REO TECHNOLOGY

Sourcing & Service

MAZDA DIESEL

Liner Kit / Cylinder Kit

REO TECHNOLOGY CORP.

Version:2016

Important Information

The information provided in this catalog has been carefully complied,but we may emphasize that it is non-committing.We do not give any warranty for the correctness.Particularly we do not undertake any warranty for changes in the equipment by the manufacturers of vehicles or engines nor for changes in the designation of the parts.Any references to errors in the catalog which you may advise are welcome and will lead to corrections in future issues of the catalog.

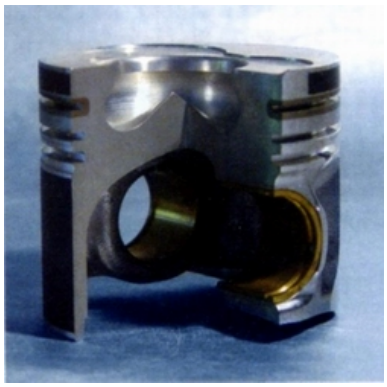
Names ,desriptions,numbers of vehicles or manufacturers etc. are only stated for reference.All figures,drawings and other data serve for explanatory and for illustration purposes only.Any reprint ,imitation and reproduction shall be subject to our prior approval in writing with exact indication of the source.

Subject to be changed without notice.

1. Design feature of Pistons

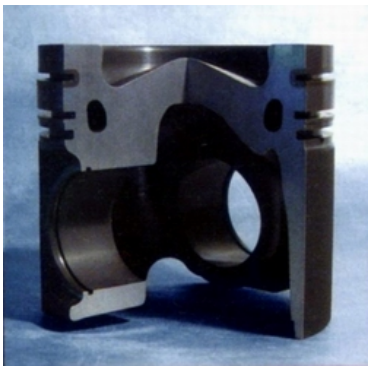
Cast Piston

Distinguish itself with a long operating life and economic viability for gasoline and diesel engines.In this piston ,the piston crown,ring zone and skirt make a robust unit.Therefore the possibilities for use range from a small to a large engine



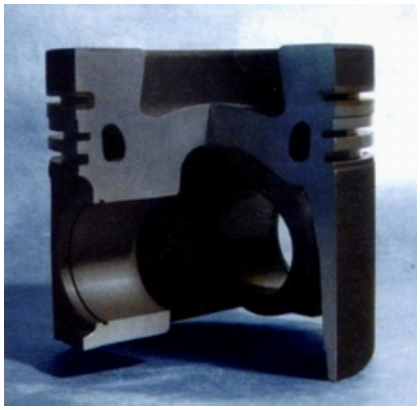
Al-fin Piston

Have a ring carrier made of special cast iron which is cast into piston.This provides protection to the top ring groove from the wear and tear which diesel engines in particular are increase the loads to which the pin boss can be subjected.



Al-fin & cooling gallery piston

The piston is used in situations in which particularly high operating temperature occur.In order to reduce the high temperatures-which are caused by the increased performance –in the piston crown and in the ring area,intensive cooling is done by circulating oil in the cooling gallery.



