

Requirement for top bracing application



No. of Cyl.	6	7	8	9
Lateral stays	B *1) / A *2)	B *1) / A *2)	A	B
Longitudinal stays	C	C	C	C

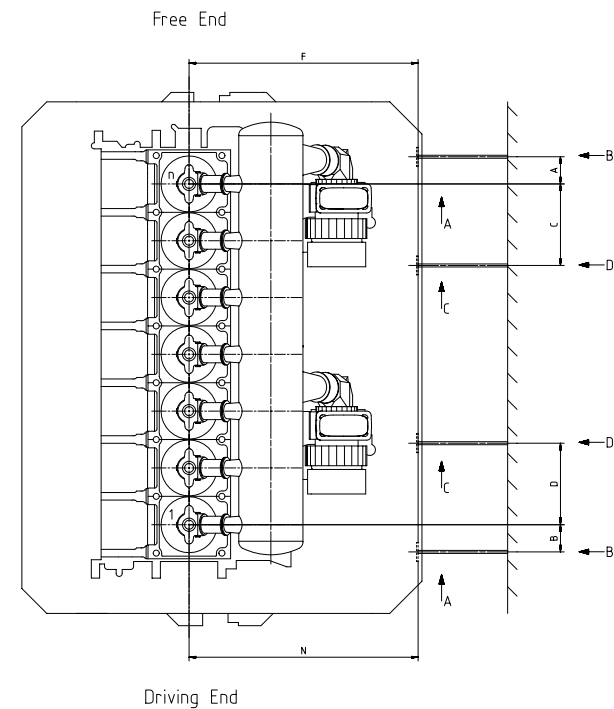
Remarks:

- A: The countermeasure indicated is needed.
B: The countermeasure indicated may be needed and provision for the corresponding countermeasure is recommended.
C: The countermeasure indicated is usually not needed.

- *1) for standard rating fields ($n_{cmer} \leq 74$ rpm)
*2) for extended rating fields ($n_{cmer} > 74$ rpm)


Stay Location	FS	X		
	ES		X	
	BOTH			X

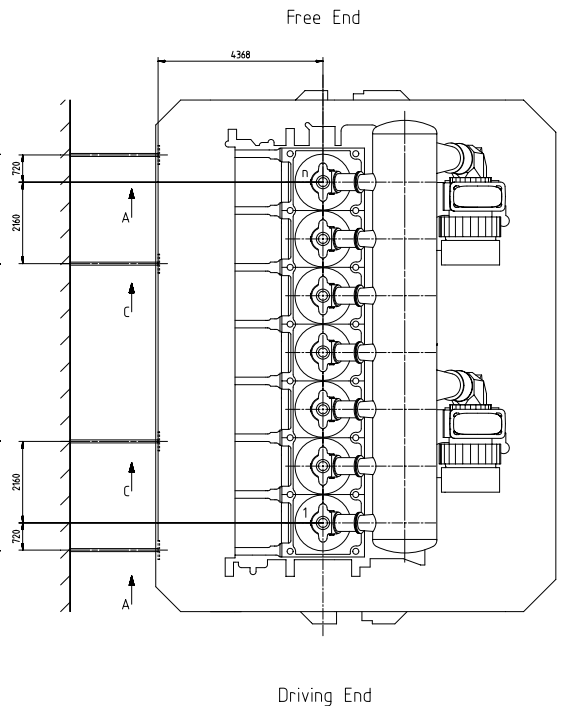
Net Weight													
0,001	0,001	0,001											
-	-	1	003	PAAD328514	ENGINE STAYS	Both Sides	DAAD116741				0,001		
-	1	-	002	PAAD328461	ENGINE STAYS	Exhaust Side	DAAD116715				0,001		
1	-	-	001	PAAD328504	ENGINE STAYS	Fuel Side	DAAD116739				0,001		
Quantity PER ENGINE			SEQ NO	Material ID	Material Name	Dimension, Occ	Standard or Drawing	Basic Material Material Standard	Weight GR./NET				
PAAD328524	PAAD328523	PAAD328522	Free space for lic.						Q-Code XXXXX Standard ISO; JIS	Main Drw.	H		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Material ID	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date	Number	Drawn date	
					Product W6-9X82-D	ENGINE STAYS Motorabstuetzung							
Units	mm kg	NX			Basic Material							Net Weight	
SURFACE PROTECTION SEE GROUP 0344			Made	20.08.2019	dk1021	DH.Kim	Scale	-	Size	A2	Page	1/1	Material ID
TOLERANCING PRINCIPLE ISO8015			Chkd	23.08.2019	dst009	Strödecke	Design Group		9715		Drawing ID	DAAD116747	
GENERAL TOLERANCES ACCORDING TO ISO2768-mK			Appd	23.08.2019	mhu019	Hug					Rev.	-	

[illegible]

- The installation and commissioning of the stays must be in accordance with the supplier's instructions.

