RECORD MACHINE DETAILS	DISTRIBUTOR
MODEL	
SERIAL No.	
DATE OF PURCHASE	
VOLTAGE	
PHASE	
Hz	

QUOTE THIS INFORMATION WHEN REQUESTING SERVICE OR SPARES.

HANDBOOK
BO10385

AUTOMATIC
HB280A

HB SERIES
HORIZONTAL BANDSAW

A.L.T. Saws & Spares Ltd
Startrite Machine Specialist
Unit 15, Pier Road Industrial Estate
Gillingham
Kent
ME7 1RZ
Tel/Fax: 01634 850833
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ISSUE 4 25-05-94 RF11097

QUALITY BANDSAW BLADES

TO SUIT THE HB250A MODEL

ORDER LINE- 01634 850833

A.L.T. SAWS & SPARES LTD

Unit 15, Pier Road Industrial Estate

Gillingham

Kent

ME7 1RZ

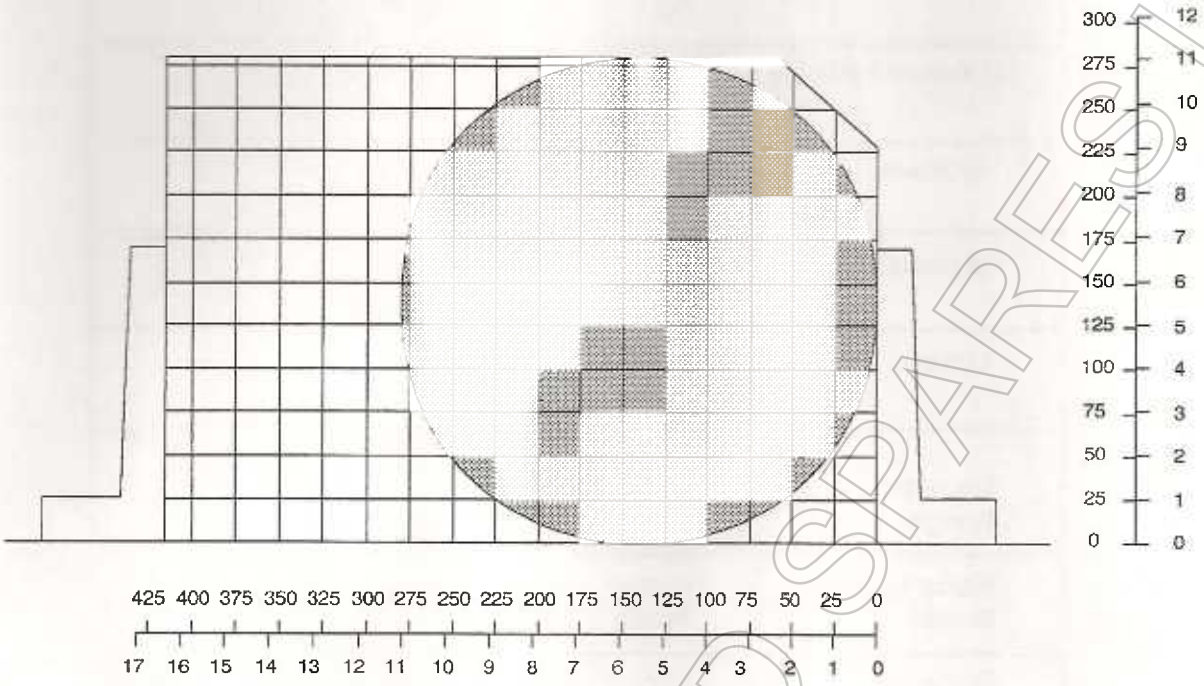
www.altsawsandspares.co.uk

CONTENTS

MODEL NUMBER		HB250A
Drive Motor 3Ph	kw hp	1.5 2.0
Coolant Motor 3Ph	watt hp	7 0.09
Hydraulic Motor	kw hp	0.19 0.25
Material Feed Motor	kw hp	0.19 0.25
Material Feed Rate	m/min ft/min	3.6 12
Stock Stop Adjustment Range	mm ins	Min Max 5 610 0.2 24
Blade Speed Range	m/min ft/min	13 to 92 43 to 300
Blade Size SUPAFLEX Blades	mm ins	3632 x 25 x 0.9 143 x 1 x 0.035 CARBON BI-METAL M2 BI-METAL M42
Bed Height Total Height Total Width Total Length	mm (ins) mm (ins) mm (ins) mm (ins)	707 (28) 1177 (47) 628 (25) 1751 (70)
Net Weight	kg (lbs)	490 (1088)
Coolant Tank Capacity Reccomended Coolant STARCOOL 209		30l 6½ imp.gal. Available in 1l or 5l containers
Electrical Supply (Examine rating plate to establish required electrical supply).		220 - 240 volts / 3 phase / 50Hz or 380 - 415 volts / 3 phase / 50Hz or 208 - 230 volts / 3 phase / 60Hz or 440 - 480 volts / 3 phase / 60Hz or 575 volts / 3 phase / 60Hz

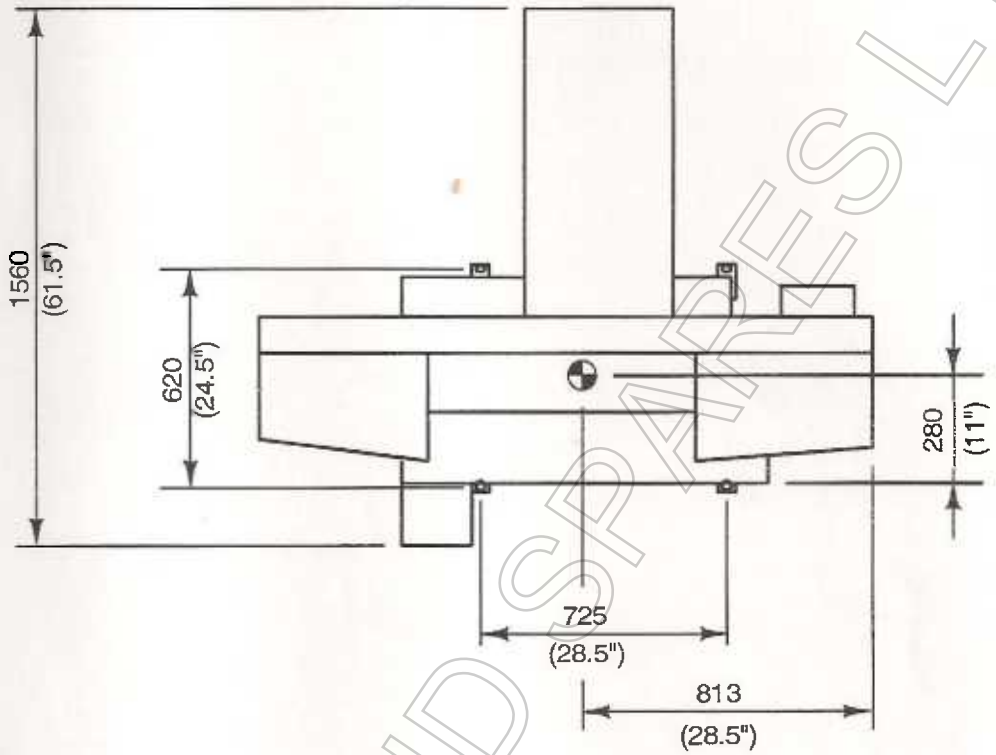
NOTE: ILLUSTRATIONS MAY VARY IN DETAIL ACCORDING TO MODEL.

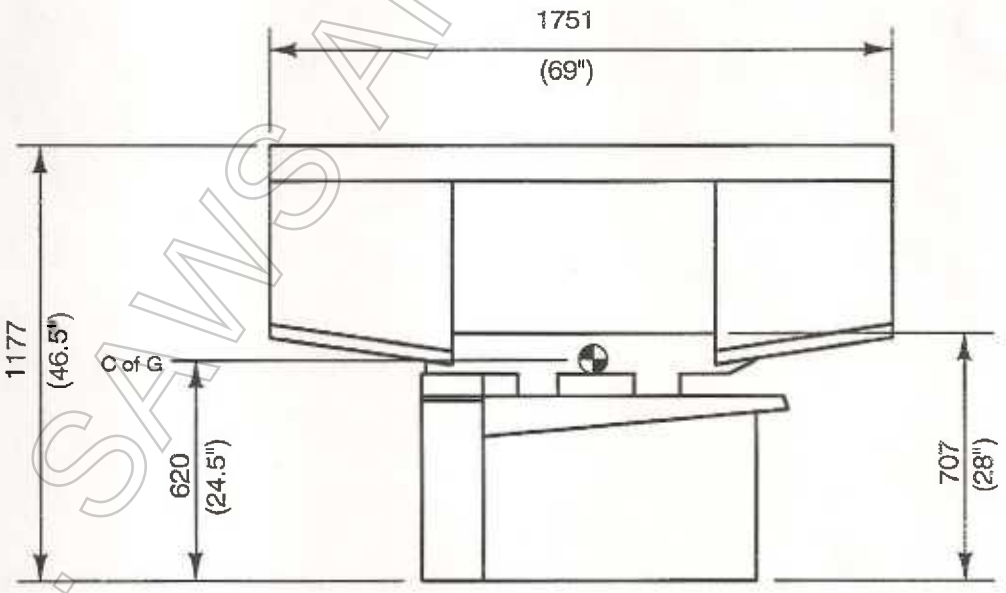
CUTTING CAPACITY FOR HB250A HORIZONTAL BANDSAW



Cutting Capacity At 90° Only

SPECIFICATION/FOUNDATION PLAN





NOTE: ALL DIMENSIONS ARE APPROXIMATE

Ensure that you fully understand this instruction manual and have recieved sufficient training in the use of this machine and the particular safety precautions to be observed.

Persons under the age of 18 years should not operate this machine, except under supervision during a course of training.

BEFORE OPERATING THIS MACHINE ENSURE THAT:

All guards and fences are securely fitted and correctly set in accordance with the current Regulations.

Tooling is of correct type, securely fastened, sharp and direction of rotation is appropriate.

Correct spindle speed and feed is selected (for the cutter equipment).

Loose clothing is either removed or fastened and jewellery removed.

Suitable jigs and push sticks are available for use where appropriate.

The working area is clean and unobstructed.

Extraction equipment is switched on, properly adjusted and working efficiently.

Suitable protective equipment is available, e.g. goggles, ear defenders and dust mask.

WHEN SETTING, CLEANING AND MAINTAINING THIS MACHINE:

Ensure all moving parts of the machine are stationary before setting, cleaning or making any adjustments.

Report immediately, to a person in authority, any machine malfunction or operator hazard. Do not attempt to repair the machine unless competent to do so.

The electrical equipment must be installed and used in accordance with the instructions contained in this manual. Regular inspection and safety tests must be undertaken by a competent person. Ensure all power sources are isolated before any maintenance work commences.

If the operator is likely to be subjected to noise levels greater than specified in the Noise At Work Regulation 1989, then a Noise Test Record Sheet will be included in this manual.

SECTION 712

NOISE TEST RECORD SHEET

This information is provided in accordance with The Health & Safety Executive Noise At Work Regulations 1989

MACHINE TYPE:
HB250A

MOUNTING CONDITION:
FREE STANDING ON CONCRETE FLOOR

BACKGROUND READING dB(A):
61

TEST	MATERIAL	CUTTER SPEED	MAX. dB(A)
1	MILD STEEL BAR - 60mm DIA.	27.5 m/min (90ft/min)	76
2			
3			
4			
5			
6			

MAXIMUM dB(A) NOISE LEVEL READINGS ARE TAKEN
WITHIN 1 METRE OF THE MACHINE
& AT A HEIGHT OF 1.5 METRES.

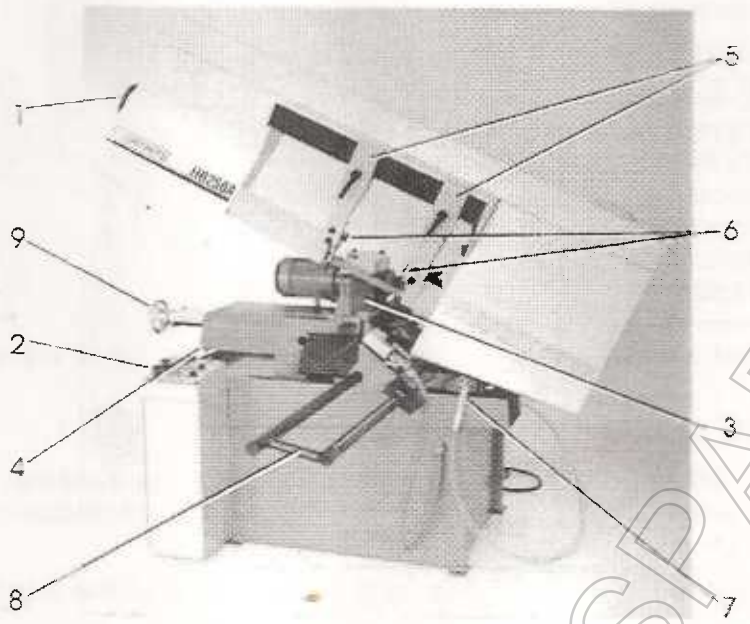


Fig. 1

KEY

1. Blade Tension Control
2. Electrical Control Panel
3. Automatic Vice
4. Counter-Balance Spring Tension Control
5. Adjustable Guide Arms
6. Coolant Nozzles
7. Flushing Nozzle
8. Swing Away Assembly
9. Vice Control Handle

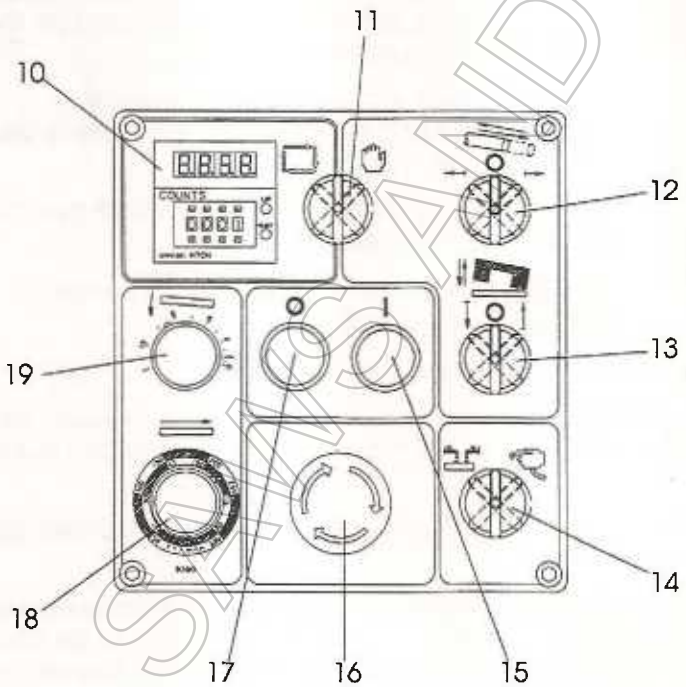


Fig. 2

10. Counter
11. Manual/Automatic Selector
12. Bar Feed Control
13. Bow Raise/Lower Control
14. Coolant Control
15. Start Button
16. Emergency Stop Button
17. Stop Button
18. Blade Speed Control
19. Feed Speed Control

GENERAL LAYOUT OF HB 250 A
HORIZONTAL BANDSAW
NOTE: DETAILS MAY VARY ACCORDING TO MODEL.

INSTALLATION.

Ensure that the following are supplied with your machine.

MODEL	HB250A
13 & 17mm Combination Spanner	Yes
17 & 19mm Combination Spanner	Yes
22 & 24mm Combination Spanner	Yes
Key x 2 (Electrical Box)	Yes
Stock Stop Assembly	Yes
Operating Manual	Yes
Infeed Roller Table	Yes

To transport the machine use fork lift truck with forks placed as close as possible to wooden transport blocks.

Site the machine with adequate working space for ease of use.

The machine stand is provided with four feet which can be used for fixing the machine. These accept 12mm ($^1/_2$") diameter bolts (not supplied). Before fixing the machine down, ensure the machine is located on a firm, level surface

Remove the anti-rust protective coating where applied, and in particular from the working elements of the machine.

Remove the transit bracket clamping the bow to the bed (see Fig 3). This bracket is fitted to avoid damage during transit and is not required for the operation of the machine.

Fill coolant tank with approximately 30 litres (6 1/2 gallons) of a good grade of soluble oil diluted about 10 parts water to 1 part oil.

IMPORTANT: DO NOT LET COOLANT PUMP RUN DRY, OR DAMAGE MAY RESULT.

Fill hydraulic tank with approximately 8 litres (2 gallons of hydraulic fluid)

ELECTRICAL INSTALLATION (REFER TO RELEVANT DIAGRAM, SECTION 743)

Check that the electrical supply is suitable for the machine, see machine ratinglabel. At all times ensure that the machine is isolated from the mains supply before making any electrical connections or adjustments.

Unlock and open door of electrical control box and pass supply leads through cable gland located in rear of control box.

For three phase supply, connect supply leads to terminals LI, L2 & L3 of the isolator and earth lead to 'E' (earth) terminal. If a neutral supply is standard, then the neutral should be connected to 'N' (neutral) terminal. (N.B. this has no electrical bearing on the machine and is supplied only as a convenient connector).

IN ALL CASES THE MACHINE MUST BE EFFECTIVELY EARTHED.

A three phase motor may run in either direction, therefore, raise the bandwheel covers and check that bandwheels run in an anti-clockwise direction. If necessary, interchange any two supply leads to reverse rotation.

The service of a competent electrical engineer must be obtained if there is any doubt regarding electrical installation of this machine.

GENERAL

Check blade tension frequently and adjust as necessary.
Clean out swarf tray frequently.

WEEKLY MAINTENANCE

Check level of coolant in coolant tank. If necessary top up with a good grade of soluble oil in accordance with manufacturer's instructions.
Clean and lubricate all miscellaneous moving parts.
Ceck level of hydraulic fluid and top up if necessary.(Auto & Semi-Auto only)

MONTHLY MAINTENANCE

Apply grease to both ends of pivot head shaft.
Check blade guide assemblies for wear.
Check level of hydraulic fluid and top up as necessary.(Auto & Semi-Auto only)
Check condition and tension of vee belt and replace or adjust as necessary (5 speed machines only).

YEARLY MAINTENANCE

Drain coolant tank. Clean tank and pump. Refill with approximately 30 litres ($6^1/_2$ gallons) of clean coolant.

NOTE: The gearbox is sealed for life and should not require maintenance.

APPROVED LUBRICANTS	
GENERAL LUBRICATION	SHELL Tellus 68 GULF Service 51 Oil MOBIL Vactra or D.T.E. Heavy Medium Oil TEXACO Ursa p20 Oil
GREASE POINTS	SHELL R2 All Purpose Grease GULF Gulfcrown No.3 Grease MOBIL Mobilplex 48 Grease TEXACO Regal Starfak Premium 3 Grease
HYDRAULIC SYSTEM	SHELL T37 Oil GULF Harmony 43AW Oil MOBIL D.T.E. 24 Oil TEXACO Rando HDA or HD32 Oil

FITTING A BLADE.

To remove saw blade, slacken off blade tension by means of blade tensioning handle (see Fig. 4).
Raise bandwheel covers and remove blade guards and slide saw blade out of guides to remove from machine. Place saw blade over bandwheels with teeth facing towards pivot and insert saw blade carefully into guide assemblies. Check that back edge of saw blade is against flanges of bandwheels before tensioning blade.

Fig. 4

BLADE TENSIONING

To obtain correct blade tension, turn blade tensioning knob until collar allows setting slip to become engaged (see Fig. 5). Check blade tension periodically as the saw blade may stretch.

