BLUE-Line
by SGF/MMB

HexaFlex-Blue

The Newest Marine Coupling Technology

See overleaf for more details.
HexaFlex BlueLine (flexible propeller shaft couplings)

When a rigid propeller shaft is fitted to a ship with fixed shaft bearings, the shaft coupling must be flexible since the engine is mounted on flexible vibration dampers which generate their own oscillation behaviour. The propeller shaft must not be affected by the engine movements otherwise the engine mountings, shaft flange, shaft bearings and shaft seals will be seriously damaged. This type of damage can lead to difficulties in manoeuvring the ship. The HexaFlex BlueLine Series is our response to the increasing demand for even more ease and safety in steering and operating the ship. This coupling series is specially designed to maximise vibration damping and ease of handling. The cyclic loading of unevenly running diesel engines gives rise to torsional vibrations. The damping of these vibrations which is achieved with the flexible disk specially developed for this kind of drive is particularly efficient. The flexible disk ensures that the connection between the engine and the propeller shaft is free of play and vibration. The internal construction of the flexible disc in particular deserves special consideration. Unlike the products of all known competitors, the torque is not transmitted through the polymer material alone. It is safety transferred by a special arrangement of loop-shaped synthetic fibres located inside and which have a safety factor of 10 against fracture. Optimisation of the shock absorber is guaranteed as is centring of the propeller shaft due to the precision-manufactured components – strong sales arguments for the HexaFlex Blue Line. Even at maximum coupling deflection, the shaft is perfectly centred on the drive flange.

The special properties of the flexible disc which enables it to run at high speeds without the need for additional safety components, unlike like the competitors’ products, means that the shaft remains precisely centred in all running directions.

The split clamping hub makes it easy to assemble and dismantle the coupling unit. Unlike conical clamping elements, the coupling can be attached to the shaft end assembled complete. This also saves time, since the expensive and complicated procedure of machining of shaft ends, such as turning the cone or recessing the keyway, is no longer necessary. The shaft is simply cut to the correct length and then the Blue Line HexaFlex fitted to it – that’s all. The flexible disk can be mounted radially or removed without any further effort. Even this Option saves time and nerves in the narrow hull.

The BlueLine has been specifically designed for the smaller boat drives up to 20 KW and rounds off the series downwards.
Advantages at a glance

- All metal parts made from stainless steel 1.4021 (X20Cr13 V)
- Optimised split clamping hub
- Flexible disc of special fabric construction
- Drive elements certificated by Lloyds of Germany
- Installed on the output side between the gearbox and the shaft
- Vibration and resonance reduction in the hull – Centred design with reinforced thrust Support
- Standard solutions available for all popular gearboxes
- Special flange geometries and custom solutions available on request
- Transmits high torque densities in a small space – No additional adapters necessary
- Axial, angular and radial displacements compensated
- Propeller shaft decoupled axially from the gearbox due to coupling’s special fabric construction
- Hole patterns on the gearbox flange connections specified by the customer at no extra cost
- Easy installation and removal without having to move the gearbox or propeller shaft
- Maintenance-free with long service life
Kupplungsdrehmoment \( T_k = 100 \text{ Nm} \)

Drehzahl \( n_{\text{max}} = 3600 \text{ 1/min} \)

Biegewinkel \( = 3^\circ \)

Flanschasche aus Ck45, Bauteile korrosionsbeständig beschichtet.

Gewicht \( m = 3.04 \text{ kg} \)

Trägheitsmoment \( I = 0.00488 \text{ kgm}^2 \)

Einbaunweisung nach T24,0102

Coupling torque \( T_k = 100 \text{ Nm} \)

speed \( n_{\text{max}} = 3600 \text{ 1/min} \)

bending angle \( = 3^\circ \)

Flange hub made of Ck45, Components with corrosion-resistant coating.

weight \( m = 30.4 \text{ kg} \)

inertia \( I = 0.00488 \text{ kgm}^2 \)

Follow mounting instruction T24,0102
Kuppeldrehmoment $T_k = 260$ Nm
Das Drehmoment ist abhängig vom Befrührungsdurchmesserd der Klemmmabe, siehe Kennlinie.

Drehzahl $n_{max} = 6500$ 1/min
Beugewinkel $= 3^\circ$

Trägheitsmoment $I = 0.00637$ kg·m²
Gewicht $m = 4.13$ kg

Flanschnaben, Schrauben und Scheiben korrosionsbeständig beschichtet.

Einbauanweisung nach T24.0102 beachten.

Coupling torque $T_k = 260$ Nm
The torque depends on the bore diameter $d$ of the clamping hub. See characteristic curve.

speed $n_{max} = 6500$ 1/min
bending angle $= 3^\circ$

Inertia $I = 0.00637$ kg·m²
weight $m = 4.13$ kg

Flange hub, Screws and discs with corrosion-resistant coating.

Follow mounting instruction T24.01021
Kuppeldrehmoment \( T_k = 260 \text{ Nm} \)

Das Drehmoment ist abhängig vom Befüllungsdurchmesser der Klemmfläche; siehe Kennlinie.

