

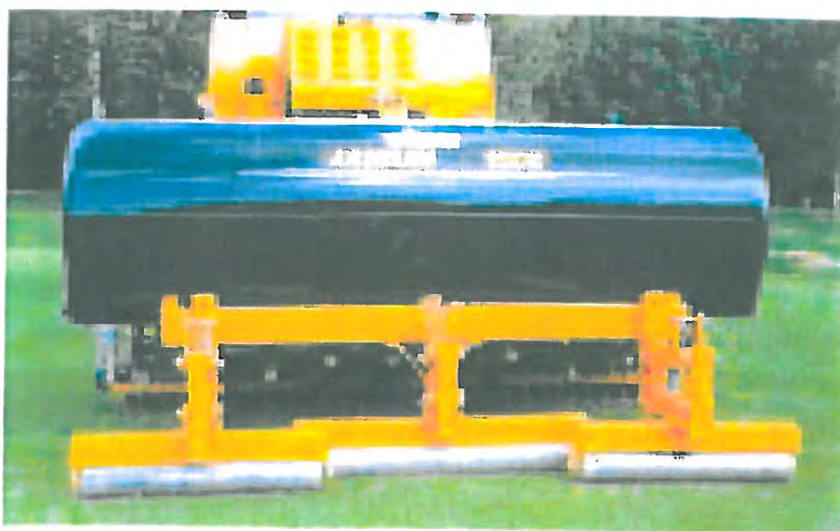
sisis

World-class turf maintenance equipment

OPERATING INSTRUCTIONS

JAVELIN

MACHINE REFERENCE	JA/1500
SERIAL NUMBER
CN CODE	8432 29 10



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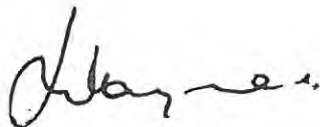
A division of Howardson Ltd - a proudly British company
Company reg no 641526 - Vat No GB 345 9918 12

EC DECLARATION OF CONFORMITY

We the undersigned
SISIS EQUIPMENT (Macclesfield) LIMITED

Certify that the	Aerator
Make	SISIS
Type	Javelin
Series	1500
Conforms to EC Directives and amendments	2006/42/EC
Standard	BS7370

This certificate applies only to NEW equipment supplied
by SISIS or our authorised dealer



J.W. Hargreaves
Director

Certificate Number
CEJV1500

We want you to obtain the best performance from this machine. If you have any difficulty after reading these instructions, please contact SISIS direct or your local SISIS Territory Manager or SISIS Dealer.

The SISIS JAVELIN is a tractor mounted aerator, which, although specifically designed for coring or hollow tining of fine and amenity turf areas, also has a range of tines available for thatch removal, solid and slitting tine treatments. Also available are Multi-Tines and MicroCore tine heads. As it is a machine designed for continuous heavy duty operation, we recommend for stability reasons, that a minimum tractor size of 16kw (21hp) is used and that front weights are fitted.

PRINCIPLE OF OPERATION

The SISIS JAVELIN mounts directly on to a conventional tractor 3 point linkage. Operational power is transmitted from the tractor PTO shaft at 450-500rpm, through a gearbox and heavy duty toothed belt drive to the specially designed crankshaft units.

These units transmit the power from the camshafts through 10 rocker mechanisms to the tine carrying bodies which, operate vertically and have freedom to pivot, allowing tine entry and withdrawal while moving forwards - without plucking or hole elongation.

Depth of penetration is infinitely variable and is controlled by a screw mechanism on a full width roller mounted forward of the tines.

Variations of hole spacing is achieved by a combination of either twin or triple adaptors and altering the tractor forward travel speed while maintaining a constant PTO speed.

IMPORTANT POINTS

- Thoroughly clean the Javelin after each days work.
- Carefully inspect the Javelin for loose components or signs of damage or wear. Rectify or replace faulty components before the machine is used further.
- Check the toothed belt tension daily and, if necessary adjust the tension. See diagram.

NEVER

- Never operate the Javelin at high speed. Best results are generally obtained between 450-500rpm and should be determined on site by short trial runs.

