

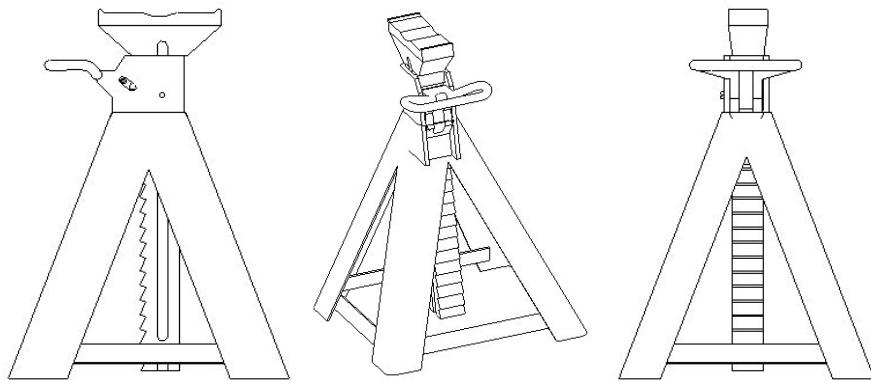
**\*TB 43-0156**

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**TECHNICAL BULLETIN**

**SAFETY INSPECTION AND OPERATION OF  
Stand, Vehicle Support:**

**5 TON: NSN 4910-00-262-0392  
7 TON: NSN 4910-00-251-8013**



\*TB 43-0156 dated 31 August 2007 supersedes TB 43-0156 dated 01 May 2006, including all changes.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

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**HEADQUARTERS, DEPARTMENT OF THE ARMY  
AUGUST 2007**



## **WARNING SUMMARY**

This warning summary contains general safety warnings and hazardous material warnings that must be understood and applied during operation and maintenance of this equipment. Failure to observe these precautions could result in serious injury or death to personnel.

### **FIRST AID**

For first aid information, refer to FM 4-25.11.

### **EXPLANATION OF SAFETY WARNING ICONS**



**HEAVY OBJECT** – Heavy object on human figure shows that heavy parts present a danger to life or limb.



**HEAVY OBJECT** – Foot with heavy object on top shows that heavy parts can crush and harm.

### **SAFETY WARNING DESCRIPTIONS**

#### **WARNING**



#### **HEAVY OBJECT**

The use of locally purchased stands that incorporate straight pins inserted through the base and column to hold up the load is not recommended. Pin substitution is very unsafe and could result in failure of the stand, causing severe injury or death to the user.

The use of damaged, corroded, or otherwise defective stands could result in failure of the stand, causing severe injury or death to the user. Always inspect the stands prior to use.

Study, understand, and follow all instructions before operating this device. Failure to heed these instructions may result in property damage and/or personal injury or death:

- Do not exceed rated capacity.
- Use only on a hard level surface.
- Center load on saddle.
- Use as a matched pair to support each end of the vehicle.
- No alterations shall be made or attachments added to this product.



**DEPARTMENT OF THE ARMY TECHNICAL BULLETIN**

**SAFETY INSPECTION AND OPERATION OF STAND, VEHICLE, SUPPORT**

Headquarters, Department of the Army, Washington, DC  
31 August 2007

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this publication. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Submit your DA Form 2028 (Recommended Changes to Equipment Technical Publications), through the Internet, on the Army Electronic Product Support (AEPS) website. The Internet address is <http://aepls.ria.army.mil>. The DA Form 2028 is located under the Public Applications section of the AEPS. Fill out the form and click on SUBMIT. Using this form on the AEPS will enable us to respond quicker to your comments and better manage the DA Form 2028 program. You may also mail, fax or e-mail your letter or DA Form 2028 direct to: Commander, AMSTA-LC-LPIT/TECH PUBS, TACOM-RI, 1 Rock Island Arsenal, Rock Island, IL 61299-7630. The e-mail address is ROCK-TACOM-TECH-PUBS@conus.army.mil. The fax number is DSN 793-0726 or Commercial (309) 782-0726.

DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

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\*Supersedes TB 43-0156 dated 01 May 2006 including all changes.