Max. permissible force in lateral direction	F_h	(kN)	± 200
Stiffness	k	(N/m)	0.6×10^4
Permissible vertical stays displacement	Def_v	(mm)	± 50
Permissible horizontal stays displacement	Def_h	(mm)	± 50
Permissible angular stays displacement	Def_a	(°)	2

	6-YX82-D ENGINE SW'S Stays location: ES Motorabstufung		G-Code XXXXXX Standard ISO_JIS	Min. Dwg.	
	Part Number	Draw date	Number	Number	Draw date
Date 20.08.2019 Drawn by dkw21 Checked 21.08.2019 dms010 Design Group 9715	Size A5 1:50 1:100	Scale 1:50 1:100	Draw No 1/1 1/1	Material PAAD328461 DAAD116715	Net Weight 0.001



VIEW C
SCALE 1:10

VIEW D
SCALE 1:10

F_h

40

500

Max. permissible force in lateral direction	F_h (kN)	± 200
Stiffness	k (N/m)	0.5×10^9
Permissible vertical stays displacement	Def_v (mm)	± 50
Permissible horizontal stays displacement	Def_h (mm)	± 50
Permissible angular stays displacement	Def_θ (°)	2

Max. permissible force in lateral direction	F_h (kN)	± 200
Stiffness	k (N/m)	0.5×10^9
Permissible vertical stays displacement	Def_v (mm)	± 50
Permissible horizontal stays displacement	Def_h (mm)	± 50
Permissible angular stays displacement	Def_a ($^\circ$)	2

- The selected stays must have maker's acceptance for one side engine installation.
WinGD approved supplier : Green & Clean Technology Co., Ltd (Korea)
Nanmi Hydraulic Machinery Co., Ltd (Korea)
Hantong Navigation Machinery Group Co., Ltd (China)

- The amount of stays must be determined based on the requirement and stays suppliers specification. The transferred forces must be taken into consideration. The engine forces and moments are defined in the relevant engine dynamic data sheet "Forces and Moments" which is linked in the Marine Installation Manual (MIM). Stay pre-tensioning forces (max. piston hydraulic force) must also be considered and are provided by the stays supplier.

- The stay attachment point requirements must be crosschecked with the specification.
- The maximum forces transferred by the selected stays type must be within the range as defined on this drawing for standard engine execution. If the total force per stay exceeds the permissible range, reinforcement of the platform attachment points can be requested from the engine builder.


- The stays must adapt to the ship hull deformation and reduce the static reaction force acting on the engine and ship hull attachment points.

- The stays must increase the total stiffness of the system to avoid harmful resonance conditions. The dynamic stiffness of the stays (dynamic spring rate) is provided by the stays supplier.

- The stays must dampen accordingly to ensure that the acceptable vibrations (RMS limits) for the WinGD 2-stroke engine are met.

- The performance of the stays must be checked during sea trial by vibration measurements.

- The installation and commissioning of the stays must be in accordance with the supplier's instructions.

Date		Time		S-Code		Risk	
				XXXXXX		Pnc	
				XXXXXX		Pnc	
				ISO_JS		Pnc	
Year	Month	Ordn date	Number	Ordn date	Number	Ordn date	Number
				ENGINE S WWS Stays location: FS Motorabstuezung			
Project S - XXXX-D							
Order	Ref. No.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
20.06.2019	040021	040021	040021	040021	040021	040021	040021
SURVIVAL PROTECTION SEC GROUP 415				11/16739			
TULSA/INDIAN PRINCIPLE CIGARS				11/16739			
GENERAL TULSA/INDIAN ACCORDING TO 502074-01				11/16739			

[illegible]

MIDS - WinGD X82-2.0 – Engine Stays (DG9715)

TRACK CHANGES

DATE	SUBJECT	DESCRIPTION
2019-08-23	DRAWING SET	First web upload

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