

Description for Purchase (DFP)
for
Tool Kit, Machinist: Post, Camp and Station (PCSMTK)

1. SCOPE

1.1. Scope. This Description For Purchase describes the Post, Camp and Station Machinist Tool Kit (PCSMTK). The full tool set consists of a tool box containing the necessary components for performing general machinist and layout work and is intended for use by direct support maintenance personnel.

2. APPLICABLE DOCUMENTS

2.1. General. The documents listed in this section are specified in sections 3 and 4 of this specification.

2.2. Government documents.

2.2.1. Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are the most current revisions as of the date of issue for this DFP as listed in the ASSIST military database and supplement thereto, cited in the solicitation.

Military Standards

MIL-STD-129	Military Marking for Shipment and Storage
MIL-STD-1472	Design Criteria Standard Human Engineering
MIL-STD-1916	DoD Preferred Methods for Acceptance of Product
MIL-STD-2073-1D	Standard Practice for Military Packaging

(Copies of these documents are available online from the ASSIST military database at <http://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2. Other Government documents, drawings and publications. The following other government documents, drawings and publications form a part of this DFP to the extent specified herein. Unless otherwise specified, the issues of these documents are the most current revisions as of the date of issue for this DFP as listed in the ASSIST military database and supplement thereto, cited in the solicitation.

Commercial Item Description (CID)

AMSC N/A

FSC 5180

Distribution Statement A. Approved for public release: Distribution is unlimited

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to the preparing activity: HQ ARDEC, RDAR-EIL-TC, Rock Island Arsenal, Rock Island, IL 61299-7300.

A-A-50271	Plate, Identification
A-A-59486	Padlock Set (Individually Keyed or Keyed Alike)

(Copies of these documents are available online from the ASSIST military database at <http://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3. Non-Government publications. The following document(s) form a part of this DFP to the extent specified herein. Unless otherwise specified, the issues of these documents are the most current revisions as of the date of issue for this DFP as listed in the ASSIST military database and supplement thereto, cited in the solicitation.

American Society of Mechanical Engineers (ASME)

B107.100	Flat Wrenches
B107.410	Struck Tools
B107.500	Pliers
B107.600	Screwdrivers

(Copies of the above publications are available from The American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990)

American National Standards Institute (ANSI)

Z535.4	Product Safety Signs and Labels
Z87.1	Occupational and Educational Personal Eye and Face Protection Devices

(Application for copies should be addressed to the American National Standards Institute, 11 W. 42nd Street, New York, New York 10036.)

American Society for Testing and Materials (ASTM)

D1974	Standard Practice for Methods of Closing, Sealing, and Reinforcing Fiberboard Boxes
D3575	Standard Test Methods for Flexible Cellular Materials Made From Olefin Polymers
D4169	Standard Practice for Performance Testing of Shipping Containers and Systems
D5118	Standard Practice for Fabrication of Fiberboard Shipping Boxes

(Copies of the above publications are available from ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959)

2.4. Order of Precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this DFP and the references cited herein, the text of this DFP shall take precedence. Nothing in this DFP, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1. Product Qualification. When specified in the contract, the contractor shall furnish one or more sets for preproduction verification inspection in accordance with section 4 herein. The sets submitted shall be in accordance with the requirements of this DFP. The approved preproduction sample and the production items shall be in accordance with the terms of the contract. Approval of the preproduction verification shall not relieve the contractor of the responsibility to furnish equipment in accordance with the requirements of this DFP. All items supplied under this contract shall be identical to the approved preproduction verification sample; including packaging requirements listed in section 5 herein.

3.2. Materials. The kit shall be new and constructed of parts and materials that are without defects. Unless otherwise specified herein, the kit and its various items shall be made of any suitable material that will meet the performance requirements set forth in this DFP.

3.3. Industrial quality tools. All components supplied with this set shall be industrial quality. For the purposes of this procurement, the term "industrial quality" is defined as items commercially marketed and manufactured for constant, rigorous, industrial or professional environment use, and that have demonstrated market acceptance. Industrial quality items are used primarily by skilled professionals and technicians in such areas as machine shops, automotive maintenance and repair facilities, aircraft maintenance and repair facilities, industrial automotive assembly plants, fleet maintenance facilities, and airline service facilities. The items will be used for specialized applications in an environment of virtual constant use, (i.e. around-the-clock 8 hour shifts), with applications requiring high torque, low slippage, and strict tolerances. Industrial quality is demonstrated by evidence of substantial sales to industrial customers. Advertising or marketing literature that indicates "professional grade" or "industrial quality", or merely stating that an item is "professional grade" or "industrial quality" is insufficient to establish industrial quality. A claim that an item is manufactured to an industry consensus standard is also insufficient to establish industrial quality. Industrial quality items shall have verifiable marketplace acceptance.

3.3.1. Market acceptance. Market acceptance is demonstrated by the component having a higher percentage of sales to industrial/professional customers than to retail or government customers. Advertising or marketing literature that indicates "professional grade" or "industrial quality", or merely stating that an item is "professional grade" or "industrial quality" is insufficient to establish industrial quality tools since these are terms for which there is no generally accepted definition. A claim that an item is manufactured to an industry consensus standard is also insufficient to establish industrial quality tools. The contracting officer may require offerors to provide evidence of market acceptance in the professional or industrial market. Evidence of acceptance by industrial/professional customers includes sales to fleet

operators, distributors, contractors, industrial and professional users, and sales to distributors who retail exclusively to the professional or industrial market.

