

**INCH-POUND**

MIL-P-44188C

12 June 1991

SUPERSEDING

MIL-P-44188B

27 January 1989

**MILITARY SPECIFICATION****PARKA, COLD WEATHER, CAMOUFLAGE**

This specification is approved for use by all Departments and Agencies of the Department of Defense.

**1. SCOPE**

**1.1 Scope.** This specification covers a nylon, three layer laminated, waterproof, and moisture vapor permeable parka, a component of the Extended Cold Weather Clothing System.

**1.2 Classification.** The parka shall be of one type in the following sizes as specified (see 6.2).

<u>Size</u>	<u>X-Short</u>	<u>Short</u>	<u>Regular</u>	<u>Long</u>
X-Small	X	X	X	X
Small	X	X	X	X
Medium	X	X	X	X
Large		X	X	X
X-Large			X	X

**2. APPLICABLE DOCUMENTS****2.1 Government documents.**

**2.1.1 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

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: U.S. Army Natick Research, Development, and Engineering Center, Natick MA 01760-5019 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8415

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are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

## SPECIFICATIONS

## FEDERAL

- A-A-50083 - Bag, Plastic, Folded Garment
- A-A-50186 - Cloth, Buckram, Woven and Non-Woven
- A-A-50199 - Thread, Polyester Core, Cotton- or Polyester-Covered
- V-F-106 - Fasteners, Slide, Interlocking
- V-T-285 - Thread, Polyester
- JJ-W-155 - Webbing, Textile (Cotton, Elastic)
- DDD-L-20 - Label: For Clothing, Equipage, and Tentage, (General Use)
- PPP-B-26 - Bag, Plastic (General Purpose)
- PPP-B-636 - Boxes, Shipping, Fiberboard

## MILITARY

- MIL-T-2283 - Tape, Textile, Nylon, Woven, White or Dyed
- MIL-T-3530 - Thread and Twine: Mildew Resistant or Water Repellent Treated
- MIL-F-10884 - Fasteners, Snap
- MIL-F-21840 - Fastener, Tapes, Hook and Loop, Synthetic
- MIL-C-21852 - Cloth, Taffeta, Nylon
- MIL-L-35078 - Loads, Unit: Preparation of Semiperishable Subsistence Items; Clothing, Personal Equipment, Equipage; General Specification For
- MIL-C-43701 - Cord, Elastic, Nylon
- MIL-C-44157 - Cloth, Plain Weave, Polyester/Cotton
- MIL-C-44187 - Cloth, Laminated, Water-Proof and Moisture-Vapor Permeable

## STANDARDS

## FEDERAL

- FED-STD-191 - Textile Test Methods
- FED-STD-751 - Stitches, Seams, and Stitching

## MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads
- MIL-STD-731 - Quality of Wood Members for Containers and Pallets

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(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D 3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3) in accordance with 4.3.

3.2 Guide samples. Samples of the end item, when furnished, are solely for guidance and information to the contractor (see 6.4). Variations from this specification may appear in the sample in which case this specification shall govern.

3.3 Material. It is encouraged that recycled material be used when practical as long as it meets the requirements of this specification.

3.3.1 Cloth, laminated. The basic material for the parka shall be cloth, laminated, waterproof and moisture vapor permeable, conforming to MIL-C-44187.

3.3.2 Cloth, plain weave. The material for the parka pockets, pocket linings, and upper right and left front linings shall be cloth, plain weave, Olive Green 106, polyester/cotton conforming to MIL-C-44157.

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3.3.3 Cloth, taffeta, nylon. The material for the parka lining shall be cloth, taffeta, nylon, Olive Green 106, conforming to type III, class 2 of MIL-C-21852.

3.3.4 Interlining. The interlining for left front, right front, and visor shall be buckram cloth, natural or bleached, conforming to type I of A-A-50186.

3.3.5 Seam sealing tape. The tape for covering and sealing all designated seams and stitching shall be cut in  $1 \pm 1/16$  inch strips from the material specified in 3.3.5.1 or 3.3.5.2 as applicable.

3.3.5.1 Sealing tape for basic material made with polytetrafluoroethylene film. The sealing tape shall be Olive Green 106 and shall be cut from laminated material fabricated in layers meeting the following requirements:

- a. Backing - Nylon 6,6 tricot fabric weighing  $1.5 \pm 0.3$  ounces per square yard.
- b. Middle layer - Microporous expanded polytetrafluoroethylene film weighing  $0.6 +0.2$  or  $-0.1$  ounces per square yard.
- c. Adhesive - Thermoplastic not less than 5.4 mils thick.

3.3.5.2 Sealing tape for optional basic material with polyolefin film. The sealing tape shall be Olive Green 106 and shall be cut from laminated material fabricated in layers meeting the following requirements:

- a. Backing - Nylon 6,6 tricot fabric weighing  $1.35 \pm 0.2$  ounces per square yard.
- b. Middle layer - Thermoset crosslinked urethane acrylic barrier weighing 1.0 minimum ounces per square yard.
- c. Adhesive - Low temperature polyurethane, with  $240^{\circ}\text{F}$  (nominal) melt point, not less than 7.5 mils thick.

Under no circumstances shall the tape machine utilized incorporate an independent nozzle air pressure control or a nozzle heat output in excess of  $600^{\circ}\text{C}$ . See 6.5 for recommended settings.

3.3.6 Hanger and hood drawcord tape. Neck hanger loop and hood drawcord shall be flat  $1/2$  inch nylon tape, Black or Olive Drab 7, conforming to MIL-T-2283.

3.3.7 Webbing, elastic. The elastic webbing at the bottom of the windskirt shall be  $7/8$  inch natural unbleached cotton webbing conforming to type I, class 5 of JJ-W-155. As an alternate, polyester webbing may be used

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as long as it meets the requirements for type I, class 5 of JJ-W-155, with the exception that the mildew resistant treatment shall not apply.

3.3.8 Tape, fastener hook and loop. The nylon fastener tapes shall be Olive Green 106 conforming to type II, class 1 of MIL-F-21840 and in the widths specified.

3.3.9 Fastener, slide, interlocking. All slide fasteners shall conform to V-F-106, lengths shall be as specified, and the color black. All slide fasteners shall be equipped with a thong.

3.3.9.1 Front entry slide fastener. The front entry slide fastener shall be type IV, style 8, size MH, individual element molded plastic and be supplied with two sliders enabling a 2-way opening.

3.3.9.2 Underarm slide fastener. The underarm slide fastener shall be type I, style 6, size MS, nylon or polyester continuous coil or ladder type configuration.

3.3.10 Fastener, snap. The stud and post parts of the snap fastener shall be style 2A, finish 2 male and female complete, consisting of stud and eyelet size 1 or 2 with button size 1 or 2, and socket conforming to MIL-F-10884, except an uncapped button may be used in areas where the surface will be concealed by a layer of base cloth.

3.3.11 Barrel lock. The barrel locks for the ends of the hood drawcord shall be black, ITW Nexus Barreloc or equivalent.

3.3.12 Thread. The thread for all seaming and stitching shall be polyester, size B, 2 or 3 ply, shade S-1, C.A. 66022 conforming to type I, class 1, subclass B of V-T-285. As an alternate, size 40/2 or 3 ply polyester core thread conforming to A-A-50199 may be used. All thread shall be water repellent treated as specified in MIL-T-3530.

3.3.13 Labels. Each parka shall have a class 1 identification label, class 2 size label, and a class 3 instruction label conforming to type VI of DDD-L-20. The label color shall be Medium Green, C.A. 70034, 70130, or 70131. The labels shall show fastness to laundering.