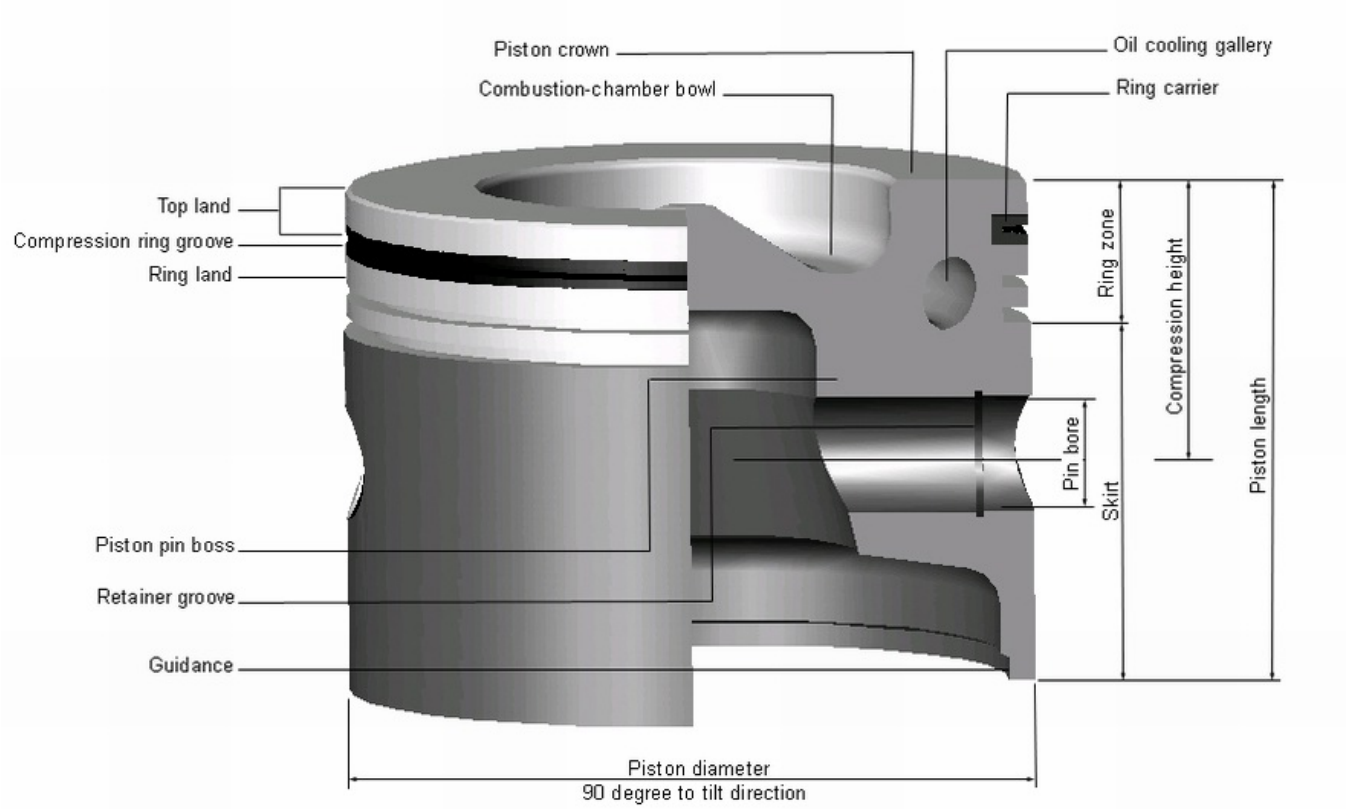
Al-fin, cooling gallery & head anodized piston

This design is used for highly loaded diesel engines.For additional protection and in order to avoid cracking in the combustion chamber and the crown.the piston has a special hard anodized layer on the piston crown.(Head anodized)

Two pieces piston

Consist of a steel piston head and an aluminum piston skirt which have a moveable connection to each other via the piston pin.Due to great strength and low wear and tear,it is possible to achieve low exhaust emission values for diesel engines that are subjected to particularly high loads.

2. Technical Terms of the piston



Fitting recommendation

Shrink fit

Assembling pistons and pins with shrink fit in the con rod requires the greatest of care.It is particularly important that there is freedom of movement between piston and pin after assembly.

Floating pin

For pistons with floating pins,the enclosed circlips serve to fix the piston in the piston pin bore.The circlips must be mounted with a suitable tool.When this is done it should be ensured that the circlips fit completely into the slot for which they are intended and that the impact is always in the stroke direction of the piston.

Never use old circlips and avoid pressing them together too much,otherwise permanent deformations canresult.

