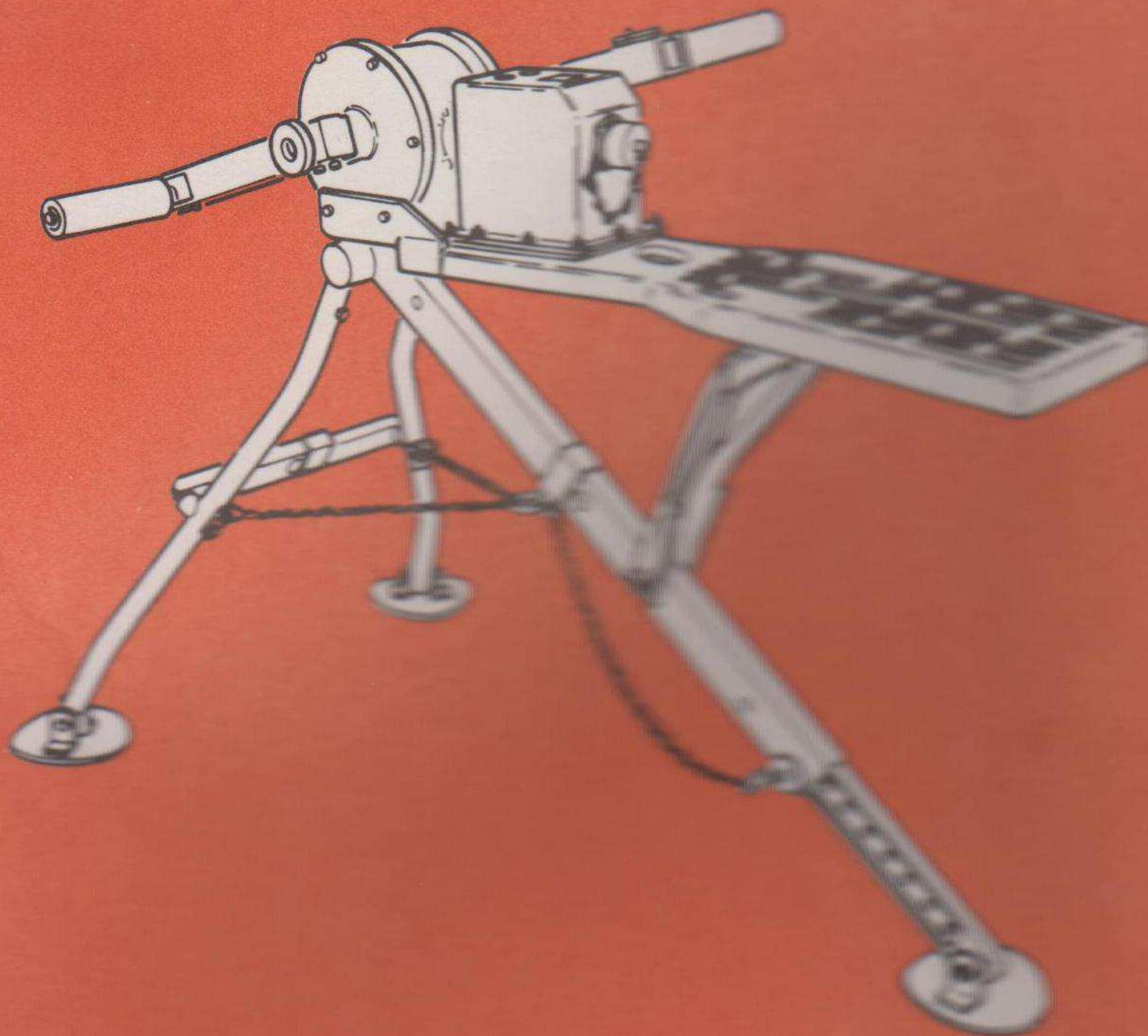


OPERATOR'S MANUAL



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DESCRIPTION
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INDICATORS
PAGE 2-1

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OPERATION
PAGE 2-7

TROUBLE
SHOOTING
PAGE 3-0

DIRECT CURRENT GENERATOR G-76/G
(NSN 6115-01-082-8107)

DIRECT CURRENT GENERATOR G-76/G (V) 1

DIRECT CURRENT GENERATOR G-76/G (V) 2

HEADQUARTERS, DEPARTMENT OF THE ARMY
AUGUST 1981

WARNING

- Adequate ventilation should be provided while using TRICHLOROTRIFLUOROETHANE. Prolonged breathing of vapor should be avoided. The solvent should not be used near heat or open flame; the products of decomposition are toxic and irritating. Since TRICHLOROTRIFLUOROETHANE dissolves natural oils, prolonged contact with skin should be avoided. When necessary, use gloves which the solvent cannot penetrate. If the solvent is taken internally, consult a physician immediately.
- Electrical shock may result if personnel fail to observe safety precautions.
- Do not touch contacts of the generator when it is being cranked.
- Do not touch contacts of a cable when it is plugged into a generator being operated.
- Do not touch contacts of any charged battery or one being charged by this equipment.

**5**

SAFETY STEPS TO FOLLOW IF SOMEONE
IS THE VICTIM OF ELECTRICAL SHOCK

1

DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

2

IF POSSIBLE , TURN OFF THE ELECTRICAL POWER

3

IF YOU CANNOT TURN OFF THE ELECTRICAL
POWER, PULL, PUSH, OR LIFT THE PERSON TO
SAFETY USING A WOODEN POLE OR A ROPE OR
SOME OTHER INSULATING MATERIAL

4

SEND FOR HELP AS SOON AS POSSIBLE

5

AFTER THE INJURED PERSON IS FREE OF
CONTACT WITH THE SOURCE OF ELECTRICAL
SHOCK, MOVE THE PERSON A SHORT DISTANCE
AWAY AND IMMEDIATELY START ARTIFICIAL
RESUSCITATION

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 12 August 1981

Operator's Manual

DIRECT CURRENT GENERATOR G-76/G
(NSN 6115-01-082-8107)

DIRECT CURRENT GENERATOR G-76/G (V) 1

DIRECT CURRENT GENERATOR G-76/G (V) 2

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you 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 U.S. Army Communications - Electronics Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, New Jersey 07703. A reply will be furnished to you.

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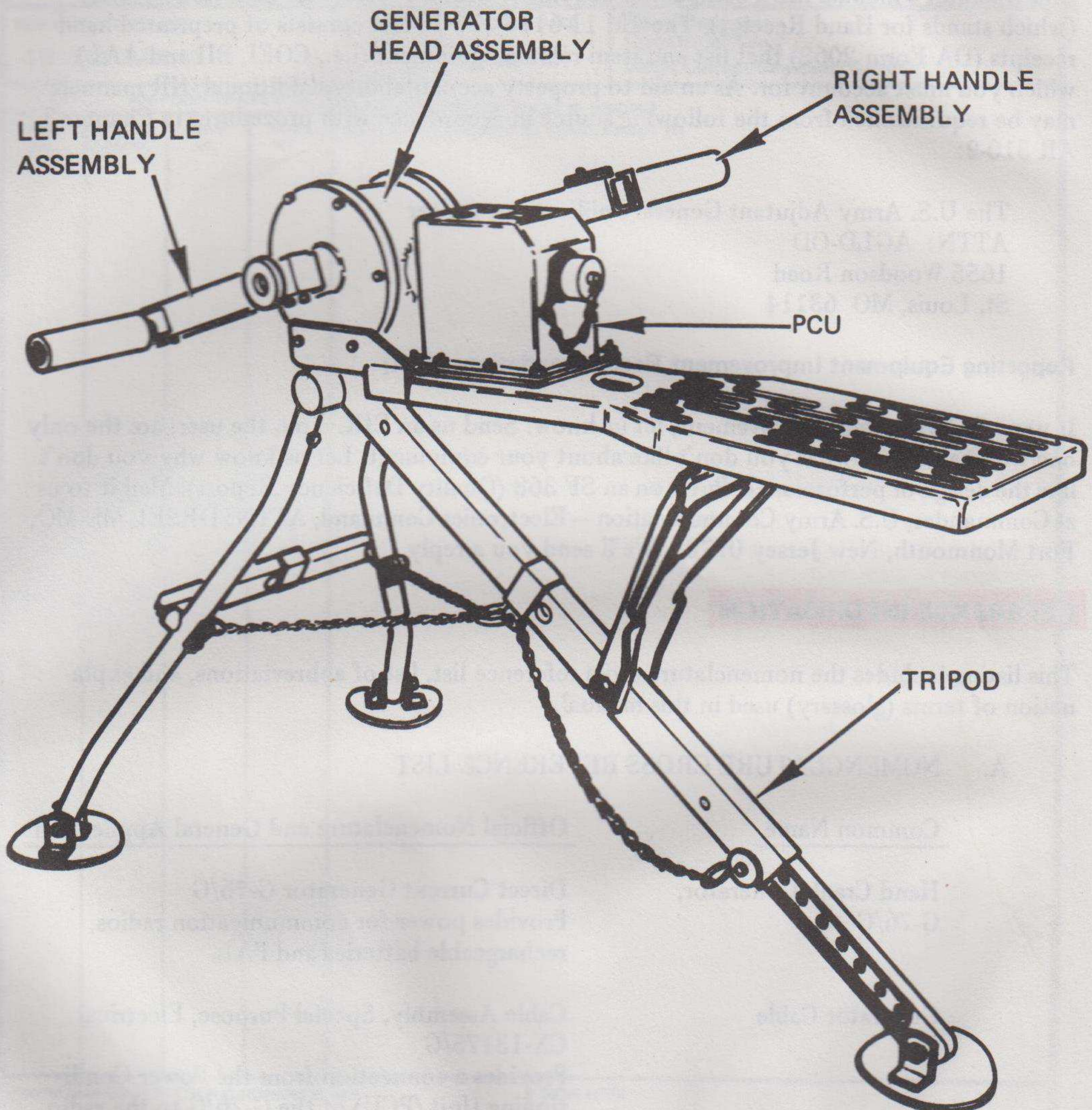
HOW TO USE THIS MANUAL

THE MANUAL COVER AND EDGE-MARKED PAGES PROVIDE A RAPID WAY OF IDENTIFYING THE MOST OFTEN USED PORTIONS OF THE MANUAL. THIS IS IN ADDITION TO A COMPLETE TABLE OF CONTENTS FOLLOWING THE TITLE PAGE.

THIS MANUAL GIVES YOU ALL THE NECESSARY INFORMATION YOU NEED TO OPERATE THE DIRECT CURRENT GENERATOR G-76/G.

CHAPTER 1 INTRODUCTION

SECTION I GENERAL INFORMATION



SCOPE

The purpose of this manual is to tell you how to operate and maintain the Direct Current Generator G-76/G. It covers the operation and preventive maintenance of the G-76/G and contains detailed set-up, care and cleaning procedures and checks. The G-76/G was developed to power field communications radios, Permissive Action Links (PAL) and to charge standard field batteries at outstations and command posts.

Maintenance Forms and Records

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by TM 38-750, The Army Maintenance Management System (TAMMS).

Hand Receipt (-HR) Manuals

This operator's manual has a companion document with a TM number followed by -HR (which stands for Hand Receipt). The TM 11-6115-470-10-HR consists of preprinted hand receipts (DA Form 2062) that list end item related equipment (i.e., COEI, BII and AAL) which you must account for. As an aid to property accountability, additional -HR manuals may be requisitioned from the following source in accordance with procedures in Chapter 3, AR 310-2:

The U.S. Army Adjutant General Publications Center
 ATTN: AGLD-OD
 1655 Woodson Road
 St. Louis, MO 63114

Reporting Equipment Improvement Recommendations (EIR)

If your G-76/G needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at Commander, U.S. Army Communication – Electronics Command, ATTN: DRSEL-ME-MQ, Fort Monmouth, New Jersey 07703. We'll send you a reply.

REFERENCE INFORMATION

This listing includes the nomenclature cross reference list, list of abbreviations, and explanation of terms (glossary) used in this manual.

A. NOMENCLATURE CROSS REFERENCE LIST

<u>Common Name</u>	<u>Official Nomenclature and General Application</u>
Hand Crank Generator, G-76/G	Direct Current Generator G-76/G Provides power for communication radios, rechargeable batteries and PAL.
Generator Cable	Cable Assembly, Special Purpose, Electrical CX-13175/G Provides a connection from the Power Condi- tioning Unit (PCU) of the G-76/G to the radio cable or to rechargeable batteries.
Radio Cable	Cable Assembly, Special Purpose, Electrical CX-13176/G Provides a direct connection from the generator cable to the communication radios.

A. NOMENCLATURE CROSS REFERENCE LIST – Continued

<u>Common Name</u>	<u>Official Nomenclature and General Application</u>
PAL Adapter	Adapter, Connector MX-2122/G Provides a connection from the PCU to the CT1478 cable that is used with the Permissive Action Links (PAL) T1533/T1554.
Foot Pads	Cover Assembly, Plate, Nonskid Covers the metal feet on the tripod to retard sliding over hard floors.
Generator Bag	Carrying Bag Provides a compact carrying case for the G-76/G and accessory equipment.

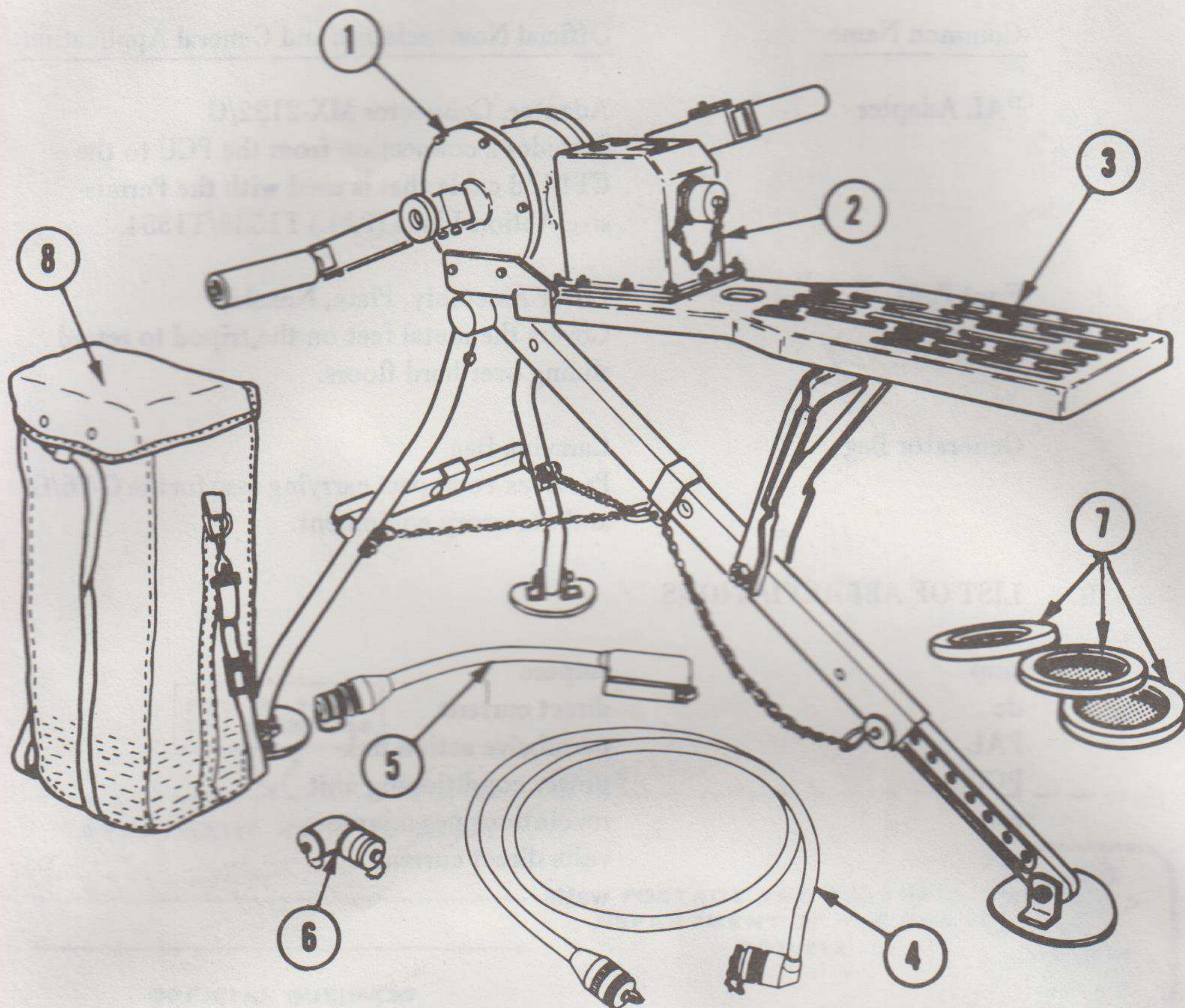
B. LIST OF ABBREVIATIONS

amp	ampere
dc	direct current
PAL	permissive action link
PCU	power conditioning unit
rpm	revolutions per minute
vdc	volts direct current
w	watts

PURPOSE, CAPABILITIES AND FEATURES OF THE G-76/G

The Direct Current Generator G-76/G is a lightweight, parachute deliverable, hand-cranked generator used in the field to directly power the AN/PRC-70 and the AN/PSC-1 communication radios. The generator is EMI qualified and capable of charging 24 volt nickel-cadmium batteries such as the BB-542/U. The G-76/G can indirectly power the AN/PRC-70 and the AN/PSC-1 thru the BB-542/U input plug. The nuclear hardened generator is also capable of charging the PAL T1533/T1554 used with the XM753 nuclear projectile. By varying the cranking speed, the operator can maintain or adjust the power production rate over a range of temperatures. The equipment in its folded configuration can be transported in a carrying bag by one man. The device, unfolded, can be operated in all kinds of weather and terrain and can be installed at fixed sites such as field headquarters and command posts.

Location and Description of Major Components



Hand Crank Generator, G-76/G provides power for communications radios, for PAL's and power to charge batteries.

GENERATOR HEAD AND HANDLE ASSEMBLY (1). Contains the alternator, harmonic drive and two hand cranks to generate power.

POWER CONDITIONING UNIT (2). The PCU contains two indicator lights and the power regulating circuitry.

TRIPOD (3). The stand assembly consists of three legs, an operator's seat and provides a mounting platform for the generator and PCU.

GENERATOR CABLE CX-13175/G (4). Provides a connection from the PCU to the radio cable or the BB-542/U battery.

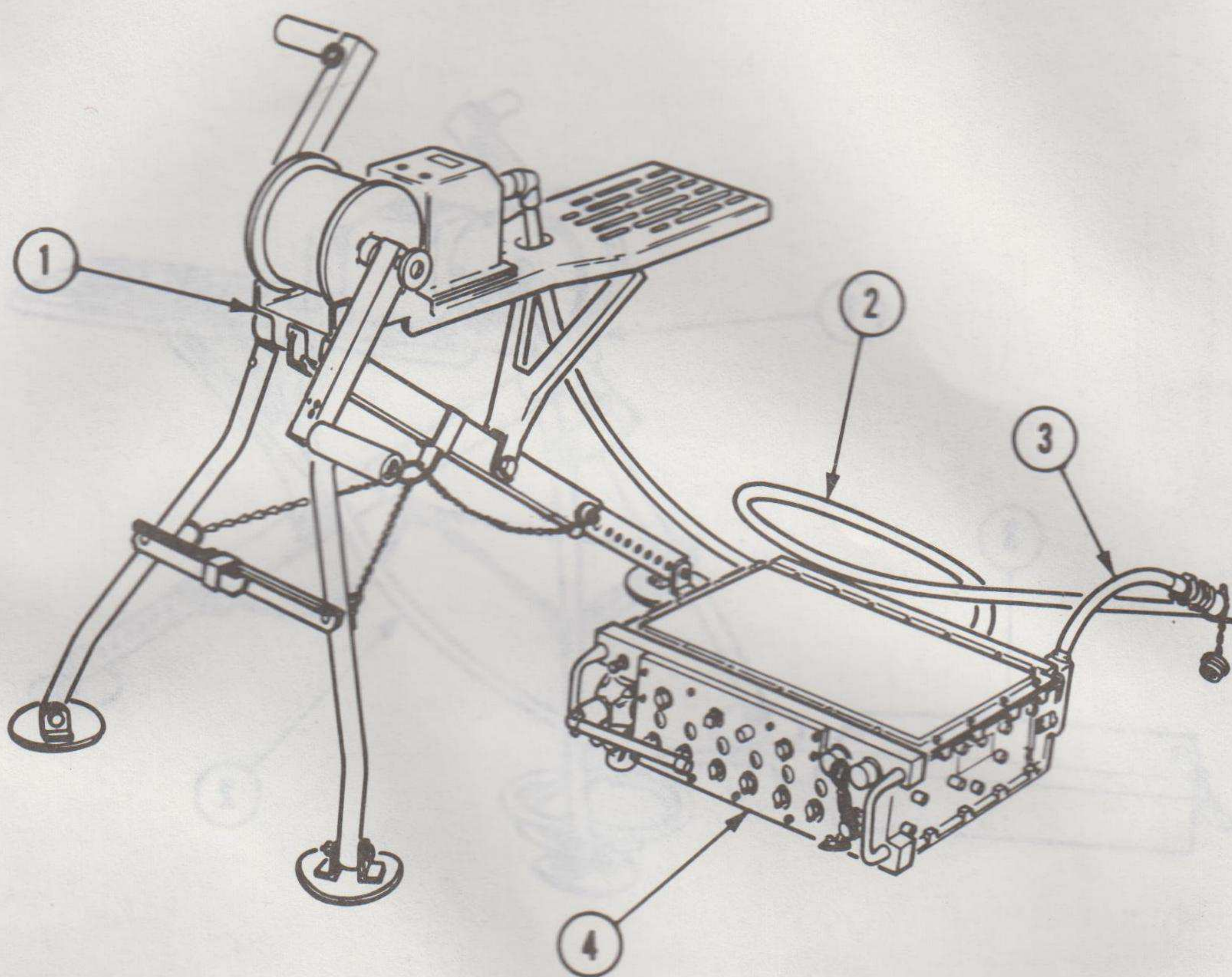
RADIO CABLE CX-13176/G (5). Provides a connection from the generator cable to the PRC-70 or PSC-1 radio.

PAL ADAPTER (6). Provides a connection from the PCU to the CT1478 cable that is used with the Permissive Action Links (PAL) T1533/T1554.

FOOT PADS (7). Covers the metal feet on the tripod to retard sliding over hard floors.

