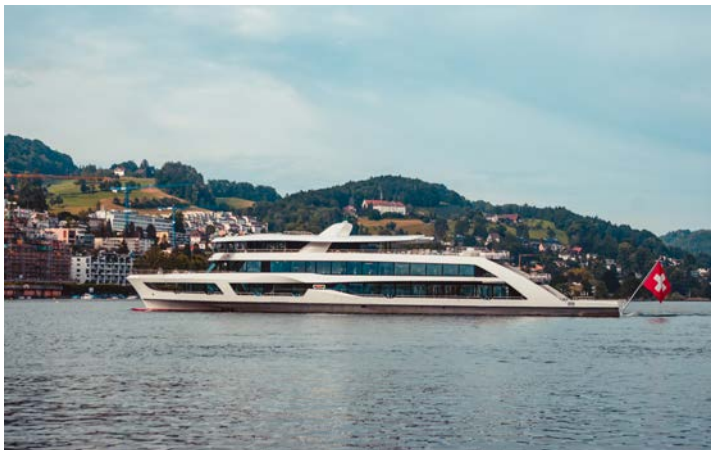
Ameridrives
Bauer Gear Motor
Bibby Turboflex
Boston Gear
Delevan
Delroyd Worm Gear
Formsprag Clutch
Guardian Couplings
Huco
Jacobs Vehicle Systems
Kilian
Kollmorgen
Lamiflex Couplings
Marland Clutch
Matrix
Nuttall Gear
Portescap
Stieber
Stromag
Svendborg Brakes
TB Wood's
Thomson
Twiflex
Warner Electric
Wichita Clutch

Innovative 2in1 Combination Coupling/ Clutch Assemblies Reduce Cost, Footprint and Weight



As seen in
Design World
November, 2021

As seen in
Maritime Reporter
November, 2021

Stromag®
Altra Industrial Motion

Innovative 2in1 Combination Coupling/Clutch Assemblies Reduce Cost, Footprint and Weight

Stromag's unique, pre-engineered single-piece combinations replace the need for expensive custom solutions

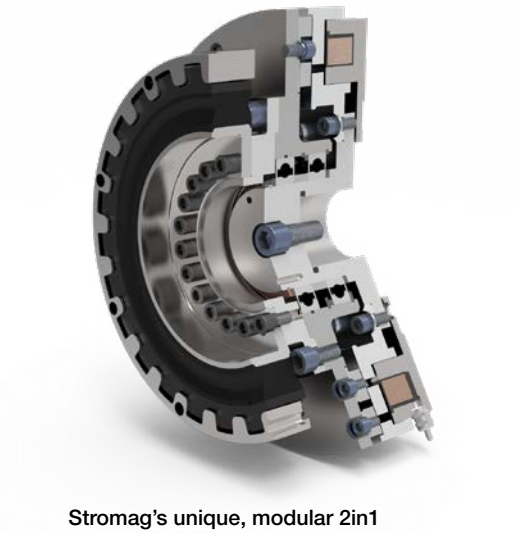
Equipment and machinery OEMs worldwide are continually challenged to design cost-effective drivetrains that fit in ever-shrinking spaces. In the case of mobile equipment designers, reducing overall system weight is also a critically important consideration.

Sourcing individual drivetrain couplings and clutches can be time consuming as engineers hold interface clarification meetings with elastic coupling and clutch suppliers while also ensuring that quality, reliability, efficiency, vibration, footprint, weight and cost requirements are met.

As the only major power transmission component manufacturer in the world to offer both couplings and clutches, Stromag is uniquely positioned to respond to the growing demand for more innovative drivetrain solutions. Founded in 1932, Stromag, part of Altra Motion, has grown to become a globally recognized leader in the development and manufacture of innovative power transmission components for a wide spectrum of industrial drivetrain applications.

The Stromag engineering team recently designed a new line of unique, modular 2in1 coupling/clutch combination assemblies. The pre-engineered combinations feature an existing Stromag flexible coupling configured with an existing switchable clutch model for a compact, single-piece solution.

Depending on the application, various models from the performance-proven line up of Stromag couplings and clutches are combined for electric, hydraulic or pneumatic actuation. Suitable 2in1 solutions are available for nearly every combination between drive electric motors or diesel engines, and pumps, generators and belt drives. The power spectrum of the 2in1 clutch/coupling combinations ranges from a few hundred to several ten thousand Newton meters.



Stromag's unique, modular 2in1 pre-engineered combinations feature an existing Stromag flexible coupling configured with an existing switchable clutch model for a compact, single-piece solution.

"Smart" modular design concept reduces lead times

"Instead of designing 'from scratch' to meet specific customer requirements, the 2in1 modular 'smart' design concept allows our engineers to select from a carefully pre-configured family of paired flexible couplings and clutches. These compact pre-engineered combinations can then be quickly modified to meet particular customer needs." said Ralph Breuer, director of engineering and product management at Stromag.

This modular design approach can significantly reduce costs and lead times. OEMs can experience the cost-saving advantages while more easily meeting tighter delivery schedules. Plus, time-consuming meetings between elastic coupling and clutch suppliers to ensure component compatibility are no longer necessary.

