Heavy-duty Clutches Fit the ATB Profile

Logan CH 1050 series clutches proved to be just what was needed when New York-based Reinauer added fast and maneuverable articulated tug and barge units to its fleet.

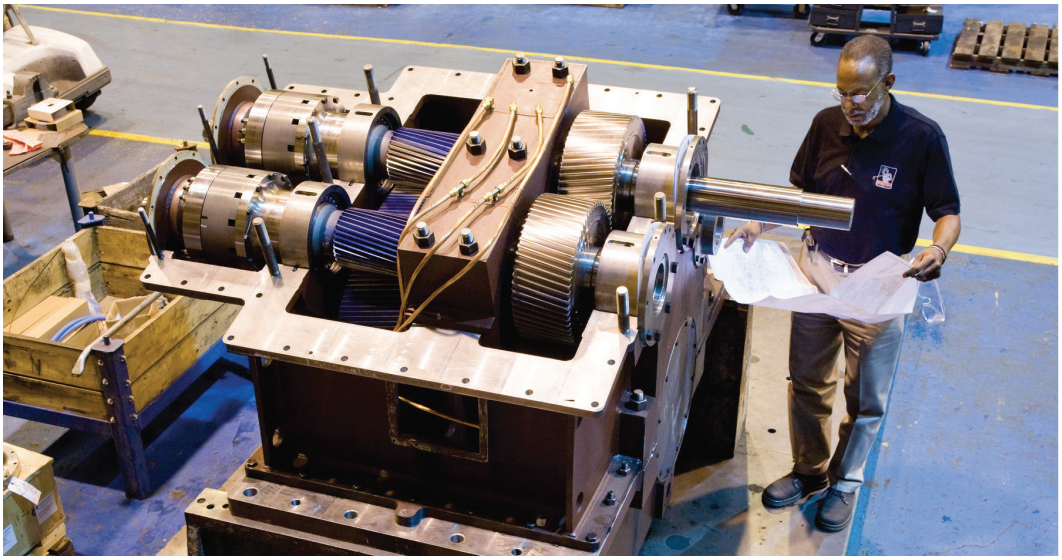
Reinauer Transportation Companies, based in Staten Island, New York, is a leader in the US maritime petroleum and chemical transportation business. Established in 1923 by Bert Reinauer, the company successfully weathered the Depression and the war years, and has continued that trend through the past several decades.

In the 1990s, Reinauer demonstrated that it could adapt to the stringent regulatory changes imposed by the Oil Pollution Act of 1990, completely revamping its fleet by moving forward with innovative double-hulled vessel designs. These innovations manifested themselves in the form of articulated tug and barge (ATB) units, of which there are now a total of 17 in the Reinauer fleet.

The most recent series of ATBs added to the Reinauer fleet were delivered by Senesco Marine, of North Kingstown, Rhode Island. There are two different classes of tugs paired with 80,000-bbl and 100,000-bbl barges. The later of the two is the B Franklin Reinauer, which is paired to an 80,000-bbl barge with a Beacon Finland JAK system.

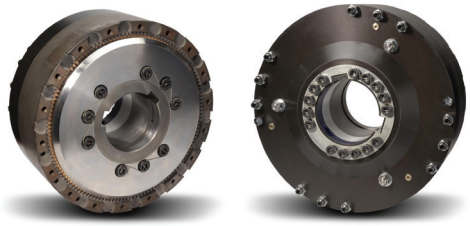
The first delivered ATB, Ruth M Reinauer, is integrated with the RTC102, a 100,000-bbl barge. The highly manoeuvrable tug is powered by two MTU 16V 4000 M60 diesel engines that drive propellers via Lufkin RS2850HG reduction gearing. It is reported to move a full knot faster than other 4,000 HP tugs and shows virtually no vibration when underway – not even at full steam. The Ruth M Reinauer features the first set of the 14 reduction gears custom-made by Lufkin to use the Logan CH 1050 clutch.

The ATB Ruth M Reinauer.

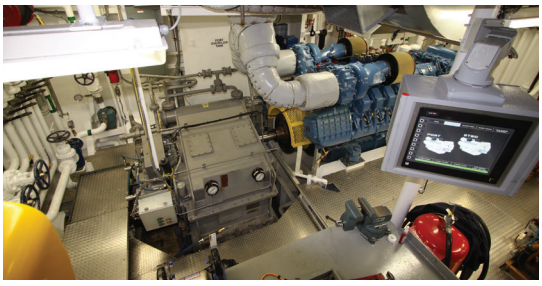


> "We have disassembled these clutches after five years' service and can measure no discernible wear."
>
> **Christian Reinauer, manager, Reinauer Transportation**

Exploded view (top) of RS2850HG with cover removed to show Logan CH1050 clutches externally mounted on the aft side of the gear for easy accessibility and maintenance.



Logan CH 1050 Series Clutch transmits 14,000 lb·in of torque/15750 Nm @ 200 psi/13.8 bar. Type-approved through ABS.



Looking down to port and starboard views of the engine room.

The Lufkin Marine Gear unit RS2850HG uses two Logan CH 1050 series clutches per gear drive, for forward and reverse. These are multiple disc wet clutches that have a maximum torque capacity of 12,000 ft·lb. The RS2850HGs were designed to last the life of the vessel. One unique aspect of this design utilises the astern clutch in a braking mode prior to locking up, eliminating the need for a shaft brake system.

Logan CH clutches are externally mounted on the aft side of the gearbox for easy accessibility during maintenance and service intervals. The gear and bearing, and clutch selections, were based on unrestricted, maximum continuous engine horsepower ratings, in line with American Bureau of Shipping (ABS) rules.

The clutches are designed specifically for heavy-duty clutch and brake applications, and are air or hydraulically actuated. They are ABS Survey Society approved for marine applications.

Logan uses long-wearing, self-lubricating seals, which minimize premature twisting failure and require no lubrication, decreasing the amount of maintenance and downtime needed. Its proprietary disc pack provides a low static-to-dynamic torque ratio for smooth, long-lasting, high-energy performance.

Christian Reinauer, manager of new construction at Reinauer Transportation, said: "Our experience with Logan Clutch has been very good, after the company was originally introduced to us as a replacement component for an OEM that decided to stop making the parts we needed.

"Lufkin's unique soft application of the clutch has eliminated the need for shaft brakes which simplifies construction and maintenance. We have disassembled these clutches after five years' service and can measure no discernible wear.

"Needless to say, having a clutch perform double duty, we were impressed and glad we have such a robust component in our vessels."

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