

DEPARTMENT
OF THE ARMY TECHNICAL MANUAL

OPERATOR, ORGANIZATIONAL, DIRECT SUPPORT
AND GENERAL SUPPORT MAINTENANCE
MANUAL INCLUDING REPAIR PARTS LIST
FOR

SAW, BAND
METAL CUTTING
Model S87
(DON G. JENNESS CO., INC.) (3405-00-294-9591)

HEADQUARTERS,
DEPARTMENT OF THE ARMY

NOVEMBER 1980

TECHNICAL MANUAL

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HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, 26 November 1980

**OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT
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FOR
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MODEL S 87
(NSN 3405-00-294-9591)**

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 20282, located in the back of this manual direct to: Commander, US Army Armament Materiel Readiness Command, ATTN: DRSAR-MAS, Rock Island, IL 61299. A reply will be furnished directly to you.

NOTE

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

Manufactured by: Don G. Jenness Co., Inc.
3010 East Olympic Boulevard
Los Angeles, CA 90023

Procured under Contract No. DAAA09-76-C-6822

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

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INSTRUCTIONS FOR REQUISITIONING PARTS

NOT IDENTIFIED BY NSN

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

- 1- Manufacturer's Federal Supply Code Number - 6G374
- 2 - Manufacturer's Part Number exactly as listed herein.
- 3 - Nomenclature exactly as listed herein, including dimensions, if necessary
- 4 - Manufacturer's Model Number - Model S87
- 5 - Manufacturer's Serial Number (End Item)
- 6 - Any other information such as Type, Frame Number, and Electrical Characteristics, if applicable.
- 7 - If DD Form 1348 is used, fill in all blocks except 4, 5, 6, and Remarks field in accordance with AR 725-50.

Complete Form as Follows:

- (a) In blocks 4, 5, 6, list manufacturer's Federal Supply Code Number - 6GA74 followed by a colon and manufacturer's Part Number for the repair part.
- (b) Complete Remarks field as follows:
 Noun: (nomenclature of repair part)
 For: NSN: 3405-00-294-9591
 Manufacturer: Don G. Jenness Co., Inc.

Model: S87

Serial: (of end item)

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

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OPERATING INSTRUCTIONS

AND

PARTS LIST

FOR

SAW, BAND

METAL CUTTING

BAND SAW SAFETY INSTRUCTIONS

1. Read, understand, and follow the safety and operating instructions found in this manual. Know the limitations and hazards associated with this band saw. A safety rules decal is installed on each machine to serve as a reminder of basic safety practice.
2. Grounding the band saw: Make certain that the machine frame is electrically grounded and that a grounding lead is included in the incoming electrical service. In cases where a cord and plug are used, make certain that the grounding lug connects to a suitable ground. Follow the grounding procedure indicated by the National Electric Code.
3. Safety: Wear an approved safety shield, goggles, or glasses to protect eyes when operating the band saw:
4. Personal Protection: Before operating the machine, remove tie, rings, watch and other jewelry and roll up sleeves above the elbow. Remove all loose outer clothing and confine long hair. Hearing protectors should be used where noise exceeds the level of exposure allowed in Section 1910.95 of the OSHA regulations. Do not wear gloves.
5. Work Area: Keep the floor around the machine clean and free of scrap material, chips, oil, grease, coolant, tools or accessories to minimize the danger of slipping or tripping. Be sure the table is free of all scrap, foreign material and tools before starting a cut. Anti-skid floor strips are recommended on the floor area where the operator normally stands. Each machine work area should be marked off. Make certain the work area is well lighted and ventilated. Where dust or fumes present a hazard, provide proper exhaust system. Provide for adequate work space around the machine.
6. : Keep the machine guards in place at all times when the machine is in use. If removed for maintenance purposes, use extreme caution and replace the guards on completion of the-maintenance task before using the band saw./

