D E P A R T M E N T O F T H E A R M Y T E C H N I C A L M A N U A L

OPERATOR'S MANUAL

LATHE, BRAKE DRUM, FLOOR MOUNTED

60 INCH RATED SWING,

25 INCH MAXIMUM DRUM DIAMETER,

115-VOLT, 60-CYCLE, SINGLE PHASE

(STAR MACHINE AND TOOL COMPANY MODEL 1400)

(4910-516-6192)

This reprint includes all changes in effect at the time of publication; change 1.

H E A D Q U A R T E R S , D E P A R T M E N T O F T H E A R M Y

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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 21 April 1967

TM 9-4910-482-10 is published for the use of all concerned.

By Order of the Secretary of the Army:

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USAR: None

For explanation of abbreviations used, see AR 320-50.

Change
No.1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, *28 June 1973*

Operator's Manual
LATHE, BRAKE DRUM: FLOOR MOUNTED
60 INCH RATED SWING,
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(4910-516-6192)

TM 9-4910-482-10, 21 April 1967, is changed as follows:

Page 10. Add the following paragraphs:

Recommendations for Maintenance Publications Improvements.

You can improve this manual by calling attention to errors and by recommending improvements using DA Form 2028 (Recommended Changes to Publications) or by a letter and mailing directly to Commander, US Army Weapons Command, ATTN: AMSWE-MAS-SP, Rock Island IL 61201. A reply will be furnished direct to you.

Components of the End Item.

Parts included with the end item and considered as components of the end item configuration are listed in the following table:

Table 1. Components of the End Item

Components	Part No.	(FSCM)	Qty
ARBOR, DRUM:	R740	(57127)	1
ARBOR, DRUM:	R640	(57127)	1
ARBOR, DRUM:	R390	(57127)	1
BAND, BRAKE DRUM SILENCING:	SB20	(57127)	1
CONE, CENTERING:	R680	(57127)	1
CONE, CENTERING:	R665	(57127)	1
CONE, CENTERING:	R670	(57127)	1
CONE, RADII:	R550	(57127)	1
CONE. RADII:	R560	(57127)	1
CONE, RADII:	R580	(57127)	1

Table 1. Components of the End Item -Continued

Components	Part No.	(FSCM)	Qty
CONE, RADII:	R620	(57127)	1
CONE, RADII:	R570	(57127)	1
CONE, RADII:	R630	(57127)	1
CONE, RADII:	R590	(57127)	1
CONE, RADII:	R600	(57127)	1
CONE, RADII:	R610	(57127)	1
CONE, TAPERED:	R510	(57127)	1
CONE, TAPERED:	R520	(57127)	1
CONE, TAPERED:	R385	(57127)	1
CONE, TAPERED:	R380	(57127)	1
CONE, TAPERED:	R375	(57127)	1
CONE, TAPERED:	R370	(57127)	1
CONE, TAPERED:	R365	(57127)	1
CONE, TAPERED:	R360	(57127)	1
CONE, TAPERED:	R355	(57127)	1
CONE, TAPERED:	R350	(57127)	1
CONE, TAPERED:	R345	(57127)	1
HONE, SHARPENING:	CB75	(57127)	1
NUT, ARBOR:	R645	(57127)	1
NUT, ARBOR:	R745	(57127)	1
NUT, ARBOR:	R395	(57127)	1
PLATE, FACE:	R655	(57127)	2
REDUCER:	R501	(57127)	1
REDUCER:	R331	(57127)	2
SPACER, ARBOR:	R530	(57127)	2
SPACER, ARBOR:	R540	(57127)	2
SPACER, ARBOR:	R330	(57127)	1
SPACER, ARBOR:	R325	(57127)	1
SPACER, ARBOR:	R320	(57127)	4
SPRING, COIL:	R315	(57127)	1
SPRING, COIL:	R675	(57127)	1
TOOL BIT:	CB35	(57127)	2
TOOL BIT:	CB36	(57127)	2

Page A-1 Appendix A is superseded as follows:

APPENDIX A
BASIC ISSUE ITEMS LIST
AND
ITEMS TROOP INSTALLED OR AUTHORIZED LIST

Section I. INTRODUCTION

1. Scope.

This appendix lists basic issue items and items troop installed or authorized required by the crew/operator for operation of the Brake Drum Lathe

2. General.

This Basic Issue Items List and Items Troop Installed or Authorized List is divided into the following sections:

a. Basic Issue Items List - Section II. A list in alphabetical sequence of items which are furnished with, and must be turned in with, the end item.

b. Items Troop Installed or Authorized List. Not applicable.

3. Explanation of Columns.

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

a. Federal Stock Number. Indicates the Federal stock number assigned to the item and will be used for requisitioning purposes.

b. Description. Indicates the Federal item name and a minimum description required to identify the item. The last line indicates the reference number followed by the applicable Federal Supply Code for Manufacturer (FSCM) in parentheses. The FSCM is used as an element in item identification to designate manufacturer or distributor or Government agency, etc., and is identified in SB 708-42. Items that are included in kits and sets and listed below the name of the kit or set with quantity of each item in the kit or set indicated in front of the item name.

c. Unit of Measure (U/M). Indicates the standard or basic quantity by which the listed item is used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation, e.g., ea, in., pr, etc., and is the basis used to indicate quantities. When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

d. Quantity Furnished with Equipment (Basic Issue Items Only). Indicates the quantity of the item furnished with the equipment.

e. Quantity Authorized (Items Troop Installed or Authorized Only). Indicates the quantity authorized to be used with the equipment.

f. Illustration (Basic Issue Items Only). This column is divided as follows:

(1) *Figure Number.* Indicates the figure number of the illustration in which the item is shown.

(2) *Item number.* Indicates the item number used to identify each item called out in the illustration.

Section II. BASIC ISSUE ITEMS LIST

(1) FSN	(2) Description	(3) Unit of Meas	(4) Qty Furn With Equip.	(5) Illustration (a) Fig No.	(5) Illustration (b) Item No.
5120-224-2504	KEY, SOCKET HEAD SCREW: GGGK00275 (81348)	EA	1	A-1	38
5120-240-5292	KEY, SOCKET HEAD SCREW: GGGK00275 (81348)	EA	1	A-1	39

(1) FSN	(2) Description	(3) Unit of Meas	(4) Qty Furn With Equip.	(5) Illustration (a) Fig No.	(5) Illustration (b) Item No.
5120-293-1266	WRENCH BOX: 8010462(19200)	EA	1	A-1	52
5120-228-9527	WRENCH, OPEN END, FIXED: GGGW636 (81348)	EA	1	A-1	49
5120-277-1261	WRENCH, OPEN END, FIXED: GGGW636 (81348)	EA	1	A-1	50
5120-277-1262	WRENCH, OPEN END, FIXED: GGGW636 (81348)	EA	1	A-1	51
5120-277-2683	WRENCH, OPEN END, FIXED: 80116PC55 (81316)	EA	1	A-1	10
5120-293-2124	WRENCH, OPEN END, FIXED: GGGW636 (81348)	EA	1	A-1	9