3.3.13.1 Identification label. The identification labels shall read "PARKA, COLD WEATHER, CAMOUFLAGE".

3.3.13.2 Size label. The size label shall be as follows:

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X-Small X-Short

Height: Up to 63 in.  
 Chest Mn: Up to 33 in.  
 Chest Wh: Up to 36 in.  
 Stock No: 8415-01-228-1306  
 NATO Size: 5060/7484

Small Short

Height: From 63 to 67 in.  
 Chest Mn: From 33 to 37 in.  
 Chest Wh: From 36 to 40 in.  
 Stock No: 8415-01-228-1311  
 NATO Size: 6070/8494

Small Regular

Height: From 67 to 71 in.  
 Chest Mn: From 33 to 37 in.  
 Chest Wh: From 36 to 40 in.  
 Stock No: 8415-01-228-1312  
 NATO Size: 7080/8494

Small X-Short

Height: Up to 63 in.  
 Chest Mn: From 33 to 37 in.  
 Chest Wh: From 36 to 40 in.  
 Stock No: 8415-01-228-1310  
 NATO Size: 5060/8494

Medium Short

Height: From 63 to 67 in.  
 Chest Mn: From 37 to 41 in.  
 Chest Wh: From 40 to 44 in.  
 Stock No: 8415-01-228-1315  
 NATO Size: 6070/9404

Medium Regular

Height: From 67 to 71 in.  
 Chest Mn: From 37 to 41 in.  
 Chest Wh: From 40 to 44 in.  
 Stock No: 8415-01-228-1316  
 NATO Size: 7080/9404

Medium X-Short

Height: Up to 63 in.  
 Chest Mn: From 37 to 41 in.  
 Chest Wh: From 40 to 44 in.  
 Stock No: 8415-01-228-1314  
 NATO Size: 5060/9404

Large Short

Height: Up to 67 in.  
 Chest: From 41 to 45 in.  
 Stock No: 8415-01-228-1318  
 NATO SIZE: 6070/0414

Large Regular

Height: From 67 to 71 in.  
 Chest: From 41 to 45 in.  
 Stock No: 8415-0228-1319  
 NATO Size: 7080/0414

X-Small Short

Height: From 63 to 67 in.  
 Chest Mn: Up to 33 in.  
 Chest Wh: Up to 36 in.  
 Stock No: 8415-01-228-1306  
 NATO Size: 6070/7484

X-Small Regular

Height: From 67 to 71 in.  
 Chest Mn: Up to 33 in.  
 Chest Wh: Up to 36 in.  
 Stock No: 8415-01-228-1308  
 NATO Size: 7080/7484

X-Large Regular

Height: From 67 to 71 in.  
 Chest : From 45 in. and up  
 Stock No: 8415-01-228-1321  
 NATO SIZE: 7080/1424

X-Small Long

Height: From 71 in. and up  
 Chest Mn: Up to 33 in.  
 Chest Wh: Up to 36 in.  
 Stock No: 8415-01-228-1309  
 NATO Size: 8090/7484

Medium Long

Height: From 71 in. and up  
 Chest Mn: From 37 to 41 in.  
 Chest Wh: From 40 to 44 in.  
 Stock No: 8415-01-228-1317  
 NATO Size: 8090/9404

X-Large Long

Height: From 71 in. and up  
 Chest: From 45 in. and up  
 Stock No: 8415-01-228-1322  
 NATO SIZE: 8090/1424

Small Long

Height: From 71 in. and up  
 Chest Mn: From 33 to 37 in.  
 Chest Wh: From 36 to 40 in.  
 Stock No. 8415-01-228-1313  
 NATO Size: 8090/8494

Large Long

Height: From 71 in. and up  
 Chest: From 41 to 45 in.  
 Stock No. 8415-01-228-1320  
 NATO Size: 8090/0414

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3.3.14.3 Combination identification/size label. A combination identification/size label conforming to class VI of DDD-L-20 may be used.

3.3.14.4 Instructions label. The instruction label shall be as follows:

PARKA, COLD WEATHER, CAMOUFLAGE

a. Fixed Laundry: The parka should be laundered utilizing (Natick Formula I) NOTE: DO NOT STARCH, BLEACH, OR DRY CLEAN.

b. Field Laundry: The parka should be laundered utilizing "Formula VIII" of TM 10-280. NOTE: DO NOT STARCH, BLEACH, OR DRY CLEAN.

Drying: The parka should be finished in a tumble-dryer, loaded not more than 2/3 of rated capacity at low heat cycle (do not exceed 100°F). Remove immediately from dryer. Avoid over-drying. NOTE: DO NOT PRESS.

c. Machine/Hand Laundering. Use wash/wear/permanent press fabric cycle or wash by hand, using warm water (90° to 110°F) and mild powdered laundry detergent. Rinse thoroughly in clean warm water. NOTE: DO NOT USE BLEACH OR STARCH.

Drying: Tumble dry at low temperature (100°F) and remove immediately from dryer. Avoid over-drying. To drip dry, remove from water and place on rust-proof hanger. NOTE: DO NOT PRESS.

3.3.14.5 Combination size, identification, and instruction label. The identification label, size label, and instruction label may be combined into one label, conforming to class 14. The three labels shall be printed as one continuous label with the size label first and the identification and instruction labels placed below the size label. The size and identification labels may be combined and the contents placed above the instruction label. A space of 1/2 inch minimum shall be maintained between the labels. In addition, a solid line 1/16 inch minimum width shall extend across the entire label approximately in the middle of the 1/2 inch blank space. The coating requirement shall conform to the class 3 label.

3.4 Design. The parka shall be camouflage, with a drawcord closing hood, two way closure front entry, elasticized waist, slide fastener underarm openings, fastener tape adjustable wrist tabs, and shall be fully lined, complete with windskirt.

3.5 Patterns. Standard patterns, which provide an allowance of 3/8 inch for all seams and 1/4 inch for all shell and shell to liners seams, will be furnished by the Government. The Government patterns shall not be altered in any way and are to be used only as a guide for cutting the contractor's working patterns. The working patterns shall be identical to the Government patterns.

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3.5.1 Pattern parts. The component parts shall be cut from the material specified below and in accordance with the pattern parts indicated in table I.

TABLE I. List of pattern parts

Material	Nomenclature	Parts
Cloth, laminated	Back	1
	Upper left front	1
	Upper right front	1
	Lower left front	1
	Lower right front	1
	Pocket flap	2
	Pocket flap facing	2
	Insignia tab 1/	2
	Slide fastener flap	2
	Crown	1
	Left side crown	1
	Right side crown	1
	Visor	1
	Hood tunnel	1
	Hood flap	1
	Sleeve	2
	Sleeve patch	2
	Sleeve pocket	1
	Sleeve pocket flap	1
	Pocket divider	1
	Sleeve tab	2
	Sleeve slide fastener welt	2
Cloth, plain weave	Upper front lining	2
	Upper pocket lining	2
	Lower front lining	2
	Lower pocket lining	2
	Lower pocket flap lining	2
Cloth, taffeta, nylon	Yoke lining	1
	Middle back lining	1
	Lower back lining	1
	Windskirt	1
	Crown lining	1
	Side crown lining	2
	Sleeve lining	2
Cloth, cotton buckram	Visor interlining	1
	Left front interlining	1
	Right front interlining	1

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- 1/ Insignia tab may be cut in one piece with seam allowance along one side deducted.

3.6 Construction. The construction shall conform in all respects to the requirements specified in table II and herein. Figure 1 is furnished solely for guidance and information. Should variation in the specification appear in figure 1, the specification shall govern.

3.6.1 Stitches, seams, and stitching. All stitches, seams and stitching shall conform to FED-STD-751. The type of seam, stitching and stitches per inch shall be as specified in table II. Seam allowances shall be maintained with seams sewn so that no raw edges, run-offs, pleats, puckers or open seams occur. When two or more methods of seams or stitches are given for the same operation, any one may be used.

3.6.1.1 Type 301 stitching. Ends of all stitching shall be backstitched or overstitched not less than 1/2 inch except where ends are turned under or caught in other seams or stitching. Ends of a continuous line of stitching shall overlap not less than 1/2 inch. Thread tensions shall be maintained so that there will be no loose stitching resulting in loose bobbin or top thread or excessively tight stitching resulting in puckering of the materials sewn. The lock shall be embedded in the materials sewn.

3.6.1.1.1 Repairs of type 301 stitching. Repairs of type 301 stitching shall be as follows:

a. When thread breaks, skipped stitches, run-offs, or bobbin runouts occur during sewing, the stitching shall be repaired by restarting the stitching a minimum of 1/2 inch back of the end of the stitching. 1/

b. Except for prestitching, thread breaks or two or more consecutive skipped or run-off stitches noted during inspection of the item shall be repaired by overstitching. The stitching shall start a minimum of 1/2 inch in back of the defective area, continue over the defective area, and continue a minimum of 1/2 inch beyond the defective area onto the existing stitching. Loose or excessively tight stitching shall be repaired by removing the defective stitching without damaging the materials, and restitching in the required manner. 1/

- 1/ When making the above repairs, the ends of the stitching are not required to be backstitched.

3.6.1.2 Type 515 or 516 stitching. Thread tension shall be maintained so that there will be no loose stitching. All repairs shall be in accordance with 3.6.1.1.a and b. Thread tension shall be maintained so that there will be no loose or excessively tight stitching resulting in puckering of the materials sewn.

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3.6.1.3 Bartacks. Unless otherwise specified, all bartacks shall be  $5/8 + 1/32$  inch long and  $1/8 + 1/32$  inch wide, and shall contain 21 to 28 stitches. Bartacking shall be free from thread breaks and loose stitching.

3.6.1.4 Automatic stitching. Automatic machines may be used to perform any of the required stitch patterns provided the requirements for the stitch pattern, stitches per inch, and size and type of thread are met; and at least three tying, overlapping or back stitches are used to secure the ends of the stitching.