Fig. 5

CHECKING & SETTING SAW FEED PRESSURE

Raise head and close 'Feed' control valve. Turn control knob 'B' anti-clockwise until it is against retaining washer 'C'. Lower head to within a few inches of the machine bed and close 'Feed' control valve. Place spring-balance scales over blade tension handle. Hold spring-balance scales and open 'Feed Speed' control valve. A head weight reading of 14.5 kg (32 lbs) should be obtained. If the head weight requires adjustment, raise head, remove set screw and locking nut 'E' and proceed as follows:-

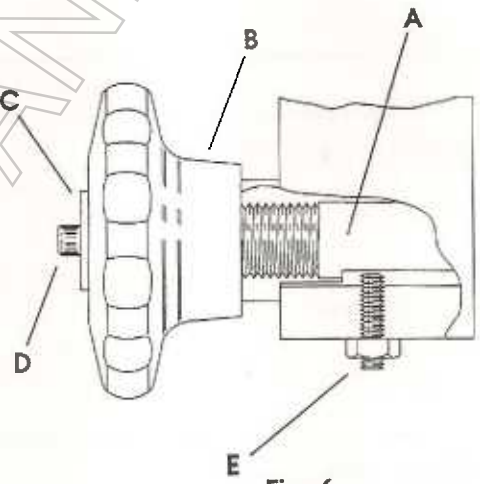


Fig. 6

For HEAVIER head weight turn control knob 'B' anti-clockwise which will turn threaded shaft 'A' anti-clockwise and increase the head weight.

For LIGHTER head weight place a socket wrench into socket cap screw 'D' and turn clockwise to turn threaded shaft 'A' and decrease the head weight.

Re-check head weight as before. If it is now correct, screw in set screw 'E' making sure it just locates into keyway in shaft and lock in place. When correctly set the control knob 'B' should give a working range of approximately 1.8 kg (4 lbs) MINIMUM - 14.5 kg (32 lbs) MAXIMUM. When no further adjustment of the spring is possible it should be replaced.

COOLANT PUMP MAINTENANCE

With the exception of occasionally removing swarf from the pump impellor, no maintenance is required. In order to clean the pump, proceed as follows:-

Disconnect pump from mains supply.

Remove plastic screen at front of pump, then remove three indicated in Fig. 7 screws indicated and take off pump head.

IMPORTANT : DO NOT REMOVE ANY OTHER SCREWS WHICH MAY BE EXPOSED.

Clean out any swarf or chips which may have clogged the impeller, taking care to avoid the painted surface. Turn the impeller by hand to make sure it is free.

Re-connect the pump to the mains supply to make sure the impeller turns freely. If it does, disconnect pump from mains supply and replace pump head, three screws and plastic screen. Re-connect pump to mains supply. If the pump does not then run freely, it should be replaced.

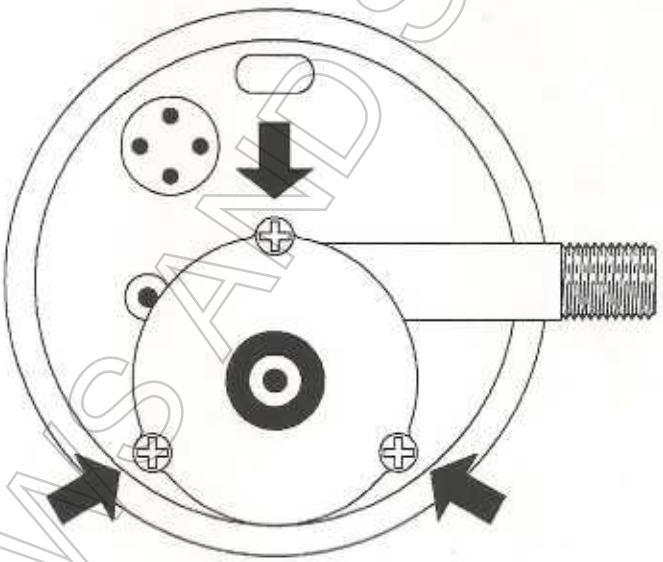


Fig. 7
NOTE: REMOVE ARROWED SCREWS ONLY

SETTING

Before making any adjustments to the machine ensure that the bow is raised in order to prevent risk of damage, and that manual mode is selected by turning the selector switch clockwise (see Fig. 2).

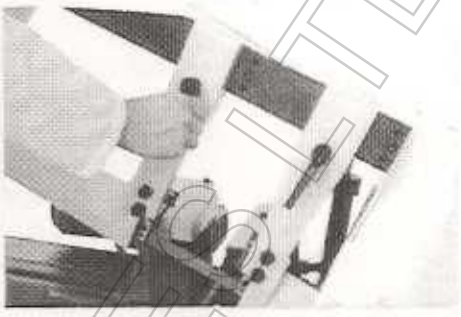


Fig. 8

BLADE GUIDE ARMS

These should be set as close as possible to the workpiece but positioned so as to clear the vice jaws as the bow is lowered. Adjustment is made by loosening the clamping handles located at the top of the blade guide arms (see Fig. 8) and sliding them along the guide rail. When correctly positioned retighten the clamping handles.

VICE JAWS

After placing the workpiece between the roller vice jaws, turn the vice control handle (see fig. 9) until the workpiece is firmly gripped between the rollers. The illuminated bar feed switch should extinguish indicating the presence of sufficient material to cut.

Fig. 9

BOW UPPER LIMIT POSITION SETTING

To set the upper bow position limit, release the handle retaining the limit switch actuating arm (see fig. 10). Lower the bow by rotating the bow raise/lower control switch (see fig. 2) clockwise until the blade is within 10mm (3/8in.) of the workpiece. Position the limit switch actuating arm so that it operates the limit switch and firmly tighten the retaining handle.

Fig. 10

STOCK STOP ADJUSTMENT

The stock stop is adjusted in two stages that provide a coarse and fine adjustment of cutting length. Coarse adjustment, to within 10mm, is made by releasing the locking knob A (see fig. 11), unlatching adjustment screw B from the indent, sliding the adjustment block along the guide rail and latching the adjustment screw B into the appropriate indent. Fine adjustment is made by turning the adjustment screw B in the appropriate direction until the inner edge of the adjustment block is aligned with the desired cutting length.

Push the stop block firmly against the adjustment block before tightening locking knob A. The stop pin should be positioned near the right hand edge of the workpiece so that it swings clear of it before the cut is complete.

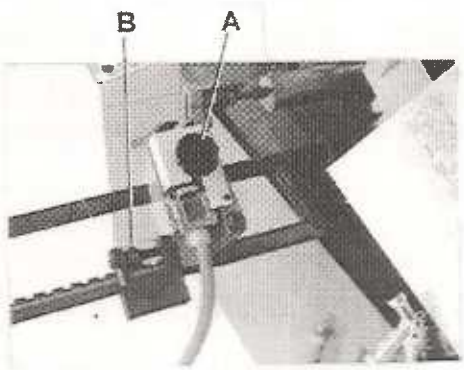


Fig. 11

BLADE SPEED

Before cutting select the appropriate blade speed by rotating the blade speed adjustment knob located on the control panel (see Fig. 2). The scale is calibrated in ft/min and m/min. To increase the blade speed rotate the knob clockwise. To decrease speed rotate the knob anticlockwise. The blade speed is set in accordance with the guide located on the right hand bandwheel cover of the machine.

Fig. 12

FEED SPEED

Before cutting, select the appropriate saw feed speed by rotating the feed speed adjustment knob located on the control panel (see Fig. 2). To increase the feed speed rotate the knob anticlockwise. To decrease the feed speed rotate the knob clockwise. As a guide, the saw feed speed should be set so that the bow descends at the same speed that the material is being removed. Further, the speed should be adjusted so as to prevent damage to the blade when it first contacts the workpiece, or whilst cutting workpieces that have abrupt changes in section or thin sections.

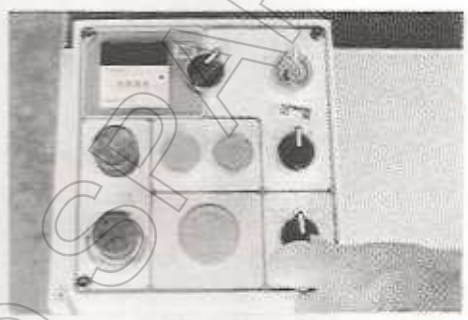


Fig. 13

FEED PRESSURE (HEAD WEIGHT)

The saw feed pressure is controlled by means of the counter balance spring tension control knob located on the left hand end of the machine bed (see Fig. 1). The saw feed pressure is set to the maximum on assembly. To reduce the feed pressure turn the control knob clockwise. As a guide sawfeed pressure should be increased as the material machineability decreases.

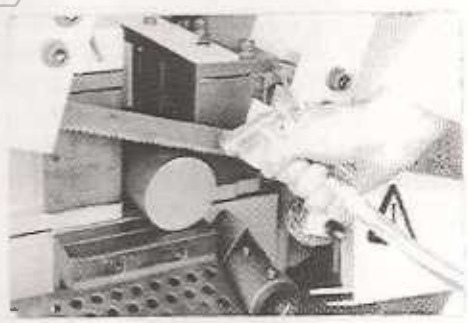


Fig. 14

TRIMMING STOCK

To square off the end of the workpiece, advance the workpiece by rotating the bar feed switch (see Fig. 2) clockwise until the workpiece is in the appropriate position. Release the bar feed switch.

Before cutting commences ensure that all necessary adjustments have been made, all guards are in position, the workpiece is firmly clamped in the vice and that the sawblade is clear of the workpiece.

To commence sawing press the 'on' button positioned on the control panel (see Fig. 2). The blade will move at the speed set and the bow will descend at the rate set. When the cut is complete the blade will stop automatically and raise to the height set.

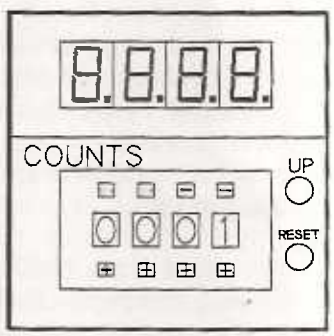


Fig. 15

The coolant will be automatically turned on when the 'on' button is pressed and off when the cut is complete. The rate of flow can be adjusted by moving the flow adjusting lever fitted to the blade guides (see Fig. 12). To turn the coolant off, select the '0' position on the coolant selector switch (see Fig. 13). A flushing nozzle is fitted as standard. This can be used when the machine is cutting by depressing the operating valve fitted to the nozzle (see Fig. 14). When the machine is not cutting it can be used by selecting the 'flush' position at the coolant selector switch and depressing the operating valve fitted to the nozzle.

SELECTING THE NUMBER OF COMPONENTS

The number of components to be cut is selected by repeatedly depressing the appropriate + or - buttons positioned above and below the count indicators (see fig.15) until the appropriate number is set.

CUTTING

Again, before cutting ensure that all necessary adjustments have been made, all guards are in position, the workpiece is securely clamped in the vice and the saw blade is clear of the workpiece.

Advance the workpiece until it strikes the stock stop, by rotating the bar feed switch (see fig. 2) clockwise.

Rotate the mode switch (see fig. 2) anticlockwise to select automatic mode. Press the 'ON' button positioned on the control panel (see fig. 2) and sawing will commence. The blade will descend at the rate set and move at the speed set. When the cut is complete the blade will stop automatically, the bow will be raised to the height set and the workpiece advanced to the stock stop. The number digitally displayed on the counter will increase by one each time a cut is completed. The next cut will automatically commence until the preset number of components has been cut or insufficient material is present for further cuts to be made.

If there is insufficient material the bar feed switch will be illuminated. It is not possible to operate the machine until material is placed in the vice. Load, trim, and recommence cutting in automatic mode as described. In these circumstances the counter will not require resetting and the displayed number of cuts will not be altered.

When cutting is complete the isolator, fitted to the electrical box should be switched to the off position and all swarf removed from the swarf tray. Reset the digital display to zero by pressing the 'Reset' button on the counter.

In the event of an emergency the 'Emergency Stop' button, fitted to the control panel or to the rear of the machine, should be pressed.

To recommence sawing, the emergency stop button must first be released by turning the button, then the 'on' button will function as normal. When stopped during cutting, the descent of the bow will automatically cease. This will prevent damage to blade and workpiece. Should the power fail, the machine will stop sawing. On reconnection of the power, the machine will not recommence sawing until an 'on' button is pressed. Also, when the power has failed during cutting, the descent of the bow will automatically cease. When the emergency stop button is pressed or the power fails, the counter will need to be reset as the digitally displayed component count will not be retained.

SETTING

Before making any adjustments to the machine ensure that the bow is raised in order to prevent risk of damage, and that manual mode is selected by turning the mode selector switch clockwise (see Fig. 2).

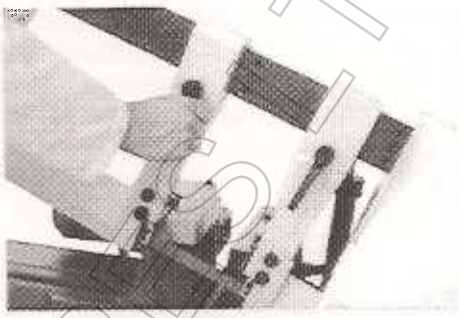


Fig. 16

BLADE GUIDE ARMS

These should be set as close as possible to the workpiece but positioned so as to clear the vice jaws as the bow is lowered. Adjustment is made by loosening the clamping handles located at the top of the blade guide arms (see Fig. 16) and sliding them along the guide rail. When correctly positioned retighten the clamping handles.

VICE JAWS

After placing the workpiece between the roller vice jaws, turn the vice control handle (see fig. 17) until the workpiece is firmly gripped between the rollers. The illuminated bar feed switch should extinguish indicating the presence of sufficient stock to cut.

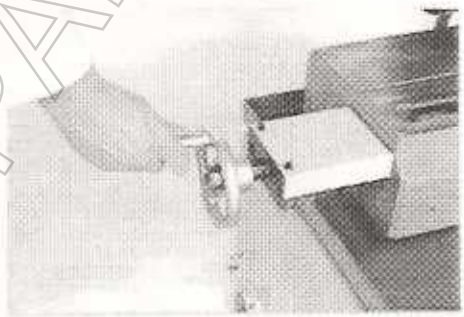


Fig. 17

BOW UPPER LIMIT POSITION SETTING

If required, the upper bow position limit can be adjusted by releasing the handle retaining the limit switch actuating arm (see fig. 10) Then lower the bow by rotating the bow raise/lower switch (see fig. 2) clockwise until the blade is within 10mm (3/8in.) of the workpiece, position the limit switch actuating arm so that it operates the limit switch and firmly tighten the retaining handle.

STOCK STOP ADJUSTMENT

If required to be used, the stock stop is adjusted in two stages that provide a course and fine adjustment of cutting length. Course adjustment to within 10mm is made by releasing the locking knob A (see fig. 11) unlatching adjustment screw B from the detent, sliding the adjustment block along the guide rail and latching the adjustment screw B into the appropriate detent. Fine adjustment is made by turning the adjustment screw B in the appropriate direction until the inner edge of the adjustment block is aligned with the desired cutting length.
Push the stop block firmly against the adjustment block before tightening locking knob A. The stop pin should be positioned near the right hand edge of the workpiece so that it swings clear of it before the cut is complete.

BLADE SPEED

Before cutting select the appropriate blade speed by rotating the blade speed adjustment knob located on the control panel (see Fig. 2). The scale is calibrated in ft/min and m/min. To increase the blade speed rotate the knob clockwise. To decrease speed rotate the knob anticlockwise. The blade speed is set in accordance with the guide located on the right hand bandwheel cover of the machine.

FEED SPEED

Before cutting, select the appropriate saw feed speed by rotating the feed speed adjustment knob located on the control panel (see Fig. 2). To increase the feed speed rotate the knob anticlockwise. To decrease the feed speed rotate the knob clockwise. As a guide, the saw feed speed should be set so that the bow descends at the same speed that the material is being removed. Further, the speed should be adjusted so as to prevent damage to the blade when it first contacts the workpiece, or whilst cutting workpieces that have abrupt changes in section or thin sections.

FEED PRESSURE (HEAD WEIGHT)

The saw feed pressure is controlled by means of the counter balance spring tension control knob located on the left hand end of the machine bed (see Fig. 1). The saw feed pressure is set to the maximum on assembly. To reduce the feed pressure turn the control knob clockwise. As a guide sawfeed pressure should be increased as the material machineability decreases.

CUTTING

Before cutting commences ensure that all necessary adjustments have been made, all guards are in position, the workpiece is firmly clamped in the vice and that the sawblade is clear of the workpiece. The bow can be lowered or raised by turning the 'bow raise/lower' switch (see Fig. 2). When it reaches the desired position, release the switch and bow movement will cease.

Fig. 18

To commence sawing press the 'on' button on the control panel (see Fig. 2). The blade will move at the speed set and the bow will descend at the rate set. When the cut is complete the blade will stop automatically and the bow will raise to the preset height.

The coolant will be automatically turned on when the 'on' button is pressed and off when the cut is complete. The rate of flow can be adjusted by moving the flow adjusting lever fitted to the blade guides (see Fig. 18). To turn the coolant off, select the '0' position on the coolant selector switch (see Fig. 19). A flushing nozzle is fitted as standard. This can be used when the machine is cutting by depressing the operating valve fitted to the nozzle (see Fig. 20). When the machine is not cutting it can be used by selecting the 'flush' position at the coolant selector switch and
depressing the operating valve fitted to the nozzle.

Fig. 19

When cutting is complete the isolator, fitted to the electrical box should be switched to the off position and all swarf removed from the swarf tray.

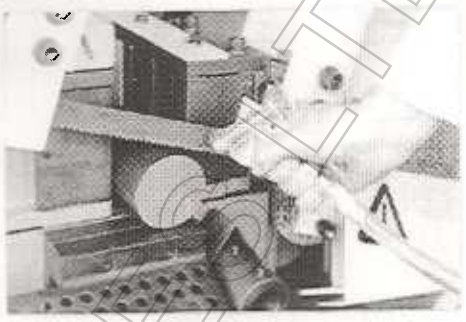


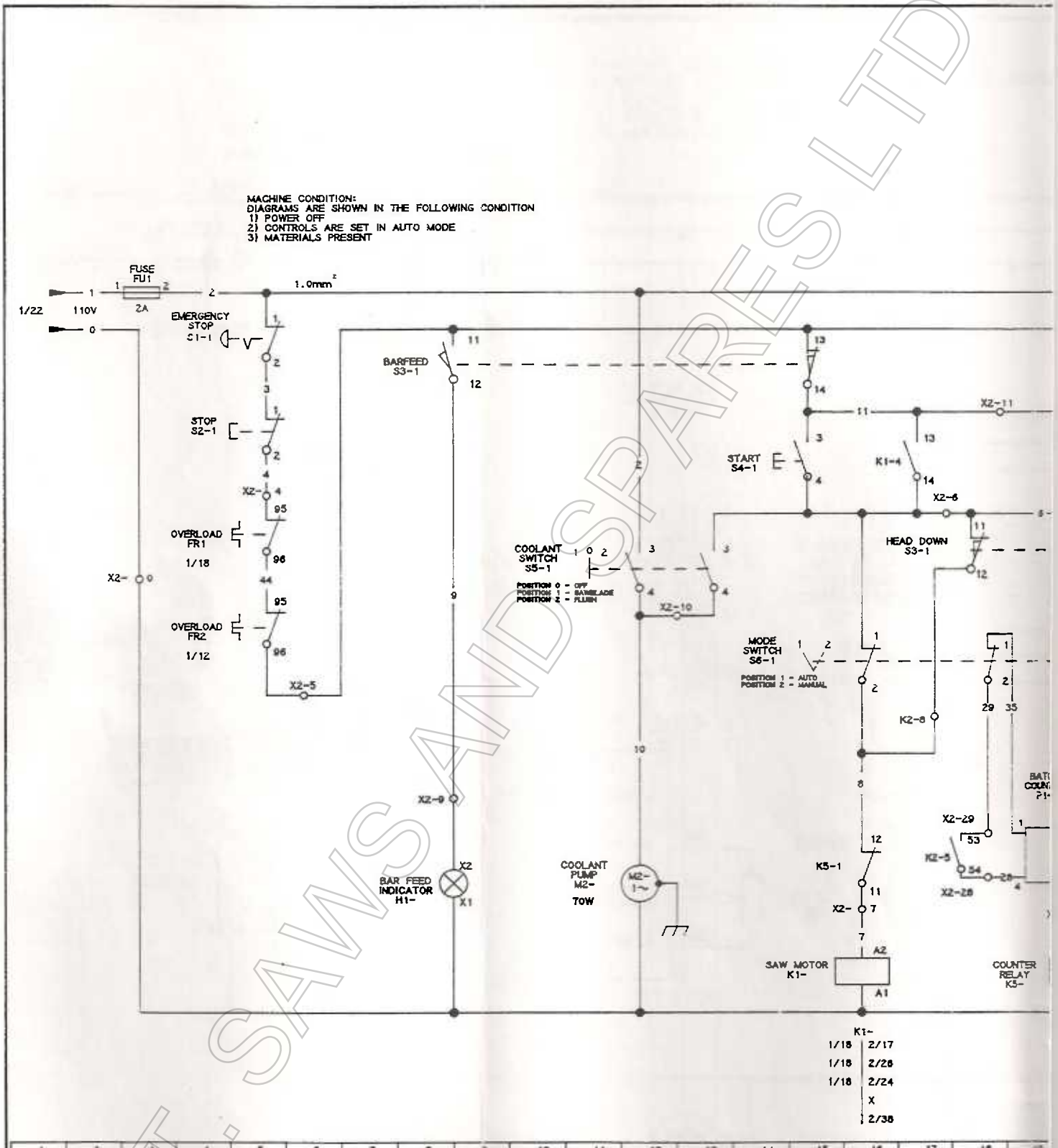
Fig. 20

In the event of an emergency the 'Emergency Stop' button, fitted to the control panel or to the rear of the machine, should be pressed.

