

**TM 9-4940-452-14&P**

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**TECHNICAL MANUAL**

**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND  
GENERAL SUPPORT MAINTENANCE MANUAL  
INCLUDING REPAIR PARTS LIST**

**F O R**

**SPRAY GUN, PAINT  
MODEL 9700-A  
(METALCRAFT, INC.)  
(NSN 4940-00-261-8413)**

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**HEADQUARTERS, DEPARTMENT OF THE ARMY**

**APRIL 1980**



Technical Manual

NO. 9-4940-452-14&P



HEADQUARTERS  
DEPARTMENT OF THE ARMY  
WASHINGTON, DC, 28 April 1980

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(METALCRAFT, INC.)  
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**REPORTING OF ERRORS**

You can help improve this manual. If you find any mistakes or know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2, located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished direct to you.

**NOTE**

This manual is published for the purpose of identifying an authorized commercial manual for the use of the personnel to whom this spray gun is issued.

Manufactured by: Metalcraft, Inc.  
718 Debelius Avenue  
Baltimore, Maryland 21205

Procured under Contract No: DAAA09-77-C-6242

This technical manual is an authentication of the manufacturer's commercial literature and does not conform with the format and content specified in AR 310-3, Military Publications. This technical manual does, however, contain available information that is essential to the operation and maintenance of the equipment.



## INSTRUCTIONS FOR REQUISITIONING PARTS

### NOT IDENTIFIED BY NSN

When requisitioning parts not identified by National Stock Number, it is mandatory that the following information be furnished the supply officer.

- 1 - Manufacturer's Federal Supply Code Number - 06535
- 2 - Manufacturer's Part Number exactly as listed herein.
- 3 - Nomenclature exactly as listed herein, including dimensions, if necessary.
- 4 - Manufacturer's Model Number - Model 9700-A
- 5 - Manufacturer's Serial Number (End Item)
- 6 - Any other information such as Type, Frame Number, and Electrical Characteristics, if applicable.
- 7 - If DD Form 1348 is used, fill in all blocks except 4, 5, 6, and Remarks field in accordance with AR 725-50.

Complete Form as Follows:

- (a) In blocks 4, 5, 6, list manufacturer's Federal Supply Code Number - 06535 followed by a colon and manufacturer's Part Number for the repair part.
- (b) Complete Remarks field as follows:  
Noun: (nomenclature of repair part) SPRAY GUN, PAINT  
For: NSN: 4940-00-261-8413  
Manufacturer: Metalcraft, Inc.

Model: 9700-A  
Serial: (of end item) N/A

Any other pertinent information such as Frame Number,  
Type, Dimensions, etc.



# OPERATING AND MAINTENANCE INSTRUCTIONS PRODUCTION HEAVY DUTY SPRAY GUN

MODEL - B-9700-A-----FSN: 4940-261-8413

## DESCRIPTION

Model B-9700-A is a Pressure-Feed Spray Gun, designed for use with 2-60 Gallon capacity Pressure Feed Tanks and Pressure Cups.

| Model No. | TYPE          | NSN              | AIR CONSUMPTION    | SPECIFICATION AND TYPE |
|-----------|---------------|------------------|--------------------|------------------------|
| B-9700-A  | Pressure Feed | 4940-00-261-8413 | 7-8CFM @ 50-60PSIG | MIL-S-12877E<br>Type I |

Service Replacement parts are shown on Page 5

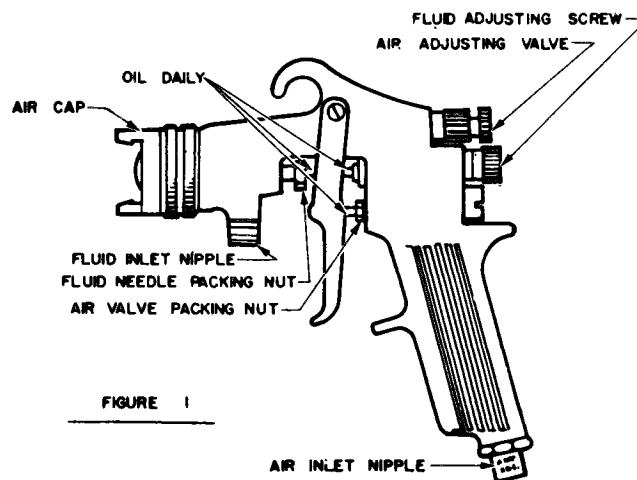


FIGURE 1

## OPERATIONS

### CONNECTIONS:

When used with a Siphon Feed Cup, attach the gun to the Fluid Inlet Nipple and connect the Air Hose to the Air Inlet Nipple (see Fig. 1). When used with a Pressure Feed Tank, Air Hose and Fluid Hose both are required to connect the Spray Gun to the Tank. The Fluid Hose is Black, the Air Hose is Red. Attach one end of the Fluid Hose to the Fluid Outlet on the Pressure Tank and the other end of the Fluid Hose to the Fluid Inlet Nipple on the Spray Gun. Attach one end of the Air Hose to the Air Outlet Valve on the Pressure Tank and connect the other end of the Air Hose to the Air Inlet Nipple of the Spray Gun (Fig. 1).

