

Pegboard Test

Quick Reference Guide

2020 Edition

Manufactured for:
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QUICK REFERENCE GUIDE FOR THE PEGBOARD TEST #A929-1

CONTENTS	
PREFACE	1
Application	1
ADMINISTRATION	1
Test Batteries and Timing	2
Equipment Required	2
TEST PROCEDURES	2
General Instructions	2
Right Hand	2
Left Hand	3
Both Hands	3
Right + Left + Both	4
Assembly	4
INTERPRETATION AND SCORING OF DATA	5
Types of Interpretation Scales	5
Normative Data and Scoring	5
Using New Interpretation Charts	6
REPLACEMENT PARTS AND REORDERING	
INFORMATION	6
REFERENCES	7
<i>FIGURE 1. INTERPRETATION CHART</i>	
EXAMPLE	7
<i>FIGURE 2A-H. Occupational Areas</i>	8-15

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Test Administrator's
Manual
Revised Edition 2020

PREFACE

Application

The Pegboard Test aids in the selection and rehabilitation of employees for various types of manual labor by measuring 2 types of dexterity:

1. Gross movements of the fingers, hands, and arms.
2. Fine fingertip dexterity necessary in assembly tasks.

The Pegboard Test can be used for many testing applications, such as Physical Therapy, Occupational Therapy, Vocational Evaluation, and Pre-employment Screening. Other applications for the test can be found by doing a bibliography search.

Physical and Occupational Therapists use the Pegboard Test for injury rehabilitation. They use the test as a tool to obtain baseline data on a patient. They also use it to document patient progress and/or degree of disability.

Vocational Evaluators use the Pegboard Test to determine a subject's ability and aptitude for certain work-related applications and for recommending placement in jobs that require manual dexterity. The Pegboard Test is also used to develop a specific training program that will give an individual the skills to complete a job task that requires manual dexterity.

Human Resource Directors and Temporary Staffing Agencies use the Pegboard Test as a pre-employment screening and selection tool. An applicant's performance on the Pegboard Test can indicate their ability to perform in a job/task that requires manual dexterity. **Note: It is strongly recommended that the testing organization shows a correlation between a subject's performance on the Pegboard Test and a subject's performance in the specific job task.** This may be accomplished by testing subjects currently working in a specific job task who are high performers and low performers. Then test the same subjects using the Pegboard Test. The high performers should score higher on the Pegboard Test than the low performers.

ADMINISTRATION

Before administering the Pegboard Test, the test administrator is advised to carefully read this section of the manual. As with any standardized test, it is important to follow the directions very closely. If the Pegboard Test is to be used as a basis for employee selection, the test must be administered to all applicants according to the standardized test procedure. If the test is not given identically, irrelevant factors may affect test scores. In order

to reduce the variability among test administrators, specific details regarding the arrangement of materials and the testing procedures are presented below.

Practice the administration of the Pegboard Test before conducting a test on a subject. The amount of practice needed in order to become comfortable with the testing process is dependent upon the test administrator's previous testing experience. The test administrator should practice the Pegboard Test until he or she is able to perform each of the tests at an average speed for demonstration purposes. **Note: The test administrator will be demonstrating to the test subject what is expected of him or her before each test.**

Test Batteries and Timing

The test administrator will compile 5 separate scores from the complete test procedure, one for each test battery:

1. Right hand (30 seconds)
2. Left hand (30 seconds)
3. Both hands (30 seconds)
4. Right + Left + Both hands (**Note: This is not an actual test; it is a mathematical sum calculation.**)
5. Assembly (60 seconds)

The test batteries should be done in this consecutive order, unless the subject is left-handed, where test batteries 1 and 2 are reversed: Left Hand first and then Right Hand. Three test trials are highly recommended: the more trials administered, the more test score reliability. **Note: The test is well suited for either group or individual testing.**

Equipment Required

The following equipment and supplies are required to ensure that the Pegboard Test is a consistent, standardized test:

1. Pegboard Test (Model # A9291)

- a. Instruction Manual
- b. 1 Test Board
- c. Pins, Collars, Washers
- d. Score Sheets

2. At least one testing table approximately 30 inches tall. **Note: The subject must be seated throughout the administration of the test.**
3. Stopwatch or clock that reads in seconds.