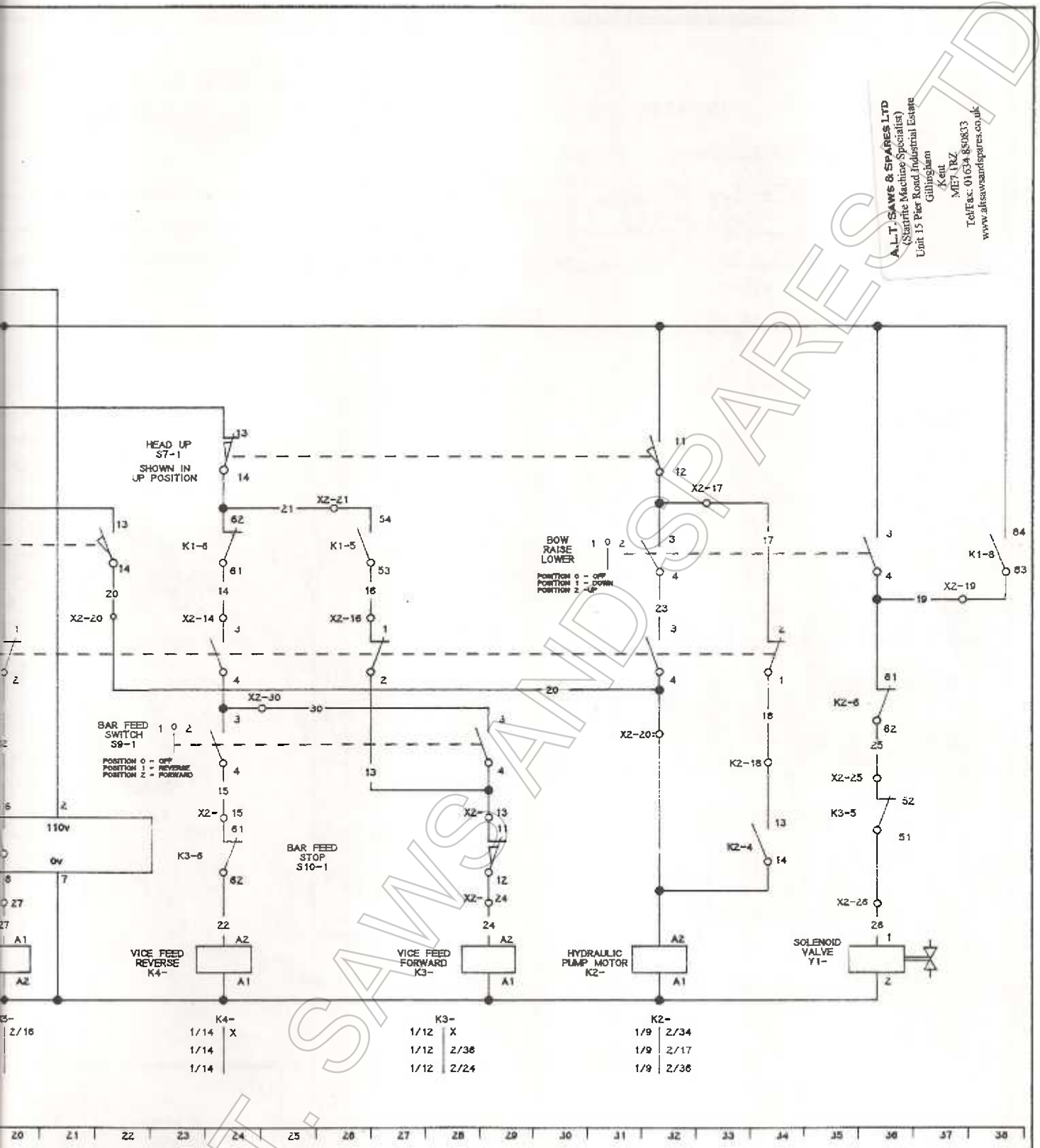
To recommence sawing, the emergency stop button must first be released by turning the button, then the 'on' button will function as normal. When stopped during cutting, the descent of the bow will automatically cease. This will prevent damage to blade and workpiece. Should the power fail, the machine will stop sawing. On reconnection of the power, the machine will not recommence sawing until an 'on' button is pressed. Also, when the power has failed during cutting, the descent of the bow will
automatically cease.

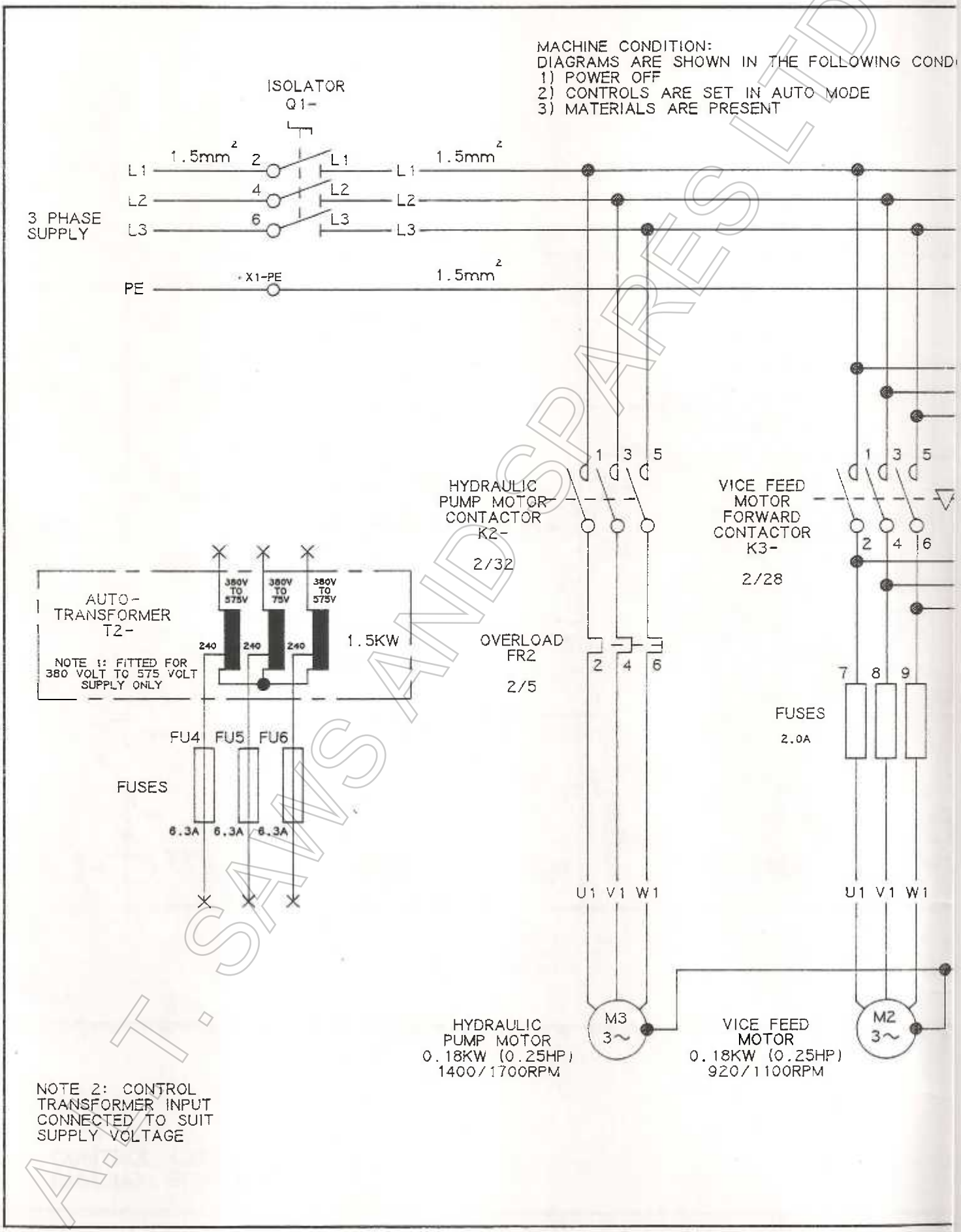
FAULT	PROBABLE CAUSE	SUGGESTED REMEDY
Sawblade will not cut.	1) Drive motor running in wrong direction. 2) Blade teeth facing in wrong direction. 3) Material too hard for type blade being used.	1) Swap any two supply leads. 2) Refit sawblade. 3) Fit suitable sawblade.
Blade vibrates in cut.	1) Workpiece not properly seated or securely held. 2) Guides set too close. 3) Blade speed too fast. 4) Blade pitch too coarse. 5) Insufficient blade tension.	1) Reseat and tighten vice properly. 2) Reset guides. 3) Select suitable speed. 4) Select suitable blade. 5) Check and retension blade.
Premature blade breakage.	1) Excessive feed pressure. 2) Unsuitable blade speed and/or blade selection. 3) Incorrect blade tension and/or tracking. 4) Feed speed too fast. 5) Worn or incorrectly set guides. 6) Blade joint improperly welded and annealed. 7) Workpiece not firmly clamped in vice jaws. 8) Blade overheating. 9) Chips and swarf building up on bandwheels.	1) Lighten feed pressure. 2) Check blade and speed, replace and/or reset. 3) Check tension and tracking and adjust as necessary. 4) Select suitable speed. 5) Reset guides and replace if necessary. 6) Split weld and rejoin. 7) Reclamp workpiece. 8) Check coolant flow and increase. 9) Clean bandwheels and check blade brushes, replace if necessary.
Teeth torn from blade.	1) Excessive feed pressure. 2) Blade speed too slow. 3) Blade pitch too fine. 4) Blade pitch too coarse. 5) Feed speed incorrectly set. 6) Workpiece not securely clamped in vice jaws.	1) Lighten feed pressure. 2) Select suitable speed. 3) Select suitable blade. 4) Select suitable blade. 5) Check and reset feed speed. 6) Reclamp workpiece.
Crooked cuts.	1) Excsessive feed pressure. 2) Incorrect blade tension. 3) Blade speed too slow. 4) Incorrect feed speed. 5) Worn or incorrectly set guides. 6) Blade teeth dull or pitch too fine. 7) Workpiece not securely clamped in vice jaws.	1) Select suitable feed pressure. 2) Retension blade. 3) Select suitable speed. 4) Select suitable feed speed. 5) Reset guides and replace if necessary. 6) Check and replace blade. 7) Reclamp workpiece.

FAULT	PROBABLE CAUSE	SUGGESTED REMEDY
Blade teeth dull rapidly.	1) Blade overheating. 2) Blade speed too fast. 3) Feed speed too slow. 4) Blade pitch too coarse. 5) Feed pressure too light. 6) Material too hard for type of sawblade being used.	1) Check coolant flow and increase. 2) Select suitable speed. 3) Select suitable speed. 4) Select blade with suitable pitch. 5) Increase feed pressure. 6) Fit suitable sawblade.
Sawblade back damaged.	1) Material too hard for type of sawblade being used. 2) Tracking incorrect. 3) Carbide insert missing from one guide assembly.	1) Fit suitable sawblade. 2) Check and set tracking. 3) Check inserts and replace.
Sawblade stalls in cut.	1) Excessive feed pressure. 2) Feed speed too fast. 3) Incorrect belt tension and/or worn belt or pulleys. 4) Incorrect blade speed and/or blade selection.	1) Reduce pressure. 2) Select suitable feed speed. 3) Check and replace belt and pulleys as necessary, re-tension. 4) Check blade type and replace as necessary, reset blade speed.
Head bounces during cut.	1) Blade joint improperly welded and annealed. 2) Teeth missing from sawblade. 3) Feed pressure too light. 4) Bandwheels or pulleys loose.	1) Split weld and re-join. 2) Replace sawblade. 3) Select suitable feed pressure. 4) Check and re-tighten bandwheels and/or pulleys.
Cutting time increases.	1) Blade teeth have become dull. 2) Feed pressure too light. 3) Incorrect blade speed.	1) Replace and/or re-sharpen blade. 2) Select suitable feed pressure. 3) Select suitable blade



CONTROL CIRCUIT
DIAGRAM FOR HB250A





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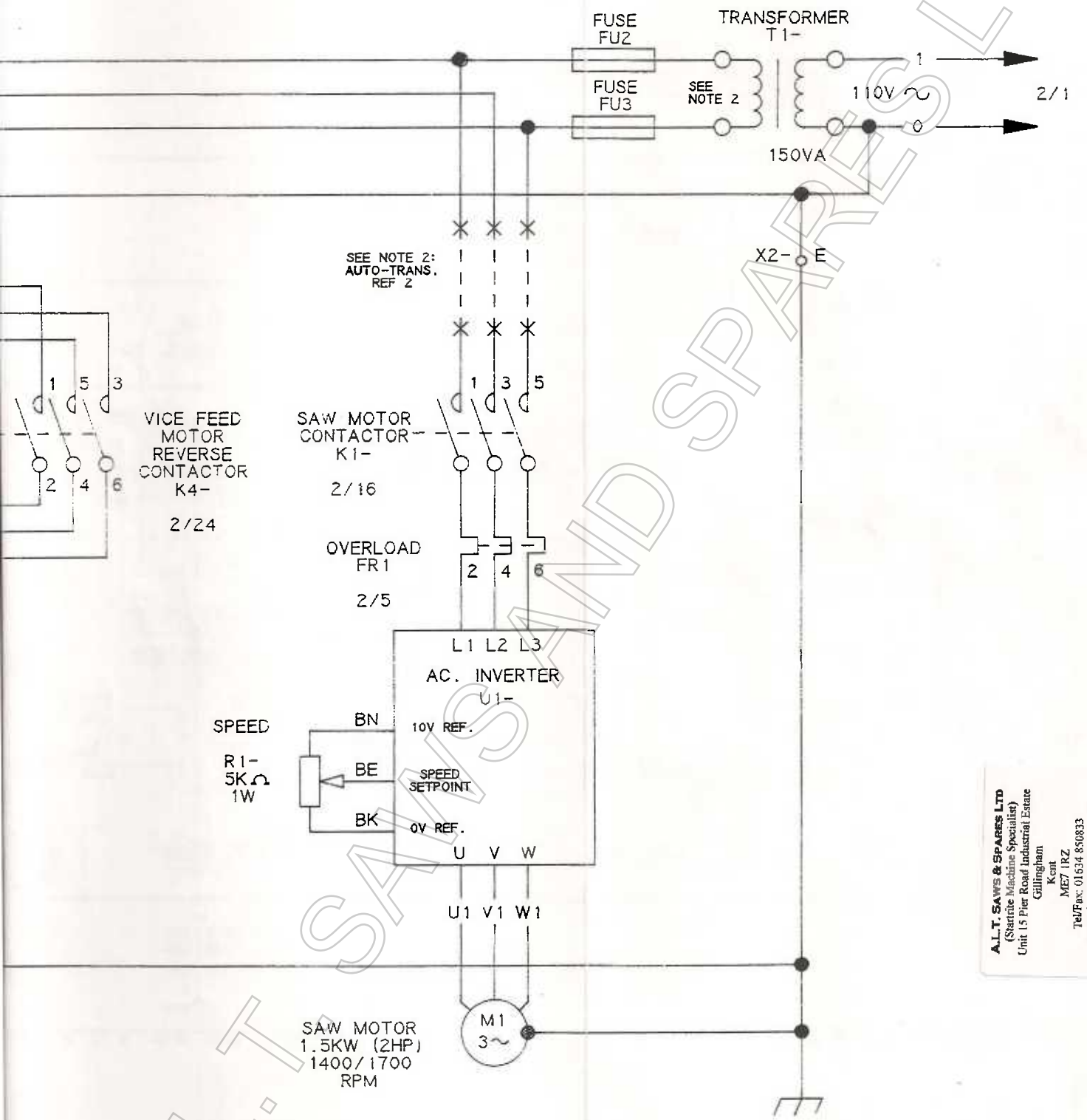
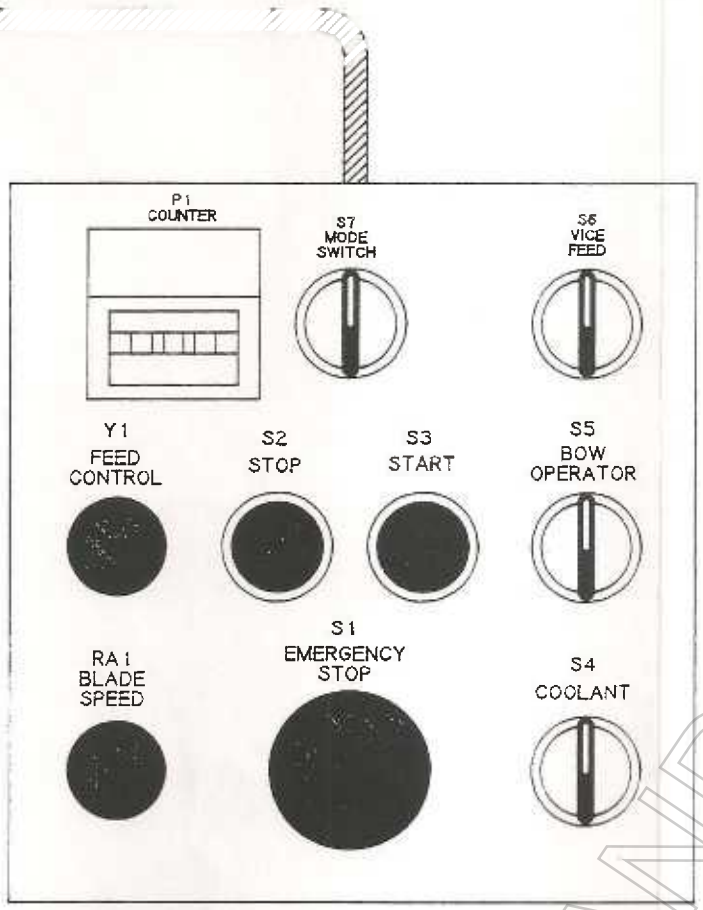
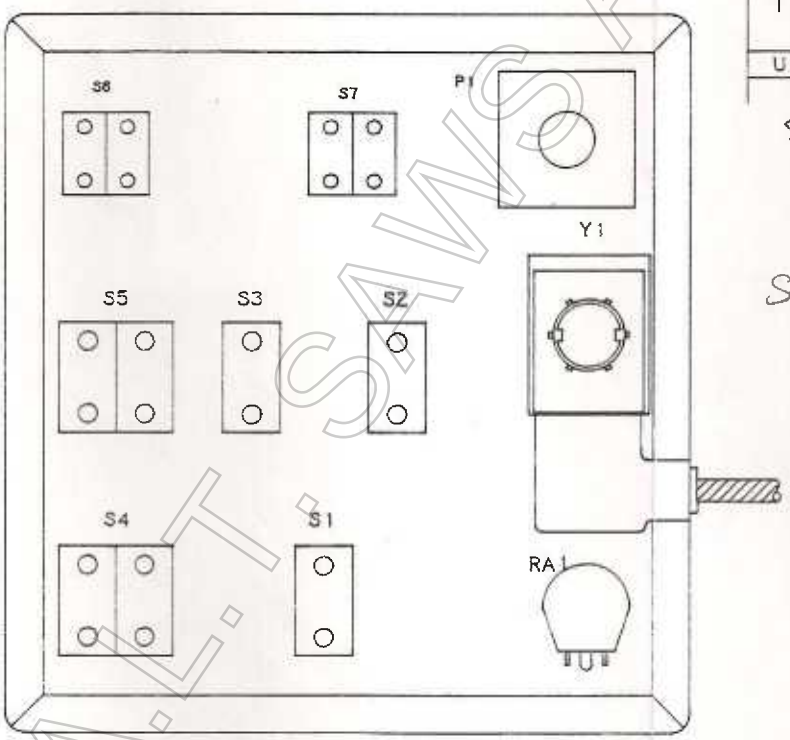


