

Prüfbericht-Nr.: Test report no.:	CN23V2UF 001	Auftrags-Nr.: Order no.:	170351850 180	Seite 1 von 7 Page 1 of 7
Kunden-Referenz-Nr.: Client reference no.:	2533689	Auftragsdatum: Order date:	2023-09-05	
Auftraggeber: Client:	SHANDONG RIPPA MACHINERY GROUP CO., LTD. No. 6 Industrial Park, No. 2166 Chongwen Avenue, High tech Zone, Jining City, Shandong Province, P.R. China			
Prüfgegenstand: Test item:	Hydraulic Excavator			
Bezeichnung / Typ-Nr.: Identification / Type no.:	NDI355			
Auftrags-Inhalt: Order content:	Noise emission test			
Prüfgrundlage: Test specification:	2000/14/EC with amendment 2005/88/EC EN ISO 3744:1995; ISO 6395:1988 Article 12, Annex III item 20			
Wareneingangsdatum: Date of sample receipt:	2023-10-12			
Prüfmuster-Nr.: Test sample no.:	SLP23082527			
Prüfzeitraum: Testing period:	2023-10-12 - 2023-10-12			
Ort der Prüfung: Place of testing:	As client			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland LGA Products GmbH			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	 Billy Shen	genehmigt von: authorized by:	 Jianlin Wang	
Datum: Date:	2023.11.21 19:58:22 +08'00'	Ausstellungsdatum: Issue date:	2023.11.22 10:01:08 +08'00'	
Stellung / Position:	Sachverständige(r)/Expert	Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / <i>Other:</i>	A-weighted sound power level was determined according to the requirements of the European Directive 2000/14/EC with amendment 2005/88/EC Article 12, Annex III item 20. The correct and complete marking of equipment was checked and it is compliant to Article 11 of noise directive. The EC declaration of conformity was checked and it is compliant to Article 8 of noise directive.			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Anmerkungen Remarks

- | | |
|----------|--|
| 1 | <p>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.</p> <p>Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.</p> <p><i>The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.</i></p> |
| 2 | <p>Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie über folgenden Link: Einführung in digitale Signaturen</p> <p><i>As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. For information on verifying the authenticity of our documents, please visit the following link: Introduction to Digital Signature</i></p> |
| 3 | <p>Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben.</p> <p>Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</p> <p><i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i></p> <p><i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i></p> |
| 4 | <p>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</p> <p><i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i></p> |
| 5 | <p>Wenn auf dem Bericht kein Akkreditierungshinweis aufgebracht ist, wurde der Bericht nicht im akkreditierten Bereich erstellt und ist folglich auch nicht vom EA MLA abgedeckt. Unabhängig davon wurde der Bericht auf Basis der allgemeinen Regeln der ISO/IEC 17000er Reihe erstellt. Mit "#" gekennzeichnete Prüfungen sind nicht Bestandteil der Akkreditierung D-PL-14169-03-00.</p> <p><i>If there is no accreditation notice on the report, the report has not been produced in the accredited area and is consequently not covered by the EA MLA. Regardless of this, the report has been prepared based on the general rules of the ISO/IEC 17000 series. Tests marked with "#" are not covered by the accreditation D-PL-14169-03-00.</i></p> |

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Produktbeschreibung
Product description

1	Produktdetails Product details	Hydraulic Excavator (crawler type)
2	Maße / Gewicht Dimensions / Weight	Dimension (LxWxH): 3180*1550*3430 mm Operating mass: 3375 kg
3	Bedienelemente Operating elements	Net Installed Power (P): 18.2 kW
4	Ausstattung / Zubehör Equipment / Accessories	Bucket (bucket volume 0.079 m³)
5	Verwendete Materialien Used materials	Engine type: Kubota – D1703 Engine power: 18.2kW@2200/min
6	Sonstiges Other	--
7	Prüfmusterbereitstellung Test sample obtaining	☐ Sending by customer ☐ Sampling by TÜV Rheinland Group ☒ others: provided by customer onsite