3.6.1.5 Thread ends. All 301 stitch and bartack thread ends shall be trimmed to a length of not more than 1/4 inch. All 515 and 516 stitch thread ends shall be trimmed to not less than 1/4 inch but not more than 1/2 inch in length.

3.6.2 Heat sealing. Seams and stitching as indicated in table II shall be sealed with heat sealing tape on the innerside of the parka. The entire width of the seam tape shall be hot air sealed over the seam or stitching. The tape shall be applied by blowing high temperature air on the thermoplastic adhesive face of the sealing tape, which is then driven through pressurized rollers, attaching the tape and sealing the seam and stitching. The machine shall operate on 1200 to 3600 watts, 115 or 220 VAC air heater with slotted pneumatically activated driven rollers which press the tape onto the seam or stitching being sealed at a maximum of 20 feet per minute. All seam tapes shall be applied without tension and shall be applied so that a minimum of 1/8 inch overlap is on both sides of the sewn seam. Every effort shall be made to avoid tape end joints where the tape passes over taped seams on the parka. All seam tapes shall overlap a minimum of 3/4 inch at joining points. Sealed seams and stitchings shall show no leakage when tested as specified in 4.4.4.

3.7 Manufacturing operations requirements. The parka shall be manufactured in accordance with operation requirements specified in table II and alternate thread allowed in 3.3.13. The contractor is not required to follow the exact sequence of operations listed. Any holding or basting stitch is permissible provided it is removed, does not show on the finished garment and does not interfere with proper seam taping.

3.7.1 Repairs. Repairing the parkas by mending, patching or darning is not allowed and at no time is the removal of heat sealing tape permitted. However, heat sealing tape may be used for repairing leaking seams, and for repair of missing yarns in the tricot knit on the inside of the parka up to 15 inches long. Up to three repairs totaling 15 inches in length shall be allowed. Seam tape may also be used to repair areas where the original tape does not overlap sewn seams by the minimum 1/8 inch on both sides. The seam dimensions as above shall apply. No more than two layers of seaming sealing tape shall be permitted in any one area.

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3.8 Use of automated apparel equipment. Automated apparel equipment may be used to perform any of the operations specified in table II providing that the seam and stitch type are as specified and the finished component conforms to the required configuration. When a government finished shaper pattern is forwarded, the component shall conform to that pattern.

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NATICK Form 903  
1 Dec 76 EDITION OF 1 OCT 76 WILL BE USED UNTIL EXHAUSTED.

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NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/LOOPER
1. <u>Cutting and marking.</u> (cont'd)	<u>Windskirt webbing</u>					
	23-3/4	26-3/4	30-3/4	34-3/4	38-3/4	± 1
			<u>Hanger tape</u>			
	4-1/2	4-1/2	4-1/2	4-1/2	4-1/2	± 1/4
c.	Under arm slide fasteners shall be of one length in accordance with patterns.					
d.	Front closure slide fasteners shall be as follows in accordance with size:					
X-Small	<u>Small</u>	<u>Medium</u>	<u>Large</u>	<u>X-Large</u>		
26-5/8	27-1/8	<u>X-Short</u>	<u>27-5/8</u>			
27-5/8	28-1/8	<u>Short</u>	<u>28-5/8</u>	<u>29-1/8</u>		
29-1/8	29-5/8	<u>Regular</u>	<u>30-1/8</u>	<u>30-5/8</u>	<u>31-1/8</u>	
30-5/8	31-1/8	<u>Long</u>	<u>31-5/8</u>	<u>32-1/8</u>	<u>32-5/8</u>	
e.	Mark front slide fastener to be matched with front center seams.					

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NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/LOOPER
2.	<u>Replacement of damaged parts.</u>  Care shall be exercised during the spreading, cutting and manufacturing operations to assure that material defects and damages, as classified in 4.4.2 are excluded and replaced with non-defective and properly matched material.				B	
3.	<u>Marking.</u>  Mark, ticket or bundle all component parts to insure a correct shade and size throughout the parka. Drill holes shall not be used and markings shall not be visible on the outer shell of the parka.				B	
4.	<u>Assemble windskirt.</u>				B	
	a. Clip top corners in accordance with marks on patterns. Turn raw edges to inside (non-face side) 1/2 inch and stitch 1/4 to 3/8 inch from folded edges.	301	EFA-1	10-13	B	B
	b. With inside (non-face side) up, hem sides by folding in $1\frac{1}{2} \pm \frac{1}{8}$ inch, fold again $\frac{3}{4} + \frac{1}{8}$ inch and stitch 1/16 to 1/8 inch from inside folded edge. Hem shall finish 5/8 to 7/8 inch.	301	EFB-1	10-13	B	B
	c. With windskirt, inside up, form tunnel by positioning drawcord 1-1/4 to 1-1/2 inches from top edge and folding skirt up around cord. Stitch along edge of cord, back tacking ends of stitching and catching drawcord at back center in stitching. Tunnel shall be no more than 3/8 inch wide and stitching shall not catch cord except where tacked at center. Knot ends of cord.	301	OSF-1	10-13	B	B

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	Bobbins/ LOOPER COVER
4.	<u>Assemble windskirt.</u> (cont'd)					
	d. Hem windskirt by turning bottom edge to the inside 1/4 inch and folding again 1-1/8 to 1-1/4 inches. Place 7/8 inch elastic webbing inside hem and tack both ends in place 1/2 inch from side hem edge. Stitch length of windskirt hem 1/16 to 1/8 inch from folded edge taking care not to catch elastic webbing.	301	Efb-1	10-13	B	B
	e. Set snaps at top and bottom of the left side with caps to the hem side of windskirt and set studs to the top and bottom of the right side to match caps.					
5.	<u>Assemble slide fastener protection flap.</u>					
	a. With face sides together and edges aligned, stitch 1/8 to 3/16 inch from edge around curve.	301	SSe-2(a)	10-13	B	B
	b. Turn face side out and edge stitch 1/16 to 1/8 inch from seamed edge.	301	SSe-2(b)	10-13	B	B
6.	<u>Assemble hood lining.</u>					
	With face sides together and raw edges aligned, stitch sides to center 3/8 inch from edges, catching ends of the two 4 to 4-1/2 inch strips of 7/8 inch elastic webbing, placed per marks on patterns.	515 or 516	SSa-2	10-13	B	B
7.	<u>Assemble upper lining.</u>					
	a. Position instruction label to yoke lining, centered 1 to 1-1/2 inches down from neck, and stitch on all four sides 1/8 to 3/16 inch from edges.	301	LSbj-1	10-13	B	B

FALL F-44100

No.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/LOOPER
7.	<p><u>Assemble upper lining.</u> (cont'd)</p> <p>The identification label and size label shall be positioned on yoke lining to the right side of instruction label and stitched on all four sides 1/16 to 1/8 inch from edge.</p> <p style="text-align: center;">or</p> <p>When a combination size, identification, and instruction label is used, position label to yoke lining centered 1 to 1 1/2 inches down from neck, and stitch on all four side 1/16 to 1/8 inch from edges.</p> <p>b. Hem bottom edge of yoke lining and top edge of middle back lining by turning <math>1\frac{1}{2} \pm \frac{1}{8}</math> inch to inside (non-face side), turn <math>1\frac{1}{2} \pm \frac{1}{8}</math> inch again and stitch <math>\frac{1}{8}</math> to <math>\frac{3}{16}</math> inch from inside fold.</p> <p>c. With face sides up and side edges aligned, position yoke lining over middle back lining, per marks on patterns and stay stitch the two pieces together <math>\frac{1}{8}</math> to <math>\frac{1}{4}</math> inch from side edges.</p> <p>d. With face sides together and edges aligned stitch sleeves to back lining at armholes, (right or left respectively) <math>\frac{3}{8}</math> inch from edge.</p> <p>e. With face side up, position 1 inch hook fastener tape (appropriate length per size as indicated on patterns) to center front edge of left upper pocket lining <math>\frac{1}{4}</math> to <math>\frac{3}{8}</math> inch from raw edge, and stitch on all four sides <math>\frac{1}{8}</math> to <math>\frac{3}{16}</math> inch from edge. Repeat for right pocket lining.</p>					

