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No. 1 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 4 April, 1973

Operator's Manual
THREADING MACHINE, PIPE AND BOLT, BENCH
MOUNTING, 1/8 TO 2 PIPE SIZE, 1/4 TO 2 BOLT SIZE,
110-VOLT, 1/2-HORSEPOWER, AC/DC, 25/60 CYCLE,
SINGLE PHASE (OSTER MFG MODEL 545) (3419-
194-9240)

This change is current as of 20 February 1973

TM 9-3419-230-10, 9 April 1969 is changed as follows:

The title is changed to read as indicated.

Page 6. Add the following two paragraphs.

REPORTING OF ERRORS

The reporting of errors, omissions, and recommendations for improving this bulletin by the individual user's encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forward direct to Commander, US Army Weapons Command, ATTN: AMSWE-MAS, Rock Island, IL 61201. A reply will be furnished directly to you.

PARTS INCLUDED WITH END ITEM

Parts included with end item and considered a component or part of item configuration are listed in the

following table. All items are manufactured by OSTER MANUFACTURING COMPANY, (Manufacturer's Code 45168).

<i>Part</i>	<i>Part No.</i>
DIE HEAD BODY	45168:31056
CUTTER BODY	45168:31026
REAMER ARM	45168:31031
REAMER	45168:502159

By Order of the Secretary of the Army

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Units org under fol TOE:
 (2 copies each)
 55-235
 55-239
 55-248

NG: State AG (3)

US, AR: None

For explanation of abbreviations used, see AR 310-50.

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

Operator's Manual

THREADING MACHINE, PIPE AND BOLT, BENCH MOUNTING, 1/8 TO 2 PIPE SIZE,
1/4 TO 2 BOLT SIZE, 110-VOLT, 1/2-HORSEPOWER, AC/DC, 25/60-CYCLE, SINGLE
PHASE (OSTER MFG MODEL 545) (3419-194-9240)

Headquarters, Department of the Army, Washington, D.C.
9 April 1969

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INTRODUCTION

These operating instructions and replacement parts lists are furnished to give the equipment owner and operator a complete description of the machine and its components, its proper care and maintenance, and a ready means of identification of its parts. The equipment is manufactured to exacting standards and is designed to perform its function of cutting, reaming and threading pipe in an efficient trouble free manner if reasonable care and preventive maintenance schedules are followed.

The use of the best available cutting oil is vital to the successful operation of the machine and Oster "BESTOIL" furnished with your equipment has been developed for the specific application of thread-cutting. Its continued use is your assurance of perfect threads and long die life.

SETTING UP MACHINE

NOTE: If wheel or leg stand is supplied with machine be sure to mount machine securely. Stand assembly instructions are included elsewhere in this manual.

The machine is shipped with the carriage in place, and the die head, cut-off tool and reamer packed in separate cartons. This is a "swing-over" type assembly and all three tool elements are to be mounted on pivot pins located at the rear of the carriage. The die head is mounted in the center position.

Make sure that the pipe plug in the sump drain hole below the chip basket at the carriage end of the machine is tightened. Slide out the chip basket, fill the oil sump with Oster Best oil, and replace the chip basket. Apply a few drops of machine oil to the carriage unit runners (do not use cutting oil).

ELECTRIC POWER AND MOTOR

Attach the electric power cord to a source supplying the voltage required by the motor. Supply voltage should be within 5% of rated voltage of the motor, measured at the machine. For best results when using long extension

cables, the cables should be equivalent to No. 12 gage wire. Attach power cable ground wire to a convenient well grounded pipe or conduit.

The machine is furnished with a reversible, variable speed, universal motor for operation on 115 volts, unless otherwise specified. It will operate on direct current or 25 to 60 cycle single phase alternating current.

ALLOW MOTOR TO COME TO FULL STOP BEFORE REVERSING.

ADJUSTING DIE HEADS

The machine may be equipped with either a "Universal" die head or a "Quadversal" die head but the general procedures of removal and insertion of dies and the adjustment of the head to proper thread size are the same for both types.

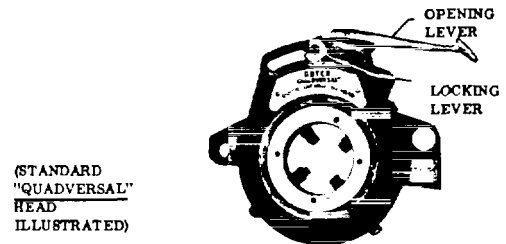


Fig. 1

TO INSERT OR REMOVE DIES IN HEAD

1. Loosen the Locking Lever that secures the Locking Bolt.
2. Rotate the Graduated Cam until the mark on the Locking Bolt Washer or opening lever is aligned with the line on the Cam marked "Change Dies."

3. Raise the opening lever and slide the dies out of the Die Head.
4. Before inserting dies, clean the die slots thoroughly with a chip brush.
5. Insert the required dies in the die head.

BE SURE TO INSERT EACH DIE IN THE SLOT NUMBER CORRESPONDING TO THE NUMBER STAMPED ON EACH DIE (1-2-3-4).

Never Force Dies In or Out of Die Slots!

ADJUSTING THREAD SIZE

1. Press the Opening Lever down.
2. Loosen the Locking Lever securing the Locking Bolt to the Cam and move the Cam to align the mark on the Washer with the required thread size stamped on the Cam.

NOTE: When threading bolts or solid stock, insert the required size dies; then set Cam to the line marked "Bolt".

3. To cut threads under-or oversized, set the Cam size slightly smaller or greater than standard size marked on the Cam.
4. Tighten the Locking Lever securely.

MONO TYPE HEAD (Extra Equipment).

The Mono type die head (see figure 2) is graduated for one size only. Once the dies have been inserted and set to size, there is no further set-up required. Simply select the head for the size to be threaded and insert head in slots provided in carriage. Like all Oster

die heads, you can cut over-or undersize threads by setting the size mark slightly off the corresponding mark.