- Never allow operation at PTO speeds in excess of 540rpm
- Never leave the tractor seat with the Javelin operating
- Ensure no personnel are close to machine when operating.

ATTACHING THE JAVELIN TO THE TRACTOR ALWAYS USE STABILIZERS TO ENSURE FULL CONTROL OF THE MACHINE.

- Align the tractor with the Javelin; fit the hydraulic lift arms (fitting the left hand side first) and secure with the retaining pins. Fit and secure the tractor top link and adjust its length until the top edge of the Javelin chassis is horizontal and parallel with the ground.
- Raise the Javelin on the tractor hydraulics and, from behind the machine, visually check that the top frame edge is horizontal with the ground - adjusting the tractor side arm levelling screw as necessary. (Always check that the tractor rear wheels have equal inflation pressures).
- Raise the drop leg and secure it in the raised position with the retaining pin. If rollers fitted, release centre roller securing pin.
- Fit the end of the PTO shaft on to the tractor spline and the other end on to the gearbox spline.

IMPORTANT There must be a minimum clearance of 2ins (50mm) between the sliding members of the PTO shaft in their closed position. (See makers leaflet for information on adjusting the length).

- Check that the bevel gearbox is filled with oil (SAE 90 or equivalent), to level plug (1.6 litres from empty)



- f) Check that the correct tines are fitted to the machine.
- g) Start the tractor and raise the machine clear of the ground. With the engine at idling speed, gently engage the PTO drive clutch and visually check that the mechanisms are operating freely.

operate the machine with the safety covers removed.

allow any unauthorised person to handle machine at any time.

OPERATING THE JAVELIN

The Javelin is designed to operate at a PTO speed of 450-540rpm. NEVER use a higher tractor PTO speed as any damage resulting from operation at speeds in excess of 540rpm cannot be considered for component replacement under warranty.

- a) On the test area, lift the machine clear of the ground and set the depth adjustment roller so that the tines will be near to the required setting

Select the tractor gear for the chosen forward travel speed and engage the PTO shaft drive.

Moving forward, lower the Javelin into its working position and treat a short run area. Raise the Javelin clear of the ground and disconnect the tractor PTO drive

Inspect the work done - check the depth of penetration and adjust the depth control roller before, if necessary, doing a further test run, adjusting tine angle to optimum possible.

Check that the hole spacing obtained from the selected tractor forward gear is satisfactory.

- b) ALWAYS operate in straight lines. Before turning or at the end of an operating swath, raise the Javelin clear of the ground and disengage the PTO shaft drive

As the starting point for the next run is reached, lower the machine into work as the PTO shaft is re-engaged.

Avoid running over the extracted cores. It is often convenient to leave a parallel area (one machine swath width) all around the work area and treat this after the central area has been completed.

BE SAFETY CONSCIOUS

NEVER

leave the machine unattended with the tractor engine running.

ALWAYS

when disconnecting for storage lower the drop leg and secure in position, or secure centre roller pin Lower front depth roller. This ensures that the Javelin is fully stable and the wheels allow the disconnected machine to be easily pushed into its storage area

when transporting over any distance or when disconnecting the Javelin from the tractor always lower the front depth roller beforehand to avoid possible damage to the tines through operator error or tractor malfunction.

before starting work always visually check machine for damage or wear to working parts such as blades or tines.

watch out for children or pedestrians. Always look behind before starting to reverse

switch off the power before making adjustments or repairs and never lift or carry a machine whilst any parts are moving

PTO DRIVES FROM TRACTORS

BEFORE

attaching or adjusting PTO driven implements, always stop the engine and disengage the PTO drive.

NEVER

operate PTO shafts at extreme angles and take particular care to avoid high linkage lift positions with the PTO in operation (ie at the end of working runs)

MANY

tractors now have multi speed PTO systems. Take special care that the PTO speed selected is suitable for the implement being used e.g. never use 1000rpm on an implement designed for 540rpm

DAILY MAINTENANCE - WALK ROUND INSPECTION CHECK

Check that all bolts are tight and that there is no distortion or impact damage to the main frame or chassis members.