## TB 43-0156

**1. Purpose.** This bulletin prescribes the responsibilities, procedures, and guidance for accomplishing safety inspections and use of vehicle support stands. The purpose is to provide direction to local purchasers, supervisors, users, and others concerned with, or responsible for its proper application, and comply with the requirements, the Occupational Safety and Health Act (OSHA) – 1970, Title 29 Code of Federal Regulations (CFR) 1960, and The Army Safety Program (AR 385-10).

**2. Scope.** This bulletin applies to Headquarters, Department of the Army Major Commands (including subordinate commands, installations and activities) and separate installations and activities reporting directly to Headquarters, Department of the Army.

### **2.1. Application.**

- a. There may be instances where host nation standards may apply. In those cases the more stringent standards will be met.
- b. The use of this manual shall be used in conjunction with appropriate vehicle operator's manuals and/or appropriate Department of the Army authenticated technical manuals.

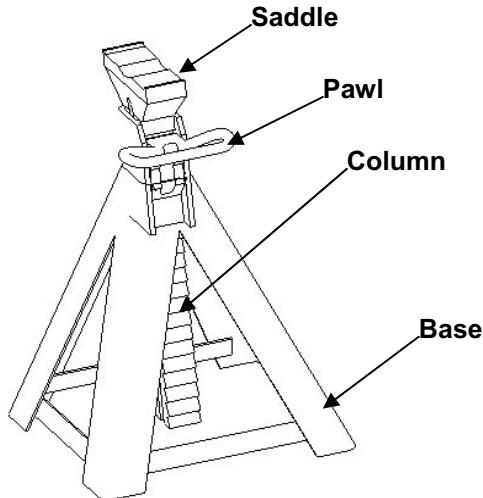
### **3. Applicable Documents.**

- a. Occupational Safety and Health Act (OSHA) of 1970 and the standards adopted therein, Department of Labor (OSHA standards are available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402) <http://www.osha.gov>.
- b. AR 385-10, The Army Safety Program.
- c. AR 385-40, Accident Reporting & Records.
- d. AR 700-138, Army Logistics Readiness and Sustainability.
- e. AR 702-7, Product Quality Deficiency Report Program, 20 July 1993.
- f. AR 702-7-1, Reporting of Product Quality Deficiencies Within the Army, 25 April 2005.
- g. AR 725-50, Requisition, Receipt, and Issue System.
- h. AR 750-1, Army Material Maintenance Policy.
- i. ANSI Z535, Safety Label Standards, American National Standard.
- j. ASME PALD-2005, Safety Standard for Portable Automotive Lifting Devices, American Society of Mechanical Engineers.
- k. DA PAM 750-8, The Army Maintenance Management System (TAMMS) User Manual.
- l. DA Form 2402, Maintenance Tag.
- m. DA Form 2404, Equipment Inspection and Maintenance Worksheet.
- n. Standard Form (SF) 368, Product Quality Deficiency Report.

## TB 43-0156

**4. Definitions.** For the purpose of this publication, the following definitions apply:

- a. **Base:** portion of the stand that rests on the ground, provides lateral stability, and holds the adjustable column in an upright position.
- b. **Column:** vertical rack gear used for elevation.
- c. **Pawl:** mechanical locking device, designed to prevent slippage of the column.
- d. **Saddle:** featured designed area of the column used to position and support the load.
- e. **Matched pair:** vehicle stands of the same design and capacity from the same manufacturer.
- f. **Vehicle support stands:** devices for supporting a vehicle at fixed heights, but lacking the means for raising or lowering the vehicle. The terms "vehicle support stand" and "jack stand" are interchangeable.



**Vehicle Support Stand**

**5. Responsibilities.**

- a. The commander of each DA Major Subordinate Command (MSC), installation, and activity is responsible for the inspection, testing, and maintenance of all vehicle support stands which are authorized his/her command and will delegate the responsibility to the appropriate support activity to perform these services.
- b. The Chief Safety Office, or the military equivalent, i.e., safety officer, will assist/advise the commander and supervisors in establishing standard operating procedures for inspection of vehicle support stands.
- c. Immediate supervisors of operations that use the vehicle support stands shall:
  - (1) Ensure that appropriate safety and occupational health training is provided.
  - (2) Ensure that the operators perform inspections of the vehicle support stands prior to use as required.

