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TRANSLATION OF THE ORIGINAL

REPORT ON THE AIR NOISE PRODUCED BY THE SUCTION BENCH WITH DEPURATOR

Place and date of issue: Monte Colombo (RN), 06/08/1999

Mandant: Ghines S.r.l., Via Ca' Torsani, 1 – 47900 Rimini

Machinery: Suction bench with depurator mod. "Agua",

Year of production: 1999

Serial No. 60690

Date of the request: 26/07/1999

Date of the test: 02/08/1999

0.-Introduction

Under request of the owner of Ghines S.r.l. company, tests regarding the phonometric values pertaining the sound pressure at the operator's workstation have been effected c/o the domicile of the company.

1.-regulatory references

The phonometric values have been taken according to the technical rule UNI EN ISO 11201 (Acoustics. Noise emitted by machines and devices – Determination of sound power levels of noise sources using sound pressure at the workstation and other specific positions).

For the qualification of the testing environment it has been adopted the procedure provided for by the rule ISO 3744 (Acoustics – Determination of sound power levels of noise sources using sound presure – Engineering method in an essentially free field over a reflecting plane) appendix A.

2.-date and time of the measurements

The measurements have been effected on August 2, 1999 between 14.15 and 16.30. In order to evaluate the background noise the environamental measurements have been effected with a microphone placed in the same position where the machine's values were recorded.

3.-testing conditions

The analysis has been effected with the analyzer set to balance “A”.

When working, the suction bench produces sound emissions that are extremely steady and continuative. It has a single engine that runs at a single speed and given its running typology there are no working conditions in which it could be put under more stress.

The workstation is well demarcated: on a work bench whose length is about two meters, on the side where the control box is.

The suction bench has been positioned inyard outside the warehouse. This yard is omogenously surfaced with asphalt.

The testing area had no phonoreflecting parts for a radius of over 10 meters from the machine at issue, anyhow three times bigger than the distance from the centre of the machine and the microphone station (about one meter), as provided for by the above mentioned rule ISO 3744.

4.-measurement conditions

It has been effected an analysis of the equivalent level with analyzer set to balance “A” and of the peak with analyzer set to balance “C”.

Given the continuity of the noise, the environmental measurements have been effected in intervals of about 5 minutes.

The phonometer has been placed at a height of 155 cm, on one side of the control panel, corresponding to the centre of the machine (at about 1.6 meters from the edges) and outside of it at a distance of about 20 cm from the projection of the walls, near the area which is considered to be mostly affected by the noise coming out of the machine, recognizable by the air outlet on one side of the control panel.

The antiwind safety earmuff has been used.

A frequency analysis of the sound emission spectrum has also been effected.

The environmental surveys have also shown a temperature of 30.0 ° C and a wind speed of 3 m/sec.

5.-Specifications of the machine on trial *

- Suction bench mod. “Agua” with water depurator.
- Plate framework on 4 adjustable feet.
- Wooden workbench 2000 x 1000 mm, height 920 mm, internally covered by sound absorption material and provided with an air spring.
- Air outlet on three sides of the motor area with polyurethane diffusers.
- Perimetral suction area at two levels and on the workbench.
- Suction group mod. CV 405F105 – high-performing centrifugal ventilator.
- Quantity of sucked air: about 7500 m^3 / hour.
- Dust exhaustion through an automatic physical system with drop separator.
- Supplying and discharging of the plumbing system through an electrovalve, draining of the overflow provided of two spray nozzles (one of 1/4” and one of 3/8”).
- Quantity of required water: 3 liters/min.
- Bipolar three-phase electric motor. Power 5.5 HP 50 Hz / 6.5 HP 60 Hz.
- Dimensions: 3220 x 1140 x 920 mm.
- Weight: 650 kg.

(*) as declared by the mandant

6.-Regulatory framework and measurement equipment:

The lay-out, procedure, measurement equipment and the results evaluation refer to the D.Lgs 277/91, the D.M. 16/03/1998 and the UNI EN ISO 11201 discipline.