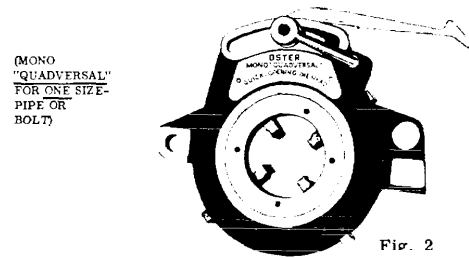


Fig. 2

Fig. 2

OPERATING PRECAUTIONS

Coolant Flow Control

Your Oster machine is now equipped with a new Coolant Flow Adjusting Screw -shown at left. Your machine is shipped with the Screw turned in, all the way -in the OFF position. Before operating machine turn Screw out approximately 1/2". Turn on machine and check oil flow (be sure die-head is in operating (down) position). By turning Screw in or out, correct oil flow to dies can be maintained.

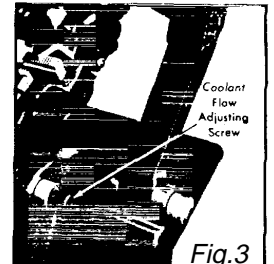


Fig.3

OPERATING THE MACHINE

CHUCKING PIPE

1. With the carriage moved to the right end of the carriage runners, load the pipe through the spindle until the end to be threaded extends sufficiently for the length of thread to be cut.
2. Support long pipe at the far end on a suitable pipe rest (Oster No. 5PRS) to prevent tipping the machine.(continued on next page.

3. Close the Rear Centering Chuck on the pipe. The three guides are a means of supporting the pipe and do not drive.
4. Close the Wrenchless Front Chuck by rotating counter-clockwise. Bring jaws down lightly but firmly on pipe. Be sure that all three jaws are bearing on pipe.

IMPORTANT: OSTER'S WRENCHLESS CHUCK REQUIRES NO HAMMERING TO CLOSE OR OPEN. THE GRIPPING ACTION OF THE JAWS INCREASES AS THE THREADING LOAD INCREASES.

5. Release pipe by rotating both chucks in opposite direction.

THREADING

Standard Pipe and Conduit Range -- 1/2" thru 2"

Standard Bolt Range -- 1/4" thru 2"

Extra Pipe or Conduit Range -- 1/8" thru 3/8"

1. Bring down die head so that it engages the slot in the carriage. BE SURE DIE HEAD LEVER IS IN THE CLOSED (DOWN) POSITION BEFORE STARTING TO THREAD.
2. With die head opening lever in down (closed) position, run the carriage forward until the pipe has entered the throats of the dies, being careful not to jam the dies on the pipe. Be sure a good flow of cutting oil is being supplied to the dies.
3. The machine is equipped with an Oster standard "Quick Opening" die head unless otherwise specially ordered. A thread length gauge is mounted on the hub of the operating handwheel and it can be used for both straight and taper pipe threads, and running bolt threads as well.
4. To cut pipe or conduit threads, lower the die head and bring the carriage forward until the throat of the dies makes contact with the pipe. Set the thread length gauge with the appropriate pipe size mark at the pointer. Using firm

pressure, start the carriage forward until the dies take hold and the carriage moves automatically. When the carriage has moved the correct amount, as shown by the gauge, lift the die head opening lever, back off the carriage, raise the die head and stop the motor.

ALWAYS OPEN DIE-HEAD BEFORE STOPPING MOTOR.

5. To cut long bolt threads follow the same procedure, but set the pointer to the uniform number section of the gauge which reads directly in thread length.
6. If the machines specially equipped with an Oster "Automatic Opening" Die Head, (see figure 4), the Trip Trigger Assembly will automatically open the Die Head at the correct length of pipe thread in sizes from 1/2" to 2", so the thread length gauge need not be used in this instance.

The action of closing the Die Head will automatically cock the trigger and no other action is necessary. When the die head opens, retract the carriage, stop the motor and raise the die head.

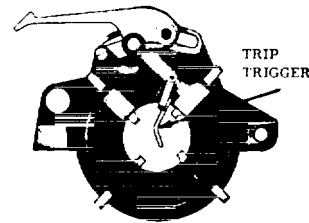


Fig. 4
**AUTOMATIC-OPENING
DIE-HEAD**

NOTE: The trip trigger cannot be used for pipe sizes smaller than 1/2", running pipe threads or bolts. For these threads move the spring off the trigger and lift the trigger straight out, or 90° to the face of the head, as the die head is closed.

REAMING

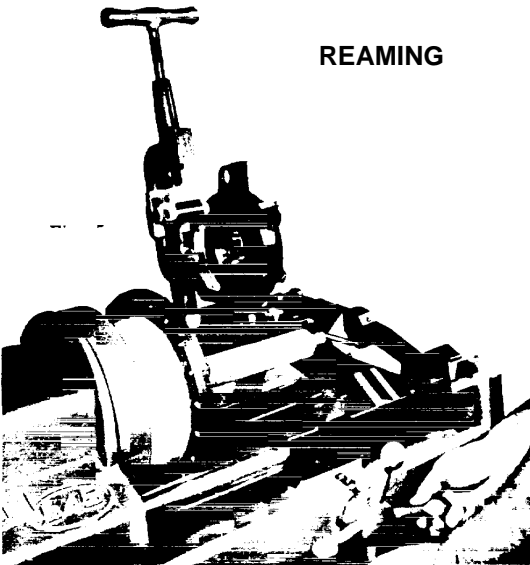


Fig. 5

1. Lower the reaming tool to the slot in the carriage and slide the carriage toward the pipe.
2. Apply pressure gently with the carriage lever until the desired chamfer is obtained.
3. Slide the carriage back and raise the reamer to the vertical position.