DO NOT OPERATE THE MACHINE WITH THE GUARDS OFF

7. not Overreach: Maintain a balanced stance and keep your body under control at all times. Do not overreach.
8. Blades that are in Good Condition: Blades that are not sharp or having missing teeth can require excessive force or could break. Examine the backs of the blades. If it is rolled over, do not use the blade. Do not exceed 500 SFM using high speed steel blade.
9. Safety: Keep hands away from the blade while it is in motion. Always adjust the guide bar to be as close to the top of the work piece or fixture as possible to minimize blade exposure. Do not open the upper or lower band saw door while machine is under power. Do not position hand on stock in line with the band saw blade.
10. Wheel Rotation: Be sure the band saw wheels rotate clockwise when under power.
11. Machine Adjustments: Make all adjustments with power off except wheel speed and feed rate.
12. Machine Capacity: Do not make any cuts requiring more power than is available on the machine. Do not exceed table carrying capacity of 500 lbs. evenly distributed.
13. Avoid Accidental Starts: Make certain the motor switch is in the "off" position before connecting power to the band saw.
14. Careless Acts: Give the work you are doing your undivided attention. Looking around, carrying on a conversation and "horseplay" are careless acts that can result in serious injury.
15. Job Completion: If the operator leaves the machine area for any reason, the hand saw should be turned off and come to a complete stop before his departure. In addition, if the operation is complete, he should clean the band saw and work area. Never clean the machine with the power on and never use the hand; to clear chips or sawdust; use a brush.
16. Disconnect Machine: Before performing any service or maintenance and when changing blades disconnect machine from power source.

17. Replacement Parts: Use only authorized replacement parts and accessories.
18. Misuse: Do not use this saw for other than its intended purpose.

Do not equip your saw with a motor larger than 3 HP at 1800 RPM.

MACHINE SPECIFICATIONS

Table Size-----	24" (609mm) x 24" (609mm)
Table Tilt--	450R. - 15° L.
Throat, Blade to Column Guard -----	19-3/4" (501 mm)
Maximum Work Thickness. -----	12" (305mm)
Table Feed Force (optional) -----	0-60 lbs. (0-27.2 kg.)
Speed Range:	
Low (infinitely variable) -----	47-470 rpm
High (infinitely variable)- -----	520-5200 rpm
Blade Width Capacity -----	1/8" - 1" (3 - 25mm)
Blade Length-----	149" - 152" (3785 -3861mm)
Upper Wheel Adjustment -----	1/2" - (38mm)
Band Saw Wheel Diameter -----	20" (508 mm)
Main Drive Motor -----	2 or 3 HP (1.5 kw or 2.24 kw)
Weight Domestic Crated -----	1300 lbs. (590 kg)

BELTS

<u>LOCATION</u>	<u>PART NO</u>	<u>INDUSTRY NO.</u>	<u>NO. REQ.</u>
Between variable pulleys -----	6077143 -----	1922V426	--- 1
Between countershaft and transmission -	6077141 -----	7M1180	--- 3
Between compressor and motor --	607707G -----	7M710	--- 1