TEST PROCEDURES

General Instructions

The subject should be comfortably seated at the testing table directly in front of the Pegboard, which is placed on the table with the row of cups (under the nameplate) at the top of the board. The far right and far left cups should have 25 pins in each to equal a total of 50 pins. For right-handed subjects, the cup to the right of center should have 20 collars and the cup to the left of center should have 40 washers. If the subject is left-handed, the collar and washer locations should be on the reverse side of center. The following directions are for single subject testing and should be appropriately modified for group testing.

When the subject(s) is seated and ready to begin, say:

"This is a test to see how quickly and accurately you can work with your hands. Before you begin each battery of the test, you will be told what to do and then you will have an opportunity to practice. Be sure you understand exactly what to do."

Right Hand (30 seconds)

Begin by saying and demonstrating:

"Pick up one pin at a time with your right hand from the right-handed cup. Starting with the top hole, place each pin in the right-hand row. (Leave the pin used for demonstration in the hole.) Now you may insert a few pins for practice. If during the testing time you drop a pin, do not stop to pick it up. Simply continue by picking another pin out of the cup."

Correct any errors made in placing the pins and answer any questions. When the subject has inserted three or four pins and appears to understand the operation, say:

"Stop. Now take out the practice pins, and put them back into the right-hand cup."

After the subject completes this task, say:

"When I say 'Begin,' place as many pins as possible in the right-hand row, starting with the top hole. Work as rapidly as you can until I say 'Stop.'"

"Are you ready? Begin."

Start timing when you say "Begin." At the end of exactly 30 seconds, say:

"Stop."

Count the number of pins inserted and record the Right Hand score. This is the total number of pins the subject placed with the right hand. Leave the pins in the holes.

Left Hand (30 seconds)

Begin by saying:

"Pick up one pin at a time with your left hand from the left-hand cup. Place each pin in the left-hand row, starting with the top hole. You may insert a few pins for practice."

When the subject has inserted three or four pins and appears to understand the operation, say:

"Stop. Now take out the practice pins, and put them back into the left-hand cup."

After the subject completes this task, say:

"When I say 'Begin,' place as many pins as possible in the left-hand row, starting with the top hole. Work as rapidly as you can until I say 'Stop.'"

"Are you ready? Begin."

Start timing when you say "Begin." At the end of exactly 30 seconds, say:

"Stop."

Count the number of pins inserted and record the Left Hand score. This is the total number of pins the subject placed with the left hand. Leave the pins in the holes. After the Right Hand and Left Hand test batteries have been completed, the subject returns all pins to their proper cups.

Both Hands (30 seconds)

This test battery tests both hands working together. Begin by saying:

"For this part of the test, you will use both hands at the same time. Pick up a pin from the right-hand cup with your right hand, and at the same time pick up a pin from the left-hand cup with your left hand. Then place the pins down the rows. Begin with the top hole of both rows. (Demonstrate. Then replace the pins used for demonstration.) Now you may insert a few pins with both hands for practice."

After the subject has three or four pairs of practice pins correctly inserted, say:

"Stop. Take out the practice pins, and put them back in the proper cups."

Then say:

"When I say 'Begin,' place as many pins as possible with both hands, starting with the top hole of both rows. Work as rapidly as you can, until I say 'Stop.'"

"Are you ready? Begin."

Start timing when you say "Begin." At the end of exactly 30 seconds, say:

"Stop."

Count the number of pairs of pins inserted (not the total number of pins), and record the score. The subject then returns the pins to the proper cups.

Right + Left + Both (Sum of scores)

This score is not based on a separate test; it is obtained from combining the test scores of the previous three test batteries. Add the scores recorded for Right Hand, Left Hand, and Both Hands; this is the score that you record for R + L + Both.

This score does not have to be recorded during the actual testing period. The Assembly test may begin immediately after the Both Hands score is recorded.

Assembly (1 minute)

This test battery consists of assembling pins, collars, and washers. Demonstrate the following operations while saying:

"Pick up one pin from the right-hand cup with your right hand. While you are placing it in the top hole in the right-hand row, pick up a washer with your left hand. As soon as the pin has been placed, drop the washer over the pin. While the

washer is being placed over the pin with your left hand, pick up a collar with your right hand. While the collar is being dropped over the pin, pick up another washer with your left hand and drop it over the collar. This completes the first 'assembly,' consisting of a pin, a washer, a collar, and a washer. While the final washer for the first assembly is being placed with your left hand, start the second assembly immediately by picking up another pin with your right hand. Place it in the next hole, drop a washer over it with your left hand, and so on, completing another assembly. Now, take a moment to try a few practice assemblies."