The measurement equipment used for the test, in compliance with Article 1 of IEC 651 and IEC 804 discipline, is herewith enlisted with the serial numbers shown in parenthesis:

- Two-channel phonometer integrator / realtime analyzer mod. Larson Davis 2900B, in compliance with IEC 651 type 1 discipline and IEC 804 type 1 discipline for the analysis of sound events, vibrations, monitoring, FFT analysis, reverberation times, statistical analysis. Analysis fro 0,7 to 20 kHz with filters in conformity with ANSI S1.11/1986 type 0-AA and 1-D, and IEC 225. Serial number 0914;
- microphone Ø 1 / 2” mod. 2541, Larson Davis. Serial number 5482;
- calibrator of the acoustic level mod. CAL200, Larson-Davis. Serial number 1116;
- complement accessories.

The calibration of the microphones is effected internally before and after executing each test.

A complete calibration of the equipment c/o the premises of the manufacturer is scheduled on an annual basis.

Copy of the instrument’s calibration certificate is attached at the end of the present report.

7.-Measurements results

The results of the tests effected are summarized by the following chart:

position	measurement time (mins.)	Leq dB(A)	Peak dB(C)
Background noise at the operator's station	10	53.5	<130
Noise produced by the machine at the operator's station	5	73.5	<130

The calibration effected before and after the measurements tests has shown the same nominal value of the calibrator.

8.-Analysis of the data and conclusions

It has been observed that the difference between the background noise and the noise when the suction bench is working is 15 dB(A), therefore the obtained results must not be corrected and are in compliance with the EN ISO 11201 discipline.

After the data has been surveyed it has been certified that the weighted sound pressure level A to be inserted in the instruction manual for this family of suction benches according to the directive CEE 89/392 All. I, point 1.7.4.f and the EN ISO 11201 discipline be the same as the observed value of 73.5 dB(A) increased by a reproducibility margin of 0.5 dB(A), that is L'pA = 74 dB(A).

THE TECHNICIAN
Dott. Ing. Giuseppe Baffoni

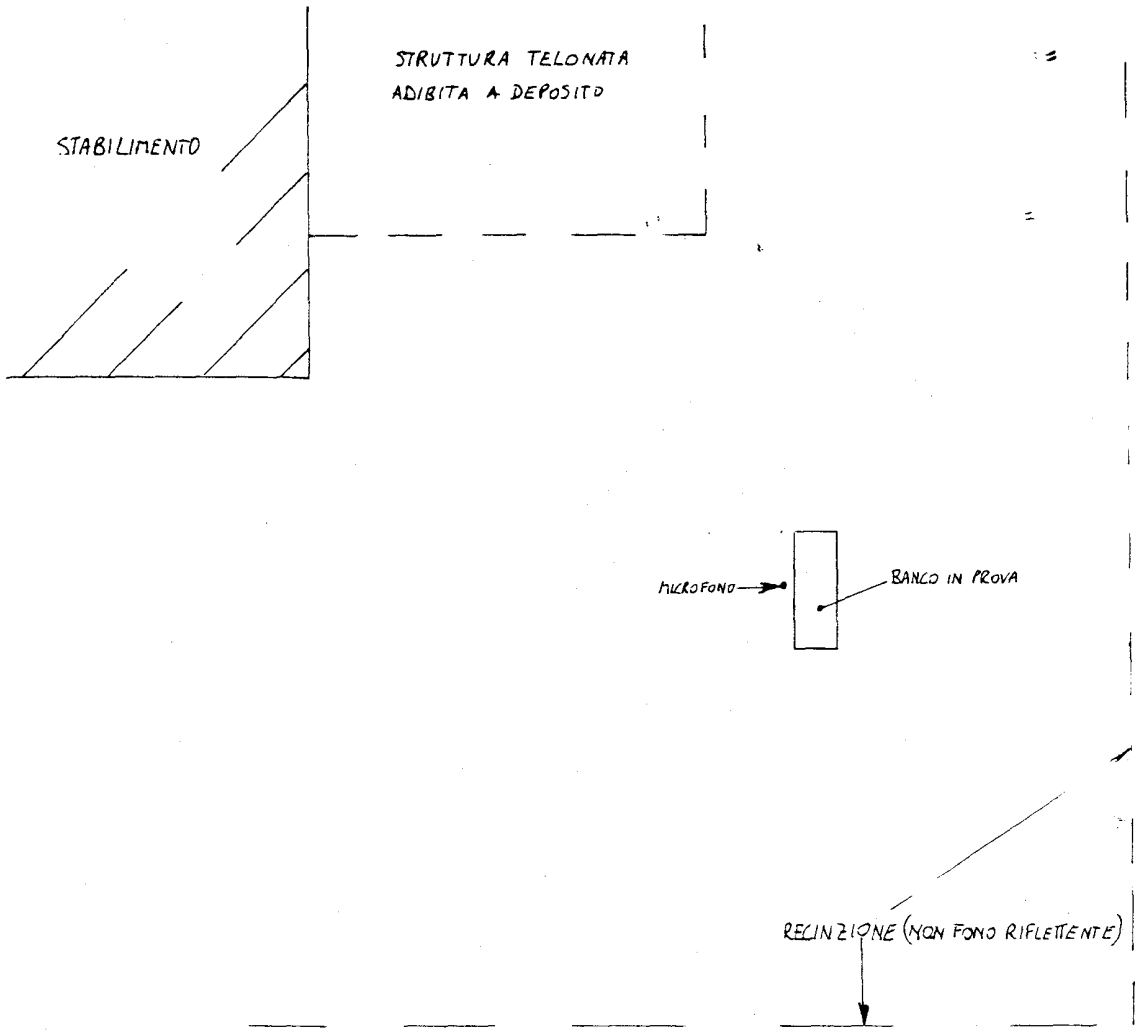
ENCLOSURES:
Planimetry of the testing area and measurements stations
Certificates of calibration of the instruments
Spectrum of the sound pressure level at the operator's station