Installation of the piston

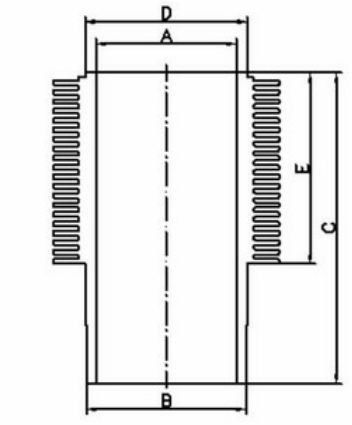
When the piston is installed,the installation direction must be observed.The impacts on the individual piston rings are to be distributed evenly across their circumference.The pin locking device is to be installed in such a way that the impact is at the top or the bottom.The cylinder bore or the pistons and the rings must be oiled.

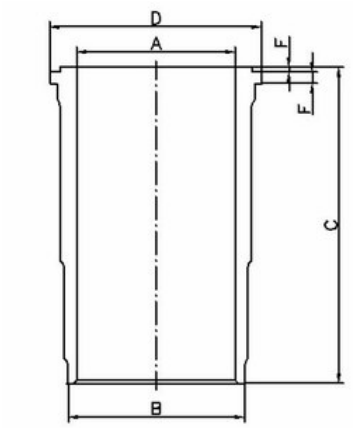
In order to avoid damage when the piston is being fitted in the cylinder bore,a suitable tool is to be used for assembly.

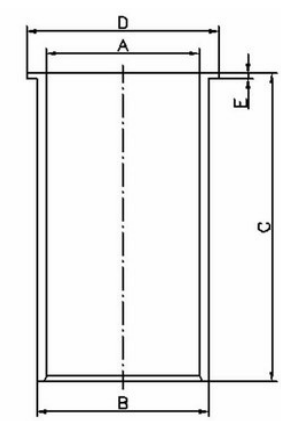
In the case of Diesel engines,the clearance must be measured and the relevant instructions from the engine manufacturer must be followed.The part of the engine (cylinder block,crankshaft,con rod and pil pan)must be cleaned carefully before assembly to remove machining residues and deposits.

3. Types and technical terms of the cylinder liner









Main dimensions

A = maximum finished diameter for pre-machined liners(Fully-finished)

B = Fitting diameter

C =Total length

D =Flange diameter

E =Flange height

F =Fire protection rim height

Fitting recommendation

Wet cylinder liners

The location bores and particularly the running surfaces in the cylinder block must be cleaned carefully.and they must be undamaged.Corroded surfaces must be reworked(use flange liners and outer diameter oversize liners).As this is done,make sure that the liners move in easily and that they take up the correct position(the projecting length of the liner must be in accordance with the regulations of the engine manufacturer).After the liner has been installed with the seal rings that belong to it(use slip agent),the cylinder diameter is to be checked-particularly in the region of seal rings-so as to determine whether any deformation has been caused by pinched sealing rings.Using the wrong sealing rings(wrong diameter/wrong material) can a narrowing of the cylinder. which can lead to engine damage. The cooling system should be pressure tested after the liners have been installed.so as to determine whether there is any leakage before the engine is started.

Semi-finished cylinder liners

The surface which supports the flange must be vertical to the location bore and it must be sufficiently and evenly beveled.If the liner flange is unevenly supported it can tear off.After the installation of the liner,which is only semi-finished in its inside diameter,this cylinder boring is finely bored and then finished by honing until it has the specified dimensions or ,in the case of finely bored liner,it is only finished by honing (tolerance accordingly to DIN/ISO H5).The surface of the liner must be flush to the sealing surface of the cylinder block ;if necessary ,the block surface and the liner must be finished by surface grinding.