**Note:** It is recommended Air Hose of not less than 5/16 I.D. and Fluid Hose of not less than 3/8 I.D. be used. Never use too small of Air Hose as this will starve the Spray Gun due to the excessive Pressure Drop in the Atomizing Air Pressure.

## OPERATIONS

### GENERAL:

The first step of Spray Gun operation is the adjustment of the Spray for uniformity over the desired width, too much Air Pressure, i. e., too much atomizing Air Pressure at the Nozzle for the particular material being used will thin out the center of the spray pattern. It will cause excessive atomization or vapor about the main body of the spray. This condition can be controlled by lowering either Air Pressure at the Air Separator or adjusting the Regulator on top of the Pressure Tank or by properly setting the Air Adjustment Valve. An insufficient Air Pressure, i. e., too little air pressure at the Spray Gun Nozzle for the particular material to be used causes a spatter effect, the material covering the surfaces in small beads, drops or dots. This condition is controlled by increasing the Air Pressure at the Air Separator or at the Pressure Tank.

The width of the Spray is controlled by the Air Adjustment Valve (Fig. 1). Turn the Air Adjustment Valve clockwise to decrease the spray, counter clockwise to increase the spray. To produce a round spray pattern or spot, close the Air Adjustment Valve.

The amount of material flow is controlled by the fluid Adjustment Screw (Fig. 1). Turn Adjusting Screw to the right to decrease the amount of Fluid flow and to the left to increase it.

With certain materials, too wide a spray adjustment will cause the spray pattern to split, i. e., the pattern becomes thin in the center and heavy at the ends, when this occurs, reduce the width of the spray.

Excessive material flow for the speed of stroke will cause runs or sags on the surface. Regulate the fluid flow to your speed of stroke.

The atomizing air pressure passing into the Spray Gun Nozzle is regulated to meet varying conditions of size of Gun Nozzle, weight or viscosity of paint, the material of the surfaces to be sprayed and the desired speed of gun operation. The atomization pressure will range from 20 to 80 pounds. Although for average materials and conditions, pressure from 40 to 60 pounds will be most satisfactory. Always use the lowest pressure that will give the desired results. A little experience will teach the Operator the most satisfactory pressures for the materials used.

Materials should be stirred thoroughly and reduced according to manufacturer's instructions; then strained into material container through cheese cloth or wire screen of such mesh or gauge as to remove all lumps, skins, etc. The straining of all material before introduction into the material container is of utmost importance, as it will prevent the consequent obstruction of spray gun passages.

A short practice period, using a cardboard, wood or metal surface is recommended so as to become familiar with the adjustments and operation of the spray gun. Do not attempt to operate the spray gun too rapidly at first. Learn to adjust and handle it and speed will follow.

The stroke is made with a free arm motion, keeping the gun body perpendicular to, and from an equal distance from the surface at all points of the stroke. Keep the gun 6 to 8 inches from the surface to be sprayed and move it across the surface with steady, even strokes.



## MAINTENANCE

### LUBRICATION

#### DO NOT IMMERSE GUN IN SOLVENTS — THIS DESTROYS LUBRICANTS.

Proper lubrication of the spray gun is essential to assure continued perfect operation.

**LUBRICATE DAILY** all bearing surfaces and moving parts with a light oil. The points of lubrication, refer to SPRAY GUN ASSEMBLY SECTIONAL DRAWING and see also Figure 1, required are: (A) the front and rear bearing surfaces of FLUID NEEDLE Item 22 (B) bearing surface of AIR VALVE STEM Item 8.

Occasional oiling applied to the threads on AIR ADJUSTING VALVE Item 4 and FLUID NEEDLE ADJUSTING SCREW Item 5 is recommended to maintain the smooth easy adjusting action.

Fluid Needle Spring Item 6 in fluid adjusting mechanism should be kept coated with a covering of light grease or vaseline.

Fluid Needle Packing and Air Valve Stem Packing Item 9 should be removed occasionally and inspected. Keep packing soft by occasional lubrication.

### CARE AND CLEANING

Spray Gun troubles are usually caused by neglect or improper cleaning.

Keep Gun lubricated.

Keep Packing Nuts around Fluid Needle and Air Valve Stem tight. Do not tighten so securely that parts cannot move freely.

Keep Gun clean. It is not necessary to take spray gun apart to clean it. Spray clean solvent through gun and wash off outside with clean solvent.