Check that the tines are in good operating condition

and replace as necessary

Check the toothed belt tension at 10mm free movement and adjust if necessary. DO NOT OVERTENSION. See diagram.

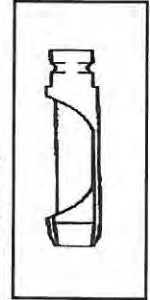
Do not adjust lock nuts 1/1230 item 36

Apply grease to all lubrication points.

JUMBO THATCH REMOVAL

4.5in 110mm ref F35967

These remove plugs of thatch and the depth of penetration is controlled so that little rootzone material is removed. They are designed for use with the Twin Head Adaptors.



OPTIONAL TINES

To remove the tines, first remove the cap head screws and nuts with allen key provided and remove the tine.

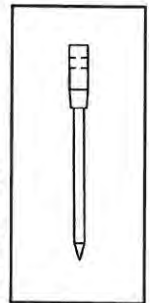
Always fit the hollow coring tines with the open side facing backwards.

When new tines are fitted for use on fine turf, we recommend that they are first given a short operational run on outfield turf to "polish" the surfaces in contact with the soil. This will reduce the operating friction which causes lifting of the surface, particularly in areas of poor grass root development.

PENCIL TINE

5in 127mm ref F33965

Has all the benefits of the solid tine, but is more acceptable on greens because of the smaller surface hole. These tines are not as strong as the tapered tine so care should be taken on outfield turf or where stony ground is prevalent.



ROUND POINTED SOLID TINES

5in 127mm ref F31730

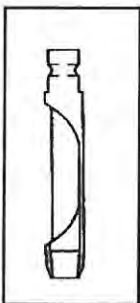
Used to assist moisture and air getting to the grass roots during the growing period.



HOLLOW CORING TINES

5in 127mm ref F31277
4in 100mm ref F36447

These remove cores of soil to relieve compaction caused by play and rolling and to exchange soil. In areas where compaction is severe use round solid tine treatment - say 4-6 weeks before hollow tining to allow moisture to penetrate the compacted layer.



4in Hollow tines are for those who wish to core more frequently with tines that cause minimal surface disruption and need less

TURF RETAINERS

ref FS1009

Exploded view page 2-Parts Figure 2.

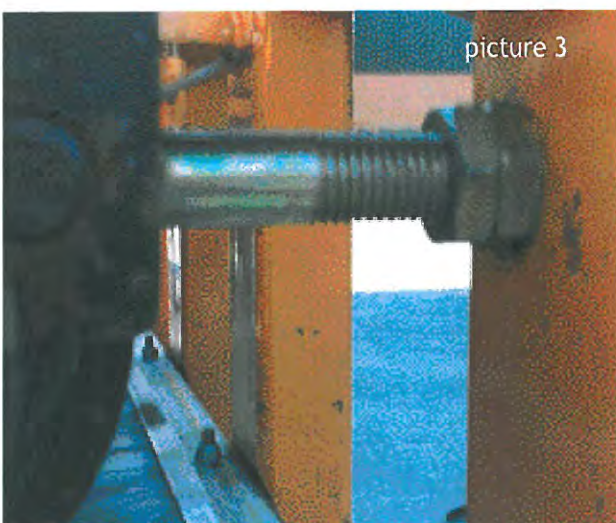
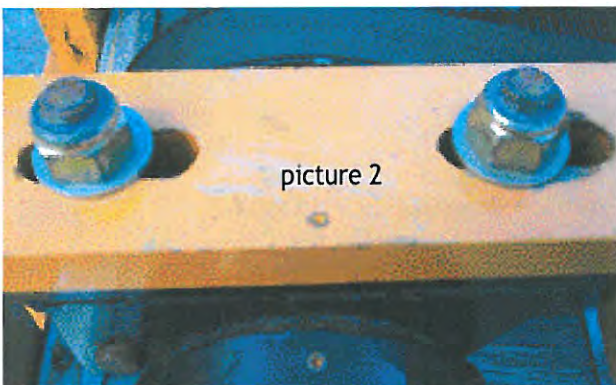
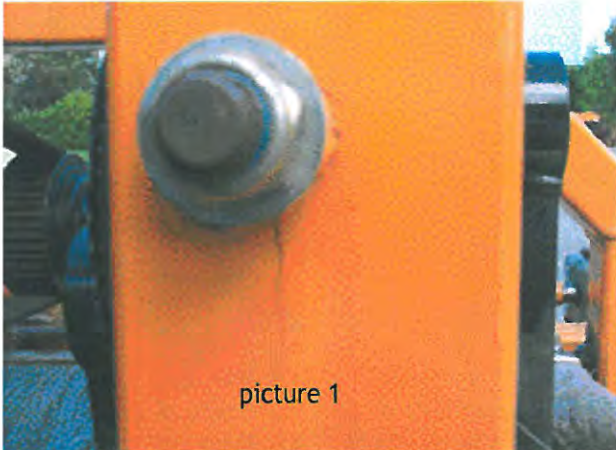
The spring steel feet are fixed to an adjustable slide so that when changing from 2in to 3in spacing the feet may be added or removed. To adjust, loosen the bolts with a 13mm socket or spanner and slide the spring foot into a central position between each tine. This is best done with the machine disconnected from the tractor with the rear drop leg in its down position and the front roller adjusted so that the tines nearly touch the ground. When all turf retainer feet are in the correct positions ensure that the bolts are tightened. (see picture)



