



Vibration diagnostic report 8311U-2026		
Project: Nordschelde IMO no: 9596038 Ordered by: Reederei Nord GmbH	Date of measurement: 2026-07-09 - 2026-07-16	Place of measurement: During normal operation

Measurement condition

Measurements were taken during normal operating condition.

Results presentation

Measured values are presented in the table below. Each machine if applicable is separated for driver (el. motor, diesel engine, etc.) and driven unit (pump, compressor, etc.). First column of the table consist name of the equipment. Second column contains the highest value of vibration velocity measured on the equipment in all measurement points. Third column contains classification of the vibration class according to proper ISO standard and other normative documents. Classification depends on highest reading of measured equipment only. Fourth column contains additional readings of enveloped value of acceleration, which is helpful in detection of early stage of bearing wear. Fifth column contains vibration trend values if previous results are available from the same source. Sixth column contains remarks and suggestions based on the analysis of vibration signal. This column can be taken as the final conclusion about machine condition. If cell is empty, it means that there is no existing problem or defect shown in vibration signal.

Vibration standards

Following standards may applied for assessment:

ISO 10816-7	Mechanical vibration — Evaluation of machine vibration by measurements on non-rotating parts — Part 7: Rotodynamic pumps for industrial applications, including measurements on rotating shafts
ISO 14694	Industrial fans - Specifications for balance quality and vibration levels
ISO 20816-1	Mechanical vibration — Measurement and evaluation of machine vibration — Part 1: General guidelines
ISO 20816-3	Mechanical vibration — Measurement and evaluation of machine vibration — Part 3: Industrial machinery with a power rating above 15 kW and operating speeds between 120 r/min and 30 000 r/min
ISO 8528-9	Reciprocating internal combustion engine driven alternating current generating sets — Part 9: Measurement and evaluation of mechanical vibrations
SAUER	Vibration of compressors CB 05-13

Legend according to vibration class

Cl. A	Newly commissioned
Cl. B	Unrestricted
Cl. C	Restricted long-term operation
Cl. D	High probability of damage, action required
Cl. D	Vibrations over the limits but actions are not required.



V. I	Unrestricted
V. II	Restricted long-term operation
V. III	High probability of damage, action required
V. III	Vibrations over the limits but actions are not required.

In limit	Unrestricted
Out of limit	High probability of damage, action required
Out of limit	Vibrations over the limits but actions are not required.

Results

In table are presented only readings with max. RMS results for each device equipment:

Machine name	Velocity RMS (mm/s) Max	ISO standard	Bearing Envelope 0-Peak (m/s ²) Max	Trend Velocity RMS (mm/s) Max	Remarks and suggestions
DECK					
Cranes					
Crane no1 el. motor	1.586	Cl. B	14.527		
Oil cooler no1 el. motor	6.555	Cl. B	3.775		
Crane no2 el. motor	1.238	Cl. A	15.083		
Oil cooler no2 el. motor	5.506	Cl. B	12.899		Vibration reduced from last reading. Please advise if any maintenance was carried out since last measurement. Some envelope errors occurred. Measurement should be repeated at first opportunity.
Crane no3 el. motor	1.459	Cl. B	24.817		
Oil cooler no3 el. motor	5.046	Cl. B	14.527		Vibration reduced from last reading. Please advise if any maintenance was carried out since last measurement. Some envelope errors occurred. Measurement should be repeated at first opportunity.
Crane no4 el. motor	0.843	Cl. A	7.458		
Oil cooler no4 el. motor	5.708	Cl. B	4.978		
ACC fan					
ACC supply fan no1 el. motor	2.160	Cl. B	11.400		
ACC supply fan no1	5.242	Cl. B	4.127		
ACC supply fan no2 el. motor	3.096	Cl. C	14.083		
ACC supply fan no2	5.582	Cl. B	2.091		Vibration reduced from last reading. Please advise if any maintenance was carried out since last measurement.
EM Generator					
Emergency Generator Engine	11.022	In limit	-		
Emergency Generator Alternator	15.697	V. I	96.695		
FWD Winch hydraulic pumps					
PU1 el. motor	0.413	Cl. A	4.071		
PU1 pump	0.721	Cl. A	7.384		
PU2 el. motor	0.982	Cl. A	10.549		
PU2 pump	1.959	Cl. B	14.805		
PU5 el. motor	3.204	Cl. C	8.217		
PU5 pump	1.642	Cl. B	15.490		