3.3.2. Brand name or Equal. The items identified in Table 1 shall be offered as either Brand Name or Equal. Each component listed contains manufacturer's part numbers for reference.

Brand Name or Equal products shall be provided. Offerors may offer an equivalent item provided that the offered item has the same or better form, fit, function, quality and warranty as the brand name item. If an equal product is provided the product shall comply with the Salient Characteristics of the component tools which refers to: A. Compliance with applicable commercial item descriptions (3.5 through 3.11), B. Compliance with Industrial Quality definition as defined in 3.3, C. Compliance with Individual dimensions and characteristics outlined in 3.5.1 through 3.5.33 as well as section 3.6 through 3.11 in its entirety, and D. Compliance with the warranty requirements outlined in Table 1 of section 3.5.

3.4. Warranty. All components shall be supplied with the warranties as specified in Table 1 below or better.

3.5. Components. The PCSMTK shall be furnished with the brand name or equal components and corresponding quantities as listed in Table 1.

TABLE 1: <u>Components</u>						
Item #	Item Description	UI	QTY	WTY	FSC	Known Source
3.5.1	BRUSH, FILE CLEANER, CARD. The file cleaner card brush shall have a wire card capable of loosening chips in the file teeth and a stiff-bristled brush to finish cleaning of the file. The brush shall have synthetic bristles and shall be 4-5 inches long by 1-2 inches wide. The card side shall have fine steel wire bristles and shall be 4-5 inches long by 1-2 inches wide. The brush shall be 9-10 inches long overall.	EA	1	M	7920	Trim Brush 17920 Simonds International 73-993500
3.5.2	CALIPER, HERMAPHRODITE, 6 INCH. The hermaphrodite calipers shall have an overall length of 6 inches +0.25/-0 inches and be made of steel. The calipers shall be firm joint with a hinged end and an adjustable point.	EA	1	M	5210	LS Starrett 51143
3.5.3	CALIPER, INSIDE, 6 INCH. The inside calipers shall have an overall length of 6 inches +0.25/-0 inches and be made of steel. The calipers shall be spring joint with a hinged end and the contact ends shall be fully rounded to read accurate dimensions.	EA	1	M	5210	LS Starrett 51303

TABLE 1: <u>Components</u>						
Item #	Item Description	UI	QTY	WTY	FSC	Known Source
3.5.4	CALIPER, MICROMETER, OUTSIDE, 1-2 INCH. The outside micrometer calipers shall have a range of 1 to 2 inches and shall have the following: graduation units of 0.0001 inch; a spindle, anvil and frame of any corrosion-resistant finish; chromium finished sleeve and thimble with black writing for easy viewing; friction thimble; lock nut.	EA	1	M	5210	LS Starrett 50025
3.5.5	CALIPER, MICROMETER, OUTSIDE, 0-1 INCH. The outside micrometer calipers shall have a range of 0 to 1 inches and shall have the following: graduation units of 0.0001 inch; a spindle, anvil and frame of any corrosion-resistant finish; chromium finished sleeve and thimble with black writing for easy viewing; friction thimble; lock nut.	EA	1	M	5210	LS Starrett 50947
3.5.6	CALIPER, OUTSIDE, 6 INCH. The outside calipers shall have an overall length of 6 inches +0.25/-0 inches and be made of steel. The calipers shall be spring joint with a hinged end and the contact ends shall be fully rounded.	EA	1	M	5210	LS Starrett 50367
3.5.7	DIVIDERS, MECHANIC'S. The mechanic's dividers shall have an overall length of 8 inches +0.25/-0 inches and be made of steel overall. The calipers shall be spring joint with a hinged end and the contact ends shall be fully rounded.	EA	1	M	5210	LS Starrett 50380
3.5.8	FILE, HAND, FLAT, 8 INCH. The hand file shall be a Swiss pattern, flat hand-type file and shall have a #2 cut. The file shall be double cut on the sides with one single cut edge and one safe edge. The file shall be 8 inches long overall $\pm 1/16$ inch tolerance.	EA	1	N	5110	Simonds International 84-120500 Grobet USA 31.153
3.5.9	FILE, HAND, ROUND. The hand file shall be a round, tapered, Swiss pattern type hand file with a #0 cut. The file shall be 10 inches long overall $\pm 1/8$ inch tolerance. The file shall have a diameter of 0.375 inches $\pm 1/16$ inch at the largest section.	EA	1	N	5110	Grobet USA 31.300
3.5.10	FILE, HAND, HALF-ROUND. The hand file shall be a half-round, Swiss pattern type hand file with #0 double cut faces and an overall length of 10 inches $\pm 1/16$ inch tolerance.	EA	1	N	5110	Grobet USA 31.124