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

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Major General, United States Army
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Distribution:
Active Army:
DCSLOG (3)
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COE (5)
Dir of Trans (1)
OCC-E (1)
CONARC (2)
AMC (12)
ARADCOM (2)
ARADCOM Rgn (2)
Armies (3) except
Seventh(5)
Eight (5)
Corps (2)
OS Maj Comd (2)
LOGCOMD (2)
WECOM (10)
MUCOM (2)
AVSCOM (2)
Ft Belvoir (2)
Ft Eustis (1)
APG (1)
DPG (1)
5th USASA FId Sta (1)
Ft Knox FLDMS (10)
USASA (1)
USACDCEC (10)
USASETAF (1)
USAOC&S (2)
Gen Dep (2)
Army Dep (3)
Arsenals (2)
USDB Ft Leavenworth (1)
USACRREL (l)
QM FLDMS (2)
Engr FLDMS (2)
ARMIS (1)
USACOMZEUR (2)
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7
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29-55
29-56
29-57

NG: State AG (2); Units same as active Army except allowance is one (1) copy to each unit.
USAR: None
For explanation of abbreviations used. see AR 310-50.

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SECTION I
USE AND MAINTENANCE

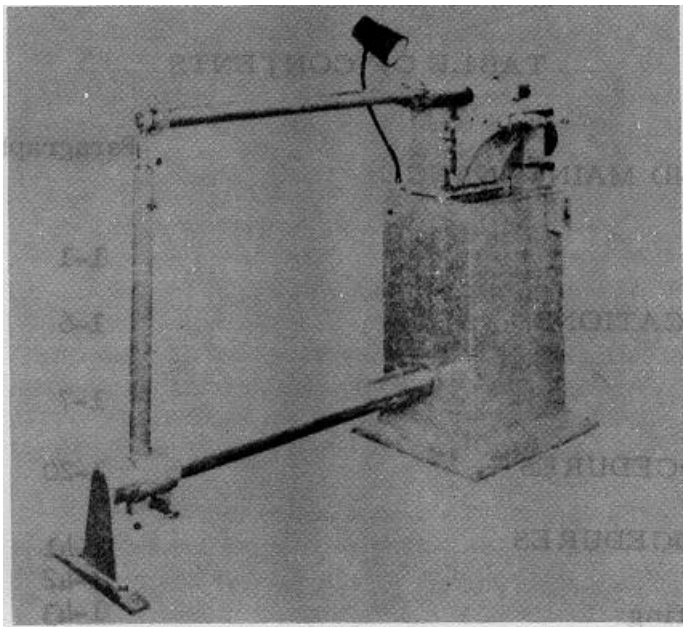

Fig. 1-1. BRAKE DRUM LATHE

1-1. INTRODUCTION

1-2. The Star Brake Drum Lathe, Model 1400 is designed to put a smooth accurate finish on used or unfinished drums. (See Figure 1-1)

1-3. The Model 1400 will handle passenger car drums as well as being capable of turning the largest and heaviest truck drums.

1-4. The Model 1400 is designed to keep maintenance expenses at a minimum.

1-5. The following instructions and parts breakdown will help assure many years of high quality, trouble-free drum turning. Numbers in parentheses refer to item numbers. (See Figure 2-1)

1-6. TABLE OF SPECIFICATIONS

Drum Capacity Range (dia.)	8" to 38"
Drum Cutting Depth (face).	8"
Speeds, Number of Changes	3
Speeds, Cutting Range	30, 60, & 125 rpm
Swing	60"
Motor	1 hp., 115V, 60 C., Single Phase, 1725 rpm
Feed Range (in/rev.)	.005 to .016
Number of Feeds	2
Weight, Lbs.	
Machine	465
Accessories	120

1-7. INSTALLATION

1-8. Remove machine and all accessories from shipping container.

1-9. Check all parts with packing slip to insure all items are included.

1-10. Clean the entire machine, adapters, and accessories with a good grease solvent to remove the protective coating on the machined surfaces.

1-11. Place machine in desired position and securely bolt it to the floor. Make sure machine is level. Level machine by removing Compound Rest (70) and placing master precision level on top of Cross Slide (57). Shim under base until machine is level. Replace Compound Rest (70).

1-12. Place the 2" Arbor, R-390, into the Spindle (28) until the Draw Bar (77), can be inserted into rear of Arbor. Rotate Draw Bar (77) by hand until Arbor, R-390, is drawn up into Spindle (28). Tighten Draw Bar (77), with Open End Wrench, R-154, by applying 60 ft. - lb. torque.

1-13. Turn Locking Screw Shaft (205) of Vertical Tube (194) counterclockwise to open split sleeve. Place Vertical Tube's (194) split sleeve over Horizontal Tube (208) with Locking Screw Shaft (205) to the left when facing open end of Horizontal Tube (208). Position open end of Horizontal Tube (208) over the boss which is welded to side of base.

1-14. Fasten the Mounting Plate (209) to the base of the Horizontal Tube (208).

1-15. By use of a plumb bob, master precision level, and shims permanently position the Mounting Plate (209) so that the Horizontal Tube (208) is directly beneath the Arbor, R-390, and level. Tighten Cap Screw (211) at rear of Horizontal Tube (208).

1-16. Swing the Vertical Tube (194) into the upright position and slide it toward the Arbor, R-390. Raise the Adjusting Bushing (197) by hand until the Rod End Bearing (198) will slide over the end of the Arbor, R-390, and tighten the Vertical Tube (194) to the Horizontal Tube (208) by turning the Locking Screw Shaft (205) clockwise. Rotate Cam Shaft (200) handle clockwise until Pin (204) hits Stop Pin (203). Rotate Adjusting Bushing (197) until you feel it touch the Cam (201). This is done by slowly moving the Cam Shaft (200) while you are rotating the Adjusting Bushing (197) until you feel a slight drag on the Cam (201). Lock Jam Nut (199) to Adjusting Bushing (197). The outboard support is now permanently adjusted.

1-17. lace Tool Bit, CB-35, into Boring Bar (74) and fasten securely with the two Square Head Set Screws (75). The tool bit slot in the head of the Boring Bar (74) is deep enough to enable several degrees of adjustment of the tool bit angle.

1-18. Position Lamp (124) over Lamp Bracket (125) and plug into Receptacle (120). Use standard bulb, 75 watts or less, moistening bulb neck before slipping it through silicone grommet at the base of the reflector. After screwing bulb into socket, make sure air space between shade and reflector is equal on all sides.

1-19. Plug machine into 115 volt outlet and the machine is now properly installed.

1-20. OPERATIONAL PROCEDURES

1-21. Mount drum on arbor using one of the following methods which apply. Be sure that the Arbor is mounted in Spindle (28) before mounting hub and drum assembly.