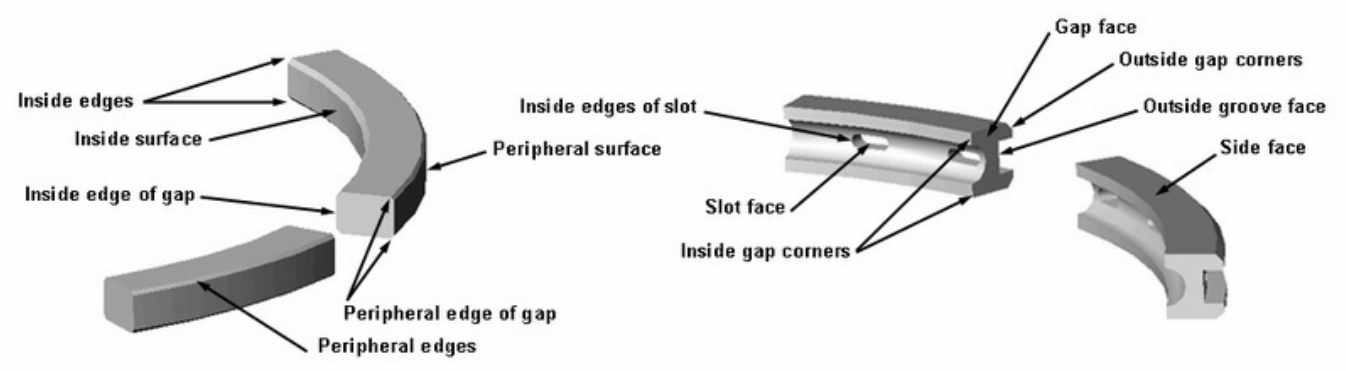
Finished cylinder liners

Before theliner is installed,the locating bore in the cylinder block must be cleaned carefully,and must be checked to ensure the accuracy of the dimensions and to determine whether any distortion has occurred.Out-of –center or dmaged bores can be reworked for the installation of oversize liners.It is important for this that the locating bore is cylindrical,as this is what determines the geometrical shape of the inside of the pressed-in ,thin walled liner.

Finned cylinders

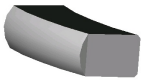
In accordance with the instructions from the engine manufacturer,cast iron cylinders or light alloy cylinders are used.Light alloy cylinders are separated into several groups due to the small installation clearance in the standard cylinder dimensions.

4. Types and technical terms of the piston ring



Cross-section configurations

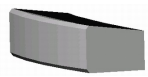
Sealing rings



Barrel-faced ring

Rectangular ring

Taper-faced ring



Half keystone ring

Keystone ring

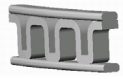
Napier ring

Scraper ring(Stepped)

Oil control rings

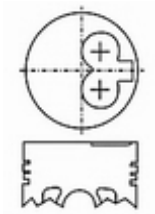
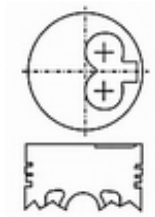
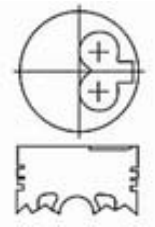
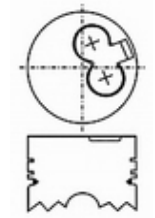
Bevelled edge oil control ring

Coil spring loaded beveled edge oil control ring



Steel-rail oil control ring (multi piece)

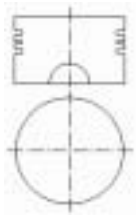
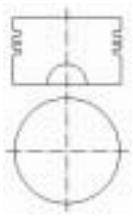
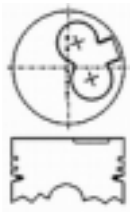
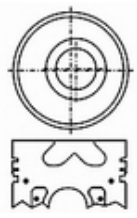
Liner Kit For MAZDA