CUTTING OFF

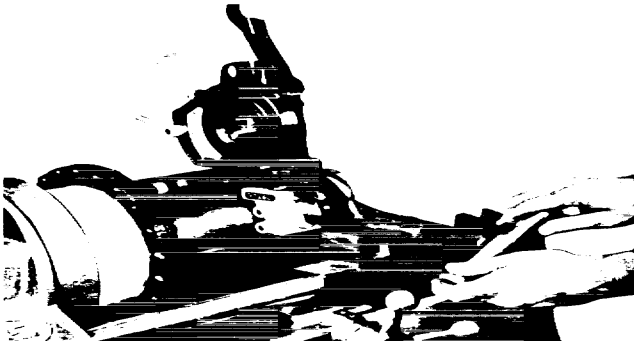


Fig. 6

1. Slide the carriage toward the pipe until the cut-off tool is in position for the length of pipe to be cut.

2. Bring the cut-off tool down over the pipe and turn the tool handle to move the cutter rollers in or out as required to fit over the pipe.
3. The new "see-thru" cutter permits accurate on-the-mark cutting. Turn the cut-off tool handle clockwise to cut the pipe.
4. Continue turning the handle slowly until the pipe is cut off.
5. Raise the cut-off tool to the vertical position.

**DO NOT CUT INTO THREADS WITH
ROLLER CUT-OFF TOOL**

MAINTENANCE

MOTOR

Motor Brushes are quickly and easily changed simply by removing a plug on each side of machine frame.

Fig. 7

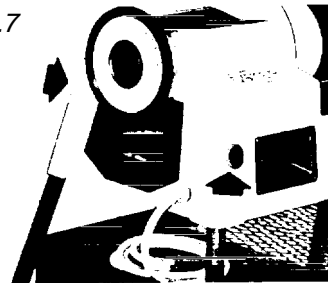
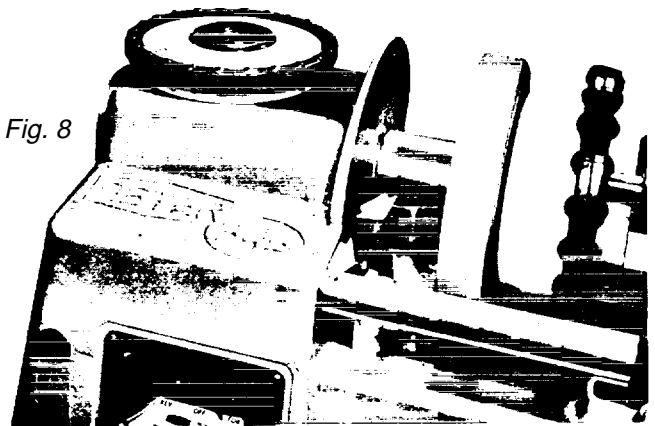


Fig. 8



The motor is mounted on four cap screws. The motor is mounted on four cap screws which extend through the face of the housing, below the front chuck. To remove the motor, first remove the rear chuck assembly, then slide the spindle and front chuck forward to expose the 2 front cap screws (see figure 8). Remove the four screws, move the motor slightly to the rear to clear the pilot and motor pinion, and disconnect the electrical cable.

COOLANT SYSTEM

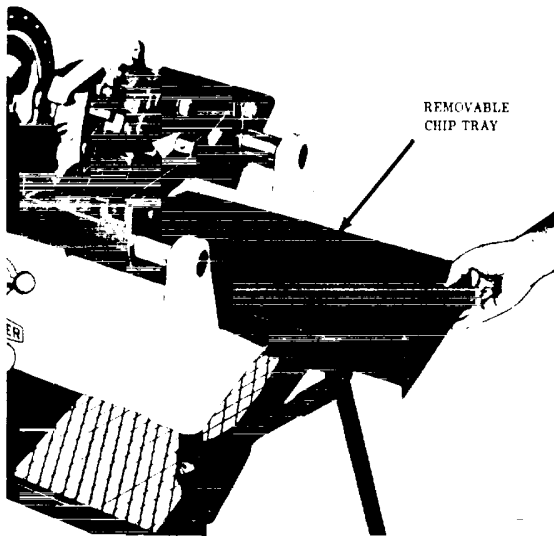


Fig. 9

Periodically remove the pipe plug from the sump drain hole and drain the cutting oil from the sump. Clean out all sludge, chips and foreign matter that has accumulated in the sump base. If the cutting oil is to be used again, pass it through a fine mesh strainer or cheesecloth before returning it to the sump. Keep oil level in sump at least 1 inch above intake screen to prevent "sputtering" at discharge outlet.

DIES

Keep dies in a set together to insure good thread form and equal cutting action from all 4 segments. Keep dies sharp at all times. High speed dies must be used when threading the harder and tougher alloys.

Some materials require special cutting angles. Make certain your dies are ground with the proper angles for your particular material. NEVER HAMMER DIES IN OR OUT OF DIE HEAD SLOTS. If a die is difficult to

remove due to fine particles working themselves into the slot use piece of wood or other soft material as a driver.

CHANGING CHUCK JAW INSERTS

You are able to change Chuck Jaw Inserts WITHOUT REMOVING FRONT CHUCK.