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	THREAD		
				NEEDLE	BOBBIN/LOOPER	COVER
7.	<u>Assemble upper lining.</u> (cont'd)					
	f. Position upper left front lining over upper left pocket lining inside to face side. Position sleeve (right or left respectively) to front lining at arm-hole with face sides together. Match all edges and stitch 3/8 inch from edge. Repeat for right side.	515 or 516	SSa-2	10-13	B	B
	g. With face sides together and edges aligned stitch fronts to back and sleeves closed from parka bottom to underarm opening (matching underarm seams) skipping over opening and continue seaming sleeve lining.	515 or 516	SSa-2	10-13	B	B
	h. With face sides together, position hood to upper lining at neckline matching edges and forming pleats at locations indicated on patterns, and stitch 3/8 inch from edge catching hanger tape by 1/4 inch at center back per marks on patterns. The outside folded edge of pleat shall face toward the back of the hood.	515 or 516	SSa-2	10-13	B	B
8.	<u>Assemble complete lining.</u>					
	a. With face sides together stitch left pocket flap lining to lower left pocket lining at both ends of pocket opening per marks on patterns to outer edges. Repeat for right front side.	301	SSa-1	10-13	B	B
	b. Position face side of assembled lower pocket lining to inside of lower front left lining and face side of lower front left lining to face side of lower back lining at side seams with all edges aligned and stitch with a 3/8 inch gauge safety stitch. Repeat for right side.	515 or 516	SSa-2	10-13	B	B

NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/ LOOPER
8.	<u>Assemble complete lining. (cont'd)</u>					
	c. With face sides together, position upper assembled lining to lower assembled lining, matching edges and ends and stitch 3/8 inch from edge for 1 to 1-1/4 inches. Place windskirt between lining seam with inside (non-face side) to lower lining, align all edges and continue stitching to end with wind-skirt ending 1 to 1-1/4 inches from end.	515 or 516	SSa-2	10-13	B	B
	d. Bartack each end of windskirt on seam with horizontal bartack and neck hanger tape on inside seam.	1/2 inch bartack	---	28 per bartack	B	B
	e. Position slide fastener with pull side up, to the top of face side of left front lining with slide fastener tape 1/8 to 3/16 inch from raw edge. Turn slide fastener top tail under, lay slide fastener protective flap between fastener and lining with wide end up at the top of slide fastener. Stitch thru all plies 1/8 to 3/16 inch from edge of slide fastener tape taking care not to catch pocket lining. Repeat for right side slide fastener, omitting slide fastener flap.	301	LSq-2(a)	10-13	B	B
	f. Position 1 inch wide loop fastener tape (appropriate length to size) to the inside (non-face side) of left and right front linings, on slide fastener seams, per marks on patterns 1/4 to 3/8 inch from edge of parka and stitch 1/8 to 3/16 inch from edge of tape.	301	LSbj-1	10-13	B	B
9.	<u>Assemble insignia tab.</u>					
	a. Position snap centered at point of tab with cap to the inside (non-face side) and set.					

NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/ LOOPER
9.	<u>Assemble Insignia tab.</u> (cont'd)					COVER
	b. Position tab pieces with face sides together and edges aligned and stitch 1/4 inch from edge around sides and point.	301	SSe-2(a)	10-13	B	B
	or					
	c. Crease all sides of one piece tab, fold in half lengthwise and stitch 1/16 inch from edges. Place a second row of stitching 1/8 inch from the first row of stitching.	301	SSC-2	10-14	B	B
	d. Turn face side out, pushing out corners, and edge stitch 1/16 to 1/8 inch from seamed edges.	301	SSe-2(b)	10-13	B	B
10.	<u>Assemble hood tunnel.</u>					
	a. Turn ends to inside 1/2 inch and stitch 1/4 inch from fold.	301	EFa-1	10-13	B	B
	b. Set barrel locks to both ends of drawcord, length appropriate to size, and tie with double twist knot.					
	c. Fold tunnel in half lengthwise with insides together, insert drawcord, and stitch the length of tunnel 1/4 inch from edge taking care not to catch drawcord.	301	SSa-1	10-13	B	B
11.	<u>Assemble sleeve wrist tabs.</u>					
	a. Position a strip of 1-1/2 inch wide hook fastener tape (length as indicated on pattern) to face side of	301	LSbJ-1	10-13	B	B

NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/ LOOPER
11.	<u>Assemble sleeve wrist tabs.</u> (cont'd)					
	tab per marks on patterns and stitch on all four sides 1/8 to 3/16 inch from edges.					
	b. Fold tab in half, face side out, and folding side raw edges in 3/8 inch, stitch 1/16 to 1/8 inch from folded edge, tacking ends.	301	EFn-2	10-13	B	B
	or					
	c. Fold tab in half, face sides together, and stitch sides with a 3/8 inch seam.	301	SSe-2(a)	10-13	B	B
	d. Turn face side out, pushing out points, and edge stitch sides 1/16 to 1/8 inch from edge tacking ends.	301	SSe-2(b)	10-13	B	B
12.	<u>Assemble sleeve pocket flap.</u>					
	a. Position a strip of 5/8 inch hook fastener tape (length as indicated on pattern) to the face side of flap per marks on patterns and stitch on all four sides 1/8 to 3/16 inch from edges.	301	LSbj-1	10-13	B	B
	b. Fold flap in half, face sides together, edges aligned and stitch both sides 1/4 inch from edge, tacking ends.	301	SSe-3(a)	10-13	B	B
	c. Turn face side out, pushing out points, and edge stitch 1/16 to 1/8 inch from edge around sides and bottom. Stitch second row of stitching 3/16 to 1/4 inch from first.	301	SSe-3(b)	10-13	B	B

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NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/LOOPER COVER
13.	<u>Assemble sleeve pocket.</u>					
	a. Hem the top edges of the sleeve pocket and pocket divider pieces, and stitch 1/4 to 3/8 inch from fold.	301	EFa-1	10-13	B	B
	b. Position a strip of 5/8 inch wide Loop fastener tape (length as indicated on pattern) to the face side of the pocket per marks on pattern and stitch on all four sides 1/8 to 1/4 inch from edge.	301	SSa-1	10-13	B	B
	c. With face side of pocket divider to face side of sleeve, stitch left side of divider 1/4 inch from edge on sleeve per marks on pattern with side and bottom of divider 1/4 inch turned in then turn divider face side out.	301	SSa-1	10-13	B	B
	d. Place pocket with face to face side of sleeve with right raw edge of pocket and right edge of divider superimposed 1/4 inch (pocket under divider). Stitch right raw edge of superimposed pocket and divider from top to bottom of divider and continue along bottom divider making sure bottom of divider is turned in 1/4 inch.	301	LSa-1	10-13	B	B
	e. Turn bottom of pocket in 1/4 inch and turn pocket face side up, top stitch right side of pocket 1/16 to 1/8 inch from edge (with bottom turned in) forming pleat on each side of pocket per marks on pattern. Stitch left edge of pocket to sleeve 1/16 to 1/8 inch from edge with raw edge turned in 1/4 inch. Stitch bottom of pocket with pleats on each side of pocket. Tack all ends of stitching.	301	SSB-1	10-13	B	B

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	NEEDLE	THREAD BOBBIN/LOOPER	COVER
14.	<u>Assemble hand pocket flaps.</u> <ol style="list-style-type: none"> <li>a. Set snap cap to pocket flap facing per marks on patterns with cap to the inside (non-face side) of flap facing.</li> <li>b. Position two strips of 1 inch loop fastener tape (length as indicated on pattern) to face side of flap facing per marks on patterns and stitch on all four sides 1/8 to 3/16 inch from edges.</li> <li>c. With face sides together, position facing to flap, edges aligned, and stitch around curve/point edge and top end.</li> <li>d. Turn face side out, pushing out points, and top stitch 1/4 to 3/8 inch from seamed edge.</li> <li>e. With face sides together, position flap lining to flap facing and stitch between marks on patterns. Clip seam to stitching and turn so insides (non-face sides) are together with unstitched seams extended.</li> </ol>	301	Lsbj-1	10-13	B	B	
15.	<u>Assemble hand pockets.</u> <ol style="list-style-type: none"> <li>a. Position two strips of 1 inch hook fastener tape (length as indicated on pattern) to the face side of left lower pocket along pocket opening per marks on pattern and stitch on all four sides 1/8 to 3/16 inch from edges. Repeat for right pocket.</li> </ol>	301	SSe-2(a)	10-13	B	B	
		301	SSe-2(b)	10-13	B	B	
		301	SSa-1	10-13	B	B	
		301	SSa-1	10-13	B	B	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD BOBBIN/ NEEDLE LOOPER		COVER
					NEEDLE	BOBBIN/ LOOPER	
15.	<u>Assemble hand pockets.</u> (cont'd)						
	b. With face sides together stitch flap facing to left lower pocket on both ends of pocket opening per marks on patterns out to edges. Repeat for right lower pocket.	301	SSa-1	10-13	B	B	
16.	<u>Assemble fronts.</u>						
	a. With face sides together, position upper front to lower front assembly, edges aligned, and seam, backstitching over pocket flap/pocket overlapp.	301	SSa-1	10-13	B	B	
	b. With seams turned towards upper front, lay heat seaming tape over the seam on the inside and heat seal.						
17.	<u>Assemble hood.</u>						
	a. With face sides together, position side pieces to center piece with edges aligned and stitch 1/4 inch from edge.	301	SSa-1	10-13	B	B	
	b. With seams turned towards center piece, lay heat seaming tape over seams and heat seal.						
	c. Position interlining to inside of visor piece with interlining offset 1/4 inch from the outer edge of visor piece and stitch the opposite edge to visor.	301	SSa-1	10-13	B	B	
	d. With face sides together, position brim unbasted edge to hood, matching marks per pattern and seam not catching interlining.	301	SSa-1	10-13	B	B	

NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/ LOOPER
17.	<u>Assemble hood.</u> (cont'd)					
e.	Center pre-assembled tunnel to face side of front of hood, align edges, and seam.					
18.	<u>Assemble hood flap.</u>					
a.	Fold hood flap, face sides together and stitch both ends.	301 or 401	SSa-1	10-13	B	B
b.	Turn ends right side out and top stitch along folded and stitched edges 1/16 inch from edge.					
c.	Position eight strips of 1 inch wide loop fastener tape (length as indicated on pattern) to flaps as indicated on pattern, and stitch through both layers of flap 1/8 to 3/16 inch from edge on all four sides.	301	SSa-1	10-13	B	B
d.	Set nine snap caps to flap as indicated on pattern.					
19.	<u>Set flap to hood.</u>					
a.	Center the hood flap on the outside of parka as indicated on pattern with loop fastener tape side facing up and stitch 1/16 to 1/8 inch from edge. The loop fastener tape shall face the front when the flap is attached to the hood.	301	LShl-2	10-13	B	B
b.	Turn flap down and topstitch 1/4 + 1/16 inch from folded edge. On the inside of the garment, seam seal tape the seam that attaches the flap to the hood.	301	SSe-3	10-13	B	B

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/COVER
20.	<u>Assemble sleeves.</u>					
	a. Position elbow patches face side up to face side of sleeves with bottom and back seam edges aligned with sleeve edges. Turn inside edges (side and top) under 1/2 inch and raise stitch 1/8 to 3/16 inch from folded edges.	301	Lsd-1	10-13	B	B
	b. Position a strip of loop fastener tape (length as indicated on pattern), per marks on patterns, and stitch on all four sides 1/8 to 3/16 inch from edge with 1/2 inch overlap stitching.	301	Lsbj-1	10-13	B	B
	c. Position preassembled sleeve tabs to the face side of sleeves per marks on pattern, lined up with fastener tape, and raw edges aligned. Stitch 1/8 to 3/16 inch from edge tacking ends.	301	SSa-1	10-13	B	B
	d. Fold sleeve pocket flap down and top stitch 1/16 to 3/32 inch from fold. Stitch second row of stitching 1/4 inch from the first and the same as the first. or Fold flap down and stitch 1/16 to 3/32 inch from fold with 1/4 inch spaced double row of stitching, tacking ends.	301	LSpk-2(b)	10-13	B	B
	e. Lay heat seaming tape on the inside of sleeve, covering all stitching except hook and loop fastener tape stitching, and heat seal.	301	Lss-2(b)	10-13	B	B

NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD BOBBIN/ NEEDLE LOOPER COVER	
					NEEDLE	BOBBIN/ COVER
21.	<p><u>Assemble parka shell.</u></p> <p>a. With face sides together, position sleeve to parka back at armpole (right and left respectively), with edges aligned and seam.</p> <p>b. With face sides together, position fronts to sleeve (right and left respectively), with raw edges aligned and seam.</p> <p>c. With face sides together, position fronts over back, align side seam edges, matching bottoms and underarm seams (seam allowance toward sleeve) and top point of underarm slide fastener opening. Seam to that point, with a 1/2 inch backstitch over pocket/flap overlap. Skip over underarm slide fastener opening and matching lower underarm point and sleeve bottom, continue seaming. Seam shoulders together, fronts to back.</p> <p>d. With all seams towards the back of parka, lay heat seaming tape to the inside, over side seams, shoulder seams and sleeve attachment seams and heat seal.</p> <p>e. With face sides together, seam hood to parka neckline with edges aligned, marks on patterns matched, sleeve seams towards center of sleeve and hood pleats formed at location and stitched in place. The outside folded edge of pleat shall face towards the back of the hood.</p> <p>f. With seam turned towards hood, lay heat seaming tape over seam on the inside of parka and heat seal. Pleat stitched area is to be spot sealed.</p>	301 301 301 301 301 301	SSA-1 SSA-1 SSA-1 SSA-1 SSA-1 SSA-1	10-13 10-13 10-13 10-13 10-13 10-13	B B B B B B	

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD		COVER
					NEEDLE	BOBBIN/ LOOPER	
21.	<u>Assemble parka shell.</u> (cont'd)						
	g. Position left interlining to inside (non-face side) of left center front, per marks on patterns, with edges aligned and stitch 1/8 to 3/16 inch from front edge. Repeat for right center front with right interlining.	301	SSa-1	10-13	B	B	
	h. Set two snap caps to left front through shell and interlining per marks on patterns, with caps to interlining side. Equally space five snap caps between the top and bottom snap caps, with caps to the interlining side.						
	i. With face sides together, fold left center front and interlining over according to notches on patterns. The left center front fold shall be 1 3/4 inches, and the right front center fold should be 1 1/4 inches. Seam top and bottom ends, stopping 1/4 inch back from edge of left center front raw edge. Repeat for right center front.	301	SSa-1	10-13	B	B	
	j. Turn face side out, snug around interlining, edge and edge stitch 1/8 to 3/16 inch from fold down front and across bottom. Repeat for right side.	301	SSloc-1	10-13	B	B	
22.	<u>Set underarm slide fasteners.</u>						
	a. Fold welts in half lengthwise and position on top of slide fastener tape (right and left sides respectively) with edges aligned, and stitch 1/8 to 1/4 inch from edge.	301	SSa-1	10-13	B	B	

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NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/COVER
22.	<u>Set underarm slide fasteners.</u> (cont'd)					
	b. Clip each end of underarm slide fastener openings following angle for point and allowing 3/4 inch opening width.					
	c. With sleeve inside out fold sleeve under at wrist end of underarm opening leaving point extended. With slide fastener closed, face side down, and welt toward sleeve front and slide fastener pull towards underarm seam position slide fastener bottom extension to point extension and stitch in place 1/4 inch from edge, stopping with needle down in corner. Turn corner, pushing sleeve under as not to catch while leaving seam allowance extended. Turn slide fastener and stitch to seam allowance 1/4 inch from edge stopping with needle down in corner. Repeat for last two sides stitching 1/8 inch from edge. Repeat for second sleeve.	301	Ssa-1	10-13	B	B
23.	<u>Join shell and lining.</u>					
	a. Lay parka face side up, lay lining face side down, raw edges along slide fastener even with edges along slide fastener opening start at bottom follow stitching on slide fastener and 1/4 inch on shell fly, watch to match marks of slide fastener with neck and waist seam. Stop sewing $1 \pm 1/8$ inch from bottom of fastener tape and start $1 \pm 1/8$ inch from top of fastener tape, join around hood (catching elastic webbing in seams), with raw edges even, and stitching 1/4 inch from edges. On other front repeat same manner leaving opening for flash pocket $1 \pm 1/8$ inch from each end of fastener tape.	301	Ssa-1	10-13	B	B

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/ LOOPER
23.	<u>Join shell and lining.</u> (cont'd)					
	b. Join lining to slide fastener opening through flash pocket area, raw edges even sew 1/4 inch from edge, lining up the stitching at each end of opening.	301	SSa-1	10-13	B	B
24.	<u>Join lining to underarm slide fasteners.</u>					
	a. Clip each end of underarm slide fastener opening following angle for point to allow 3/4 inch opening width.					
	b. With sleeve and lining inside (non-faceside) out, fold sleeve under at slide fastener bottom and fold lining up to underarm opening leaving point extended and stitch to slide fastener bottom. Continue as in 22.c. Repeat for second sleeve.	301	SSa-1	10-13	B	B
25.	<u>Join sleeve and lining at wrist.</u>					
	With sleeve shell and lining wrong side out, position sleeve ends with face sides together and seam around bottom.	301	SSa-1	10-13	B	B
26.	<u>Join lower pocket liner to lower pocket.</u>					
	a. With face sides together stitch left pocket flap liner to left pocket flap facing at pocket opening. Repeat for right front side.	301	SSa-1	10-13	B	B
	b. With face sides together stitch lower left pocket liner to lower left pocket at pocket opening. Repeat for right front side.	301	SSa-1	10-13	B	B