To fit or remove the complete turf retainer assembly remove the two bolts from each end of the slide bracket (item 26) withdraw the complete bracket and replace the bolts through the scraper and retighten.

FITTING A NEW BELT

- 1 Remove nut shown in picture 1, item 37, figure 3
IMPORTANT DO NOT undo locknuts shown in picture 3, item 36, figure 3



- 2 Loosen nuts shown in picture 2, and slide unit forward until belt can be removed. If this is a belt inboard of the layshaft bearings remove the bolts through the bearing and the bearing spacer plate item. 94, figure 1.

IMPORTANT Fit new belt. Check the alignment of the pulleys with a straight edge.

At this stage it is important to ensure that the pulley is timed correctly. With the pulley belt loose move the pulley round until the timing pins line up. See timing diagram page 5

IMPORTANT

Re tension the belt, leaving 10mm deflection in the top centre of the belt (see diagram 2) Re tighten nuts shown in picture 2, item 37, figure 1

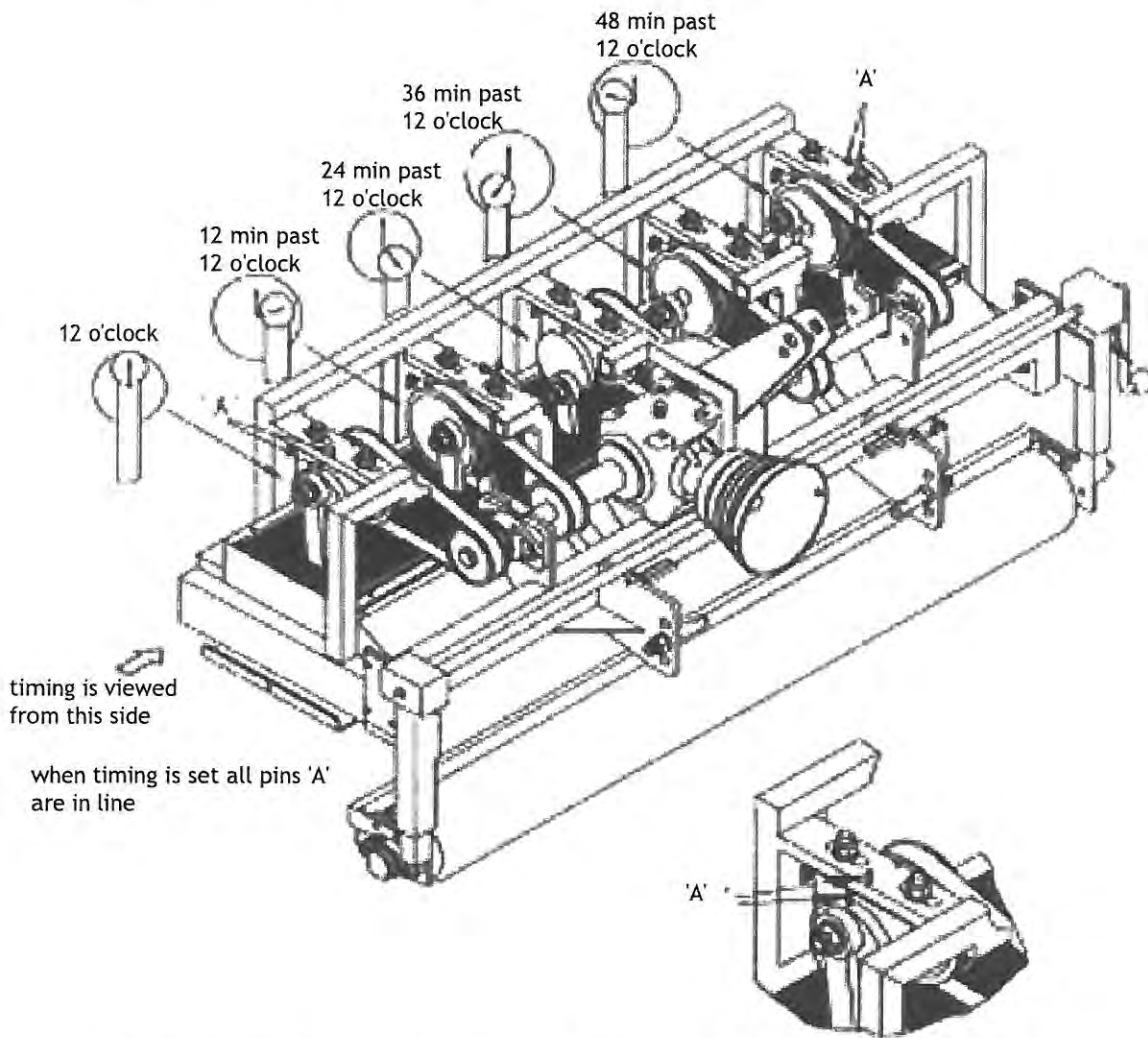
IMPORTANT These nuts must be tightened with a torque wrench to a setting of 244Nm (180 LBF/FT).

After tightening re check belt tension and pulley alignment. Run machine on tickover on tractor to ensure the belt runs in line and all pulleys are timed correctly. See page 5


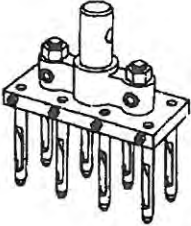

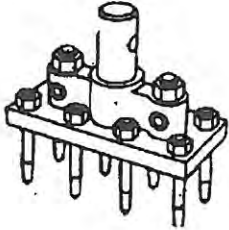
