



OnSite™
C O M M A N D E R

User's Manual

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Register Your OnSite™

Please register your OnSite gauge so we can provide you with easy access to our friendly customer service department. Registering your device also guarantees that you will be fully covered under your warranty.

Registration also provides you with these extra benefits:

- *New product upgrades*
- *New product announcements.*
- *Seminar announcements.*
- *Special offers.*

For your convenience, a registration card is included with your order. Simply fill it out and return it to JTECH.

OnSite Warranty

One-year Limited Warranty

The OnSite gauge is designed to perform reliably and to meet specifications. In spite of diligence in manufacturing, eliminating malfunctions resulting from random component failure is impossible. Therefore, JTECH will at its option repair or replace the product with a new or reconditioned unit at no charge for a period of one year from the date of purchase.

In view of the varied conditions in which the unit will be used, the OnSite gauge is sold “as is” and JTECH’s responsibility does not go beyond the terms set forth above. JTECH will not be responsible for medical expenses or any direct, indirect, or consequential damages arising from the use of this product. JTECH shall in no way be liable for loss of revenue or profits resulting from or alleged to result from use of this product.

THIS WARRANTY IS MADE EXPRESSLY IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING AN IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCES SHALL JTECH BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. THE REMEDIES SET FORTH IN THIS WARRANTY SHALL BE THE ONLY REMEDIES AVAILABLE, EXCEPT AS SPECIFICALLY PROVIDED BY STATE LAW. NO PERSON HAS ANY AUTHORITY TO BIND JTECH TO ANY REPRESENTATION OR WARRANTY EXCEPT AS SPECIFICALLY SET FORTH HEREIN.

To have your OnSite gauge repaired:

1. Contact JTECH Customer Service and describe the problem. After receiving a return authorization number, return the product to JTECH, including all accessories, postage paid and insured to JTECH. ***JTECH is not responsible for damages or losses incurred in shipping.***
2. Submit proof of purchase and date.
3. Include a brief explanation describing the problem.

Features and Benefits

- 1 Uses a single gauge for pushing and pulling motions.
- 2 “Axis Compensation” circuitry maintains accuracy if force is applied off-center and precision technology achieves greater than 99% force accuracy.
- 3 1.5” high LCD window is easy to read.
- 4 Gathers, stores, and analyzes up to 40 tests.
- 5 Calculates CV, fatigue, maximum force and average force for each repetition; documents fatigue for timed tests; and measures maximum forces using an “untimed” test mode for on-the-job testing.
- 6 Test now, record later because the exam is stored in memory, even when OnSite is turned off.
- 7 Automatic audio prompts you to start the next test in the series and provides motivation during timed tests.
- 8 Measures up to 500 pounds.
- 9 Battery powered for portable operation.
- 10 Test protocols can be customized according to number of tests, starting force, test time, average or maximum, and number of repetitions.
- 11 Rugged aluminum case withstands the rigors of on-location testing.

Available Upgrades

The OnSite™ can be used with the following upgrade products:

Easy Docs Plus - Create cutting edge reports using this versatile software package. With Easy Docs Plus, you can enter data from your OnSite gauge and from other testing devices such as grip dynamometers, inclinometers, and muscle testers.

Tracker™ Software Package - OnSite is available to plug into the leading Windows-based evaluation software package. Tracker™ software automatically records test results, analyzes statistics, makes comparisons to previous tests during exams, works seamlessly with other Tracker diagnostic devices, and outputs data in a comprehensive report format.

For more information on upgrades, contact your JTECH sales representative or call JTECH at 1-800-985-8324 or 1-801-478-0680.

Check Your System

Your OnSite system should include the following parts:

- *OnSite gauge*
- *5" Push/Pull handles*
- *Extension*
- *Curved Tests Pad*
- *Snap Hook*
- *V-slot Attachment*
- *Worksheets*

If any parts are missing, call JTECH Customer Service.

Proper Care

With proper care your new OnSite gauge will provide many years of worry free use. Do not immerse the gauge in water, place in an autoclave or sterilize with harsh disinfectants. Clean the housings with a soft, non-abrasive cloth moistened with clean water. Clean the display using a non-abrasive dry cloth. Do not use cleaners. Avoid dropping the unit or banging it against hard objects. Do not stand on, apply more than 500 lb. of force, or use the gauge for anything other than force testing. Failure to follow these policies will void the warranty.