POWER CIRCUIT
DIAGRAM FOR HB250A

A.L.T. SAWS & SPARES LTD
(Startrite Machine Specialist)
Unit 5 Pier Road Industrial Estate
Gillingham
Kent
ME7 1RZ
Tel/Fax: 01634 850833
www.altsawsandspares.co.uk



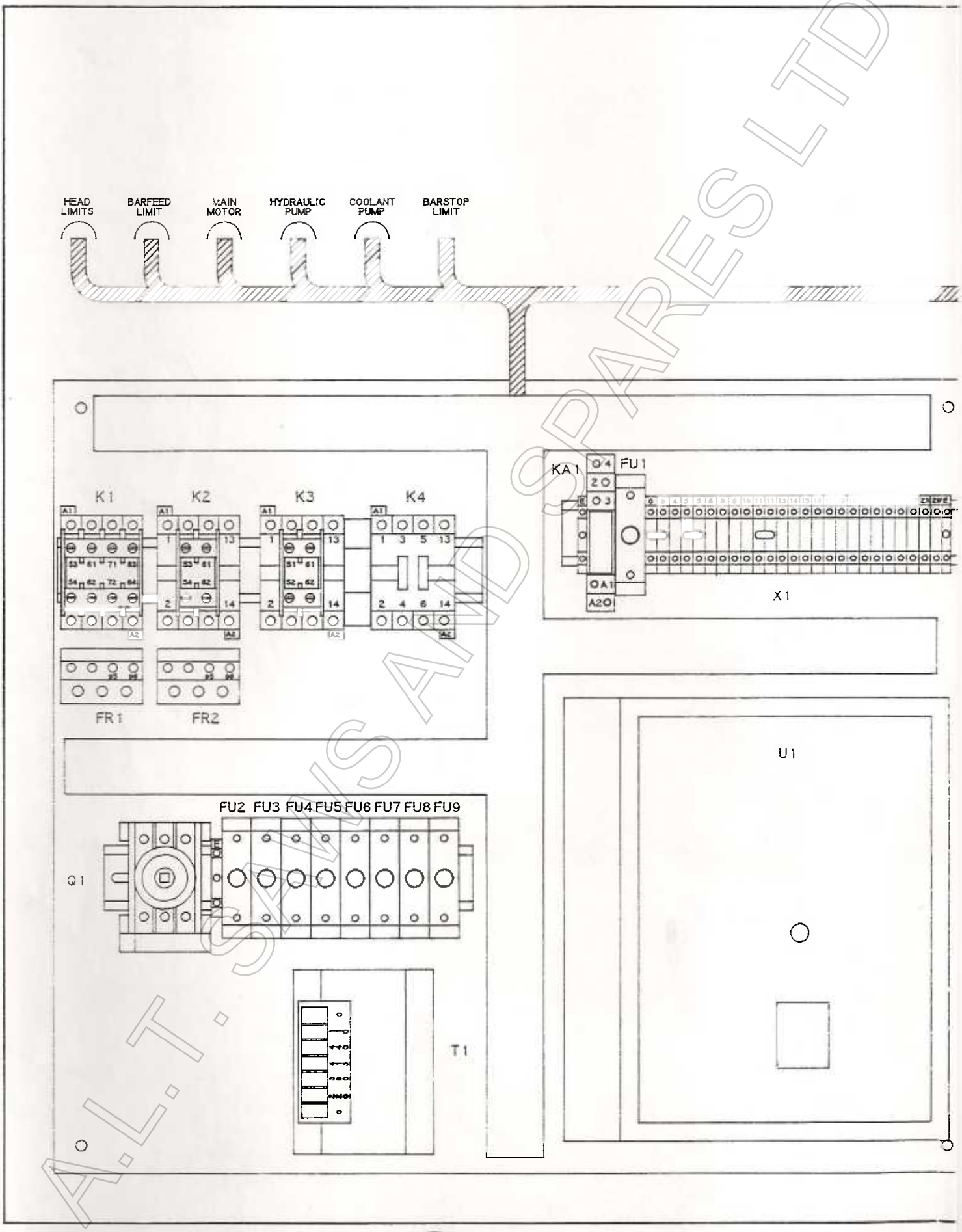


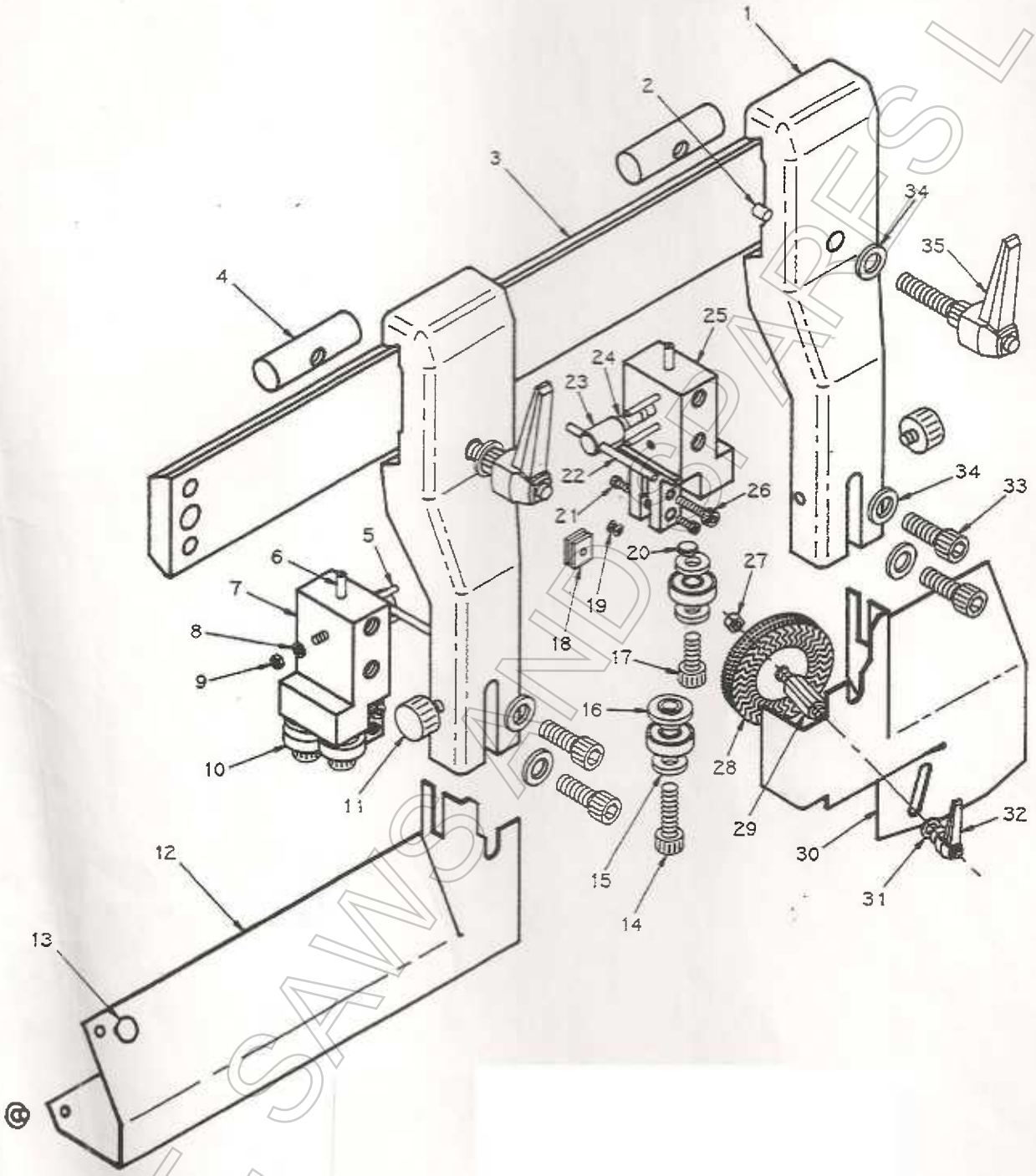
ITEM	PART No.	DESCRIPTION	No.OFF
S1	B01187	STAY PUT STOP BUTTON	1
	B01181	CONTACTOR:	1
S2	B01382	STOP BUTTON:	1
	B01181	CONTACTOR:	1
S3	B01172	START BUTTON:	1
	B01180	CONTACTOR:	1
S4	B01174	COOLANT SWITCH:	1
	B01182	CONTACTOR:	1
S5	B01367	SELECTOR HD:	1
	B01182	CONTACTOR:	1
S6	B01368	ILLUM SELECTOR:	1
	B01369	ILLUM BODY:	1
S7	B01176	MODE SWITCH:	1
	B01181	CONTACTOR:	1
	B01184	CONTACTOR:	4
	B01185	CONTACTOR:	2
P1	B01491	COUNTER IMO:	1
RA1	9181	CONTROL KNOB	1
	B01364	POTENTIOMETER	1
Y1	9181	CONTROL KNOB	1
	B01208	COIL:	1
K1	B01158	CONTACTOR:	1
	B01170	CONTACTOR:	1
K2	B01158	CONTACTOR:	1
	B01375	CONTACTOR:	1
K3	B01158	CONTACTOR:	1
	B01171	CONTACTOR:	1
K4	B01158	CONTACTOR:	1
KA1	B01492	RELAY:	1
FU1 TO FU9	B06392	TERMINAL BLOCKS FUSED	9
FR1	B01161	OVERLOAD:	1
FR2	B01165	OVERLOAD:	1
X1	B06396	TERMINAL BLOCK EARTHED	3
	B06394	TERMINAL BLOCK STANDARD	26
Q1	B01316	ISOLATOR SWITCH:	1
T1	B01273	TRANSFORMER: HOME MARKET	1
	B01282	TRANSFORMER: C.S.A. ONLY	1
U1	B06230	INVERTER: SSD	1

S6 - BULB - 1
B01431

S6 = B01368 x 1
B01369 x 1
B01431 x 1

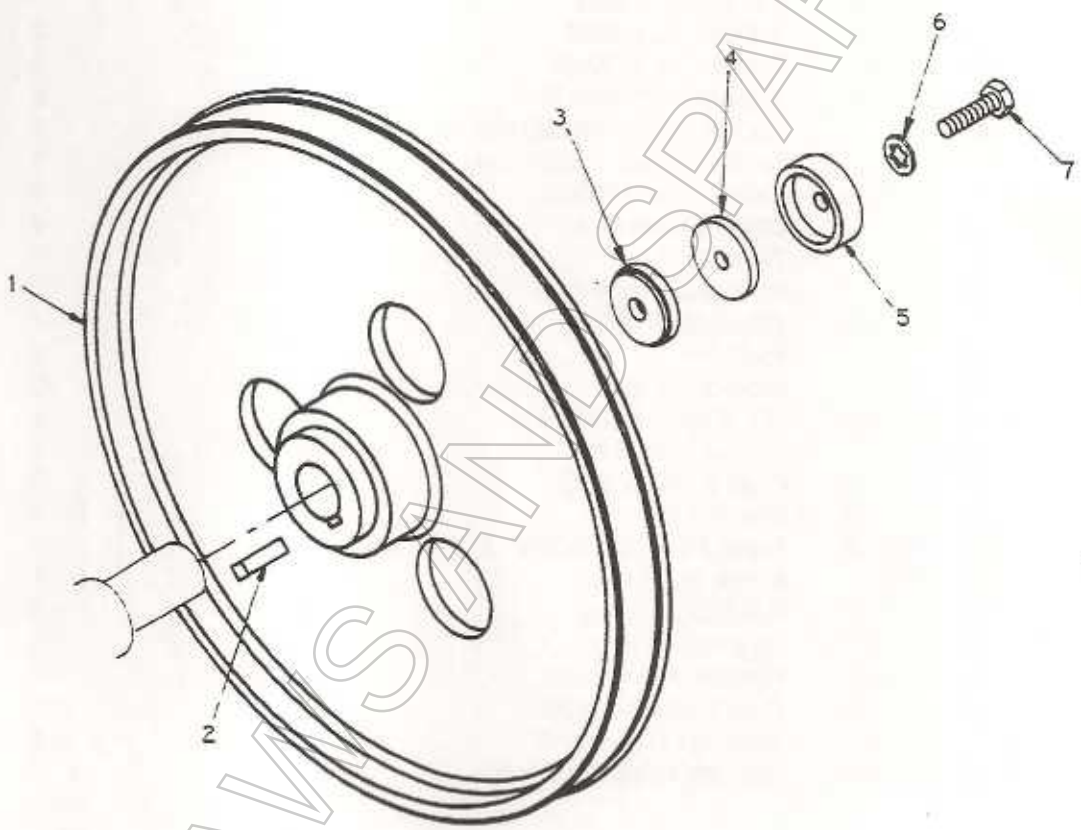
LOCATION DIAGRAM
FOR HB250A





BLADE GUIDES, GUARDS AND BLADE BRUSH

ITEM	PART No.	DESCRIPTION	No. OFF
1	9776	Guide Arm HB330 Only	2
	9777	Guide Arm HB225/HB250	2
2	BO5356	Sel Loc	1
3	9703	Guide Rail	1
4	9702	Guide Arm Lock BAR	2
5	BO5341	Sel Loc	4
6	6400	Connector	2
7	9705	Guide Body L.H.	1
8	BO5913	Washer	2
9	BO5773	Binx Nut	2
10	BO2025	Bearing: 6200.2RS	4
11	6638	Thumb Screw	2
12	SM2597	L.H. Blade Guard	1
13	BO6305	Rubber Plug: 3402	2
14	BO5087	Cap Screw	2
15	BO5919	Washer	6
16	6062	Spacer Roller - HB225/HB250	2
	9387	Spacer Roller - HB330 Only	2
17	BO5086	Cap Screw	2
18	6393	Blade Guide Insert	4
19	6394	Conical Nut	4
20	6068	Round Carbide Pad	2
21	BO5046	Cap Screw	4
22	9351	Pivot Pin	2
23	9540	Coolant Nozzle	2
24	BO2252	'O' Ring: RM0036-24	4
25	9706	Guide Body R.H.	1
26	BO5070	Cap Screw	2
27	BO5774	Binx Nut	1
28	BO2565	Brush 3 Dia	1
29	9744	Blade Brush Pivot	1
30	SM2596	R.H. Blade Guide	1
31	BO5916	Washer	1
32	BO2617	Handle:	1
33	BO5092	Cap Screw	4
34	BO5921	Washer	8
35	BO2619	Handle:	2

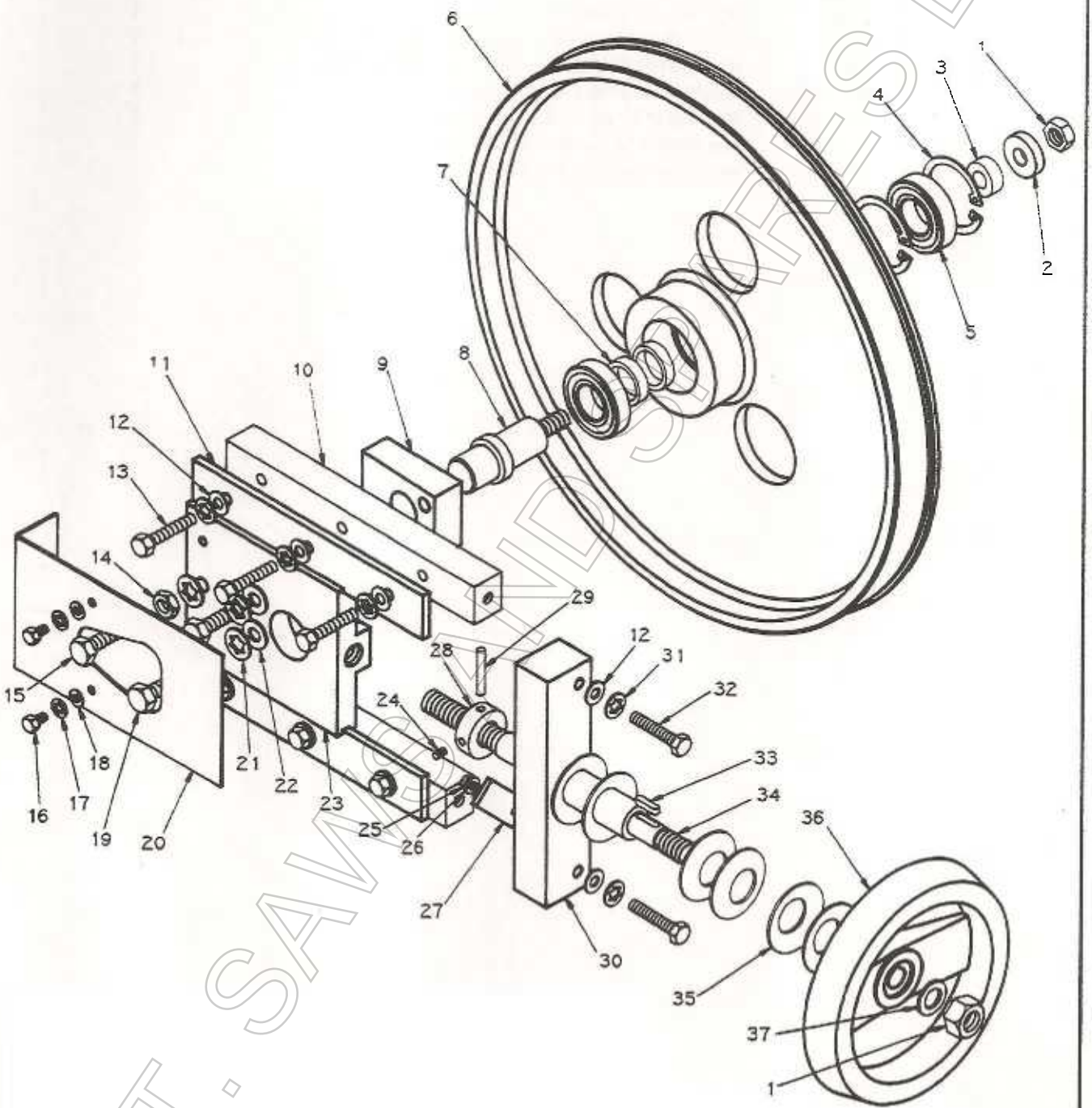


BANDWHEEL - DRIVE END

BANDWHEEL - DRIVE END

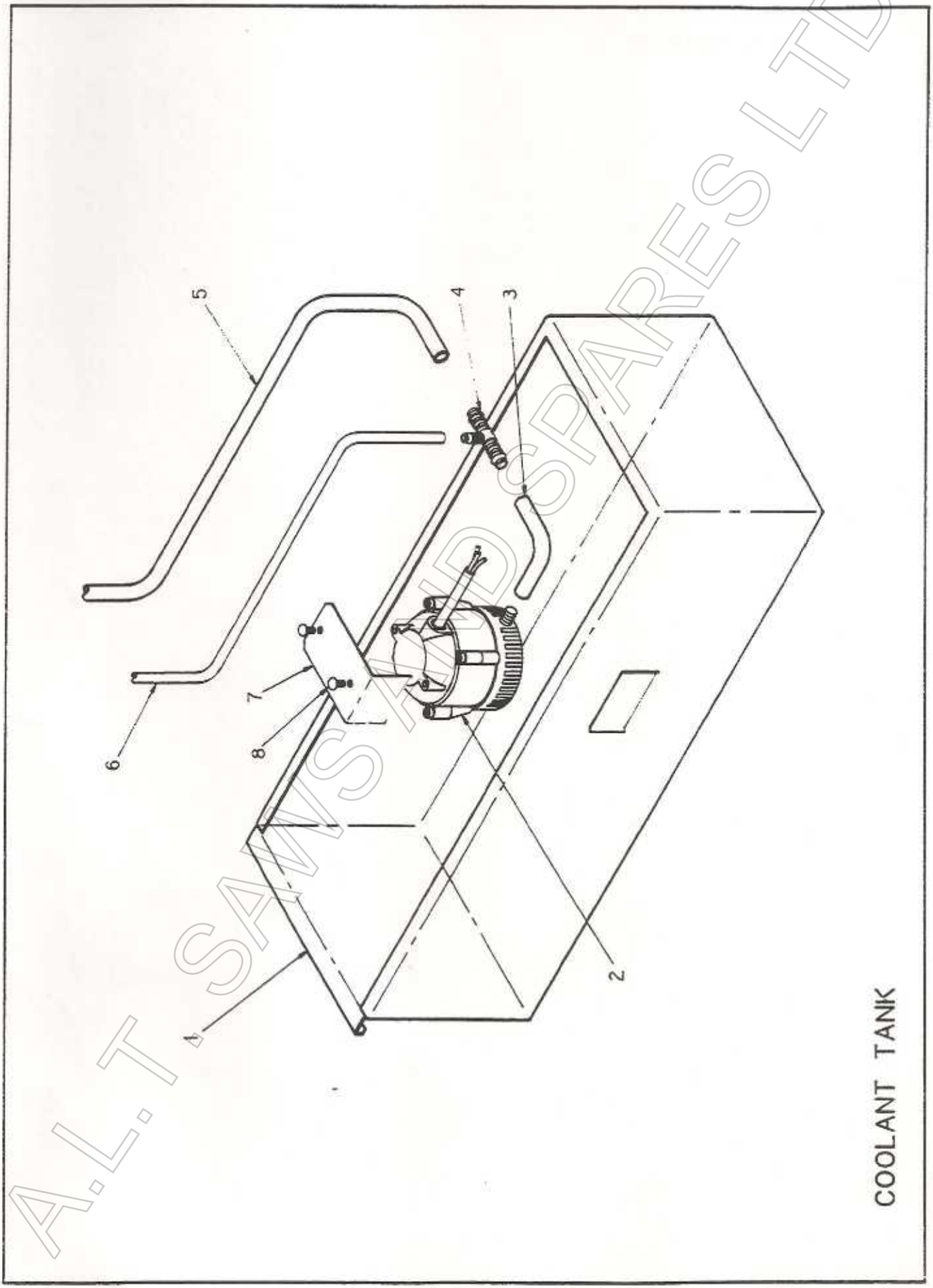
SECTION

ITEM	PART No.	DESCRIPTION	No.OFF
1	5961/A	Drive Bandwheel -	1
	9370	Drive Bandwheel -	1
2	5962	Key	1
3	4333	washer - 5 Speed Machines Only	1
4	9678	Bandwheel Retaining Washer -	1
5	9679	Bandwheel Retaining Washer -	1
6	BO5946	Washer	1
	BO5945	Washer	1
7	BO5579	Hex Screw	1
	BO5575	Hex Screw	1