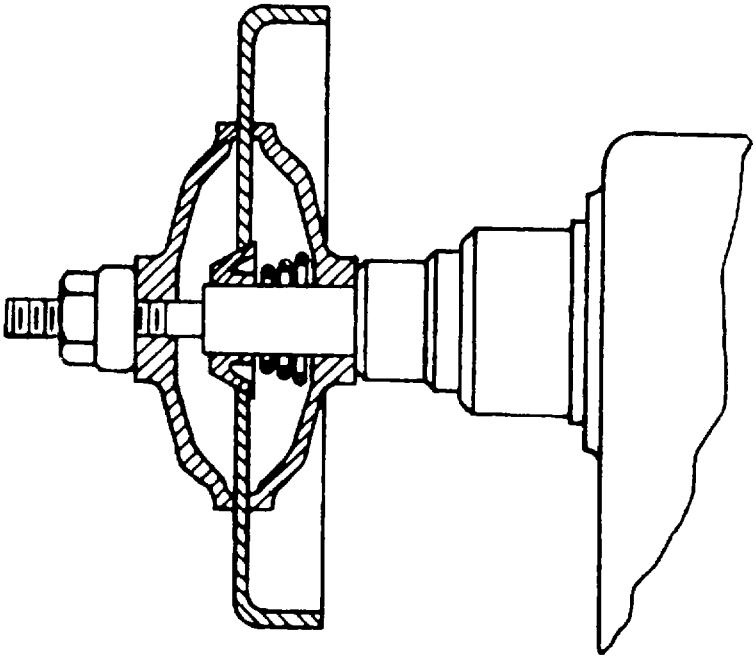

Fig. 1-2 - LOOSE DRUM SET-UP

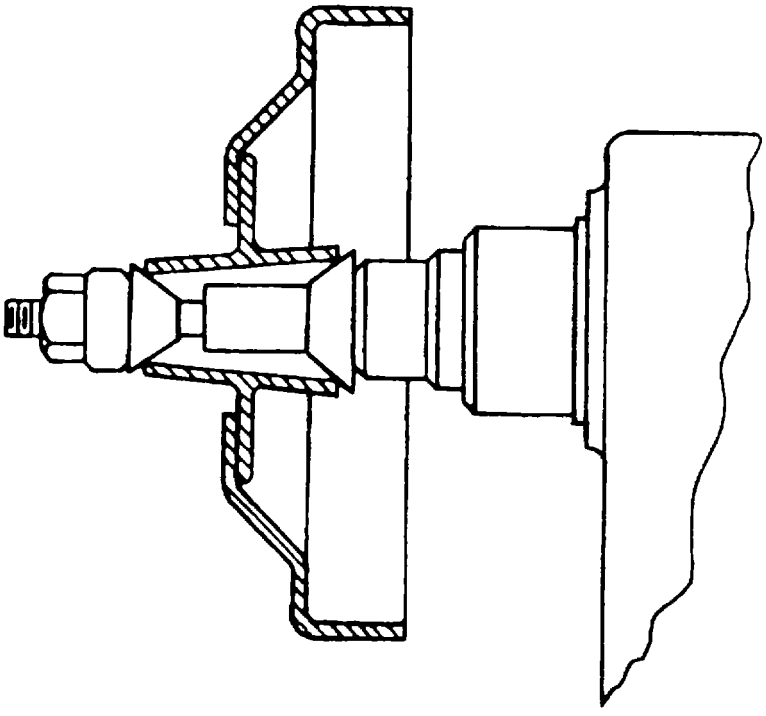

Fig. 1-3 - TAPERED HUB

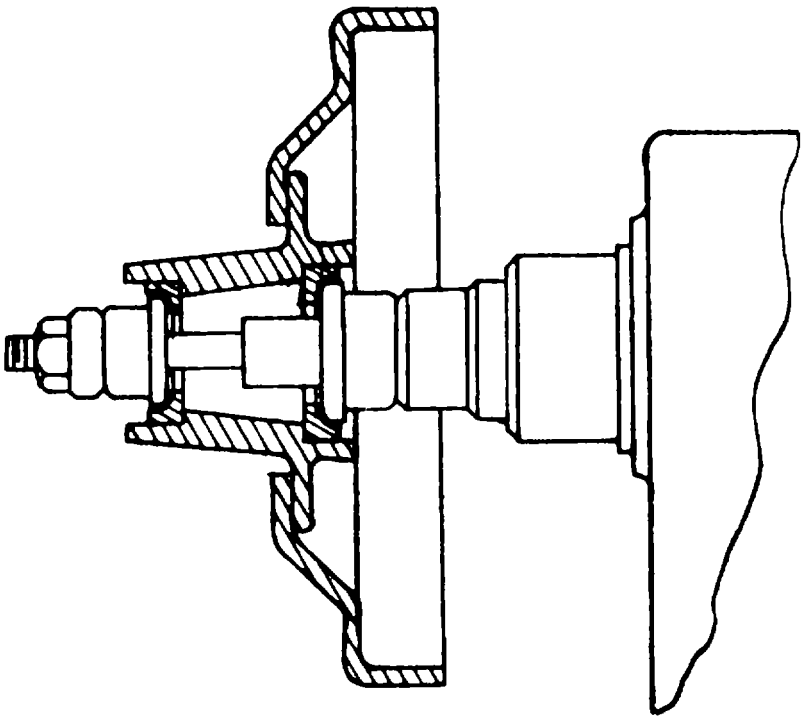

Fig. 1-4 - BALL BEARING EQUIPPED HUB

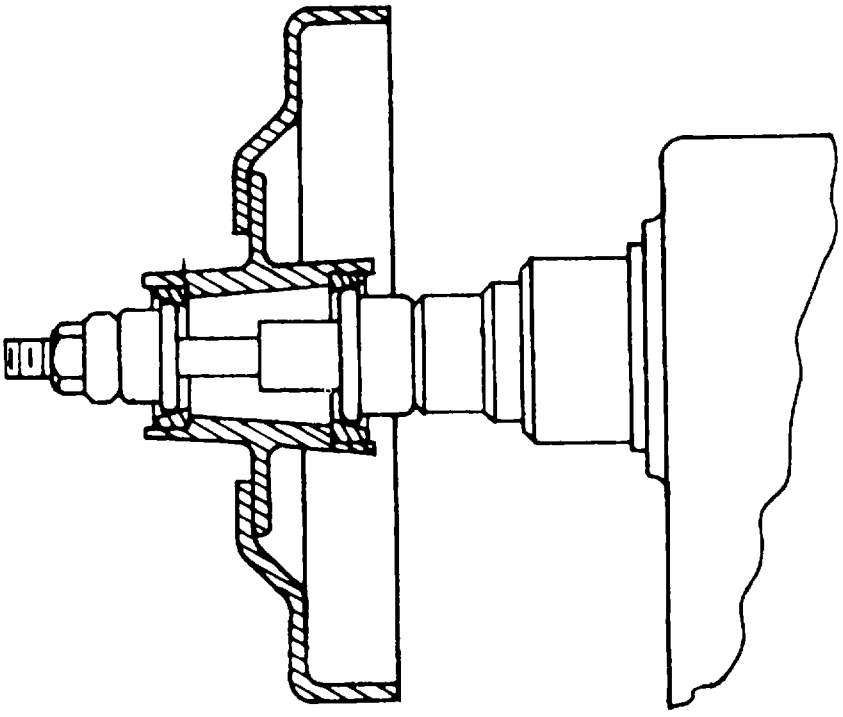

Fig. 1-5 - TAPERED BEARING EQUIPPED HUB

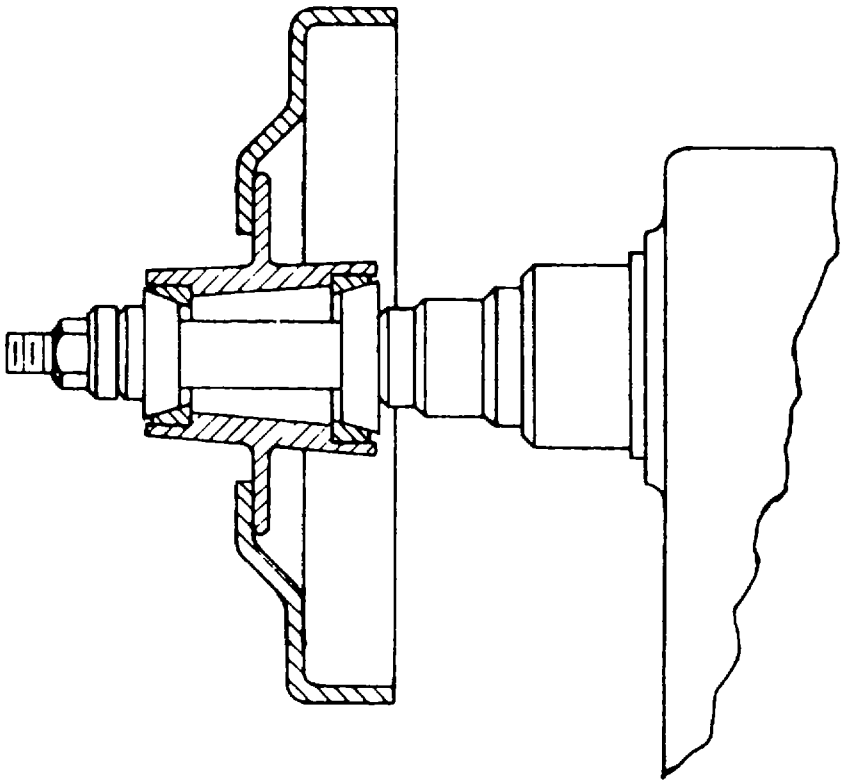

Fig. 1-6 - TAPERED BEARING HUB (TRUCK)

a. -Loose Drum Set-Up. Select proper Tapered Cone to fit in center of drum. Place one Face Plate on Arbor followed by the Spring and Tapered Cone. Place drum on Arbor over Tapered Cone and push drum up to pads of Face Plate. Place other Face Plate on Arbor and push up to drum. Place additional Spacers on Arbor so that the two Face Plates can be tightened together when the Arbor Nut is put on the end of Arbor and tightened. Make sure that the face plate pads are riding on a smooth clean surface of the drum. (See Figure 1-2)

b. -Tapered Hub. Select the proper Tapered Cones to fit in drum hub. On some drums the Tapered Cones go in about 1/4 of an inch. Place Tapered Cone for inside of tapered hub onto Arbor followed by the drum and outside Tapered Cone. Place additional Spacers onto Arbor so that when the Arbor Nut is tightened at the end of the Arbor, the two Tapered Cones are drawn up tightly against the Tapered Hub. (See Figure 1-3)

c. -Ball Bearing Equipped Hub. Select the proper Radii Cone to fit into the inner and outer bearing cups. Radius of Radii Cone selected should seat in Center of Bearing Cup radius. Place Radii Cone for inner bearing cup onto Arbor followed by drum and Radii Cone for outer bearing cup. Place additional Spacers on Arbor so that when the Arbor Nut on the end of Arbor is tightened, the two Radii Cones are drawn up securely to the bearing cups. Make sure bearing cups and radii cones are clean before mounting. (See Figure 1-4)

d. -Tapered Bearing Equipped Hub. Select the proper Radii Cone to fit into the inner and outer bearing cups. The Radius of Radii Cone selected should seat somewhere on cup bearing surface. In most cases, this will be approximately in the center of bearing cup. Place Radii Cone for inner bearing cup on Arbor, followed by hub and Radii Cone for outer bearing cup. Place additional Spacers on Arbor so that when the Arbor Nut on the end of the Arbor is tightened the two Radii Cones will draw up securely to the bearing cups. Make sure that the Radii Cones and Bearing Cups are clean before mounting. (See Figure 1-5)