TABLE 1: <u>Components</u>						
Item #	Item Description	UI	QTY	WTY	FSC	Known Source
3.5.11	FILE, HAND, FLAT, 10 INCH. The hand file shall be a Swiss pattern, flat hand-type file with a #0 cut and an overall length of 10 inches \pm 1/16 inch tolerance.	EA	1	N	5110	Grobet USA 31.156
3.5.12	GAGE, CENTER, 60-DEG. The center gage shall have 60-degree angles for U.S. standard screw thread and double depth of American national thread. The gage shall be used for lathe thread cutting and be made of steel with a corrosion-resistant chromium finish. The gage shall be etched in graduations of 1/14, 1/20, 1/24 and 1/32 inch for checking number of threads per inch. the gage shall be the setting and grinding type with male and female angled ends with parallel sides and the notches shall have clearance slots.	EA	1	M	5210	LS Starrett 51475
3.5.13	GAGE, SCREW PITCH, 28. The screw pitch gage shall conform to the International Metric standard 60-degree threads and be used for gaging inside threads of small holes and nuts as well as external threads. The gage shall have a blade locking device and no less than 28 encased blades divided into 2 groups and ranging in pitch from no less than 0.5 to 11.5 mm (millimeters).	EA	1	M	5210	LS Starrett 50591
3.5.14	GAGE, SCREW PITCH, 51. The screw pitch gage shall conform to the American national 60-degree screw threads and be used for gaging the inside of threads of small holes and nuts as well as external threads. The gage shall have no less than 51 steel blades divided into 3 groups and shall have a blade lock. The gage shall include blades measuring no less than the following threads per inch (TPI): 4, 4-1/2, 5, 5-1/2, 6, 7, 8, 9, 10, 11, 11-1/2, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82 and 84 TPI.	EA	1	M	5210	LS Starrett 52484

TABLE 1: <u>Components</u>						
Item #	Item Description	UI	QTY	WTY	FSC	Known Source
3.5.15	GOGGLES, INDUSTRIAL. The industrial goggles shall have a molded plastic frame with clear anti-fog plastic polycarbonate lens. The goggles shall have an adjustable elastic strap for securing to the face and head. The goggles shall be capable of fitting over prescription glasses and shall be supplied in accordance with ANSI Z87.1.	PR	1	M	4240	3M 40651
3.5.16	HAMMER, DEAD-BLOW. The dead-blow hammer shall have the following characteristics: head weight of 10 ounces (oz) \pm 1/4 oz; overall length of 9.625 to 10.625 inches; face diameter of 1 to 2 inches; head length of 2.625 to 3.625 inches. The tool shall have a soft face, be steel overall and non-sparking with a urethane coated head, handle and faces.	EA	1	M	5120	Stanley 57-530 Armstrong 69-530
3.5.17	HAMMER, BALL-PEEN, DEAD-BLOW. The machinist's ball-peen dead-blow hammer shall be: 12 to 14 inches long overall, 3.625 to 4.625 inch long head length, face diameter of 0.875 to 1.125 inches and head weight of 15.5 to 16.5 oz. The hammer shall have a steel head, steel faces and a steel reinforced handle. The head and handle shall be urethane coated and the hammer faces shall be bare.	EA	1	M	5120	Stanley 54-516
3.5.18	HANDLE, ADJUSTABLE FILE. The file handle shall have adjustable clamping jaws that grip the entire length of the file tang. The handle shall have a knurled adjusting knob with positive locking and shall be capable of holding the files described in item numbers 3.5.8, 3.5.9, 3.5.10 and 3.5.11 herein. The handle shall be 3.625 to 4.625 inches long by 1 to 1.5 inches in diameter overall.	EA	2	M	5110	General Tool 890

TABLE 1: <u>Components</u>						
Item #	Item Description	UI	QTY	WTY	FSC	Known Source
3.5.19	PLIERS, SLIP JOINT. The slip joint pliers shall be 5 to 7 inches long overall with a jaw length of 1.5 to 2 inches, a jaw thickness of 0.28 to 0.50 inches and a closed handle width of 1.3 to 2.2 inches. The pliers shall be shear type wire cutting combination pliers and capable of use in two jaw positions. The pliers shall have comfort grips on the handles. The pliers shall be Type 2, Class 1, Style A, wire-cutting pliers in accordance with ASME B107.500 (B107.23).	EA	1	M	5120	Stanley J276
3.5.20	PUNCH, CENTER, SOLID. The solid center punch shall be 0.375 inches \pm 0.125 inches in diameter with a 0.1563 \pm 0.0156 inch point size. The punch shall be steel overall and shall be 3.5 to 4.5 inches long overall. The punch shall be a Type 2, Class 3 center punch in accordance with ASME B107.410 (B107.48).	EA	1	M	5120	Mayhew 24301
3.5.21	PUNCH, DRIVE PIN. The drive pin punch shall be 9.5 to 10.5 inches long overall with a 3/4 inch point \pm 1/8 inch tolerance. The punch shall be made of copper alloy to ensure non-magnetic and non-sparking qualities.	EA	1	M	5120	Continental Tool & Mfg 5120-00-239-0038
3.5.22	RULE, MACHINIST'S. The machinist's rule shall be 6 inches long with a tolerance of +0.004 /-0.002 inches. The rule shall be 0.70 to 0.76 inches wide by 0.040 to 0.051 inches thick. The rule shall be steel overall with corrosion resistant surface finish. The rule shall have black filled characters and the following graduation units: 8ths, 16ths, 32nds and 64ths of an inch.	EA	1	M	5210	LS Starrett 52645
3.5.23	SCREWDRIVER, PHILLIPS #2. The screwdriver shall have a #2 Phillips tip with an overall blade length of 3.5 to 4.5 inches and overall tool length of 8.25 to 9.5 inches. The screwdriver shall have a steel blade and a plastic handle with or without cushion grip. The blade shall have chromium surface treatment and a hexagonal bolster for use with a wrench for added torque capabilities. The screwdriver shall be a Type 1, Class 1 screwdriver in accordance with ASME B107.600 (B107.30).	EA	1	L	5120	Mac Tools PB2042AR Snap-On SGDP42IRBR