TENSIONING AND TRACKING

ITEM	PART No.	DESCRIPTION	No.OFF
1	BO5774	Binx Nut	2
2	6048	Washer	1
3	9914	Bandwheel Sleeve	1
4	BO6041	Internal Circlip	2
5	BO2006	Bearing	2
6	5961/B	Tension Bandwheel	1
	9371	Tension Bandwheel	1
7	6047	Bearing Spacer	1
	6047	Bearing spacer -	2
8	5985	Spigot	1
9	5984	Tracking Block	1
10	9822	Guide Block	2
11	5986	Guide Gib	2
12	BO5017	Washer	8
13	BO5566	Hex Screw	6
14	BO5754	Lock Nut	1
15	BO5574	Hex Screw	1
16	BO5067	Hex Screw	2
17	BO5943	Washer	2
18	BO5915	Washer	2
19	BO5575	Hex Screw	2
20	8388	Guide Tension Plate	1
21	BO5945	Washer	3
22	BO5919	Washer	2
23	5979	Tension Guide Plate	1
24	BO5186	Set Screw	1
25	BO5061	Cap Screw	1
26	BO5913	Washer	1
27	6098	Tension Gauge	1
28	5990	Tension Collar	1
29	BO5358	Sel Loc	1
30	5988	Spindle Plate	1
31	BO5944	Washer	8
32	BO5567	Hex Screw	2
33	1148	Key	1
34	5989/A	Tension Spindle	1
35	BO2243	Discspring:	6
36	9768	2 Spoke Handwheel 200D	1
37	BO5922	Washer	1

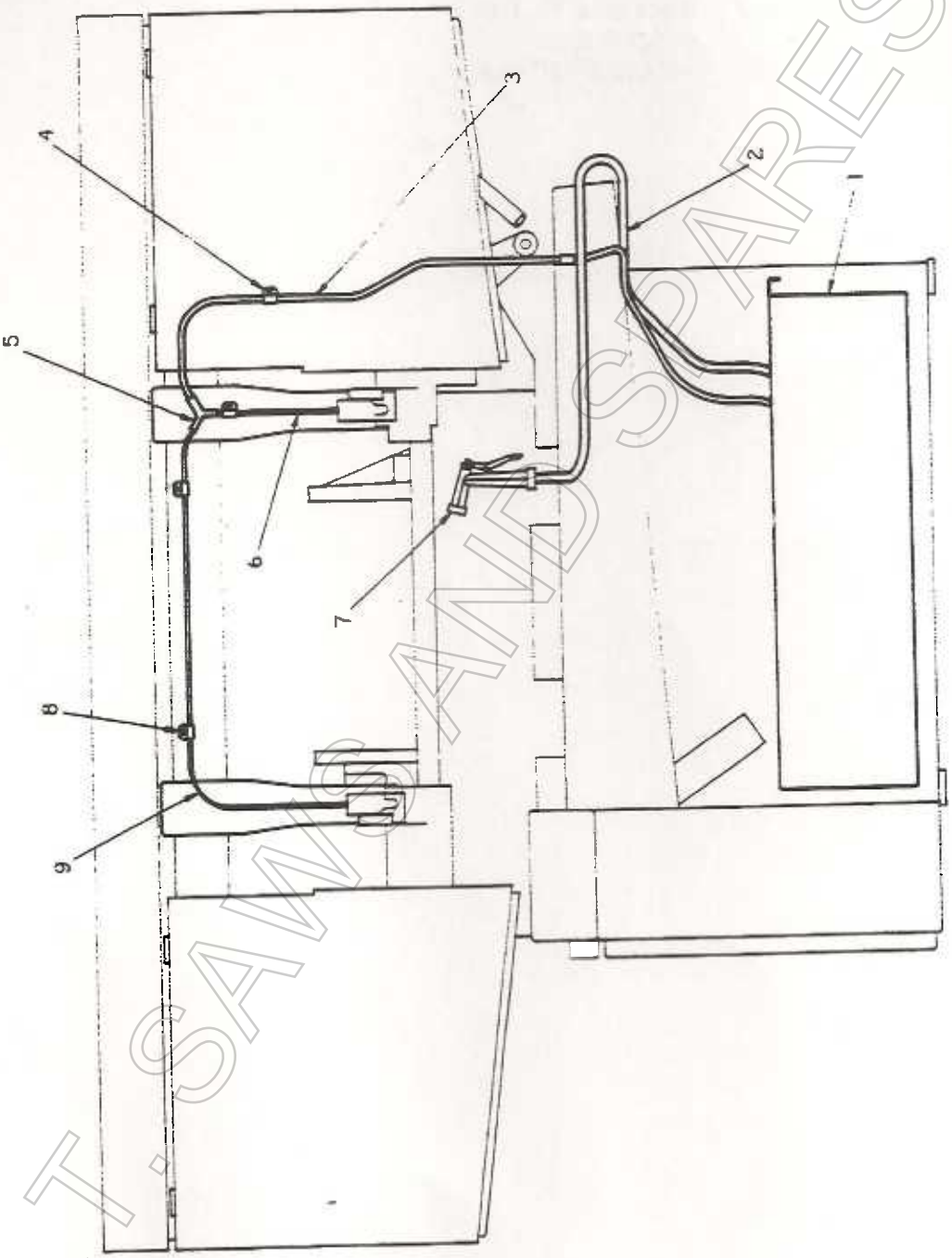


COOLANT TANK

COOLANT TANK

SECTION 754

ITEM	PART No.	DESCRIPTION	No.OFF
1	SM2327	Coolant Tank	1
2	BO2464	Pump:Y1-Y:115V 60Hz	1
3	BO6379	Clear Tube	0.08
4	BO2490	T' Adaptor TRS	1
5	BO6379	Clear Tube	2.14
6	BO6378	Clear Tube	1.83
7	6505	Pump Bracket	1
8	BO5858	Self Tap	2

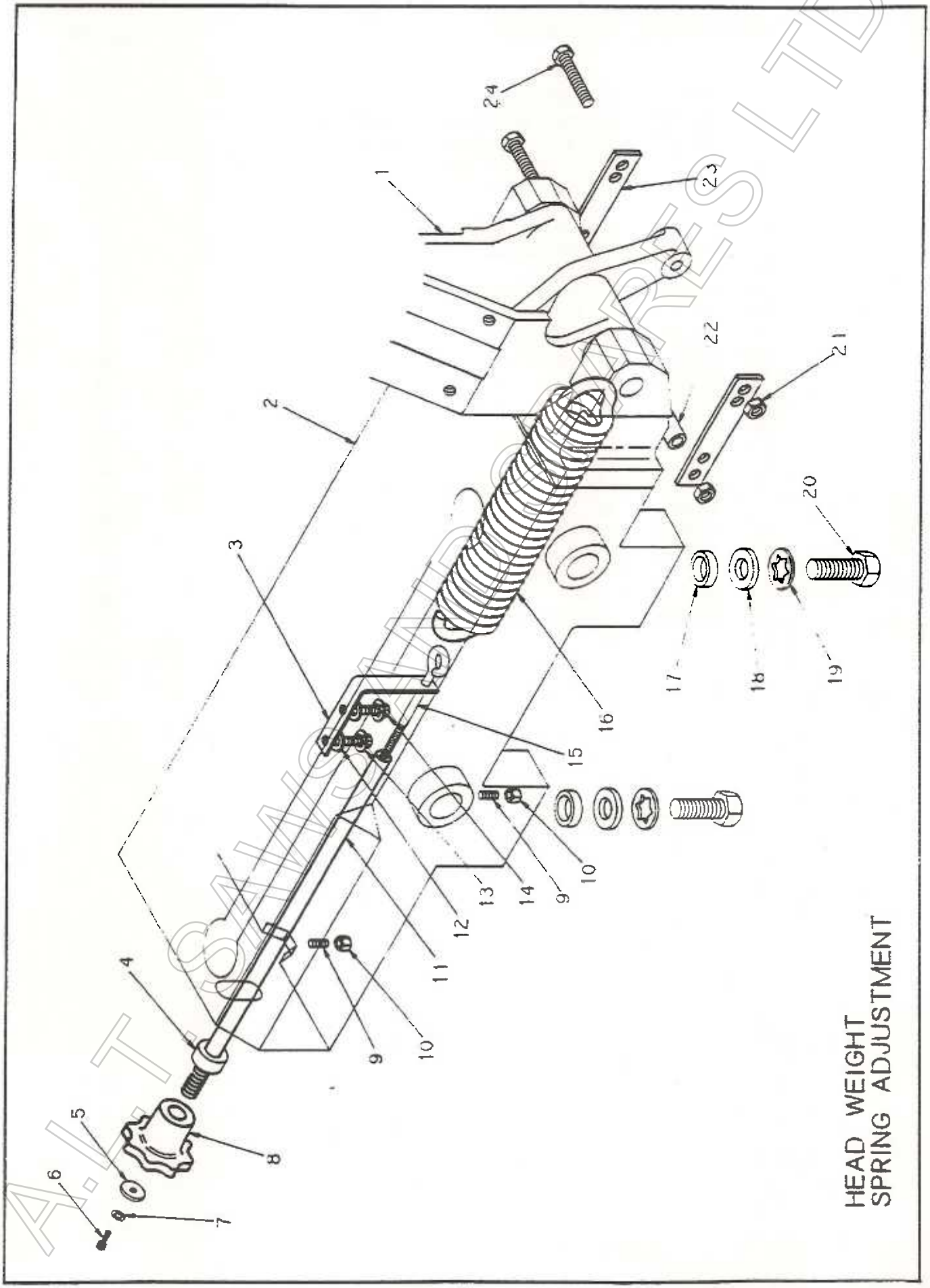


COOLANT LAYOUT

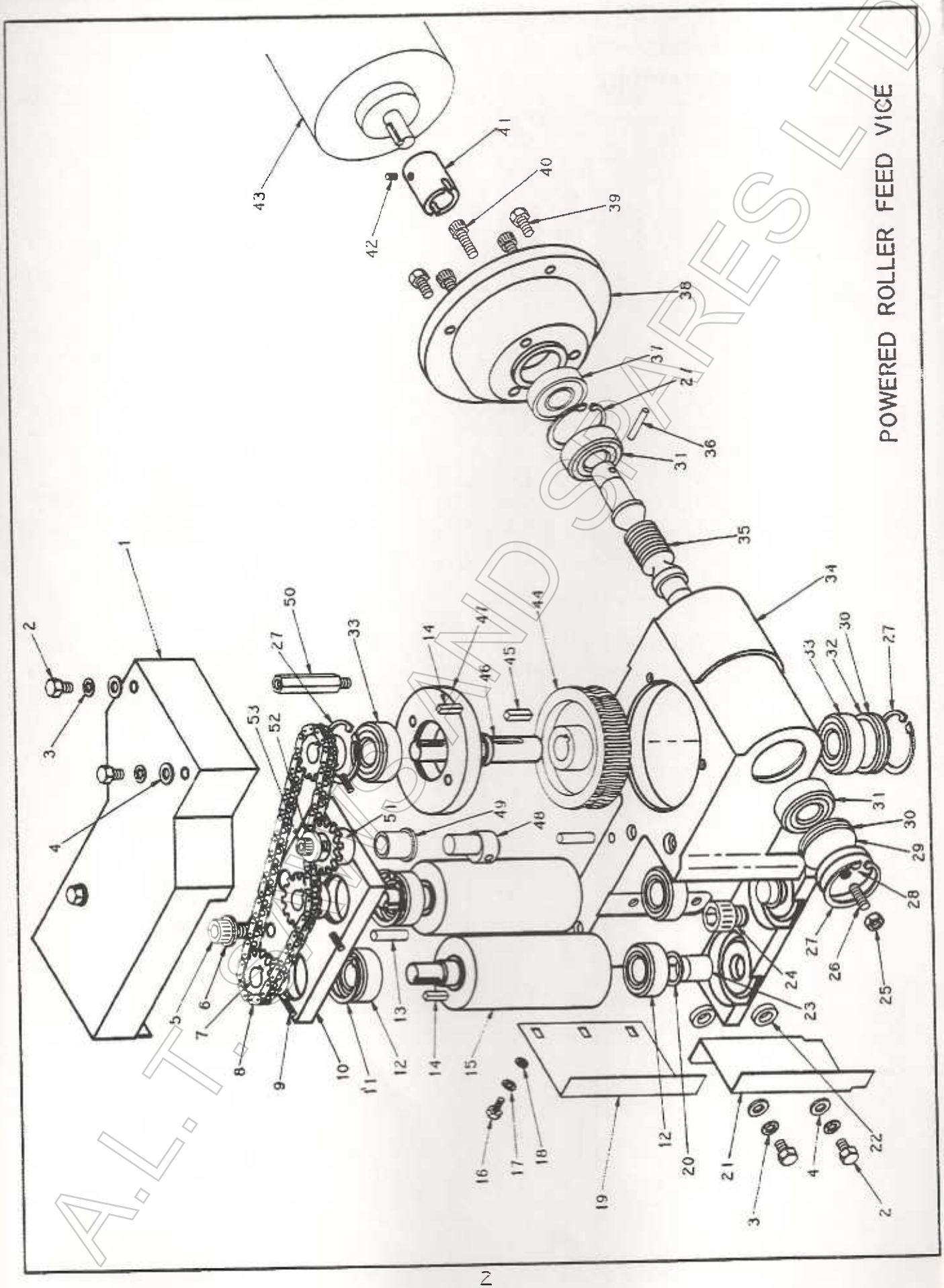
COOLANT LAYOUT

SECTION 754

ITEM	PART No.	DESCRIPTION	No.OFF
1	SM2327	Coolant Tank	1
2	BO6379	Clear Tube	2.14
3	BO6378	Clear Tube	1.83
4	BO6401	Tube Clip	5
5	BO2488	'Y' Stem	1
6	BO6377	Clear Tube	0.36
7	BO2487	Coolant Nozzle	1
8	BO5452	Domed Screw	5
9	BO6377	Clear Tube	0.81

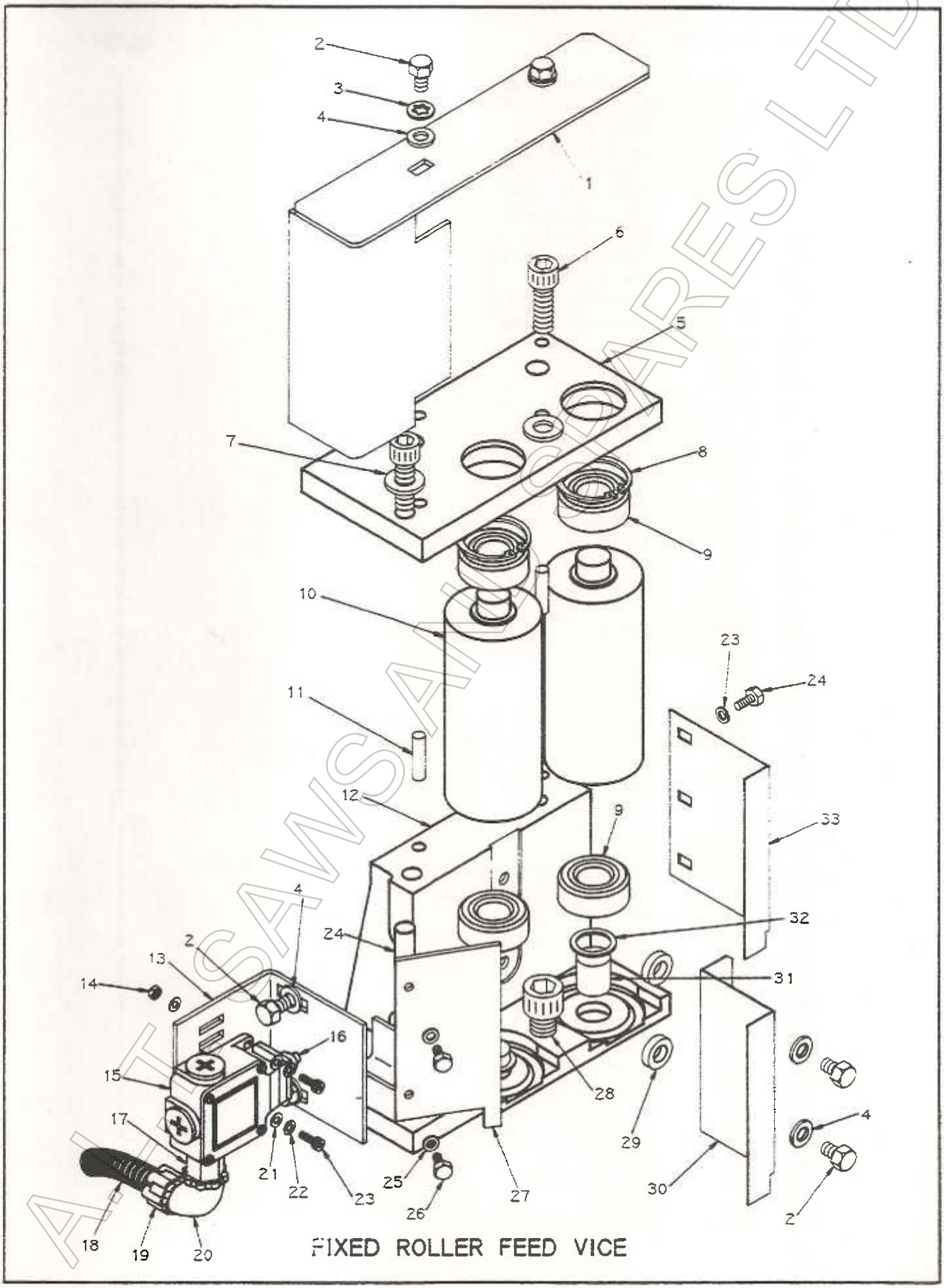


ITEM	PART No.	DESCRIPTION	No.OFF
1	9392	Bow Mount	1
2	SM2415	Machine Bed Assembly	1
	SM2417	Machine Bed Assembly	1
3	9547	Spring Support Bracket	1
4	5958	Distance piece	1
5	6403	Washer	1
6	BO5061	Cap Screw	1
7	BO5942	Washer	1
8	6402	Handknob	1
9	BO5204	Set Screw	2
10	BO5715	Full Nut	2
11	5957/A	Spring Rod	1
12	BO5917	Washer	2
13	BO5944	Washer	2
14	BO5073	Cap Screw I	2
15	9463	Hook Bolt	1
16	5955	Extension Spring	1
17	BO2126	Nylite Seal:	4
18	BO5921	Washer	4
19	BO5946	Washer	4
20	BO5578	Hex Screw I	4
21	BO5755	Locknut	2
22	6070	Distance piece	1
23	6069	Plate	2
24	BO5582	Hex Screw	2