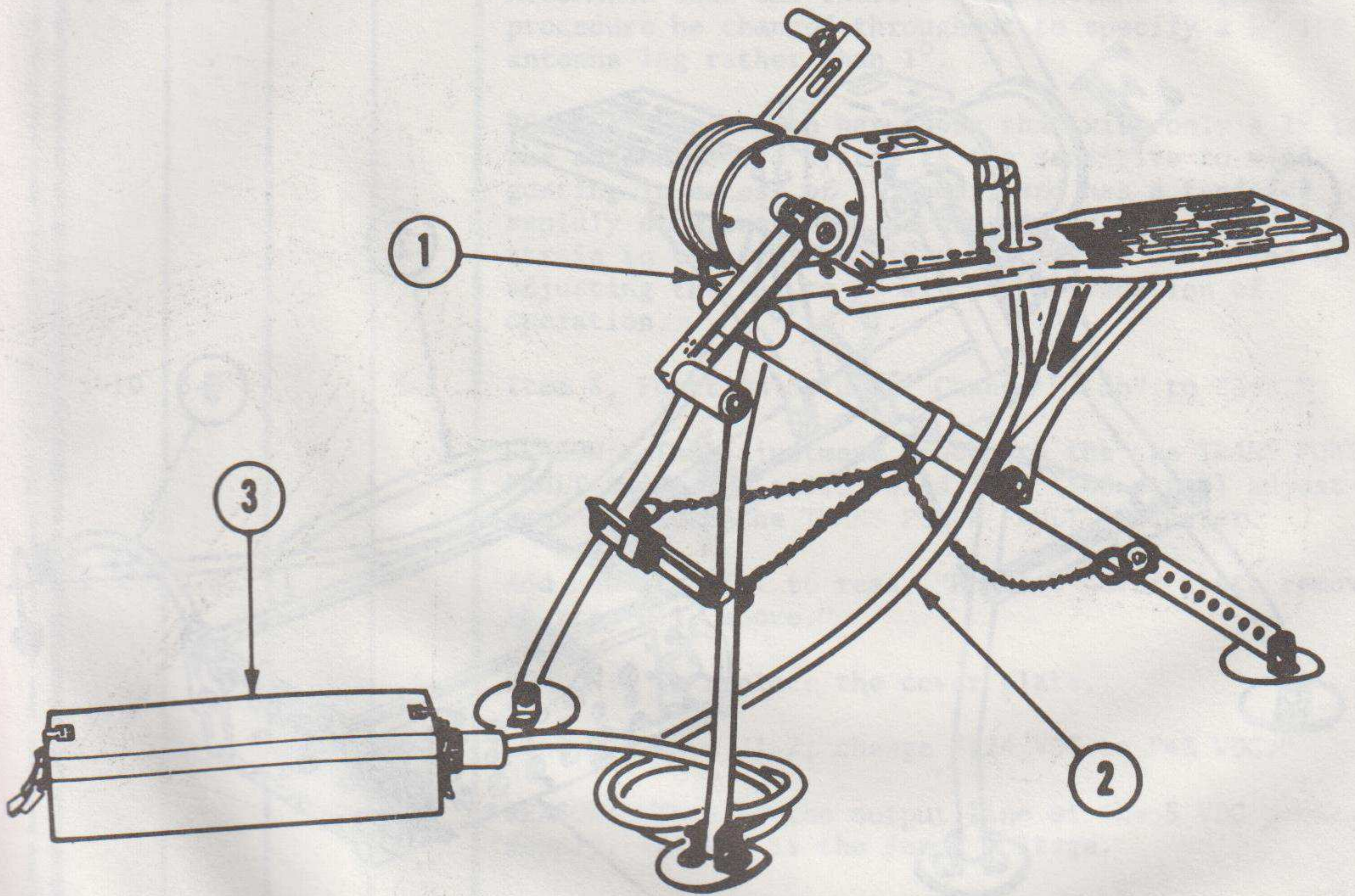
GENERATOR BAG (8). Is a canvas bag with shoulder and leg straps to carry the G-76/G and accessory equipment.

G-76/G to AN/PRC-70 or AN/PSC-1 Radio Connection



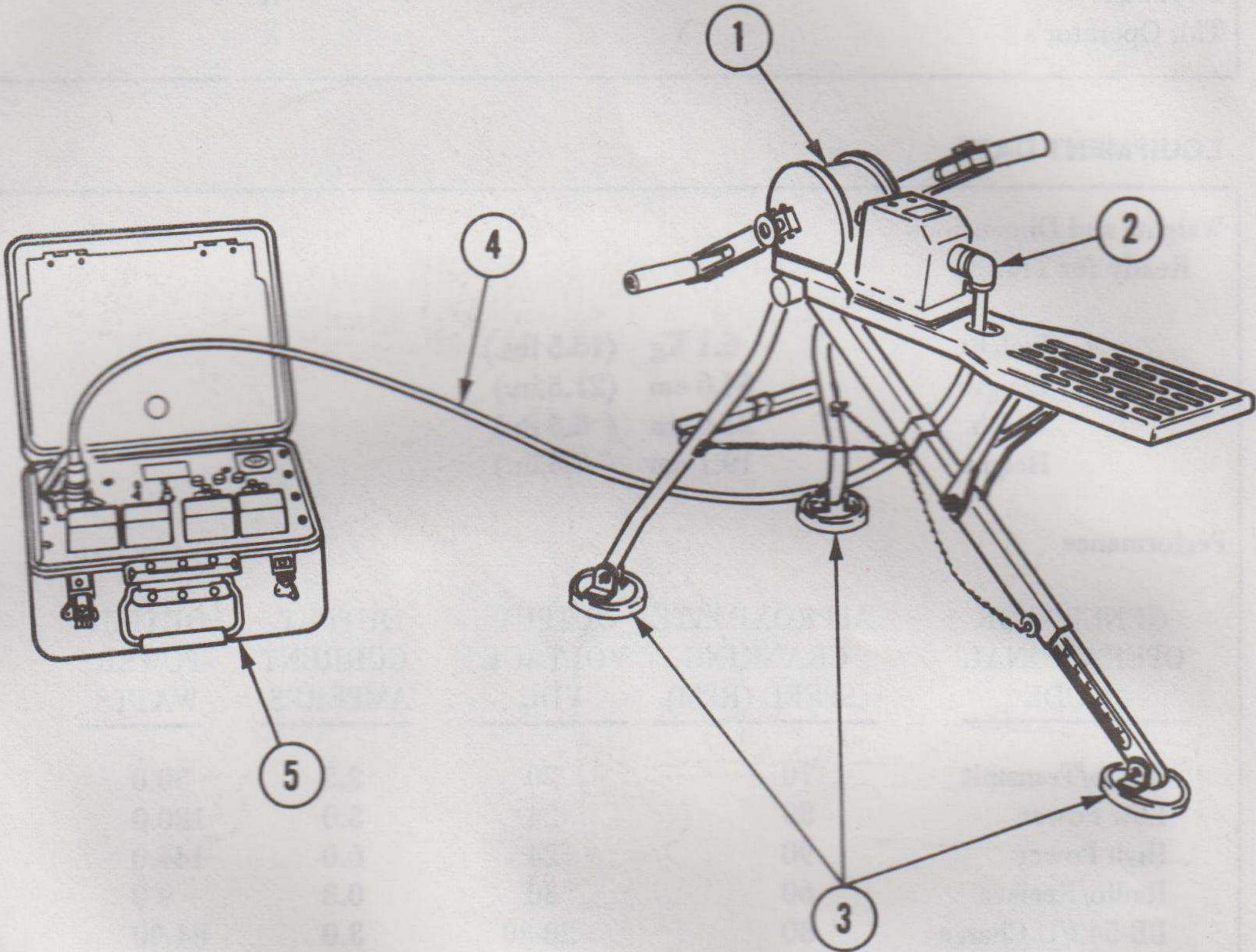
- G-76/G (1)
- Generator Cable CX-13175/G (2)
- Radio Cable CX-13176/G (3)
- Field Radio, AN/PRC-70 or AN/PSC-1 (4)

G-76/G to BB-542/U Battery Connection



- G-76/G (1)
- Generator Cable CX-13175/G (2)
- BB-542/U Battery (3)

G-76/G to PAL T1533/T1554 Connection



- G-76/G (1)
- PAL Adapter MX-2122/G (2)
- Foot Pads (3)
- CT1478 Cable (4)
- PAL T1533/T1554 (5)

DIFFERENCES BETWEEN G-76/G APPLICATIONS

	<u>G-76/G (V) 1</u>	<u>G-76/G (V) 2</u>
Generator G-76/G	X	X
Carrying Bag	X	X
Generator Cable CX-13175/G	X	
Radio Cable CX-13176/G	X	
PAL Adapter MX-2122/G		X
Foot Pads		X
TM, Operator's	X	X

EQUIPMENT DATA

**Weights and Dimensions
Ready for Travel**

Weight	6.1 Kg (13.5 lbs.)
Length	54.6 cm (21.5 in.)
Width	21.6 cm (8.5 in.)
Height	19.1 cm (7.5 in.)

Performance

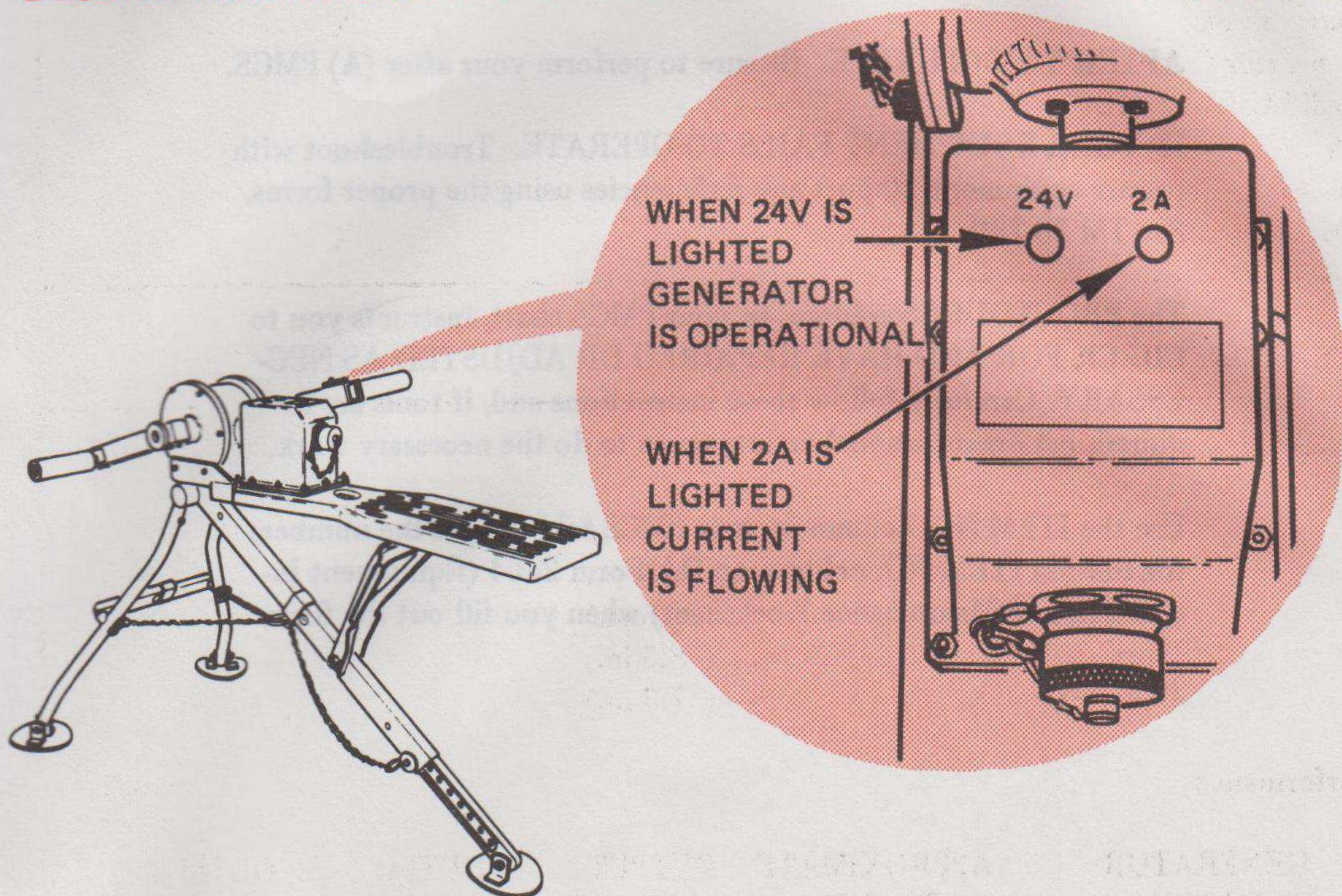
<u>GENERATOR OPERATIONAL MODE</u>	<u>APPROXIMATE CRANKING SPEED (RPM)</u>	<u>OUTPUT VOLTAGE VDC</u>	<u>OUTPUT CURRENT AMPERES</u>	<u>OUTPUT POWER WATTS</u>
Radio/Transmit	70	20	2.5	50.0
Low Power	80	24	5.0	120.0
High Power	90	24	6.0	144.0
Radio/Recieve	60	30	0.3	9.0
BB-542/U Charge	80	28-30	3.0	84-90
BB-542/U Heat	80	36	3.0	108

Temperature Range

Operating	-50°F to +120°F (-45.5°C to +51.7°C)
Non-operating (Storage)	-50°F to +160°F (-45.5°C to +71°C)

CHAPTER 2 OPERATING INSTRUCTIONS

SECTION I DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS



NOTE

Do not operate the G-76/G until you understand the operation and function of the indicators.

There are no switches used in the operation of the G-76/G. There are only 2 indicator lights on the regulator box. One is a 24V light, the other is a 2A light. The 24V indicator will light whenever the handles are cranked at between 70-100 RPM. The G-76/G must be connected to equipment and cranked at between 70-100 RPM for the 2A indicator to light. If they do not light then there is a malfunction in the equipment. Refer to Troubleshooting Procedures in Chapter 3.

SECTION II PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

GENERAL

The PMCS (Table 2-1) outlines inspections to be made at certain times. Perform these checks at the appropriate times to make sure the G-76/G is in good physical condition and in good operating condition so it will do its job when necessary.

BEFORE YOU OPERATE. Always keep in mind the CAUTIONS and WARNINGS. Perform your before (B) PMCS.

WHILE YOU OPERATE. Always keep in mind the CAUTIONS and WARNINGS. Perform your during (D) PMCS.

AFTER YOU OPERATE. Be sure to perform your after (A) PMCS.

IF YOUR EQUIPMENT FAILS TO OPERATE. Troubleshoot with proper equipment. Report any deficiencies using the proper forms. See TM 38-750.

The PROCEDURES column, in your PMCS chart, instructs you to CHECK FOR AND HAVE REPAIRED OR ADJUSTED AS NECESSARY. Carefully follow these instructions and, if tools are required, get organizational maintenance to do the necessary work.

Use the ITEM NO. column in your PMCS table to get the numbers for the TM ITEM NO. column on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) when you fill out the form.

B - Before Operation

D - During Operation

A - After Operation

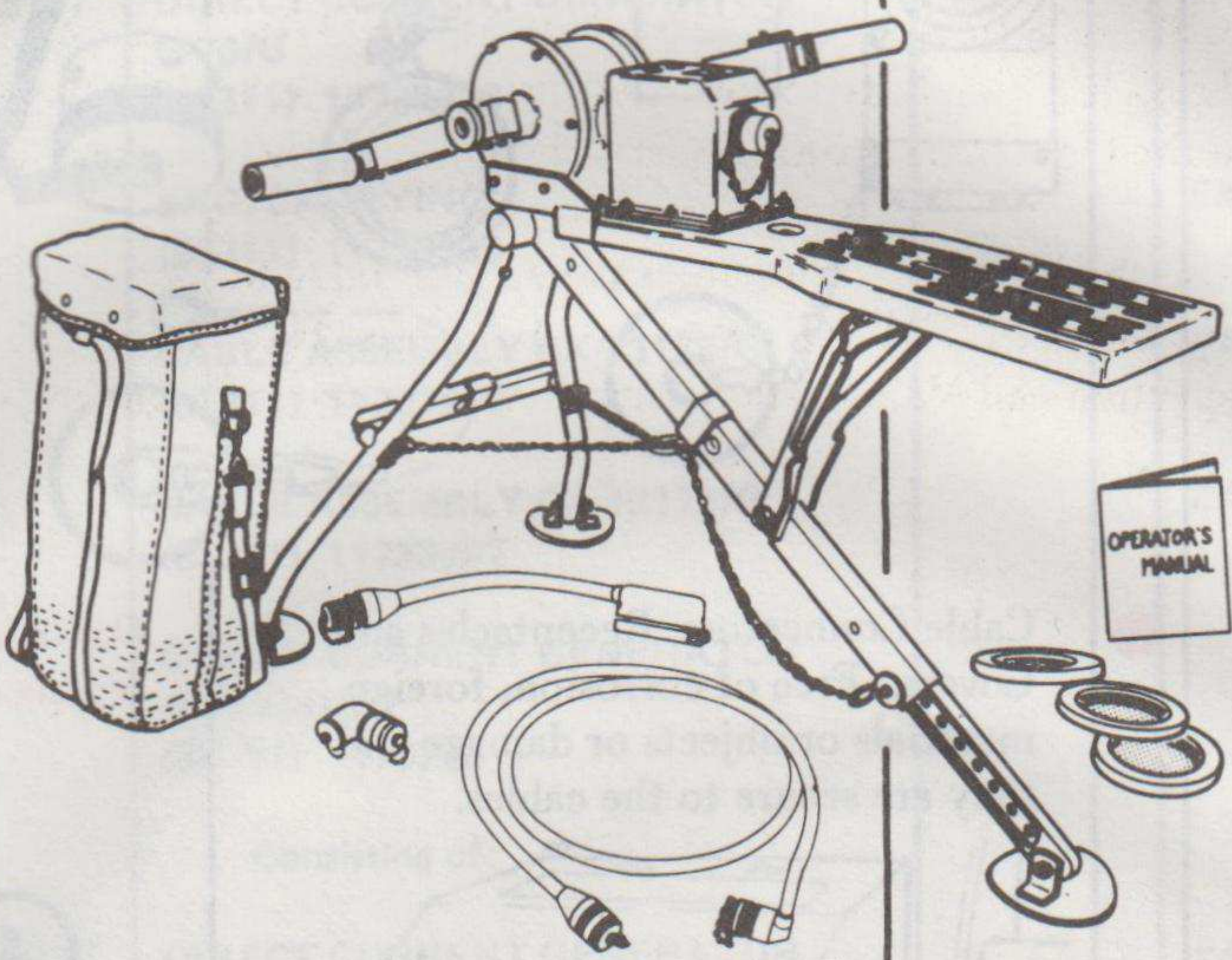
Item No.	Interval			ITEM TO BE INSPECTED PROCEDURE (check for and have repaired or adjusted as necessary)	Equipment is Not Ready/Available If:
	B	D	A		
1				<p>G-76/G Operator's Manual Available</p> 	
2				<p>G-76/G Hand Crank Generator. Check that all parts are intact and complete and are clean, dry, free of grease, dirt or fungus.</p>	
3				<p>Tripod. Check legs, seat and support bracket for looseness of hardware, bent, damaged or broken parts. Check foot pads.</p>	
4				<p>Painted Surfaces. Free of bare spots, rust and corrosion.</p>	