Do not allow Gun to get so dirty that soaking of complete gun becomes necessary.

Do not use caustic alkaline solutions for cleaning as they destroy aluminum alloy.

An unbalanced or distorted spray indicates a dirty air cap. Remove Air Cap and wash thoroughly in clean solvent. If reaming of air cap holes is necessary, use match stick, broom bristle or other soft implement. Never use a hard or sharp instrument for this purpose, as it may permanently damage the cap.

Do not remove spray gun parts unless absolutely necessary.

Check condition of gaskets when removing parts which seal on gasket.

Always make certain the Fluid Nozzle is securely tightened when replacing. The Fluid Nozzle size is 1" Hex.

## TROUBLESHOOTING CHART

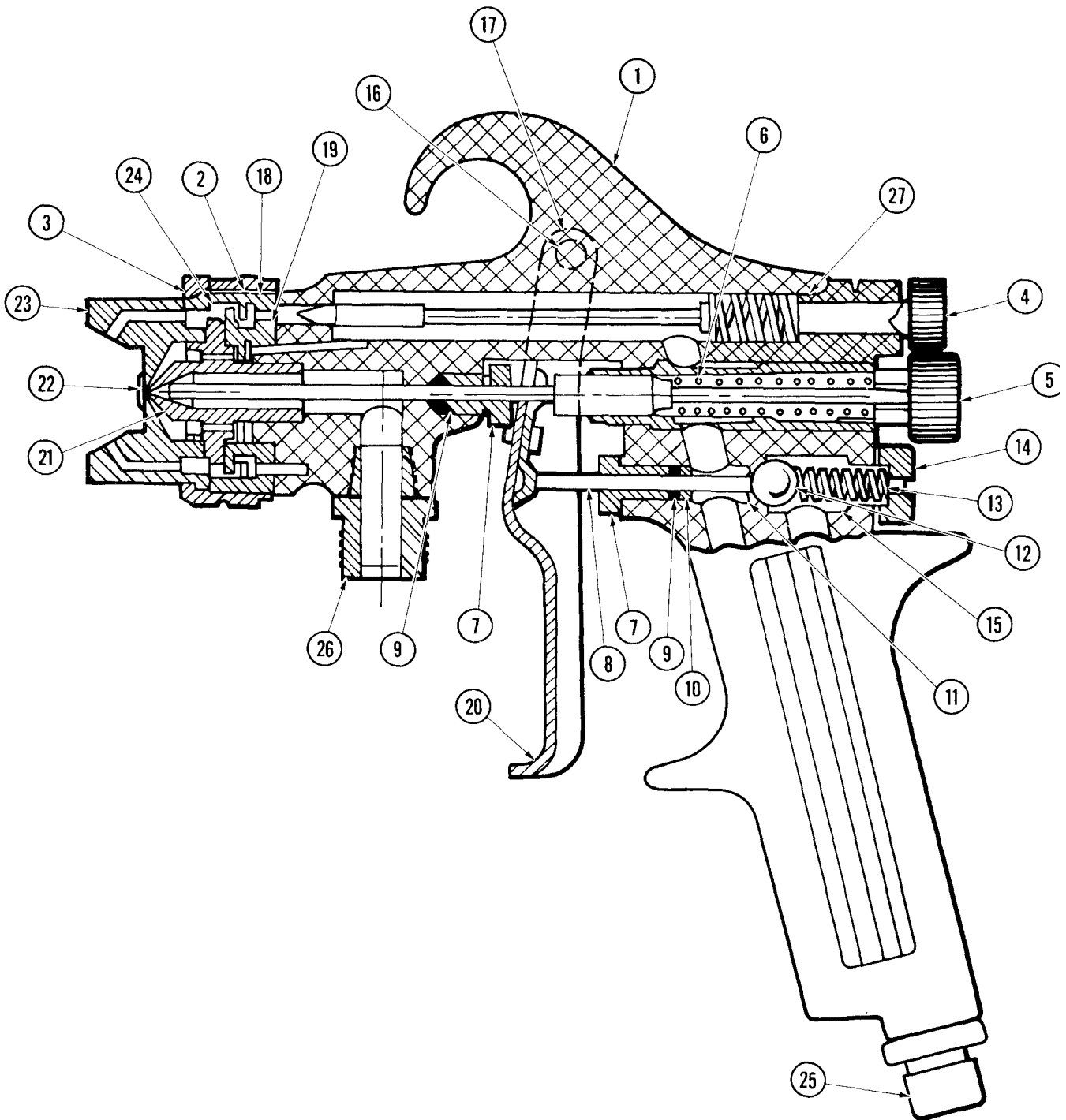
Most troubles may be avoided by thoroughly cleaning equipment after use.