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Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result

General Information:

License holder : SHANDONG RIPPA MACHINERY GROUP CO., LTD.
No. 6 Industrial Park, No. 2166 Chongwen Avenue, High tech Zone,
Jining City, Shandong Province, P.R. China

Manufacturer : SHANDONG RIPPA MACHINERY GROUP CO., LTD.
No. 6 Industrial Park, No. 2166 Chongwen Avenue, High tech Zone,
Jining City, Shandong Province, P.R. China

Manufacturing plant:
(Test location) : SHANDONG RIPPA MACHINERY GROUP CO., LTD.
No. 6 Industrial Park, No. 2166 Chongwen Avenue, High tech Zone,
Jining City, Shandong Province, P.R. China

Indication of the machine rating label:

 山东立派机械集团有限公司 SHANDONG RIPPA MACHINERY GROUP CO., LTD.			
设备名称 Product Name	Hydraulic Excavator	型号 Model	NDI355
功率(kW) Engine Power	18.2	工作质量(kg) Operating Mass	3375
出厂编号 PIN	>SLP23082527<	出厂日期 Date of production	2023/08
地址:山东省济宁市高新区崇文大道2166号第六工业园 Address: No. 6 Industrial Park, No.2166 Chongwen Avenue, High tech Zone , Jining City, Shandong Province, P.R. China		电话:+86-0537 2339712 TEL:+86-0537 2339712	

Indication of the guaranteed sound power level:



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Absatz Clause	Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse – Bemerkungen/ Measuring results - Remarks	Ergebnis Result
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1. TECHNICAL DATA OF THE SAMPLES

Description : Hydraulic Excavator
Type : NDI355
Serial Number : SLP23082527
Engine
Type : D1703
Manufacturer : Kubota
Engine power : 18.2kW@2200/min
Cooling fan
Type : Directly connected to engine
Operation speed : 2200 /min

2. INSTALLATION AND OPERATING CONDITIONS (ISO 6395:1988 Annex A)

A.4.1 Basic machine cycle

The dynamic cycle, without moving material, comprises three 90° swings to the left of the operator and back. Each swing shall be from the x-axis to the y-axis, and back to x-axis. A single cycle consists of three continuous 90° swings to the left and back while moving the front end attachment through a complete sequence for each 90° swing and back.

A.4.2 Hoe attachment

At the beginning of cycle, the boom and arm shall be adjusted to place the bucket at 75% of the maximum reach with the bucket 0.5 m above the ground surface. The cutting edge of the bucket in the rolled forward position shall be at an angle of 60° to the test site measurement surface. First, raise the boom and simultaneously retract the arm so that the bucket follows the ground surface for 50 % of the remaining boom and arm travel distance. Then, roll back or curl the bucket. Lift the bucket by raising the boom and continue to retract the arm to simulate the adequate clearance (30 % of maximum bucket lift height) needed to swing across the edge of the trench. Execute a 90° swing to the left of the operator. Raise the boom during the swing and extend the arm until the bucket has reached 60 % of maximum boom lift height. Then uncurl the arm until it is 75 % extended. Roll forward or uncurl the bucket until the cutting edge is vertical. Execute a return swing to the starting position, with the boom being lowered and the bucket curled. Repeat the above sequence of actions two more consecutive times, in order to complete a single dynamic cycle.

3. TEST ENVIRONMENT (ISO 6395:1988)

Hard reflecting plane (concrete or sealed asphalt), having negligible sound-reflecting obstacles within a distance from the source equal to three times the measurement hemisphere radius.