PLANIMETRY OF THE TESTING AREA AND MEASUREMENT STATIONS

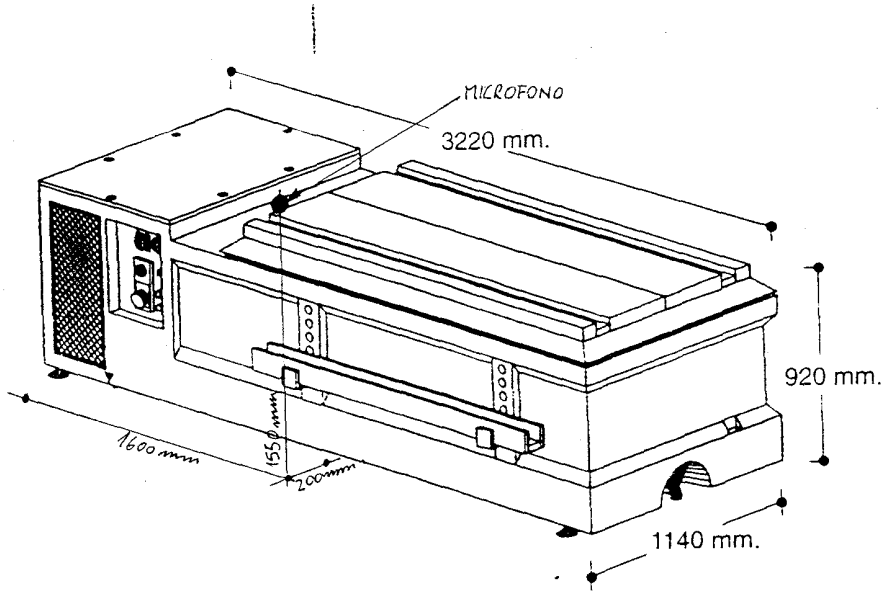
Workshop
Tarpaulin-covered structure used as warehouse
Microphone
Tested suction bench
Fence (not sound-reflecting)
Ca’ Torsani st.
Microphone – 3220 x 1140 x 920 mm.