e. -Tapered Bearing Hub (Truck). Select the proper Tapered Cones to fit into the inner and outer bearing cups. The Tapered Cone should fit so that it is almost completely inside the bearing cup. There are conditions when the Tapered Cone will barely enter the cup or just about go through the cup. Place the Tapered Cone for the inner bearing cup on the Arbor, followed by the drum and Tapered Cone for outer bearing cup. Place additional Spacers on the Arbor so that when the Arbor Nut on the end of the Arbor is tightened, the two Tapered Cones are drawn securely against the bearing cups. Make sure that the Tapered Cones and Bearing Cups are clean. (See Figure 1-6)

NOTE: In order to prevent interference between the machine and wheel elements when turning the largest dual wheel and drum assembly (14.00 x 24), it is necessary to use a combination of arbor spacers that will result in a clearance of approximately 2-3/4 inches between the outside edge of the tire and the face of the cabinet.

1-22. Place Brake Drum Silencing Band, SB-20, around drum and apply enough tension so that the drum is snugly wrapped. On passenger drums, the Brake Drum Silencing Band, SB-20, should be positioned even with the edge of open side of the drum. The Brake Drum Silencing Band, SB-20, should not be too tight or too loose on drum.

1-23. If drum is to be turned with wheels mounted, then the outboard support should always be used.

1-24. Before drum and wheel assembly is resting with full weight on Arbor, make sure that the Vertical Tube (194) of the outboard support is in place and the Cam Shaft (200) is in the up position.

1-25. For best results, the outboard support should be used on all drum and wheel assemblies.

1-26. The Boring Bar (74), Compound Rest (70), Cross Slide (57) and Apron (46) should be adjusted so that the Tool Bit can be placed in the rear of the drum without interference. This adjustment depends on the diameter and depth of the drum. The Boring Bar (74) can slide in and out of the Compound Rest (70) by loosening the Cap Screw (73). The Compound Rest (70) can be rotated by loosening Cap Screw (71) and Cap Screw (73). The Cross Slide (57) can be moved in and out by rotating the Handle (68).

1-27. The spindle speed is selected by the following procedure; Always make sure machine is off when changing spindle speed.

1-28. Loosen right Hand Knob (130) on side of base and give it two full turns counterclockwise.

1-29. Raise left Hand Knob (130) to highest position and retighten right Hand Knob (130).

1-30. Loosen clasp on side of Guard (181) and swing open Back Guard (183) and move "V" Belt (500154) to proper groove in Step Pulley (25).

1-31. Loosen right Hand Knob (130) and lower left Hand Knob (130) to original position.

