LOADED SOUND TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)	Jig Saw
TOOL OPERATOR	Edward Zechmann
COMPUTER OPERATOR	Hyunsu Kim
TEST DATE	12/21/2005
TEST DESCRIPTION	Sound Power Level Measurement
TEST LOCATION	UC anechoic lab
MANUFACTURER	Bosch
MODEL	1590EVSK
SERIAL NUMBER	486093007
MODE OF OPERATION	Normal
RUN NUMBER	2
YEAR MADE	
DIMENSIONS (inches)	LENGTH 10, WIDTH 3, HEIGHT 8.5
WEIGHT (lbs.)	6.4 lbs.
TECHNICAL SPECIFICATIONS	1 inch stroke length, 12.5 TPI blade
MOUNTING CONDITIONS	HELD BY OPERATOR, OAK CLAMPED TO WORK TABLE
LOADING CONDITIONS	FULL SPEED, LOADED WITH OAK BOARD, NO ORBITAL
K1 (dBA)	0
K2 (dBA)	1.22
TEMPERATURE (CELSIUS)	23 C
HUMIDITY %	11
BAROMETRIC PRESSURE ("Hg, Pa)	30.29 "Hg
TEST ENVIRONMENT	SEMI ANECHOIC, SEMI HEMISPHERICAL
TOOL TESTING STANDARD	ANSI S12.15-1992
MEASUREMENT STANDARD	ISO 3744:1994-05-01
MICROPHONE SET-UP	10-MICROPHONES
SURFACE RADIUS	2.00 meters
RATED POWER (WATTS)	768
ACTUAL INPUT POWER (WATTS)	NA
VOLTAGE (VOLTS)	NA
CURRENT (AMPS)	NA
RATED RPM	2800
ACTUAL RPM	NA
SOUND POWER LEVEL (dBA)	101.4
SOUND POWER (WATTS) A-weighted	0.01395
SWLA - k2 (dBA)	100.2
SWLA - k2 (WATTS) A-weighted	0.01052
SOUND PRESSURE LEVEL (dBA) @ 2 meters	87.4
AT THE NOMINAL HEARING ZONE OF OPERATOR	
SOUND PRESSURE LEVEL (dBA)	95.0

Average Directivity Study

TEST DATE	12/21/2005
DUT	Jig Saw
Manufacturer	Bosch
Model Number	1590EVSK
Serial Number	486093007
Mode	Normal
Run Number	2

A-weighted Sound Pressure Level

	Position1	Position2
Mic #	dBA	dBA
0	88.2	
1	84.9	
2	86.9	
3	84.2	
4	84.9	
5	85.3	
6	89.4	
7	86.6	
8	87.4	
9	91.2	
10	95.0	
dB difference	7.0	

A-weighted Directivity Index

Mic #	dBA	dBA
0	1.3	
1	-2.0	
2	0.0	
3	-2.7	
4	-2.0	
5	-1.6	
6	2.5	
7	-0.3	
8	0.5	
9	4.3	
10	8.2	

SOUND DATA SHEET

PRODUCT INFORMATION		TEST CONDITIONS	
TEST DATE	12/21/2005		
DUT	Jig Saw	Actual Power (watt)	NA
Manufacturer	Bosch	Voltage (Volts)	NA
Model Number	1590EVSK	Current (Amps)	NA
Serial Number	486093007	Actual RPM	NA
Mode of Operation	Normal	Temperature (Deg. F)	23 C
Run Number	2	Humidity (%)	11
		Baro. Press. (inch of Hg)	30.29 "Hg

Measurement Data

Linear (unweighted) Position 1					
Sound Power (dB)	101.22	101.60	101.26	101.29	101.50
Sound Power (Watts)	0.01325	0.01445	0.01338	0.01347	0.01411
Sound Pressure (dB)	87.22	87.60	87.26	87.29	87.49

A-weighted Position 1					
Sound Power (dBA)	101.22	101.60	101.32	101.44	101.63
Sound Power (Watts)	0.01325	0.01445	0.01355	0.01393	0.01455
Sound Pressure (dBA)	87.22	87.60	87.32	87.44	87.63

Calculations

Average A-weighted Sound Data	
Sound Power (dBA)	101.44
Sound Power (Watts)	0.0139
Sound Pressure (dBA)	87.44
Std. Deviation SWLA	0.1761
95 % Confidence Level	0.1587
Mean SPLA-k2	86.22