Spectrum of the sound pressure level at the operator’s station for the “Agua” suction bench

PLANIMETRIA SCHEMATICA DELL'AREA E DEI PUNTI DI MISURA



VIA CÀ TORSANI



spettro del livello di pressione sonora al posto operatore per il modello "Agua"



Certificate of Calibration and Conformance

Certificate Number 1999-19580

Instrument Model 2900, Serial Number 0914, was calibrated on 04-13-1999. The instrument meets factory specifications according to Larson • Davis Test Procedure TP-1016, ISO 10012, ANSI S1.11 1986, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

New Instrument
Date Calibrated: 04-13-1999
Calibration due: 06-13-2000

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson • Davis	LDSigGn/2209	0099 / 0101	12 Months	01/18/2000	1999-18175

Certified Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 22 ° Centigrade

Relative Humidity: 31 %

Affirmations

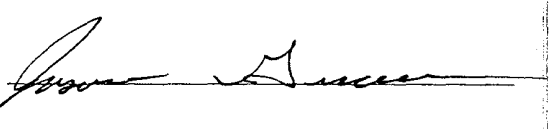
This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Larson • Davis Corporate Headquarters. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with ISO 10012. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

Due to state-of-the-art limitations, 4:1 calibration ratios are not possible on pressure measurement standards, microphones and acoustic calibrators. Calibration ratios for these types of devices are limited to 1:1.

The results documented in this certificate relate only to the item(s) calibrated or tested. Calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of Larson • Davis Laboratories.

Technician: Jason Grace
Service Center: Larson • Davis Laboratories, Utah

Signed: 

LARSON • DAVIS LABORATORIES
1681 West 820 North Provo Utah 84601 Phone (801) 375-0177

Certificate of Calibration and Conformance

Certificate Number 1999-19558

Instrument Model CAL200, Serial Number 1116, was calibrated on 04-12-1999. The instrument meets factory specifications according to Larson • Davis Test Procedure TP-1027, ISO 10012.

New Instrument
Date Calibrated: 04-12-1999
Calibration due: 06-12-2000

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Hewlett Packard	HP-34401A	US36015216	12 Months	07/31/1999	1136A03
Larson • Davis	2900	0276	12 Months	08/17/1999	1998-15718
Larson-Davis	2559	2506	12 Months	09/30/1999	7291
Larson • Davis	PRM915	0107	12 Months	12/15/1999	1998-17760
Larson • Davis	MTS1000 / 2201	1004 / 0102	12 Months	12/15/1999	12152-1998

Certified Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 23 ° Centigrade

Relative Humidity: 25 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Larson • Davis Corporate Headquarters. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with ISO 10012. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

Due to state-of-the-art limitations, 4:1 calibration ratios are not possible on pressure measurement standards, microphones and acoustic calibrators. Calibration ratios for these types of devices are limited to 1:1.

The results documented in this certificate relate only to the item(s) calibrated or tested. Calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of Larson • Davis Laboratories.

Technician: Scott Montgomery
Service Center: Larson • Davis Laboratories, Utah

Signed: Scott Montgomery

LARSON • DAVIS LABORATORIES
1681 West 820 North Provo, Utah 84601 Phone (801) 375-0177

Certificate of Calibration and Conformance

Certificate Number 1999-19654

Microphone Model 2541, Serial Number 5482, was calibrated on 04-16-1999. The microphone meets current factory specifications according to Larson • Davis Test Procedure TP-1004, ISO 10012.

New Instrument
Date Calibrated: 04-16-1999
Calibration due: 06-16-2000

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson • Davis	2250M	225102	12 Months	04/22/1999	1998-13943
Larson • Davis	2900	0575	12 Months	07/16/1999	1998-15236
Larson-Davis	2559	2506	12 Months	09/30/1999	7291
Hewlett Packard	34401A	3146A62099	12 Months	10/06/1999	1136A05
Larson • Davis	PRM916	0102	12 Months	12/15/1999	1998-17758
Larson • Davis	PRM915	0102	12 Months	12/15/1999	1998-17757
Larson • Davis	PRM902	0206	12 Months	12/15/1999	1998-17756
Larson • Davis	MTS1000 / 2201	1000 / 0100	12 Months	12/15/1999	12151-1998
Larson • Davis	CAL250	0102	12 Months	03/19/2000	1999-19195

Certified Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Environmental test conditions as printed on microphone calibration chart.

Affirmations

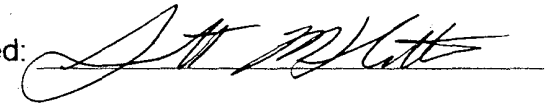
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Technician: Scott McIlrath
Service Center: Larson • Davis Laboratories, Utah

Signed: 

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