1-32. Retighten right Hand Knob (130) firmly using moderate downward pressure on left Hand Knob (130).

1-33. Close Back Guard (183) and secure clasp.

1-34. Turn machine on at Switch (115).

1-35. If drum has a prominent ridge on outer or inner edge of braking surface, remove with rough cut before observing the following procedures.

1-36. Bring Tool Bit to maximum depth of drum by rotating Handwheel (189).

1-37. Advance Handle (68) until Tool Bit touches inside surface of drum. Each graduation on the Graduated Collar (66) represents .001" of travel of the Tool Bit. Advance Tool Bit into drum until desired depth of cut is reached. Lock Cross Slide (57) by tightening Thumb Screw (55).

1-38. Shift Lever (162) into desired feed. Finish cut corresponds to .005 inch per revolution and Rough Cut corresponds to .016 inch per revolution.

1-39. When Tool Bit leaves drum, shift Lever (162) into neutral and turn machine off.

1-40. The above procedures are for instruction purpose only. Drum condition determines the proper depth of cut, carriage feed, and spindle rpm. As the operator gains experience with this machine, he will be able to make the proper setting for maximum performance, efficiency and accuracy.

1-41. MAINTENANCE PROCEDURES

1-42. Lubrication

a. -Main Bearings (3 & 4). Apply a few drops of light machine oil, SAE #10, daily in both Head Oilers (5).

b. -Lead Screen (42) and Lead Screw Nut (43). Apply a few drops of light machine oil, SAE #10, daily at Oiler (177).

c. -Cross Slide (57). Apply a few drops of light machine oil, SAF #10, at Oiler (58) and between Graduated Collar (66) and End Plate (64) daily.

d. -Gear Box. Maintain the oil level in the center of Oil Window (8) with gear oil, SAF 1190. Add oil by removing Vented Plug (6). Caution: Do not fill higher than top of Oil Window (8). Drain oil every 1,000 running hours by removing Pipe Plug (82).

e. -Apron Ways. Move Apron (46) to extreme front position, wipe away all dirt or cutting particles and apply several drops of light oil, SAE #10, to all exposed surfaces of the dovetail ways. Move Apron (46) in opposite direction and repeat above procedures. Perform weekly.

f. -Cross Slide Ways. Back out Cross Slide (57) to extreme out position and wipe the dovetail surfaces clean and apply light oil, SAE #10, weekly.

g. -Wipe machine free of dust and cutting particles with oil rag daily.

1-43. Trouble Shooting

a. -Problem: Chatter Reason:

Wrong Cones and Adapters Face Plate, R-655, making poor contact due to excessive dirt between face plate pads and drum.

Dull Tool Bit.

Failure to use Brake Drum Silencing Band, SB-20.

Improper mounting of Brake Drum Silencing Band, SB-20.

Spindle rpn too slow or too fast for depth of cut.

Outboard support not bolted to floor.

Failure to tighten Thumb Screw (55).

The following areas should be checked for tightness:

(1) Tool Bit, CB-35, or CB-36
(2) Boring Bar (74)
(3) Cross Slide Gib (59)
(4) Apron Gib (47)
(5) Draw Bar (77)
(6) Arbor Nut, R-645, or R-395
(7) Drum on Hub
(8) Bearing Cup on Hub

b. -Problem: Loss of Power Reason:

Low Voltage to motor.

Worn or loose drive belts.

Dull Tool Bit.

Failure to follow lubrication instructions.

c. -Problem: Machine Shuts Off During Operation

Reason:

Thermal Overload Switch (115) cuts off because machine is overworked.

d. -Problem: Machine will not start.

Reason:

Thermal Overload Switch (115) has not had time to cool.

e. -Problem: Cannot Engage Lever (162).
Reason:
Cut Off Bracket (50) has disengaged feed. Rotate Handwheel (189) clockwise until Cut Off Bracket (50) has adequately cleared Lever (162).

f. -Problem: Carriage will not feed out when engaging Lever (162).
Reason:
Remove Guard (181) and see if Chain (180) has come off Sprocket Sub-Assembly (138). Place Chain (180) on Sprocket Sub-Assembly (144), Drive Sprocket (178), and Idler Sprocket (137). Loosen two Cap Screws (134) and push Bar (1 36) to obtain proper Chain (180) tightness. Tighten Cap Screws (134).

Remove Guard (181) and replace Spring Pin (173). Check to see if Boring Bar (74) has hit Main Housing (2).

1-44. Calibration

a. -Apron Gib (47) adjustment. Loosen Jam Nuts (49). Tighten Set Screws (48) until Apron (46) looseness is taken up. Tighten Jam Nuts (49).

b. -Cross Slide Gib (59) adjustment. Loosen Jam Nuts (61). Tighten Gib Screws (60) until Cross Slide (57) looseness is taken up. Tighten Jam Nuts, (61).

c. -Spindle (28) end play adjustment. Remove Guard (181) and Housing Cover (39). Loosen Lock Washer (35) from Nut (36). Tighten Nut (36) so that when you press hard at rear of Spindle (28) you can get a .003" feeler gauge between the Spindle (28) nose and the Front Main Bearing (3). Tighten Lock Washer (35) onto Nut (36) and replace Housing Cover (39) and Guard (181).

d. -Worm (14) end play. Open Back Guard (183) and remove Step Pulley (25) and Bearing Retainer (19). Remove either .010" Shim (23) or .005" Shim (24) depending on the amount of take-up. Replace Bearing Retainer (19), Step Pulley (25) and close Back Guard (183).

1-45. DISASSEMBLY

1-46. Remove Arbor, R-390, R-640, or R-740 by rotating Draw Bar (77) with Open End Wrench, R-154, in counterclockwise direction until Arbor breaks free of Spindle (28).

1-47. Outboard Support is removed by loosening two Cap Screws (210) and Cap Screw (211) and sliding Horizontal Tube (208) off of welded boss.

(Located in back of manual)

Fig. 2-1 - PARTS BREAKDOW1N MODEL 1400

APPENDIX A

BASIC ISSUE ITEMS LIST

SECTION I
INTRODUCTION

A-1. Scope. This appendix lists items which accompany the Ram Type Milling Machine or are required for installation, operation, or operator' s maintenance.

A-2. Requisitioning a part to which FSN has not been assigned. When requisitioning a C source (local procurement) item identified only by a manufacturer's part number, it is mandatory that the following information be furnished the Supply Officer:

a. Manufacturer's code number (5 digit number preceding the colon in the descriptive column).
b. Manufacturer' s part number (the number, and sometimes letters, following the colon, (a above). Dashes, commas, or other marks must be included exactly as listed.
c. Nomenclature exactly as listed herein, including dimensions if necessary.
d. Name of manufacturer of end item (from cover of TM or manufacturer's name plate).
e. Federal stock number of end item (from TM).
f. Manufacturer's model number (from TM or name/data plate, preferably name/data plate).
g. Manufacturer's serial number (from name/data plate).
h. Any other information such as type, frame number, and electrical characteristics, if applicable.
i. 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:

(1) In blocks a, 5, and 6, list manufacturer's code and manufacturer's part number (as listed in description column).
(2) In Remarks field, list noun name (repair part), end item application (FEN of end item), manufacturer, model number (end item), serial number (end item), and any other pertinent information such as frame number, type, etc.