TABLE 1: <u>Components</u>						
Item #	Item Description	UI	QTY	WTY	FSC	Known Source
3.5.24	SCREWDRIVER, PHILLIPS #1. The screwdriver shall have a #1 Phillips tip with an overall blade length of 2.5 to 3.5 inches and overall tool length of 6.25 to 7.25 inches. The screwdriver shall have a steel blade with chromium surface treatment and a plastic handle with or without cushion grip. The screwdriver shall be a Type 1, Class 1 screwdriver in accordance with ASME B107.600 (B107.30).	EA	1	L	5120	Stanley 64-101 Snap-On SGDP31IRBR
3.5.25	SCREWDRIVER, FLAT TIP, 3/8 INCH. The flat tip screwdriver shall have a tip width of 0.375 ± 0.020 inches, blade length of 8 to 10 inches and end thickness of 0.055 ± 0.004 inches. The screwdriver shall have a flared tip, plastic handle with or without a cushion grip and a steel blade with chromium surface treatment. The screwdriver shall be a Type 2 flared-tip screwdriver in accordance with ASME B107.600 (B107.15).	EA	1	L	5120	Snap-On SGD10BR
3.5.26	SCREWDRIVER, FLAT TIP, 1/4 INCH. The flat tip screwdriver shall have a tip width of 0.250 ± 0.020 inches, blade length of 3.5 to 4.5 inches and end thickness of 0.040 ± 0.004 inches. The screwdriver shall have a flared tip, a plastic handle with or without cushion grip, and a steel blade with chromium surface treatment. The blade shall have a bolster for use with a wrench for added torque capabilities. The screwdriver shall be a Type 2 flared-sided screwdriver in accordance with ASME B107.600 (B107.15).	EA	1	L	5120	Snap-On SGD4BR Stanley 66-174
3.5.27	SCRIBER, MACHINIST. The machinist scriber shall be steel overall with a double-point and a knurled body. The scriber shall have an adjustable sleeve capable of moving up or down the body of the scribe for comfort. The scribe shall be 8 to 9 inches long overall with one straight point and one regular bent point.	EA	1	M	5120	LS Starrett 50321

TABLE 1: <u>Components</u>						
Item #	Item Description	UI	QTY	WTY	FSC	Known Source
3.5.28	SQUARE, COMBINATION. The combination square shall have a square head with level, a center head and a reversible protractor with level and blade. The square shall have a 12 inch (tolerance: +0.005/-0.010 inches) precision ground steel blade with chromium finish and shall be grooved for use with all combination square components. The edges shall be graduated in 1/100, 1/64, 1/50 and 1/32 inch increments.	EA	1	M	5210	LS Starrett 51549
3.5.29	STONE, COMMUTATOR SURFACING. The commutator surfacing stone shall be used for dressing and finishing, shall be 2.5 to 3.5 inches thick by 1.5 to 2.5 inches wide by 2.5 to 3.5 inches long and shall be supplied with a vertically mounted handle that is 5.5 to 6.5 inches long overall. The stone shall be a fine, 120 grit stone.	EA	1	N	5345	Martindale Co. COMM411SF
3.5.30	TAPE, MEASURING, 16 FEET. The measuring tape shall have a durable, impact resistant plastic case with rubber grip and a metal blade that is no less than 16 feet long by 1-1/4 ± 0.10 inches wide. The entire length of the blade shall have a clear, plastic film not incorporated in with the paint that will increase the tensile strength of the metal blade as well as protect from moisture and dust; no less than the first 6 inches of the blade shall be coated with a stronger material to increase durability of the riveted hook end. The measuring tape shall have no less than an 11-foot standout, a top-forward blade lock mechanism and a hook with no less than three rivets connecting it to the blade. The blade shall measure inches with increments of 1/4, 1/8 and 1/16 inches and shall display 16 and 19.2 inch stud on center markings.	EA	1	M	5210	Stanley 33-716
3.5.31	TOOL BOX, PORTABLE. The portable tool box shall be provided in accordance with paragraph 3.6 through 3.11 and shall be capable of accommodating all tools described within this table.	EA	1	M	5140	

TABLE 1: <u>Components</u>						
Item #	Item Description	UI	QTY	WTY	FSC	Known Source
3.5.32	WRENCH SET, COMBINATION. The combination box and open end wrench set shall consist of 12 wrenches furnished in a canvas, nylon or vinyl tool roll featuring a separate pocket for each wrench. The wrenches shall all be standard length and made of steel with chromium surface treatment. The set shall include one 12-point wrench each in not less than the following sizes: 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16 and 1 inch. The wrenches shall be supplied in accordance with ASME B107.100 (B107.6).	SE	1	L	5120	Snap-On OEX-10B, 12B, 14B, 16B, 18B, 20B, 22B, 24B, 26B, 28B, 30B, 32B
3.5.33	WRENCH, ADJUSTABLE. The adjustable wrench shall be 7.5 to 8.5 inches long overall with a maximum jaw capacity of 0.938 to 1.25 inches. The wrench shall be steel overall with corrosion resistant surface treatment and shall have a rack and worm adjustment method. The wrench shall be supplied in accordance with ASME B107.100 (B107.8).	EA	1	L	5120	Armstrong 28-408

*WTY (Warranty) Column Definitions:

L=Lifetime Warranty
M=Manufacturer's Warranty
N=No Warranty

*QTY = Quantity

*UI (Unit) Definitions:

EA = each
PR = pair
SE = set

3.6. Tool Box Design. The PCSMTK shall consist of the prescribed tool load as specified in Table 1 and other items, devices or characteristics as necessary to provide rapid inventory capability and tool position retention during transportation and rough handling. The tool box shall be 20-20.75 inches long by 8.5-9.125 inches wide by 13-14.25 inches high and capable of containing all tools described in Table 1. The tool box shall have a hinged lid with a restraint to prevent the lid from opening more than 95-degrees. The case shall consist of 7 drawers, a top till and a front panel capable of securing all drawers in a locked position. The tool box shall be capable of locking using a single locking device. The locking device shall be an integrated key-turn lock or a means for attaching a padlock. If the case is lockable only through use of the padlock, the padlock shall be included in this set in accordance with paragraph 3.6.10.