Table 2-1. Preventive Maintenance Checks and Services – Continued

B - Before Operation

D - During Operation

A - After Operation

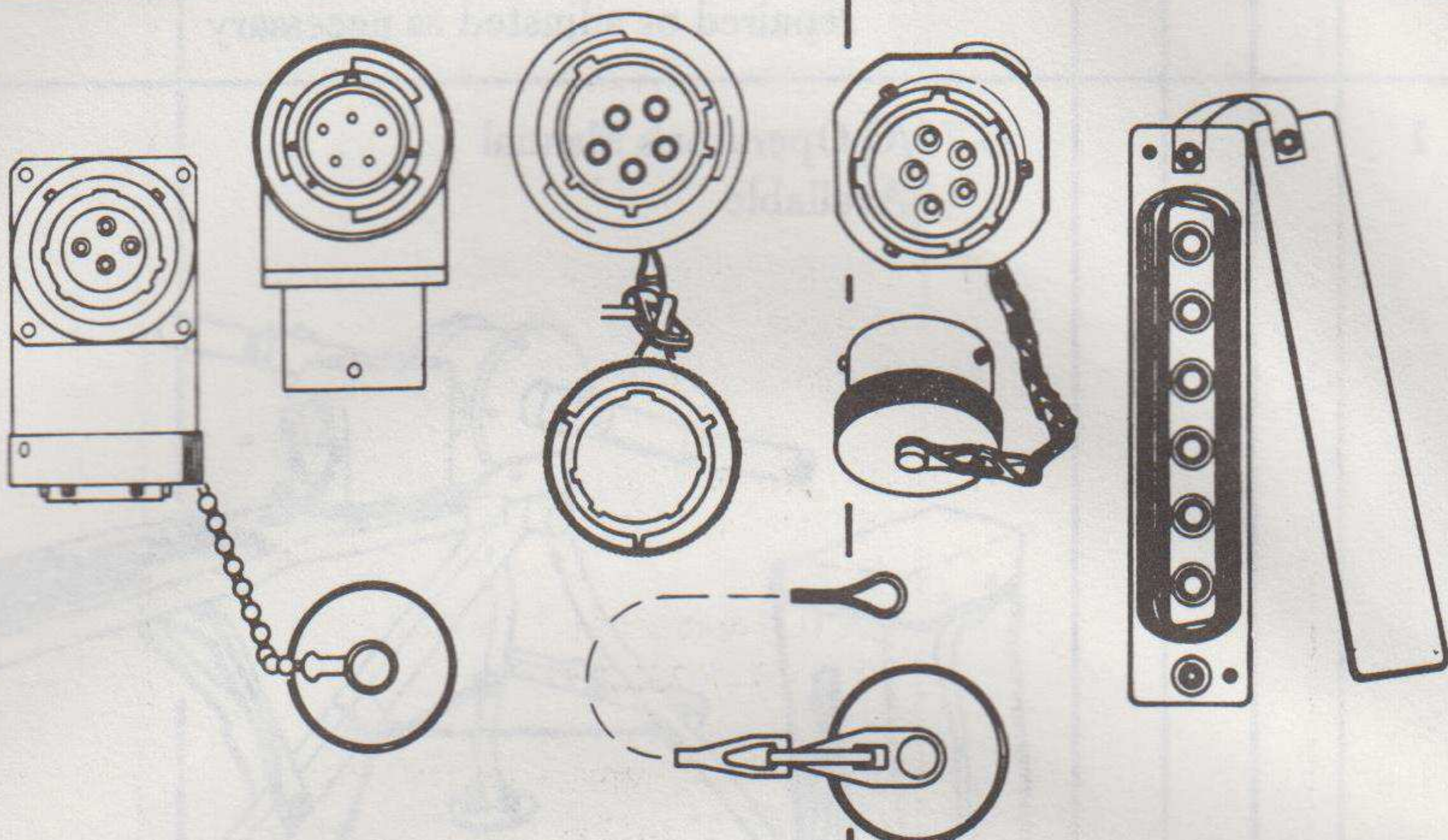
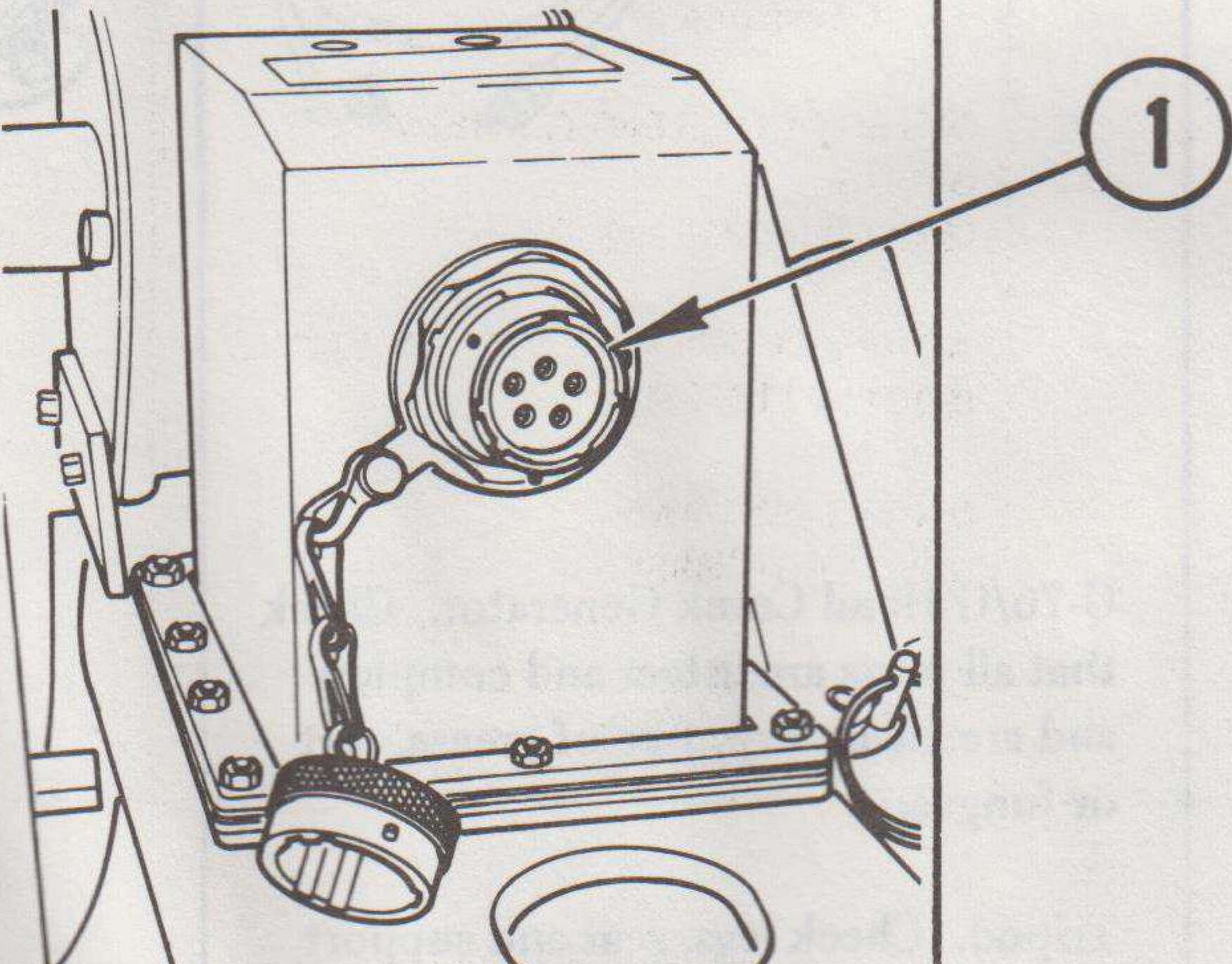
Item No.	Interval			ITEM TO BE INSPECTED PROCEDURE	Equipment is Not Ready/Available If:
	B	D	A		
5	●		●	 <p>Cable Connectors, Receptacles and Covers. Free of corrosion, foreign materials or objects or damage and they are secure to the cables.</p>	Damage requires replacement.
6	●		●	 <p>PCU Connector (1). Check for damage to receptacle sockets and threads.</p>	Damage requires replacement.
7	●	●	●	<p>Cables. Check that they are not frayed, torn or broken and the insulation is not cut or kinked.</p>	

Table 2-1. Preventive Maintenance Checks and Services – Continued

B - Before Operation

D - During Operation

A - After Operation

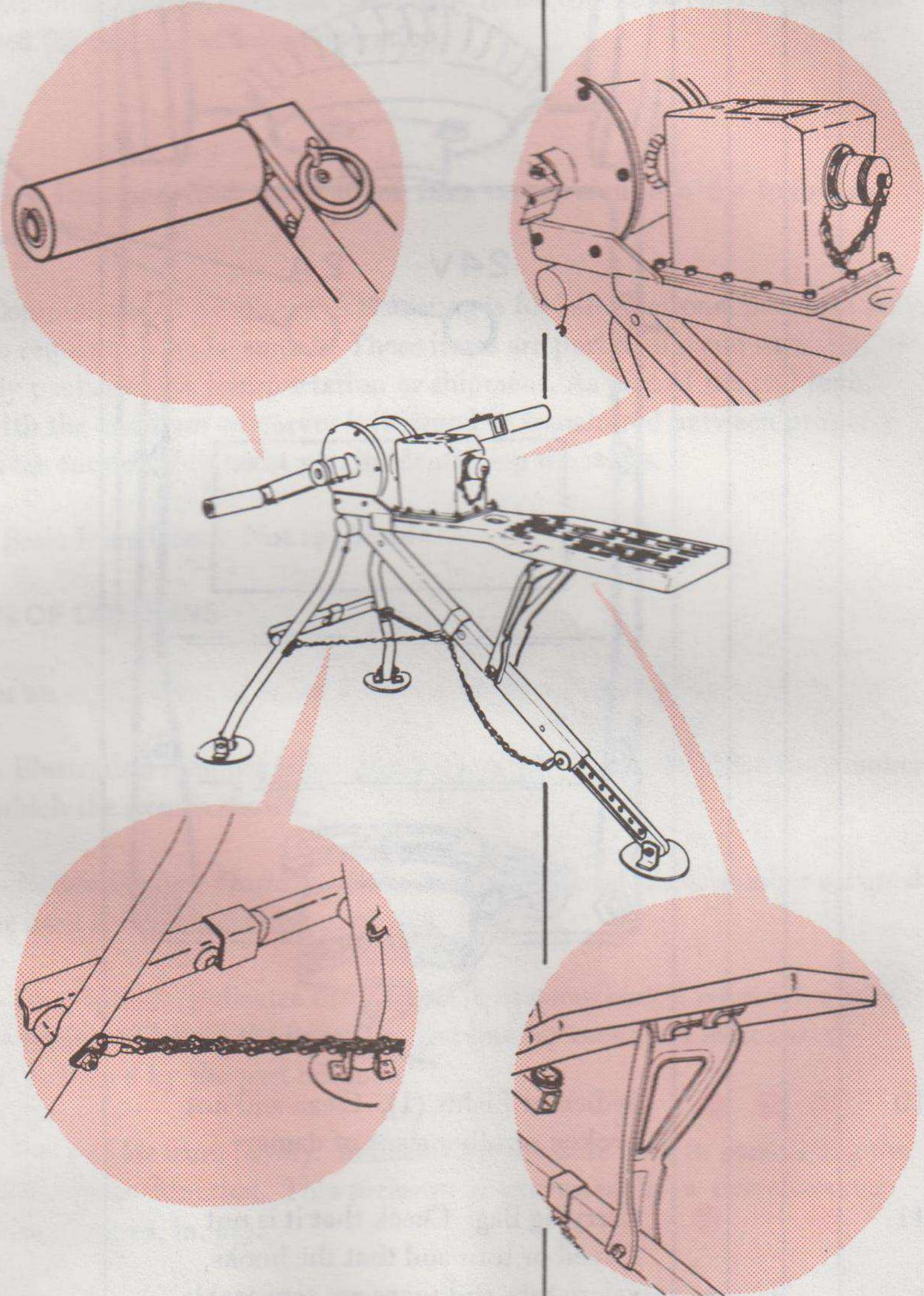
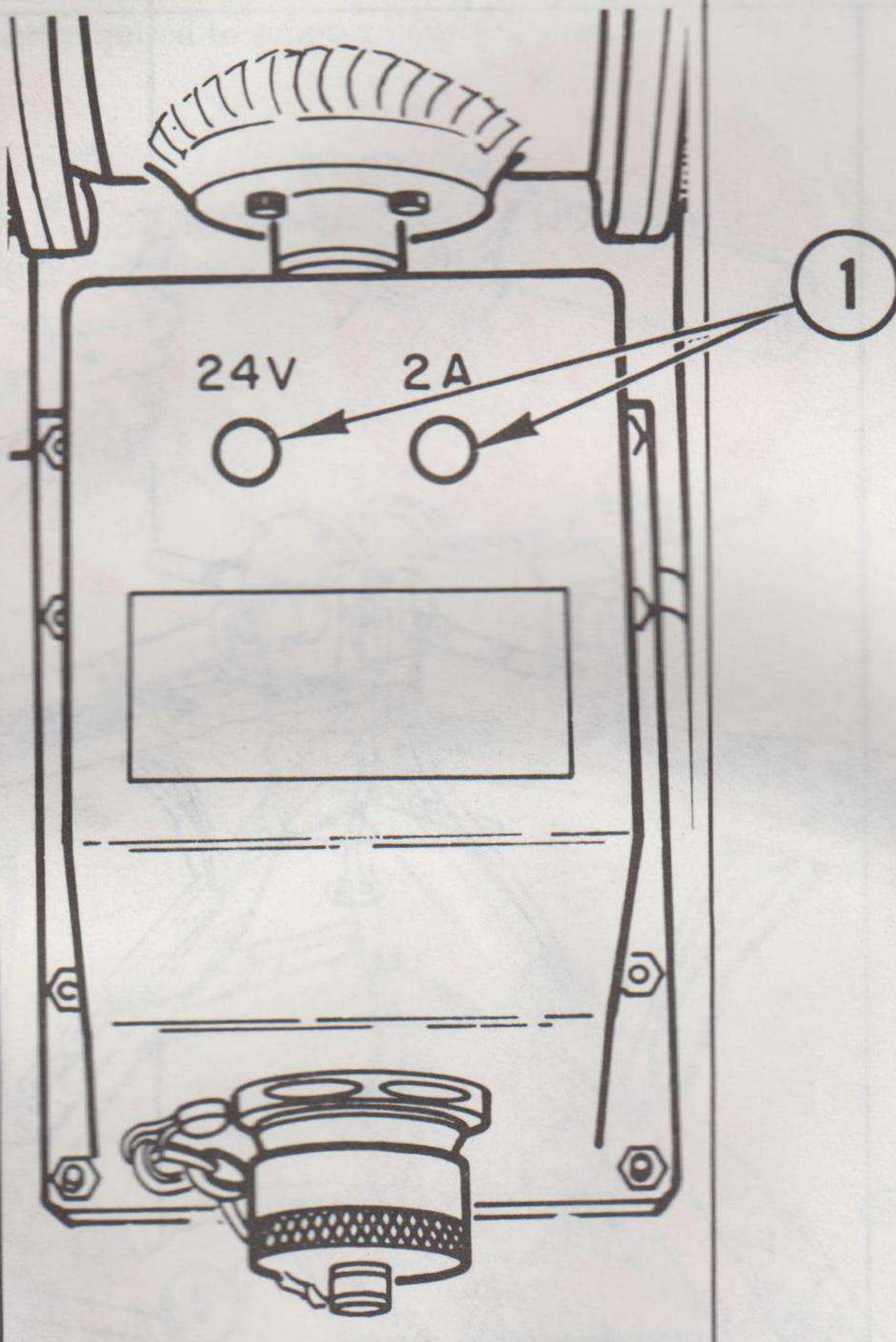
Item No.	Interval			ITEM TO BE INSPECTED PROCEDURE	Equipment is Not Ready/Available If:
	B	D	A		
8	●		●	 <p>Metal Parts. Mounting plates, hinges, chains and locks should be free of corrosion, rust, looseness or damage.</p>	
9	●		●	Latches and slides. Serviceable.	

Table 2-1. Preventive Maintenance Checks and Services – Continued

B - Before Operation

D - During Operation

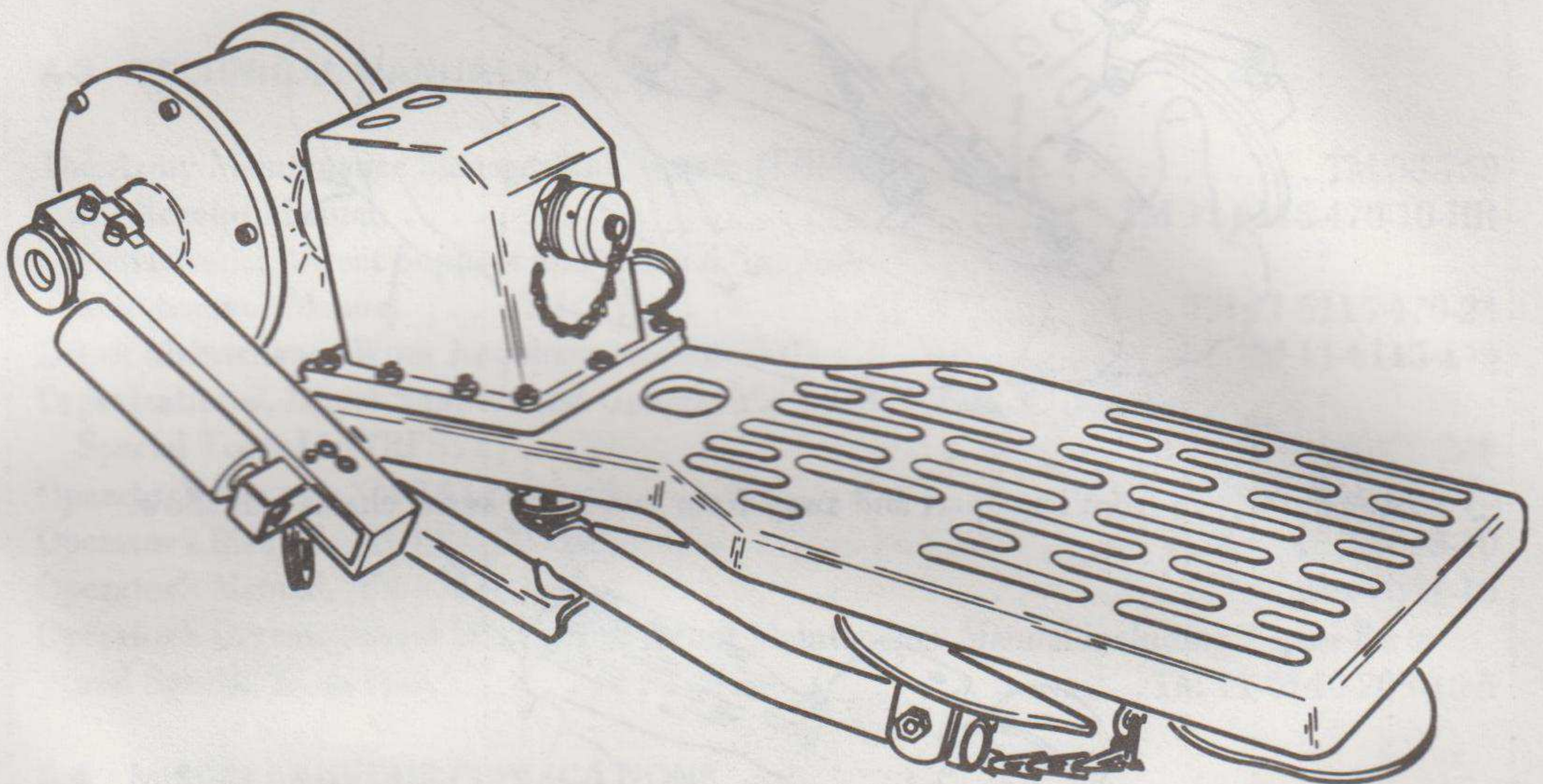
A - After Operation

Item No.	Interval			ITEM TO BE INSPECTED PROCEDURE	Equipment is Not Ready/Available If:
	B	D	A		
					
10	●	●	●	Indicator Lights (1). Clean and not broken or other signs of damage.	
11	●		●	Carrying Bag. Check that it is not frayed or torn and that the hooks, velcro tabs and snaps are serviceable.	
12	●	●	●	G-76/G. Proper operation of AN/PRC-70 or AN/PSC-1 radio.	

SECTION III OPERATION UNDER USUAL CONDITIONS

SETUP PROCEDURE - GENERAL

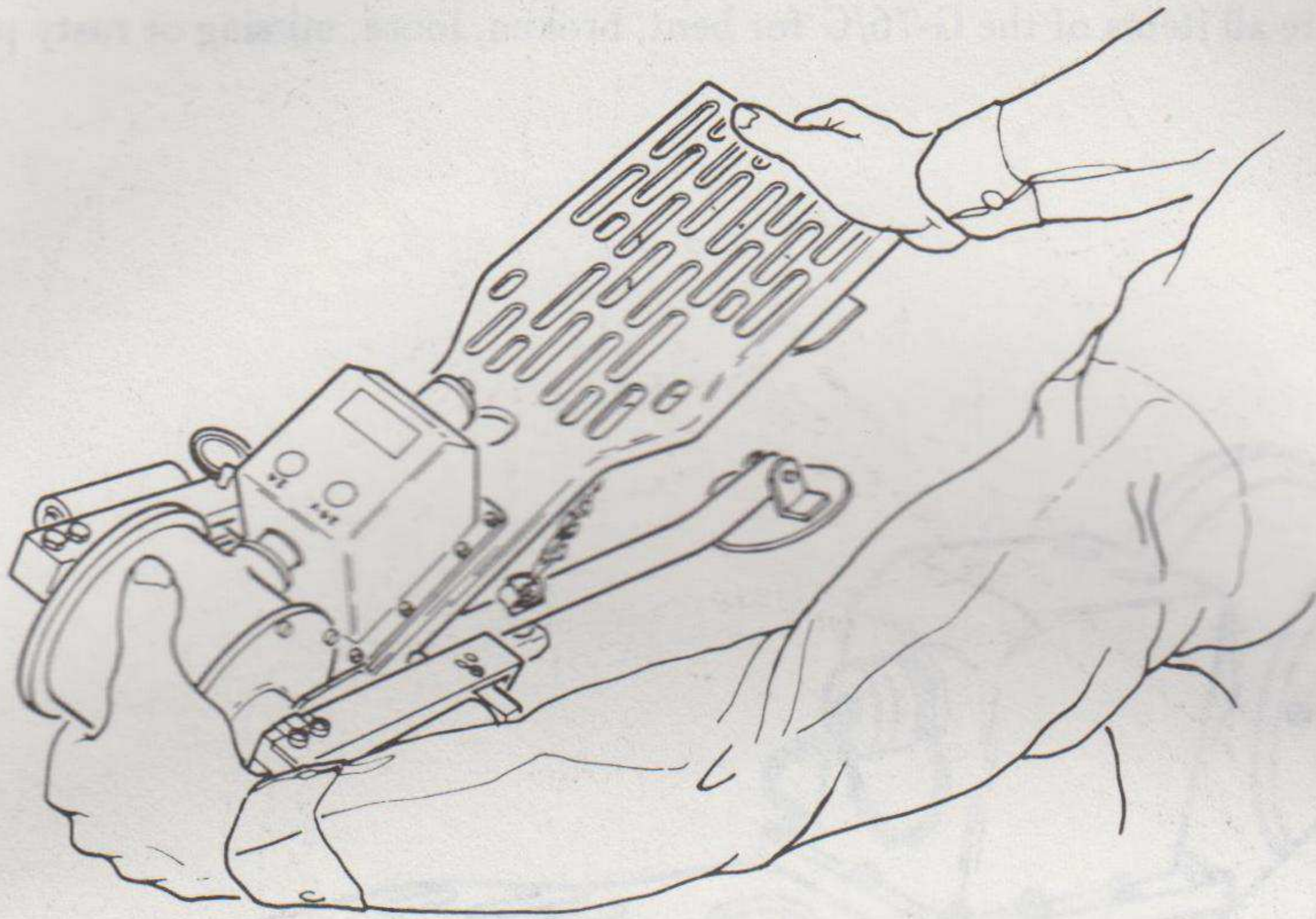
- A. Remove G-76/G Generator from the carrying bag.
- B. Examine all items of the G-76/G for bent, broken, loose, missing or rusty parts.