A-3. Explanation of Columns. The following provides an explanation of columns in the tabular list in section II.

a. Source, Maintenance, and Recoverability Codes, column 1a, are as follows:
(1) Source Code column 1a, indicates the selection status and source for the listed item. Source codes are:

Code	Explanation
C	Obtain through local procurement. If not obtainable from local procurement, requisition through normal supply channels with a supporting statement of non- availability from local procurement.
P	Applied to repair parts which are stocked in or supplied from GSA/DSA, or Army supply system, and are authorized for use at indicated maintenance categories.

(2) Maintenance Code, column 1b, indicates the lowest category of maintenance authorized to install the listed item. The maintenance level is:

Code	Explanation
C	Operator or crew maintenance

(3) Recoverability Code, column 1c, indicates whether unserviceable items should be returned for recoverability or salvage. Items not coded are expendable. Recovery code is:

Code	Explanation
R	Items which are economically repairable at direct and general support maintenance activities and are normally furnished by supply on an exchange basis.

b. Federal Stock number, column 2, indicates the Federal stock number for the item.
c. Description, column 3, indicates the Federal item name and any additional description required. A five digit manufacturer's code and part number is included in parentheses for reference.
d. Unit of Issue, column 4, indicates the unit used as a basis for issue.
e. Quantity Incorporated in Unit Pack, column 5, indicates the actual quantity contained in the unit pack.
f. Quantity Incorporated in Unit, column 6, indicates the total quantity of the item used on the equipment.
g. Quantity Authorized, column 7, indicates the total quantity of an item to be on hand and necessary for operation and maintenance of the equipment. Items to be requisitioned as required are indicated by an asterisk.
h. Illustration, column 8, is divided as follows:
   (1) Figure Number, column 8a, indicates the figure number of the illustration in which the item is shown.
   (2) Item Number, column 8b, indicates the callout number used to reference the item in the illustration.

A-4. Abbreviations.

Abbreviation	Explanation
circ	circumference
deg	degree(s)
fl	flat
hdl	handle(d)(s)
hd	head
HSS	high speed steel
nom	nominal
o/a	overall
w-	wide, width
w/	with

A-5. Federal Supply Code.

Federal Supply Code	Manufacturer
57127:	Star Machine and Tool Co.

A-6. Errors, Comments, and/or Suggestions. Reports of errors, comments, and/or suggestions are encouraged. They should be submitted on DA Form 2028 and forwarded direct to: Commanding General, Headquarters, U. S. Army Weapons Corm and, ATMN: AMSWE-SMM-P, Rock Island Arsenal, Rock Island, Illinois 61201.

SECTION II
BASIC ISSUE ITEMS LIST

(1) SOURCE MAINT AND RECOV CODE			(2) FEDERAL STOCK NO.	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY. INC IN UNIT PACK	(6) QTY. INC IN UNIT	(7) QTY. FURN WITH EQUIP	(8) ILLUSTRATION	
(a) SOURCE	(b) MAINT	(c) RECOV							(a) FIG. NO.	(b) ITEM NO.
				TOOLS AND EQUIPMENT FOR LATHE, BRAKE DRUM, FLOOR MOUNT (4910-516-192) SPARE PARTS						
C	C	- -	- - -	BELT, V; rubberized fabric, 26 outside circ, 3/8 top w (57127: 500153).	EA	1	1	1	A-1	3
C	C	- -	- - -	BELT, V: rubberized fabric, 43 outside circ, 3/8 top w (57127: 500154).	EA	1	1	1	- -	- -
				TOOLS AND EQUIPMENT LATHE, BRAKE DRUM (57127: 1400)						
C	C	- -	- - -	ARBOR, DRUM: 1 in. dia, 11/16 in. thd (57127: R-740).E	EA	1	1	1	A-1	7
C	C	- -	- - -	ARBOR, DRUM:1 In. dia,11/16 in. thd (57127:R-640).	EA	1	1	1	A-1	5
C	C	- -	- - -	ARBOR, DRUM: 2 in. dia, 2 in. thd (57127: R-390).	EA	1	1	1	A-1	1
C	C	R	- - -	BAND, BRAKE DRUM SILENCING: truck (57i27:SB-20).	EA	1	1	1	A-1	13
C	C	- -	- - -	CONE, CENTERING: 1-15/32 2-3/8 x 1 bore (57127:R-680).	EA	1	1	1	A-1	17
C	C	- -	- - -	CONE, CENTERING: 2-5/16 x 3-1/4 x 1 bore (57127:R-665).	EA	1	1	1	A-1	16
C	C	- -	- - -	CONE, CENTERIRC: 3-1/16 x 4 x 1 bore (57127:R-670).	EA	1	1	1	A-1	15
C	C	- -	- - -	CONE, RADII: 1-1/2 x 1-45/64 x 1 bore (57127:R-550). 1	EA	1	1	1	A-1	44
C	C	- -	- - -	CONE, RADII: 1-19/32 x 1-49/64 x 1 bore (57127:R-580).	EA	1	1	1	A-1	27
C	C	- -	- - -	CONE, RADII. 1-13/32 x 2-3/8 x1 bore (57127:R-580).	EA	1	1	1	A-1	36
C	C	- -	- - -	CONE, RADII: 1-27/32 x 2-55/64 x 1 bore (57127:R-620).	EA	1	1	1	A-1	25
C	C	- -	- - -	CONE, RADII: 1-61/64x 2-13/64 x 1 bore (57127:R-570).	EA	1	1	1	A-1	26
C	C	- -	- - -	CONE, RADII: 2-1/16 x 3-19/64 x 1 bore (57127:R-630).	EA	1	1	1	A-1	24
C	C	- -	- - -	CONE, RADII: 2-19/64 x 2-1/2 x 1 bore (57127:R-590).	EA	1	1	1	A-1	35
C	C	- -	- - -	CONE, RADII: 2-27/64 x 2-39/64 x 1 bore (57127:R-600).	EA	1	1	1	A-1	34
C	C	- -	- - -	CONE, RADII: 2-35/64 x 2-25/64 x 1 bore (57127: R-610).	EA	1	1	1	A-1	18
C	C	- -	- - -	CONE, TAPERED: 3/4 x 1-112 x 11/16 bore (57127:R-530).	EA	1	1	1	A-1	47
C	C	- -	- - -	CONE, TAPERED: 1-1/16 x 1-3/4 x 1 bore (57127:5-520).	EA	1	1	1	A-1	45
C	C	- -	- - -	COME, TAPERED: 2-15/64 x 3-3/6 x 2 bore (57127:R-385).	EA	1	1	1	A-1	40
C	C	- -	- - -	CONE, TAPERED: 2-23/64 x 3-11/32 x 2 bore (57127:R-380).	EA	1	1	1	A-1	31
C	C	- -	- - -	CONE, TAPERED: 3-17/64 x 3-57/64 x 2 bore (57127: R-375)	EA	1	1	1	A-I	21
C	C	- -	- - -	CONE, TAFERED 36 5/32 a 4-27/64 x 2 bore (57127:R-370).	EA	1	1	1	A-1	20
C	C	- -	- - -	CONE, TAPERED: 4-5/16 x 4-31/32 x 2 bore (57127:5 365).	EA	1	1	1	A-1	1.2
C	C	- -	- - -	CONE, TAPERED: 4-55/64 x 5-1/2 x 2 bore (57127:R-360)	EA	1	1	1	A-1	30