Calibration

To ensure accuracy, your OnSite gauge has been factory calibrated with weights traceable to the National Institute of Standards and Technology. When turned on the OnSite gauge automatically zero calibrates itself. Therefore, when the gauge is turned on, make sure no force is being applied to it. Any force applied to the gauge when it is turned on will become the zero value and will result in inaccurate force readings.

Battery Life

The OnSite uses a standard 9 volt alkaline battery. The estimated battery life is 28 hours of operation. The gauge should always be turned off when not in use to maximize battery life. (OnSite will automatically shut itself off after four minutes of inactivity.) NiCad batteries can be used, however, the active battery life will be reduced to approximately eight hours or less. When using a NiCad battery, completely drain the battery before recharging to prevent "memory" in the battery that will further reduce battery life.

Using Pads and Accessories

Pads and accessories must be screwed into the "FORCE INPUT" end of the gauge. The opposite end of the gauge is used to attach accessories for in-line testing.

Note: If the OnSite gauge is turned on and in "TEST" mode but does register when force is applied, make sure the accessory is attached to the "FORCE INPUT" end of the gauge.

Using the OnSite Controls

Conventions

This manual adopts the following conventions throughout:

Test Refers to one force assessment that may include multiple repetitions.

Exam Refers to multiple tests. For example, testing push, pull and lift forces could comprise one exam.

Repetition A test is composed of 1 - 4 repetitions

On/Off Button



Press the “On” button once to turn on, press again to turn off. Exams stored in memory are not erased when power is turned off. However, pressing this button and holding for two seconds deletes stored exams. (For information about deleting tests, see Advanced Console Features.) The console will shut off automatically after four minutes of inactivity.

Note: *Make sure no force is applied to the gauge when turning it on.*

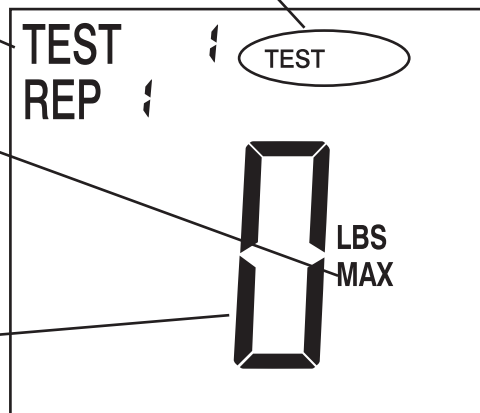
When the gauge is turned on it will activate in either “Test” mode or “Review” mode, depending on whether an exam is stored in memory. If no exam is stored in memory the gauge will activate in Test mode ready for test #1.

The active “mode,” in this case “TEST,” is displayed in this area.

Test and repetition numbers are shown here.

Whether the device will record maximum force only or both maximum force and average force.

Real-time force on gauge is shown in pounds.



Testing Mode

If an exam is in memory when the gauge is turned on, OnSite activates in “Review” mode. From this point you can review exam data, change to “Test” mode to finish testing, or delete the exam. See the appropriate headings below for more information.

Push/Pull Switch

When using the OnSite gauge for pushing on an object, you must make sure the switch on the side of the gauge is in the “Push” position. For pulling, lifting or weighing, place the switch in the “Pull” position. To ensure accuracy, turn the OnSite gauge off before changing the push/pull selection. Turning the gauge off before moving the switch makes sure the gauge auto-zeroes at the correct switch position.

Helpful Hint: If you do change the “push/pull” switch position with the gauge on, the display may indicate a force reading other than zero. If this happens, simply turn the gauge off, then back on, and it will automatically rezero. Also, if force applied to the gauge does not register, make sure the “push/pull” switch is in the proper position.

Setup Mode

Testing Defaults

The OnSite “Setup” mode controls a variety of test parameters, such as the testing threshold, number of tests, test time, number of repetitions per test, and maximum or average force readings. Once test parameters are set, they become the defaults for the gauge. For example, if you set the number of repetitions to three, then the unit will test for three repetitions for every exam until you change the default. Default settings do not change when the unit is turned off or when an exam is deleted. Defaults can only be reset manually.

