PISTON SEIZURE, WITH SEVERE DAMAGE TO THE TOP LAND
Cause: Excessive combustion pressures, which may be caused by abnormal engine load or incorrect fuel injection equipment.
Remedy: Establish cause and correct remedial action. Replace piston assembly.

EROSION OF PISTON SKIRT ADJACENT TO PISTON PIN HOLE. DAMAGE TO CYLINDER BORE.
Symptom: Engine noise. Oil consumption.
Cause: Incorrect assembly of piston rings. Inadequate piston pin or weak pin or weak bushing. Foreign material or other foreign material assembled into the piston pin groove. Incorrect oil circulation. Correct as necessary. Replace damaged components.
Remedy: Correct any crankshaft end float. Replace piston assembly, ensuring that the circlips are correctly located.

CRACKS RADIATING FROM THE COMBUSTION BOWL
Symptom: Cannot be detected during normal engine operation.
Cause: Excessive temperature applied to piston crown, resulting in thermal shock. May be prevented by exceptionally high engine load or incorrect fuel injection equipment.
Remedy: Replace damaged components.

PISTON RING SCUFFING, OR LOCALISED AREAS OF PISTON RING SEIZURE
Symptom: Oil consumption, with possible fumes from engine breather.
Cause: Excessive cylinder surface temperature. Abnormal lubrication, particularly during early engine life. Cylinder bore distortion.
Remedy: Rectify any cylinder bore distortion. Replace piston ring and piston, if necessary. Replace damaged components.

PISTON RING LAND FRACTURE
Symptom: Loss of power. Oil consumption. Excessive blowby. Oil consumption.
Cause: Excessive combustion pressures, which may be caused by abnormal engine load or incorrect fuel injection equipment.
Remedy: Establish cause and take remedial action. Replace piston assembly.

EROSION AND BURNING OF PISTON CROWN
Cause: Incorrect fuel injection, excessive timing, wear, cutting, damaged, or incorrectly located injec-
Remedy: Rectify any cylinder bore damage. Replace piston ring and piston, if necessary. Replace damaged components.

PISTON SEIZURE, WITH SEVERE DAMAGE CONCENTRATED IN THE LOWER AREA OF PISTON SKIRT
Remedy: Replace piston rings and coolant circulation. Correct as necessary. Replace damaged components.

FRACTURE OF CYLINDER LINER IN THE UNDER FLANGE AREA
Symptom: Combustion gases ventilating to cylinder bores. Check for block bore distortion and rectify if possible.
Remedy: Establish cause and solve corrective action. Replace cylinder liner and any other affected components.

PISTON SEIZURE, WITH SEVERE DAMAGE CONCENTRATED IN THE LOWER AREA OF PISTON SKIRT
Remedy: Replace piston rings and coolant circulation. Correct as necessary. Replace damaged components.

PITTING AND EROSION OF LINER OUTER SURFACE
Symptom: Loss of coolant.
Cause: High frequency vibration resulting in wear of liner flange. This may be prevented by proper engine wear or rectifying any coolant problems by non-standard engine loads. Incorrect fuel injection equipment and timing can cause wear. Coolant inhibitor systems can prevent wear. Low coolant inhibitors are not recommended by the engine manufacturer.
Remedy: Rectify any cylinder bore damage. Replace piston rings and piston, if necessary. Replace damaged components.