Hercules Engine News

Including Economy, ARCO, Jaeger & Thermoil

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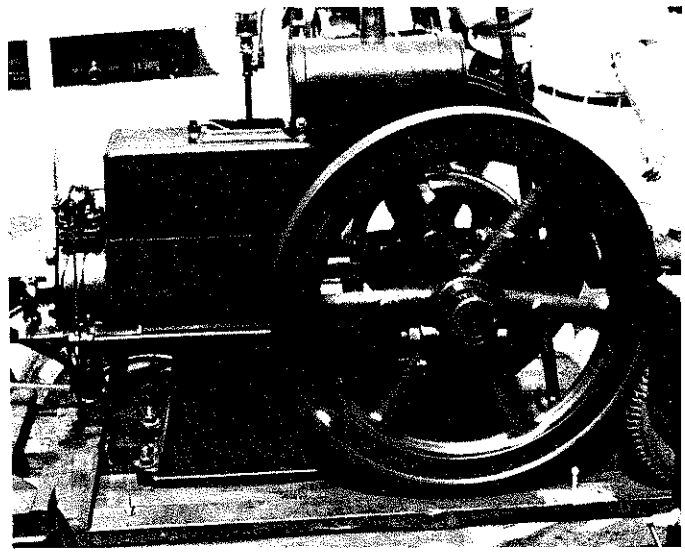
Sometime after 1913, W. M. Tippett, manager of Sears engine department, obtained a license from Rasmus M. Hvid, a naturalized Danish engineer, to manufacture oil engines of Hvid's design. Sears contracted with Hercules to manufacture Hvid type oil engines, signing a five year contract dated February 3, 1914. The first Thermoil engines were produced in October of 1915.

As reported earlier, Hercules was said to be working on the Hvid type engine as early as 1913 even before they built their first gas engine. Walter Schnake, a former Hercules employee, reported that when he began working there in 1915, they were all excited about the new Thermoil engine that they were building. It was said to run on anything that would pour, including buttermilk! This would be the model T Thermoil all-kerosene engine.

Sears became interested in the Hvid type engine because of its low fuel operating cost. Fuel costs were half that of a kerosene throttling governed engine and a fourth of that of a gasoline hit and miss engine. The name Thermoil seems to be very fitting since it took heat to ignite the oil. Although engines of the Hvid type were built by other manufacturers, the Thermoils are the most common and well known. Some 3000 model T Thermoils were built, but today very few exist. They were plagued with breakage problems and many people with gas engine experience didn't understand how to operate them. Some were exchanged for gas engines.

The model T Thermoils appear to use the same frame structure as the same HP gas engines. The bore and stroke are the same. The modifications seem to involve the head, governor, piston, fuel system and heavier flywheels. Thermoil engine weights were about 10% heavier than comparable size gas engines.



It is interesting that the model T Thermoil did not appear in the Sears catalog until the spring 1917 issue. The 2½ and 5 HP sizes were offered with the 7 HP added in the fall issue. These three sizes are the only sizes known to exist. However, the parts and instruction book also listed a 1½ HP size. More interestingly, in the fall 1917 catalog is the sentence, "If you want a portable Thermoil All Kerosene engine larger than 7 HP, write us for price." Was there a Thermoil version of the 9 or 12 HP Economy gas engine too? These larger sizes may have been available from another supplier—who?

The Thermoil is not a diesel, even though many refer to them that way. The diesel patent involved injection of fuel under pressure into the cylinder in proper sequence with the compression stroke. The Hvid patent involved metering a small amount of fuel into a hole on the fuel injector valve seat. During the intake stroke this fuel valve opened and the fuel and a small charge of air was drawn into a fuel cup in the cylinder. Upon compression to 450 PSI the fuel in the cup ignited, blowing the charge out into the cylinder for complete combustion. It was said that the air became "red hot."

In addition to the Thermoil brand, these same engines were also marketed under the Parmaco brand by the Parkersburg Machine Company of Parkersburg, West Virginia, and under the Dynoil brand by the Burnoil Company of South Bend, Indiana. There may have been others.

Production of the model T Thermoils ceased in 1917. Fred Buente, a former Hercules employee, reported that they weren't building Thermoils when he began work there in 1917. He said production began a couple of years later in 1919. That's when the model U Thermoils were first built, but that's another story. ○

2. Injector body
3. Injector valve
4. Injector valve guide
5. Injector valve cap
6. Valve spring
7. Injector valve cap spring
8. Throttle valve
9. Throttle valve guide
10A. Throttle valve nut and collar
12. Fuel cup
18. Injector body gasket
19. Fuel cup gasket
112. Fuel inlet pipe
125. Set screw for fuel cup