NISSAN
FORKLIFT

SERVICE MANUAL & TECHNICAL BULLETIN

K15, K21, K25 ENGINE

(GAS/LPG)

Model 1D1/1D2 & 1F1/1F2 series

SERVICE

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ENGINE GENERAL

SECTION EG

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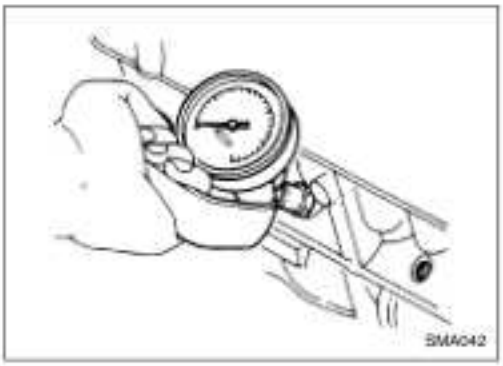
ABBREVIATION LIST EG-23

NOTE: This section contains information and specifications for both carbureted general overseas market models, as well as, electronic control models (manufactured in USA.) Therefore, ensure the specifications or procedures you are looking at are for the proper fuel delivery system; electronic controlled or carbureted.

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Engine Body Related (Cont'd)

COMPRESSION PRESSURE INSPECTION



1. Warm up the engine sufficiently and then stop it.
   Release the fuel pressure. (Electronic controlled specifications)
2. Remove the spark plug.
3. Apply a compression gauge correctly to the cylinder plug hole to be measured.
4. Depress the throttle pedal to the fully-open position.
5. Crank the engine and read the gauge.
   - Keep the engine speed at approximately 250 rpm.
   - Finish the pressure measurement in as short a time as possible.

Standard compression pressure

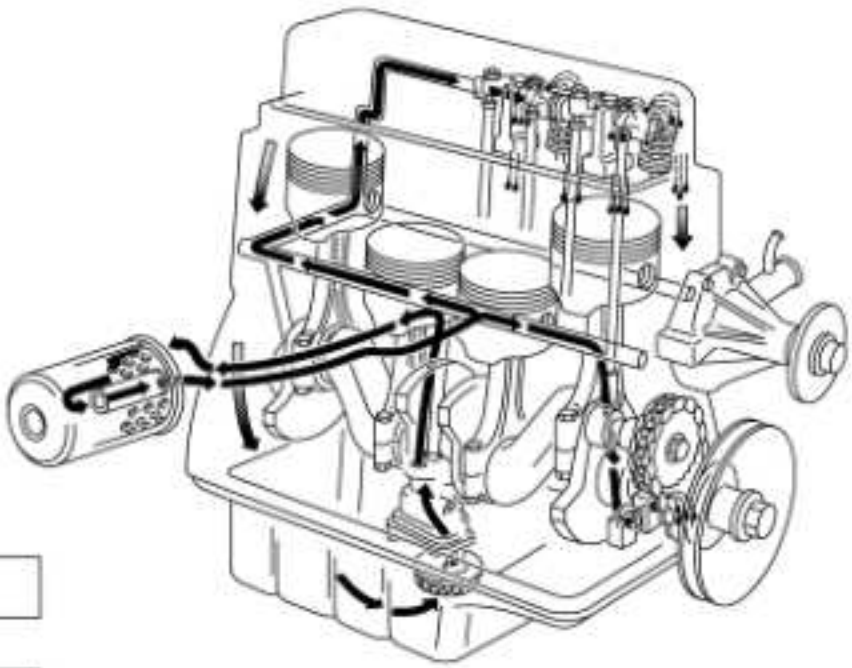
K21	1.23 MPa (12.26 bar, 12.5 kg/cm^2, 178 psi)
K25	1.27 MPa (12.7 bar, 13.0 kg/cm^2, 185 psi)