BASIC ISSUE ITEMS LIST

(1) SOURCE MAINT AND RECOV CODE			(2) FEDERAL STOCK NO.	(3) DESCRIPTION	(4) UNIT OF ISSUE	(5) QTY. INC IN UNIT PACK	(6) QTY. INC IN UNIT	(7) QTY. FURN WITH EQUIP	(8) ILLUSTRATION	
(a) SOURCE	(b) MAINT	(c) RECOV							(a) FIG. NO.	(b) ITEM NO.
				TOOLS AND EQUIPMENT FOR: LATHE, BRAKE DRUM (57127:1400) - Continued:						
C	C	- -	- - -	CONE, TAPERED: 5-25/64 x 6-1/32 x 2 bore (57127:R-355).	EA	1	1	1	A-1	19
C	C	- -	- - -	CONE, TAPERED: 5-59/64 x 6-9/16 x 2 bore (57127:R-350).	EA	1	1	1	A-1	11
C	C	- -	- - -	CONE, TAPERED: 6-31/64 x 7-1/8 x 2 bore (57127:R-345).	EA	1	1	1	A-1	4
C	C	- -	- - -	HONE, SHARPENING: tool bit (57127:CB-75).	EA	1	1	1	A-1	40
P	C	- -	5120-224-2504	KEY, SOCKET HEAD SCREW: hex type, L-hdl, 5/64 across f1, 1-7/8 nom lg arm lg.	EA	1	1	1	A-1	38
P	C	- -	5120-240-5292	KEY, SOCKET HEAD SCREW: hex type, L-hdl, 1/8 across f1, 2-1/4 nom lg arm lg.	EA	1	1	1	A-1	39
C	C	- - -	- - -	NUT, ARBOR:11/16 thd (57127:R-645).	EA	1	1	1	A-1	8
C	C	- -	- - -	NUT, ARBOR:1 in. thd (57127:R-745).	EA	1	1	1	A-1	6
C	C	- -	- - -	NU, ARBOR:2 in. thd (57127:R-395).	EA	1	1	1	A-1	2
C	C	- -	- - -	PIATE, FACE:1 in. bore (57127:R-655).	EA	1	2	2	A-1	22
C	C	- -	- - -	REDUCER:11n. od to 11/16 id, 1-3/8 lg (57127: R-501).	EA	1	1	1	A-1	37
C	C	- -	- - -	REDUCER: 2 in. od to 1 in. id, 1-i/8 lg (57127:R-331).	EA	1	2	2	A-1	42
C	C	- -	- - -	SPACER, ARBOR: 11/16 bore, 1 in. lg (57127:R-530)-	EA	1	2	2	A-1	48
C	C	- -	- - -	SPACER, ARBOR: 1 in. bore, 1 in. lg (57127:R-540)-	EA	1	2	2	A-1	46
C	C	- -	- - -	SPACER, ARBOR: 2 in. bore, 1 in. lg (57127:R-330).	EA	1	1	1	A-1	32
C	C	- -	- - -	SPACER, ARBOR: 2 in. bore, 2 in. lg (57127:R-325).	EA	1	1	1	A-1	43
C	C	- -	- - -	SPACER, ARBOR: 2 in. bore, 3 in. lg (57127:R-320).	EA	1	4	4	A-1	23
C	C	- -	- - -	SPRING, COIL:4 coil, 2-3/8 od (57127:R-315).	EA	1	1	1	A-1	14
C	C	- -	- - -	SPRING, COIL:4 coil, 2-3/8 id tapered to 1-1/2 id (57127:R-675).	EA	1	I	1	A-1	33
C	C	- -	- - -	TOOL BIT: 5/8 sq, carbide tipped (57127:CB-35).	EA	1	2	2	A-1	28
C	C	- -	- - -	TOOL BIT:5/8 sq, HSS (57127:CB-36).	EA	1	2	2	A-1	29
P	C	- -	5120-293-1266	WRENCH, BOX: stght, sgle-hd type, hex shape wrench opng, 3/4 opng, 4-3/8 nom o/a lg (57127:R-149).	E A	1	1	1	A-1	52
P	C	- -	5120-293-2124	WRENCR, OPEN END, FLKED: dble-hd type, 15 deg angle of hd, engineer style, 1-1/4 and 1-5/8 wrench opngs, 14 nom o/a lg, 9/16 thk of hd (57127:R-154).	EA	1	1	1	A-1	9
P	C	- -	5120-293-1840	WRENCH, OPEN END, FIXED: sgle-hd type, 15 deg angle of hd, 1/4 wrench opng, 3-1/2 nom o/a lg, 3/16 thk hd (57127:R-153).	EA	1	1	1	A-1	49
P	C	- -	5120-277-1261	WRENCH, OPEN END, FIXED: sgle-hd type, 15 deg angle of hd, 3/8 wrench opng, 3-7/8 nom o/a Ig, 17/64 thk hd (57127:R-148).	EA	1	1	1	A-1	50
C	C	- -	- - -	WRENCE, OPEN END, FIXED: sgle-od type, 15 deg angle of hd, 7/16 wrench opng (57127:R-152).	EA	1	1	1	A-1	51
C	C	- -	- - -	WRENCH, OPEN END, FIXED: sgle-hd type, 15 deg angle of hd, 3 wrench opng, 17 nom o/a lg (57127:R-410).	EA	1	1	1	A-1	10