Environmental correction $K_{2A} = 0$ dB

4. TECHNICAL DATA OF THE SAMPLES

Atmospheric pressure : 100.4 kPa
Ambient air temperature : 29 (-10 ~ 35) °C
Humidity : 53 %
Wind speed : 2 ≤ 8 m/s
Background noise : 45.0 dB(A)

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5. BACKGROUND NOISE

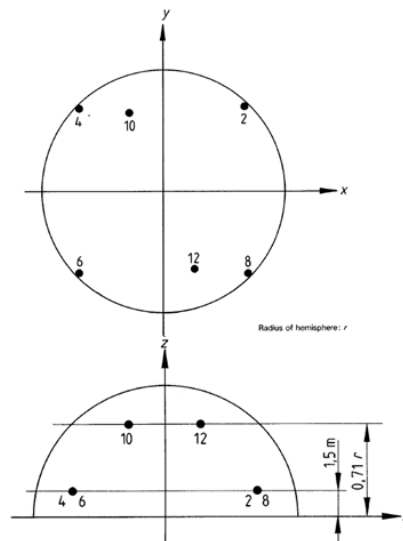
The level of the background noise was at least 15dB below the sound pressure level at each measuring point. So no correction is made.

Background noise correction K1A= 0 dB

6. MEASUREMENT METHOD – DETERMINATION OF SOUND POWER LEVEL

Six measuring positions were used. Microphone positions and their coordinates are shown in following figure.
($l = 1.38$ m; $r = 4$ m)

Measurement position number	x/r	y/r	z
2	0.7	0.7	1.5
4	-0.7	0.7	1.5
6	-0.7	-0.7	1.5
8	0.7	-0.7	1.5
10	-0.27	0.65	$0.71r$
12	0.27	-0.65	$0.71r$



Length of upper construction (l)	<1.5 m	1.5–4 m	≥4 m
Measurement surface radius (r)	4 m	10 m	16 m

Digital integration was used to measure the equivalent continuous A-weighted sound pressure level, $L_{pAeq,T}$ in decibels for each measurement period T.

Three dynamic cycles shall be carried out resulting in three measurements to be taken at each of the six microphone positions.

Calculate the three values of the sound power level from the three sets of data obtained at six microphone positions. If two of the three values so obtained do not differ by more than 1 dB, further measurements are not necessary. If this is not case, continue taking measurements until two values within 1 dB of each other are obtained. Report, as the value of the A-weighted sound power level, the arithmetic mean of the two highest values that are within 1 dB of each other.

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7. RESULTS

Sample 1# Serial number: SLP23082527; Measured fan speed: 2200 /min			
Measurement Position	Equivalent continuous A-weighted Sound pressure LpAeq,T [dB(A)]		
	Measurement Cycle 1	Measurement Cycle 2	Measurement Cycle 3
2	71.7	71.7	71.7
4	74.6	75.0	75.0
6	74.5	74.5	74.9
8	72.8	72.9	72.4
10	73.3	73.3	73.3
12	73.2	73.0	73.1
LpAeq,T (surface-averaged)	73.46	73.54	73.57
Average of two maximum cycles	73.56		

The calculated A-weighted sound power level $LWA = 73.56 + 10\lg(S/S_0) = 93.56$ dB(A).

Remark: S is the area of the hemispherical measurement surface, in square metres; $S_0 = 1 \text{ m}^2$. $10\lg(S/S_0) = 20$ for 4m radius, 28 for 10m radius and 32 for 16m radius.

The uncertainty K is calibrated according to the RfU No. 07-003 R2: $K = 1.5 \times 0.5 = 0.75$ dB.

8. CONCLUSIONS

Note below results were measured with ONE sample for each model in accordance with the requirements of the European Directive 2000/14/EC Annex VII (Unit Verification).

The sound power level according to EN ISO 3744:1995 and ISO 6395:1988 is as follow.

The permissible value according to 2000/14/EC with amendment 2005/88/EC Article 12, stage II for excavator is as below.

Model Type	Net Installed Power	Measured value	Guarantee value	Limit value	Verdict
NDI355	18.2 kW	93.6 dB(A)	94 dB(A)	94 dB(A)	PASS

END OF TEST REPORT