					
R2 Ø86.0 4 cyl.,2184cm³ Bongo SR29V , Piston : Alfin,Tin Plate Liner :Semi Finsihed & Fully Finished	**8A86F01-FT** **8A86F01-ST** **8A86F01-FAT** **8A86F01-SAT** MZKT01F000	**8L86F01-F** **8L86F01-S** RF01-23-051 TL 165.0 OD 90.0 FD 94.0 FH 5.0	**8P86F01-T** **8P86F01-AT** RF01-23-200 TL 86.3 CH 47.3 -1.6 PD 25.0 PL 68.5	**8B86F01** RF01-11-213 	**8R86F01** R201-23-130 R201-23-130A R30850 RN Cr2 2.0 2.0 FX 4.0
R2 Ø86.0 4 cyl.,2184cm³ Bongo SR29V , Piston : Alfin,Tin Plate Liner :Semi Finsihed	**8A86F02-ST** MZKT01F000	**8L86F02-S** RF01-10-311 TL 165.0 OD 90.0	**8P86F01-T** RF01-23-200 TL 86.3 CH 47.3 -1.6 PD 25.0 PL 68.5	**8B86F01** RF01-11-213 	**8R86F01** R201-23-130 R201-23-130A R30850 RN Cr2 2.0 2.0 FX 4.0
R2 New Ø86.0 4 cyl.,2184cm³ Bongo SR29V , Piston : Alfin,Tin Plate Liner :Semi Finsihed & Fully Finished	**8A86F03** MZKT20Y000	**8L86F03** R2B6-10-311 TL 163.0 OD 89.0 FD 94.0 FH 2.8	**8P86F03** R2Y0-11-SAO TL 86.3 CH 47.3 -1.6 PD 25.0 PL 68.5	**8B86F01** RF01-11-213 	**8R86F02** R2B6-11-SCO R30330 GN 2.0 2.0 RN SX 3.0
S2 Ø88.9 4cyl.2209cm³ Bongo,Diesel Luce(929L) LA48,DA258,BA259,E2200 Piston : Liner :	**8A89F01** MZKT0801	**8L89F01** 1456-23-051 TL 167.5 OD 96.9 FD 101.0 FH 3.8+1.0	**8P89F01** 1456-23-200 TL 94.7 CH 50.7 -1.7 PD 28.0 PL 73.5	**8B89F01** 1456-23-206 	**8R89F01** 0911-11-213 1456-23-206 S213-11-213 R30190 RN Cr2 2.393 RN 2.393 RN FX 4.763

Suffix Code : Piston **A**=Alfin **D**=Head Anodizing **M**=MoS2 Coating **O**=Oil Gallery **T**=Tin Plating
Liner **C=**Chrome plating **F**=F/F **IH**=Induction Harden **P**=Phosphated **S**=S/F **U**=Copper plating

Liner Kit For MAZDA

XB Ø92 4cyl. ,2701cm3 Titan E2700 Piston : Liner :	**8A92F01** MZKT5280000	**8L92F01** 0528-10-311 TL 191.0 OD 96.9 FD 101.0 FH 3.8+0.8	**8P92F01** 0528-23-200 TL 115.7 CH 60.2 PD 31.75 PL 75.0	**8B92F01** 0636-11-213 	**8R92F01** 0527-23-206 0528-23-206 R30741 RN Cr2 2.38 RN 2.38 RN 2.38 RN FO 4.76 RN 4.76
E3000 Ø95.025 **HA** 4cyl. E3000 Piston : Liner :	**8A95F01** MZKT933000	**8L95F01** 1363-23-051 TL 189.0 OD 98.5 FD 103.5 FH 3.8 +0.8	**8P95F01** 0933-23-200 TL 115.4 CH 58.4 PD 31.75 PL 75.0	**8B95F01** 	**8R95F01** SE01-23-206 R30371 RN Cr2 2.38 2.38 FX 4.763
HA Ø95.025 4cyl.,2977cm³ Titan D3000 WE,WOFI ,T3000 Piston : Liner :	**8A95F02** MZDKT0901	**8L95F01** 1363-23-051 TL 189.0 OD 98.5 FD 103.5 FH 3.8 +0.8	**8P95F02** SE01-23-200 TL 100.7 CH 53.7 -2.0 PD 30.0 PL 79.0	**8B95F02** SE01-11-213 	**8R95F01** SE01-23-206 R30371 RN Cr2 2.38 2.38 FX 4.763
SL Ø100 4cyl.,3455cm3 Titan Truck T3500 Piston : Al-Fin,Round Combustion Chamber 35mm Liner :OD is graded as A & B,Phosphated.	**8A00F01** MZKT01L000	**8L00F01-P** SL01-23-311 TL 193.5 OD 103.5 FD 108.0 FH 2.5 +0.8	**8P00F01-A** SL01-23-200 TL 105.0 CH 58.0 -21.3 PD 34.0 PL 82.0	**8B00F01** SL01-11-213 	**8R00F01** SL01-23-206A R30140 RN 2.5H 2.0 FX 4.5