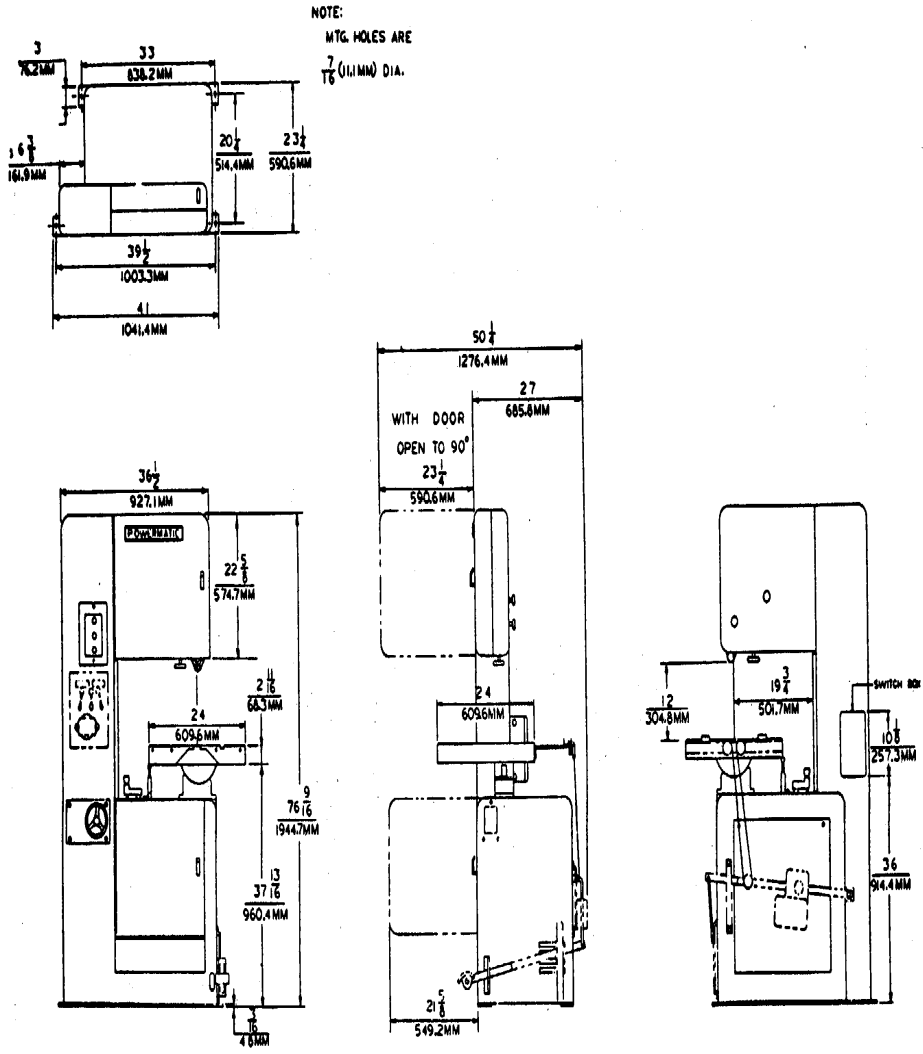


Figure 1. Foundation Layout.

LUBRICATION CHART

ITEM NO	INTERVAL	ITEM& INSTRUCTIONS	RECOMMENDED LUBRICANT
1	Weekly	Variable Speed Sheaves - oil male hubs	SAE No. 10
2	Weekly	Air Compressor - on side	SAE No. 10
3	Monthly	Variable Speed Adjusting Screw	Fiske Co., Lubriplate No. 630A
4	Monthly	Band Tensioning Screw	Fiske Co., Lubriplate No. Lubriplate
5	Monthly	Upper Wheel Slide	Fiske Co., Lubriplate No. 630A
6	Monthly	Variable Speed A	SAE No. 10
7	Monthly	Transmission. Fill Through Fill Plug (drain and Flush ever six months)	Mobil Vactra No. 1
8	Monthly	Upper Wheel Tilt Bracket Pivot Screws and adjusting screw	SAE No. 10
9	Monthly	Table Trunnion Surfaces, clean & regrease	Fiske Co., Lubriplate No. 630A
10	Monthly	Gearbox Shifter Detent Plunger	SAE No. 10
11	Monthly	Guide Post & Guide Post Clamp Screw	SAE No. 10
12	6 Months	Speed Dial Gears	Fiske Co., Lubriplate No. 630A

LOCATION PLANNING

Caution: Lift machine with fork lift truck under base. Do not lift through the throat opening. Net weight is 1100 lbs. (498.96kg), approximately. The machine should be located so that space is allowed for easy feeding and removal of material. Clearance should also be allowed behind the machine for servicing and in front for the opening of doors (fig. 1).

RECEIVING

Remove all protective coverings, crating, etc. carefully. Inspect the machine for broken or damaged parts. Any evidence of damage in transit should be reported immediately.

Four (4) holes are provided in the base for anchoring the machine to the floor.

