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Become an Academy Member and gain access to additional pages and programs! Comments: Submit To Comments/EverythingAboutBoats.org (Replace "" with "@"). Lehman 120 (6D380) Maritized from Ford 2715E base engine/Lehman produced and marketed the 6D380 marine engine from 12/69 to 11/70 by maritizing new 110hp Ford 2704C base engines, and from 12/70 to 1981 by maritizing new 120hp Ford 2715E base engines which had the same displacement of 380 cubic inches, but a different compression ratio of 16.0:1 instead of 15.5:1. The nearly identical engines were very robust old school naturally aspirated engines and featured overhead valves operated by rockers, push rods and flat tappets by a camshaft located low in the right-hand side of the cylinder block and parallel to the horizontal crankshaft. The six inline cast-iron block parent bore cylinders were oriented vertically and the mechanical fuel injection sprayed diesel directly into the combustion chamber machined into the crown of each aluminum alloy solid skirt piston. The Lehman Manufacturing Company was formed in 1931. By 1957, they were producing maritizing components for a wide variety for gasoline engines including General Motors, Ford, Chrysler, and Willys(see Lehman Catalog #28 1957). In the early 1960's, Lehman began manufacturing maritizing components for many of the diesel engine models produced by Ford of Britain after 1952. Lehman marketed these maritizing components in kits so other parties could maritize various new and used Ford diesel engines, many of which were taken out of tractors, lorries, harvesters, rock crushers, generators, and the like. Early in 1965, Lehman started buying brand new Ford 2701E and 2704E diesel engines from Ford's Industrial Power Products Division and maritizing them into the Lehman 120 and Lehman 110 respectively. When Ford succeeded these models with the slightly larger "parent bore" diesel engines beginning in November of 1969, Lehman began maritizing them into theLehman 80 and Lehman 120 which Lehman very successfully marketed worldwide. Lehman maritized several later Ford based models including the popular Lehman 90 Super and Lehman 135 Super before going out of business in 1993 as engine emissions became more restricted. See EAB's Lehman Mfg. Co. article for more details, contact information PLUS information about their other products. Industrial Engine Operation Ford Power Products Ford Motor Company has long been an industry leader in supplying powertrain systems to the industrial and power generation markets. Originally established in 1947 as the "Industrial Engine Operation of Ford Motor Company", and going by several names over the years, Ford Power Products is now managed by Ford Component Sales: a wholly owned subsidiary of the Ford Motor Company. Back when they were called "Ford Industrial Power Products", they marketed diesel engines sourced from their tractor and truck divisions located mainly in Europe to the offroad OEMs including maritizers like Lehman, AMMarine, Bomac, Lees, Mermaid, Parsons, Sabre and Thorneycroft. See our main Ford Industrial Power Products article for more details,contact information, PLUS information about their other products. This Document is available to Academy members to download and print. CLICK HERE and when the document webpage opens in a new window,scroll down to ACADEMY eLIBRARY Section for links and Instructions. Primary Commercial Maritizers of British Ford Diesel Engines(Including maritizing component and "Kit" suppliers) Some maritizers maritized only "brand new" engines from Ford Power Products while others maritized only "used take-out" engines, while still others maritized both new and used engines. Most maritizing component suppliers made their components available to other commercial maritizers, repair shops and individual private parties who used them to maritize new and/or used engines or maintain/repair existing maritized engines. Many Ford of Britain diesels began their service life as low RPM, agricultural workhorses driving tractors, harvesters and other farm equipment. Many more began their service life as high RPM automotive engines driving lorries and other vehicles. Others were marketed by Ford Industrial Power Products for industrial applications such as off-road and military vehicles, farm and forest equipment, pumps and power generation. Duty ratings ranged from continuous to intermittent and from 1250 to 2700 RPMs. Those that realized that these engines would be ideal for marine propulsion began cobbling together cooling systems and exhaust systems so they could be used in boats. Enterprises like Lehman, Bowman, Thorneycroft, and Mermaid quickly geared up to produce quality components, available individually and in kits so that maritizers could adapt both brand new and used "take-out" engines. Many component producers became maritizers themselves. Lehman was one of several that started buying brand new Ford industrial base engines from Ford Industrial Power Products, maritizing them "in-house" and marketing them as complete, ready to install units. Most of the Ford diesel engine maritizing component producers and engine maritizers are listed below. If you know of any more that should be listed, please email us at: editor/EverythingAboutBoats.com (Replace "" with "@") The very popular 6.22L Lehman 120 (6D380) maritizing the Ford 2715E Base Engine. Unfortunately, many of the commercial maritizers and component suppliers (like Lehman) are no longer in business (those listed below in bold font are still in business and most still support the Ford engines). Fortunately, enterprises like American Diesel Corporation (listed below) still offer valuable information and quality replacement parts for these engines. *In 1981, Bob Smith, who was the former managing director of Lehman Power, founded American Diesel Corporation in Kilmarnock, VA