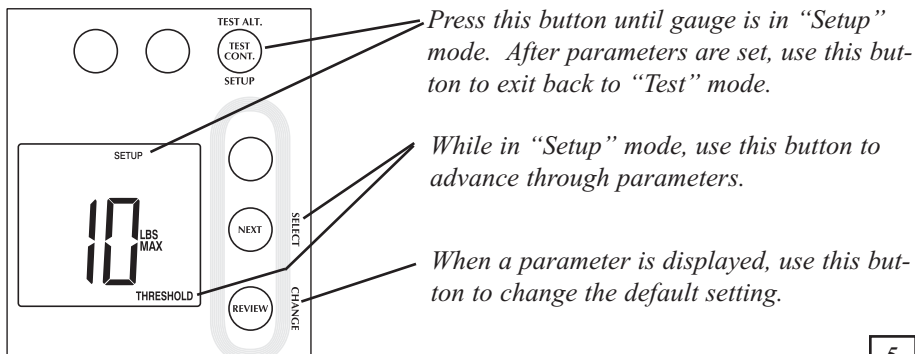
Setting Defaults

Three buttons are used when setting gauge defaults: SETUP, SELECT, and CHANGE. The buttons function as follows:

SETUP: Press this button until “Setup” is displayed at the top of the LCD. It is also used to exit “Setup” after setting parameters.

SELECT: Use this button to advance and select the parameter to be changed.

CHANGE: This button changes the parameter setting.



Adjustable Defaults

The OnSite gauge allows you to control the following default parameters:

THRESHOLD: This setting determines the amount of force that must be exerted against the gauge before it begins recording data. This setting is used to avoid inadvertently beginning a test. **It can be set at 5, 10, or 20 pounds.**

READY TIME: Is used to avoid recording initial transient forces. For example, when measuring only the moving force required to push a cart, you would disregard the initial starting force since it is higher. Setting the “ready time” greater than zero enables you to eliminate the starting force. Ready time begins when force on the gauge exceeds the threshold. **It can be set at 0, 1, 2, or 3 seconds.**

Helpful Hint: If the test ends before the expiration of ready time, no data is recorded. This can be helpful in avoiding false starts, such as during NIOSH lift tests. The buzzer also sounds at a higher pitch during ready time.

TEST TIME: Determines the length of a sustained test in seconds. During the test the buzzer sounds. The test begins when ready time expires or, if no ready time is set, when the threshold is crossed. The test ends when either the allotted time expires or force drops below the threshold value. Test time does not include ready time. **Test time can be set from 1-5 seconds or to “blank” for untimed tests.**

TEST: Controls the number of tests available for an exam. The console automatically goes into “Review” mode when the number is reached. **It can be set from 5-40 in increments of five.**

MAX and MAXAVG: Allows you to record either maximum force or maximum and average forces for each repetition. “MAXAVG” is the preferred setting, as it provides the most information. “MAX” is used when only peak force measurement is desired, such as when measuring during a job analysis.

When MAXAVG is selected, the force is averaged from threshold to threshold during the actual test time, not during ready time, after test time expires, or after the force drops below the threshold.

NOTE: This parameter cannot be changed if an exam is stored in memory or after a test has been completed. To change the setting, clear all data and enter setup mode.

REP: Sets the number of repetitions per test. **It can be set from 1-4.** A minimum of two repetitions is required for CV calculations.

Conducting a Test

To conduct a test, force in excess of the default threshold must be exerted on the gauge. The test begins when either the ready time expires or, if no ready time is set, the default threshold force is exceeded. A test ends when test time expires or the force on the gauge drops back below the threshold. The display then indexes to the next repetition in the series. After all repetitions for a test are completed, the display indexes to the next sequential test number. Continue testing with this method until all tests are recorded in memory.

Testing Modes

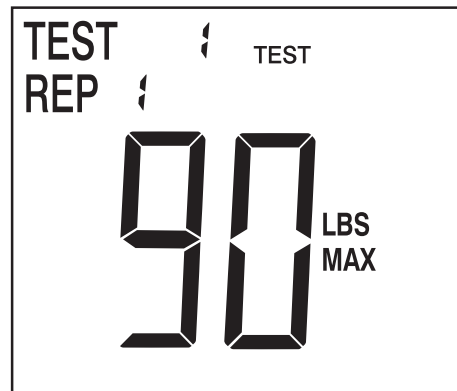
The OnSite gauge can store up to 40 tests in memory complete with data for all repetitions and statistics. To easily record multiple tests the OnSite gauge uses Automatic Indexing™. This method automatically advances the display to the next test in the series without requiring you to press any buttons. For example, after completion of the repetitions in TEST 1, the display indexes to TEST 2 REP 1.

NOTE: After completing a test, OnSite prevents inadvertent deletion of tests previously stored in memory by indexing to the next test not completed. For example, assume that for some reason you select and complete TEST 2 first, then return to begin the series at TEST 1. After TEST 1 is completed OnSite will skip TEST 2 and index to TEST 3.