Level the table and check to see that post is square to the table. Connect the leads of the line circuit into the starter on the back of the machine and check for proper direction of rotation as follows:

1. into low range on transmission. To do this, manually rotate the bottom wheel, at the same time move shift lever to the left detent position.
2. start button to start main drive motor and check rotation. The lower wheels should rotate clockwise. not, disconnect machine from power source and change any two incoming leads in the starter usually mounted on the rear of the column of machine. Install a saw band and check to see that the band touches upper and lower backup bearings in saw guide and is centered on both top and bottom wheels. If it is not centered, see section on band saw lineup for proper

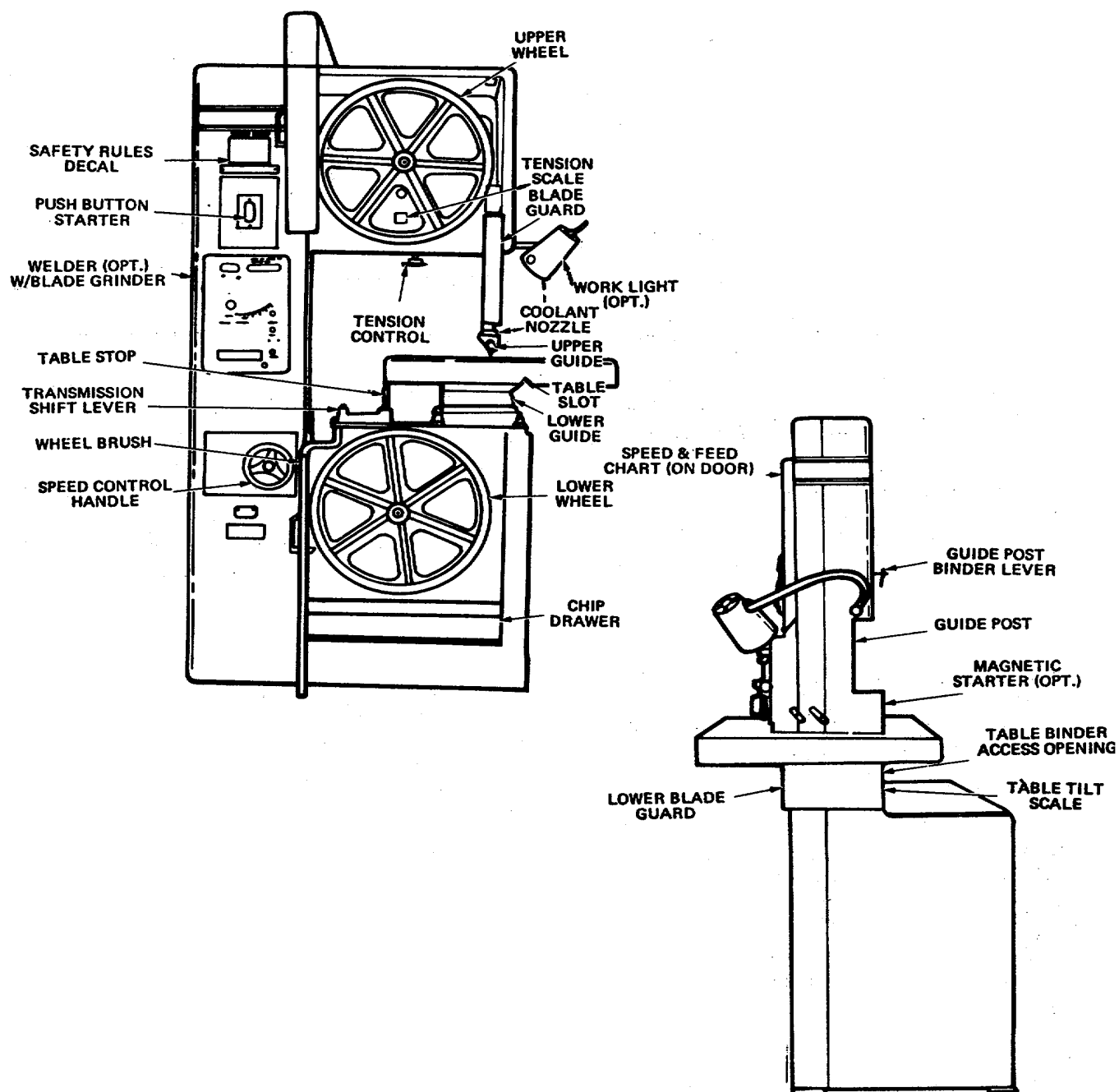


Figure 2. Features and Controls.