LOADED VIBRATIONS TEST SUMMARY SHEET

NAME OF DEVICE UNDER TEST (DUT)	Jig Saw
TOOL OPERATOR (SUBJECT OF TEST)	Edward Zechmann
COMPUTER OPERATOR	Hyunsu Kim
TEST DATE	12/21/2005
TEST DESCRIPTION	Human Exposure to Vibrations
TEST LOCATION	UC ANECHOIC LAB
MANUFACTURER	Bosch
MODEL	1590EVSK
SERIAL NUMBER	486093007
MODE OF OPERATION	Normal
RUN NUMBER	2
YEAR MADE	
DIMENSIONS (inches)	LENGTH 10, WIDTH 3, HEIGHT 8.5
WEIGHT (lbs.)	6.4 lbs.
TECHNICAL SPECIFICATIONS	1 inch stroke length, 12.5 TPI blade
MOUNTING CONDITIONS	HELD BY OPERATOR, OAK CLAMPED TO WORK TABLE
LOADING CONDITIONS	FULL SPEED, LOADED WITH OAK BOARD, NO ORBITAL
TEMPERATURE (FARHENHEIT, CELSIUS)	23 C
HUMIDITY %	11
BAROMETRIC PRESSURE ("Hg, Pa)	30.29 "Hg
TEST ENVIRONMENT	SEMI ANECHOIC, SEMI HEMISPHERICAL
MEASUREMENT STANDARD	ISO 5349-1and ISO 5349-2
ACCELEROMETER SETUP	2 - ACCELEROMETERS
SETUP DIAGRAM	Accelerometer Location and Orientation Diagram for Jig Saws
LOCATION ACCEL 1	right hand, rear handle, near electrical switch
ORIENTATION ACCEL 1	X toward bottom of tool, Y toward saw blade, Z toward right side of saw
LOCATION ACCEL 2	left hand, front palm grip, above saw blade
ORIENTATION ACCEL 2	X toward bottom of tool, Y see diagram, Z see diagram
ADAPTER TYPE	Accel 1 side adapter, Accel 2 side adapter
OPERATOR PRESSURE	Standing and holding the tool with both hands, pushing tool into wood
HAND GRIP FORCE	Hands gripping to control tool and press electrical switch
RATED POWER (WATTS)	768
ACTUAL INPUT POWER (WATTS)	NA
VOLTAGE (VOLTS)	NA
CURRENT (AMPS)	NA
RATED RPM	2800
ACTUAL RPM	NA
Vibrations	
Accelerometer 1	
X, Y, Z arms m/s^2 weighted	3.1, 6.3, 2.4
X, Y, Z arms m/s^2 linear	54.7, 82.2, 56.3
Total arms m/s^2 (weighted, linear)	7.4, 113.7
Accelerometer 2	
X, Y, Z arms m/s^2 weighted	6, 7.1, 4.3
X, Y, Z arms m/s^2 linear	66.3, 62.4, 26.6
Total arms m/s^2 (weighted, linear)	10.2, 94.9

VIBRATIONS DATA SHEET

TEST DATE	12/21/2005		
DUT	Jig Saw	Actual Power (watt)	NA
Manufacturer	Bosch	Voltage (Volts)	NA
Model Number	1590EVSK	Current (Amps)	NA
Serial Number	486093007	Actual RPM	NA
Mode of Operation	Normal	Temperature	23 C
Run Number	2	Humidity (%)	11

Accelerometer 1	arms weighted m/s^2				
Axis	1	2	3	4	5
X	2.8	3.2	3.1	3.2	3.3
Y	5.4	6.3	6.3	6.5	6.8
Z	2.4	2.4	2.6	2.2	2.2
Total arms	6.6	7.4	7.4	7.6	7.9
Accelerometer 1	arms linear m/s^2				
X	56.0	57.8	56.0	50.3	53.2
Y	87.9	83.9	80.8	80.7	77.7
Z	59.2	59.8	53.4	52.6	56.6
Total arms	119.9	118.2	111.9	108.7	109.9

Accelerometer 2	arms weighted m/s^2				
Axis	1	2	3	4	5
X	4.8	5.6	6.5	6.5	6.4
Y	6.3	8.1	6.9	6.4	7.6
Z	3.7	3.4	5.2	4.7	4.5
Total arms	8.8	10.4	10.8	10.3	10.9
Accelerometer 2	arms linear m/s^2				
X	71.9	58.9	67.7	70.5	62.5
Y	65.7	62.2	61.3	62.5	60.3
Z	26.1	24.6	28.0	28.5	26.0
Total arms	100.8	89.1	95.5	98.4	90.6

Average arms

Weighted m/s^2	Accel 1	Accel 2	Linear	Accel 1	Accel 2
X	3.1	6.0	X	54.7	66.3
Y	6.3	7.1	Y	82.2	62.4
Z	2.4	4.3	Z	56.3	26.6
Total arms m/s^2	7.4	10.2		113.7	94.9
Std. Deviation	0.5	0.9		5.0	5.0
95 % Confidence Level	0.5	0.8		4.5	4.5