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PU6 el. motor	1.778	Cl. B	6.866		
PU6 pump	1.727	Cl. B	28.389		
Rescue boat					
Rescue Boat el motor	0.519	Cl. A	9.420		
Fans					
Sanitary EXH Fan el. motor	0.379	Cl. A	4.404		
Galley EXH fan el. motor	0.507	Cl. A	4.719		
Paint Store EXH fan el. motor	1.824	Cl. A	3.017		
Wind. Ctr. RM EXH fan el. motor	1.062	Cl. A	12.769		Bearing envelope value reduced from last reading. Please advise if any maintenance was carried out to bearings since last measurement.
Hydraulic oil pump station EXH fan el. motor	0.813	Cl. A	7.902		
CO2 RM EXH fan el. motor	0.666	Cl. A	1.888		
Steering gear room fan el. motor	0.667	Cl. A	1.610		
ENGINE ROOM					
MAIN ENGINE					
ME Turning gear el. motor	2.146	Cl. B	9.697		
ME Aux Blower no1 el. motor	5.841	Cl. B	8.642		
ME Aux Blower no2 el. motor	6.169	Cl. B	9.124		
ME High Press pump no1 el. motor	0.842	Cl. A	11.363		
ME High Press pump no1	1.051	Cl. A	12.122		
ME High Press pump no2 el. motor	0.878	Cl. A	7.477		
ME High Press pump no2	0.703	Cl. A	12.288		
AE					
AE no1 Engine	4.799	In limit	-		
AE no1 Alternator	4.769	V. I	-		
AE no1 Turbocharger	7.612	Cl. D	-	 Last value: 2026-03-23 4.138	High signal comes from AE. No signs of deterioration. Next measurement should be done according to regular interval.
AE no2 Engine	4.371	In limit	-		
AE no2 Alternator	4.626	V. I	-		
AE no2 Turbocharger	4.154	Cl. B	-		
AE no3 Engine	5.990	In limit	-		
AE no3 Alternator	4.864	V. I	22.152		
AE no3 Turbocharger	5.269	Cl. C	-		
Air compressors					
Air compressor no1 el. motor	4.744	In limit	9.124		
Air compressor no1	4.756	In limit	15.471		
Air compressor no2 el. motor	5.072	In limit	22.411		
Air compressor no2	6.548	In limit	38.530		
Working Air compressor el. motor	2.228	Cl. A	8.272		
Working Air compressor	3.477	Cl. B	23.688		
LO pumps					