Emphasize that both hands should be operating at all times: one picking up a pin, one a washer, one a collar, and so on.

The subject should be allowed to make four or five complete assemblies before the test is begun to make certain the subject fully understands the "alternating" procedure. The subject must keep both hands moving at the same time. If he or she fails to do this, the administrator should give further instructions. **Note: If the subject is left-handed, the washer and collar locations in the cups are switched. The subject begins by picking up the pin with his/her left hand, the washer with his/her right hand, the collar with his/her left hand, another washer with his/her right hand and so on through all assemblies.**

After the subject has practiced the assemblies, say:

"Stop. Now return the pins, collars, and washers to their proper cups."

Then say:

"When I say 'Begin,' make as many assemblies as possible, beginning with the top hole. Work quickly until I say 'Stop.'"

Start timing when you say "Begin." After exactly 1 minute (60 seconds), say:

"Stop."

Count the number of parts assembled and record the Assembly score. Since there are four parts in each assembly, if the subject made eight complete assemblies, the score is 8 multiplied by 4 (parts), or 32. Beyond completed assemblies, if there are additional parts properly placed at the end of the minute, they are also added to the Assembly score. For example, if there is another pin and first washer, in addition to those 2 parts, the score is 32 + 2, or 34. After the test administrator records this score, the subject should return the pins, collars, and washers to the proper cups.

INTERPRETATION AND SCORING

Types of Interpretation Scales

There are several ways to evaluate the subject and his/her raw scores. **Note: It is assumed that the data represents a normal distribution.** These three types of interpretation scales follow:

1. Percentile scale
2. Standard scale
3. Verbal scale

Percentile Scale

Use the *percentile scale* when a subject's score must be interpreted in terms of a percent of the normal population surpassed by the subject. For example, if the subject's score is at the midpoint (50 percentile on the scale), it means that the score made by a subject was better than 50 percent of the normative population. Other percentile points are interpreted in a similar fashion. The instructions for scoring appear in the *Normative Data and Scoring* section.

Standard Scale

The *standard scale* is a statistical analysis of a subject's score. It is derived from a normal frequency curve or bell-shaped curve. The Mean, which is the arithmetic average, and Standard

Deviation (S.D.) numbers are provided in PPM as well as in the New Interpretation Charts, which are labeled as Figure 2 (A-H) on pages 8-15. Generally, 68 percent of scores fall between -1 and +1 S.D.; 95 percent between -2 and +2 S.D.; 99.70 percent between -3 and +3 S.D. There are a very small percentage of scores that fall either above or below 3 S.D. from the Mean. The instructions for scoring appear in the *Using New Interpretation Charts* section on page 6.

Verbal Scale

The *verbal scale* is merely a scale of broad categories. Thus, a subject should be described as having *excellent* ability when his/her score falls higher than 2 S.D. above the Mean. When a subject's score falls between 1 S.D. and 2 S.D. above the Mean, they should be described as having *high-average* ability. A subject described as having *average* ability would have a score that falls within the range of 1 S.D. above and below the Mean. A *low-average* subject would have a score that falls between 1 S.D. and 2 S.D. below the Mean. A subject should be described as having *poor* ability when his or her score falls under 2 S.D. below the Mean. The instructions for scoring appear in the *Using New Interpretation Charts* section on page 6.

Normative Data and Scoring

The PPM is the source of the following statistical data. Percentile rank tables in Appendix A (Tables 8 through 15) address each occupation area so the test administrator may plot the subject's raw scores and convert them into a percentile score that can be recorded. This will enable the test administrator to conduct subject score comparisons with the normative population.