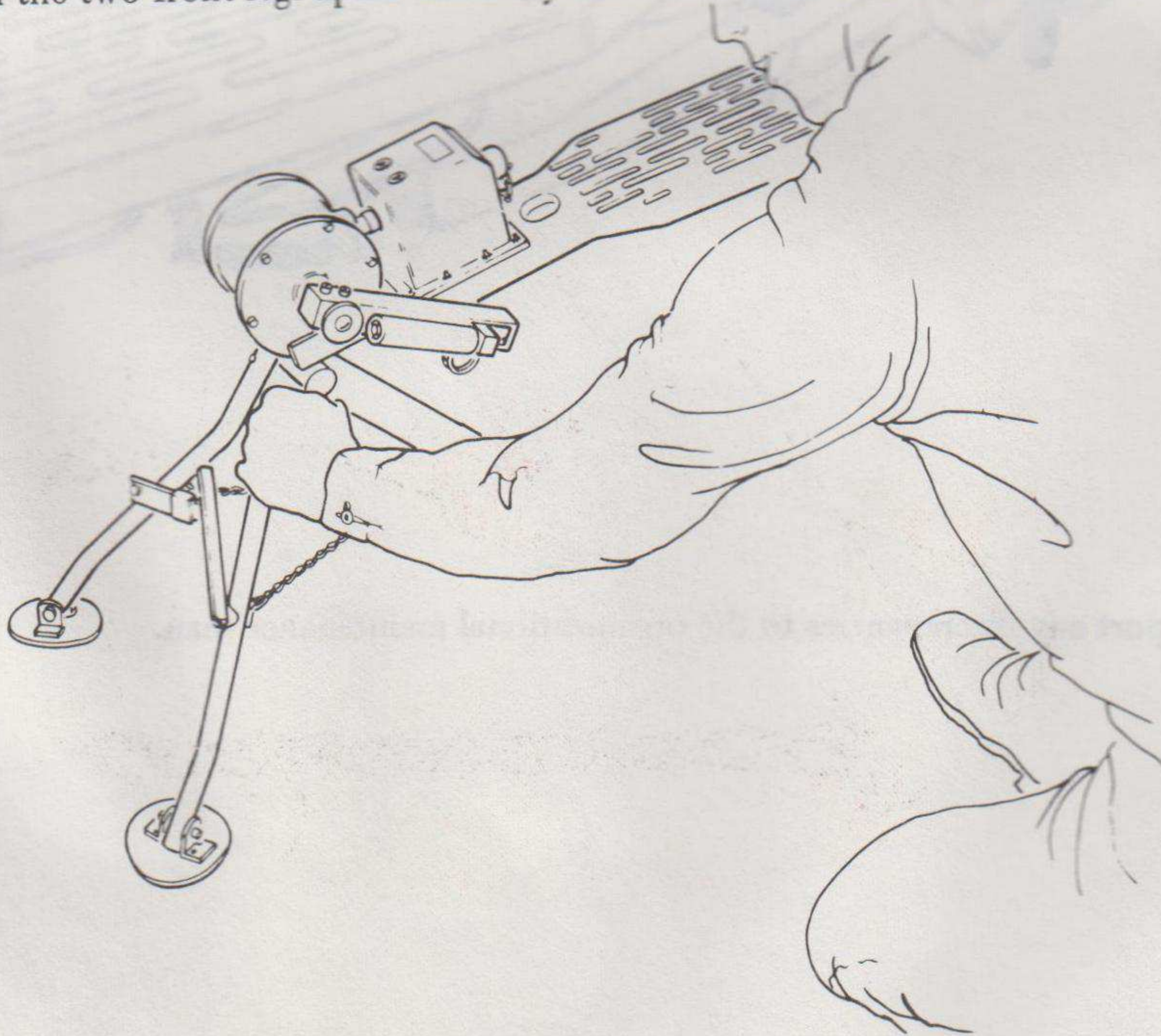
- C. Report any discrepancies to the organizational maintenance man.

TRIFOD SETUP

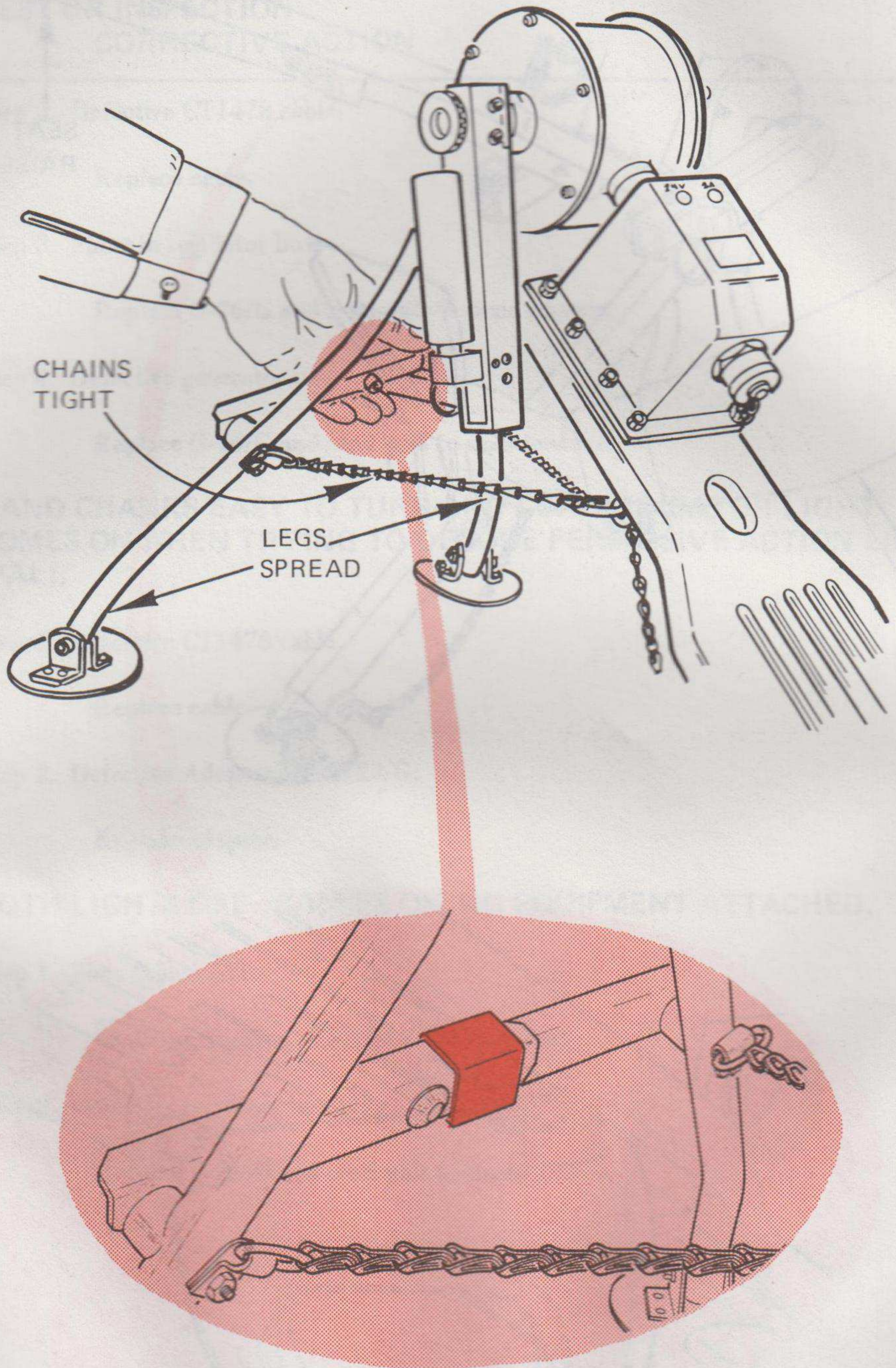
- A. Grasp G-76/G with both hands, one hand placed at the rear of the seat, the other on the front of the Generator Head.
- B. With a pushing motion of the G-76/G, as if dropping, allow the legs to swing down and spread out from under the seat.



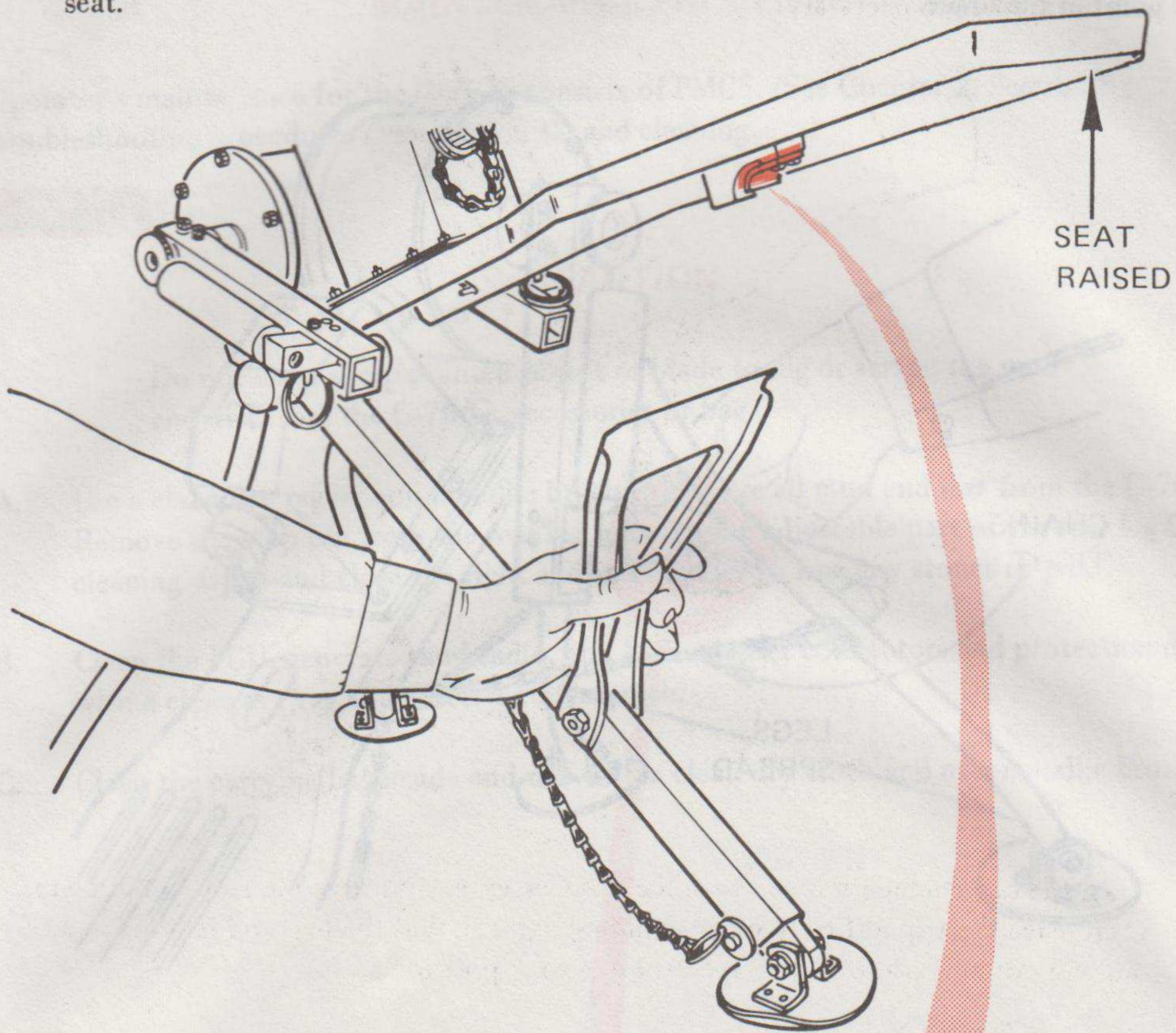
- C. Spread the two front legs apart and away from seat as far as the chains will allow.



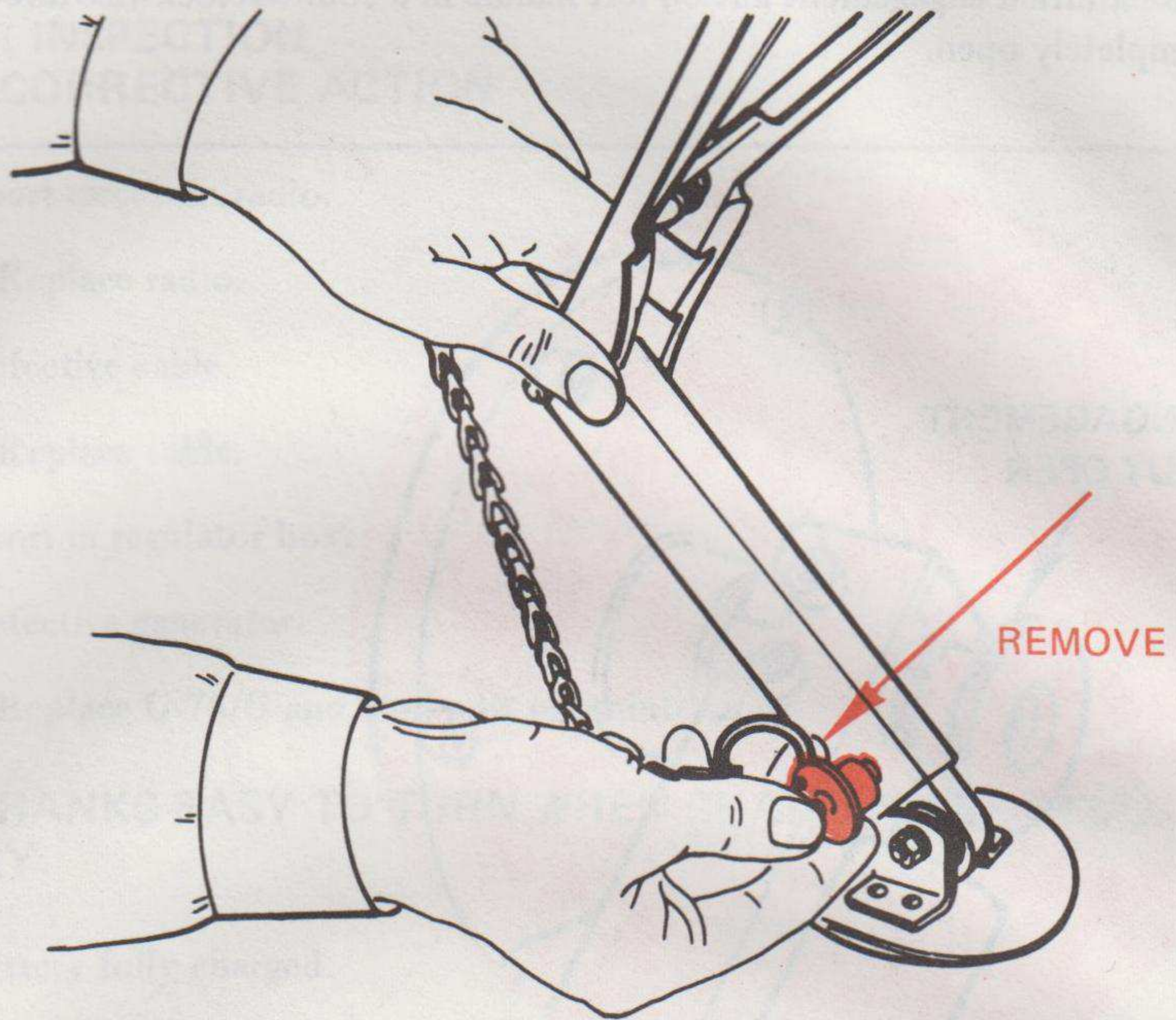
- D. Lock the brace for the front legs in the open position by sliding the lock over the pivot point in the brace.



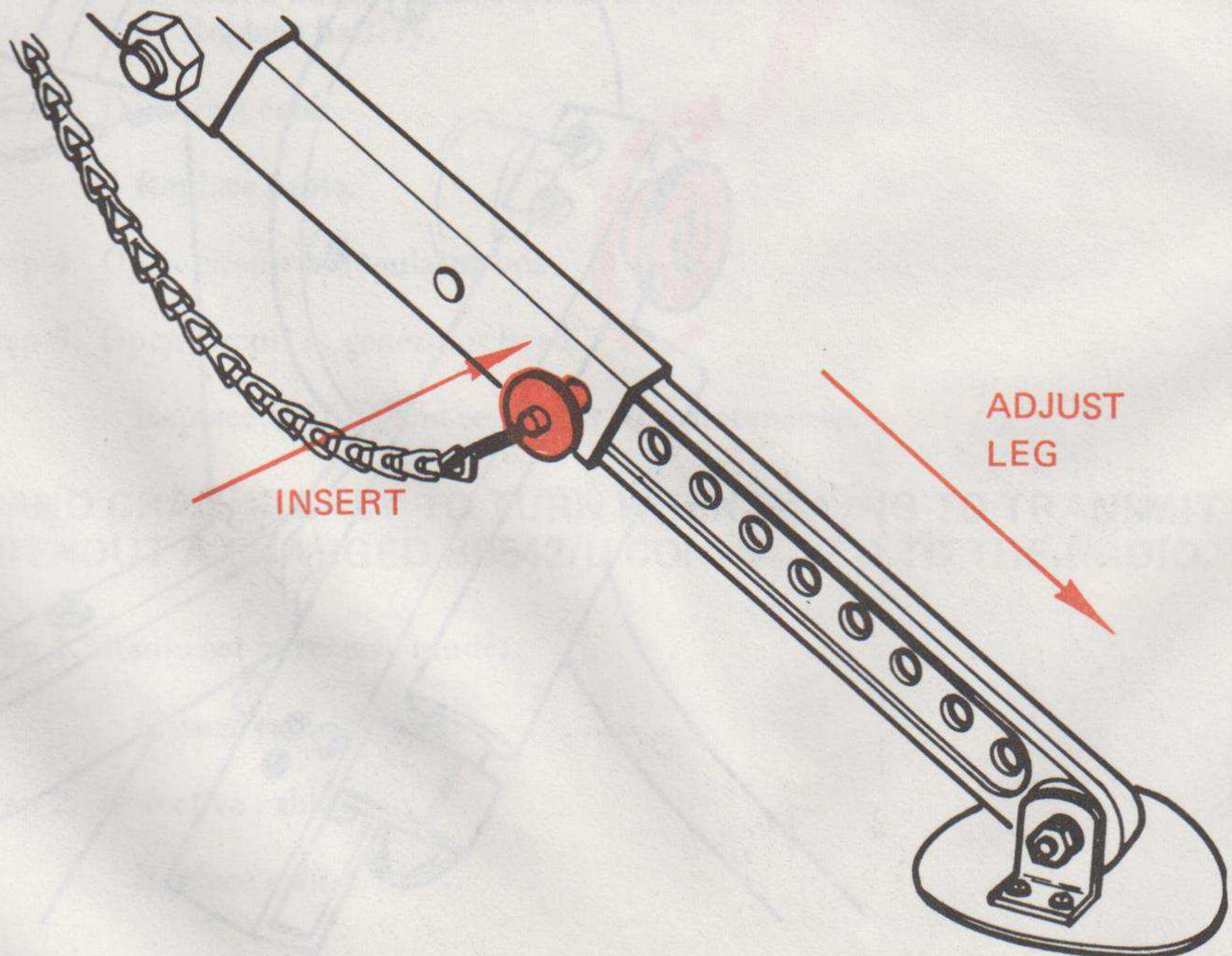
E. Raise seat away from rear leg and place seat support bracket into the slots under the seat.



- F. Adjust the length of the rear leg by removing the stop pin to allow the leg extension to slide to the length necessary.

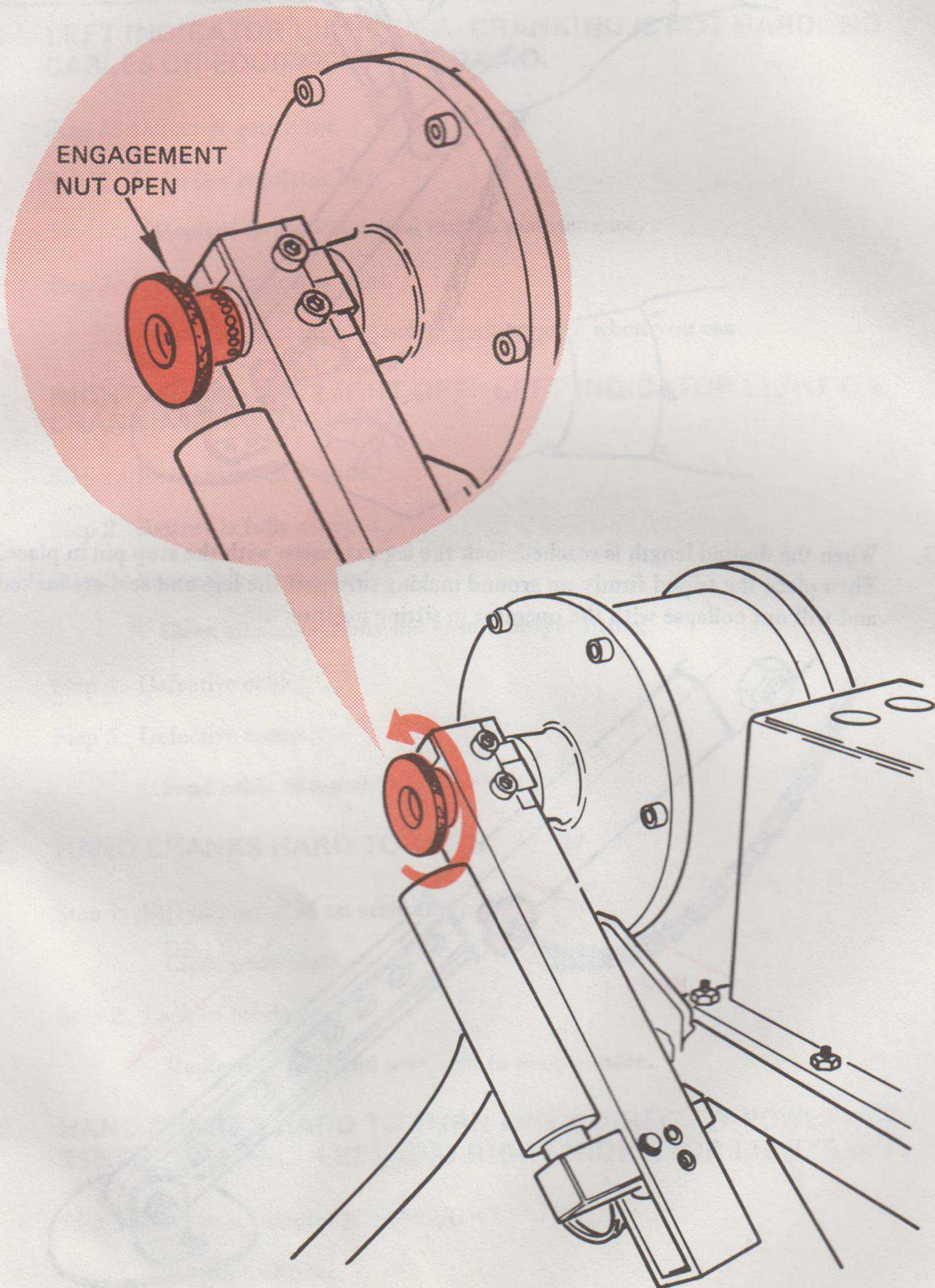


- G. When the desired length is reached, lock the leg extension with the stop pin in place. Then place the tripod firmly on ground making sure that the legs and seat are locked and will not collapse with the operator in sitting position.