3.6.1. **Materials.** The tool box shall be made of sheet steel with a corrosion resistant coating incorporated to prevent the tool box from premature corrosion. The tool box shall be new and constructed of parts and materials that shall be corrosion resistant or suitably processed to resist corrosion. Hardware that protrudes into the tool box interior shall not present a hazard to users or the tool load. The use of toxic chemicals, hazardous substances, and ozone depleting chemicals (ODCs) shall be avoided.

3.6.2. **Weight.** Each tool box and moveable piece within the tool box shall be capable of being lifted and moved by manpower. The weight limit of the fully loaded tool box shall be in accordance with MIL-STD-1472, 5.9.11.3.1 & Table XVII, Male and Female, scenario C: carry 33 feet as described in Table 2 below, or by forklift without modification or use of an adapter on the box.

TABLE 2: MIL-STD-1472 Lifting Requirements

MIL-STD-1472 Lifting Requirements for Males and Females					
A: Lift 5 feet from floor		B: Lift 3 feet from floor		C: Carry 33 feet	
#-Person Lift	Max Load (lbs)	#-Person Lift	Max Load (lbs)	#-Person Lift	Max Load (lbs)
1	37	1	44	1	42
2	74	2	88	2	84
3	102	3	121	3	116
4	130	4	154	4	147
5	157	5	187	5	179
6	185	6	220	6	210
7	213	7	253	7	242
8	241	8	286	8	273
9	268	9	319	9	305
10	296	10	352	10	336

3.6.2.1. **Warning Marking Tool Box.** Each tool box shall have a warning label prominently displayed on the exterior of the box. The warning label shall state the number of persons required to lift the fully loaded tool box (i.e. “Two person lift required”, “Three person lift required”, etc) as well as the weight of the fully loaded tool box in accordance with MIL-STD-1472, 5.9.11.3.9. This requirement will be waived if the total weight of the filled tool box is equal to or less than the weight of a one-person lift (42 lbs).

3.6.3. **Handles.** The handle(s) shall each be rated for not less than 1-1/2 times the weight of the fully loaded tool box. The handles shall be installed using mechanical fasteners that cannot be readily removed, i.e. rivets or screws that cannot be removed with a screwdriver. (Reason: In the absence of another tethering point, the handle will be used to tie the tool box to a fixed post, pillar or another tool box with a cable and padlock for security. If the handle can be easily removed, then the tool box can be carried away without having to defeat the cable or padlock. Furthermore, if the handles are used to secure the tool box in a moving vehicle they need to be able to withstand higher forces than those encountered in a simple lift and carry situation.)

A total of no less than one handle shall be included directly centered on top. If the tool box is more than a one person lift, as calculated in paragraph 3.6, a total of no less than three handles

shall be included: one directly centered on top and one on each side of the tool chest (excluding the front and back).

Handles shall not affect the strength and firmness of the box. While in use, the handles located on the sides of the tool box shall stop at a 90-degree angle to the face of the box. If a bar type handle is used, the clearance for the hand inside the handle shall be not be less than 2 inches by 4.25 inch.

3.6.4. Hardware. All metal hardware items on the tool box shall be corrosion resistant steel or steel with corrosion resistant surface finish and shall be able to withstand long term attacks from corrosive atmospheric conditions.

3.6.5. Color. The tool box shall be non-reflective, non-glossy and painted any industry accepted color.

3.6.6. Finish. The exterior surface finish of each tool box shall be clean, corrosion resistant, non-reflective, non-glossy and shall have no sharp edges or projections.

3.6.7. Human Engineering. Each tool box, including the handle and clasps, shall be designed so that the tool box can be carried, opened, and closed by a person wearing insulated work gloves. Each clasp or latch shall be able to be opened and closed using only one gloved hand. It shall require no more than 20 pounds of force to open or close the latch. If a bar type handle is used the clearance for the hand inside the handle shall be not less than 2 inches by 4.5 inches. If a recessed, molded type handle is used the space provided for the hand shall be not less than 2 inches (from palm side to knuckle side) by 5.25 inches (thumb side to little finger side) and $\frac{3}{4}$ inch clearance for the finger tips. If drawers are used, each drawer shall be able to be opened by a person wearing insulated work gloves.

3.6.8. Ambient Temperature Rough handling resistance. At ambient temperature, the fully loaded tool box shall withstand being gently rolled over on the floor so it's top is on the ground as well as being rolled 360 degrees, four times, once over each side. Throughout and upon completion of the testing, all drawers shall remain locked in their storage position and all tools shall remain in their designated positions within the organizing liners. Opened drawers and dislodged tools shall be cause for failure.

3.6.9. Rapid inventory. The tool storage system of the PCSMTK components in the tool box shall facilitate rapid inventory. Storage methods employed should enable the operator to verify within ten minutes or less that all items are present and secured in their designated storage locations. In the event an item is absent from the set, the user shall be provided with the means to identify the specific item by name and description. It is desired that any one missing item in a tool box be identifiable within five minutes. Diagrams (consisting of photos or drawings) of the tool layout shall be permanently attached to the inside of the tool box lid and shall be water and dust resistant through lamination or some other means of sealing. The diagrams shall be labeled with the corresponding drawer or layer number as well as all components within that layer. Each component shall be labeled with its corresponding part number.