To utilize the percentile tables, identify the appropriate table (8 through 15) for the occupation area that best describes the subject. Locate the subject's raw score or the average of 3 trials for each test battery under the corresponding heading

(i.e., Right Hand, Left Hand) within the percentile box. Draw a line from that raw score across to the left or right outside edge of the box to where the percentile scores are located (1-99). This will give you the converted score, from raw scores to percentiles. Record this number on the score sheet. For example, if a subject's percentile score is "30," this means that the subject performed better than 30 percent of the normative population. **Note: If the subject's preferred hand is the Left Hand, the Left Hand score should be looked up under the Right Hand column heading on these tables.**

The Mean and Standard Deviations (S.D.) have also been provided at the bottom of each percentile table. **Note: The Mean does not always represent 50 percentile, this may be attributed to sampling size and/or sampling error. The differences between the mean and 50 percentile do not seem to be significant.** The Mean and S.D. can be used to plot the subject's score on a bell-shaped curve and interpret using the standard scale or verbal scale. The instructions for using these scales appear in the next section.

Using New Interpretation Charts

All of the possible scores that fall into the range of data provided in Appendix A have been analyzed and plotted, using the "Standard Scale" (Mean and S.D.). The scores are presented in the form of a color-coded bar graph. The bar graph represents a normal distribution or bell curve, but the actual curve is not shown. The colors indicate the gradations of performance based on the "Verbal Scale." **Note: This is illustrated in Figure 1 on page 7.**

To utilize the new interpretation charts, identify the appropriate chart for the occupational area that best describes the subject. Refer to the proper bar graph for data regarding each test battery. Locate the subject's raw score or the average of 3 trials. Evaluate the score using the verbal scale, the standard scale, or both. Look at the top of the bar

graph for the verbal score. The sections are color coded for convenience. The subject's raw score can also be used to determine how many S.D. above or below the Mean the score falls. Read the S.D. from the outside inward. Notice the arrows in the example chart (Figure 1) on the next page.

Using the data in Figure 1, if the raw score is 14, then evaluate the subject's score as **2 S.D.** below the Mean. The score is **Low-average** compared to the normative population. If the raw score is 19, then the score falls within **1 S.D.** above the Mean, which is also **Average**, compared to the normative population. All raw scores are evaluated in this manner. **Note: Customers using the Lafayette Purdue Pegboard have reported a decrease in subject scores in recent years. Therefore, the scores may appear lower as compared to the original normative data.**

REPLACEMENT PARTS AND REORDERING INFORMATION

Sammons Preston continues service after the sale by offering the following replacement parts for the Pegboard Test:

Pins, Collars, & Washers# A92911
Manual.....# 747303
Score Sheets.....# A92912

We can be contacted between 8:00 a.m. - 5:00 p.m.
Monday through Friday for pricing and ordering.

Manufactured for:
Performance Health Supply, Inc.
W68 N158 Evergreen Blvd.
Cedarburg, WI 53012
1-800-323-5547
www.performancehealth.com

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Figure 1

INTERPRETATION CHART EXAMPLE

Male & Female Applicants for Production Work (n=454)

Right Hand:

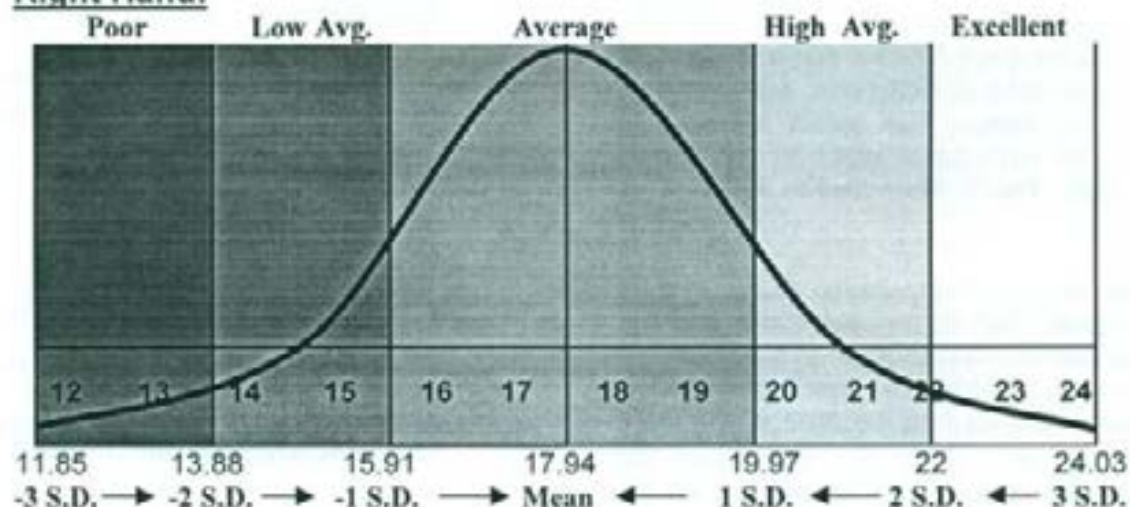


Figure 2A Male & Female Applicants for Assembly Jobs
(n=146)