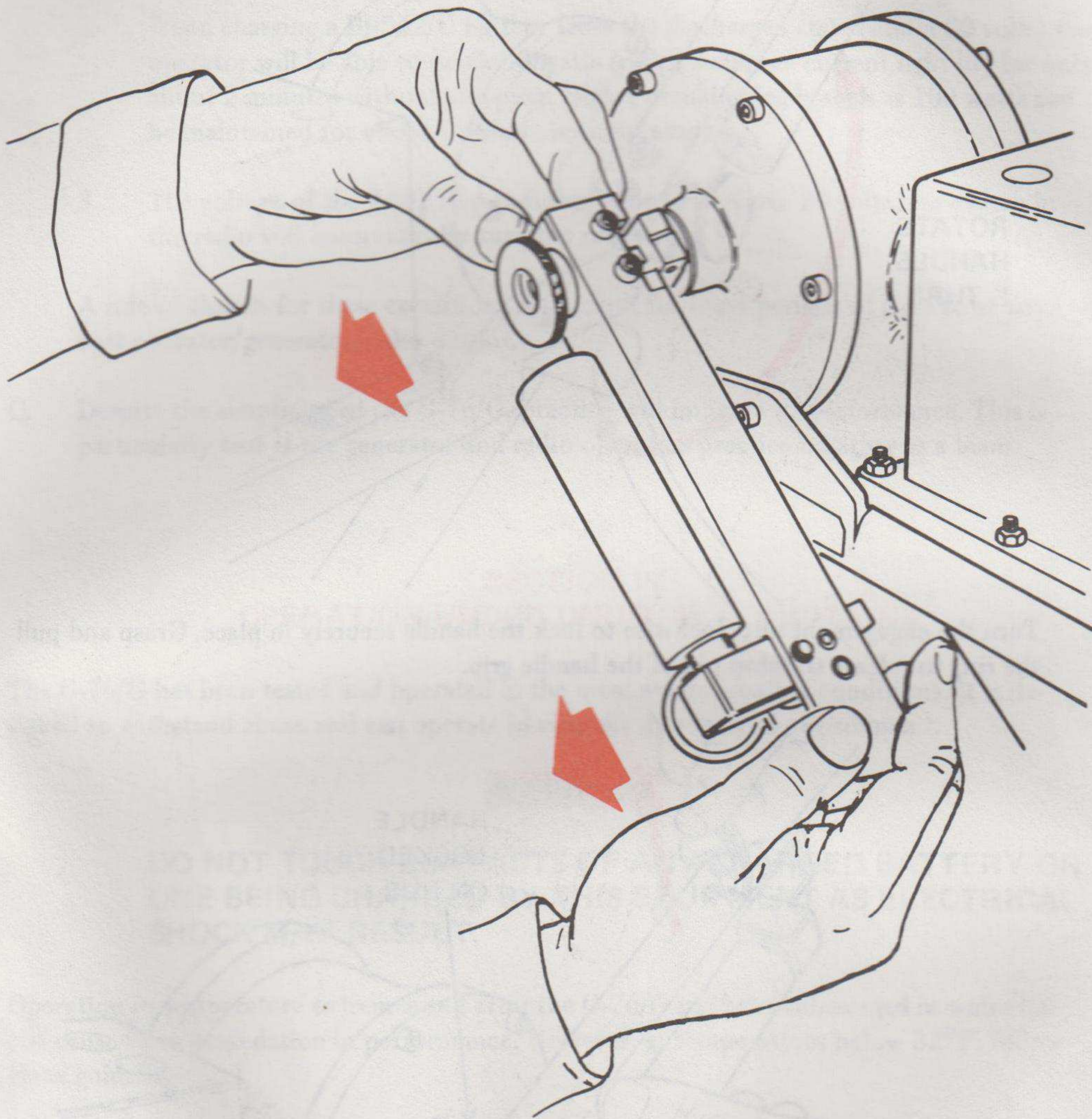


LEFT HAND CRANK HANDLE SETUP

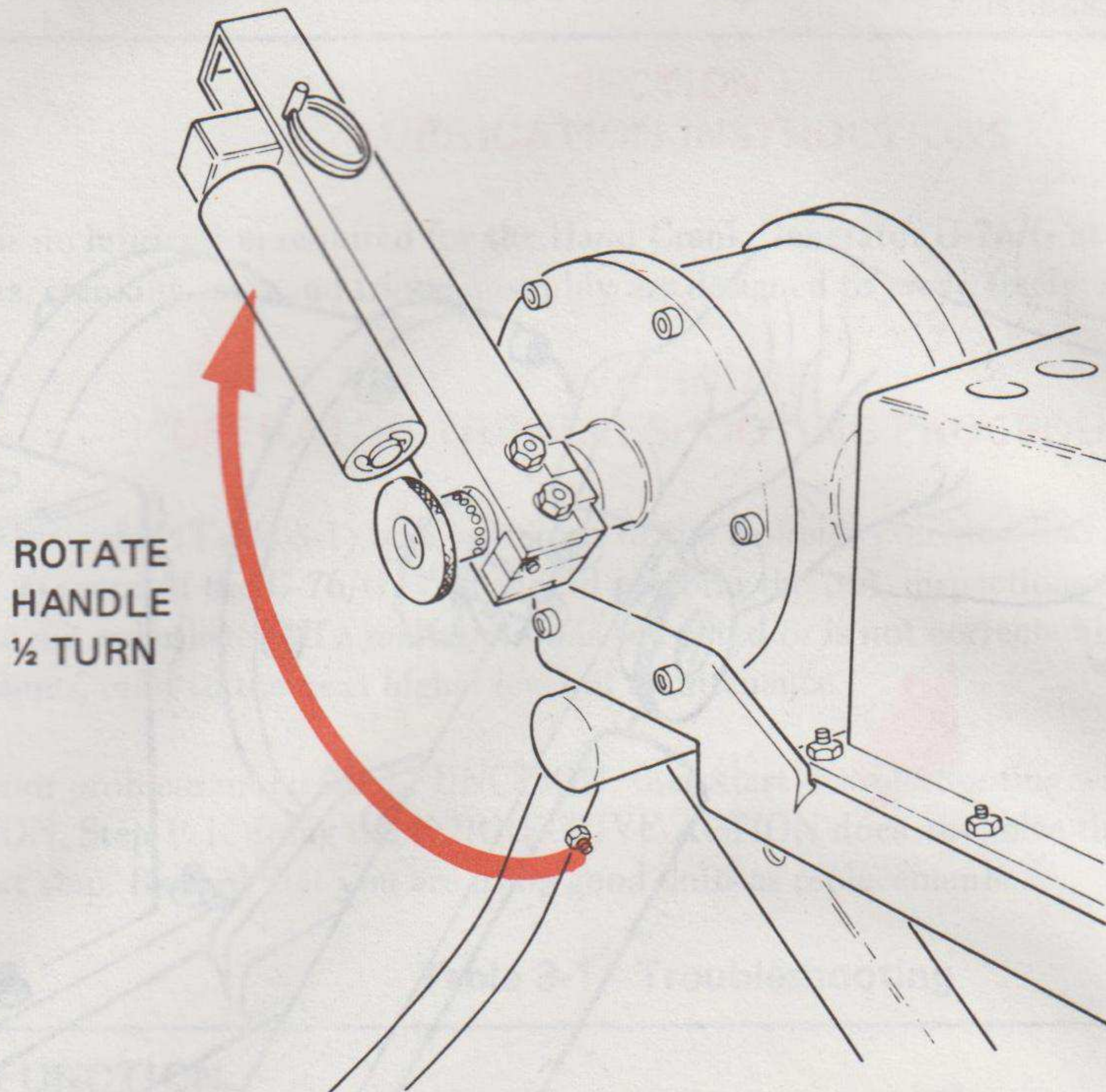
- A. Rotate knurled engagement nut on left handle in a counterclockwise direction until it is completely open.



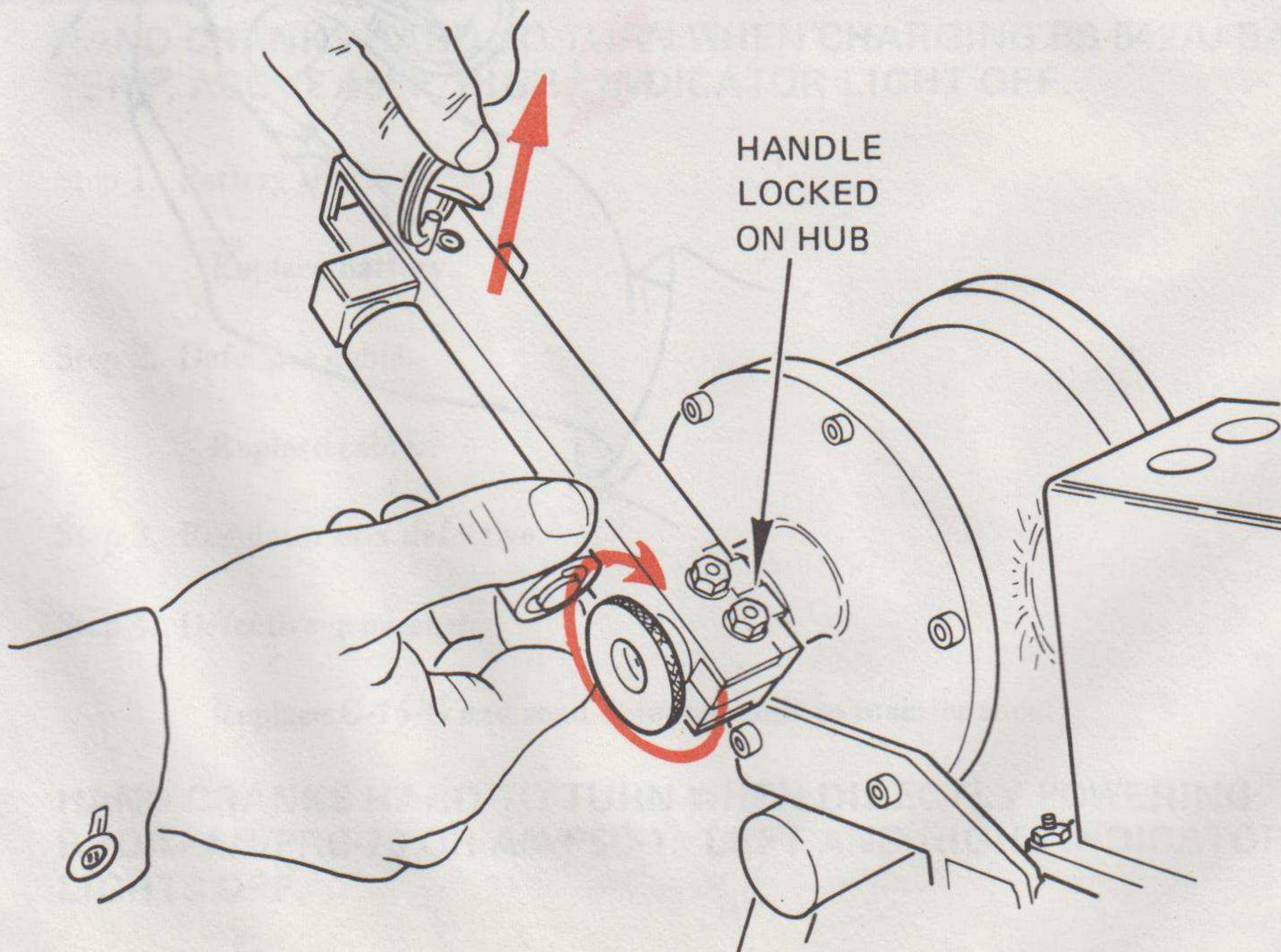
B. Using two hands to steady the handle pull it away from the hub so it can rotate freely.



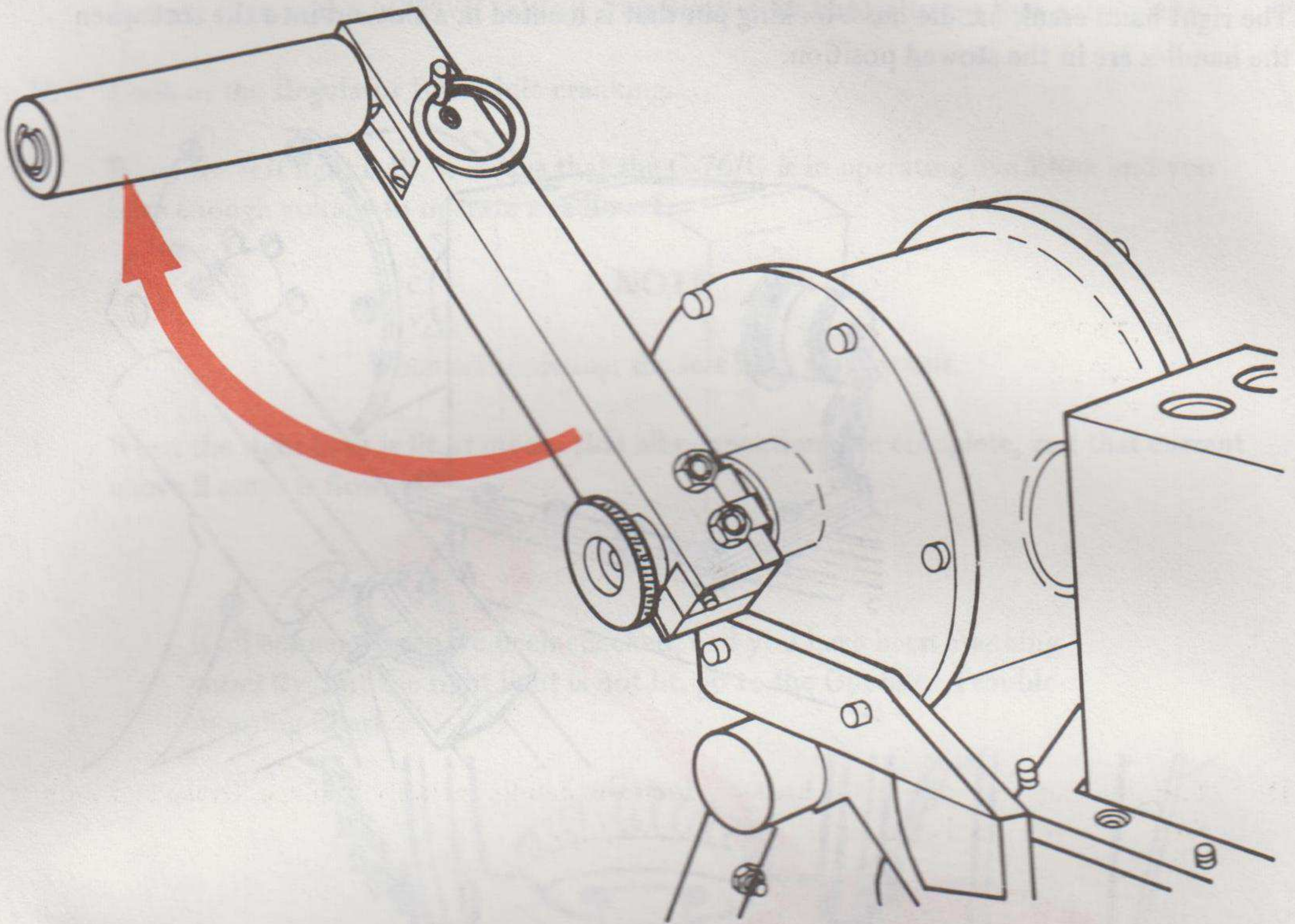
- C. Rotate the handle 1/2 turn and push it back into place on the hub.



- D. Turn the engagement nut clockwise to lock the handle securely in place. Grasp and pull the ring to release the stop pin of the handle grip.



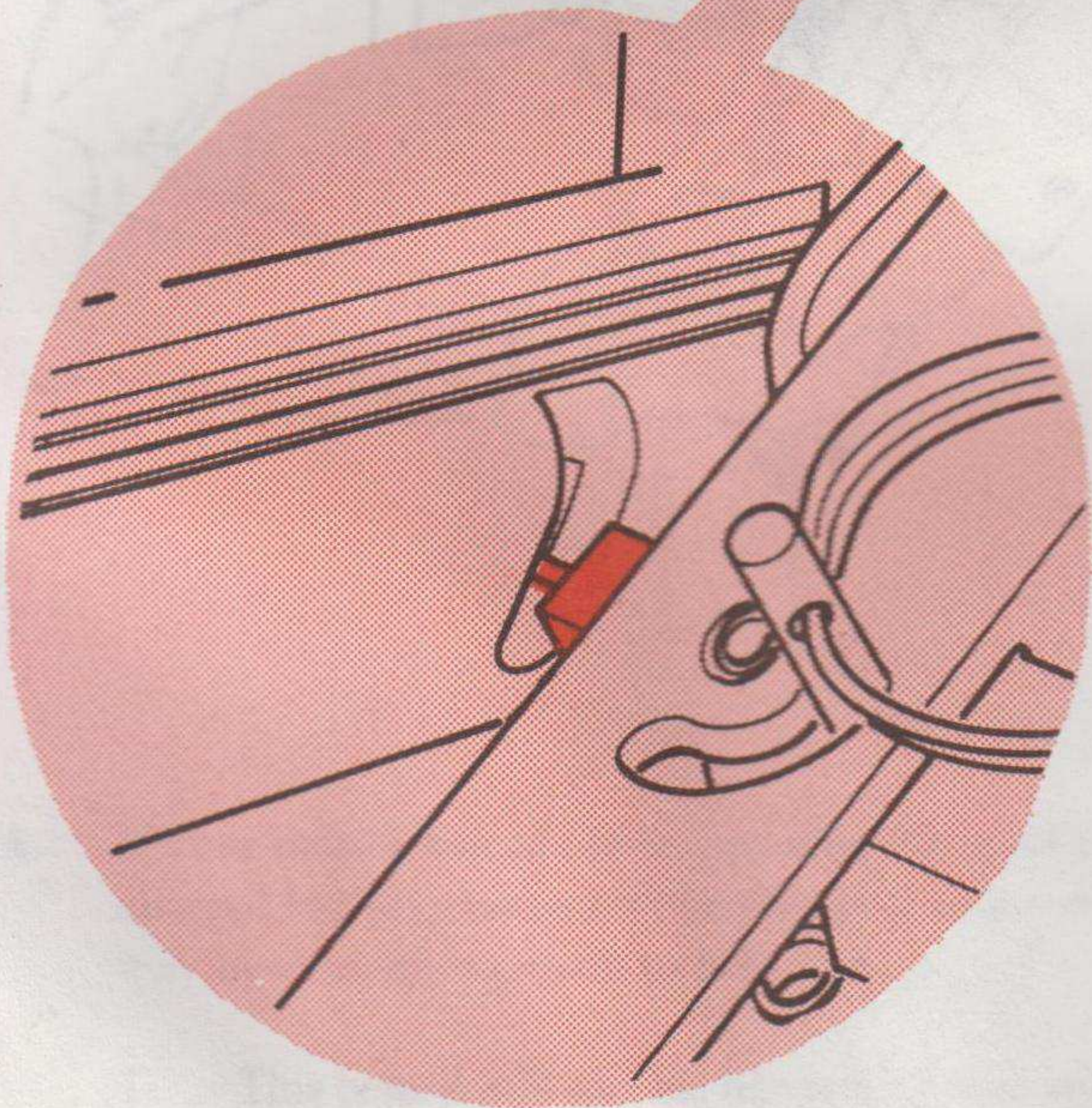
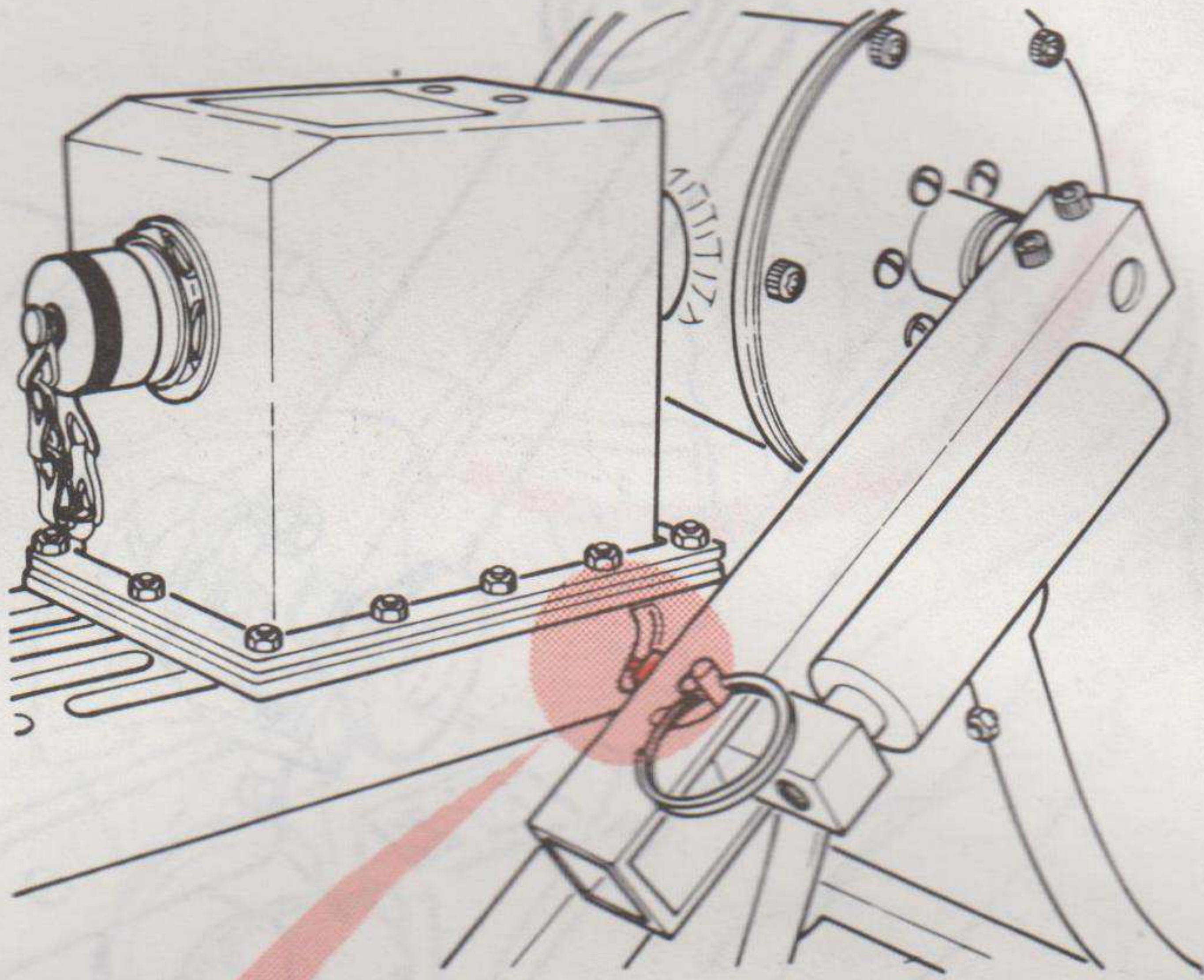
- E. Swing the plastic grip away from the handle arm to form an L shape in the open and ready position and release the stop pin.