## TB 43-0156

- d. The owner and/or operators shall study the product instructions (this TB and/or commercial operator's manual) and retain them for future reference. The operator shall have an understanding of the product and safety operating instructions before operating the vehicle support stands. Safety information shall be emphasized and understood.

### 6. Product Requirements.

- a. Army Items. To obtain the U.S. Army's five (5) ton vehicle support stand(s), NSN 4910-00-262-0392 or the seven (7) ton stand(s), NSN 4910-00-251-8013 submit a funded MILSTRIP requisition(s). Requisitions should be submitted IAW AR 725-50. If a vehicle support stand has a U.S. Army data plate affixed, with a contract number stamped on the data plate, the stand has been tested and a Certificates of Conformance (COC) is not required.

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#### WARNING

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**The use of locally purchased stands that incorporate straight pins inserted through the base and column to hold up the load is not recommended. Pin substitution is very unsafe and could result in failure of the stand, causing severe injury or death to the user.**

- b. Commercial Items. Only vehicle support stands that have been manufactured to meet or exceed the safety guidelines of AMSE PALD Standards, Part 4 shall be purchased and used. Local purchasers of commercial stands shall require suppliers of the stands to provide proof of a qualified load test either from the manufacturer or a testing facility. The COC with the load testing requirement by locally purchased stands will be maintained by the unit.
- c. Safety Markings. An example of typical acceptable safety markings is in Appendix A.

### 7. Preventive Maintenance Checks and Services (PMCS).

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#### WARNING

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**The use of damaged, corroded, or otherwise defective stands could result in failure of the stand, causing severe injury or death to the user. Always inspect the stands prior to use.**

- a. General. Preventive Maintenance Checks and Services (PMCS) are performed to keep the equipment in operating condition. The checks are used to find, correct, or report problems. Crew members are to perform the PMCS procedures as shown in the PMCS table. PMCS are done every day the equipment is operated, using the PMCS table. Pay attention to WARNING and CAUTION statements. A WARNING means someone could be hurt. A CAUTION means equipment could be damaged.
- b. Preventive Maintenance Checks and Services (PMCS) - Explanation of Columns.
  - (1) Item Number Column. Checks and services are numbered in chronological order regardless of interval. This column is used as a source of item number for the "TM Number" column on DA Form 2404 in recording results of PMCS.

## **TB 43-0156**

(2) Interval Column. This column tells you when and how often to do a certain check or service. More than one interval may be placed in a column, which would mean you would do that check or service at each of those intervals.

(3) Item to be Inspected Column. This column lists the common name of the item to be inspected (such as "Base").

(4) Procedure Column. This column tells you how to do the required checks or services, and what to do if the inspection fails.

(5) Not Fully Mission Capable If Column. This column tells you when and why your equipment cannot be used.

c. If Your Equipment Fails Inspection.

(1) Criteria for Failure. Any stand that appears to be damaged in any way, is found to be worn, or operates abnormally SHALL BE REMOVED FROM SERVICE. No repairs to the stand base, column, saddle, or pawl are authorized. Signs of repair will be cause for immediate rejection and disposal.

(2) Reporting. Report any deficiencies using DA Form 2404 (or equivalent) and tag it with DA Form 2402. If the item is an Army item, also report failures on SF 368 (refer to AR 702-7 and DA PAM 750-8).

(3) Disposition. Those stands that fail inspection must be identified, segregated from other stands, and be disabled to preclude usage. The defective stands will be disposed of in a timely manner in accordance with local disposal policies. Replacement stands can be ordered through appropriate supply channels.