Drehzahl \( n_{\text{max}} \) = 6500 1/min

Beugeradius \( \beta \) = 3°

Trägheitsmoment \( I = 0.00627 \text{ kg m}^2 \)

Gewicht \( m = 4.13 \text{ kg} \)

Flanschnaben aus 1.4021. Schrauben und Scheiben korrosionsbeständig beschichtet.

Einbauanweisung nach T24,0102 beachten

Coupling torque \( T_k = 260 \text{ Nm} \)

The torque depends on the bore diameter \( d \) of the clamping hub. See characteristic curve.

Speed \( n_{\text{max}} \) = 6500 1/min

Bending angle \( \beta \) = 3°

Inertia \( I = 0.00627 \text{ kg m}^2 \)

Weight \( m = 4.13 \text{ kg} \)

Flange hub made of 1.4021. Screws and discs with corrosion-resistant coating.

Follow mounting instruction T24,0102!
Coupling torque: \( T_k = 420 \text{ Nm} \)

The torque depends on the bore diameter \( \phi \) of the clamping hub. See characteristic curve.

Drehzahl \( n_{max} = 6000 \text{ 1/min} \)

Beugewinkel \( \alpha = 3^\circ \)

Trägheitsmoment \( I = 0.0096 \text{ kg m}^2 \)

Gewicht \( m = 5.3 \text{ kg} \)

Flanschnabe aus 1.4021. Schrauben und Scheiben korrosionsbeständig beschichtet.

Follow mounting instruction T24.0102!
Kupplungsdrehmoment \( T_k = 740 \text{ Nm} \)

Drehzahl \( n_{\text{max}} = 6000 \text{ 1/min} \)

Beugewinkel \( \alpha = 2^\circ \)

Trägheitsmoment \( I = 0,03055 \text{ kg m}^2 \)

Gewicht \( m = 10,9 \text{ kg} \)

Flanschen aus 1.4021, Schrauben und Scheiben korrosionsfestig beschichtet.

Einbauanweisung nach T24.0102 beachten!

Coupling torque \( T_k = 740 \text{ Nm} \)

speed \( n_{\text{max}} = 6000 \text{ 1/min} \)

bending angle \( \alpha = 2^\circ \)

Inertia \( I = 0,03055 \text{ kg m}^2 \)

weight \( m = 10,9 \text{ kg} \)

Flange hub made of 1.4021. Screws and discs with corrosion-resistant coating.

Follow mounting instruction T24.0102
Kuppelungsdrehmoment \( T_k = 150 \text{ Nm} \)
Das Drehmoment ist abhängig von Lüftung und Drehzahl. Siehe Kurven.

Drehzahl \( n_{max} = 6000 \text{ min}^{-1} \)
Biegedruck \( p = 2 \text{ MPa} \)
Gewicht \( m = 14,5 \text{ kg} \)

Flanschen aus \#4021, Schrauben und Scheiben aus korrosionsbeständig.

Einbauanleitung nach TÜV/0102 beobachten.

Coupling torque \( T_k = 120 \text{ Nm} \)
The torque depends on the bore diameter of the coupling hub. See characteristic curve.

Speed \( n_{max} = 6000 \text{ rpm} \)
Bending strength \( p = 2 \text{ MPa} \)
Weight \( m = 14.5 \text{ kg} \)

Flange hub made of \#4021, Screws and discs with corrosion-resistant coating.

Follow mounting instruction TÜV/0102.
Kupplungsdrehmoment $T_{km,\text{max}} = 2000 \, \text{Nm}$

Das Drehmoment ist abhängig vom Bohrungsdurchmesser $d$ der Klemmbohle, siehe Kennlinie.

Drehzahl $n_{\text{max}} = 4000 \, \text{1/min}$

Beugewinkel $\beta = 2^\circ$

Trägheitsmoment $I = 0.12532 \, \text{kg \cdot m}^2$

Gewicht $m = 20.54 \, \text{kg}$

Einbautenweisen nach T240102 beachten!

Coupling torque $T_{km,\text{max}} = 2000 \, \text{Nm}$

The torque depends on the bore diameter $d$ of the clamping hub, see characteristic curve.

speed $n_{\text{max}} = 4000 \, \text{1/min}$

bending angle $\beta = 2^\circ$

Inertia $I = 0.12532 \, \text{kg \cdot m}^2$

weight $m = 20.54 \, \text{kg}$

Follow mounting instruction T240102!
HexaFlex-Blue Couplings
For a smooth marine driveline

- Mounts on the output side between the gearbox and shaft
- Reduces vibrations and resonance in the hull
- Centred design with strengthened shear support
- Extends the life of surrounding driveline components
- Standard solutions available for ZF, YANMAR and VOLVO gearboxes
- Special flange geometries and customized solutions available on request

**Advantages:**
- Transfer of high torque with a small coupling size
- No additional adapters necessary
- Eliminates axial, angular and radial misalignments
- Special fabric design of the coupling ensures axial separation of the propeller shaft from the gearbox
- Customized hole patterns for the gearbox flange connection at no extra charge
- Easy fitting and removal without moving the gearbox or propeller shaft
- Easy bolted attachment of the propeller shaft with optional extra anti-twist device
- Flange and shaft connections made of stainless steel
- Also ideally suitable for aluminium hulls
- Maintenance-free and very durable, of course

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