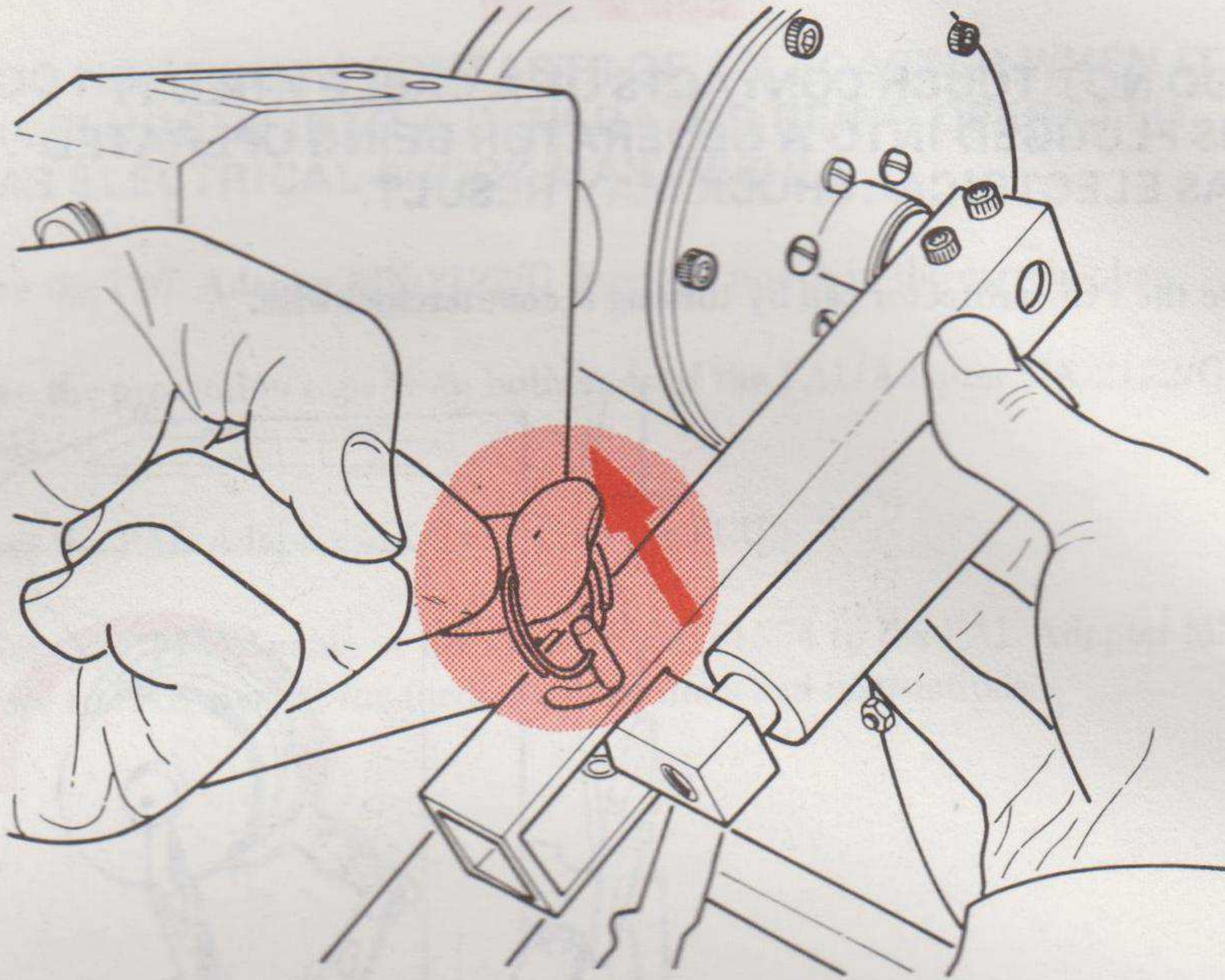
RIGHT HAND CRANK HANDLE SETUP

General

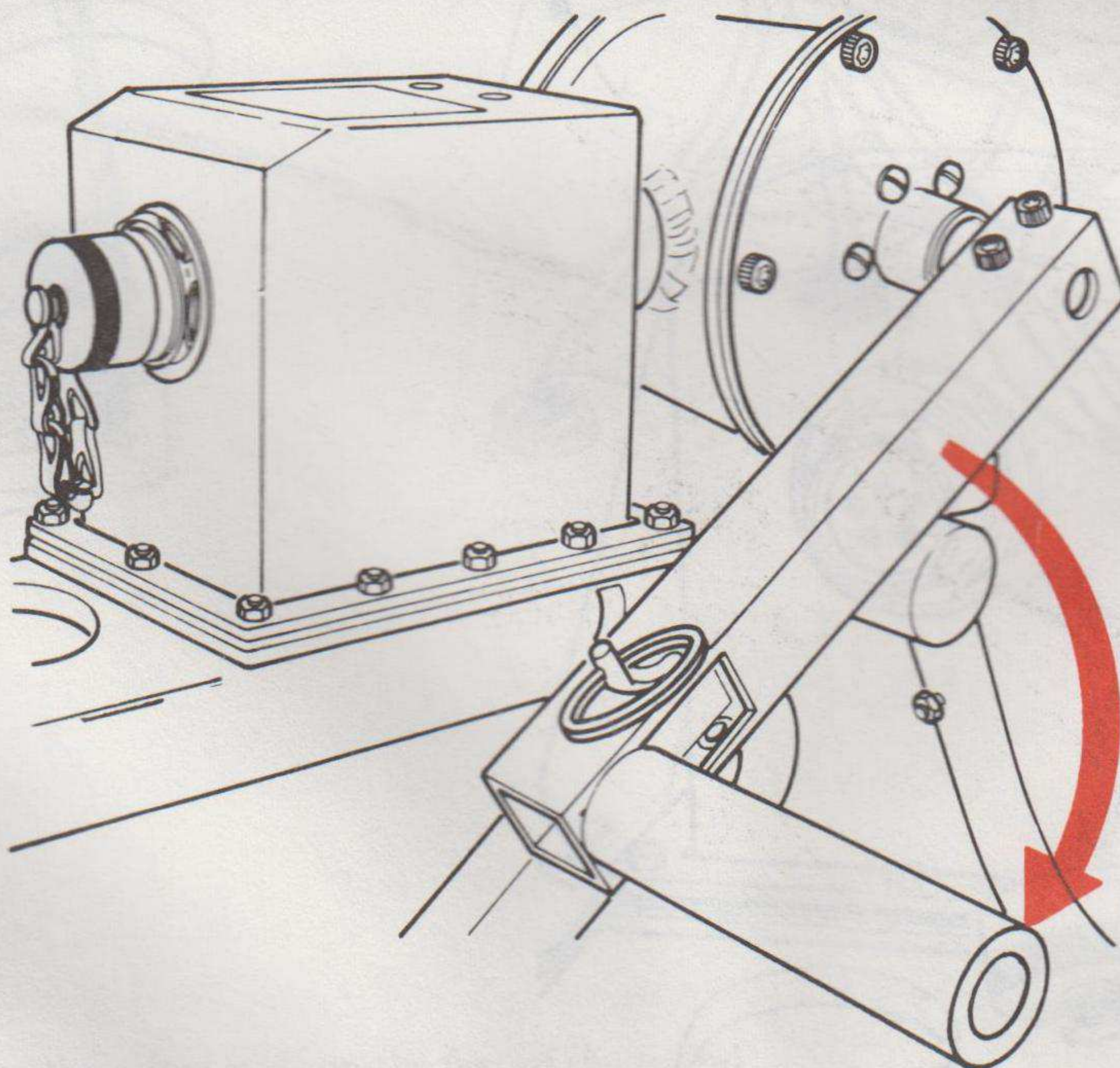
The right hand crank handle has a locking pin that is located in a slot cut into the seat when the handles are in the stowed position.



- A. Grasp and pull the ring to release the stop pin of the handle grip.



- B. Swing the plastic handle grip away from the handle arm to form an L shape. The right and left handles are now in the open and ready position.

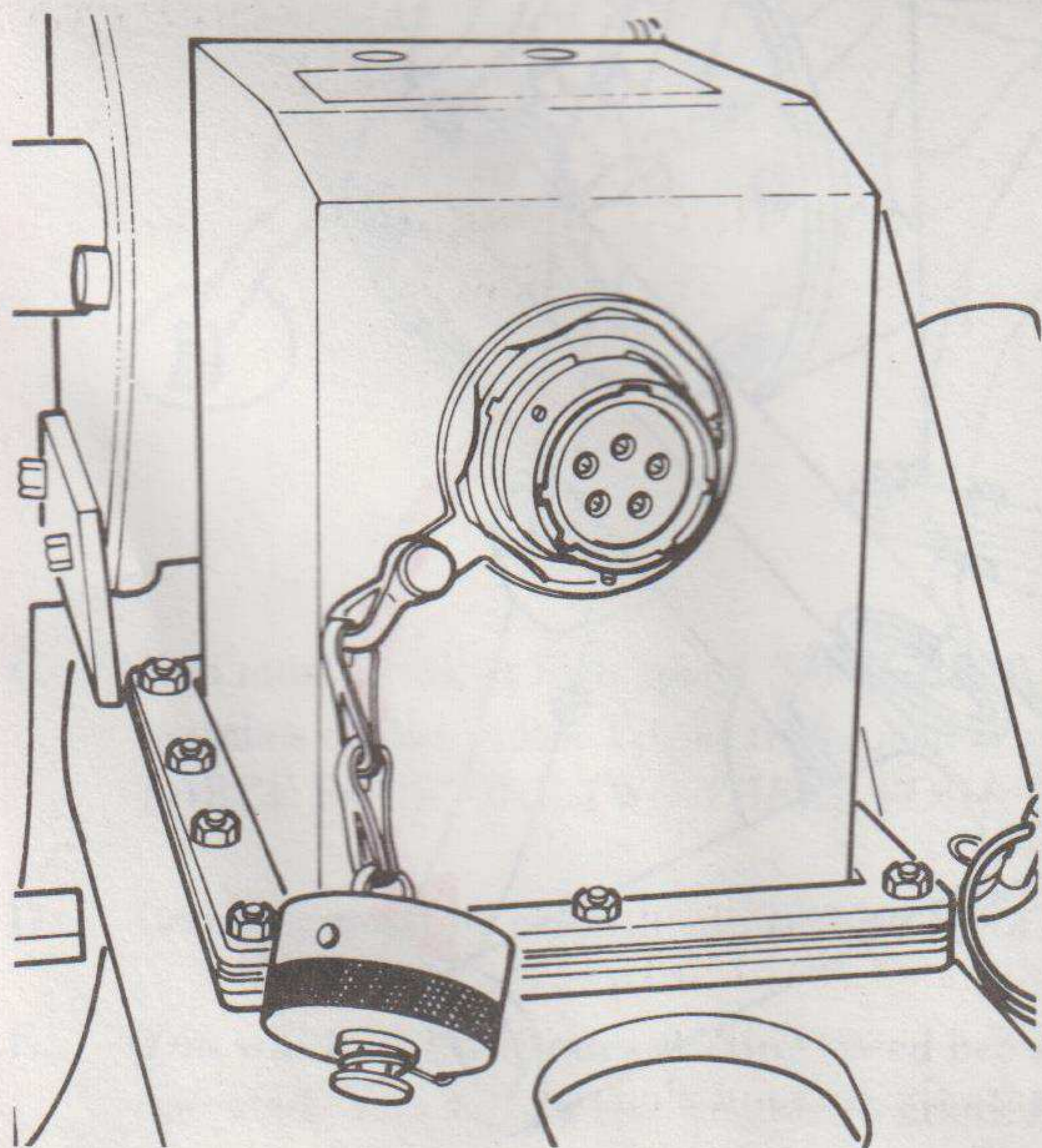
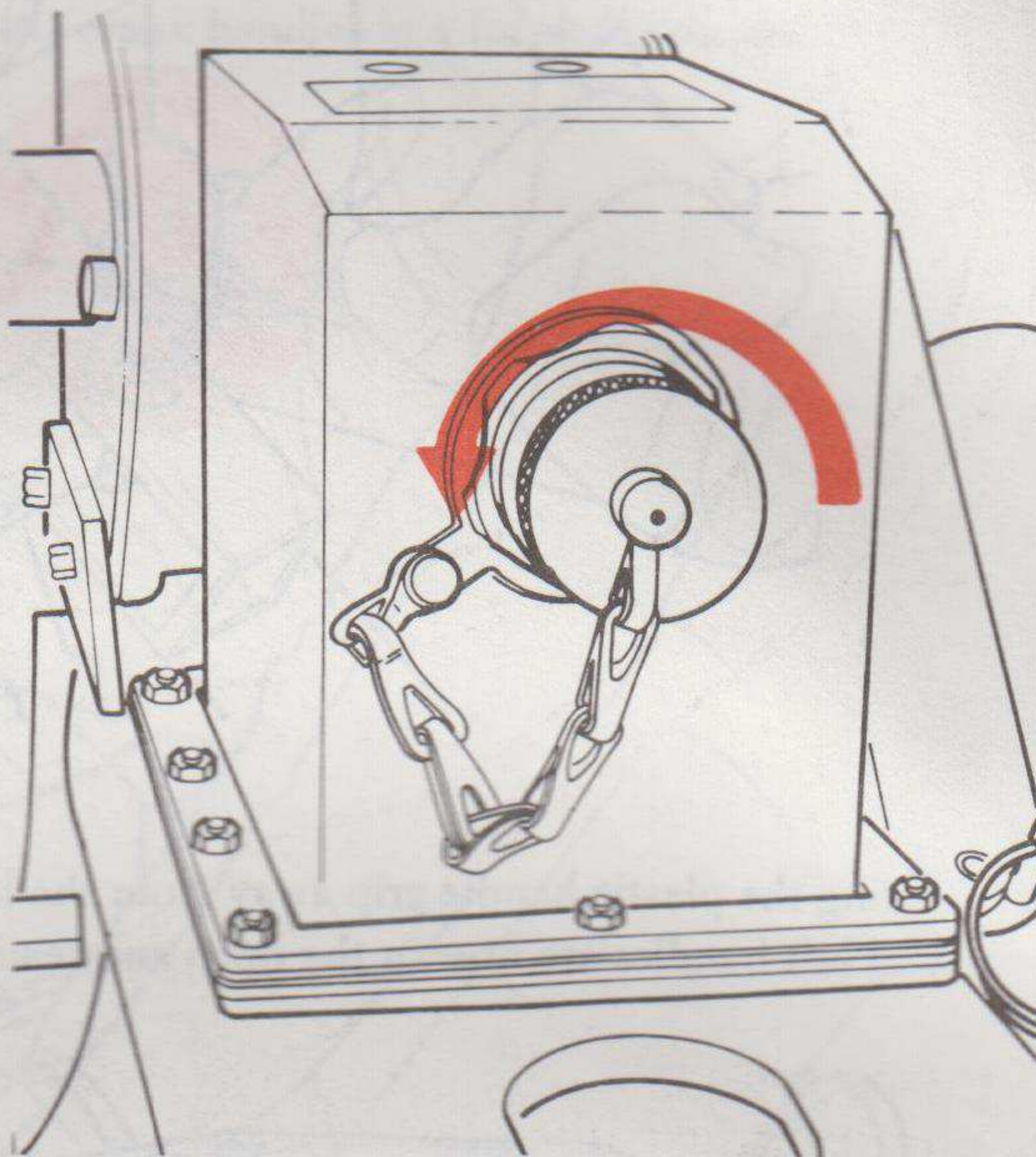


CONNECTING THE GENERATOR CABLE CX-13175/G TO THE PCU

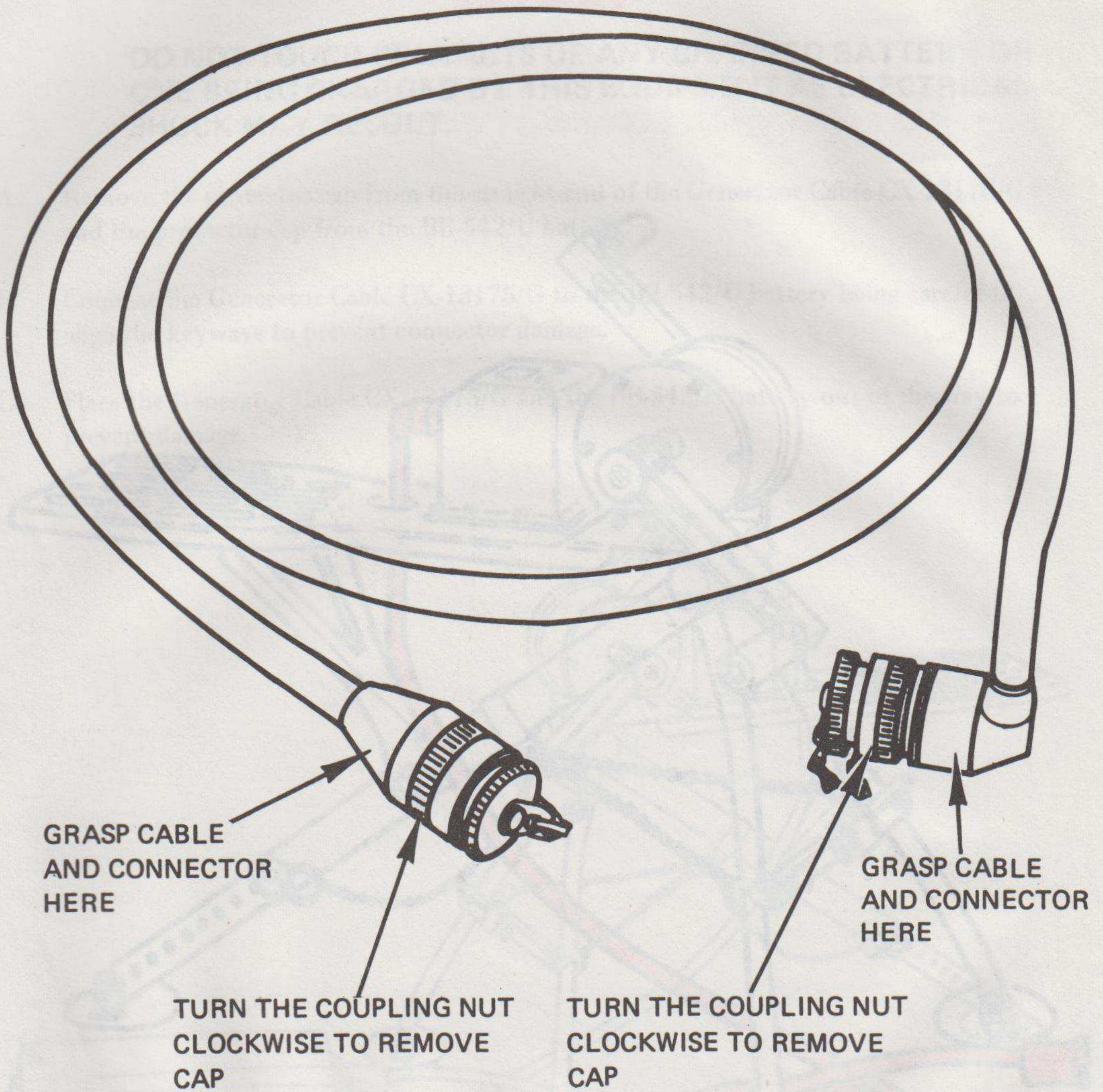
WARNING

DO NOT TOUCH CONTACTS OF A CABLE WHEN IT IS PLUGGED INTO A GENERATOR BEING OPERATED AS ELECTRICAL SHOCK MAY RESULT.

- A. Remove the PCU protector cap by turning it counterclockwise.



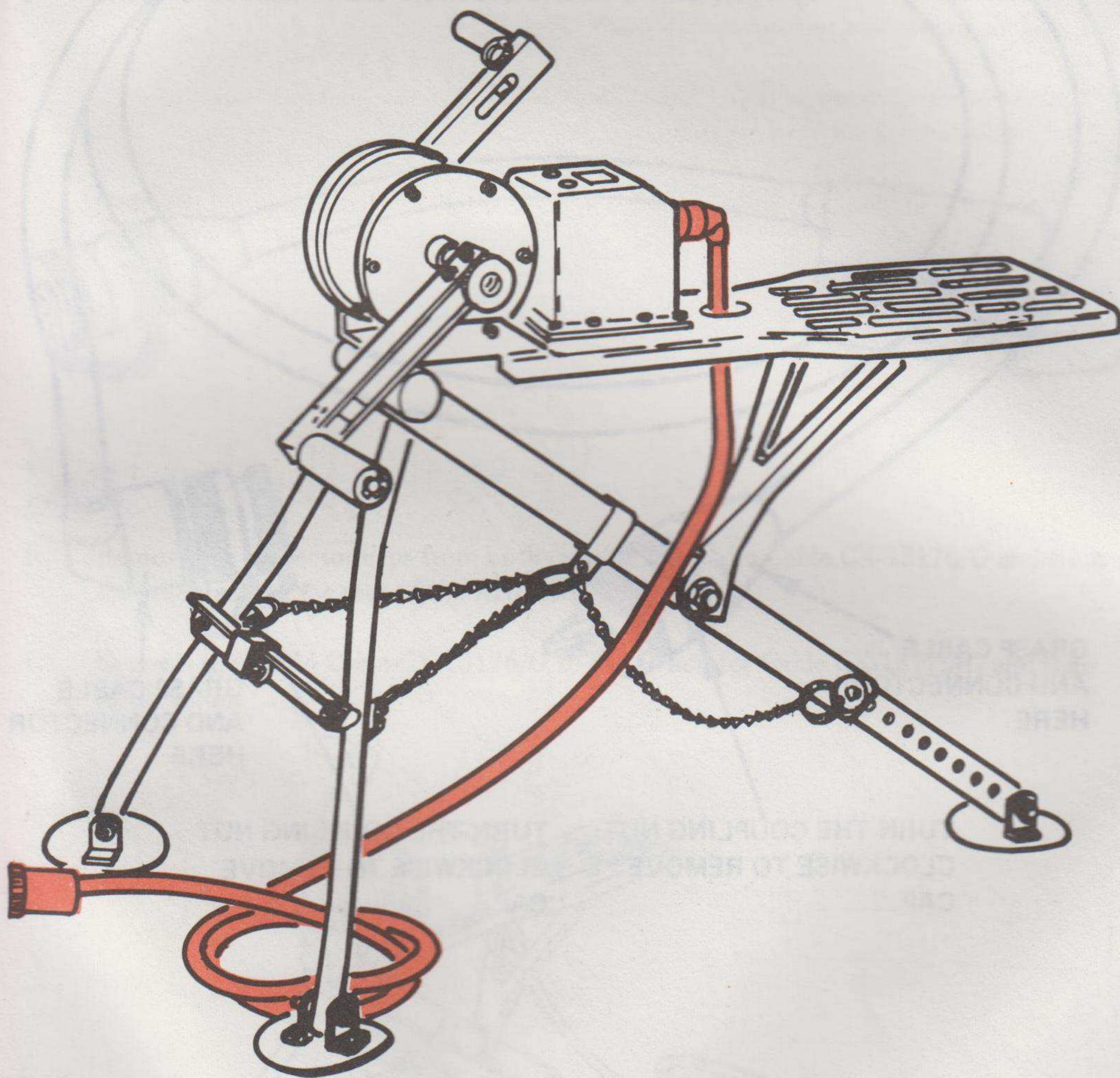
B. Remove the Generator Cable CX-13175/G from the carrying bag.