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ME LO pump no1 el. motor	1.789	Cl. B	11.511		
ME LO pump no1	2.245	Cl. A	20.042		
ME LO pump no2 el. motor	6.116	Cl. D	7.569	 Last value: 2026-03-25 9.873	High signal only in one point is related with rotational speed of motor. No signs of deterioration. Next measurement should be done according to regular interval.
ME LO pump no2	3.578	Cl. B	4.404		
ME Crosshead LO pump no1 el. motor	2.788	Cl. B	5.034		
ME Crosshead LO pump no1	1.188	Cl. B	7.180		
ME Crosshead LO pump no2 el. motor	2.439	Cl. B	8.383		
ME Crosshead LO pump no2	0.800	Cl. A	5.866		
AE priming pump no1 el. motor	1.187	Cl. B	12.325		
AE priming pump no2 el. motor	0.861	Cl. A	18.654		
AE priming pump no3 el. motor	0.877	Cl. A	12.677		
LT FW pumps					
LT FW pump no1 el. motor	2.345	Cl. B	3.387		
LT FW pump no1	1.015	Cl. A	14.287		
LT FW pump no2 el. motor	5.704	Cl. D	1.832	 Last value: 2026-04-17 4.036	Visible signal is related with rotational speed of machine. No signs of deterioration. Next measurement should be done according to regular interval.
LT FW pump no2	4.579	Cl. B	8.587		
LT FW pump no3 el. motor	4.668	Cl. D	5.237	 Last value: 2026-03-30 10.071	High signal only in one point is related with rotational speed of machine. No signs of deterioration. Next measurement should be done according to regular interval.
LT FW pump no3	1.379	Cl. A	20.949		
HT cooling pumps					
HT cooling pump no1 el. motor	1.377	Cl. B	1.795		
HT cooling pump no1	1.592	Cl. A	10.178		
HT cooling pump no2 el. motor	1.502	Cl. B	14.546		
HT cooling pump no2	0.554	Cl. A	8.420		
ME preheating pump el. motor	0.838	Cl. A	8.235		
ME preheating pump	0.632	Cl. A	8.235		
AE preheating pump el. motor	1.046	Cl. A	8.032		
AE preheating pump	0.600	Cl. A	4.756		
SWC pumps					
SWC pump no1 el. motor	4.536	Cl. D	7.014	 Last value: 2026-03-26 9.844	High signal only in one point is related with rotational speed of machine. No signs of deterioration. Next measurement should be done according to regular interval.
SWC pump no1	2.319	Cl. A	41.528		

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SWC pump no2 el. motor	4.684	Cl. D	17.618	 Last value: 2026-04-17 3.852	Visible signal is related with rotational speed of machine. No signs of deterioration. Next measurement should be done according to regular interval.
SWC pump no2	1.313	Cl. A	21.523		
SWC pump no3 el. motor	1.948	Cl. B	13.917		
SWC pump no3	1.521	Cl. A	20.190		
Ballast pump					
Ballast pump no1 el. motor	2.261	Cl. B	17.118		
Ballast pump no1	1.905	Cl. A	16.748		
Ballast pump no2 el. motor	3.447	Cl. C	14.675		
Ballast pump no2	2.790	Cl. A	20.634		
Fire & GS pumps					
Fire & GS pump no1 el. motor	4.157	Cl. C	4.219		
Fire & GS pump no1	2.207	Cl. A	8.550		
Fire & GS pump no2 el. motor	5.029	Cl. D	3.220	 Last value: 2026-04-02 7.253	Visible signal is related with rotational speed of machine. No signs of deterioration. Next measurement should be done according to regular interval.
Fire & GS pump no2	1.885	Cl. A	6.311		
Emergency Fire pump el. motor	4.188	Cl. C	5.885		
Emergency Fire pump	1.918	Cl. A	12.936		
Bilge pumps					
Daily Bilge pump el. motor	1.963	Cl. B	6.810		
Daily Bilge pump	1.426	Cl. B	6.477		

Trend results:



Whenever new results are increased more than 5% of previous measurements

Whenever new results are in range plus / minus 5% of previous measurements

Whenever new results are reduced more than 5% of previous measurements

Measurement equipment:

Technical data	
Maker:	Info Marine
Type:	MarVib DC650
Serial number:	650169322
Measuring range:	2Hz-30kHz / RPM = 60-20000
Indication error:	± 0,5%

Equipment is calibrated, certificate for verification - if required.

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Ship type: Bulk Carrier	Main dimensions: Length(b.p).....189,00 m Breadth(B.).....28,00 m
Sea depth: Least twice times greater than Vessel draught	
Measurement method: According to standard ISO 10816 : - procedure No. 2 Measurement report	

Summary

Next measurements should be done in three month period to obtain trend value for each equipment, in some cases even one month period is preferable.

This report is prepared in good faith based on measurement diagnostic done on available running rotary machine and documentation submitted.

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