



# Logan Front of Engine Power Take-off Clutches and John Deere Gensets provide on-demand power for the tugboat North Arm Tempest

**Logan 600 Series Front of Engine Power Take-off (PTO) clutches supply on demand connect/disconnect power from John Deere 4045 engines to Kawasaki hydraulic pumps which run deck winches for towing/shiphandling**

## On-demand power

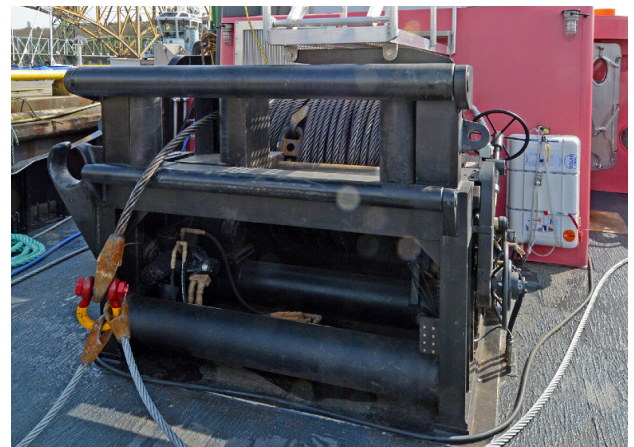
The 64'9" (19.7m), 2000 hp (1491kW) North Arm Tempest built by North Vancouver-based ABD Boats is North Arm Transportation's most powerful tug yet. Twin Cummins KTA-38 main engines provide propulsion through VZ-900 azimuthing drives from Veth Propulsion, a Twin Disc brand. These drives allow for free-running speeds of about 10.5 knots and towing speeds of about 8 knots. Auxiliary power is provided by twin John Deere 4045TFM85 74kW gensets supplied by Frontier Power of Delta, BC. Two SPF-600 series Logan Front of Engine Power Take-off (PTO) clutches provide on-demand connect/disconnect power from the front of John Deere 4045TFM85 engines to Kawasaki pumps that power the hydraulic systems. The winches running off this hydraulic system were built by Burrard Iron Works.

## Lower fuel consumption and emissions, less wear and tear, and easier maintenance

Logan SPF-600 series clutches are actuated either pneumatically or hydraulically, transmitting up to 985 lb. ft. of torque. Logan Front Mount Brackets support the clutches. The clutches provide reliable power to the hydraulic system so that the North Arm Tempest can meet the demands of towing barges on the coast of British Columbia, including between Centerm in Vancouver and Duke Point in Nanaimo, and on the more demanding North Coast run near Prince Rupert, BC. Additionally, the Logan SPF-600 series clutches allow power to the hydraulic system to be disconnected when not in use, reducing demands on the genset and thus reducing fuel consumption and harmful emissions like CO<sub>2</sub>. Further, disconnecting the hydraulic system reduces wear and tear on the hydraulic system and reduces the noise of the hydraulic pumps, increasing crew comfort. The ability to disconnect the hydraulic system also allows troubleshooting of hydraulics issues without the need to shut off the gensets, maintaining the electrical supply.



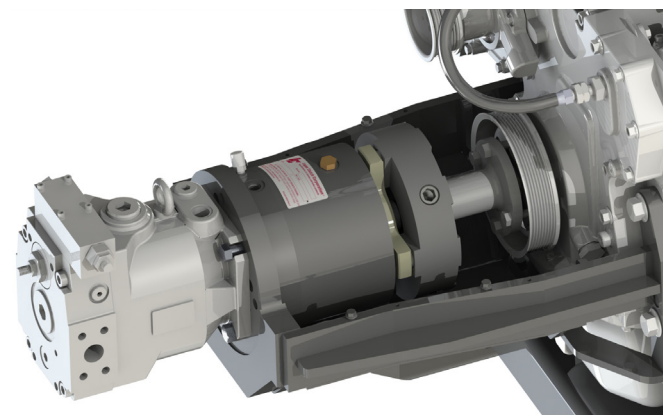
The North Arm Tempest uses SPF-600 series Logan Front of Engine Power Take-off clutches to provide on-demand connect/disconnect power from the John Deere 4045TFM85 engines to Kawasaki pumps that power the hydraulic systems



Logan SPF-600 series transmit up to 985 lb.ft. of torque to the hydraulic pumps that power the winches and tow lines of the North Arm Tempest



Logan SPF-600 series clutch attached with a Logan Front Mount Kit allows power to be drawn from the front of the John Deere 4045TFM85 gensets



Logan SPF-600 series clutch with torsional coupling powers hydraulic systems (cover plate of Front Mount Kit removed for clarity)