3.6.10. Physical Security. Each tool box shall include a locking feature for the entire tool box. The locking feature shall prevent the separation of the tool box top and base as well as preventing the opening of any drawers (if applicable) such that no tool can be removed. A key-turn lock or padlock shall be used as the locking feature.

If padlocks are used, they shall be key-operated, tumbler type padlocks conforming to CID A-A-59486. Each tool box shall be provided with a rust proof flexible aircraft cable not greater than 12 inches in length riveted under the hasp and with a loop to engage the hasp and retain the padlock when it is loose. All padlocks supplied for each individual tool box shall be keyed alike so that one tool box can be opened with a single key regardless of the number of locks.

3.7. Inputs and Interfaces

3.7.1. Component list. The items identified in Table 1 shall be loaded into the tool box. All tools shall be of an industrial quality (see 3.2). Only industrial quality tools that have a verifiable market place acceptance shall be included in this tool set.

3.8. Loading Tool Boxes. The components listed in Table 1 shall be acquired and loaded into the tool box in accordance with the storage system specified herein. Any fragile or precision measurement items that are not supplied in individual carrying cases shall be placed in an organizing liner that shall protect the tools against damage from rough movement, shock, and vibration encountered during transportation, storage and handling. Suitable cushions and restraints shall be provided to keep all components not included in the organizing liner in place and stowed inside the tool box. The interior storage system shall also allow the tools in the tool box to be immediately located and withdrawn from the tool box without having to sort through the other tools in the process. The storage system shall be configured in a manner that the users can immediately locate and identify a missing tool.

3.8.1. Organizing liner. The tool organizing liners used to protect the tools lacking cases shall fill the tool box to prevent as much movement as possible. The organizing layer shall retain required tools in position to provide for rapid inventory of the tool load, and to maintain the position of tools under rough handling and shipping conditions. If foam is used, it shall be closed cell and have a water absorption limit of no more than 0.020 lbs/ft² over cut surfaces when tested in accordance with ASTM D3575. The organizing liner shall provide contrasting color underneath the tools to aid in rapid inventory; contrasting color examples could include but are not limited to the following: light on dark such as white/red on top and black underneath the tool or dark on light such as black on top and white/red underneath the tool.

The materials used in the tool organizing liner shall be resistant to water, refrigerants, automotive oils, greases, lubricants, fuels including gasoline, diesel fuel, JP-8 and JP-4, acids, bases, coolants, aircraft hydraulic fluid, alcohols and cleaning agents. Each contoured retention feature shall securely hold tools in place so that when a tool is turned over, the tools will be retained in position. Each contoured retention feature shall allow easy removal of the tool and shall include as necessary pick holes, cut out or recessed areas, or protrusion of tools above the tool organizing liner. Each retention feature shall be smooth and free from rough edges.

3.8.2. Proximate storage. The contractor shall lay out the components and assemble them into the drawers and top till with cut outs for each individual tool lacking an individual case. Items normally used together, to the maximum extent practical, shall be stored in the same proximity within the tool box.

3.8.3. Markings. A diagram (consisting of photos or drawings) showing the location of each component in its loaded position shall be provided with each tool box and shall be permanently affixed to the inside of the lid. The manner in which the diagram is permanently affixed to the inside of the lid shall not inhibit the ability to open or close the container. This diagram shall serve as an inventory sheet to facilitate rapid inventory. The diagram shall be water and dust resistant and durable. In addition, warranty information concerning the tools and the tool box shall also be permanently affixed to the inside of the tool box. Warranty information shall include the length and terms of the warranty. A complete list of tools including the nomenclature, manufacturer's part number and NSN, when known, shall also be permanently affixed to the inside of the tool box. The diagram, tool list and warranty information may be combined into one document or may be provided separately.

3.8.3.1. Non-Warranty. For the non-warranty ordering of replacement tools from the contractor, the procedures as determined by the contractor (including phone number, web site and email address if they are applicable) may be provided separately or included with or near the above information.

3.8.3.2. Warranty Label. The toolbox shall have a warranty label that is permanently affixed to the inside of the lid of the tool box. The label shall be provided on a permanent, water resistant, scuff resistant label, which is permanently affixed to the inside of the lid of the tool box. The label shall contain the following information:

Contact Tools Group for all Tool Replacement and Warranty Issues
 1-877-4-PMSKOT (1-877-476-7568)
 DSN: 312-786-3403
 Commercial: 586-282-3403
 Email: usarmy.detroit.tacom.mbx.ilsc-questions@mail.mil
 Website: <https://tools.army.mil>

3.9. Safety.

3.9.1. Lift hazards. Caution signs shall be provided for all items that exceed the safe limits for a single person to lift using both hands. Product safety signs and labels shall conform to ANSI Z535.4. The number of persons assigned for lifting each item shall be determined using the guidance per paragraph 5.9.11.3.1 of MIL-STD-1472. Lifting limits established for a single person is 42 lbs per Table XVII. (See paragraph 3.6.2)

3.10. Plates.

3.10.1. Data Plate. Each tool box shall have a data plate permanently and legibly marked with the following information, including all information required to be inserted in the blanks indicated.