ITEM	PART No.	DESCRIPTION	No. OFF
1	SM1176	Cover Assembly	1
2	BO5560	Hex Screw	5
3	BO5944	Washer	5
4	BO5917	Washer	5
5	BO5092	Cap Screw	2
6	BO5921	Washer	2
7	5895	Chain Sprocket	3
8	BO2179	Chain	1
9	BO5191	Set Screw	3
10	5891	Bearing Plate	1
11	BO6038	Int. Circlip	2
12	BO2031	Bearing	4
13	BO5894	Dowel	2
14	5920	Key	3
15	7202	Feed Roller	2
16	BO5592	Hex Screw	3
17	BO5942	Washer	3
18	BO5914	Washer	3
19	7223	Scraper Plate	1
20	7233	Spacer	2
21	7222	Scraper Plate	1
22	7231	Washer	2
23	7205	End Spigot	2
24	BO5099	Cap Screw	2
25	BO5715	Full Nut	1
26	BO5205	Set Screw	1
27	BO6039	Int. Circlip	4
28	5899	Jacking Plug	1
29	5902	Thrust Washer	1
30	BO2275	'O'Ring:	2
31	BO2034	Angular Bearing	2
32	5904	Sealing Washer	1
33	BO2032	Bearing	2
34	7200	Feed Vice Jaw	1
35	5890	Feed Worm	1
36	BO5354	Sel Loc	1
37	BO2127	Oil Seal	1
38	5887	Motor Mounting Flange	1
39	BO5562	Hex Screw	4
40	BO5075	Cap Screw	3
41	5867	Coupling	1
42	BO5186	Set Screw	1
43	Starcro068	Motor 0.18KW	1
44	5889	Worm Wheel	1
45	5919	Key	1
46	5908	Worm Wheel Shaft	1
47	5888	Bearing Cap	1
48	5897	Eccentric Spigot	1
49	BO2332	Oilite Bush	1
50	5898	Scraper Stud	3
51	5896	Idler Sprocket	1
52	4919	Washer	1
53	BO5082	Cap Screw	1

SECTION 780

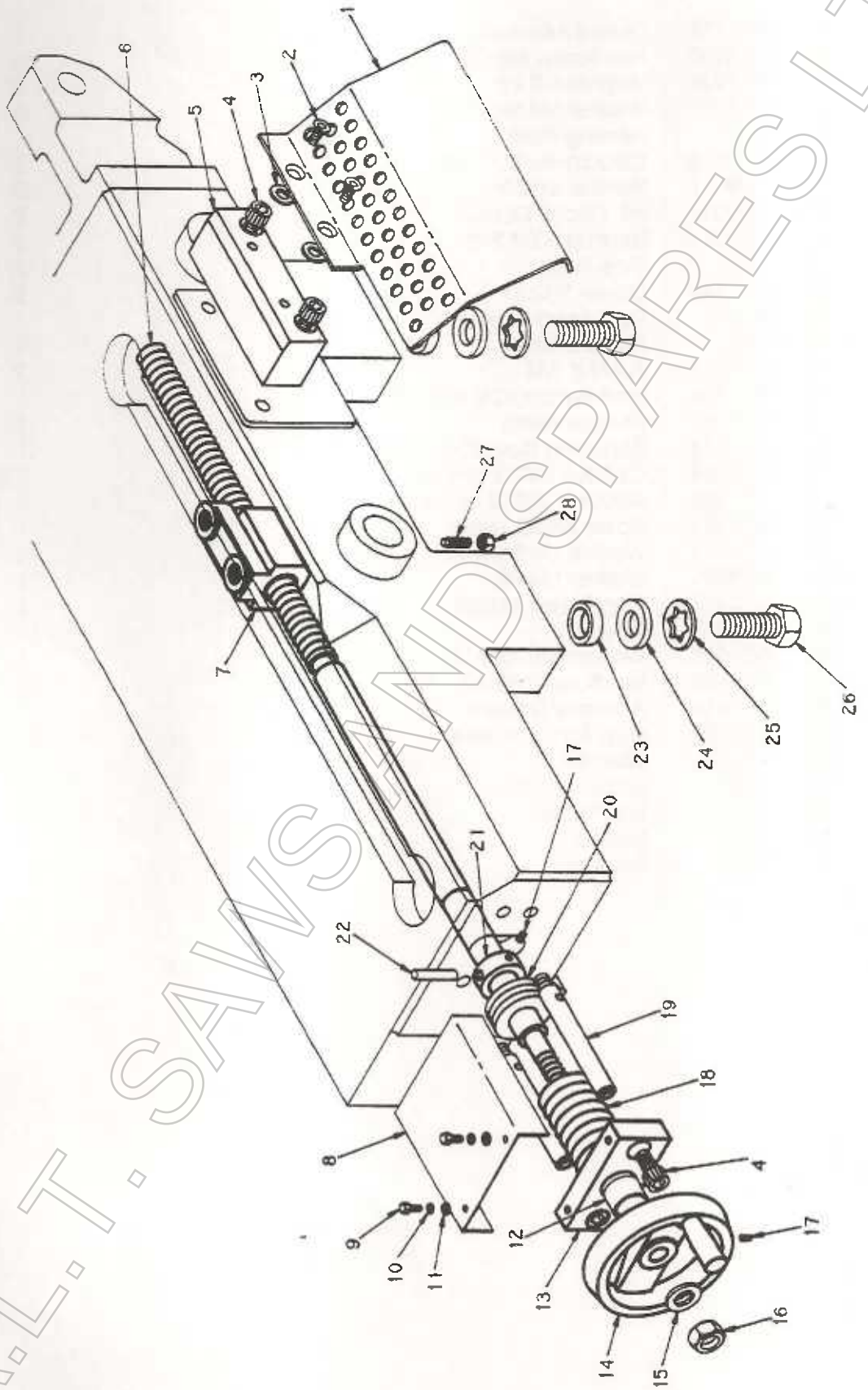


FIXED ROLLER FEED VICE

FIXED ROLLER FEED VICE

SECTION 780

ITEM	PART No.	DESCRIPTION	No.OFF
1	SM1175	Guard Assembly	1
2	BO5560	Hex Screw	6
3	BO5944	Washer I	6
4	BO5917	Washer I	6
5	5892	Bearing Plate	1
6	BO5092	Cap Screw	2
7	BO5921	Washer	2
8	BO6038	Int. Circlip	2
9	BO2031	Bearing	4
10	7203	Vice Roller	2
11	BO5894	Dowel	2
12	7201	Rear Feed Vice Jaw	1
13	5903	Switch Plate	1
14	BO5712	Full Nut	2
15	BO1154	Limit Switch :	1
16	BO1147	Plunger Head	1
17	BO6083	Reducing Bush :	1
18	BO6369	Conduit	0.66
19	BO6051	Adaptor	1
20	BO6091	Elbow	1
21	BO5911	Washer	4
22	BO5941	Washer	2
23	BO5047	Cap Screw	2
24	5905	Pivot Pin	1
25	BO5913	Washer	5
26	BO5592	Hex Screw	5
27	SM1414	Actuator Bracket	1
28	BO5099	Cap Screw I	3
29	7231	Washer	2
30	7220	Scraper Plate	1
31	7205	End Spigot	2
32	7233	Spacer	2
33	7221	Scraper	1

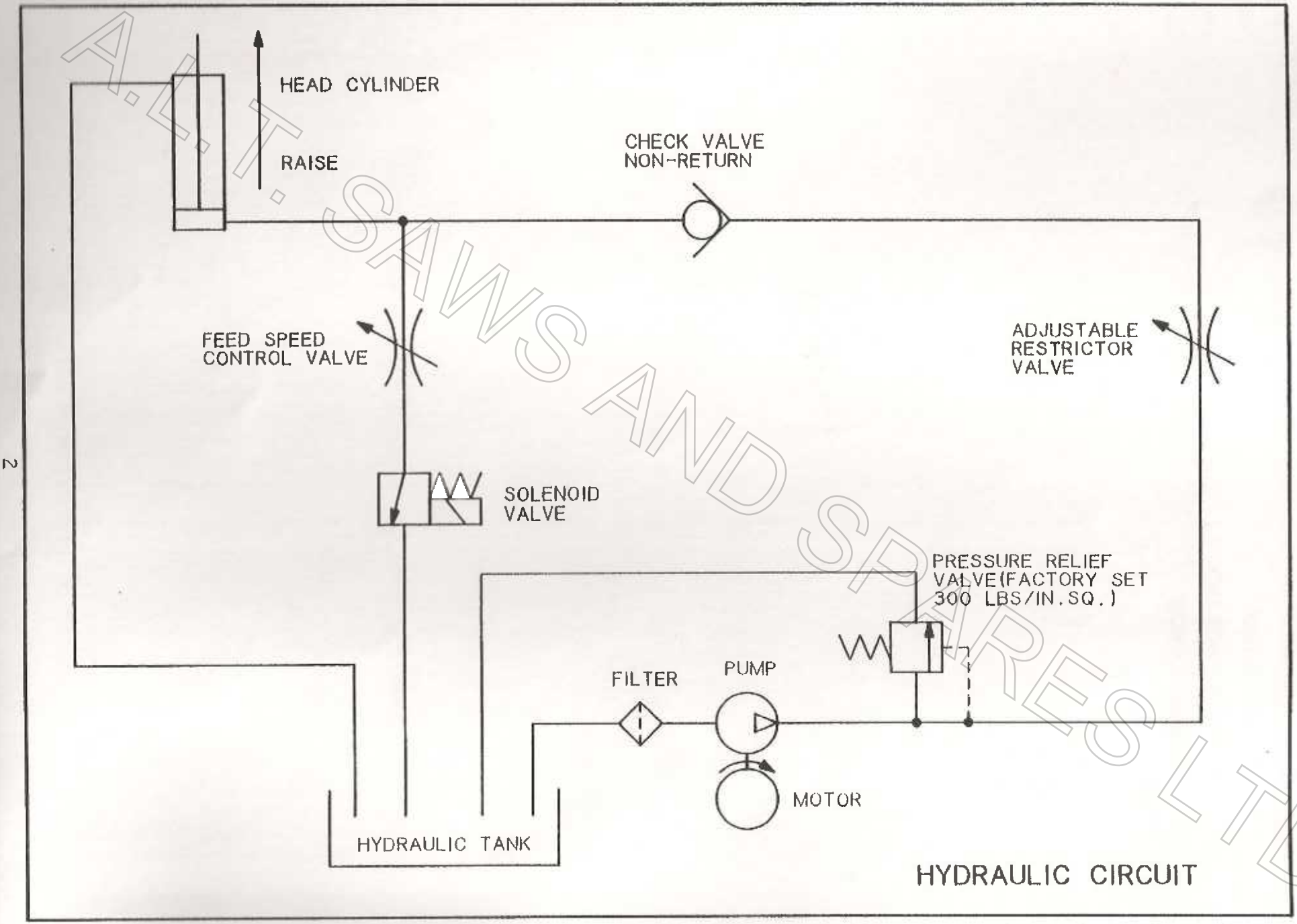


VICE SCREW ASSEMBLY

VICE SCREW ASSEMBLY

SECTION 780

ITEM	PART No.	DESCRIPTION	No.OFF
1	6413	Feed Plate	1
2	BO5271	CSk Screw I	2
3	BO5921	Washer I	2
4	BO5090	Cap Screw	4
5	6362/B	Support Block	1
6	9871	Vice Spindle	1
7	5967	Tenon Nut	1
8	6002	Cover Plate	1
9	BO5546	Hex Screw	2
10	BO5942	Washer	2
11	BO5913	Washer	2
12	BO2333	Oilite Bush	1
13	5965	End Plate	1
14	9769	Handwheel	1
15	BO5922	Washer	1
16	BO5777	Binx Nut	1
17	BO5186	Set Screw	2
18	5836	Vice Spring	1
19	5963	Pillar	2
20	BO2033	T/R Bearing	1
21	5964	Collar	1
22	BO5365	Sel Loc	1
23	BO2126	Nylite Seal	2
24	BO5921	Washer	2
25	BO5946	Washer	2
26	BO5578	Hex Screw	2
27	BO5203	Set Screw	1
28	BO5715	Nut Full I	1



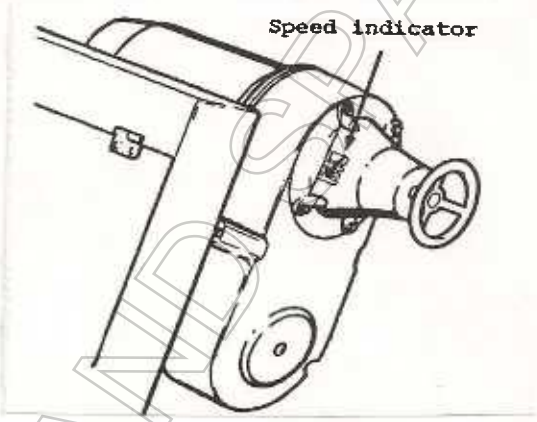
HYDRAULIC CIRCUIT

ADDITION TO HANDBOOK
H280AV US/UK SPEC MODELS
YEAR 2000.

These additions cover the new type motor drive unit, the Rehfus Belt Vari-Speed Type.

1. Rehfus Belt Vari-Speed Unit Description and Operation.

This unit replaces the electronically variable unit previously fitted and described in the handbook supplied. It has a mechanically variable speed control and the layout of the controls are show below.



The blade speed is adjusted by turning the speed control handle next to the speed indicator.
To increase speed to the desired value, turn the handle clockwise; anticlockwise to decrease speed. The speed can be set at the division values listed below, or at any point in between, to suit the material/blade selection being used.

IMPORTANT NOTE:

The speed is adjusted **only** when the saw is running. Attempting to adjust the speed control when the saw is not running will cause serious damage to the unit. Please ensure that all operators are aware of this.

The speed indicator shows ten division numbered from one upwards. Each division co-responds to the following speed, in feet per minute (metres per minute in brackets):

1	2	3	4	5	6	7	8	9	10	
49	78	105	135	160	190	220	245	275	300	ft/min
(15)	(24)	(32)	(41)	(49)	(58)	(67)	(75)	(84)	(92)	mtr/min

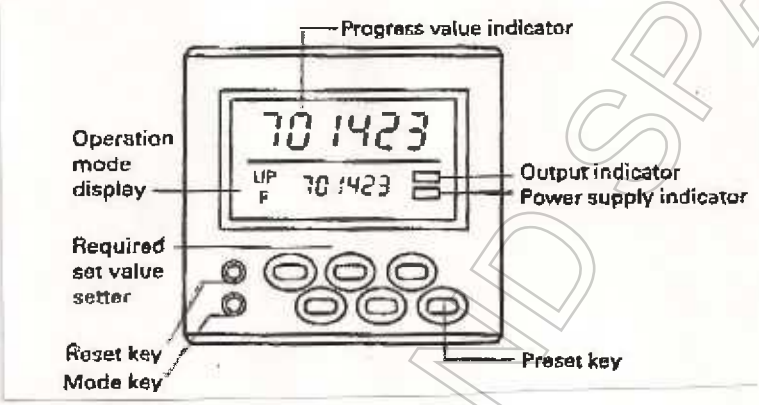
Startrite Machines 27.9.00

ADDITION TO HANDBOOK
H280AV US/UK SPEC MODELS
YEAR 2000.

These additions cover the new type counter fitted, the IMO CB8-D (UK and US models).

1. IMO CB8-D Counter Description and operation.

This unit replaces the Omron unit previously fitted and described in the handbook supplied. It has an LCD display and the layout of screen and controls are show below.



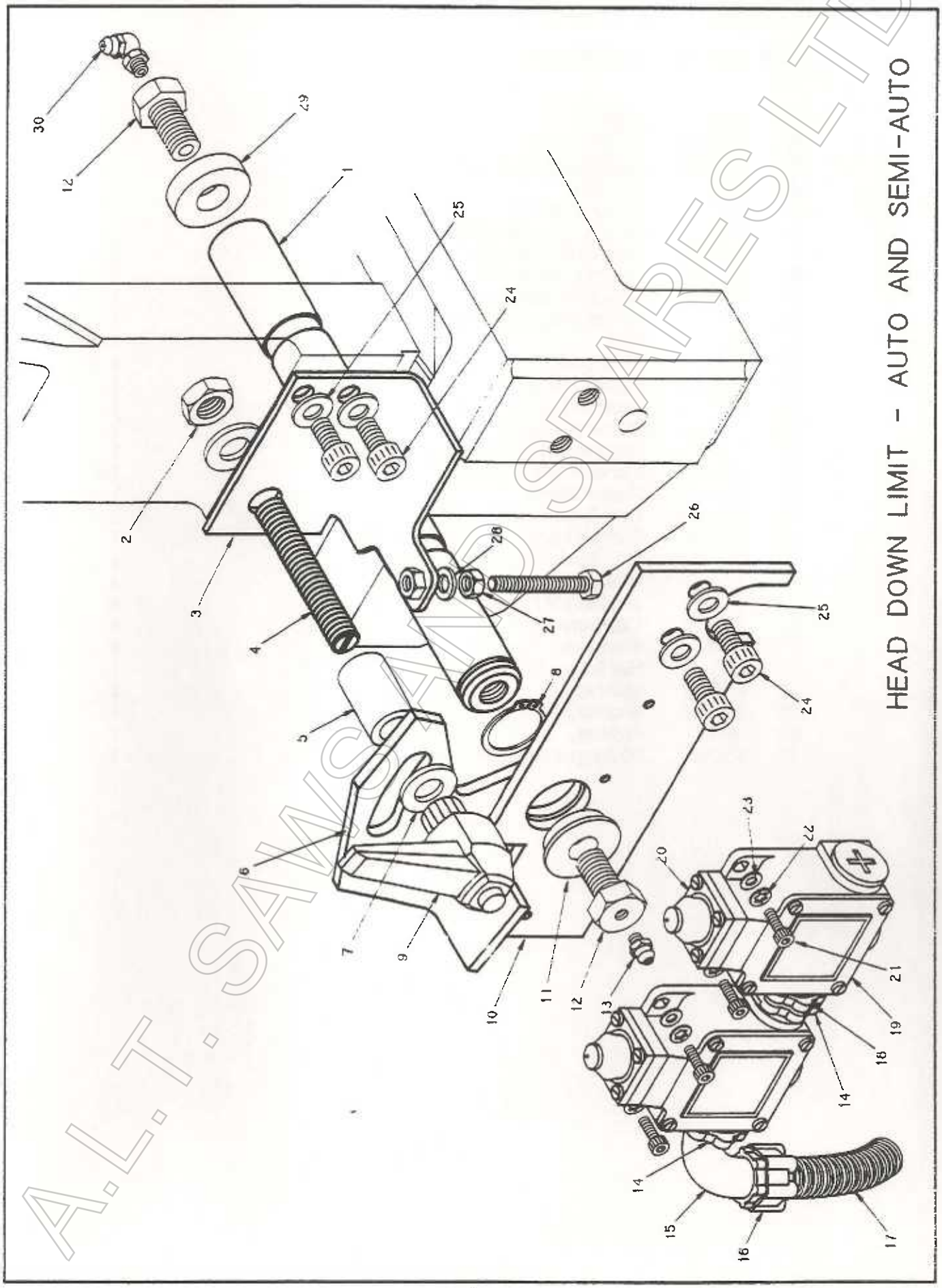
The counter is used in the "UP F" mode as displayed in the bottom left of the screen. When the machine is powered up, this is the default setting from the factory**.