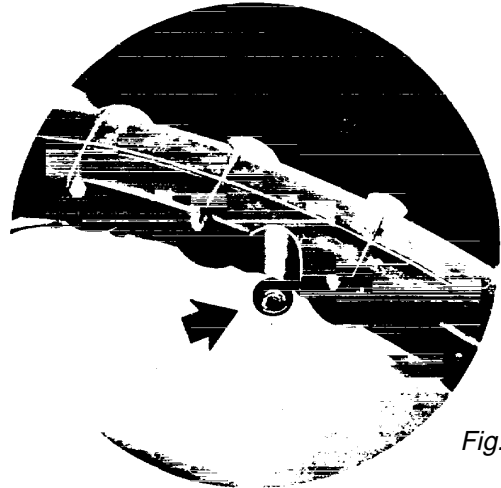
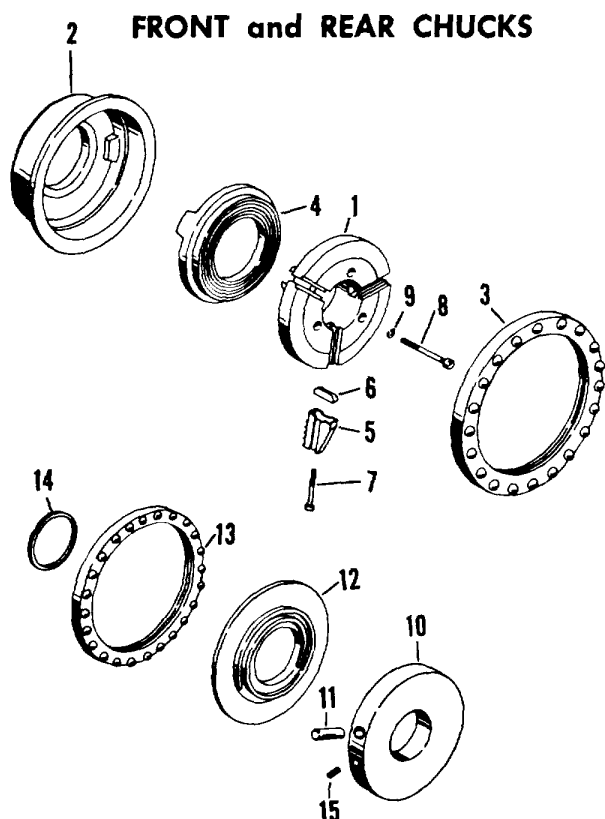


Fig. 10

You will notice a notch in the rear side of the front Chuck Handwheel (see Fig. 10). By revolving the Handwheel, you can line up the notch for each (3) Chuck Jaw. Insert a 5/32 Allen wrench, remove old Insert and replace with new Insert.

RECOMMENDED PUBLICATION IMPROVEMENTS-

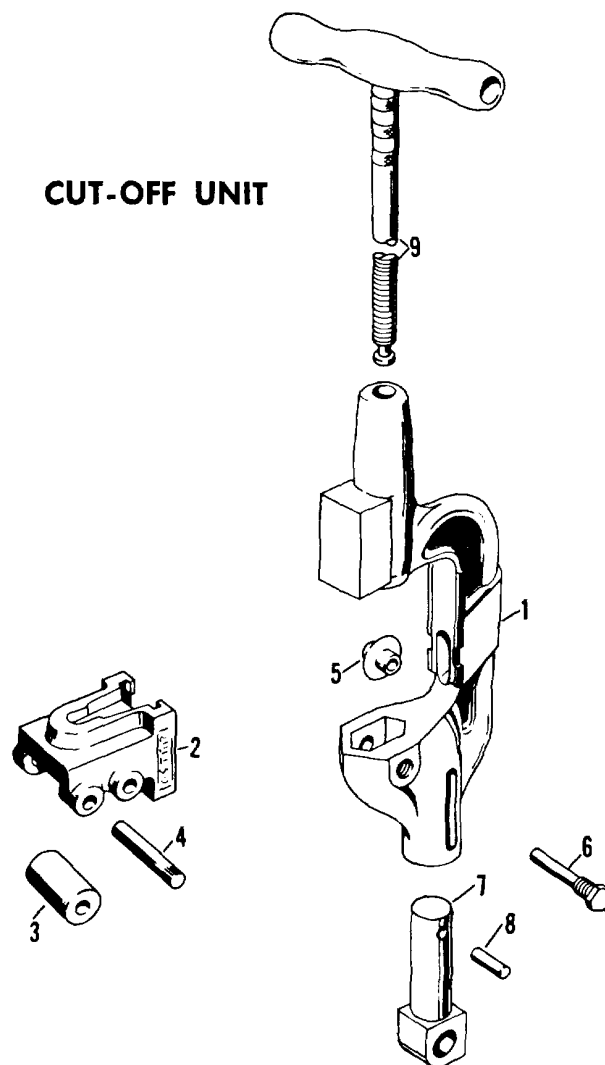
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Be sure to install the Front Chuck Insert Seats (5) in the jaw slots in the chuck body (1) corresponding to the numbers stamped on the inserts (1-2-3); and the centering chuck Guides (11) in the corresponding numbered holes in the Rear Chuck Centering Body (10). Do not remove the handwheel tires.

