



PRO-SPEC[®] D. D. MOTOR OIL

PRO-SPEC[®] D. D. MOTOR OIL meets or exceeds API CF-2 and provides an enhanced level of lubricant performance over the CD-II category for two-stroke cycle engines (Detroit Diesel Series 53, 71, 92, and 149). Single grade oils having less than 1% sulfated ash are preferred and primarily recommended for new Detroit Diesel design changes.

Sulfated ash is related to the oil's additive composition and is significant in predicting lubricants which may cause valve distress under certain operating conditions. Most of the sulfated ash is related to total base number which measures an oil's alkalinity and ability to neutralize acid. As TBN increases, sulfated ash also increases to where lubricants with TBN's above 10 will likely have sulfated ash contents above 1.0%.

It should be understood the use of PRO-SPEC[®] D. D. MOTOR OIL is with fuel with less than 0.5% sulphur. For fuels with higher sulphur content, use PRO-SPEC[®] SAE 40 with a TBN of 15. The higher TBN is necessary to offset the harmful effects of acids formed during the burning of high sulphur fuels.

High Total Base Numbers are important to control deposits in four-stroke cycle diesel engines and to neutralize the effects of high sulphur fuel in all diesel engines. For two-stroke cycle engines, Detroit Diesel recommends lubricants with a sulfated ash content of 1.0% or less and TBN's between 6 and 10 for engines operating on less than 0.5% sulphur fuel. Starting in 1994, diesel fuel for U.S. highway vehicles was limited to 0.05% sulphur content maximum. The need for high Total Base Numbers for over-the-road Detroit Diesel Engines ceases to be a problem in the U.S.A., providing the customer is buying fuel meeting these specifications. Of course, off highway diesel fuel may still have sulphur content much higher and that's where real care must be exercised in the recommendation of the proper engine oil.

If extreme cold weather (0 to -25°F.) prevents sufficient starter cranking speed with PRO-SPEC[®] D. D. MOTOR OIL SAE 40, then the use of PRO-SPEC[®] SAE 15W/40 or PRO-SPEC[®] SAE 30 will improve startability. These oils must be replaced with PRO-SPEC[®] D. D. MOTOR OIL as soon as ambient conditions permit.

Exception: Do not use 15W/40 or SAE 30 lubricants in two-stroke cycle marine engines or series 149 engines under any circumstances.

It should be noted, PRO-SPEC[®] D. D. MOTOR OIL is formulated in such a way that it will keep the engine cleaner than low ash commercial engine oils. The reason PRO-SPEC[®] D. D. MOTOR OIL is better is because of excellent detergents and dispersants in a superior oil additive package plus highly refined base oils. The base oils have been refined in such a way to make the oil accept these superior quality additives - - - and the overall result is a cleaner engine.

SPECIFICATIONS

PRO-SPEC® D. D. ENGINE OIL, SAE 40

Product Code #6704

Meets and/or Exceeds Detroit Diesel Specifications For a Low Ash Oil

ASTM TEST METHOD	TESTS	SAE 40
D 287	Gravity	25.5/27.5
D 92	Flash Point, Deg. F., COC Min.	430
D 97	Pour Point, Deg. F., Maximum	-5
D 446	Viscosity, SUS at 100 Deg. F.	640
D 446	Viscosity, SUS at 210 Deg. F.	76/80
D 567	Viscosity Index	105
D 874	Sulfated Ash, Wt. %, Max.	0.9
D 2896	Total Base No. Mg KOH/gm	6.4
D 892	Foam Tendency/Stability:	
	Sequence I	25/0
	Sequence II	25/0
	Sequence III	25/0
Zinc, Wt. %, Typical		0.10
Nitrogen, Wt. %, Typical		0.06
Calcium, Wt. %, Typical		0.24

Handling Information: For safe handling of the product, read the Safety Data Sheet (SDS).

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