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## PMCS Table

Item Number	Interval	Item to be Inspected	Procedure	Not Fully Mission Capable If:
<b><u>WARNING</u></b>				
			 	
			<p><b>The use of damaged, corroded, or otherwise defective stands could result in failure of the stand, causing severe injury or death to the user. Always inspect the stands prior to use.</b></p>	
1	BEFORE	Entire Stand	Inspect the stand for the required legible safety markings.	There are no safety markings.
2	BEFORE	Base	Check the base for bends, separated welds, cracks, excessive corrosion, damaged, loose or missing parts, or other evidence of mishandling or excessive wear. Any evidence of these conditions will render the stand unsafe for use and require its replacement with a stand that is known to be safe for use.	There are any visible breaks, bends, or cracks.
3	BEFORE	Column and Saddle	Check column and saddle for bends, excessive corrosion, or missing teeth on the rack.	The column is bent; the saddle is visibly leaning over sideways; there is evidence of excessive corrosion; or teeth are missing from the rack.
4	DURING	Pawl and Handle	Manually operate the pawl and handle to assure that they move freely and engage the rack by force of gravity alone. The pawl should not be visibly bent or have any visible cracks. The engagement areas will be free of dirt, debris, and excessive wear. A functional test (manual operation to determine that all parts operate as required) of the rack and pawl should be performed prior to use to insure the complete and proper engagement of teeth. If there is any doubt concerning the reliability of the stand, it should be replaced.	The handle is broken; the pawl is bent or does not engage the rack freely by force of gravity alone.

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**PMCS Table (Continued)**

Item Number	Interval	Item to be Inspected	Procedure	Not Fully Mission Capable If:
5	DURING	Entire Stand	Check to see that the lifted item, usually a vehicle, bares its weight in the middle of the saddle and that all legs of the stand touch the ground.	The load is not centered on the saddle or one leg does not touch the ground.
6	DURING	Entire Stand	Each stand shall be inspected immediately if the device is believed to have been subject to an abnormal load or shock.	Remove immediately from service if any abnormality is found.

**8. Operation and Use.**

**WARNING**



**Study, understand, and follow all instructions before operating this device. Failure to heed these instructions may result in property damage, personal injury or death:**

- **Do not exceed rated capacity.**
- **Use only on a hard level surface.**
- **Center load on saddle.**
- **Use as a matched pair to support each end of the vehicle.**
- **No alterations shall be made or attachments added to this product.**

- a. Follow the instructions in your vehicle's TM for the required size of stand and the proper placement of vehicle stands under the vehicle.
- b. Make sure the stands are on level ground and standing up straight. Ensure that the rack and pawl are fully engaged before and after the load is applied.
- c. Apply the load so as to prevent any lateral forces on stands. Lateral forces usually occur when the vehicle is being lifted for the placement of another stand. The first stand that is already in position is the stand that receives the lateral forces as the vehicle suspension system adjusts to further changes in height. Support stand failures frequently occur when they are pushed over sideways by the vehicle itself.

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- d. Never place a stand under the independent suspension system, as this could generate lateral forces causing the stand to tip over. Lift/support a vehicle with independent suspension by the vehicle frame; wheels should hang free.
- e. The stability of the vehicle, in conjunction with the appropriate placement of the stands, must be checked prior to any personnel initiating vehicle maintenance procedures. Once the load is applied and settled, no rocking is allowed.

**APPENDIX A**

**Typical Vehicle Support Stand Safety Markings**

An example of typical acceptable safety markings follows. Note: the method of affixing the markings and other entries such as NSN, manufacturer, and date of manufacture and capacity may vary as necessary.

- a. Stamped:

**7 TON CAPACITY**

- b. Adhesive label:



- c. Stamped or data plate:

NSN 4910-00-251-8013  
(US Army Contract No. or Date of Manufacture)  
(Manufacturer)  
VEHICLE SUPPORT STAND  
7 TON CAPACITY, (Part No.)



<b>RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS</b> For use of this form, see AR 25-30; the proponent agency is ODISC4.						Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE  Date you filled out this form.
TO: <i>(Forward to proponent of publication or form) (Include ZIP Code)</i> AMSTA-LC-LPIT / TECH PUBS, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630						FROM: <i>(Activity and location) (Include ZIP Code)</i>  Your mailing address	
<b>PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS</b>							
PUBLICATION/FORM NUMBER TB 43-0156				DATE 31 August 2007	Stand, Vehicle Support: 5 Ton and 7 Ton		
ITEM NO.	PAGE NO.	PARA-GRAF	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).	
							