NOTE

When removing the protector caps from either end of the Generator Cable CX-13175/G, turn the coupling nut of the cap assembly in a clockwise direction to release the cap and chain.

- C. Thread the elbow end of the Generator Cable CX-13175/G up through the oval hole in the seat. Lay the cable out of the way of the legs to keep it from being damaged.

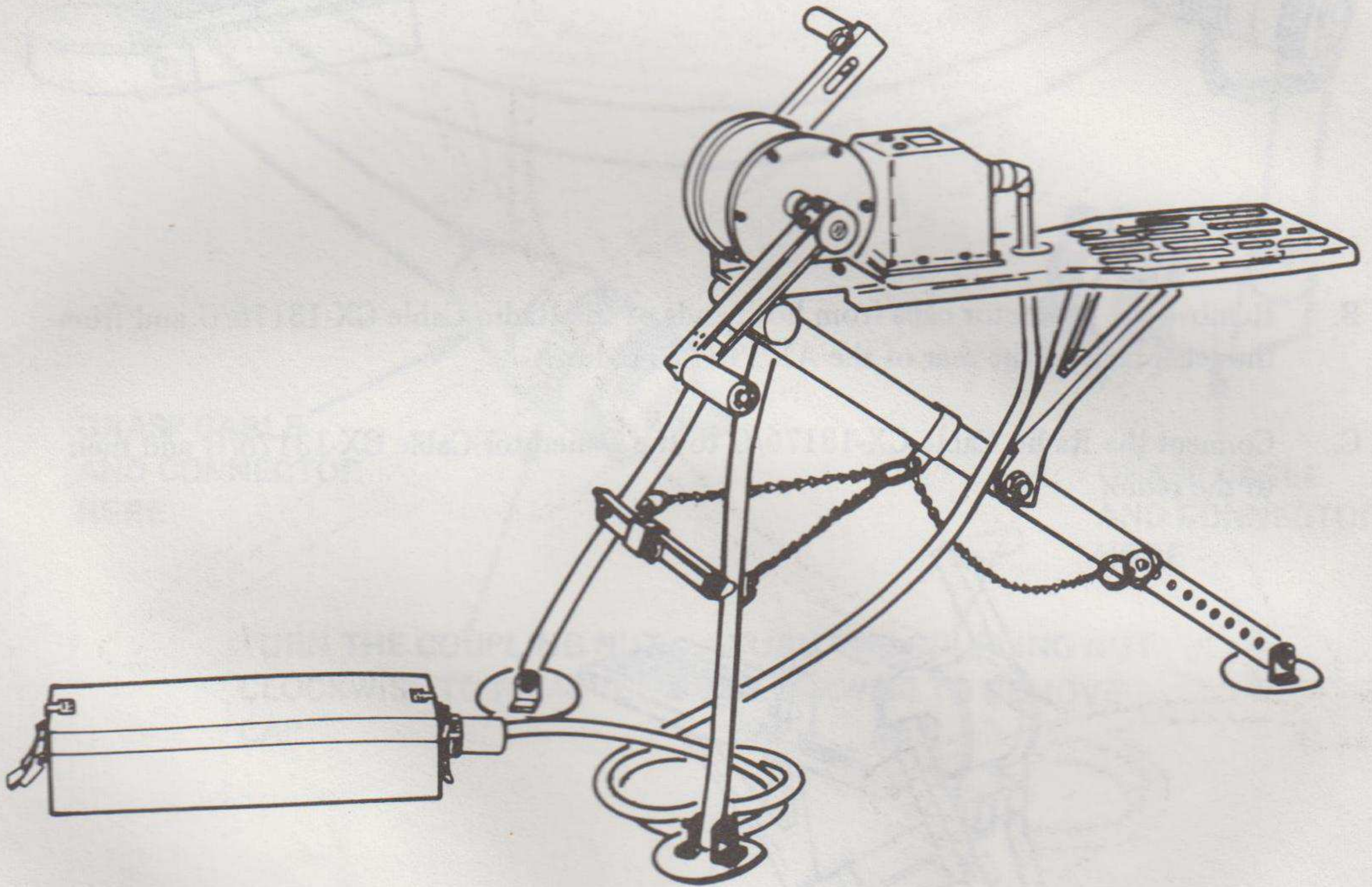


- D. Remove the protector cap and connect the cable to the PCU being careful to align the keyways to prevent connector damage.

G-76/G TO BB-542/U BATTERY SETUP**WARNING**

DO NOT TOUCH CONTACTS OF ANY CHARGED BATTERY OR ONE BEING CHARGED BY THIS EQUIPMENT AS ELECTRICAL SHOCK MAY RESULT.

- A. Remove the protector cap from the straight end of the Generator Cable CX-13175/G and the protector cap from the BB-542/U battery.
- B. Connect the Generator Cable CX-13175/G to the BB-542/U battery being careful to align the keyways to prevent connector damage.
- C. Place the Generator Cable CX-13175/G and the BB-542/U battery out of the way to prevent damage.

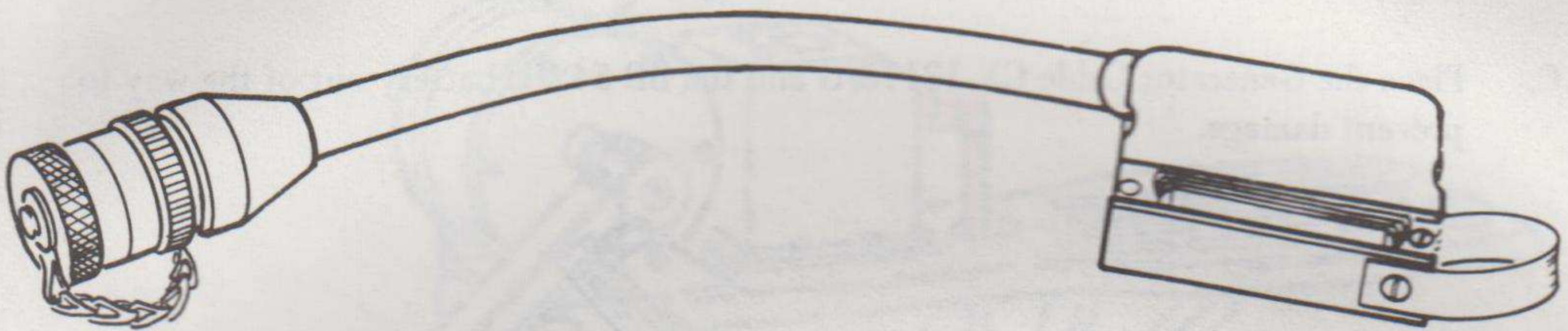


G-76/G TO AN/PRC-70 OR AN/PSC-1 RADIO SETUP

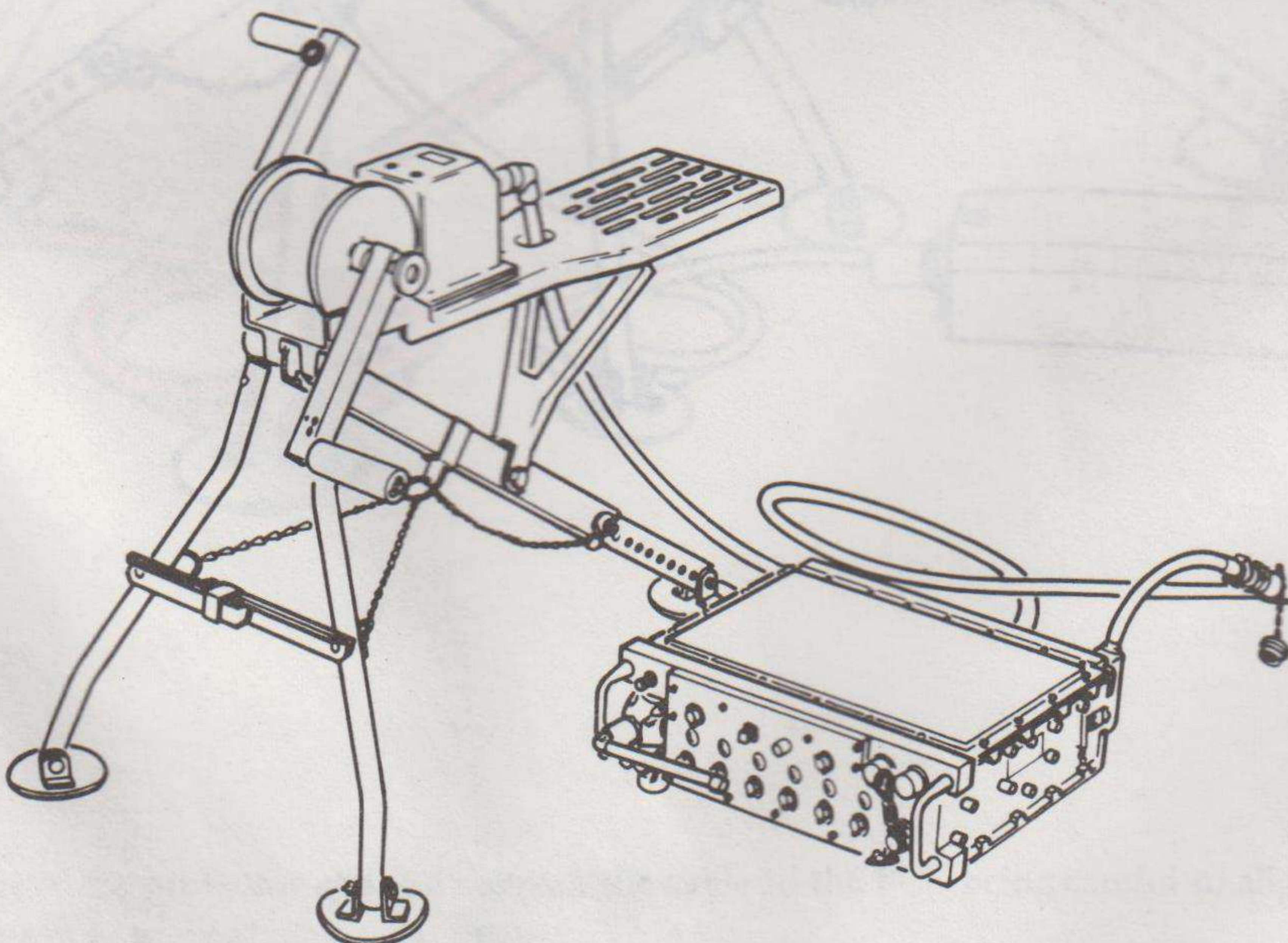
WARNING

DO NOT TOUCH CONTACTS OF A CABLE WHEN IT IS PLUGGED INTO A GENERATOR BEING OPERATED AS ELECTRICAL SHOCK MAY RESULT.

- A. Remove the Radio Cable CX-13176/G from the carrying bag.



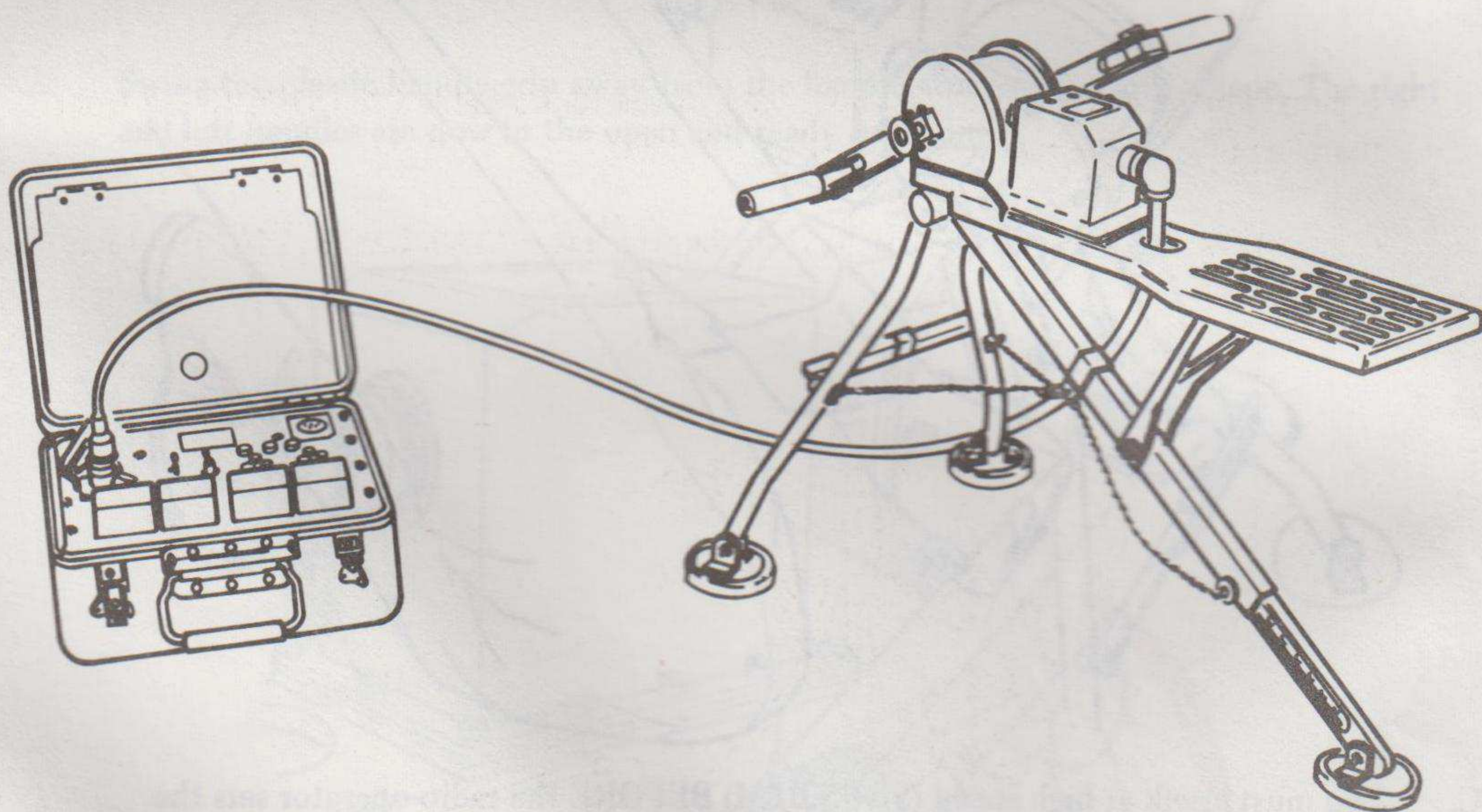
- B. Remove the protector caps from both ends of the Radio Cable CX-13176/G and from the receptacle at the rear of the AN/PRC-70 radio.
- C. Connect the Radio Cable CX-13176/G to the Generator Cable CX-13175/G and then to the radio.



G-76/G TO PERMISSIVE ACTION LINK (PAL) SETUP**WARNING**

DO NOT TOUCH CONTACTS OF AN ADAPTER WHEN IT IS PLUGGED INTO A GENERATOR BEING OPERATED AS ELECTRICAL SHOCK MAY RESULT.

- A. Remove the PAL Adapter MX-2122/G from the pouch in the carrying bag.
- B. Remove the protection caps from both ends of the PAL Adapter MX-2122/G and from the PCU.
- C. Connect the PAL Adapter MX-2122/G to the PCU.
- D. Connect the CT1478 cable of the PAL T1533/T1554 to the PAL Adapter MX-2122/G and refer to PAL manual for further connections and instructions.



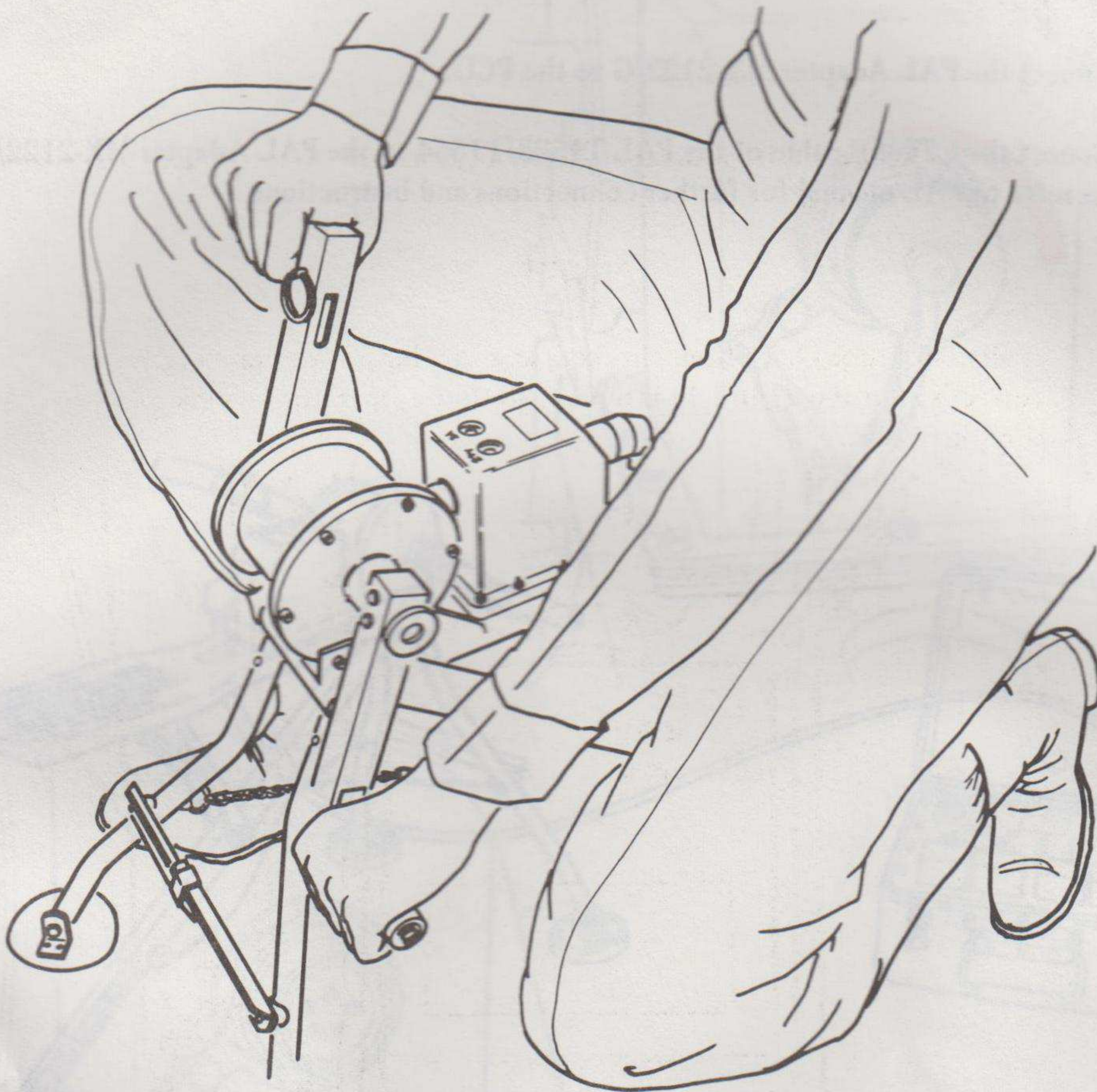
- E. Install the three foot pads on the feet of the tripod.

OPERATING PROCEDURE - ONE PERSON

WARNING

DO NOT TOUCH CONTACTS OF THE GENERATOR WHEN IT IS BEING CRANKED AS ELECTRICAL SHOCK MAY RESULT.

- A. After the G-76/G setup is complete, straddle the G-76/G and sit on the seat.
- B. Grasp the handles and begin rotating the crank handles in a forward motion.



- C. You must crank at high speed (90-95 RPM) BEFORE the radio operator sets the switches on the radio. To get that speed you must crank to the count of "ONE TWO THREE FOUR ONE TWO THREE FOUR ONE TWO THREE FOUR" and so on.
- D. Cranking must be smooth and regular -- not jerky.
- E. You will find that your cranking speed becomes slower when the radio set is being operated. You should still be able to crank fast enough to supply power to the radio set.

- F. You will find that cranking the generator is harder when the radio sets are used for sending than when used for receiving.
- G. The AN/PRC-70 or the AN/PSC-1, at the HI PWR setting, will need more power to operate than at the LO PWR setting. You must work harder to get that extra power.
- H. Look at the Regulator Box while cranking.
- I. When the left light is lit, it means that the G-76/G is in operating condition and you have enough voltage to operate a radio set.