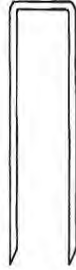
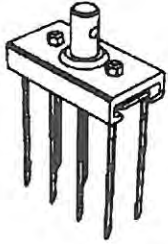
SPECIFICATION

Model reference	JA/1500
Overall width	1.8m
Effective working width	1.5m
Height	1.1m
Length	0.9m
Weight	446kg
Number of Tines at	
2in spacing	30
3in spacing	20

TIMING DIAGRAM (cutaway for clarity)



TINES AVAILABLE AS SPARES FOR OLD MACHINES IN MULTI-TINE HEADS

MICROCORE		MULTITINE		NEEDLE	
					
Tine	ref 33895	Tine	ref 31606	Tine	ref 34828
Tine Head	ref	Tine Head	ref	Tine Head	ref

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OPERATING INSTRUCTIONS

AER-AID as fitted to Javelin

MACHINE REFERENCE

AA/JA

SERIAL NUMBER

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CN CODE

8432 29 10



SALES/SPARES 01625 503030

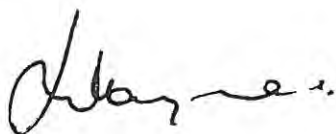
Website www.sisis.com

EC DECLARATION OF CONFORMITY

We the undersigned
SISIS EQUIPMENT (Macclesfield) LIMITED

Certify that the	Air Injection Machine
Make	SISIS
Type	AerAid
Series	1
Conforms to EC Directives and amendments	2006/42/EC
Standard	BS7370

This certificate applies only to NEW equipment supplied
by SISIS or our authorised dealer



J.W. Hargreaves
Director

Certificate Number
CE8432/2910

We want you to obtain the best performance from this machine. If you have any problems after reading the following instructions, please contact your local SISIS Territory Manager or SISIS on 01625 503030 who will be pleased to help.