*Reference to line numbers within the paragraph or subparagraph.							
TYPED NAME, GRADE OR TITLE  Your Name			TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION			SIGNATURE  Your Signature	

<b>TO:</b> (Forward direct to addressee listed in publication) AMSTA-LC-LPIT / TECH PUBS, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630					<b>FROM:</b> (Activity and location) (Include ZIP Code) Your address				<b>DATE</b> Date you filled out this form
<b>PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS</b>									
PUBLICATION NUMBER TB 43-0156					DATE 31 August 2007			TITLE Stand, Vehicle Support, 5 Ton and 7 Ton	
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION	
<b>PART III – REMARKS</b> (Any general remarks or recommendations, or suggestions for improvement of publications and blank forms. Additional blank sheets may be used if more space is needed.)									
TYPED NAME, GRADE OR TITLE  Your Name			TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION				SIGNATURE  Your Signature		

<b>RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS</b> For use of this form, see AR 25-30; the proponent agency is ODISC4.						Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).	DATE
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<b>PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS</b>							
PUBLICATION/FORM NUMBER					DATE	TITLE	
TB 43-0156					31 August 2007	Stand, Vehicle Support, 5 Ton and 7 Ton	
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TYPED NAME, GRADE OR TITLE			TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION			SIGNATURE	

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<b>PART II – REPAIR PARTS AND SPECIAL TOOL LISTS AND SUPPLY CATALOGS/SUPPLY MANUALS</b>									
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TYPED NAME, GRADE OR TITLE			TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION			SIGNATURE	

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TYPED NAME, GRADE OR TITLE			TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION				SIGNATURE		

**TB 43-0156**

By Order of the Secretary of the Army:

GEORGE W. CASEY, JR.  
*General, United States Army*  
*Chief of Staff*

Official:



JOYCE E. MORROW  
*Administrative Assistant to the  
Secretary of the Army*

0723301

DISTRIBUTION: To be distributed in accordance with the initial distribution requirements for IDN: 344849,  
requirements for TB 43-0156



## THE METRIC SYSTEM AND EQUIVALENTS

### LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meter = 0.3937 Inch  
 1 Decimeter = 10 Centimeters = 3.94 Inches  
 1 Meter = 10 Decimeters = 100 Centimeters  
     = 1000 Millimeters = 39.37 Inches  
 1 Dekameter = 10 Meters = 32.8 Feet  
 1 Hectometer = 10 Dekameters = 328.08 Feet  
 1 Kilometer = 10 Hectometers = 1000 Meters  
     = 0.621 Mile = 3,280.8 Feet  
 Millimeters = Inches times 25.4  
 Inches = Millimeters divided by 25.4

### WEIGHTS

1 Centigram = 10 Milligrams = 0.154 Grain  
 1 Decigram = 10 Centigrams = 1.543 Grains  
 1 Gram = 0.001 Kilogram = 10 Decigrams  
     = 1000 Milligrams = 0.035 Ounce  
 1 Dekagram = 10 Grams = 0.353 Ounce  
 1 Hectogram = 10 Dekagrams = 3.527 Ounces  
 1 Kilogram = 10 Hectograms = 1000 Grams = 2.205 Pounds  
 1 Quintal = 100 Kilograms = 220.46 Pounds  
 1 Metric Ton = 10 Quintals = 1000 Kilograms = 1.1 Short Tons

### LIQUID MEASURE

1 Milliliter = 0.001 Liter = 0.034 Fluid Ounce  
 1 Centiliter = 10 Milliliters = 0.34 Fluid Ounce  
 1 Deciliter = 10 Centiliters = 3.38 Fluid Ounces  
 1 Liter = 10 Deciliters = 1000 Milliliters = 33.82 Fluid Ounces  
 1 Dekaliter = 10 Liters = 2.64 Gallons  
 1 Hectoliter = 10 Dekaliters = 26.42 Gallons  
 1 Kiloliter = 10 Hectoliters = 264.18 Gallons

### SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inch  
 1 Sq Decimeter = 100 Sq Centimeters = 15.5 Sq Inches  
 1 Sq Meter (Centare) = 10 Sq Decimeters  
     = 10,000 Sq Centimeters = 10.764 Sq Feet  
 1 Sq Dekameter (Are) = 100 Sq Meters = 1,076.4 Sq Feet  
 1 Sq Hectometer (Hectare) = 100 Sq Dekameters  
     = 2.471 Acres  
 1 Sq Kilometer = 100 Sq Hectometers  
     = 1,000,000 Sq Meters = 0.386 Sq Mile

### CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.061 Cu Inches  
 1 Cu Decimeter = 1000 Cu Centimeters = 61.02 Cu Inches  
 1 Cu Meter = 1000 Cu Decimeters  
     = 1,000,000 Cu Centimeters = 35.31 Cu Feet

### TEMPERATURE

$5/9 (\text{°F} - 32) = \text{°C}$   
 $(9/5 \times \text{°C}) + 32 = \text{°F}$   
 -35° Fahrenheit is equivalent to -37° Celsius  
 0° Fahrenheit is equivalent to -18° Celsius  
 32° Fahrenheit is equivalent to 0° Celsius  
 90° Fahrenheit is equivalent to 32.2° Celsius  
 100° Fahrenheit is equivalent to 38° Celsius  
 212° Fahrenheit is equivalent to 100° Celsius

### APPROXIMATE CONVERSION FACTORS

<u>TO CHANGE</u>	<u>TO</u>	<u>MULTIPLY BY</u>	<u>TO CHANGE</u>	<u>TO</u>	<u>MULTIPLY BY</u>
Inches.....	Centimeters.....	2.540	Centimeters.....	Inches.....	0.394
Feet.....	Meters.....	0.305	Meters.....	Feet.....	3.280
Yards.....	Meters.....	0.914	Meters.....	Yards.....	1.094
Miles.....	Kilometers.....	1.609	Kilometers .....	Miles.....	0.621
Square Inches.....	Square Centimeters.....	6.451	Square Centimeters .....	Square Inches.....	0.155
Square Feet.....	Square Meters.....	0.093	Square Meters .....	Square Feet.....	10.764
Square Yards.....	Square Meters.....	0.836	Square Meters .....	Square Yards.....	1.196
Square Miles.....	Square Kilometers.....	2.590	Square Kilometers .....	Square Miles.....	0.386
Acres.....	Square Hectometers.....	0.405	Square Hectometers .....	Acres.....	2.471
Cubic Feet.....	Cubic Meters.....	0.028	Cubic Meters.....	Cubic Feet.....	35.315
Cubic Yards.....	Cubic Meters.....	0.765	Cubic Meters.....	Cubic Yards.....	1.308
Fluid Ounces.....	Milliliters.....	29.573	Milliliters .....	Fluid Ounces .....	0.034
Pints.....	Liters.....	0.473	Liters .....	Pints.....	2.113
Quarts.....	Liters.....	0.946	Liters .....	Quarts .....	1.057
Gallons.....	Liters.....	3.785	Liters .....	Gallons .....	0.264
Ounces.....	Grams.....	28.349	Grams .....	Ounces .....	0.035
Pounds.....	Kilograms.....	0.454	Kilograms .....	Pounds .....	2.205
Short Tons.....	Metric Tons.....	0.907	Metric Tons .....	Short Tons .....	1.102
Pound-Feet.....	Newton-Meters .....	1.356	Newton-Meters .....	Pound-Feet.....	0.738
Pound-Inches.....	Newton-Meters .....	0.11375	Kilopascals .....	Pounds per Square Inch.....	0.145
Pounds per Square Inch..	Kilopascals.....	6.895	Kilometers per Liter.....	Miles per Gallon.....	2.354
Ounce-Inches.....	Newton-Meters .....	0.007062	Kilometers per Hour.....	Miles per Hour .....	0.621
Miles per Gallon .....	Kilometers per Liter .....	0.425	°Fahrenheit .....	°Celsius .....	°C = (°F-32)x5/9
Miles per Hour.....	Kilometers per Hour .....	1.609	°Celsius .....	°Fahrenheit .....	°F = (9/5x°C)+32

**PIN: 083229-000**