Sequential Testing Mode

This method always begins with TEST 1 and uses Automatic Indexing™ to proceed from TEST 1 to TEST 2, and so forth. Test results should be marked on the OnSite worksheet corresponding to the test numbers from the display.

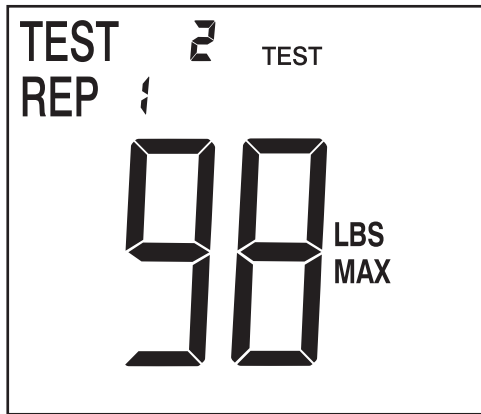
Helpful Hint: Since the display indexes past old tests stored in memory, this method is recommended only if all previous tests have been erased.



In this example the test results would be written under #1 on the worksheet.

Assigned Testing Method

This method is used for conducting a predetermined series of tests. The six NIOSH lift tests are a prime example of a standard test sequence where the assigned testing method could be used.



The NIOSH test sequence described in the Work Practices Guide for Manual Lifting is arm lift, leg lift, torso lift, floor lift, high near lift, and high far lift. Therefore, when using the NIOSH sequence with the assigned testing method, TEST 2 on the display corresponds to a “leg lift.”

Helpful Hint: You should be careful to select the proper test number for the type of test before beginning. When performing a standard series (such as the NIOSH lift tests) you can still use Automatic Indexing™ to move from one test to the next in the series. Use care, however, to begin the series at TEST 1 and to continue testing in the assigned order.

Advanced Gauge Features

The OnSite gauge offers many control features for editing repetitions and tests that may have been performed improperly or inadvertently. The following section describes how to use these OnSite gauge features.



Redo the last repetition - Press “REDO” to test the last repetition again. This feature is helpful if the current test was started inadvertently, was done incorrectly, or was performed for practice.



Redo or delete other tests - Press “REVIEW” to change the display mode, then press “NEXT” until the number of the test you want to delete is displayed. While holding the “REVIEW” button down, press “REDO” and all data for that test number is deleted.



Important Note: When using “REDO” for a test, the entire test, including all repetitions and statistics, is deleted. Once a test is deleted it cannot be recovered later.



Review last repetition - To review the measured force for the last repetition, press “REVIEW” after the repetition is complete. To review other statistics associated with the test, continue pressing “REVIEW,” and the display will scroll through all available statistics. To continue testing with the next repetition, press “TEST CONT.” To erase the repetition and start over, press “REDO.”



Reviewing an Exam



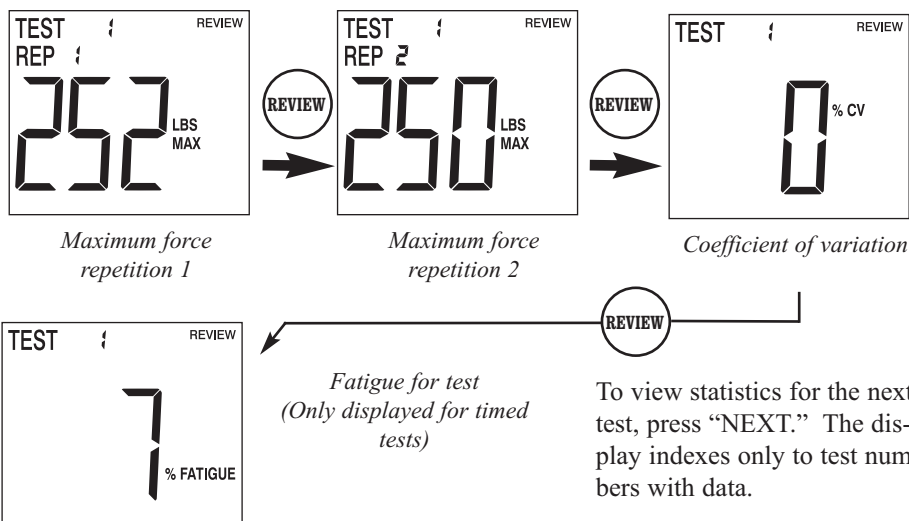
An exam can be reviewed at any time, either during testing or after, by pressing the “REVIEW” button. The last completed repetition will be displayed. To review other tests within the exam, press “NEXT” to advance to the next test with recorded data. When advancing through tests, the OnSite display shows the test number in the upper left-hand corner.



