

High Energy Clutch Solutions for Dredging Applications



WICHITA CLUTCH™
A REGAL REXNORD BRAND

REGAL REXNORD PROVIDES POWER TRANSMISSION SOLUTIONS FOR MARINE PROPULSION, MOORING AND DECK EQUIPMENT NEEDS

As leading multinational designers and manufacturers of innovative power transmission products, the companies of Regal Rexnord offer critical components for a wide range of marine applications.

Regal Rexnord utilises advanced technologies and materials together with extensive application expertise and world-class engineering capability to provide reliable clutches and brakes, couplings, pump mounts, gear drives, belted drives and more. Preferred by marine OEM's, Regal Rexnord products are designed to provide dependable performance in challenging marine environments.

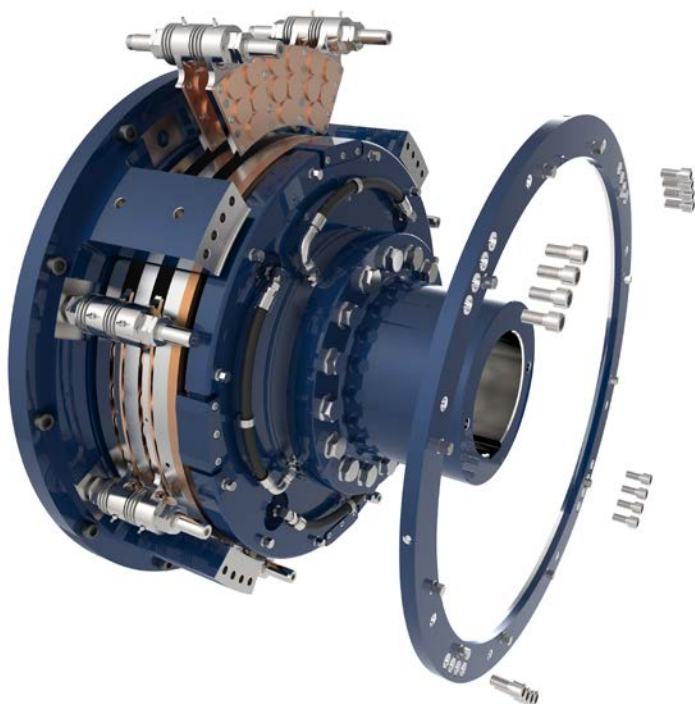
Regal Rexnord engineered power transmission products are installed in a variety of marine applications including main propulsion and thruster drives, anchor handling & mooring winches, fire pumps, dredge pumps, cranes and hoists, davits, generators and compressors.

DREDGING INDUSTRY DRIVE SOLUTIONS

Wichita Clutch has engineered a series of high-energy capacity clutches specifically to meet the demands of the international dredging industry. Developed from the proven "MSV" range, the use of a sintered metal friction material permits a significantly increased heat-dissipation capability as well as extending the wear-life of linings by an order of magnitude compared to traditional organic material.

These high-heat dissipation clutches are the ideal solution for the high-speed engagement, extended slip times and long ramp-up durations associated with the drive types found in the dredging industry. Decades of experience have culminated in designs that are optimised for long life while minimising the maintenance burden and reducing any required servicing times typical of more traditional clutch units.

www.RegalRexnordMarineSolutions.com



INNOVATIVE CLUTCH DESIGN

- Pin drive and open ring for improved cooling
- Radial remove option for rapid lining replacement
- Sintered linings for high energy and long life

Sintered copper alloy friction material is at the heart of the Wichita MSV-HE design. The clutch plate facings can withstand much higher interface temperatures than organic derived equivalents. As well as increased mechanical strength, they are able to handle extremely high peak power inputs, for longer periods, while exhibiting substantially reduced wear-rates.

The Wichita Clutch air-tube design combines all the best features of a disc type clutch with all the advantages of direct air engagement. It is the simplest and most trouble-free method of applying air pressure actuation where accurate, proportional control of a clutch is fundamental to the longevity of its operation.



Wichita 'MSV-HE' Clutch Assembly

MSV-HE Clutches

Wichita Clutch

- Air-applied with sintered metal friction material
- No adjustment or lubrication required
- Highly stable torque capacity unaffected by centrifugal forces
- High heat capacity
- Multi-plate designs up to 1500 mm diameter for high torque applications
- Pin-drive arrangement creates an open ring design for improved cooling flow and dust ejection whilst providing clear visual inspection opportunities for maintenance planning
- Separator springs eliminate freewheeling drag
- Designed and built for the marine environment
- Easily integrates with all leading flexible coupling brands

CUTTER HEAD DRIVES

Modern day cutter head drives require a high torque compact clutch solution designed to deal with the high cutting powers and high driven speeds associated with the new generation of 'Mega' Cutters.

Combining high energy sintered friction in a multi-plate design keeps clutch diameters small while delivering a high torque slipping capability in overload mode for cutter protection in the event of a cutter stall. Pneumatic actuation in combination with specially developed controls allows for rapid slip detection and clutch disengagement to protect the drivetrain.

DREDGE AND JET PUMP DRIVES

As the trend for diesel engines of lighter construction and increasingly dual fuel compatibility continues, the need for a reliable clutch system that can engage at elevated engine idle speeds and offer extended acceleration times can dramatically improve the pump start up profile whilst limiting the power demand from the diesel engine.

The sintered metallic 'high energy' friction clutch provides a greater thermal mass capable of withstanding extremely high start and overload slipping energy events with minimal friction wear when compared to similar sized organic friction clutches.

The dredge pump drives are critical to the operation of any dredging vessel and therefore a robust reliable clutch solution is essential in keeping maintenance and costly downtime to a minimum.

INTEGRATED CONTROLS

The effectiveness of any clutch solution in dredging applications is heavily reliant upon a well configured interface with the 'dredge master' controls.

Wichita can provide a full range of electro pneumatic control systems to suit the specific requirements of cutter and dredge pump drives. Bespoke systems (with optional touch-screen HMI) designed in collaboration with the end user, together with an extensive range of proven 'standard' controls, are available upon request.



Typical Wichita clutch control cabinet and panel

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