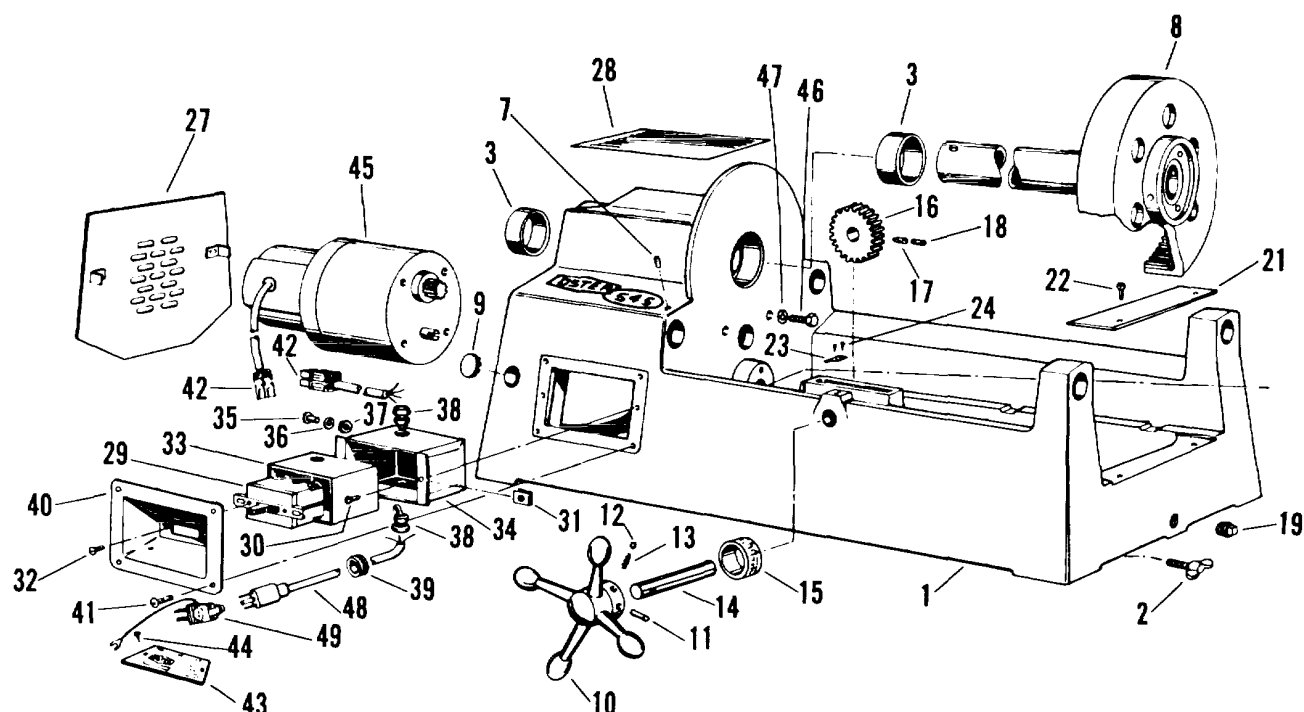
REF No.	PART No.	QUANTITY	ITEM
Front Chuck Unit			
1	55297	1	Chuck Body
2	55291	1	Handwheel
3	10014	1	Handwheel Tire
4	42257	1	Scroll
5	432106SA	1 set	Chuck Jaw with Inserts (3 per set)
6	43230	1 set	Chuck Jaw Insert (3 per set)
7		3	Soc. Hd. Cap Scr. #10-32 NF x 1-1/2 Lg.
8		3	Soc. Hd. Cap Scr. 3/8-16 NC x 3 Lg.
Rear Centering Chuck Unit			
9		3	Lock washers 3/8 H. C. Sec.
10	10015	1	Centering Chuck Body
11	10016	1 set	Centering Chuck Guide (3 per set)
12	10017	1	Centering Chuck Scroll
13	10018	1	Centering Chuck Handwheel Tire
14	100242	1	Retaining Ring
15		2	Soc. Set Scr. 3/8-16 NC x 5/8 Lg. "Nylok" (Half Dog Pt.)

CUT-OFF UNIT



REF No.	PART No.	QUANTITY	ITEM
Cut-Off Unit			
1	31026	1	Cutter Body
2	100145	1	Roller Carrier
3	100153	2	Roller
4	100163	2	Roller Pin
5	502105	1	Cutter Wheel
6	502116	1	Wheel Pin
7	31027	1	Pivot Arm
8			Roll Pin #59-048-250-1000
9	100156SA	1	Adjusting Screw Assembly

BED and DRIVE UNIT

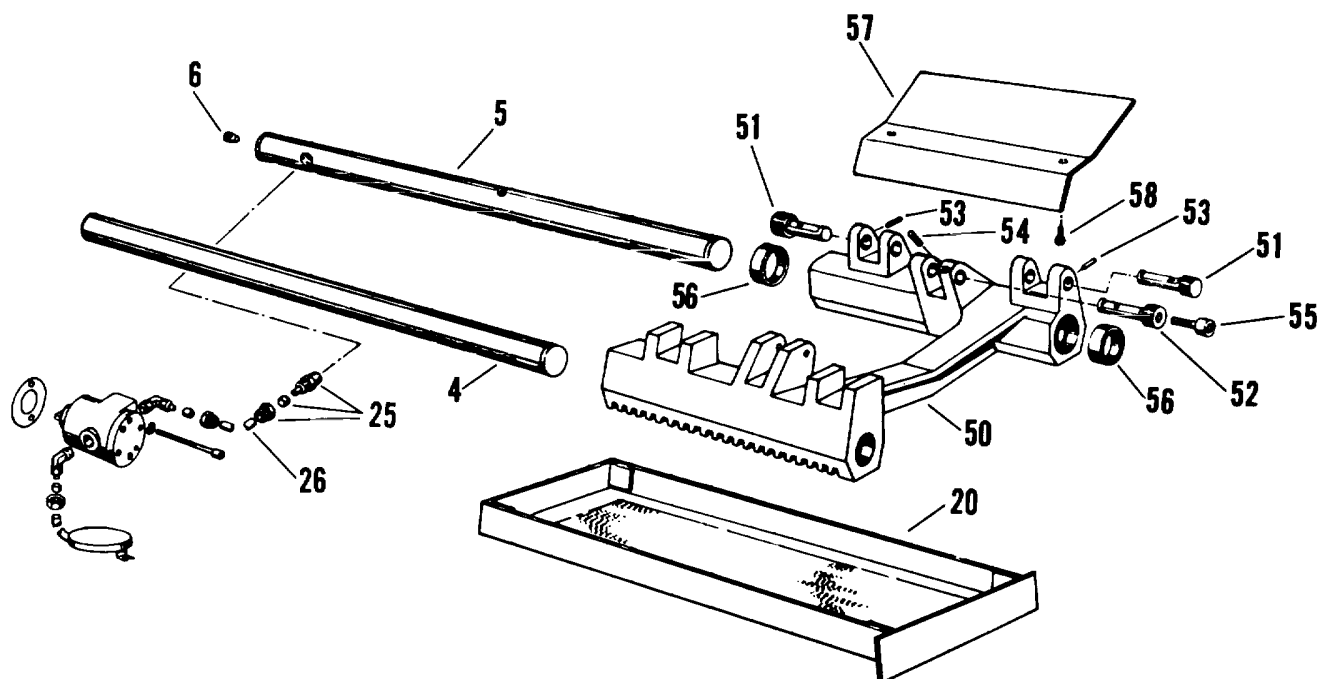


REF NO.	PART NO.	QUAN-TITY	ITEM
Bed Unit			
1	54501	1	Bed
2		4	Thumb Scrs. 3/8-16 NC x 1" Lg.
3	43217	2	Bearings
4	54514WF	1	Torque Arm (Front)
5	54518WF	1	Torque Arm (Rear)
6		1	Pipe Plug 1/4 Sq.
7		2	Soc. Set Scr. 1/4-20 NC x 3/8 Lg.
8	31019SA	1	Spindle and Gear Assembly
9	31016	2	Plug Button
10	54520	1	Handle
11		1	Roll Pin #59-040-187-1500
12	54528	1	Ball
13	792A145	1	Spring
14	54521	1	Shaft