To operate the machine in automatic mode, the following sequence needs to be used:

1. Press the mode key until the digit line next to the mode display is flashing.
2. Using the preset keys, input the number of cuts required. The numbers are increased by one each time a key is pressed. Incorrect inputs can be corrected by setting each digit to zero, starting from the left hand side.
3. Press the mode key to accept the input once correct.
4. The progress value indicator will register 0, if not press reset key to clear.
5. Cutting can then commence in automatic mode. As each cut is made, the progress value indicator will increment until it reaches the previously inputted required quantity and the saw will stop.
6. The indicator can be reset to 0, for a repeat quantity, or the number of cuts changed as required (repeat steps 1-3).

** If the default setting has been changed to any other than "UP F", this can be reset by powering off the machine and pressing the mode key until the mode display flashes and using the left hand preset key to ripple through the options until "UP F" is displayed. The mode key is then pressed to accept and the mode display will stop flashing.

Startrite Machines 27.9.00

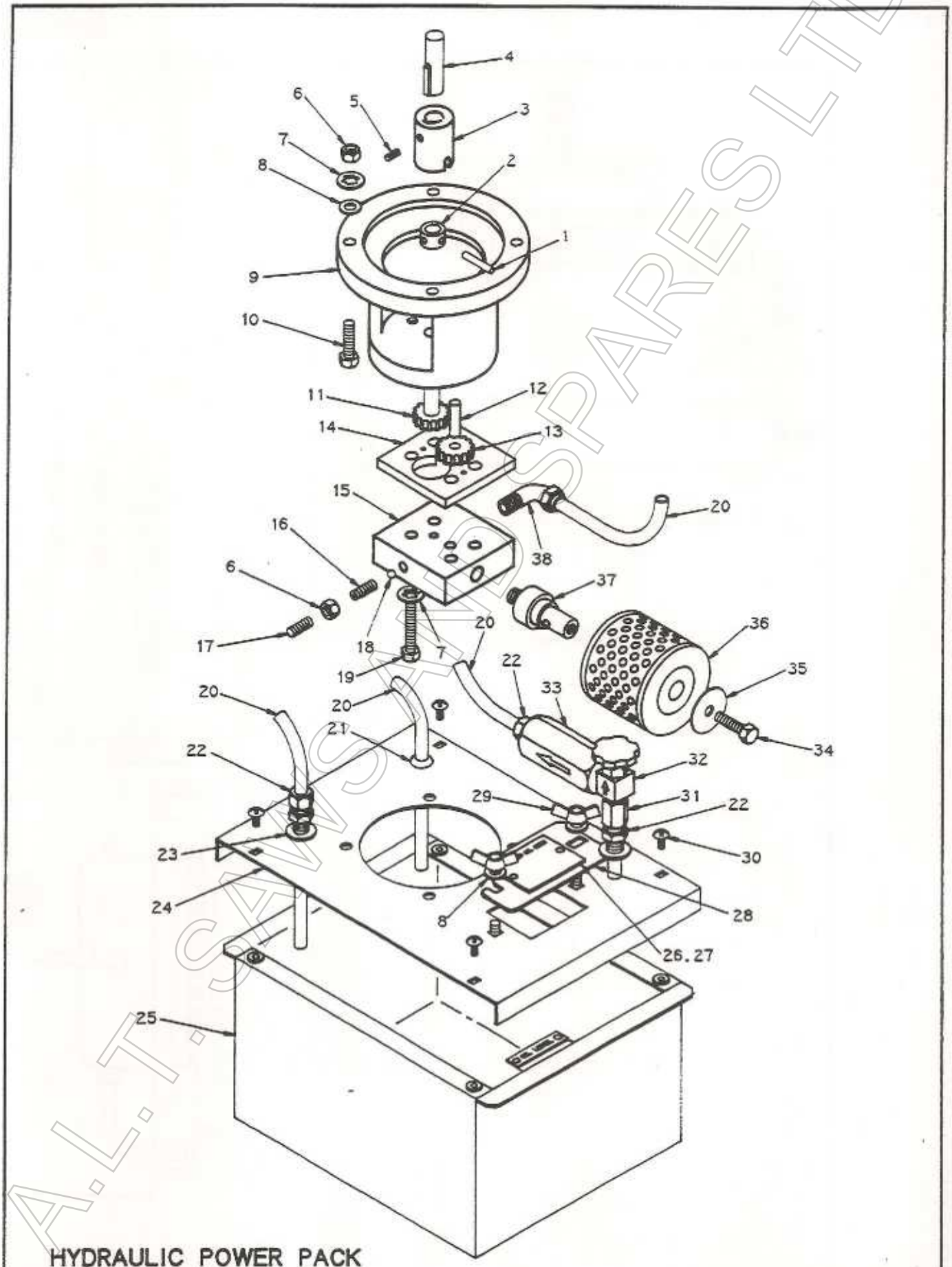


HEAD DOWN LIMIT SWITCH - AUTO & SEMI - AUTO

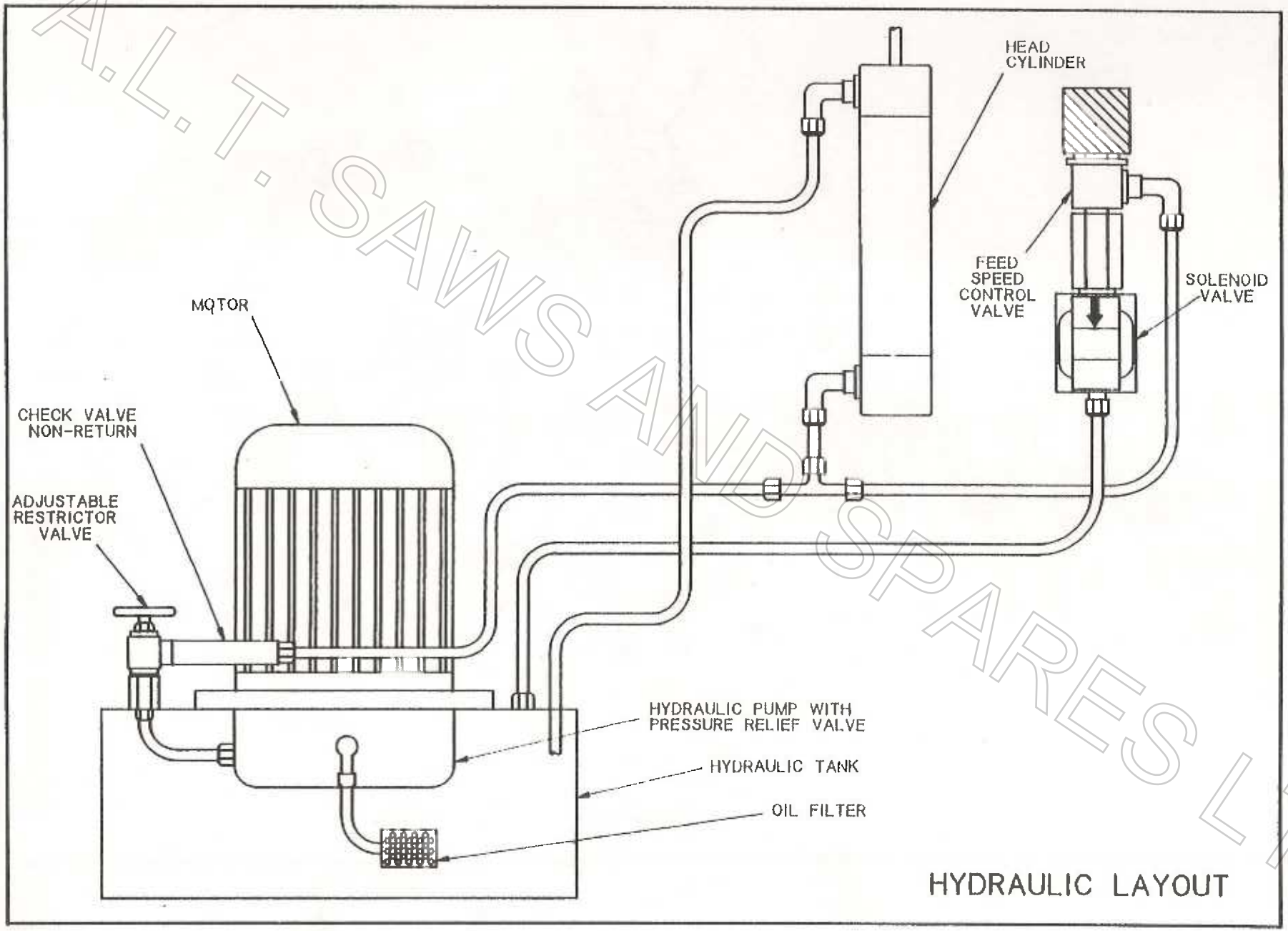
SECTION 784

ITEM	PART No.	DESCRIPTION	No.OFF
1	5983	Pivot	1
2	BO5755	Locknut	2
3	SM2586	Head Down Bracket	1
4	6359	Studding	1
5	9583	Locking Spacer	1
6	9586	Switch Actuating Plate	1
7	BO5921	Washer	2
8	BO6010	External Circlip	1
9	BO2555	Handle	1
10	9584	Switch Mounting Bracket	1
11	9585	Bush	1
12	5998	Pivot Screw	2
13	BO2479	Nipple	1
14	BO5762	Locknut	1
15	BO6085	Elbow	1
16	BO6052	Adaptor	1
17	BO6370	Conduit	1.0
18	BO6060	Nipple	1
19	BO1154	Limit Switch:	2
20	BO1147	Plunger Head:	1
21	BO5046	Cap Scew	4
22	BO5941	Washer	4
23	BO5911	Washer	4
24	BO5073	Cap Screw	4
25	BO5917	Washer	4
26	BO5559	Hex Screw	1
27	BO5752	Locknut	2
28	BO5915	Washer	1
29	6048	Washer	1
30	BO2485	90 Degrees Nipple	1

SECTION 782

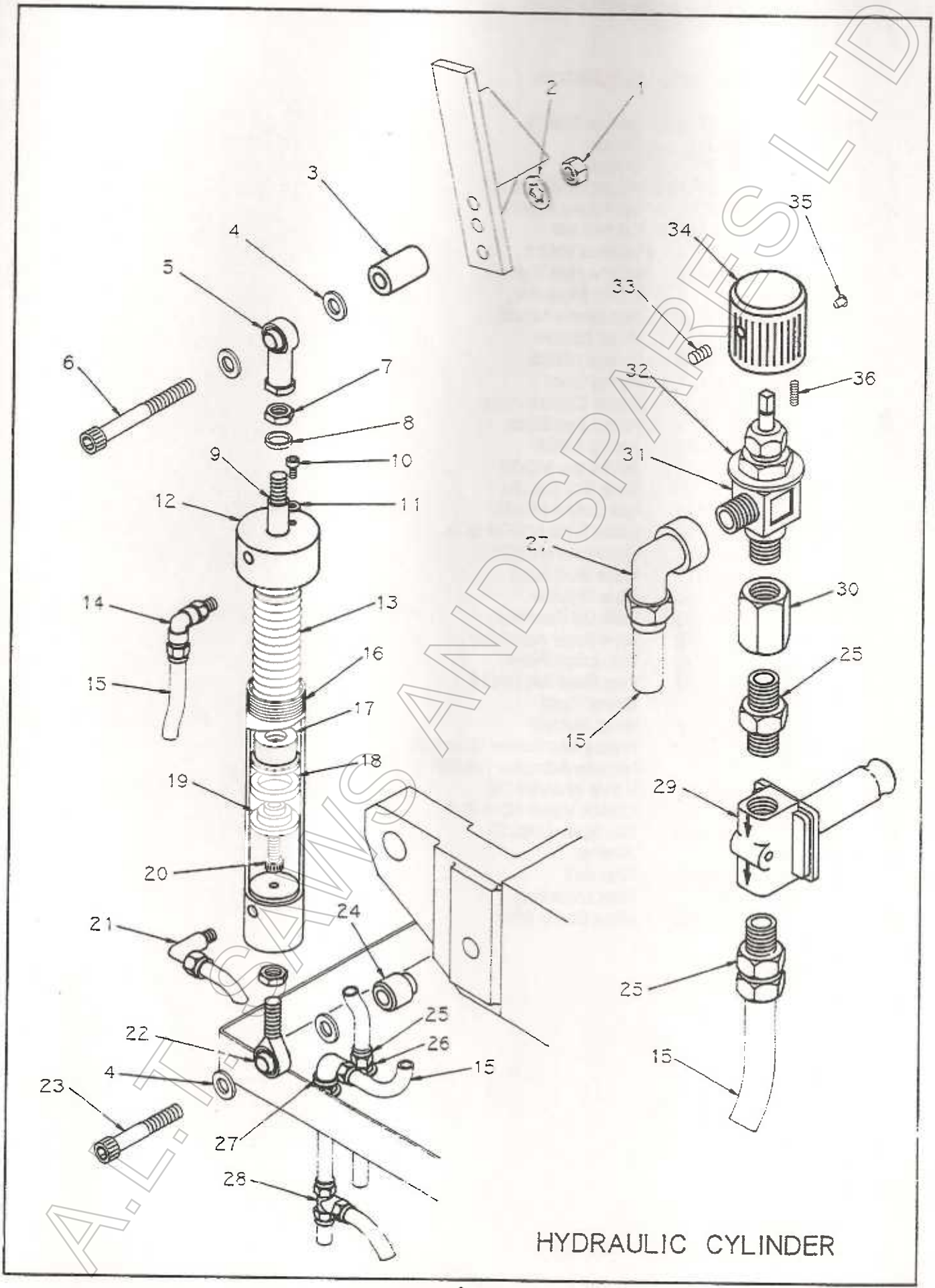


HYDRAULIC POWER PACK

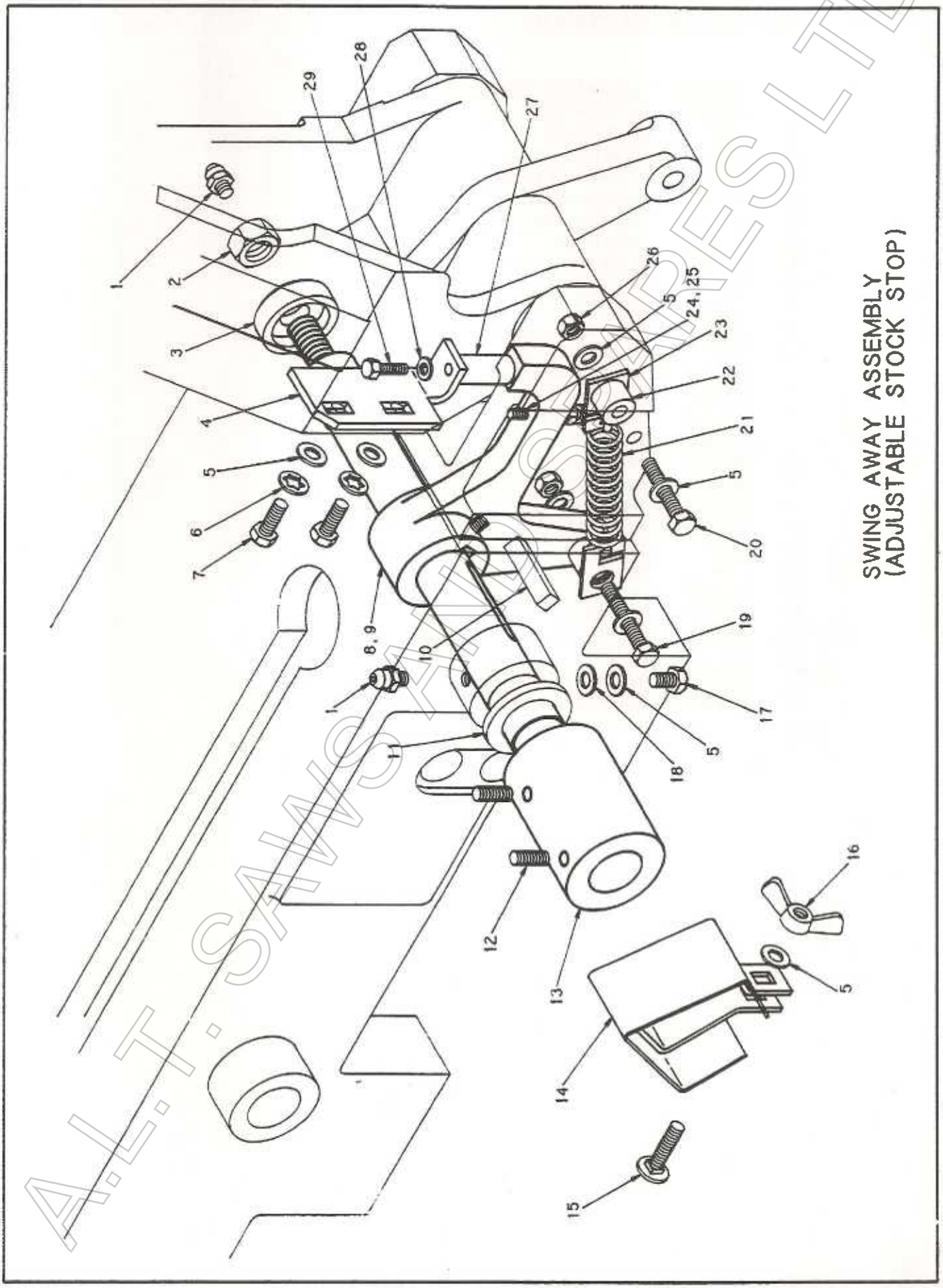


HYDRAULIC LAYOUT

ITEM	PART No.	DESCRIPTION	No.OFF
1	BO6364	Sel Loc I	1
2	5873	Collar	1
3	5867	Coupling	1
4	[illegible]065	Motor18KW	1
5	BO5189	Set Screw	1
6	BO6715	Full Nut	1
7	BO6944	Washer	1
8	BO5917	Washer	3
9	5874	Motor Mounting	1
10	BO5565	Hex Screw	1
11	5872	Gear Spindle	1
12	BO5893	Dowel	1
13	SM1171	Pump Gear	1
14	5868	Pump Centre Plate	1
15	5869	Pump End Block	1
16	BO2218	Spring	1
17	BO5203	Set Screw	1
18	BO2100	Steel Ball	1
19	BO5568	Hex Screw	4
20	BO6386	Black Tube	1
21	BO6321	Grommet	1
22	BO2412	Male Stud [illegible]	3
23	BO5954	Fibre Washer	2
24	SM1374	Tank Lid Assembly	1
25	SM1372	Tank Body Assembly	1
26	6387/A	Instruction Plate	1
27	BO5794	Pop Rivet	2
28	5877	Cover Plate	1
29	BO5785	Wing Nut M8	2
30	BO5402	Phillips Rec Screw	4
31	5564	Female Adaptor	1
32	BO2466	Valve	1
33	BO2467	Check Valve	1
34	BO5564	Hex Screw	1
35	3611	Washer	1
36	BO2568	Filter	1
37	5870	Filter Mounting	1
38	BO2423	Male Elbow	1