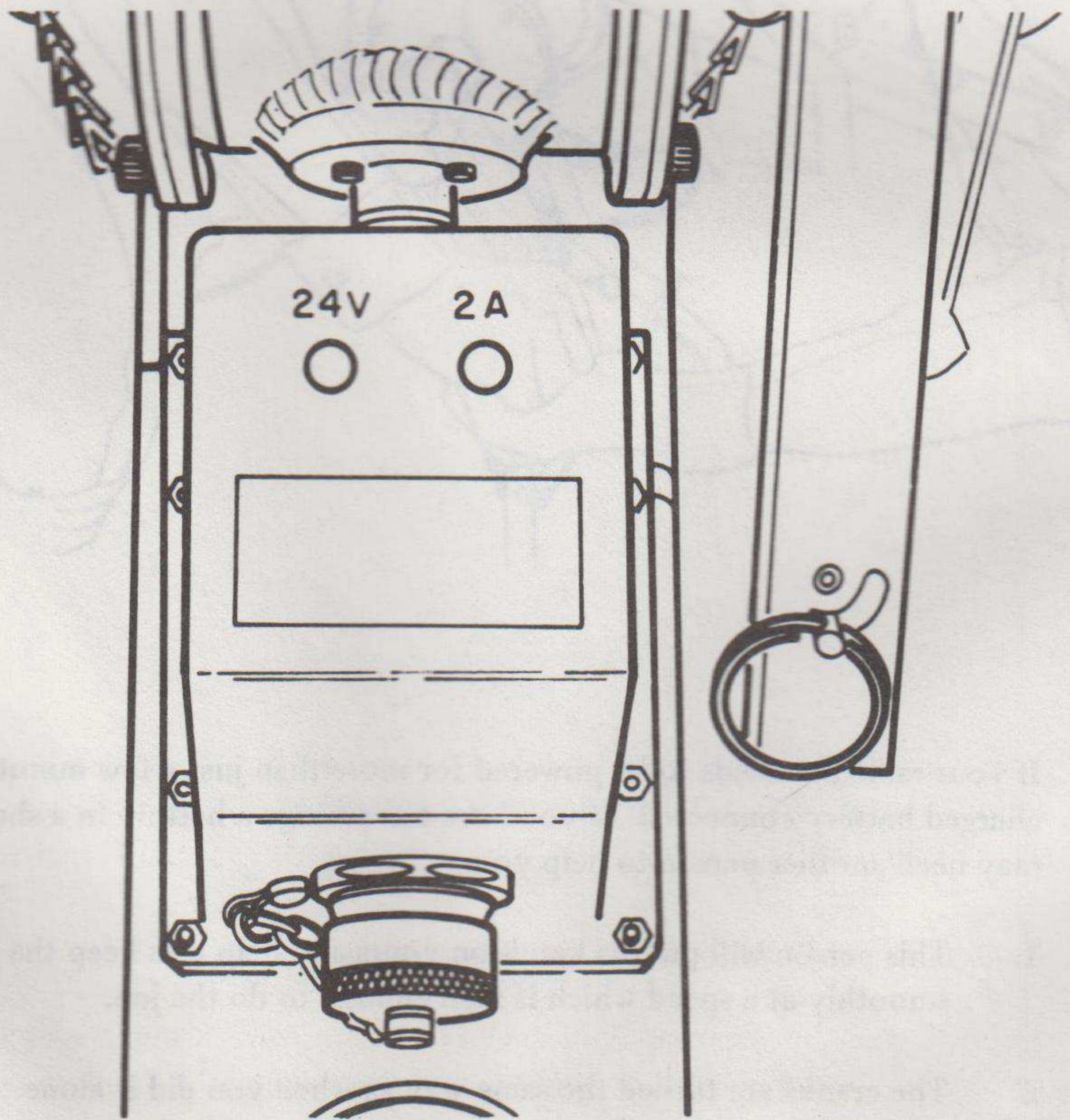
NOTE

When transmitting, the left light may go out.

- J. When the right light is lit, it means that all connections are complete, and that current above 2 amps is flowing.

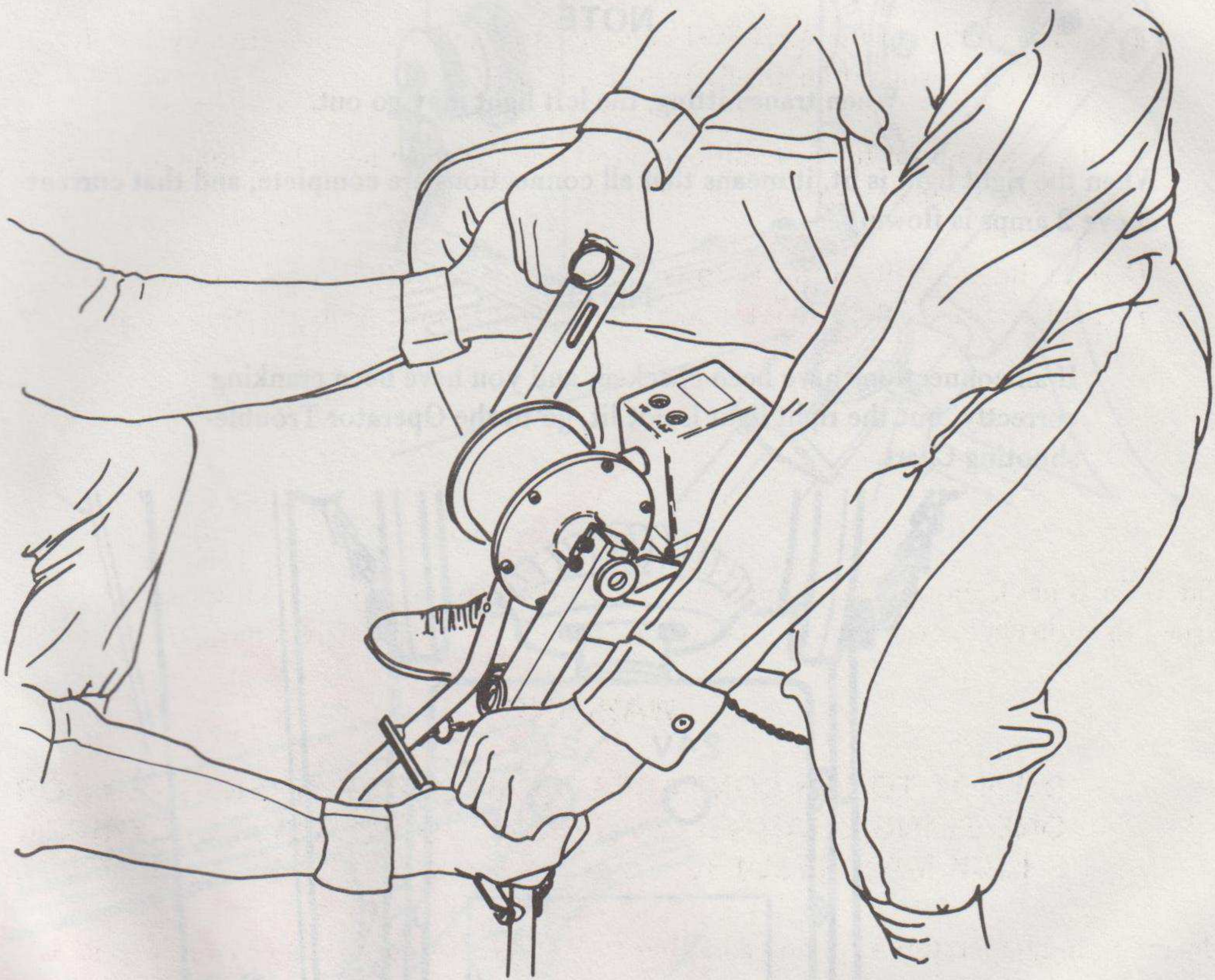
NOTE

If all connections have been checked, and you have been cranking correctly, but the right light is not lit, go to the Operator Troubleshooting Chart.



WARNING

DO NOT TOUCH CONTACTS OF THE GENERATOR WHEN IT IS BEING CRANKED AS ELECTRICAL SHOCK MAY RESULT.

OPERATING PROCEDURE - TWO PERSON

- A. If your radio set needs to be powered for more than just a few minutes without a charged battery connected, or you have to recharge a battery in a short time, you may need another person to help you.
1. This person will put his hands on yours and help you keep the cranks turning smoothly at a speed which is high enough to do the job.
 2. The cranks are turned the same way as when you did it alone.

B. The G-76/G operator will feel tired when operating the G-76/G under these conditions:

1. If the AN/PRC-70 field radio is in the burst mode, cranking will be difficult for more than 15 seconds.
2. When charging a BB542/U battery from the discharged state (under 20 volts) the operator will be able to crank 60 watts (right, 2 ampere current light lit) for only about 2 minutes without stopping. Higher cranking loads such as 100 watts can be maintained for about 1 minute without stopping.
3. The voltage of the AN/PSC-1 radio must be kept above 20 volts or a switch in the radio will automatically turn the radio off.

A rule of thumb for these conditions is to crank for short periods of time to achieve best operator/generator/radio output.

C. Despite the simplicity of the G-76/G, practice will improve its performance. This is particularly true if the generator and radio operators practice together as a team.

SECTION IV OPERATION UNDER UNUSUAL CONDITIONS

The G-76/G has been tested and operated in the most severe weather conditions. It is designed to withstand abuse and can operate in virtually any tactical environment.

WARNING

DO NOT TOUCH CONTACTS OF ANY CHARGED BATTERY OR ONE BEING CHARGED BY THIS EQUIPMENT AS ELECTRICAL SHOCK MAY RESULT.

Operation in temperature extremes and after the G-76/G has been submerged in water has not caused any degradation in performance. However, at temperatures below 32°F, follow these guidelines:

At temperatures below 32°F all power entering the BB542/U battery goes to its internal heater. Crank hard enough to keep the 24V light lit to provide a minimum of 60 watts of heat. At an internal battery temperature of 32°F battery charging will start.

The most efficient battery charging at very low temperatures will be obtained by continuously cranking. Long rest periods will cause the BB542/U battery to cool off and thereby require reheating before charging will start.

CHAPTER 3 MAINTENANCE INSTRUCTIONS

SECTION I LUBRICATION INSTRUCTIONS

There is no lubrication required for the Hand Crank Generator G-76/G at the operator level. Handles, cranking arms and tripod assembly are designed to move freely without binding.

SECTION II OPERATOR TROUBLESHOOTING PROCEDURES

Troubleshooting (Table 3-1) tells you some of the troubles you may find during the operation or maintenance of the G-76/G. You should perform the test, inspections and corrective actions in the order listed. If a malfunction is not listed or is not corrected by the listed corrective actions, refer to the next higher level of maintenance.

Find your problem under MALFUNCTION, then start troubleshooting with TEST OR INSPECTION, Step 1. If doing the CORRECTIVE ACTION does not solve the problem, go to the next step. Be sure that you are using good units as replacements.

Table 3-1. Troubleshooting

MALFUNCTION
TEST OR INSPECTION
CORRECTIVE ACTION

1. HAND CRANKS HARD TO TURN WHEN CHARGING BB-542/U BATTERY, ABOVE 45°F, RIGHT INDICATOR LIGHT OFF.
--

Step 1. Battery shorted.

Replace battery.

Step 2. Defective cable.

Replace cable.

Step 3. Regulator box defective.

Step 4. Defective generator.

Replace G-76/G and send defective unit to maintenance.

2. HAND CRANKS HARD TO TURN WHEN DIRECTLY POWERING RADIO AN/PRC-70 OR AN/PSC-1. LEFT AND RIGHT INDICATOR LIGHTS OFF.
--

Table 3-1. Troubleshooting — Continued

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

Step 1. Short circuit in radio.

Replace radio.

Step 2. Defective cable.

Replace cable.

Step 3. Short in regulator box.

Step 4. Defective generator.

Replace G-76/G and send unit to maintenance.

3. HAND CRANKS EASY TO TURN WHEN CHARGING BB-542/U BATTERY.

Step 1. Battery fully charged.

Stop charging.

Step 2. Open circuit in battery.

- a. Check battery fuse; replace if open.
- b. Replace battery.

Step 3. Defective cable.

Replace cable.

Step 4. Open circuit in regulator box.

Step 5. Open circuit in generator head.

Replace G-76/G and send unit to maintenance.

4. HAND CRANKS EASY TO TURN WHEN TRYING TO TRANSMIT WITHOUT A CHARGED BB542/U CONNECTED TO THE RADIO.

Step 1. Radio set in receive mode.

Change radio setting.

Step 2. Defective cable.

Replace cable.

Table 3-1. Troubleshooting – Continued

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
5. LEFT INDICATOR LIGHT OFF. CRANKING IS NOT HARD. NO CABLES OR EQUIPMENT ATTACHED.	Step 1. Defective generator.	Replace G-76/G and send unit to maintenance.
	Step 2. Defective regulator box.	
	Step 3. Defective indicator light.	Not a critical item. Send to maintenance when you can.
6. RIGHT INDICATOR LIGHT OFF. LEFT INDICATOR LIGHT ON. CRANKING IS NOT HARD.	Step 1. Radio in receive mode.	
	Step 2. Battery is fully charged.	
	Step 3. Poor cable connections.	Clean all connections and ensure proper fitting.
	Step 4. Defective cable.	
	Step 5. Defective connector.	Send cable to maintenance.
7. HAND CRANKS HARD TO TURN.	Step 1. Dirt or corrosion on crankshaft.	Clean crankshaft.
	Step 2. Lack of lubrication.	Replace G-76/G and send unit to maintenance.
8. HAND CRANKS HARD TO TURN WHEN DIRECTLY POWERING T1533/T1554 PAL. LEFT AND RIGHT INDICATOR LIGHTS OFF.	Step 1. Defective Adapter MX-2122/G	Replace adapter.

Table 3-1. Troubleshooting – Continued

MALFUNCTION	TEST OR INSPECTION	CORRECTIVE ACTION
-------------	--------------------	-------------------

Step 2. Defective CT1478 cable.

Replace cable.

Step 3. Short in regulator box.

Replace G-76/G and send unit to maintenance.

Step 4. Defective generator.

Replace G-76/G and send unit to maintenance.

9. HAND CRANKS EASY TO TURN AND LEFT INDICATOR LIGHT COMES ON WHEN TRYING TO DECODE PERMISSIVE ACTION LINK (PAL).

Step 1. Defective CT1478 cable.

Replace cable.

Step 2. Defective Adapter MX-2122/G.

Replace adapter.

10. BOTH LIGHTS OFF. CABLES ON, NO EQUIPMENT ATTACHED.

Step 1. Poor cable connection.

Clean connection. Replace cable if necessary.

Step 2. Defective regulator box plug.

Replace G-76/G and send unit to maintenance.

SECTION III MAINTENANCE PROCEDURES

Operator's maintenance for the G-76/G consists of PMCS, (See Chapter 2, Section II) troubleshooting procedures (See Section II) and cleaning.

CLEANING

CAUTION

Do not use a sharp pointed object or blade to dig or scrape the mud and dirt from the G-76/G, accessories or bag.

- A. Use a clean dry rag or non-metallic brush to remove all mud and dirt from the G-76/G. Remove the stop pin from the rear leg to move the adjustable part of the rear leg for cleaning. Open and close the right and left handles to free any stones or grit.
- B. Clean the PCU, generator and radio, and PAL adapter connectors and protection caps with a clean dry rag and a non-metallic brush.
- C. Clean the carrying bag inside and out with a clean dry cloth and non-metallic brush.

APPENDIX A REFERENCES

A-1 SCOPE

This appendix lists all forms, technical manuals and miscellaneous publications referenced in this manual.

A-2 FORMS

Recommended Changes to Publications and Blank Forms	DA Form 2028
Recommended Changes to Equipment Technical Manuals	DA Form 2028-2
Hand Receipts	DA Form 2062
Quality Deficiency Report	SF 368
Equipment Inspection and Maintenance Worksheet	DA Form 2404

A-3 TECHNICAL MANUALS

The Army Maintenance Management System (TAMMS)	TM 38-750
Hand Receipt Manual.	TM 11-6115-470-10-HR
Organizational, Direct Support and General Support Maintenance Manual.	TM 11-6115-470-24
Depot Maintenance Work Requirements (DMWR)	TM 11-6115-470
Organizational, Direct Support and General Maintenance Repair Parts and Special Tools List (RPSTL)	TM 11-6115-470-24P
Operator's Manual, XM-753 Projectile	TM 9-1110-220-10
Operator's Manual, AN/PRC-70 Radio.	TM 11-5820-553-10
Operator's Manual, AN/PSC-1 Radio.	TM 11-5820-841-10
Operator's Organizational DS, GS and Depot Maintenance Manual including Repair Parts and Special Tools List.	TM 11-6140-203-15-5

A-4 MISCELLANEOUS PUBLICATIONS

Property Accountability Manual.	AR 310-2
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APPENDIX B COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

SECTION I INTRODUCTION

B-1 SCOPE

This appendix lists components of end item and basic issue items for the G-76/G to help you inventory items required for safe and efficient operation.

B-2 GENERAL

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III. Basic Issue Items. Not applicable.

B-3 EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings:

a. Column (1) - Illustration Number (Illus Number). This column indicates the number of the illustration in which the item is shown.

b. Column (2) - National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

c. Column (3) - Description. Indicates the Federal item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number.

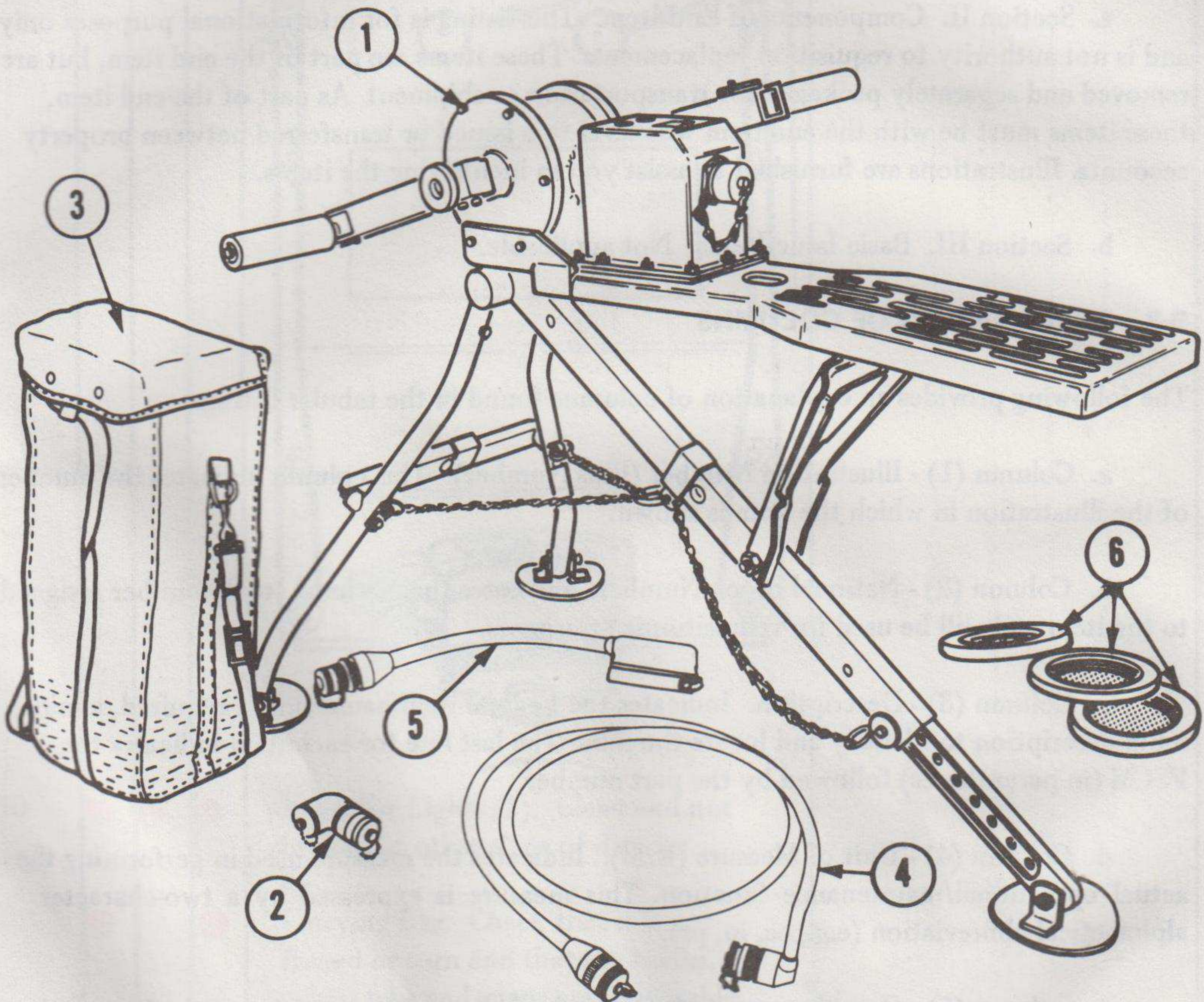
d. Column (4) - Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

e. Column (5) - Quantity required (Qty rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

NOTE

National stock numbers (NSN's) that are missing have been applied for and will be added to this TM by future changes/revision when they are entered in the Army Master Data File (AMDF). Until the NSN's are established and published, submit exception requisitions to: Commander, U.S. Army Communications – Electronics Command, ATTN: DRSEL-MM, Fort Monmouth, NJ 07703 for the part required to support your equipment.

**SECTION II
COMPONENTS OF END ITEM**



(1) Illus Number	(2) National Stock Number	(3) Description FSCM and Part Number	Usable On Code	(4) U/M	(5) Qty Rqr
1	6115-01-082-8107	DIRECT CURRENT GENERATOR G-76/G (83311) 11733326 DIRECT CURRENT GENERATOR G-76/G (V) 1 (83311) 11738242 Consisting of:		EA	1
1	6115-01-082-8107	DIRECT CURRENT GENERATOR G-76/G (83311) 11733326		EA	1
3		BAG, CARRYING (83311) 11733365		EA	1
4		CABLE ASSEMBLY CX-13175/G (83311) 11733296		EA	1
5		CABLE ASSEMBLY CX-13176/G (83311) 11733297 DIRECT CURRENT GENERATOR G-76/G (V) 2 (83311) 1173243 Consisting of:		EA	1
1	6115-01-082-8107	DIRECT CURRENT GENERATOR G-76/G (83311) 11733326		EA	1
2		ADAPTER CONNECTOR MX-2122/G (83311) 11733985		EA	1
3		BAG, CARRYING (83311) 11733365		EA	1
6		COVER ASSEMBLY, PLATE NON-SKID (83311) 11738274		EA	1

SECTION III
BASIC ISSUE ITEMS

Not Applicable

**APPENDIX C
ADDITIONAL AUTHORIZATION LIST**

The Hand Crank Generator G-76/G does not require any additional authorized items at operator level, therefore an additional Authorization List is not applicable in this document.

APPENDIX D EXPENDABLE SUPPLIES AND MATERIALS LIST

The G-76/G Hand Crank Generator does not require any expendable maintenance supplies at operator level, therefore an Expendable Supplies and Materials List is not applicable in this document.

Item No.	Description	Quantity	Unit	Part No.	Remarks
(The table body is mostly illegible due to fading and bleed-through from the reverse side of the page.)					

By Order of the Secretary of the Army:

EDWARD C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Brigadier General United States Army
The Adjutant General

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