Right Hand:

Poor		Low Avg.		Average			High Avg.		Excellent
13	14	15	16	17	18	19	20	21	22
13.18	14.74	16.30		17.86			19.42	20.98	22.54
-3 S.D.	-2 S.D.	-1 S.D.		Mean			1 S.D.	2 S.D.	3 S.D.

Left Hand:

Poor		Low Avg.		Average			High Avg.		Excellent
12	13	14	15	16	17	18	19	20	21
11.71	13.34	14.97		16.60			18.23	19.86	21.49
-3 S.D.	-2 S.D.	-1 S.D.		Mean			1 S.D.	2 S.D.	3 S.D.

Both Hands:

Poor		Low Avg.		Average			High Avg.		Excellent
	11	12	13	14	15	16	17	18	
10.06	11.50	12.94		14.38			15.82	17.26	18.70
-3 S.D.	-2 S.D.	-1 S.D.		Mean			1 S.D.	2 S.D.	3 S.D.

Right + Left + Both:

Poor		Low Avg.		Average			High Avg.		Excellent
	37 - 42		43 - 46	47 - 51	52 - 55		56 - 62		
36.93	40.89		44.85	48.81	52.77		56.73		60.69
-3 S.D.	-2 S.D.		-1 S.D.	Mean	1 S.D.		2 S.D.		3 S.D.

Assembly:

Poor		Low Avg.		Average			High Avg.		Excellent
	30 - 36		37 - 41	42 - 45	46 - 50		51 - 57		
29.69	34.32		38.95	43.58	48.21		52.84		57.47
-3 S.D.	-2 S.D.		-1 S.D.	Mean	1 S.D.		2 S.D.		3 S.D.

Figure 2B Male & Female Applicants for General Factory Work (n=282)

Right Hand:

Poor		Low Avg.		Average		High Avg.		Excellent	
12	13	14	15	16	17	18	19	20	21
22	23	24	25	26	27	28	29	30	31
11.78	13.57	15.36	17.15	18.94	20.73	22.52			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Left Hand:

Poor		Low Avg.		Average		High Avg.		Excellent	
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
10.91	12.61	14.31	16.01	17.71	19.41	21.11			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Both Hands:

Poor		Low Avg.		Average		High Avg.		Excellent	
10	11	12	13	14	15	16	17	18	
20	21	22	23	24	25	26	27	28	29
9.14	10.69	12.24	13.79	15.34	16.89	18.44			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Right + Left + Both:

Poor		Low Avg.		Average		High Avg.		Excellent	
35	40	41	44	45	48	49	52	53	58
60	65	66	69	70	73	74	77	78	81
34.64	38.68	42.72	46.76	50.80	54.84	58.88			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Assembly:

Poor		Low Avg.		Average		High Avg.		Excellent	
22	30	31	36	37	42	43	48	49	56
57	63	64	69	70	75	76	81	82	87
21.63	27.52	33.41	39.30	45.19	51.08	56.97			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Figure 2C Male & Female Production Work (n=454)

Right Hand:

Poor		Low Avg.		Average				High Avg.		Excellent		
12	13	14	15	16	17	18	19	20	21	22	23	24
11.85	13.88	15.91		17.94				19.97		22.00		24.03
-3 S.D.	-2 S.D.	-1 S.D.		Mean				1 S.D.		2 S.D.		3 S.D.

Left Hand:

Poor		Low Avg.		Average				High Avg.		Excellent
12	13	14	15	16	17	18	19	20	21	
11.80	13.47	15.14		16.81			18.48	20.15	21.82	
-3 S.D.	-2 S.D.	-1 S.D.		Mean			1 S.D.	2 S.D.	3 S.D.	