Popular Stromag couplings include plug-in, highly flexible Periflex® VN disc couplings and TRI-R couplings featuring a combination ring element and diaphragm.

Breuer explains, "Stromag's know-how in Torsional Vibration Analysis (TVA) constitutes the core of each coupling design. It provides a comprehensive analysis of loads in the crankshaft, coupling and driven side to ensure that critical speeds can be moved per application requirements."

Unevenly rotating systems can severely degrade product quality and cause great harm to the powertrain. The TVA experts at Stromag work daily on the challenge of detecting such deviations by measuring them and protecting the entire powertrain with ideal product selection. Stromag calculates stationary and transient operating conditions while considering the stiffness and damping of a particular coupling's elastomers.

Stromag flexible couplings also accommodate various levels of radial, axial and angular misalignment, depending on the model. All couplings meet the following industry classifications: ABS, Lloyd's, CCS, Bureau Veritas and DNV-GL.

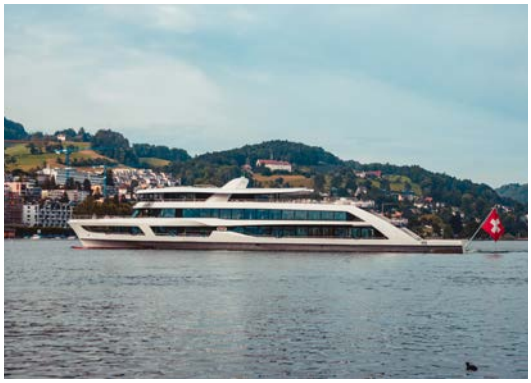
Reliable Stromag MWU electromagnetic pole-face friction clutches, KHA and KHR multi-disc clutches, and KPR clutches have a proven record of long-life performance in a variety of demanding applications.

Since the 2in1 combinations are configured into a single piece, there is no need for individual housings, bushings or keyways. These part reductions combine to provide weight savings which are especially important for marine and mobile equipment applications.

Stromag combination assemblies are provided as an open-running solution which is required for resiliently mounted engines and rigidly arranged drive lines. However, if desired, the combination units can be integrated into a single SAE housing for direct mounting to diesel engines. Stands and IIoT options are also available.

The unique 2in1 coupling/clutch combination units can be incorporated in a variety of applications across many industries. However, they are particularly popular for marine applications. According to Breuer, "The key to our success in the marine market certainly lies in our high level of marine application engineering know-how. We have a deep understanding of the technical aspects of marine applications allowing us to quickly and confidently design our solutions to meet specific requirements."

"We have seen increased demand for these compact 2in1 assemblies partially due to the growing usage of marine hybrid drive

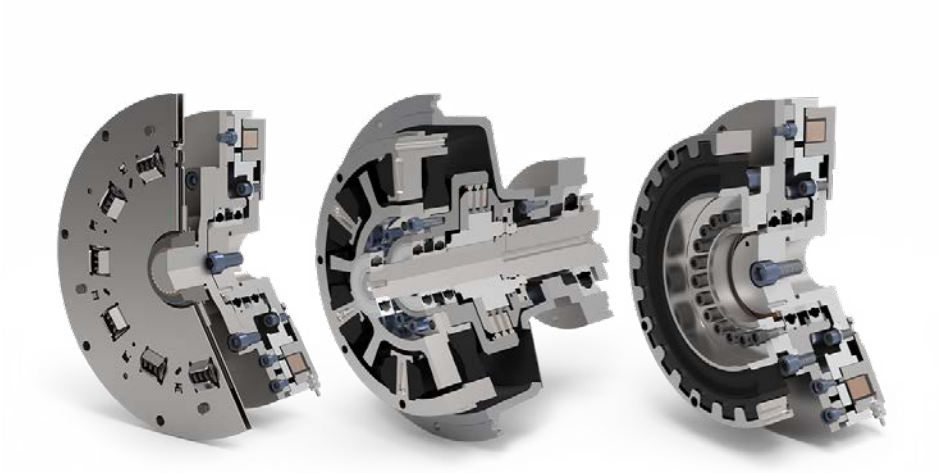


A Stromag 2in1 Periflex® VN/MWU Coupling/Clutch assembly was recently installed on the hybrid propulsion system onboard Switzerland's first climate-neutral cruise ship with energy consumption that is 20% less than a conventional ship.

systems or alternative drive train solutions due to ecological restrictions in or near harbor areas," Breuer said.

Various 2in1 combination assemblies are also ideally suited for use on a range of off-highway construction and agricultural machinery, including asphalt milling machines, dozers, excavators, tractors and combines.

In these types of construction and ag applications, enclosed units for direct mounting on internal combustion engines according to the SAE standard are used on air compressors and hydraulic fluid pump drives. Units can also be utilized on belted drives applications such as asphalt milling machines. Output-side is designed for easy "Plug & Play" connection to work machines.



Depending on the application, various models from the performance-proven line up of Stromag couplings and clutches are combined for electric (left), hydraulic (center) or pneumatic (right) actuation.

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