REF NO.	PART NO.	QUAN-TITY	ITEM
15	54568UA	1	Gage Ring Assembly
16	54522	1	Carriage Pinion Gear
17		1	Soc. Set Scr. 1/4-20 NC x 3/8 Lg.
18		1	Soc. Set Scr. 1/4-20 NC x 3/8 Lg. (Flat Pt.)
19		1	Pipe Plug 1/2 Sq. Hd
20	54523WF	1	Chip Basket
21	54567	1	Oil Guard
22		2	Truss Hd Mach Scr 1/4-20 NCx3/8 Lg
23	54569	1	Length Cage Pointer
24		2	Rd Hd Mach Scr #10-24 NC x 3/8 Lg.
25		1	Tube Fitting "Imperial" #268P
26		1	Plastic Tubing 3/8 OD x 1/4 ID x 5 Lg.
27	54566WF	1	Motor Guard
28	54571	1	Mat

...Continued on page 9

CARRIAGE UNIT



(Continued from page 8)

REF NO.	PART NO.	QUAN- TITY	ITEM
<u>Drive Unit</u>			
29	31040	1	Switch
30		2	Flat Hd Mach Scr #10-24 NC x 3/4 Lg.
31		2	Tinnerman Speed Nut Type "U" #1197-1024-27
32		2	Rd Hd Mach Scr #6-32 NC x 1/4 Lg.
33	54534	1	Switch Box Insulator
34	54535WF	1	Switch Box
35		1	Rd Hd Mach Scr #10-24 NC x 1/2 Lg. Brass
36		1	Lock washer 3/16 Med Sec
37		1	Hex Nut #10-24 NC BrasA
38		2	Cord Connector
39	54585	1	Rubber Grommet
40	54503	1	Switch Cover
41		4	Rd Hd Mach Scr #8-32 NC x 1/4 Lg.
42	31043	8	Power Stack
43	54542	1	Name Plate

REF NO.	PART NO.	QUAN TITY	ITEM
<u>Drive Unit</u>			
44		2	Rd Hd Self Tapping Scr P-K Type "A" #6 x 1/4 Lg.
45	115391	1	Motor 115 Volt
46		4	Hex Hd. Cap Scr. 5/16-24 F x 1" Lg.
47		4	Lock washer 5/16 Med. Sec.
48	43225	1	Supply Cable 15 AMP-125V
49		1	Polarized Adapter 3 wire-15 AMP
<u>Carriage Unit</u>			
50	54502	1	Carriage
51	31032	2	Pivot Pin
52	31033	1	Pin Valve
53		2	Roll Pin #59-028-0375
54		1	Sec. Set Scr. 5/16-18 NC x 5/16 Lg. (Half Dog Pt.
55		1	Sec Hd Cap Scr 3/8-16 NC x 1" Lg.
56	54539	2	Seal
57	31049WF	1	Drip Shield
58		2	Rd Hd Mach Scr 3/8-16 NC x 1/2 Lg.

ASSEMBLY AND PARTS LIST

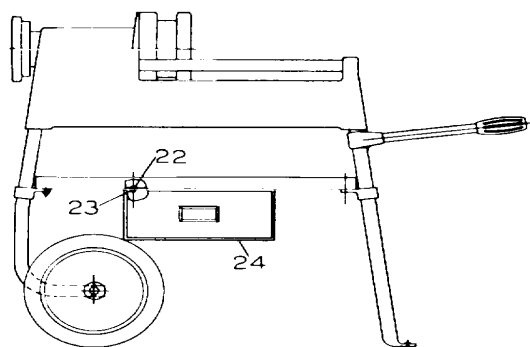
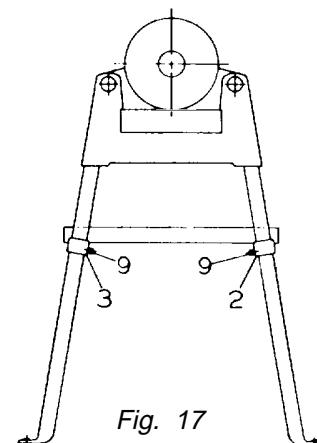
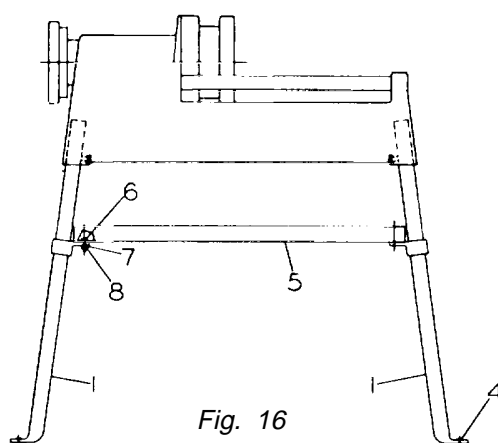
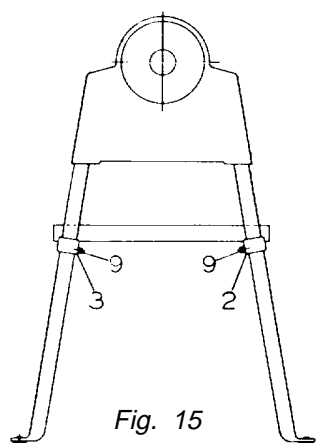