CAUTION

This machine is designed to be used for the aeration of turf with air injection.

NEVER

Allow any untrained or unauthorized person to use this equipment.

ALWAYS

Use manufacturers genuine guaranteed spare parts and tines. The manufacturer cannot be held responsible for injury or damage caused by non-genuine parts.

The CE Certificate, working instructions and warranty only apply to parts supplied by SISIS Equipment Limited

USING THE AER-AID

Before starting to use the Aer-Aid take the time to read the working instructions for the Javelin and Aer-Aid supplied with the machine. If there are any points you are not sure about please telephone SISIS Equipment or your local SISIS Territory Manager or SISIS Dealer for further technical help.

Set up the Javelin on the tractor as per the Javelin working instruction.

Before starting work make a visual check of the machine to ensure that the correct tines are fitted at the required spacings and depth and the PTO shaft is cut to the correct length to suit the tractor, with all guards fitted, as per the instructions, supplied with the PTO shaft.

When operating with air, ensure the air from the compressor is turned on at the tap on the manifold.

Check all pipework is in good condition and secure.

Ensure outlet holes in tines are not blocked.

Visually check the oil level in the compressor sight glass. This should be visible in the sight glass if not top up with Fluid Force 2000 oil. Ensure the tractor PTO is set to maximum of 540rpm. Some tractors have dual PTO speeds using higher speed than 540rpm will cause damage to the machine mechanism.

ALWAYS

Clean the machine after use to avoid soil/sand hardening onto the tines and working parts.

FITTING AIR TINES

The push in air pipe fitting is fitted/removed by pushing the 2.5mm allen key supplied with the machine into the fitting and turning to tighten or slacken the fitting.

CHANGING TINES

WORN AIR TINES FOR NEW AIR TINES

When replacing worn air tines with a new set, push the lip seal on top of the air tube connector (on top of the tine) downwards and pull the tube up away from the tine. Undo the securing grub screw and remove the tine. Remove the silver air connector from the old tine (item 9) by unscrewing it and replace it in the new tine. Fit the new tine into the tine foot and re-tighten the grub screw securely. Then push the air tube back into the air connector as far as it will go. Pull the air tube upwards to ensure it is seated and held in the connector.

REMOVING AIR TINES FOR STANDARD TINES. 2IN OR 3IN SPACING

Remove the air tines as detailed above. The tine holder has a spare connector. Fit the loose air tube into this holder to retain the pipe whilst using other types of non air tines.

USING THE AER-AID WITH NON AIR TINES

When the non air tines are fitted and the air line has been stowed onto its stowage point OPEN THE VALVE ON THE MANIFOLD TO ALLOW THE AIR FROM THE COMPRESSOR TO ESCAPE.

See separate details for maintenance and use of the compressor.

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OPERATING INSTRUCTIONS

AER-AID COMPRESSOR

SALES/SPARES 01625 503030
Website www.sisis.com

NOTE TO USERS

The compressor warranty will be invalidated if unapproved spare parts or lubricants are used. Using such items may cause the efficiency and service life of the compressor to be reduced and could create a hazardous condition over which SISIS has no control.

Failure to maintain the compressor correctly, or modifying it without prior approval from SISIS may also create a hazardous condition. This will also invalidate the warranty.

SISIS accept no responsibility for damage or injury caused by use of non-approved parts or lubricants, unauthorised modifications, or failure to comply with maintenance instructions.

Consequential damage of any nature is not covered by the warranty.

Every effort has been made both in the design of the compressor and in the preparation of this handbook, to protect the end user from possible dangers.

The majority of accidents can be avoided if basic safety precautions and procedures are adhered to.