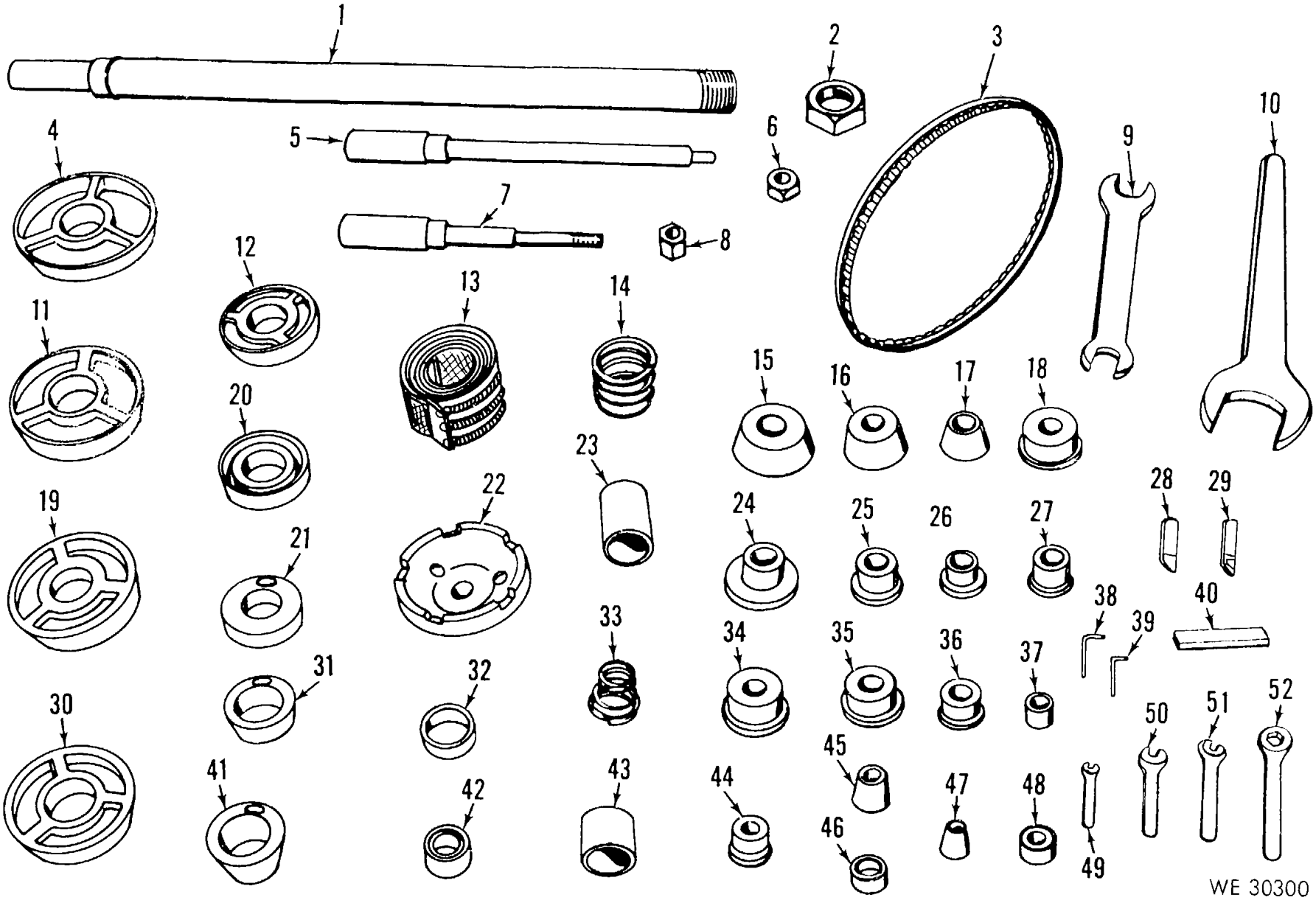

Figure A-1. TOOLS AND EQUIPMENT

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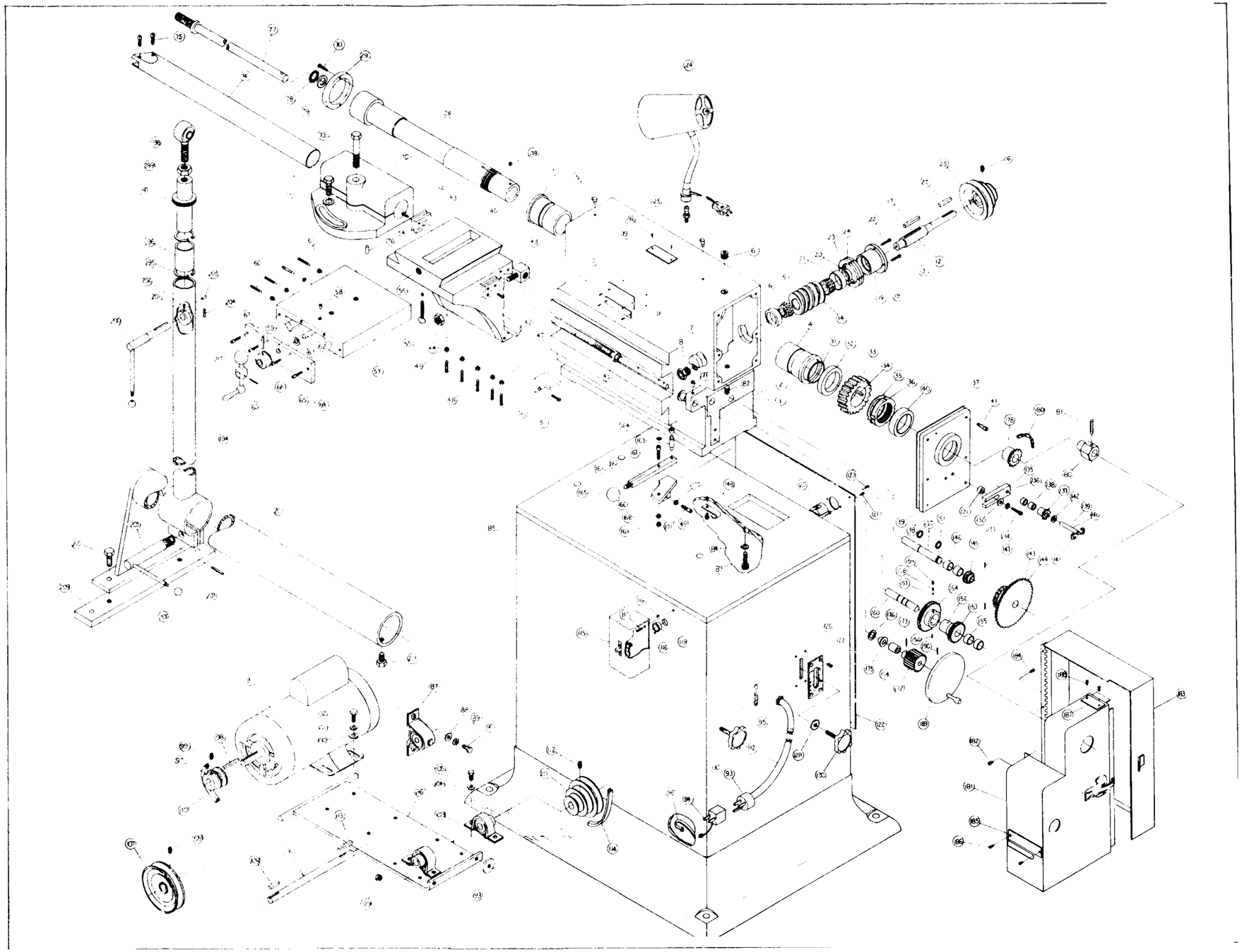

FIG. 2-1. PARTS BREAKDOWN MODEL 1400

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM. CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL.

SOMETHING WRONG WITH PUBLICATION

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE

BE EXACT PIN-POINT WHERE IT IS

PAGE NO.	PARA-GRAPH	FIGURE NO.	TABLE NO.

IN THIS SPACE, TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT.

PRINTED NAME, GRADE OR TITLE AND TELEPHONE NUMBER	SIGN HERE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

PIN: 008526-000