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD BOBBIN/ NEEDLE LOOPER COVER	
					NEEDLE	BOBBIN/ LOOPER
26.	<u>Join lower pocket liner to lower pocket.</u> (cont'd)					
	or					
	C. Fold in raw edges of left pocket flap liner and left pocket flap facing and stitch across pocket opening 1/8 to 3/16 inch from folded edge. Repeat for right front side.	301	SSc-1	10-13	B	B
	d. Fold in raw edges of lower left pocket and left pocket liner and stitch across pocket opening 1/8 to 3/16 inch from folded edge. Repeat for right front side.	301	SSc-1	10-13	B	B
	NOTE: If option to use operation 26.c and 26.d is utilized, operation 27.h shall be eliminated.					
27.	<u>Top stitch parka.</u>					
	a. Lay parka open, lining up, topstitch lining (thru shell) 1/8 to 3/16 inch from slide fastener seam, beginning at top of hood fronts and stopping 1/4 to 3/8 inch into top of fastener tape on both fronts. Topstitch beginning 1/4 to 3/8 inch above the bottom of fastener tape to bottom of parka on both sides backtacking at hand pocket openings making sure shell is flat and smooth.	301	LSq-2(b)	10-13	B	B
	b. Separate fastener tape at hand pocket opening and topstitch lining 1/8 to 3/16 inch from edge of lining making sure shell is flat and smooth.	301	LSq-2(b)	10-13	B	B

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NO.	TABLE II. (cont'd) MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD	
					NEEDLE	BOBBIN/ LOOPER
27.	<u>Top stitch parka.</u> (cont'd)	301	LSq-2(b)	10-13	B	B
	C. Top stitch beginning 1/4 to 3/8 inch above the bottom end of fastener tape to the bottom of parka, 1/8 to 3/16 inch from liner/slide fastener seam, on both fronts of parka, making sure shell is flat and smooth.	301	LSq-2(b)	10-13	B	B
	d. Topstitch center fold 1/8 to 3/16 inch from edge from top of hood to hem stitch line, making sure stitch does not catch drawcord, on both fronts of parka.	301	SSe-2b	10-13	B	B
	e. Top stitch hood brim 3/16 to 1/4 inch from edge (catching interlining in top stitching) starting and stopping 1/4 to 3/8 inch from tunnel seam.	301 or 5/8 inch bartack	EFa-1	10-13 21-28	B	B
	f. Stitch 1/2 to 3/4 inch vertical bartack centered thru hood tunnel and drawcord at center of hood.	301	LSq-2b	10-13	B	B
	g. Top stitch 1/8 to 3/16 inch from seamed edges around underarm slide fastener openings.	301	GSf-1	10-13	B	B
	h. With sleeve shell and lining pulled straight and flat, top stitch around bottom of sleeve 3/16 to 1/4 inch from bottom edge with 1 inch over sew.	301	GSf-1	10-13	B	B
	i. Top stitch around lower front pocket openings (pocket to liner seam and flap facing to flap liner seam), 1/8 to 3/16 inch from edge.	301				

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NO.	MANUFACTURING OPERATIONS REQUIREMENTS	STITCH TYPE	SEAM AND STITCHING TYPE	STITCHES PER INCH	THREAD BOBBIN/ NEEDLE LOOPER		COVER
					NEEDLE	BOBBIN/ COVER	
28.	<u>Attach insignia tab.</u>	301	LSbl-2(a)	10-13	B	B	
	a. Position the raw edge of the preassembled insignia tab to left front slide fastener opening 1 1/2 inches above the center of the third snap cap from the top, face sides together, point towards hood, and stitch 1/4 inch from raw edge.  b. Turn tab down and stitch 1/16 to 1/8 inch from fold with 1/4 inch spaced double row of stitching, tacking ends.						
29.	<u>Hem bottom of parka.</u>	301	LSbl-2(a)	10-13	B	B	
	Open parka with lining up. Turn bottom edges of shell up $1\frac{1}{2} \pm \frac{1}{8}$ inch, fold again $3\frac{1}{4} \pm \frac{1}{8}$ inch and stitch $\frac{1}{16}$ to $\frac{1}{8}$ inch from folded edge. The hem shall finish $\frac{5}{8}$ to $\frac{7}{8}$ inch wide.						
30.	<u>Set studs.</u>	301	SS1-1	10-13	B	B	
	a. Set seven studs to right front opening to match snap caps on left front opening. Set one stud to left front opening to match snap cap on insignia tab.  b. Set one stud to each lower front pocket, matching up to the snap cap on pocket flaps.						

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3.9 Finished measurements. The measurements of the parka shall conform to the requirements specified in table III.

TABLE III. Finished measurements (inches)

	<u>1/2 Chest 1/</u>	<u>Back length 2/</u>	<u>Sleeve length 3/</u>	<u>Hood flap length 4/</u>
<u>X-Short</u>				
X-Small	21	26-1/2	26-1/4	26-1/2
Small	23	27	26-1/2	27
Medium	25	27-1/2	26-3/4	27-1/2
<u>Short</u>				
X-Small	21	27-1/2	26-3/4	26-1/2
Small	23	28	27	27
Medium	25	28-1/2	27-1/4	27-1/2
Large	27	29	27-1/2	28
<u>Regular</u>				
X-Small	21	29	27-3/4	26-1/2
Small	23	29-1/2	28	27
Medium	25	30	28-1/4	27-1/2
Large	27	30-1/2	28-1/2	28
X-Large	29	31	28-3/4	28-1/2
<u>Long</u>				
X-Small	21	30-1/2	28-3/4	26-1/2
Small	23	31	29	27
Medium	25	31-1/2	29-1/4	27-1/2
Large	27	32	29-1/2	28
X-Large	29	32-1/2	29-3/4	28-1/2
<u>Tolerance</u>				
Plus	3/4	3/4	1/2	1/2
Minus	3/4	3/4	1/2	1/2

- 1/ With slide fastener closed and parka smoothed flat measure 1/2 chest from folded edge to folded edge at base of armhole seams.
- 2/ Measure center back length from neck seam to bottom of hem.
- 3/ Measure sleeve length from armhole seam to bottom of sleeve along under-arm seam.

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- 4/ Measure straight edge of flap, from end to end, following the curve of the hood.

3.9.1 Slide fastener finished measurements. After stitching, the front slide fasteners shall measure not less than 1/4 inch less than minimum specified length in table II operation 1.d.

3.10 Workmanship. The finished parka shall conform to the quality of product established by this specification. The occurrence of defects shall not exceed the applicable acceptable quality level.

#### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to the requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Responsibility for dimensional requirements. Unless otherwise specified in the contract or purchase order, the contractor is responsible for ensuring that all specified dimensions have been met. When dimensions cannot be examined on the end item, inspection shall be made at any point, or at all points in the manufacturing process necessary to ensure compliance with all dimensional requirements.

4.1.3 Certificates of compliance. When certificates of compliance are submitted, the Government reserves the right to inspect such items to determine the validity of the certification.

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

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).

4.3 First article inspection. When a first article is required (see 3.1 and 6.2), it shall be examined for the defects specified in 4.4.2 and 4.4.3 and shall be tested for the characteristics specified in 4.4.4.

4.4 Quality conformance inspection. Unless otherwise specified, sampling for inspection shall be in accordance with MIL-STD-105.

4.4.1 Component and material inspection. In accordance with 4.1, components and materials shall be inspected in accordance with all the requirements of referenced documents unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.

4.4.1.1 Component and material certification. Unless otherwise specified a certificate of compliance will be acceptable as evidence that the heat sealing tape conforms to the requirements specified in 3.3.5.

4.4.2 End item visual examination. The end items shall be examined for the defects listed in table IV. The lot size shall be expressed in units of parkas. The sample unit shall be one parka. The inspection level shall be II and the acceptable quality level (AQL), expressed in terms of defects per hundred units, shall be 2.5 for major defects and 15.0 for (major and minor combined) defects.