GENERAL HEALTH & SAFETY INFORMATION

Any persons operating or carrying out any type of maintenance work on this compressor, must use safe engineering working practices and abide by all local and Government Health and Safety requirements.

The Health & Safety at Work Act 1974

In order to comply with your responsibilities under the above act, it is essential that the compressor is installed, operated and maintained by competent persons in accordance with the instructions in this handbook.

This compressor must only be used in the compression of clean atmospheric air and positioned in a fume and vapour free non explosive environment.

It is the responsibility of the local supervisor to ensure that people operating or maintain the compressor have:-

A detailed knowledge of the product prior to use.

Read and fully understood the contents contained in the user handbook.

WHEN OPERATING THE COMPRESSOR

Do not remove any plugs or release pipework when the compressor is running.

Compressed air is dangerous and can be fatal if misused. Do not allow compressed air jets discharged from any pipe or nozzle to make contact with your body.

Wear safety glasses and suitable clothing when using, or working in an area where compressed air is being used.

Hazardous vapours/fumes can be produced if compressed air is used to remove chemicals, cleaning agents and lubricants from equipment and components. Suitable respiratory and extraction equipment may be required in these circumstances. Never use compressed air for cleaning personal clothing.

Do not use air directly from compressors for breathing purposes. If the air is to be used for human consumption then it must be subjected to further treatment to ensure that the levels of contaminants, odour and moisture meet the requirements of BS4275 1974.

We recommend that the air supply to hand held air guns is regulated to a lower pressure (refer to local health and safety regulations).

Do not insert any object or part of body through any opening of the compressor enclosure. Serious personal injury and/or damage may result.

Never run the compressor when any covers or guards are missing, unless advised to do so in this handbook.

BEFORE WORKING ON COMPRESSOR

Extreme caution should be taken if the compressor has been subjected to severe operating temperatures or fire. Certain components may contain fluoroelastomer materials and under these conditions can leave extremely corrosive residues. Severe burns and permanent skin and tissue damage can be a result of skin contact.

The Health and Safety information contained in this handbook is only intended to give general guidelines.

POTENTIAL OIL HEALTH HAZARDS

NOTE! This section relates to Fluid Force 2000 oil. For other lubricants refer to the Health and Safety Instructions issued with the relevant product.

There are no significant hazards associated with this product when properly used and in the application for which it was designed. Frequent and/or prolonged skin contact may give rise to skin irritations and it is recommended that protective gloves are worn. The carcinogenic action of mineral oils should be brought to the attention of all users. *

NOTE! The oil may be hot so take care when carrying out oil changes.

Do not keep oily rags in pockets or wear contaminated clothing.

Do not inhale fumes or vapours.

Do not swallow.

Avoid eye contact.

Always wash hands after use and before eating, drinking, smoking and using the toilet.

Ingestion

Do not induce vomiting because of the risk of aspiration. Wash mouth out with water. Give 1/2 pint milk Seek immediate medical attention.

Skin Contact *

Mildly irritating. Remove by wiping. Wash with soap and water. Apply emollient cream.

Eye Contact *

Mildly irritating. Flush with copious amounts of warm water. Seek medical advice if necessary.

Aspiration

If there is any suspicion of aspiration into the lungs (for example during vomiting) admit to hospital immediately.

Inhalation

Remove from exposure into fresh air. If necessary give artificial respiration or oxygen. Seek medical advice.

Pressure Injection

Obtain immediate medical attention, even if injury appears minor

Spillage

Soak up with absorbent clay

Waste Disposal

Oil, condensate, filter elements etc. should be disposed of in accordance with local regulations. Do not allow oil to contaminate water supplies.

* See cautionary notice SHW397 'Effects of Mineral Oil on the Skin' and MS(B)5 'Skin Cancer Caused by Oil' published by the Health and Safety Executive.

SERVICING

CHECK PRESSURE - COMPRESSOR AIR-END

To check the air-end pressure, use the pressure gauge located in the air end.

