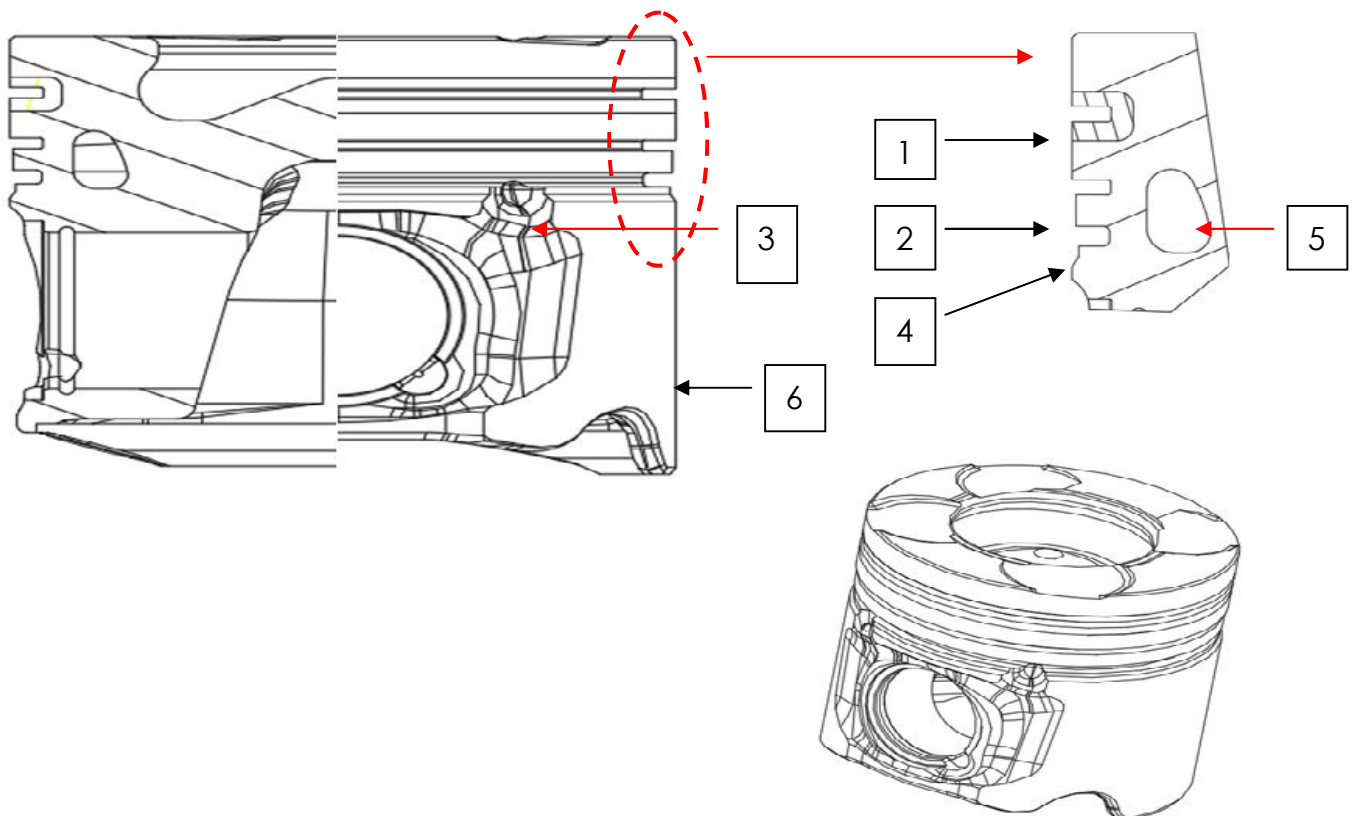
Variety of vehicles sports this engine, list of which is as follows:

- Tata Indigo Manza
- Tata Indica Vista D90
- Tata Zest
- Tata Grande
- Fiat Punto Evo
- Fiat Linea
- Maruti SX4
- Maruti Ertiga
- Maruti S-Cross 1.3L
- Maruti Vitara Brezza

This piston assembly have many special features which are as under:

PISTON:

Special Features of Piston are:-



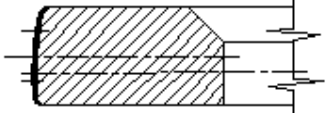
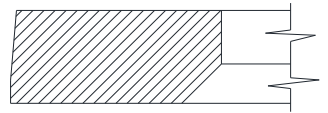
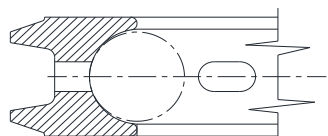
S.No.	Special Features	Benefits to customers
1)	HIGH NICKEL WEAR RESISTANT RING CARRIER (RCP): Top Groove of this Piston is made of high wear resistant ring carrier insert, which is manufactured as per latest centrifugal casting process.	<ul style="list-style-type: none"> Longer life of piston due to negligible wear of top groove.
2)	CUT BACK IN SECOND RING LAND: Land is slightly undersize to provide more space for the oil scrapped by the second ring.	<ul style="list-style-type: none"> Helps in reducing oil consumption.
3)	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.	<ul style="list-style-type: none"> Quick drainage of oil and hence lower oil consumption.
4)	“J” CUT: This piston has been provided with a unique ‘J’ cut below the oil ring groove area.	<ul style="list-style-type: none"> ‘J’ cut provides all time lubrication to skirt. No piston seizure in extreme limits of normal working conditions.
5)	OIL COOLING GALLERY (OCG): Oil cooling gallery is made around the periphery on under crown area of the piston beneath ring zone through which oil flows regularly.	<ul style="list-style-type: none"> Facilitates heat dissipation. Helps in rapid cooling of the under crown & ring groove area thereby enhancing engine life.
6)	SKIRT COATED WITH NEW “Nanofriks” COATING	<ul style="list-style-type: none"> Nanofriks permanent coating provides better wear resistance & helps in initial lubrication to avoid piston scuffing/seizure etc.
7)	PISTON SURFACE COMPLETELY BONDERISED	<ul style="list-style-type: none"> Bonderising helps in preventing oxidation of piston. Also provides porous surface for oil retention & reduced wear.

TECHNICAL DATA - TATA INDIGO MANZA/ FIAT LINEA PISTON		
		USHA
CODE→ C21		
Nominal Bore Diameter	mm	69.60
Piston Diameter	STD Size mm	69.55, 69.56, 69.57
Recommended Piston-Liner Clearance	mm	0.50
Compression Height	mm	40.43
Total Height	mm	63.43
Piston Pin- Pin Bore Clearance	mm	+0.009 to +0.0010 (Clearance Fit)

PISTON RINGS:

The pistons are supplied with Modern technology IP **DVM** ring set for low oil consumption, minimum blow-by & excellent performance.

USHA IP DVM ring set configuration is as below:

TECHNICAL DATA- TATA INDIGO MANZA/ FIAT LINEA RINGS						
Ring	Ring Configuration	Axial Thickness (mm)	Closed Gap		Surface Treatment	Cross-Section
			(mm)	(Thou)		
Top	Steel Inside Bevel	1.75	0.18-0.28	7-11	Ion Plating	
Second	Reverse Torsion	1.5	0.70-0.85	28-34	Parkerised	
Oil Ring	DVM	2.0	0.20-0.40	8-16	Gas Nitrided	

Note:

Please remember our **IP DVM** ring set is **exclusively designed for USHA Tata Indigo Manza/ Fiat Linea pistons** and is **not compatible with competitor's piston** because of **difference in top ring axial thickness**.