TABLE IV. End item visual defects

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>	
		<u>Major</u>	<u>Minor</u>
Material defects and damages	Any smash, multiple float or loose slub	101	
	Cut, tear, mend, burn, needle chew, or hole	102	
	Misweave, area of poor dye penetra- tion, dyestreak, broken or missing yarn, visible mend, thin place, or shade bar 1/	103	201
Cleanliness	Any spot, streak, or stain of a perma- nent nature on any portion of garment . which would be visible when parka is worn		202

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TABLE IV. End item visual defects (cont'd)

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>
		Major      Minor
Cleanliness (cont'd)	Removable spot, streak, or stain on outside of parka	203
	Thread ends not trimmed throughout parka	204
	Any holding or basting threads visible on outside of the finished parka when applicable	205
Component and assembly	Any defective component <u>1/</u>	104
	Any component part omitted	105
	Any required operation omitted or improperly performed <u>1/</u>	106
Drawcord	Any drawcord caught in hem or tunnel stitching restricting use of drawcord	107
	Any end not heat seared	208
	Any drawcord omitted	108
	Any end not knotted	209
	Any drawcord insufficient in length	109
	Any barrel lock omitted	210
	Not caught in center bartack	211
Slide fastener	Any part of slide fastener bent, broken, otherwise defective	110
	Not closing as specified	111
	Length not as specified	112
	Color not as specified	212
	Thong not as specified	213
Snap fasteners	Any part of assembly missing, mismatched, broken, cracked, bent, not securely clinched, affecting function:	
	- two or more snap fasteners	113
	- one snap fastener	214
	One or more clinched too tightly cutting surrounding fabric	114
	Loose, i.e., socket or stud spins freely or wobbles in connection portions	215
	One or more having rough or sharp edge	115

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TABLE IV. End item visual defects (cont'd)

Examine	Defect	Classification	
		Major	Minor
Wrist tabs	Missing Improperly located 1/	116 117	216
Labels	Missing, illegible, or incorrect Incorrectly placed or attached	118	217
Accuracy of seaming	Seam twisted, pleated, or puckered 1/ Part of parka caught in any unrelated operation or stitching 1/ Thread break secured by stitching back of the break less than 1/2 inch Ends of all seams and stitchings when not caught in other seams or stitching, backtacked less than 1/2 inch Color not as specified Gage of stitching not as specified Edge of seam tape less than 1/8 inch from seam allowance Seam tape lifting off fabric Visible scorching (heat degradation of fabric on the laminate) in excess of 3/16 inch width or 1/2 inch in length at any location along a taped seam	119 120 121 122 123	218 219 221 222 223
Open seams	More than 1/8 inch up to 1/4 inch More than 1/4 inch		224 124

NOTE: One or more broken or two or more continuous skipped or run-off stitches constitute an open seam. On double stitched seams, a seam is considered open when one or both sides of the seam is open. Raw edge not securely caught in stitching shall be classified as an open seam.

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TABLE IV. End item visual defects (cont'd)

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>
		Major
		Minor
Seams and stitching	Not specified seam or stitch type Missing, broken or skipped stitches <u>1/</u>	225 125      226
Stitch tension	Loose tension in any area: - more than 1 inch but not more than 2 inches - more than 2 inches Tight tension (stitches break when normal strain is applied to the seam or stitching) Missing, broken, or skipped stitches <u>1/</u>	126      227 127 128      228
Stitches per inch (to be scored only when the condition exists on major portion of the seam)	Less than minimum specified: - one stitch - two or more stitches More than maximum specified	129      229 230
Pockets and flaps	Flap attached crookedly, i.e., distance between sides of pocket and underside of opened flap vary by more than 1/4 inch Pocket or flap poorly shaped Flap not covering front or back edge of pocket by 3/16 or more	231 232 233
Heat sealed seams	Any seam tape not located as specified Any required stitching not covered by seamtape Any needle punctures that have not been repaired using heat sealing tape	234 235 236
Repairs	Any heat sealing repairs extending beyond 15 inches in length <u>1/</u> More than three repairs on any one item <u>1/</u>	130      237 131      238

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TABLE IV. End item visual defects (cont'd)

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>
		Major      Minor
Seam tape adhesion	Seam tape lifting off fabric within 3/4 inch of seam <u>1/</u> Visible scorching (heat degradation of the fabric on the laminate) in excess of 3/16 inch in width or 1/2 inch in length at any location along a taped seam. The length requirement shall not apply to the leg insert seams <u>1/</u>	132      239
Shaded part	Variation in shade within an outside part <u>1/</u> Any part required to be cut from one piece of material shade <u>1/</u>	133      240 134      241 135      242
Fronts	NOTE: Parts suspected as being shaded shall be examined at a distance of 3 feet against the background of the otherparts and colors of the garment. When the shade difference is readily discernible under these examining conditions, it shall be scored as a shaded part.	
Length of fronts	Uneven by 1/4 inch or more at bottom when fastened Uneven by 1/4 inch or more at neck when fastened	243 244
Bartacks	Bartack omitted Any bartack not in specified location, insecure, or not serving intended purpose: - more than two - two or less Any loose stitching, incomplete or broken Length or width not specified	136 137      245 246      247

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TABLE IV. End item visual defects (cont'd)

<u>Examine</u>	<u>Defect</u>	<u>Classification</u>
		Major
		Minor
Hood flap	Snaps not in locations specified	138
	Loop fasteners not in locations specified	139
	Not heat sealed	140

1/ This defect shall be scored as major when seriously affecting serviceability and as minor when affecting serviceability but not seriously.

4.4.3 End item dimensional examination. The end items shall be examined for conformance to the dimensions specified in table III. Any dimension not within the specified tolerance shall be classified as a defect. The lot size shall be expressed in units of one parka. The sample unit shall be one parka. The inspection level shall be S-3 and the AQL, expressed in terms of defects per hundred units, shall be 4.0.

4.4.4 End item testing. The end items shall be tested as specified in 4.5.1 for conformance to the leakage requirement in 3.6.2. The lot size shall be expressed in units of parkas. The sample unit shall be one parka. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 6.5 for test failures.

4.4.5 Packaging examination. The fully packaged end items shall be examined for the defects listed below. The lot size shall be expressed in units of shipping containers. The sample unit shall be one shipping container fully packaged. The inspection level shall be S-2 and the AQL, expressed in terms of defects per hundred units, shall be 2.5.

<u>Examine</u>	<u>Defect</u>
Marking (exterior and unit packs)	Omitted; incorrect; illegible; of improper size, location, sequence, or method of application.
Materials	Any component missing, damaged, or not as specified.
Workmanship	Inadequate application of components, such as: incomplete closure of container flaps, loose strapping, inadequate stapling, or improper taping. Bulged or distorted container.

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**Content**      Number of parkas per container is more or less than required. 1/  
                     Size shown on one or more parkas not as specified on shipping container. 1/

1/ For this defect, one container in the sample shall be examined.

**4.4.6 Palletization examination.** The fully packaged and palletized end items shall be examined for the defects listed below. The lot size shall be expressed in units of palletized unit loads. The sample unit shall be one palletized unit load, fully packaged. The inspection level shall be S-1 and the AQL, expressed in terms of defects per hundred units, shall be 6.5.

<u>Examine</u>	<u>Defect</u>
Finished dimension	Length, width, or height exceeds specified maximum requirement.
Palletization	Pallet pattern not as specified. Load not bonded as specified.
Weight	Exceeds maximum load limits.
Marking	Omitted; incorrect; illegible; of improper size location, sequence, or method of application.

#### **4.5 Methods of testing.**

**4.5.1 Hydrostatic resistance test.** The hydrostatic resistance of sealed seam areas of the parka shall be tested in accordance with Method 5516 of FED-STD-191, except for the following: The test may be performed on any device which tests the same specimen area at the equivalent pressure. The hydrostatic head shall be 50 cm pressure for 3 minutes. The parka shall be tested at four different locations as follows: one on hood seam, one on juncture of hood and neck seam (except pleat seam area), one on corner of left sleeve pocket, and one on straight torso seam. Evidence of leakage in one or more seam locations shall be considered a test failure.

### **5. PACKAGING**

**5.1 Preservation.** Preservation shall be level A or Commercial, as specified (see 6.2).

**5.1.1 Level A preservation.** Each parka, having all fasteners closed, shall have the arms folded down the front with the cuffs even at the waist. The parka shall then be folded across the front at the inside edge of each sleeve. The final folds shall be accomplished by folding the waist up the front to the neck and the hood folded over the waist at the neck. The folded

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parka shall have dimensions not exceeding 11 inches by 15 inches. The parka shall be placed in a close-fitting clear polyethylene bag conforming to A-A-50083 or type I or II, style 1 or 2 of PPP-B-26. The style 1 bag shall have a 1/4 inch hole located near a bottom corner to allow air to escape. As an alternate to the specified closure, a flap and reverse tuck may be used.

5.1.2 Commercial. Parkas shall be preserved in accordance with ASTM D 3951.

5.2 Packing. Packing shall be level A, B, or Commercial, as specified (see 6.2).

5.2.1 Level A packing. Twelve parkas of one size only, preserved as specified in 5.1, shall be packed within a snug-fitting fiberboard shipping container conforming to style RSC-L, class weather-resistant, grade V2s of PPP-B-636. The shipping container shall be fitted with a box liner conforming to class weather-resistant, variety DW, grade V15c of PPP-B-636. Level A unit packs shall be packed flat, two in length, one in width, and six in depth. Approximate dimensions of the container are 23 inches in length, 15 inches in width, and 15 inches in depth and are furnished as a guide only. Each shipping container shall be closed in accordance with method III, waterproofed in accordance with method V, and reinforced as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.5. Shipping containers shall be arranged in unit loads in accordance with MIL-L-35078 for the type and class of load specified (see 6.2). Strapping shall be limited to non-metallic strapping, except for type II, class F loads.