- a. End Item Nomenclature: Tool Kit, Machinist: Post, Camp and Station
- b. End Item LIN: W44512
- c. End item NSN: 5280-00-511-1950
- d. End Item Serial No.: TBD
- e. Specification data: ARDEC DFP 581
- f. Box ___ of ___
- g. Manufacturer: CAGE or FSCM and PIN
- h. Acquisition instrument identification number

*TBD: To Be Determined

CAGE: Commercial and Government Entity Code

NSCM: NATO Supply Code for Manufacturers

PIN: Part or Identifying Number

The data plate shall conform to Commercial Item Description A-A-50271 Composition A, Class 2 or Composition D. The data plate shall be placed in a plainly visible location on the exterior of each tool box, but not on the lid, when it is closed in preparation for shipment or storage.

3.10.2. Plates and labels. All identification, warning and instruction plates and labels shall be permanently affixed to the PCSMTK tool box. They shall be resistant to deterioration caused by heat, cold, solar radiation, water, and petroleum products to the extent that they will remain intact and readily legible for no less than 5 years. Marking shall be accomplished in a manner that does not adversely affect the life and utility of the PCSMTK set or its equipment. All plates and labels shall be printed using the English language and may be supplemented by graphical symbols.

3.11. Workmanship. The quality of workmanship imparted to the PCSMTK shall equal or exceed that typically provided to domestically produced commercial products of this type. The PCSMTK presented for acceptance shall have been manufactured with skill and care; shall be uniform, neat, and clean; and shall be free from irregularities and anomalies that degrade form, fit, function, performance or appearance.

4. QUALITY ASSURANCE PROVISIONS

4.1. General Provisions. The product verifications and conformance inspections stated herein shall be performed to determine whether the item conforms to Section 3 of this Description for Purchase. Unless otherwise specified in the contract, all verifications and inspections shall be performed in accordance with the conditions specified herein. The contractor is responsible for the performance of all product verifications and conformance inspections specified herein. The contractor may use his own or any other facilities suitable for the performance of the verifications and inspections, unless disapproved by the Government. The Government reserves the right to perform any of the verifications and inspections set forth in this

DFP, at a later date and in its own facilities, where such verifications and inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1. Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. Product performance verification (see 4.2)
- b. Conformance inspection (see 4.3)

4.2. Product Performance Verification. Product performance verification is performed before full production begins and is intended to verify that the product is designed and manufactured to meet the requirements of this specification. It includes visual and manual inspections, some of which result in measured or counted values, as well as tests and demonstrations to prove compliance of the tested product and all of its assemblies and subcomponents with the requirements of this specification. It also includes the product conformance inspections, as described in paragraph 4.3, that will be performed during production to prove that all inspected characteristics are in compliance at the beginning of production. Product submittal, inspections and acceptance criteria are as follows:

- a. Submission. The contractor shall submit one or more sets for product verification and conformance inspections. (see 3.1)
- b. Inspections to be performed. As determined by the Government, the set assemblies, components and specimens may be subjected to any or all of the verifications and inspections specified in paragraphs .
- c. Rejection. If any kit assembly, component or specimen fails to comply with any of the applicable requirements, the entire kit shall be rejected. The Government reserves the right to terminate further verifications and inspections upon any failure of a kit assembly, specimen or component to comply with any of the requirements.

4.2.1. Ambient temperature rough handling demonstration and organizer demonstration. Load a chest with a full component load, close and fasten. Roll the chest over on the floor, 360 degrees, so that the chest becomes completely inverted, and do so four times, once in each of the four different directions, going over each of the four lower edges. Set the chest upright. Open the chest and inspect the components to assure that all components are still in their proper storage position and are not damaged. Failure of the component organizing liner to retain the required components such that no components are damaged and any displaced component, required to be retained in the organizing liner, that is immediately replaced into its proper storage position shall constitute failure of this requirement. (see 3.6.8, 3.8)

4.2.2. Tool box construction verifications: Verify that the components of the chest meet the requirements of paragraph 3.6 and all sub paragraphs.

4.2.2.1. Materials. Verify if a metallic material is used for the construction of the tool box, that a corrosion resistant coating was applied. Verify with objective evidence that the tool box is

constructed of parts and materials that are corrosion resistant or suitably processed to resist corrosion. Verify hardware that protrudes into the tool box interior does not present a hazard to users hands or the tool load. (see 3.6.1)

4.2.2.2. Weight and warning label. Verify the weight limit of the fully loaded tool box conforms to MIL-STD-1472, 5.9.11.3.1 & Table XVII, Male and Female, scenario C: carry 33 feet as described in the table of paragraph 3.6.2, or by forklift without modification or use of an adapter on the box. Verify the tool box has a warning label prominently displayed on the exterior of the box that states the number of persons required to lift the fully loaded tool box as well as the weight of the object in accordance with MIL-STD-1472, 5.9.11.3.9. (see 3.6.2, 3.6.2.1, 3.9.1)

4.2.2.3. Plates and labels. Verify all identification, warning and instruction plates and labels are permanently affixed to the PCSMTK tool box and contains the information as described in paragraph 3.10.1, including all information required to be inserted in the blanks indicated. Verify all plates and labels are printed using the English language and may be supplemented by graphical symbols. (see 3.10.1, 3.10.2)