Statistics

To scroll through and review all the statistics for the displayed test, press “REVIEW.” Each time you press “REVIEW” the display will advance to the next test result or statistic for the selected test number. To see statistics for another test, press “Next” while still in “REVIEW” mode. Continue pressing “NEXT” to advance through additional tests. Once at the desired test number, use the “REVIEW” button to advance through that test’s data.

In the following example, the statistics for TEST 1 are displayed in the order they will appear by pressing “REVIEW.” The number of repetitions was set at two and the “MAX” parameter was selected:



Statistics Definitions

LBS: In “Test” mode LBS displays force (either push or pull) applied to the OnSite gauge in real-time. In “Review” mode, LBS shows either the maximum force only (“MAX” parameter setting) or both maximum force and average force (in “AVG”) that was applied to the gauge for the displayed repetition.

% CV: The coefficient of variation for all the repetitions for the indicated test using the n-1 method.

% Fatigue: Calculated only for timed tests using the highest force repetition for the indicated side. Fatigue shows the reduction in force at the end of a timed test compared to the maximum force reached during the same test. For example, if the maximum force reached is 100 lb. and the force at the end of the test is 80 lb., the fatigue is 20%. The fatigue formula is:

$$\frac{100 - 80}{100} \times 100$$

Note: If test ends before test time expires, % Fatigue will be 100%.

Deleting an Exam

To erase an exam, turn the Commander console on, then press and hold the ON/OFF button for a minimum of two seconds, or until the unit reactivates. The unit will beep and turn off indicating data has been erased.

Note: All test default values will be retained.

Reporting

OnSite Commander comes with a worksheet tablet that enables you to manually document test results (see the next section on the worksheet). In addition, computerized reports can be created from OnSite data using optional Easy Docs Plus software from JTECH Medical. For more information on Easy Docs Plus, contact JTECH Medical sales at 800 985-8324 or 801 478-0680.

OnSite Worksheet

OnSite Commander comes with a tablet of worksheets for manually recording test data. The front page includes lines for up to 15 tests and the back page has lines for an additional 25. Each line has spaces for a brief test description, values for up to four repetitions, and places for CV and fatigue statistics. Additional worksheet features are highlighted below.

The details area is used for information like worksite location, company name, reason for testing and more.

These boxes are checked to indicate if repetition forces are maximum values or averages and to show if the information is for lift task testing or a job analysis.

Checking this box identifies that additional tests are recorded on the back page.

OnSite™ Worksheet

Name: _____ Date: _____ Examiner: _____
 Details: _____

Check appropriate boxes below

Max
 Max/Average
 Static Lift Tasks
 Job Analysis (JA)


Test	OnSite Force Gauge Readings												CV	(% JA) Data	
	REP - 1			REP - 2			REP - 3			REP - 4					
	Max	Avg	% Fat	Max	Avg	% Fat	Max	Avg	% Fat	Max	Avg	% Fat			
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Footnotes: Additional tests on back ▶

1. "MAX" indicates the maximum force recorded for the repetition.
 "AVG" indicates force readings were averaged from threshold to threshold for the repetition.

2. "%CV" is the coefficient of variation for performed tests (minimum of two repetitions required).

3. "%PAT" corresponds to fatigue over the duration of a repetition. It is only calculated for timed tests.



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 To reorder call JTECH Customer Service
 1-800-985-8324, 1-801-478-0680
 Part Number: MN014_A

Where to call when reordering worksheets.

Using OnSite for Lift Task Testing

The OnSite gauge is a very versatile tool for testing static lift tasks. It functions independently with its various attachments and with an optional lifting platform from JTECH. OnSite can be used for custom tests that match job lifting, pushing and pulling postures and to test standard postures such as the NIOSH positions.

Important Notice: *When using OnSite for static lifting always make sure the device is securely fasten to the lifting platform or object. Also be sure, when using something other than a platform designed for static lifting, that the object can withstand the force of the lift. Remember, **responsibility for the safety of the subject rests with you, the examiner.***

As a general rule of thumb when performing static lift tests, the test time parameter should be set between 3 seconds and 6 seconds, depending on the patient and the test being conducted. The ready time parameter should also be set from 1-3 seconds to avoid any transient phenomenon at the beginning of the test. Times should be selected to provide the information you need.

Static Lifting Precautions

The following are general guidelines to minimize risk of injury to the patient. Note that these guidelines are not comprehensive and cannot cover all conditions. Final responsibility for the risk of injury to the patient lies with the examiner.