FEATURES AND CONTROLS (FIG. 2)

SPEED AND FEED CHART: The speed and feed chart mounted on the upper door of the saw enables the operator to quickly select the correct saw band, speed and feed rate on the chart for basic materials

TABLE: A heavy duty table and trunnion assembly will hold 200 lbs (91.72kg) at any point or 500 lbs (226.8kg) evenly distributed. The table can be tilted 150 left or 450 right. Pointer and degree scale are attached directly to the trunnion and cradle to indicate the angle at which the table is set.

SAW WHEELS: The wheels are cast iron, dynamically balanced, centered and aligned so that the band will run at all times against backup bearings and centered on wheels. Tires are vulcanized to the wheels assuring no slippage and long wear. Should the tires become worn, there is an exchange policy where the wheels are returned for credit after the replacement wheels are received. To remove a wheel, loosen both setscrews and pull straight out. If the wheel has been in place for a long time, a wheel puller may be necessary. On replacement be sure to oil the shaft and hole to avoid rusting.

SPEED CONTROL: Variable speeds are selected through a column-mounted control wheel. An easy to change, easy to set shift lever is mounted on the cross member near the table. In low range, speeds are from 47 to 470 SFM (14.33 to 143.3 mpm) and in high range, from 520 to 5200 SFM (158.5 to 1585mpm). A speed dial is mounted on the column of the machine for direct reading of surface feet per minute (meters per minute). If the shift lever will not go into the detent position when changing range, rotate the lower wheel manually until teeth engage.

WHEEL BRUSHES: Check the wheel brushes occasionally. If they are worn so that they no longer contact the wheel face, loosen the adjusting screws and move the brush up to the wheel. Replace as required.

TRANSMISSION: Drain, flush, and refill after first month and thereafter at least every six months. Capacity is 3 quarts. Fill to the top of fill pipe, but do not over fill. Check for seal leaks around the shafts. Any rough operation, vibration, loud or unusual noises should be investigated immediately. It is recommended that the transmission be returned to the factory for repairs, or that repairs be made by a factory serviceman.

CAUTION: Difficulties in shifting may be caused by wear or incorrect adjustment in the shifting linkage and this should be considered before repairing the transmission. It may be necessary to jog the band drive motor until the shift lever is fully engaged, Do not attempt to force the shift lever into position. **VARIABLE SPEED PULLEY:** Every six months remove the pulley unit, and wash and clean with solvent. Re-oil and install. Check the variable pulley faces for scoring which could damage the belts.

BLADE INSTALLATION

NOTE: If the blade width to be installed is less than ½", use the 3/16" thick shim back of the upper guide and turn the step in the bar support for the lower guide towards the trunnion. Check the inserts for the correct width. The insert width should be slightly less than the distance from the back of the band to the bottom of the gullet. Change them if required and leave them pulled away from the band. Lower the upper wheel housing. Loosen both the insert clamp screws and remove the insert. Open booth doors and post-mounted band guard. Loop the band over the upper wheel, feed it into the blade guard on the column and under the lower wheel. Using the band tension handwheel, put tension on the blade. Rotate the wheels by hand and watch how the band tracks on the wheels. Tilt the wheel if necessary to cause the band to run centered on the wheel. Check to see if the blade is against the upper and lower guide backup bearing. For proper operation the blade should be in firm contact with lower backup bearing and be in light contact or slightly clearing the upper backup bearing. If it is not, see section on band saw alignment and realign the machine.