5.2.2 Level B packing. Twelve parkas of one size only, preserved as specified in 5.1, shall be packed within a snug-fitting fiberboard shipping container conforming to style RSC-L, class domestic, grade 275, variety SW of PPP-B-636. The shipping container shall be fitted with a box liner conforming to class domestic, variety DW, grade 275 of PPP-B-636. Level A unit packs shall be packed flat, two in length, one in width, and six in depth. Approximate dimensions of the container are 23 inches in length, 15 inches in width, and 15 inches in depth and are furnished as a guide only. Each shipping container shall be closed in accordance with method II as specified in the appendix of PPP-B-636, except that the inspection shall be in accordance with 4.4.5.

5.2.2.1 Weather-resistant fiberboard container. When specified (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with method III as specified in PPP-B-636, except that the inspection shall be in accordance with 4.4.5.

5.2.3 Commercial packing. Parkas of one size only, preserved as specified in 5.1, shall be packed in accordance with ASTM D 3951.

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5.3 Palletization. When specified (see 6.2), parkas packed as specified in 5.2.2 or 5.2.3, shall be palletized on a 4-way entry pallet in accordance with load type Ia of MIL-STD-147. Pallet type shall be type I (4-way entry), type IV, or type V in accordance with MIL-STD-147. Pallets shall be fabricated from wood groups, I, II, III, or IV of MIL-STD-731. Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C and D or film bonding means F or G. Pallet pattern shall be number 3 in accordance with the appendix of MIL-STD-147.

5.4 Marking. In addition to any special marking required by the contract or purchase order, unit packs, shipping containers and palletized unit loads shall be marked in accordance with MIL-STD-129 or ASTM D 3951, as applicable.

5.4.1 Polyethylene bagged unit packs. Polyethylene bagged unit packs shall have the required information legibly printed or stamped in black directly on the bag across the center face or on a white paper label inserted within the bag so as to permit ready identification. The bag or label shall indicate the following information:

Stock number  
Nomenclature  
Size  
Quantity

## 6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The parka is intended for use by members of the Department of Defense as a component of the Extended Cold Weather Clothing System.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of this specification.
- b. Size (see 1.2).
- c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. When a first article is required (see 3.1, 4.3, and 6.3).
- e. Levels of preservation and packing (see 5.1 and 5.2).
- f. Type and class of unit load required (see 5.2.1).
- g. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2).
- h. When palletization is required (see 5.3).

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6.3 First article. When a first article is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209. The first article should be a preproduction sample. The contracting officer should specify the appropriate type of first article and the number of units to be furnished. The contracting officer should also include specific instructions in acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.4 Standard samples. For access to standard samples, address the contracting activity issuing the invitation for bids or request for proposal.

6.5 Alternative seam tape set-up procedures. As with any seam tape, it is always best to consult the seam tape manufacturer for recommended settings depending on the type of taping machine utilized. However, it has been determined that the following set-up procedures offer the best results for taping the polyolefin based material with the alternative tape:

Set the seam tape machine nozzle as close to 1/16 inch and as evenly aligned as possible to the edges of the seam tape without touching the adhesive layer. Adjust the heat setting and run at the desired roller speed without exceeding 20 feet per minute. Place an unseamed sample of optional material face down into the rollers. Set the roller pressure so as to create a positive feed with no slippage. While bonding the tape onto the material knit backing, adjust the nozzle air pressure such that only the fabric knit backing is scorched within a 3/8 to 5/8 inch center area relative to heat reflected off the tape. This condition can be achieved using a very low nozzle pressure. Under no circumstances may the optional material knit backing be scorched a full 1 inch width or leakage will occur. Also, any change in heat setting versus roller speed will create varying reflected heat scorching patterns. Therefore, the nozzle pressure should be changed. Record the settings to achieve the correct reflected scorching pattern.

6.6 Subject term (key word) listing.

ECWCS  
Garment  
Outerwear  
Wet/dry

6.7 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue, due to the extensiveness of the changes.

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Custodians:

Army - GL  
Navy - NU

Review activities:

Army - MD  
Navy - MC  
DLA - CT

Preparing activity:

Army - GL  
(Project 8415-0777)

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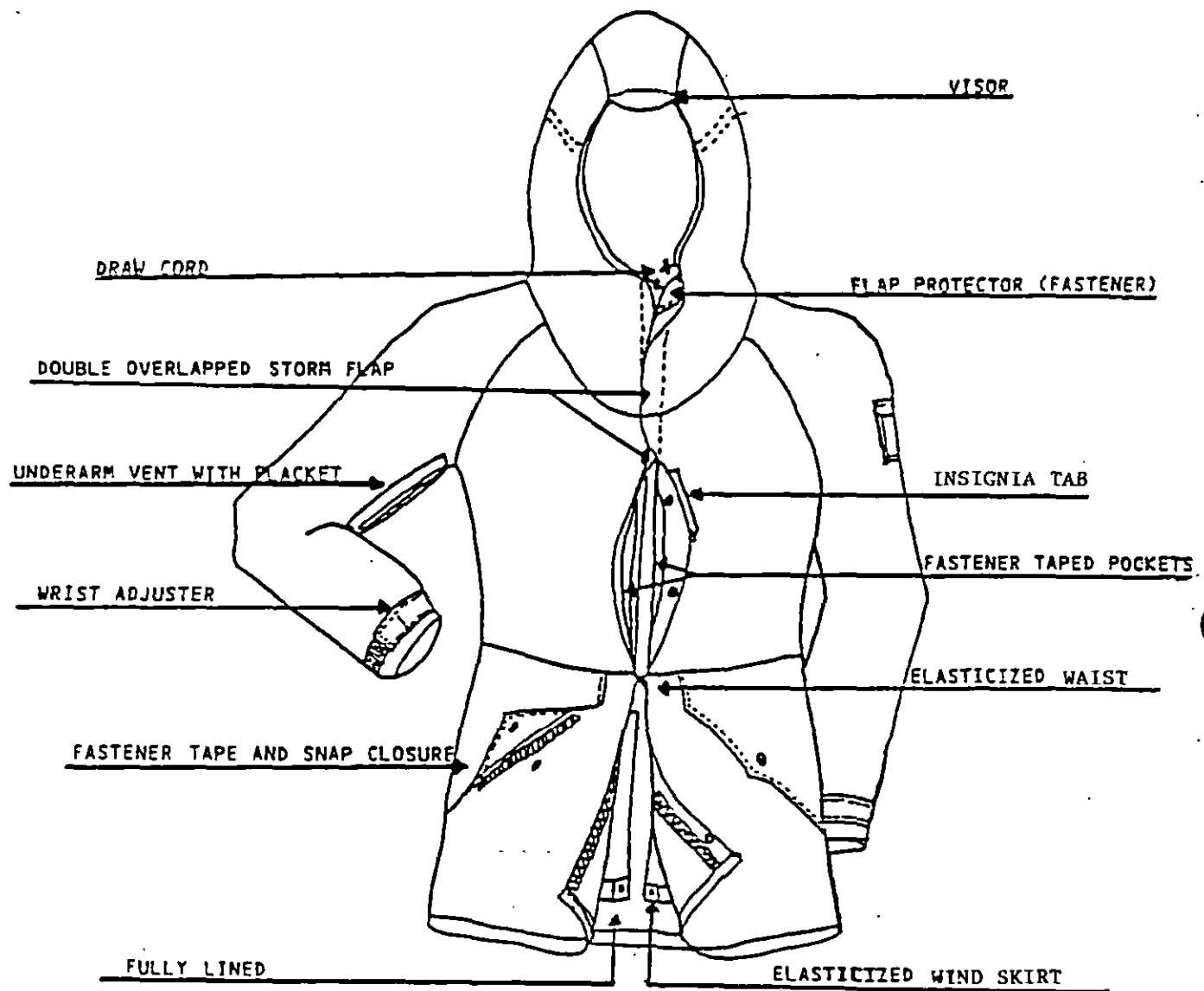


Figure 1: Parka, Cold Weather, Camouflage

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

**NOTE:** This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

<b>I RECOMMEND A CHANGE:</b>		1. DOCUMENT NUMBER MIL-P-44188C	2. DOCUMENT DATE (YYMMDD) 1991 June 12
3. DOCUMENT TITLE PARKA, COLD WEATHER, CAMOUFLAGE			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER		7. PREPARING ACTIVITY	
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (If applicable)	e. DATE SUBMITTED (YYMMDD)
B. PREPARING ACTIVITY		b. TELEPHONE (Include Area Code) (1) Commercial 508-551-4532 (2) AUTOVON 256-4532	
d. ADDRESS (Include Zip Code) Commander, U.S. Army Natick RD&E Center ATTN: STRNC-IRT Natick, MA 01760-5019		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	