4.2.2.4. Handles. Verify each handle is rated for not less than 1-1/2 times the weight of the fully loaded tool box. Verify the handles are installed using mechanical fasteners that cannot be readily removed, i.e. rivets or screws that cannot be removed with a screwdriver. Verify if only one handle is required that the handle is placed on top of the tool box and positioned directly in the center. Verify if more than one handle is used, no less than three handles are positioned with one directly centered on top and one on each side of the tool box. Verify if the fully loaded tool box weight requires more than a two person lift, that the required number of handles are spaced in such a manner that the lifters do not interfere with each other while lifting. Verify that while in use, the handles located on the sides of the tool box stop at a 90-degree angle to the face of the box. Verify if a bar type handle is used, the clearance for the hand inside the handle is not less than 2 inches by 4.25 inch. (see 3.6.3)

4.2.2.5. Hardware. Verify by objective evidence that all metal hardware items on the tool box are corrosion resistant stainless steel and able to withstand long term attacks from corrosive atmospheric conditions. (see 3.6.4)

4.2.2.6. Color. Verify the tool box is non-reflective, non-glossy and painted any industry accepted color. (see 3.6.5)

4.2.2.7. Finish. Verify the exterior surface finish of each tool box is clean, corrosion resistant, non-reflective, non-glossy and have no sharp edges or projections. (see 3.6.6)

4.2.2.8. Human engineering demonstration. Verify a fully loaded component chest shall be used by persons wearing insulated work gloves. Inability of the persons to carry the fully loaded chest, unlock, open and remove items, replace items, close and re-lock the chest, while wearing the gloves, shall constitute failure of this requirement. (see 3.6.7)

4.2.2.9. Rapid inventory demonstration. Verify the tool storage system of the PCSMTK components in the tool box facilitates rapid inventory. Demonstrate that the storage methods employed enable an operator to verify within ten minutes or less that all items are present and secured in their designated storage locations. Demonstrate, by randomly removing one or several tools, that the user can determine any missing items in a tool box and identify the missing items within five minutes. Verify photos or drawings of the tool layout is permanently attached to the inside of the tool box lid and is water and dust resistant through lamination or some other means of sealing. Verify the photos or drawings are labeled with the corresponding drawer or layer number as well as all components within that layer. (see 3.6.9)

4.2.2.10. Physical Security. Verify the tool box has a locking feature for the entire tool box. Verify the locking feature prevents the separation of the tool box top and base as well as preventing the opening of any drawers (if applicable) such that no tool can be removed. Verify a key-turn lock or padlock is used as the locking feature. Verify the tool box has a rust proof flexible aircraft cable not greater than 12 inches in length is riveted under the hasp and with a loop to engage the hasp and retain the padlock when it is loose. (see 3.6.10)

4.2.2.11. Interior component storage system. Verify, when applicable, that each retention feature is capable to hold required components in place without damage following the rough handling test of paragraph 3.6.8. Provide objective evidence that each retention feature allows for the easy removal of the components. (see 3.6.8, 3.8)

4.3. Conformance Inspection. Conformance inspection shall be applied to the first units inspected at the Product Performance Verification step (see 4.2) and to production units being offered for acceptance under the contract. These inspections shall include all verifications listed under paragraph 4.3 and shall be limited to the examination of product to verify compliance with design requirements established during product performance verification.

4.3.1. Inspection Lot Formation. Inspection lots shall be formed in accordance with Section 4 of MIL-STD-1916.

4.3.1.1. Sampling Plan Determination. Sampling inspections shall be conducted in accordance with MIL-STD-1916 using Verification Level I.

4.3.1.2. Rejection: Failure of any unit to pass any verification shall be cause for rejection of the lot.

4.3.2. Product examination. Visually, dimensionally, and manually examine each set to determine conformance with the requirements. Visual examination shall include verification of completeness of manufacture and assembly, proper cleaning, and freedom from the identified defects. Dimensional examination includes measuring dimensions as specified and weighing the unit. Manual examinations shall include the operation of movable parts by hand to assure proper functioning. (see 3.5.1 thru 3.5.33)

4.3.3. Workmanship. Verify the quality of workmanship imparted to the PCSMTK and its components equal or exceed that typically provided to domestically produced, commercial

chests of these types. Verify the chests presented for acceptance have been manufactured with skill and care; uniform, neat, and clean; and free from irregularities and anomalies which degrade form, fit, function, performance or appearance. (see 3.11)

4.3.4. Components and related items loaded into the kit. Verify all the components, as listed on Table 1, are loaded into the chest in the quantities indicated. (see 3.4, 3.5)

4.3.5. Industrial quality components. When required, verify that the components provided conform to industrial standards through substantial evidence of sales to industrial customers. (see 3.2)

4.3.6. Warranty. Verify that warranties of all components are provided in accordance with manufacturing requirements as specified in the contract. (see 3.3, 3.8.3.1, 3.8.3.2)

4.3.7. Packaging. Verify that unit packaging, unit package markings, shipping containers, shipping container markings, packing lists, quality certification heat treatment markings and unitization requirements are in accordance with Section 5 of this DFP. Failure to comply with the requirements may be cause for rejection.

4.4. Changes to materials, processes, or configuration. The contracting officer shall be informed of any changes to the materials, processes, or configuration of any characteristic of the units. The contracting officer shall determine if the reported changes to materials, processes, or configuration shall require additional verifications.

4.5. Conformance of subsequent production quantity. All products offered for acceptance throughout the life of the contract shall conform to all of the requirements of the contract. The Government reserves the right to re-verify conformance with requirements, at its own facility and at its own expense, at any time during the life of the contract and return to the contractor for warranty replacement such product that does not conform to the specified requirements.

5. PRESERVATION, PACKING AND PACKAGING

See Section D of the contract.