Both Hands:

Poor		Low Avg.		Average				High Avg.		Excellent
10	11	12		13	14	15	16	17	18	
9.60	11.10	12.60		14.10			15.60	17.10	18.60	
-3 S.D.	-2 S.D.	-1 S.D.		Mean			1 S.D.	2 S.D.	3 S.D.	

Right + Left + Both:

Poor		Low Avg.		Average				High Avg.		Excellent
35 - 41		42 - 46		47 - 51		52 - 56		57 - 63		
34.27	39.13	43.99		48.85			53.71	58.57	63.43	
-3 S.D.	-2 S.D.	-1 S.D.		Mean			1 S.D.	2 S.D.	3 S.D.	

Assembly:

Poor		Low Avg.		Average				High Avg.		Excellent
21 - 30		31 - 37		38 - 43		44 - 50		51 - 60		
20.60	27.29	33.98		40.67			47.36	54.05	60.74	
-3 S.D.	-2 S.D.	-1 S.D.		Mean			1 S.D.	2 S.D.	3 S.D.	

Figure 2D Female Electronic Production Work (n=533)

Right Hand:

Poor		Low Avg.		Average		High Avg.		Excellent	
14	15	16	17	18	19	20	21	22	23
13.40	15.09	16.78	18.47	20.16	21.85	23.54			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Left Hand:

Poor		Low Avg.		Average		High Avg.		Excellent	
12	13	14	15	16	17	18	19	20	21
11.37	13.17	14.97	16.77	18.57	20.37	22.17			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Both Hands:

Poor		Low Avg.		Average		High Avg.		Excellent	
10	11	12	13	14	15	16	17	18	
10.36	11.75	13.14	14.53	15.92	17.31	18.70			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Right + Left + Both:

Poor		Low Avg.		Average		High Avg.		Excellent	
39	43	44	47	48	51	52	55	56	61
38.11	42.02	45.93	49.84	53.75	57.66	61.57			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Assembly:

Poor		Low Avg.		Average		High Avg.		Excellent	
28	35	36	41	42	46	47	51	52	59
27.80	33.12	38.44	43.76	49.08	54.40	59.72			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Figure 2E Female Hourly Production Workers (n=373)

Right Hand:

Poor		Low Avg.			Average		High Avg.		Excellent			
12	13	14	15	16	17	18	19	20	21	22	23	24
11.96	13.98	16.00			18.02		20.04		22.06		24.08	
-3 S.D.	-2 S.D.	-1 S.D.			Mean		1 S.D.		2 S.D.		3 S.D.	

Left Hand:

Poor		Low Avg.			Average		High Avg.		Excellent			
12	13	14	15	16	17	18	19	20	21	22		
11.41	13.21	15.01			16.81		18.61		20.41		22.21	
-3 S.D.	-2 S.D.	-1 S.D.			Mean		1 S.D.		2 S.D.		3 S.D.	

Both Hands:

Poor		Low Avg.			Average		High Avg.		Excellent			
10	11	12	13	14	15	16	17	18				
9.75	11.28	12.81			14.34		15.87		17.40		18.93	
-3 S.D.	-2 S.D.	-1 S.D.			Mean		1 S.D.		2 S.D.		3 S.D.	

Right + Left + Both:

Poor		Low Avg.			Average		High Avg.		Excellent			
37 - 42		43 - 46			47 - 51		52 - 55		56 - 62			
36.21	40.52	44.83			49.14		53.45		57.76		62.07	
-3 S.D.	-2 S.D.	-1 S.D.			Mean		1 S.D.		2 S.D.		3 S.D.	

Assembly:

Poor		Low Avg.			Average		High Avg.		Excellent			
18 - 27		28 - 34			35 - 41		42 - 48		49 - 58			
17.83	24.58	31.33			38.08		44.83		51.58		58.33	
-3 S.D.	-2 S.D.	-1 S.D.			Mean		1 S.D.		2 S.D.		3 S.D.	

Figure 2F Male Hourly Production Workers (n=288)

Right Hand:

Poor		Low Avg.		Average		High Avg.		Excellent	
12	13	14	15	16	17	18	19	20	21
11.14	12.91	14.68		16.45		18.22	19.99	21.76	
-3 S.D.	-2 S.D.	-1 S.D.		Mean		1 S.D.	2 S.D.	3 S.D.	