1. Force increase generated by the patient should be gradual, especially for testing of the spine and in the presence of a musculoskeletal injury, instability, or recent surgery. A warm-up repetition consisting of 50% maximum effort is recommended prior to each test.
2. The patient should be CLOSELY observed during testing for any evidence of pain or discomfort. The test should be stopped immediately if the patient reports pain, shortness of breath or dizziness.
3. Contraindications to testing include: uncontrolled hypertension, severe respiratory problems, herniated disk, severe osteoporosis, structural weakness of the abdominal or thoracic wall, unsplinted fractures, unhealed torn or sutured tendons, or any other condition that would be exacerbated by the performance of isometric contraction or valsalva maneuver.
4. In the event the patient is illiterate or does not understand English, be sure the patient is made aware of all the inherent risks of testing and understands the content of the warnings. An informed consent form should always be signed prior to testing.

Static Lifting Accuracy

Several general rules must be followed to insure repeatability and accuracy when using static lift task testing:

1. Have the patient build force gradually until the maximum effort is achieved and held. In general, however, maximum force should occur within two to three seconds. Prolonging the time to maximum force may introduce fatigue. Based on the patient's condition and endurance level, use the "Test Time" feature of the software to select the optimum duration of the test (up to six seconds). Standard protocols require at least three seconds of data collection after the maximum force is achieved for valid statistical determinations.
2. Studies have shown that isometric strength testing results vary according to the instructions given to the patient. Therefore, greater consistency will result if standardized instructions are given to patients.

Static Lifting Instructions

Studies have shown that isometric strength testing results vary according to the instructions given to the patient. Therefore, greater consistency will result if the instructions* are standardized as follows:

Tell the patient: "We are going to measure your strength. These tests are static strength tests, which means that you will be exerting force, but not moving anything. We will measure your average maximum force with this apparatus. For each test, please follow these instructions:"

1. The test will be demonstrated for you. If you do not understand, please ask questions.
2. For each test, we will give you at least three attempts. The first is practice, try it at 50% effort. This first attempt is a warm-up and will help you determine if you know what is expected.
3. Next you will be given a minimum of two attempts on each test. Try to do your best on each attempt as your score will be the average of the two measurements.
4. When a test is given, I will say, "Ready ... set ... go." For the period of the test, you should apply consistent, maximum effort. If at any time during the test you experience pain or discomfort, you should stop the test immediately. The gauge will beep during the test and double beep when the test is finished.
5. Let me demonstrate the test for you.
6. Are there any questions?
7. Let's begin the first test. "Ready ... set ... go."

* Adapted from *Preemployment Isometric Strength Testing Methods*, Dr. Andrew Jackson FACSM, June 1990, p 37.

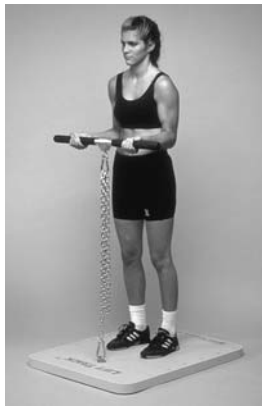
Using OnSite for NIOSH Lift Tests

The six static lifting postures pictured were used to compile an isometric strength database and are summarized in the *Work Practices Guide for Manual Lifting* (NIOSH 1981).

The OnSite gauge can be used with LiftTrack™ or Mobile Lift System™ platforms from JTECH Medical Industries. The platform includes equipment for attaching the OnSite gauge and web strapping for adjusting the height of the OnSite handles for each test. For more information about the LiftTrack platform, contact JTECH at 1-800-985-8324 or 1-801-478-0680.

Gauge Setup

When performing NIOSH lift testing, document the position of the subject's feet from the resistance point and the height to the bottom of the OnSite handles for each tests as described below. The gauge should be set to "MAXAVG" mode and the ready time and threshold should be set to avoid extraneous readings. Downloader software follows the test order below:



Arm Lift

Height of the lift bar is determined by positioning the patient such that the elbows are flexed to 90° with the shoulders in neutral position. The position of the patient's feet should be such that the lift bar fits in palms of hands when the elbows are in the position described above. Feet should be shoulder width apart. Document the bar height above the platform and the position of the medial malleoli for future testing. The patient lifts upward without swaying backward, raising up on toes, or elevating shoulders. This test primarily stresses the elbow.



Leg Lift

The height of the bar is 15", and the medial malleoli are placed at 0". The feet are far enough apart such that the lift bar fits between the medial borders of the knees. The trunk should be held as vertical as is comfortable. The patient should use a leg lift technique, emphasizing the quadriceps. This test primarily stresses the knee.