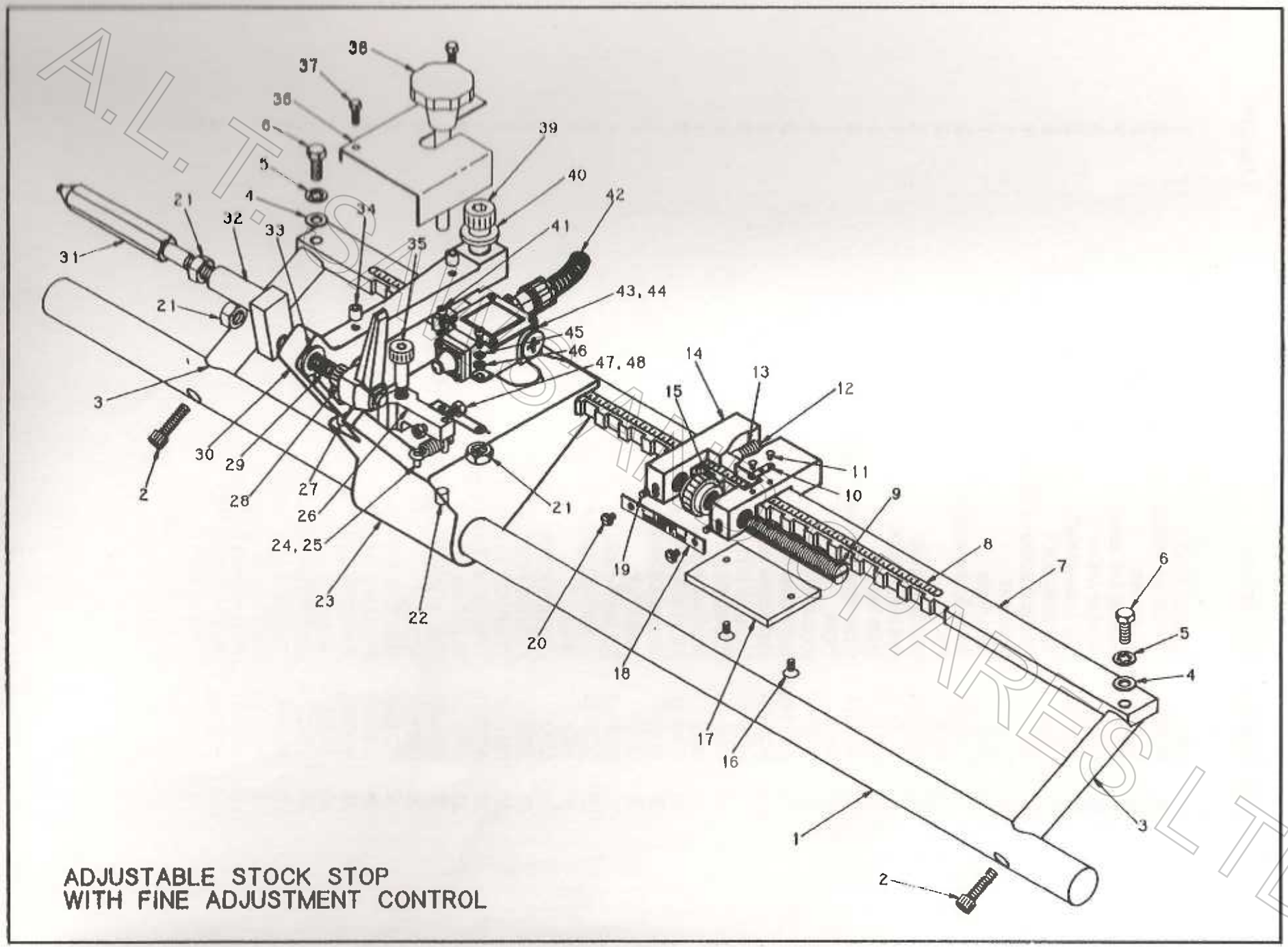
ITEM	PART No.	DESCRIPTION	No.OFF
1	BO5717	Full Nut	1
2	BO5946	Washer	1
3	9545	Cylinder Spacer Top	1
4	BO5921	Washer	4
5	BO2037	Rod End	1
6	BO5095	Cap Screw	1
7	BO5755	Locknut	2
8	BO2279	'O' Ring:RM0156-24	1
9	5999	Piston Rod	1
	9753	Piston Rod	1
10	BO5059	Cap Screw	1
11	BO5951	Fibre Washer	1
12	6391	Cylinder Cap	1
13	BO2220	Spring	1
14	BO2421	Stud Elbow	1
15	BO6386	Black Tube NYH10	1.9
16	SM1185	Cylinder	1
17	6007	Piston	1
18	BO2130	S/A Seal	1
19	6018	Piston Nut	1
20	BO5077	Cap Screw	1
21	BO2421	Male Stud Elbow	1
22	BO2036	Rod End	1
23	BO5097	Cap Screw	1
24	9384	Spacer-Cylinder	1
25	BO2414	Male Stud	3
26	BO5956	Fibre Washer	4
27	BO2418	Female Stud Elbow	2
28	BO2444	Branch Tee	1
29	BO1213	Valve Body:	1
30	BO2495	Adaptor	1
31	BO2466	Control Valve:	1
32	BO5186	Washer	1
33	BO5186	Set Screw	1
34	9581	Control Knob	1
35	BO5870	Drive Screw	1
36	BO5220	Set Screw	1



SWING AWAY ASSEMBLY

SECTION 786

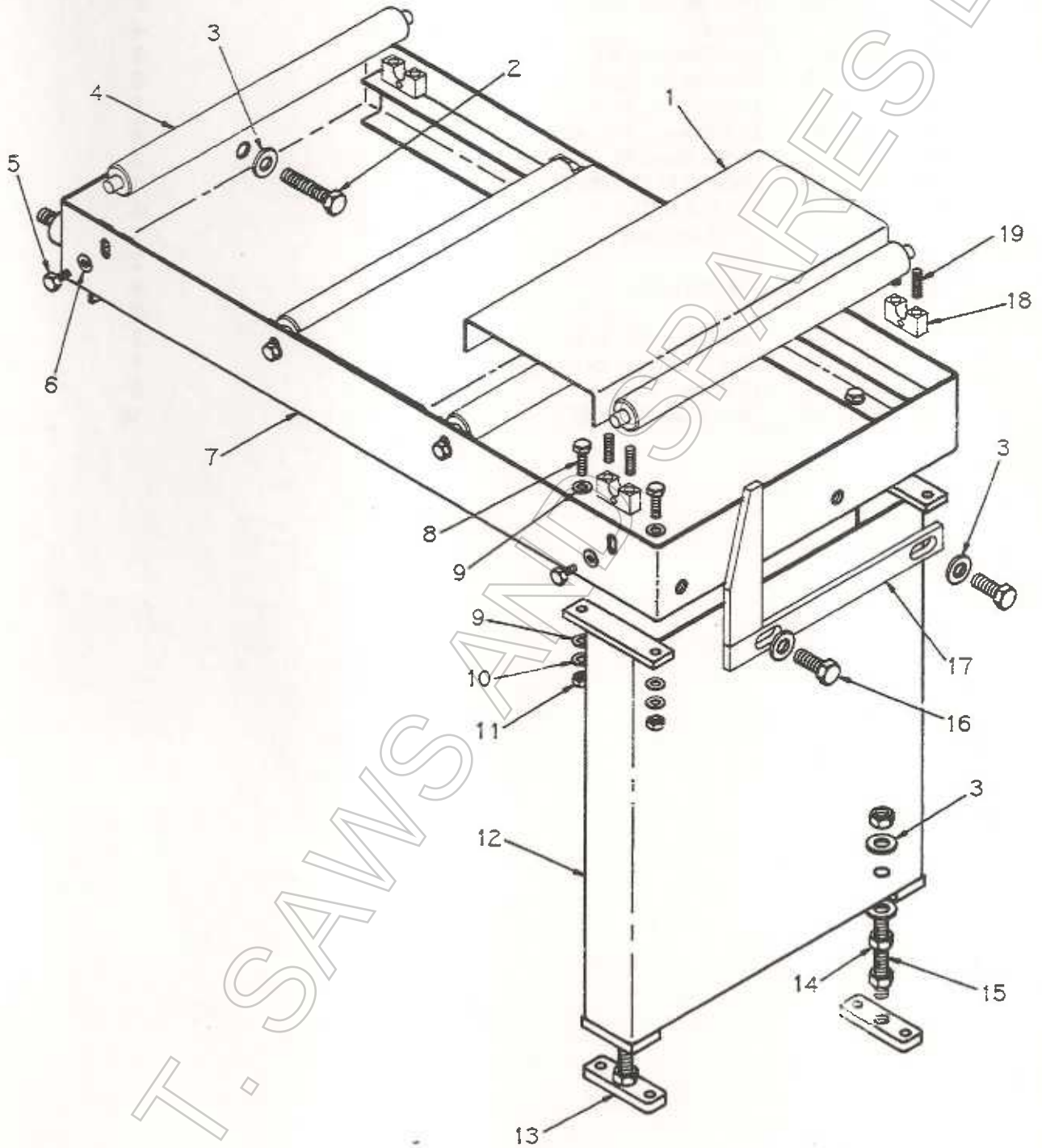
ITEM	PART No.	DESCRIPTION	No.OFF
1	BO2478	Nipple	2
2	BO5777	Binx Nut I	1
3	6697	Cup Washer	1
4	6675	Stop Bracket	1
5	BO5917	Washer	9
6	BO5944	washer	2
7	BO5562	Hex Screw	2
8	9523	Stop Pivot	1
9	BO5200	Set Screw	1
10	5962	Key	1
11	7304	Spacer	1
12	BO5203	Set Screw	2
13	6682	Stop Pivot Shaft	1
14	SM1417	Swarf Deflector	1
15	BO5621	Coach Bolt	1
16	BO5785	Wing Nut	1
17	BO5560	Hex Screw	1
18	BO5953	Fibre Washer	1
19	BO5568	Hex Screw	1
20	BO5566	Hex Screw	1
21	BO2225	Spring:	1
22	6695	Spacer	2
23	6694	Spring Link	2
24	BO5559	Hex Screw	1
25	BO5714	Full Nut	1
26	BO5715	Full Nut	1
27	9611	Stop Pin	1
28	BO5915	Washer	1
29	BO5555	Hex Screw	1



ADJUSTABLE STOCK STOP
WITH FINE ADJUSTMENT CONTROL

ITEM	PART No.	DESCRIPTION	No.OFF
1	9741	Support Shaft	1
2	BO5076	CapScrew	2
3	6342	Suport Arm	2
4	BO5917	Washer	2
5	BO5944	Washer	2
6	BO5562	Hex Screw	2
7	6343/A	Notched Bar	1
8	3944/A	Barfeed Scale	1
9	5710	Stop End	1
10	1388	Zero Plate	1
11	BO5870	Drive Screw	2
12	5698	Pin	2
13	BO2202	Spring:123108	2
14	5718	Indicator Block	1
15	5711	Stop Nut	1
16	BO5264	Countersunk Screw	2
17	5697	Plate	1
18	5719	Indicator Plate	1
19	BO5185	Set Screw	2
20	BO5306	Slot Screw	2
21	BO5755	Locknut	3
22	6346	Clamp Pad	1
23	6092	Support Bracket	1
24	BO5331	Mills Pin	2
25	BO2221	Spring	1
26	6338	Lever Arm	1
27	BO5363	Sel Loc	1
28	BO2555	Adjusting Handle:	1
29	5526	Stud	1
30	6337	Operating Arm	1
31	9738	Adjustable Stop Shaft	1
32	SM1408	Stop Shaft Assembly	1
33	BO5921	Washer	1
34	1899	Tray Stop	2
35	BO5484	Shoulder Screw	1
36	6389	Cover	1
37	BO5547	Hex Screw	2
38	SM1216	Hand Knod Assembly	1
39	BO5486	Shoulder Screw	1
40	6339	Spacer	1
41	BO5046	Cap Screw	2
42	BO6369	Conduit 24302	2
43	BO1154	Limit Switch:	1
44	BO1147	Plunger Head:	1
45	BO5941	Washer	2
46	BO5911	Washer	2
47	BO5557	Hex Screw	1
48	BO5752	Locknut	1

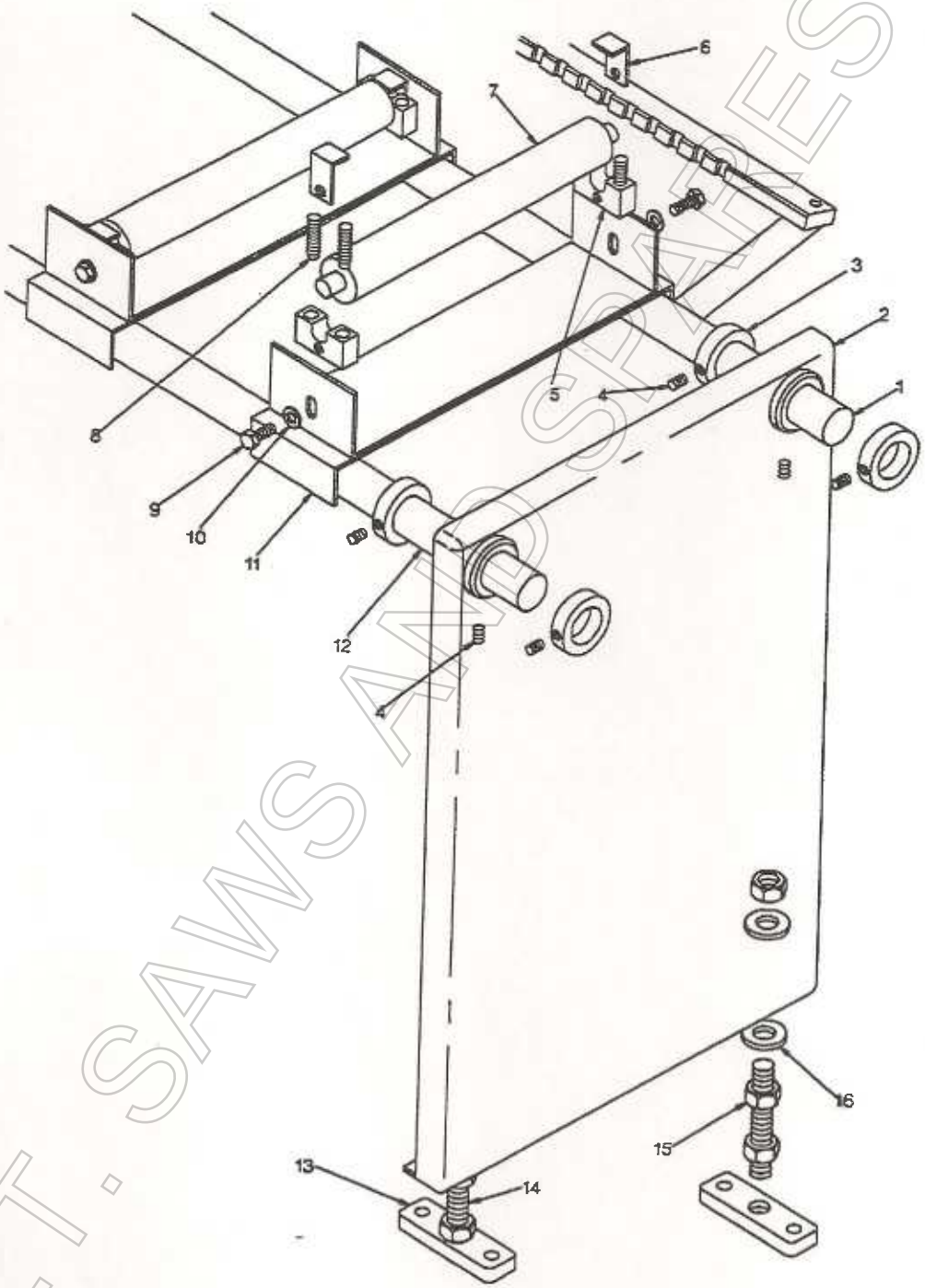
ITEM	PART No.	DESCRIPTION	No. OFF
1	9867	Support Plate	3
2	BO5587	Hex Screw	2
3	BO5922	Washer	8
4	9868	Rolier	4
5	BO5562	Hex Scew	8
6	BO5918	Washer	8
7	SM2677	Conveyer Chassis	1
8	BO5574	Hex Screw	4
9	BO2133	Nylite Seal	8
10	BO5919	Washer	4
11	BO5716	Full Nut	4
12	SM2678	Leg Assembly	1
13	4681	Foot	2
14	BO5718	Full Nut	6
15	4682	Stud	2
16	BO5584	Hex Screw	2
17	SM1232	Stop Bracket - conveyer	1
18	4387	Plumber Block	8
19	BO5214	Set Screw	16



INFEED ROLLER TABLE

OUTBOARD MATERIAL SUPPORT

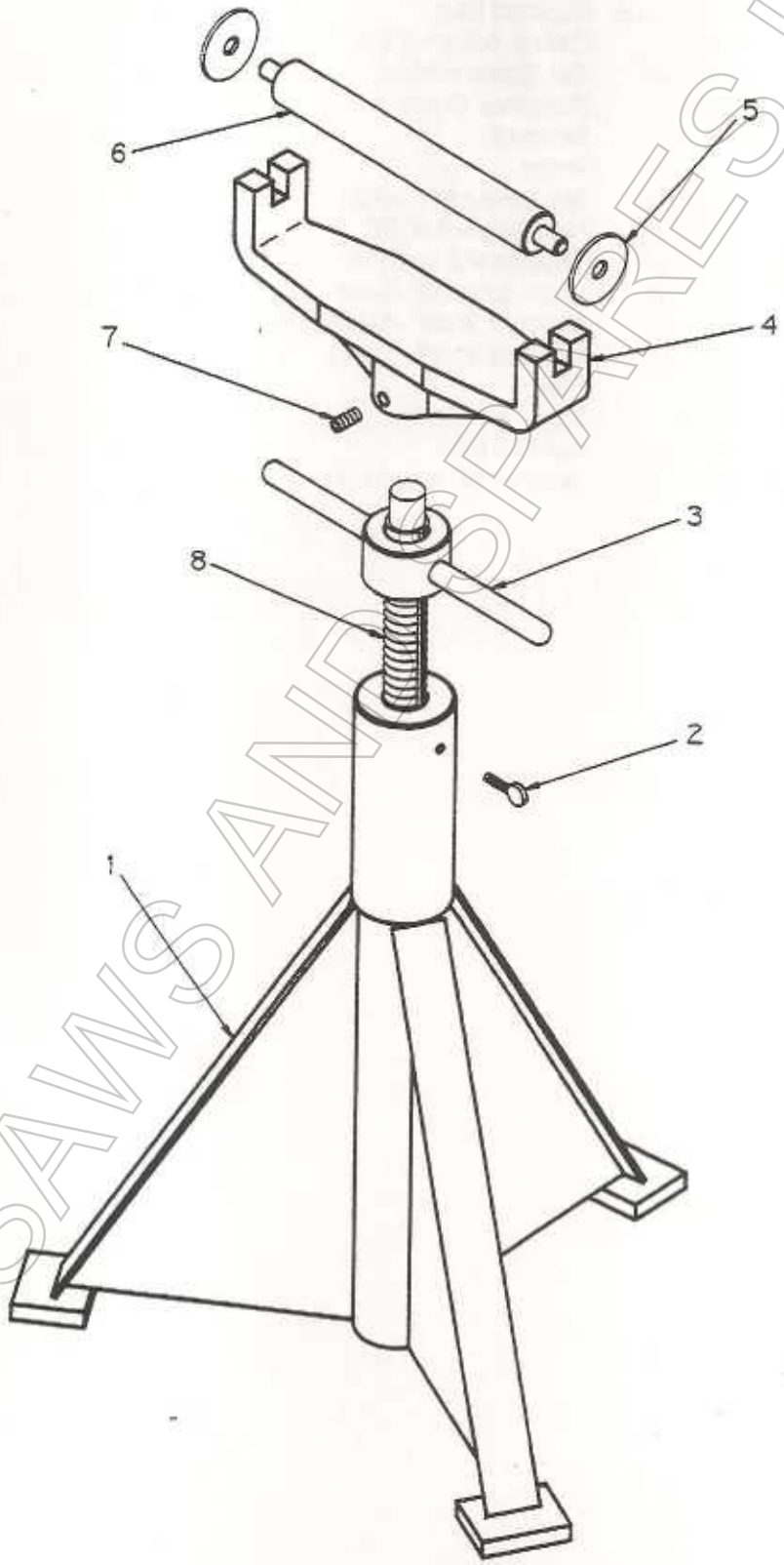
STOCK STAND



OUTBOARD
MATERIAL SUPPORT

ITEM	PART No.	DESCRIPTION	No. OFF
1	SM1409/B	Ajustable Stock Stop Assembly	1
2	SM1293/A	Support Leg	1
3	6696	Collar, Support Shaft	4
4	BO5200	Set Screw	6
5	4387	Plummer Block	4
6	6518	Bracket	4
7	4389	Roller	2
8	BO5214	Set Screw	8
9	BO5562	Hex Screw	8
10	BO5717	Washer	4
11	SM1291	Work Support, Roller	2
12	6404/A	Support Shaft - Standard	1
	6404/B	Support Shaft - Long	1
13	4681	Foot	2
14	4682	Stud	2
15	BO5718	Full Nut	6
16	BO5922	Washer	4

SECTION 798



STOCK STAND

STOCK STAND

SECTION 798

ITEM	PART No.	DESCRIPTION	No. OFF
1	SM560	Stand	1
2	BO5825	Thumb Screw	1
3	SM557	Adjuster	1
4	3867	Roller Bracket	1
5	6553	Stop Plate	2
6	3866	Roller	1
7	BO5176	Set Screw	1
8	3869	Jacking Screw	1