Left Hand:

Poor		Low Avg.		Average		High Avg.		Excellent	
12	13	14	15	16	17	18	19	20	21
11.24	12.93	14.62		16.31		18.00	19.69	21.38	
-3 S.D.	-2 S.D.	-1 S.D.		Mean		1 S.D.	2 S.D.	3 S.D.	

Both Hands:

Poor		Low Avg.		Average		High Avg.		Excellent	
10	11	12	13	14	15	16	17		
9.02	10.47	11.92		13.37		14.82	16.27	17.72	
-3 S.D.	-2 S.D.	-1 S.D.		Mean		1 S.D.	2 S.D.	3 S.D.	

Right + Left + Both:

Poor		Low Avg.		Average		High Avg.		Excellent	
35 - 40		41 - 44		45 - 48	49 - 51		52 - 57		
34.47	38.35	42.23		46.11	49.99		53.87	57.75	
-3 S.D.	-2 S.D.	-1 S.D.		Mean	1 S.D.		2 S.D.	3 S.D.	

Assembly:

Poor		Low Avg.		Average		High Avg.		Excellent	
18 - 27		28 - 33		34 - 40	41 - 46		47 - 56		
17.15	23.73	30.31		36.89	43.47		50.05	56.63	
-3 S.D.	-2 S.D.	-1 S.D.		Mean	1 S.D.		2 S.D.	3 S.D.	

Figure 2G Male Maintenance & Service Employees (n=237)

Right Hand:

Poor		Low Avg.		Average				High Avg.		Excellent	
10	11	12	13	14	15	16	17	18	19	20	21
9.85	11.73	13.61		15.49		17.37		19.25		21.13	
-3 S.D.	-2 S.D.	-1 S.D.		Mean		1 S.D.		2 S.D.		3 S.D.	

Left Hand:

Poor		Low Avg.		Average				High Avg.		Excellent	
10	11	12	13	14	15	16	17	18	19	20	
9.85	11.65	13.45		15.25		17.05		18.85		20.65	
-3 S.D.	-2 S.D.	-1 S.D.		Mean		1 S.D.		2 S.D.		3 S.D.	

Both Hands:

Poor		Low Avg.		Average				High Avg.		Excellent	
9	10	11	12	13	14	15	16				
8.17	9.55	10.93		12.31		13.69		15.07		16.45	
-3 S.D.	-2 S.D.	-1 S.D.		Mean		1 S.D.		2 S.D.		3 S.D.	

Right + Left + Both:

Poor		Low Avg.		Average				High Avg.		Excellent	
32 - 37	38 - 41	42 - 43	44 - 46	47 - 54							
31.25	35.18	39.11	43.04	46.97	50.90	54.83					
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.					

Assembly:

Poor		Low Avg.		Average				High Avg.		Excellent	
24 - 31	32 - 36	37 - 41	42 - 46	47 - 53							
23.53	28.59	33.65	38.71	43.77	48.83	53.89					
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.					

Figure 2H Female Applicants for Sewing-Machine Operator
(n=146)

**Valid only when 3 trials of each test battery have been completed
Do not take the average; add all 3 trials together.*

Right Hand:

Poor		Low Avg.		Average		High Avg.		Excellent	
39 - 47		48 - 52		53 - 57		58 - 63		64 - 71	
38.88	44.32	49.76	55.20	60.64	66.08	71.52			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Left Hand:

Poor		Low Avg.		Average		High Avg.		Excellent	
37 - 44		45 - 49		50 - 54		55 - 59		60 - 67	
36.24	41.42	46.60	51.78	56.96	62.14	67.32			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Both Hands:

Poor		Low Avg.		Average		High Avg.		Excellent	
31 - 37		38 - 41		42 - 46		47 - 50		51 - 57	
30.80	35.21	39.62	44.03	48.44	52.85	57.26			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Right + Left + Both:

Poor		Low Avg.		Average		High Avg.		Excellent	
113 - 132		133 - 144		145 - 157		158 - 170		171 - 189	
112.99	125.69	138.39	151.09	163.79	176.49	189.19			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			

Assembly:

Poor		Low Avg.		Average		High Avg.		Excellent	
80 - 106		107 - 124		125 - 142		143 - 160		161 - 187	
79.56	97.51	115.46	133.41	151.36	169.31	187.26			
-3 S.D.	-2 S.D.	-1 S.D.	Mean	1 S.D.	2 S.D.	3 S.D.			