Torso Lift

The height of the lift bar is 15", and the medial malleoli are positioned at 15". The patient flexes at the waist with minimal knee flexion. The bar is pulled upward in the direction of the arms. This test is stressful on the low back and, therefore, potentially the most dangerous for patients with low back pain. *Exercise extreme caution with this test.*



Floor Lift

The height of the lift bar is 6", and the medial malleoli are positioned at 10" on the platform. The patient flexes the trunk and the knees to reach the lift bar. The patient lifts upward utilizing the hip, back and leg extensors.



High Near Lift

The height of the lift bar is 60", and the medial malleoli are positioned at 10" on the platform. The patient grabs the bar with forearms supinated and lifts directly upward without raising up on the toes. This test primarily stresses the shoulder.



High Far Lift

The height of the lift bar is 60", and the medial malleoli are positioned at 20" on the platform. The patient grabs the bar with forearms supinated and lifts directly upward without raising up on the toes. This test primarily stresses the shoulder.

Using the OnSite Gauge for Job Analysis

Job analyses can help generate business in many areas for clinics involved in the occupational medicine arena. Performing a job analysis creates a bridge from the clinic to work place and gives valuable insight into the work dynamics of any given industry. This in turn generates opportunities to explore employment testing, functional capacity testing, return-to-work evaluations, creation of ADA compliant job descriptions, job modification, and consulting opportunities related to reasonable accommodation and modified duty. In addition, thorough job analysis also invites exploration into ergonomic and work practice situations and into the realm of educational seminars geared to the industry and "industrial athletes."

To offer job analysis services, however, a clinician or provider must be able to capture the crucial elements and critical demands of a given job. Typical tools needed to perform this service are a tape measure, a force gauge and a stop watch. The clinician must also possess a willingness to get down and dirty and the ability to determine effective methods for obtaining data on the critical elements that define a job's physical demands.

Reviewing any documentation the employer can provide about the position is a good starting place. If such documentation exists, it often identifies the essential job functions. Essential functions are those duties the employer identifies as integral to performing and completing a given job. The job analysis then defines the physical attributes associated with each essential function. Even if no documentation or only partial documentation exists, simple observation along with worker and supervisor interviews should provide enough information to define a position in terms of its integral components.

Once a job's duties are identified, the job analysis can be performed. Begin by looking at each task or component of the job. Identify what is physically required of the worker to complete each task. Some of the questions about physical demands you should answer are: Does the worker sit or stand as a requisite to performing the task? Does the worker need to use his hands to operate controls or tools? What work postures or work activities are performed? Is any combination of standing, walking, kneeling, squatting, or bending required? What kind of reach and work heights are required?

Answering these questions requires that you observe and document what work postures are mandated by the position, for example, sitting vs. standing. You may also wish to note differences between commonly used postures and those preferred by the worker, such as kneeling as opposed to squatting to work at low work surfaces. Document all required activities and identify inherent job task demands and worker preferences. Using your tape measure, quantify and document the relevant distances like work heights, surface heights, and reach requirements. This may also be a good time to describe any couplings or dexterity requirements, as well as tool use and grasp functions. If the job task has any kind of time or pace constraints, use your stopwatch to document these parameters. (This can be an effective avenue to

highlight work practice and/or performance issues that relate to repetitive strains.)

Next you should use the OnSite gauge to determine the physical loads and weight requirements of the job. (Scales can be used to measure simple weights, but they are often too cumbersome for effective job analysis.) The On-Site gauge has some extra features that set it apart from other gauges. First of all, it effectively captures the static weight of an object. This can be done by looking at peak force, maximum force and average force or by averaging a series (up to four repetitions) of peak or averages forces. This function proves especially handy when measuring items that are not easily stabilized, which makes obtaining accurate static weight difficult. Identifying torque forces is another area where OnSite is useful; such as when turning a crank to lower the gear on a large trailer. Often when turning a crank for the first complete revolution no consistency of force is required. By performing repeated tests, a peak force (the greatest effort needed to start the crank) can be identified along with the typical or average forces per revolution. This information is especially important if the job analysis data will be used for a work hardening or conditioning program at some point.

