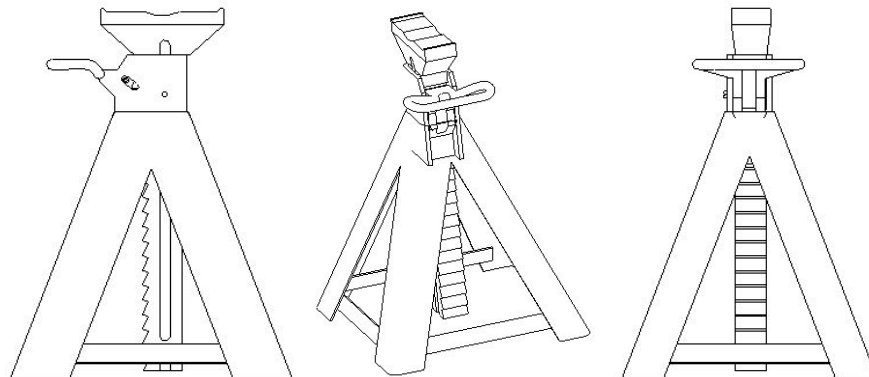


TECHNICAL BULLETIN

SAFETY INSPECTION AND OPERATION OF
Stand, Vehicle Support:

5 TON: NSN 4910-00-262-0392

7 TON: NSN 4910-00-251-8013



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

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

SAFETY INSPECTION AND OPERATION OF STAND, VEHICLE, SUPPORT

Headquarters, Department of the Army, Washington, DC
1 May 2006

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

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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.

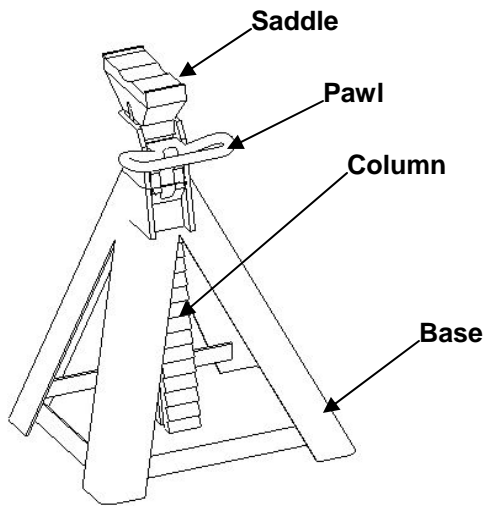
- a. Occupational Safety and Health Act (OSHA) of 1970 and the standards adopted therein, Department of Labor (OSHA Standards are available from the Superintendent of Documents, Government Printing office, Washington, DC 20402) <http://www.osha.gov>.
- b. AR 385-10, The Army Safety Program.
- c. AR 385-40, Accident Reporting & Records.
- d. AR 700-138, Army Logistics Readiness and Sustainability.
- e. AR 725-50, Requisition, Receipt, and Issue System.
- f. AR 750-1, Army Material Maintenance Policy.
- g. ASME PALD-2003, Safety Standard for Portable Automotive Lifting Devices, American Society of Mechanical Engineers, 2003.
- h. DA PAM 750-8, The Army Maintenance Management System (TAMMS) User Manual.
- i. DA Form 2402, Maintenance Tag.
- j. DD Form 314, Preventive Maintenance Schedule and Record.
- k. DA Form 2404, Equipment Inspection and Maintenance Worksheet.

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.

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- e. **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. Federal employees who exercise supervisory functions shall, to the extent of their authority, furnish employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm.

- 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 prevention program procedures are implemented to include annual inspection.
 - (3) Ensure that the operators perform inspections of the vehicle support stands prior to use as required.
- 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. Requirements.

- a. 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.

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- b. Certificates of Conformance (COC). 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. Certificates of Conformance (COC) with the load testing requirement by locally purchased stands will be maintained by the unit.
- c. Use of Straight Pins. 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 happens frequently regardless of efforts to prevent it.
- d. Product Marking and Identification. The marking and identification will be in accordance with AMSE PALD Standards, paragraph 1. If the stand does not have these markings then it does not meet US Army requirements and shall not be used.
 - (a) Rated Capacity. The rated capacity will be marked in a prominent location by casting imprint, metal stamp, or use of durable materials and attachment methods.
 - (b) Identification. The original manufacturer or supplier will be marked in a prominent location by casting imprint, metal stamp, or use of durable materials and attachment methods.

7. Testing Requirements. Vehicle support stands are tested by the manufacturer at time of production. 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 already been tested and does not require subsequent testing. If there is no indication of completed testing by the manufacturer, the stand must be tested prior to use. The using unit is required to verify the proof load test of each vehicle support stand at 150% of rated capacity, and create a Certificate of Conformance (COC) to record compliance of each individual vehicle support stand and keep the certificate on file.

8. Inspection.

WARNING

Vehicle stands MUST be inspected for damage, defects or excessive corrosion prior to every use. The use of damaged, corroded, or otherwise defective stands could result in failure of the stand, causing severe injury or death to the user.