Fig. 18

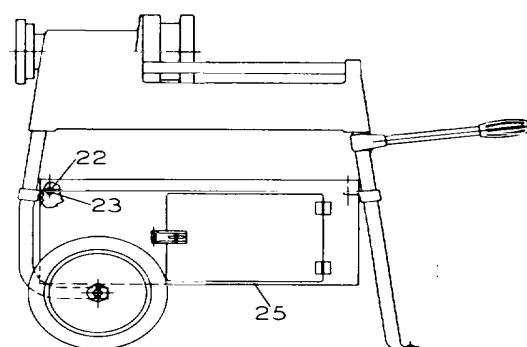


Fig. 19

ASSEMBLY INSTRUCTIONS LEG STAND AND TRAY UNIT 3371 (FIG. 15-16-17)

1. This stand is shipped knocked down to sub-assemblies as follows:
 2-R. H. Floor Legs consisting of items 1, 2, 4 and 9
 2-L.H. Floor Legs consisting of items 1, 3, 4 and 9
2. Remove tray mounting collar (2) from one R. H. leg. Slide this leg thru machine spindle so foot projects 6" from rear chuck. Tighten chucks.
3. Lift front end of machine and insert one R. H. and one L. H. leg. Lock in place with thumb screws. Machine now rests on two legs and on rear of base casting.
4. Using leg projection from rear chuck lift rear end of machine and insert L. H. leg in socket. Lock in place with thumb screws.
5. R. H. leg from spindle. Replace mounting collar and insert R.H. leg in socket. Lock in place with thumbscrews.
6. Set tray (5) on collars and secure with 3/8" bolts (6, 7, 8).
7. Level tray by sliding collars as required. Top of tray should be 6" below base.

REF NO.	PART NO.	QUAN-TITY	ITEM
1	54551	4	Floor Leg
2	54549	2	Tray Mtg. Collar-R. H.
3	54550	2	Tray Mtg. Collar-L.H.
4	10049	4	Rubber Grommet
5	54580WF	1	Tray Assembly
6		4	Hex Hd. Cap Scr. 3/8-16 NC x 1" Lg.
7		4	Plain Washer 3/8 Std. SAE
8		4	Hex Nut 3/8-16 NC
9		4	Sq. Hd. Set Scr. 3/8-16 NC x 1/2 Lg.
10	54564	2	Floor Leg
11	54578	1	Wheel Leg L. H.
12	54577	1	Wheel Leg-R. H.
13	54560	2	Wheel
14		4	Plain Washer 3/4 Std. SAE
15		2	Cotter Pin 1/8 Dia. x 1-1/4 Lg.
16	54559	1	Wheel Axle
17	54579	1	Wheel Spacer
18		2	Rd. Hd. Self Tapping Scr. #10-24 x 1/4 Lg.
19	54561	2	Handle Socket
20	54562	2	Handle
21	54563	2	Handle Grip
22		4	Hex Hd. Cap Scr. 1/4-20 NC x 1/4 Lg.
23		4	Hex Nut 1/4-20 NC
24	54554	1	Enclosed Drawer
25	54572WF	1	Locking Cabinet Assembly

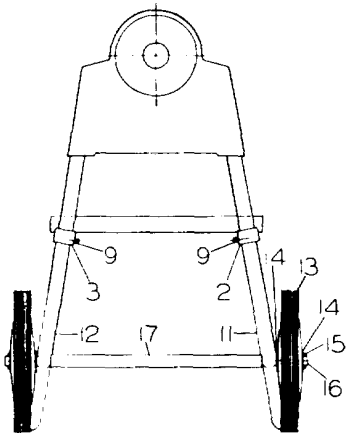


Fig. 20

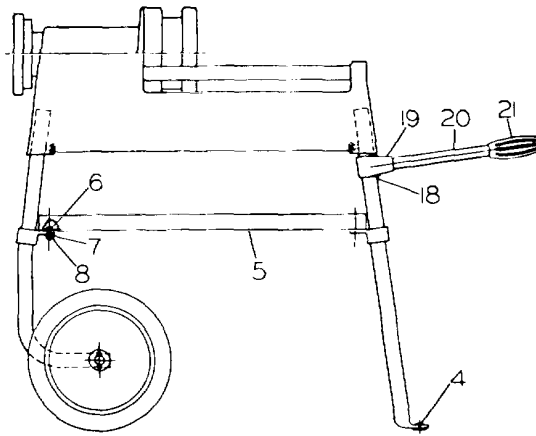


Fig. 21

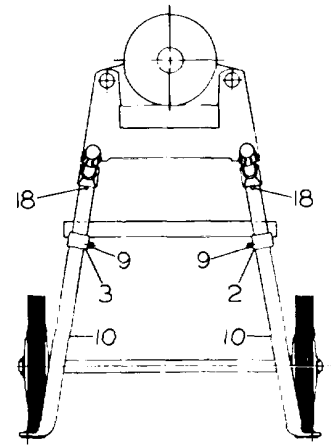


Fig. 22

ASSEMBLY INSTRUCTIONS WHEEL STAND AND TRAY UNIT NO. 3374 (FIG. 20-21-22)

1. This stand is shipped knocked down to sub-assemblies as follows:
 - 1-R. H. Floor Leg consisting of items 10, 4, 2, 9 and 18
 - 1-L. H. Floor Leg consisting of items 10, 4, 3, 9 and 18
 - 1-R. H. Wheel Leg consisting of items 12, 3 and 9
 - 1-R. H. Wheel Leg consisting of items 12, 2 and 9
 - 2-Handles consisting of items 19, 20 and 21
2. Up end 545 machine so it rests on rear chuck.
3. Insert R. H. and L. H. wheel legs in bed sockets and lock in place with thumb screws.
4. Slide axle (16) thru one wheel leg, thru wheel spacer (17) and thru other wheel leg.
5. Mount wheels (13) on axle with washer (14) on each side. Insert cotter pins (15) thru axle to retain wheels.
6. Slip handles onto R. H. and L. H. floor legs.