The OnSite gauge can also be set up to look at inertia by changing the test time (from 1-5 seconds or infinity) and the ready time (from 0-3 seconds). After the ready time expires, OnSite begins to collect data. This is especially useful when measuring the push and pull forces of heavy objects that require significant force to overcome inertia but relatively less force to keep the object in motion. This situation is found in industries where carts or bins are moved or at construction sites using heavy loads and wheelbarrows. In these situations, less sophisticated gauges may register a peak force before enough force is generated to set the object in motion, or you must watch for the greatest force value while you are pushing or pulling. By changing the time of information capture, OnSite gives you the ability to collect only forces pertinent to the task at hand and frees you from viewing the screen while performing the task.

The OnSite Gauge offers other benefits that facilitate data collection for a job analysis. Its makes coupling the gauge to the environment easy. For example, OnSite can be placed in line to many tasks using the top and bottom attachment options. The unit is rugged and built to function under tough industrial conditions. It comes with a wide assortment of hooks, eyes, push plates and fasteners that readily apply to industry. OnSite stores up to 40 tests, which can be downloaded into a word processor or spreadsheet or printed using the Reporter. This storage feature can be a life saver if any data recorded manually gets lost or becomes illegible.

Once you have thoroughly addressed all of the above areas, you are now ready to put together an effective narrative based Job Analysis. You have collected all of the pertinent data associated with human performance in terms of work heights, surfaces, and reach; all of the work postures and activities have been identified as they relate to job requirement and worker preference; and all of the weighted parameters (items, negotiation, push/pull forces, and loads) have been identified using the

OnSite gauge. Now all the data must be put together in a manner that helps the client facilitate return-to-work avenues, modify duty options, evaluate functional capacity, or otherwise make use of the information. This is done by creating a picture in words encapsulating the job tasks and the functional data associated with them. The picture should also include any and all human performance elements. Providing a detailed picture allows the reader of your job analysis to see the position and allows for better creation of tests or comparisons than a checklist of critical demands.

At this point, you can even take your job analysis a step further by creating formal job descriptions that comply with the American with Disabilities Act (ADA). This is done by pulling out all of the job analysis data that defines the job, such as the single greatest expectation. You should change your narrative picture now to depict the job as a whole and decrease the focus on the individual details. Task performance should be identified in ranges; for example: "Packages weighing up to 90 pounds are lifted, negotiated and carried without assist of handles for distances of up to 20 yards." In addition to the narrative picture, the critical demands can be listed to define physical employment expectations. Any and all administrative details pertinent to the position such as hours, wage, educational requirements, and the like can be added, along with information specific to work policies, safety regulations and exposure. The employer should formally define the essential functions specific to physical requirements and to the mental and skill needs. As a check for thoroughness, you should compare your picture and critical demand list to the employer's list of essential functions, both should complement each other and not leave any areas unaddressed.

As you can see, a job analysis can be an effective means to open doors to new business and revitalize existing business relationships. With OnSite you will now have the ability to enter the industrial medicine spectrum at virtually any point. This is true because service or care providers within the industrial medicine arena need greater clarification of physical expectations for individuals on the job. As a result of the information you can now provide, employers will have a greater understanding of the job and its demands on workers. Your data will also give employers a more accurate starting point for performing functional capacity testing, duty modification and employment testing.

OnSite Commander Troubleshooting

Problem: Device does not power on.

Solution: Replace battery.

If replacing the battery does not resolve the issue, contact JTECH Medical's customer service team.

Problem: Device powers on but does not respond to input from user.

Solution: Replace battery.

If replacing the battery does not resolve the issue, contact JTECH Medical's customer service team.

Problem: OnSite Gauge does not record force when attempting lift tests.

Solution: Ensure the load is connected to the "Force Input" connector.

If this does not resolve the issue, contact JTECH Medical's customer service team.

Problem: Device shows steady force measurement even when no force is applied.

Solution: Power off the Commander console. Ensure device is connected to the console properly and power on console.

Solution: Check serial numbers of instrument and console and ensure they match. The instrument may have been calibrated to a different console.

If this does not resolve the issue, contact JTECH Medical's customer service team.

Problem: Difficulty pressing buttons on Commander console.

Solution: Contact JTECH Medical's customer service team to arrange for service.

Problem: Device battery life seems short, even after a new battery is installed.

Solution: The console "sleep" mode is a low-power state, but still drains battery life. Ensure the power is turned off completely after use.

If this does not resolve the issue, contact JTECH Medical's customer service team.

OnSite Commander Troubleshooting

Problem: Device powers on and responds, but will only record data for a small number of tests.

Solution: Replace battery.

If replacing the battery does not resolve the issue, contact JTECH Medical's customer service team.

Problem: Device does not clear memory when prompted by user.

Solution: Replace battery.

If replacing the battery does not resolve the issue, contact JTECH Medical's customer service team.



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