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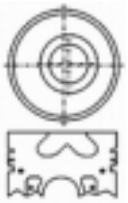
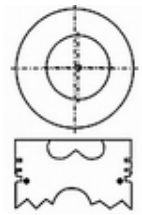
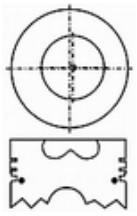
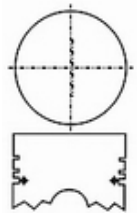
Liner Kit For MAZDA

SL **Ø100**	**8A00F02**	**8L00F01-P**	**8P00F02-DO**	**8B00F01**	**8R00F02**
	MZKT07L000	SL01-23-311	SL07-23-200	SL01-11-213	SL07-23-206A
4cyl.,3455cm3					R30141
Titan Truck T3500					
Piston : Oil Gallery & Head Anodized.Round Combustion Chamber 35mm		TL 193.5	TL 105.0		RN Cr4 2.5
		OD 103.5	CH 58.0 -21.3		2.0
Liner :OD is graded as A & B,Phosphated.		FD 108.0	PD 34.0		FX 4.5
		FH 2.5 +0.8	PL 81.8		

SLT **Ø100**	**8A00F03**	**8L00F01-P**	**8P00F03-AO**	**8B00F01**	**8R00F03**
	MZKT50L000	SL01-23-311	SL50-11-SA0	SL01-11-213	SL50-11-SCO
4cyl.,3455cm3					R30045
Titan,Truck,Dump,T3500T					
Piston : Oil Gallery & Al-Fin,Round Combustion Chamber 53mm		TL 193.5	TL 105.2		RN Cr2 2.5
		OD 103.5	CH 58.2 -18.5		2.0
Liner :OD is graded as A & B,Phosphated.		FD 108.0	PD 34.0		FX 4.5
		FH 2.5 +0.8	PL 81.8		

TF **Ø105.5**	**8A05F01**	**8L05F01-P**	**8P05F01-AO**	**8B05F01**	**8R05F01**
	MZKT20L000	TFY0-10-311	TF20-11-SAO	TF01-11-213	TF01-11-SCO
4cyl.,4021cm3					R30505
Titan T4000					
Piston : Oil Gallery & Al-Fin,Round Combustion Chamber 47mm		TL 200.0	TL 108.3		RN Cr2 2.5H
		OD 109.0	CH 61.4 -21.7		2.0
Liner :OD is graded as A & B,Phosphated.		FD 114.5	PD 35.0		FX 4.5
		FH 6.0 +1.0	PL 87.0		

ZB **Ø92**	**8A92F02**	**8L92F02**	**8P92F02**	**8B92F01**	**8R92F02**
	MZDKT0902	V101-23-051	V101-23-200	0636-11-213	V101-23-206
6cyl.,4052cm3					R30230
Titan T4100					
Piston :		TL 191.0	TL 103.4		RN 2.38
Liner :		OD 96.9	CH 60.4		2.38
		FD 101.0	PD 31.75		FX 4.76
		FH 3.8+0.8	PL 75.0		

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