7. Insert R. H. and L. H. floor legs in bed sockets and lock in place with thumb screws.
8. Set tray (5) on collars and secure with 3/8" bolts. (6, 7, 8).
9. Grasp machine by handles, brace axle with foot and pull machine into upright position as in handling a hand truck.
10. Level tray by sliding collars on legs as required. Top of tray should be 6" below base.

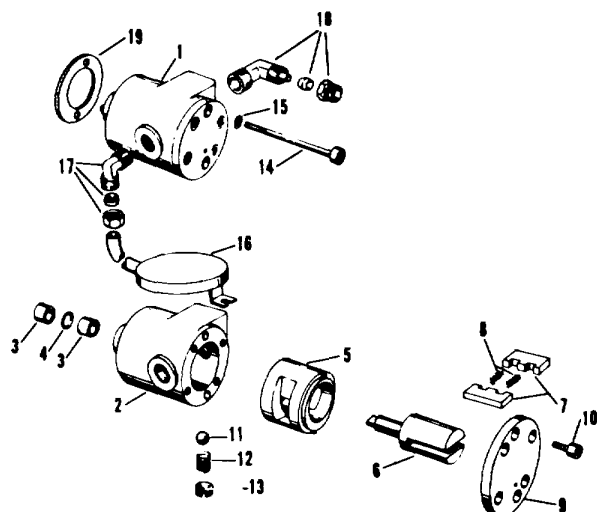
WHEEL STAND AND TRAY WITH DRAWER NO. 3375 (FIG. 18)

1. Set up stand as described above.
2. Bolt drawer (24) to center four holes in tray with 1/4" hex hd. bolts (22, 23).

WHEEL STAND AND TRAY WITH CABINET NO. 3419 (FIG. 19)

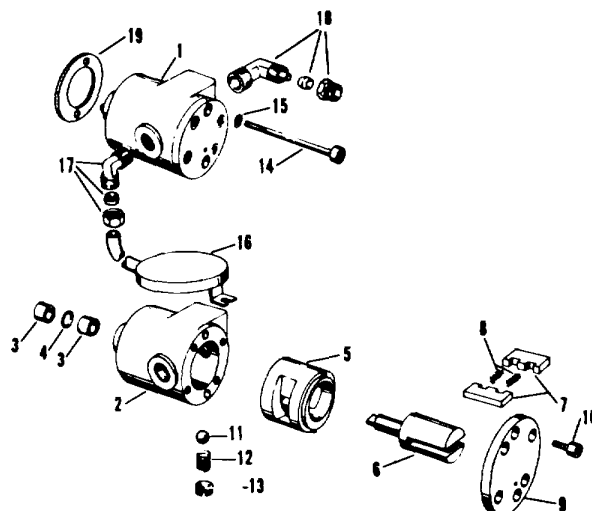
1. Set up stand as described above.
2. Slide cabinet (25) in between floor legs, raise rear end over axle and bolt to outer four holes in tray with 1/4" hex head bolts (22, 23).

COOLANT PUMP UNIT

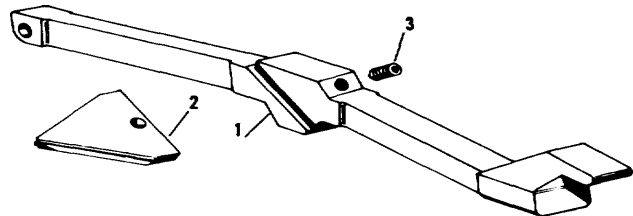


REF NO.	PART NO.	QUANTITY	ITEM
Coolant Pump Unit			
1	54529UA	1	Pump Assembly (Complete)
2	54505	1	Pump Body
3	54506	2	Bushing
4	54507	1	"O" Ring
5	54513	1	Reversing Bushing
6	54508	1	Rotor
7	54509	2	Vane
8	552372	2	Spring
9	54510	1	Back Plate
10		4	Soc Hd Cap Scr #1-24 NC x 1/2 Lg.
11	54511	1	Ball
12	54512	1	Relief Valve Spring
13		1	Hollow Lock Scr 1/2-13 NC x 1/4 Lg.
14		2	Soc. Hd Cap Scr 1/4-20 NC x 2-3/4 Lg.
15		2	Lock washer 1/4 Std (Med. Sec.)
16	54570	1	Oil Strainer
17		1	Tube Fitting "Imperial" #69F
18		1	Tube Fitting "Imperial" #269P
19	54530	1	Gasket

QUADVERSAL DIE HEAD (STANDARD QUICK OPENING)



REF NO.	PART NO.	QUANTITY	ITEM
"Quick-Opening" Swing-Over Type Die Head No. 3398 "Quadversal"			
1	31056	1	Die Head Body
2	(10079	1	Die Cam ("Quadversal")
	(55279	1	Die Cam (Mono "Quadversal")
3	31023	1	Die Cam Washer
4		4	Soc Hd Cap Scr 1/4-20 NC x 7/8 Lg.
5	10075	1	Opening Lever
6	50201	1	Opening Lever Fulcrum
7	100118	1	Fulcrum Setting Washer
8		1	Washer 1/4" Plain Wrought Steel
9		1	Hex Hd Cap Scr 1/4-20 NC x 3/8 Lg.
10	31057	1	Locking Lever
11	50257	1	Opening Link
12	552337	1	Opening Link Screw
13	100218	1	Locking Screw
14	100219	1	Washer
15	31066	1	Name Plate
16		2	Drive Scr "P-K" Type "U" #4 x 3/16 Lg.
17		1	Soc Set Scr 5/16-18 NC x 5/6 Lg. (Flat Pt.) "Nylok"



REAMER UNIT

REF NO.	PART NO.	QUANTITY	ITEM
Reamer Unit			
1	31031	1	Reamer Arm
2	502159	1	Reamer
3		1	Soc. Set. Scr. 3/8-16 NC x 3/4 Lg. (Cup Pt.)

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ARNG: Stage AG (3).

USAR: None.

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

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