DNV·GL

Certificate No:
TAM00000D0

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Elastic Couplings

with type designation(s)
ARCUSAFLEX-VSK, AC-VSK 15, AC-VSK 25, AC-VSK 35, AC-VSK 45, AC-VSK 50, AC-VSK 55, AC-VSK 60, AC-VSK 70, AC-VSK 85, Each in the versions EN, WN and NN. Application: Installation on combustion engines in connection with articulated shafts.

Issued to
Dipl.-Ing. Herwarth Reich GmbH
Bochum Nordrhein-Westfalen, Germany

is found to comply with
DNV GL rules for classification – Ships
DNV GL rules for classification – High speed and light craft

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **2022-01-12**.

Issued at **Hamburg** on **2017-01-13**
DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Wolfgang Schütz**

Frank Lutz
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Job Id:
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Product description

The highly flexible AC-VSK coupling is mounted on the engine flywheel, ahead of the drive train with drive shaft. The AC-VSK coupling contains its own axial and radial bearing to support the weight of the drive shaft and its reaction forces. Narrow width to connect an engine flywheel to a cardan shaft.

Application/Limitation

For use with combustion engines in conjunction with cardan shafts for main propulsion and auxiliary duty.

Size	Element version	Nominal torque T_{KN} Nm	Maximum torque T_{Kmax} Nm	Cont. vibratory torque[2] $T_{KW\ (10\ Hz)}$ Nm	Permissible power loss P_{KV} (30 °C) W	Dynamic torsional stiffness C_{Tdyn} Nm/rad	Relative damping[1] Ψ -	Maximum speed n_{max} rpm	Maximum speed n_{max} SAE
AC-VSK 15	EN	390	1170	140	120	2400	1.00	4500	8"
	WN	450	1350			2900	1.25	4000	10"
	NN	560	1680			4500	1.40		
AC-VSK 25	EN	710	2130	250	190	4500	1.00	4000	10"
	WN	820	2440			5200	1.25	3500	11.5"
	NN	1000	3000			8000	1.40		
AC-VSK 35	EN	1100	3300	400	220	7800	1.00	3600	10"
	WN	1250	3750			9500	1.25	3500	11.5"
	NN	1600	4800			14000	1.40	3000	14"
AC-VSK 45	EN	1400	4200	525	240	9000	1.00	3500	11.5"
	WN	1600	4800			11000	1.25	3000	14"
	NN	2100	6300			17000	1.40		
AC-VSK 50	EN	2000	6000	750	280	14000	1.00	3000	14"
	WN	2300	6900			18000	1.25	2300	18"
	NN	3000	9000			24000	1.40		
AC-VSK 55	EN	3500	10500	1250	335	24000	1.00	2600	14"
	WN	4000	12000			30000	1.25	2300	18"
	NN	5000	15000			45000	1.40		
AC-VSK 60	EN	4400	13200	1550	375	35000	1.00	2500	14"
	WN	5000	15000			42000	1.25	2300	18"
	NN	6200	18600			65000	1.40		
AC-VSK 70	EN	7000	21000	2500	445	50000	1.00	2300	18"
	WN	8000	24000			62000	1.25	2100	21"
	NN	10000	30000			93000	1.40		
AC-VSK 85	EN	14000	42000	5000	650	96000	1.00	2100	21"
	WN	16000	48000			120000	1.25		
	NN	20000	60000			185000	1.40		

Shore hardness of the rubber element version: EN = 50° Shore A; WN = 55° Shore A; NN = 65° Shore A

1) The relative damping relates only to the elastomer. The frictional damping of the bearings has to be considered seperately, depending on the type of operation.

2) Continuous vibratory torque under reversing stresses $\pm T_{KW}$ at f = 10 Hz, for other frequencies f_x apply $T_{KW} \cdot \sqrt{\frac{10}{f_x}}$

Type Approval documentation
Tests carried out

Marking of product

The product is to be marked with manufacturer's name or trademark and type number identification

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform survey every 2,5 years and before expiry date of this certificate to verify that the conditions of the type approval are complied with.

Other conditions

The connection to driving and driven component is not included in this approval.

DNV GL product certificate is not required for couplings according DNV GL Rules for auxiliary duty with rating up to 500 kW and rated torque less than 5 kNm, where torsional vibration calculations are not required.

The Type Approval Certificate No. TAM00000D0 is replacing the following GL Certificate:

- GL Certificate No. 42 241-01 HH

END OF CERTIFICATE