to provide aftermarket maritizing replacement parts and support for Lehman maritized Ford Industrial Power (UK) diesel engines. They also produced their own maritized replacement engine packages from the last of the Ford-Otosan 6.22L engines (similar to the Ford-Lehman Super 135). They were rated at 120, 125, 130, 136 and 140 horsepower. American Diesel Corp can supply most of the parts required to accomplish the "Fixes" that need to be accomplished to prevent engine damage. The americandieselpower.com website has recently been updated with new features including Parts Lists, a Parts Order Form, and a Contact Form. Bob was well known for his Lehman Workshops. We are saddened to have to report that Bob has passed away. See Passagemaker's heartfelt and informative obituary. Bob's very capable and diesel-experienced son, Brian, will carry on the good work that would make his father proud. The Late Bob Smith (right) presenting his Lehman Workshop at Trawletfish in Anacortes, WA, in 2013. Ford & Lehman "Fixes" that need to be accomplished before the engine suffers damage: Notes: Many parts for these "Fixes" are available from American Diesel Corp's Website. Repair Shops and Parts Suppliers American Diesel Corp./Ford Maritizer, Parts, +... (Kilmarnock, VA, USA) Bepec-Tractor Parts. (South Africa) Bomac./Ford Maritizer, Parts, +... (100 miles north of Atlanta, Georgia in Blairsville, Ga, USA) Emmark UK Ltd./Ford Tractor Engines Parts. (Pudsey, UK) Harbor Marine: Ford Repair, Parts, +... (Velvet Drive Repair, Parts, +... (Everett WA, USA) Lancing Marine: Ford Repair, Parts, +... (Portslade, Sussex, UK) Logan Diesel: Ford Repair, Parts, +... (14 miles north of Jackson, Michigan in Leslie, MI, USA) Mermaid Marine: Ford+ Engine Repair, Parts. (Coventry, UK) Timik Marine Engines:Ford+, Engine Repair, Upright, Repower, +... (Southampton, UK) If you know of a vendor that should be added to this list, email the info/links To: Editor/EverythingAboutBoats.org (Replace "" with "@") The Ford 2704C and 2715E Industrial base engines that Lehman maritized to produce theLehman 120 (6D380) models are members of the following Ford engine group. Ford "Dorset" (2700 & 2710 Range) Diesel Engines (1965/1982) The fuel injection pumps on 2700+ engines (1965+) were gear driven directlythrough the exposed shafts and couplingsused on "Dagenham" models. Lehman maritized FORD 2701E Dorset base engine.The directly driven fuel injection pump caused more rapid wear of the engine's helical cut timing gears. The "Two Shaft" Raw Water Pump was yet to be replaced with "Single Shaft" Pump to avoid shaft failure. Also note the remote oil filter, which had been inverted to fit into the shipping crate is now righted. See other "Fixes" listed in this article that need to be accomplished to prevent engine damage. In 1965, Ford introduced the Dorset Series 2700 Range diesel engines. The early Dorset models were produced from 2/1965 to 11/1969. This range included the 4 cylinder 2701E and 2706E (an inclined 2701E), the 6 cylinder 2703E, 2704E, 2708E, and 2709E (an inclined 2704E). All featured "Dry" cylinder liners, a new block, cylinder head, sump, etc. and were distinct from the earlier Dagenham series 4D & 6D engines by having the fuel injection pump mounted directly to the timing gear housing and driven directly by the engine's timing gears (as shown in the picture above) with no moving parts seen whilst the engine is running, like the Dagenham series. They had pressed steel timing gear covers and angle cut timing gears. The turbocharged 6D Mark-2 six cylinder 330 cubic inch 510ET (automotive) and 590ET (Industrial) engines were carried over until late 1968, after the turbocharged 2407ET Dorset engine was released and the 6D engine stocks were exhausted. The Lehman maritized versions of the Dorset engines were fitted with the troublesome two-shaft raw water pump which was developed by Lehman from a Jabco rubber impeller type water pump and located just under the fuel injection pump. Both the directly driven fuel injection pump and the raw water pump contributed to rapid wear of the engine timing gears. When these Helical (curved) gears failed, the engine would suffer significant internal damage. The earlier 4D and 6D engines did not experience as much gear wear because the soft shock absorbing fuel injection pump drive coupling had the beneficial effect of minimizing drive gear chatter, and thus engine timing gear wear was not the problem that it became on the directly driven Dorset Series engines. The Dover 2720+ models introduced in 1982 were fitted with the more robust, but noisier, straight cut gears. See How To Identify Ford Diesel Engines. In April 1965 Ford launched the "D-Series" lorry (pictured above) to replace the Thames Trader. These vehicles were fitted with automotive versions of the new 2700 series engines which were fitted into the lorries at a 45 slant (incline) to the left. These engines were offered in 254, 330 & 363 cubic inch displacements with "dry" cylinder liners as the upright 2701E, 2703E, and 2704E respectively, and the corresponding inclined versions as 2706E, 2708E and 2709E respectively. Ford 2706E inclined (slanted 45 left) version of 2701E Diesel Engine. If an inclined version of this engine is un-slanted to an upright position and the oil pan sump and oil pickup are replaced with the engine's type of sump, pickup and the corresponding inclined version of the 2701E, 2703E, and 2704E, then the engine will run. The 2706E inclined (slanted 45 left) version of 2701E Diesel Engine. If an inclined version of this engine is un-slanted to an upright position and the oil pan sump and oil pickup are replaced with the engine's type of sump, pickup and the corresponding inclined version of the 2701E, 2703E, and 2704E, then the engine will run. The 2706E inclined (slanted 45 left) version of 2701E Diesel Engine. 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