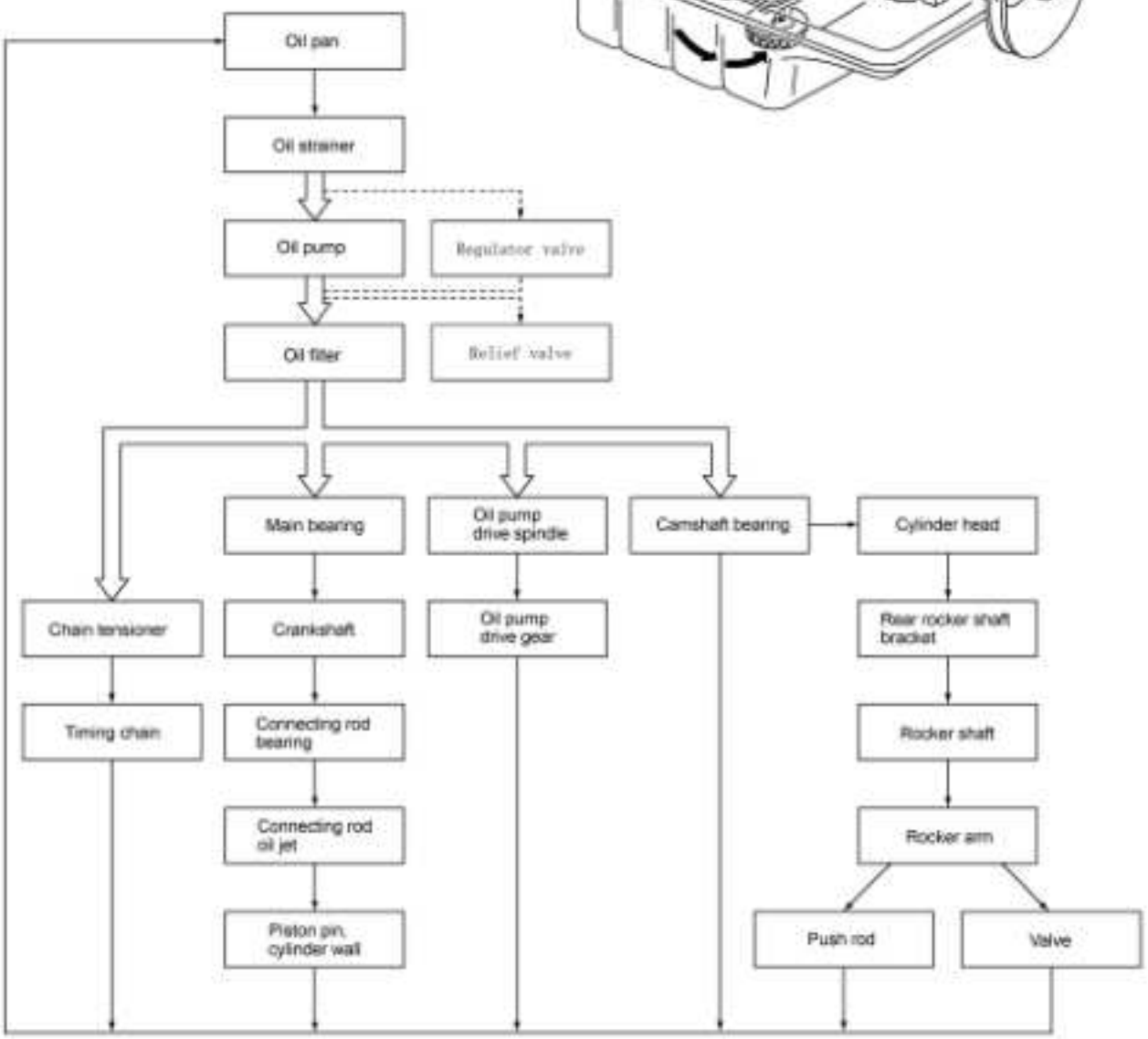
6. The compression pressure differences between cylinders must not exceed 98 kPa (1.0 bar, 1 kg/cm^2, 14 psi) /250 rpm. If any cylinder shows an extremely low compression pressure, put a small amount of oil into the cylinder through the spark plug hole and remeasure the pressure.
   - If the pressure rises after filling oil, the piston ring is worn or damaged.
   - If the pressure remains unchanged even after filling oil, the valve is stuck or inappropriately seated.
   - If low compression pressure is observed in two adjacent cylinders and the pressure is not restored even after filling oil, the head gasket is leaking. In this case, oil and water may enter in the combustion chamber.
   - If the engine RPM is not in the specified range: Measure the battery specific gravity.

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Lubrication Schematic Diagram

LUBRICATION CIRCUIT





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Diagnosis Chart by Symptom (Cont'd)

Symptoms		Impossible to start		Poor starting		Poor idle					Poor driving								Engine stall				Other		Check that symptoms are detected with self-diagnosis.	Check that symptoms are in fail-safe condition.	Description/notable characteristics of the symptom
Actuator malfunction ⊕: Highly possible ♦: Possible		No initial combustion	Initial combustion	When engine is cold	When engine is warming up	Fast idle is not effective	High idle rpm	Low idle rpm	Inconsistent idle when engine is cold.	Inconsistent idle when warming up	Poor power output	Poor acceleration	Engine rpm does not increase smoothly.	During surge and acceleration	During surge and constant speed driving	Knocking	Backfire	After-burn	At idle	Driving	During deceleration	During a heavy load	Engine over temperature (Overheat)	Poor fuel consumption efficiency			
ECM relay circuit	OPEN	⊕																♦	⊕	⊕	⊕	⊕					
Throttle control motor circuit	OPEN/ SHORT			♦		♦	♦				♦	♦												♦			
Throttle motor relay circuit	OPEN			♦		♦	♦				♦	♦	♦	♦		♦	♦		♦		♦	♦		♦			• The same malfunction may occur as power supply open of throttle control motor and throttle position sensor.
Heated oxygen sensor heater circuit	OPEN																										
• Fuel pump relay circuit • Fuel pump circuit • Ignition relay circuit	OPEN	⊕																	⊕	⊕	⊕	⊕					• Impossible to start
	Momentarily open													♦	♦				♦		♦	♦					• Impossible to start
Fuel pump Pressure regulator	OPEN/ SHORT								♦	♦	♦	♦															
LPG injector — HI side circuit	OPEN	⊕																	⊕	⊕	⊕	⊕			♦	♦	• LPG interception valve OFF
	SHORT		⊕																⊕	⊕	⊕	⊕			♦	♦	• LPG interception valve OFF
Coil	OPEN	⊕																	⊕	⊕	⊕	⊕			♦	♦	• LPG interception valve OFF
LO side circuit	OPEN		⊕																⊕	⊕	⊕	⊕			♦	♦	• LPG interception valve OFF
	SHORT		⊕																⊕	⊕	⊕	⊕			♦	♦	• LPG interception valve OFF
LPG assistance injector	OPEN											♦					♦						♦				
	Control unit side short		♦			♦			♦	♦								♦						♦			
LPG interception valve relay	OPEN	⊕																	⊕	⊕	⊕	⊕					
	Control unit side short																										
LPG interception valve	OPEN	⊕																	⊕	⊕	⊕	⊕					
Malfunction indicator light	OPEN																										
Improper TAS learning	OPEN					♦	♦	♦	♦	♦											♦	♦					

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