- a. The Operator and/or Unit level of maintenance will always inspect the stands for proper function and safety prior to each instance of usage. Those stands that fail inspection must be identified (affix DA Form 2402), 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.
 - (1) The user will inspect the stand for the required legible markings.
 - (2) The base will be inspected 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 (see PMCS table, paragraph 9).
 - (3) The rack and pawl will be inspected for evidence of improper engagement or extreme wear. 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.

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

9. Preventive Maintenance Checks and Services (PMCS).

a. General.

- (1) Before You Operate. Always keep in mind the cautions and warnings. Perform your BEFORE PMCS.
- (2) While You Operate. Always keep in mind the cautions and warnings. Perform your DURING PMCS.
- (3) If Your Equipment Fails To Operate. If your equipment does not perform as required, refer to section 8, Inspection, for instructions on inspection criteria and what to do with vehicle support stands that fail inspections. Report any malfunctions or failures on DA Form 2404, or refer to DA PAM 750-8.

b. Preventive Maintenance Checks and Services (PMCS) - Explanation of Columns.

- (1) Purpose of PMCS. Your PMCS list the inspections and care of your equipment required to keep it in good operating condition. The PMCS Table lists those required checks and services to be performed.
- (2) 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.
- (3) 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.**
- (4) Item to be Inspected Column. This column lists the common name of the item to be inspected (such as "Base").
- (5) Procedure Column. This column tells you how to do the required checks or services. Carefully follow these instructions.
- (6) Not Fully Mission Capable If Column. This column tells you when and why your equipment cannot be used.

WARNING

Vehicle stands MUST be inspected for damage, defects or excessive corrosion prior to every use. The use of damaged, corroded, or otherwise defective stands could result in failure of the stand, causing severe injury or death to the user.

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PMCS Table

Item Number	Interval	Item to be Inspected	Procedure	Not Fully Mission Capable If:
1	BEFORE	Base	Check base for bent legs, breaks, or visible cracks in metal or welds.	There are any visible breaks, bends, or cracks.
2	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.
3	BEFORE	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 handle is broken; the pawl is bent or does not engage the rack freely by force of gravity alone.
4	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.

10. Operation and Use. Follow the instructions in your vehicle's TM for the required size of stand and the proper placement of vehicle stands under the vehicle.

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.

- a. Do not exceed rated capacity.
- b. Use only on a hard level surface.
- c. Center load on saddle.
- d. Use as a matched pair to support one end of a vehicle only. Stands are not to be used to simultaneously support both ends or one side of a vehicle.

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- e. Make sure the stands are standing up straight and perpendicular to ground or floor.
- f. Ensure that the rack and pawl are fully engaged before and after the load is applied.
- g. 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.
- h. Never place a stand under the independent suspension system, 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.
- i. 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, absolutely no rocking is allowed.
- j. No alterations shall be made to this product.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	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
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TO: (Forward to proponent of publication or form) (Include ZIP Code) AMSTA-LC-LPIT / TECH PUBS, TACOM-RI 1 Rock Island Arsenal Rock Island, IL 61299-7630	FROM: (Activity and location) (Include ZIP Code) <p style="text-align: center;">Your Name and Unit Address</p>
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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER TB 43-0156	DATE 1 May 2006	TITLE Stand, Vehicle Support
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ITEM	PAGE	PARA-	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON
	7	3				Reference is wrong

SAMPLE

<i>*Reference to line numbers with in the paragraph or sub paragraph.</i>		
TYPED NAME, GRADE, OR TITLE <p style="text-align: center;">Your Name and Grade</p>	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION <p style="text-align: center;">Your Telephone Number</p>	SIGNATURE <p style="text-align: center;">Your Signature</p>

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II (<i>reverse</i>) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/ Supply Manuals (SC/SM)	DATE
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TO: (Forward to proponent of publication or form) (Include ZIP Code)	FROM: (Activity and location) (Include ZIP Code)
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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
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ITEM	PAGE	PARA-	LINE	FIGURE NO.	TABLE	RECOMMENDED CHANGES AND REASON

**Reference to line numbers with in the paragraph or sub paragraph.*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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TO: (Forward to proponent of publication or form) (Include ZIP Code)	FROM: (Activity and location) (Include ZIP Code)
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PART II – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER			DATE	TITLE				
PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTIONS

PART III – REMARKS *(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.)*

**Reference to line numbers with in the paragraph or sub paragraph.*

TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 25-30; the proponent agency is OAASA	Use Part II (<i>reverse</i>) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/ Supply Manuals (SC/SM)	DATE
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TYPED NAME, GRADE, OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
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By Order of the Secretary of the Army:

Official:



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

0608910

PETER J. SCHOOMAKER
*General, United States Army
Chief of Staff*

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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

$5/9 (°F - 32°) = °C$
 $(9/5 \times °C) + 32° = °F$
 -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