| TROUBLE  | POSSIBLE CAUSE   | REMEDY  |
|--|--|---|
| <b>SPRAY</b>   |  |   |
| Jerky, Spitting or Fluttering                          | General Cause -- Air leakage into fluid line.<br>Loose fluid tip or mutilated gasket<br>Loose packing nut or dry packing<br>Loose fluid tube in cup or tank.<br>Clogged vent hole in suction cup lid | Tighten fluid tip. Replace gasket.<br>Tighten nut. Oil packing.<br>Tighten fluid tube.<br><br>Clean out vent hole.  |
| Excessive Vapor  | Too much atomizing air pressure for the amount and weight of material  | Reduce atomizing air pressure or increase flow of material  |
| Spattered  | Too much material for the amount of air pressure at the spray gun nozzle or dirty air cap  | Increase atomizing air pressure or decrease flow of material to spray gun nozzle. Clean air cap.  |
| Unbalanced   | Dried paint or dirt in center orifice or air jet holes in air cap  | Clean air cap as instructed under Care and Cleaning.  |
| Split  | Too much atomizing air pressure or too wide spray  | Reduce air pressure or lower setting of air adjustment valve  |
| Too Small  | Too little fluid pressure<br>Dirty holes in air cap<br>Too low setting of air adjustment valve<br>Lumpy material   | Increase fluid pressure<br>Clean air cap<br><br>Increase setting.<br>Strain material and clean spray gun and hose line.   |
| <b>SPRAY GUN</b>                                       |  |   |
| Fluid Leakage from Spray Gun Nozzle                    | General Cause -- Improper seating of fluid needle.<br>Fluid needle packing nut too tight.<br>Lumpy Material<br><br>An accumulation of dried material on inside of fluid tip<br><br>Bent fluid needle | Loosen packing nut slightly.<br>Strain material. Clean gun and hose.<br>Remove fluid tip and immerse in solvent. Blow out with compressed air.<br>Straighten or replace needle. |
| Air Leakage from Spray Gun Nozzle                      | General Cause -- Improper seating of air valve.<br>Dirt, lack of oil or wear   | Oil valve stem, remove and clean or replace valve.  |
| Air Leakage from Oil Hole in Rear of Gun               | Dry trigger control piston leather   | Oil (See Lubrication)   |
| Fluid Leakage from Fluid Needle Packing Nut            | Loose fluid needle packing nut<br>Dried packing  | Tighten packing nut.<br>Restore packing with a few drops of oil or replace it.  |
| Failure of Fluid Adjusting Screw to Control Fluid Flow | Improper assembly of parts   | See Precautions for Removing or Replacing Parts.  |

REPAIR PARTS  
SEE PAGE 6 FOR REPAIR PARTS DIAGRAM.

| ITEM<br>NUMBER | DESCRIPTION                        | MODEL<br>B-9700-A<br>PART NO. |
|----------------|------------------------------------|-------------------------------|
| 1              | SPRAY GUN BODY                     | B-101                         |
| 2              | THREAD AND BAFFLE ASSEMBLY         | B-102                         |
| 3              | ATOMIZER HEAD LOCKNUT              | B-103                         |
| 4              | AIR ADJUSTING VALVE ASSEMBLY       | B-104                         |
| 5              | FLUID NEEDLE VALVE ADJUSTING SCREW | B-117                         |
| 6              | FLUID NEEDLE SPRING                | B-118                         |
| 7              | PACKING NUT                        | B-119                         |
| 8              | AIR VALVE STEM                     | B-120                         |
| 9              | PAKING WASHER                      | B-122                         |
| 10             | AIR VALVE GLAND                    | B-123                         |
| 11             | AIR VALVE SEAT                     | B-124                         |
| 12             | AIR VALVE BALL                     | B-125                         |
| 13             | AIR VALVE SPRING                   | B-126                         |
| 14             | AIR VALVE CAP                      | B-127                         |
| 15             | AIR VALVE GASKET                   | B-128                         |
| 16             | TRIGGER PIN                        | B-133                         |
| 17             | TRIGGER SCREW                      | B-134                         |
| 18             | GASKET                             | B-139                         |
| 19             | GASKET                             | B-140                         |
| 20             | TRIGGER ASSEMBLY                   | B-148                         |
| 21             | FLUID NOZZLE                       | B-153                         |
| 22             | FLUID NEEDLE                       | B-155                         |
| 23             | ATOMIZER HEAD                      | B-618                         |
| 24             | O RING                             | 267-SL-220                    |
| 25             | AIR SPUD                           | 268-163                       |
| 26             | FLUID SPUD                         | 268-165                       |
| 27             | O RING                             |                               |

WHEN ORDERING REPAIR PARTS, SPECIFY PART NUMBER AND NAME OF PART



By Order of the Secretary of the Army:

**Official:**

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Callouts for trigger screw (17) and air spud (25)  
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NSN 4940-00-261-8431 should be NSN 4940-00-261-8413

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