If the correct size of compressor has been installed the gauge should read:

Condition	10 Bar
Pressure when stopped	after vent down air end pressure gauge should read 0 bar
Initial start up (3 seconds approximately)	4.0/6.0 - 9.6/10.2
Normal working pressure (PURS)	8.0 - 9.6/10.2 **
When compressor has stopped (PURS)	9.6/10.2 - 0

NOTE ** Stop and see fault finding if pressures are greater than those quoted.

CHECK OIL LEVEL

When compressor has stopped sight glass should be full.

OIL TOP UP PROCEDURE

WARNING! RISK OF DANGER. RISK OF HOT SURFACE

Close the air outlet valve to isolate the compressor from the air line system. Fit a safety notice to the valve advising that it is not to be opened.

Wait until air end vent down cycle is complete

Check that air end pressure gauge reads zero.

WARNING! DO NOT PROCEED UNTIL GAUGE READS ZERO!

Carefully unscrew oil filler plug (B)

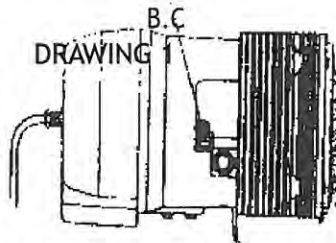
WARNING ! RISK OF DANGER

If any air or oil escapes before plug is fully removed then stop! Compressor air end is pressurised! DO NOT remove plug until all pressure is lost. Do not allow any compressed air jets to make contact with your body.

Remove filler plug (B), retain bonded seal (C).

Fill to overflow with an approved oil (eg Fluid Force 2000)

Examine bonded seal, if not damaged refit to filler plug.



Refit seal and filler plug, tighten to 40Nm.

Remove safety notices.

50 HOUR (WEEKLY) SERVICE PROCEDURE.

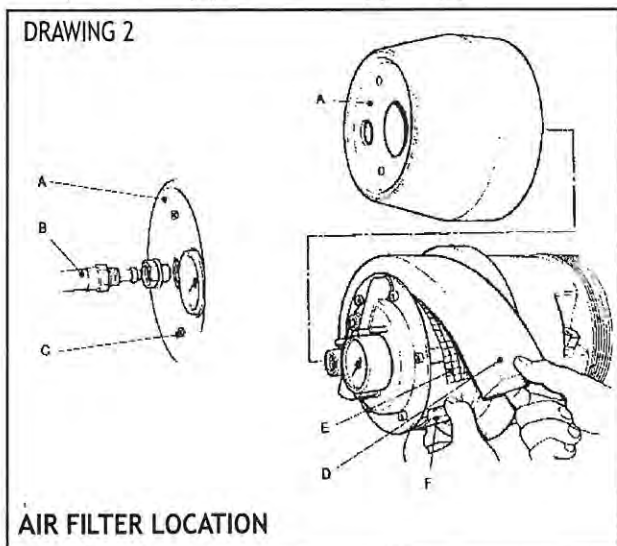
In addition to the daily checks the following procedures should be carried out every 50 hours or weekly (whichever is the sooner).

WARNING! Risk of Danger. Risk of Hot Surface. Mandatory : Eye Protection Must be Worn

If compressed air is used for cleaning, then eye protection **MUST** be worn.

Unscrew the two cowl retaining screw (C). Remove cowl (A) from separator casing. Drawing 2

Unclip air filter (D) and filter support (E).



AIR FILTER LOCATION

Clean separator casing and inside of cowl.

Vacuum clean or blow dust out of filter using low pressure, clean dry air. Renew the filter if it cannot be cleaned satisfactorily.

Relocate filter support (E), refit air filter (D) and secure both ends using spring clip (F).

Refit cowl (A) and secure in place with retaining screws (C). Apply sealant to air outlet pip (B) and refit.

CLEAN OIL COOLER AND MOTOR

Vacuum clean or blow dust from motor (J) and motor grill (K) using low pressure, clean dry air.

Carefully vacuum clean the oil cooler matrix (G) and guard rings (H).

2000 HOUR (YEARLY) SERVICE PROCEDURE

In addition to daily and 50 hour service, the following procedures should be carried out every 2000 hours or yearly (whichever is the sooner).

IMPORTANT !

You are reminded that service work must only be carried out by competent persons. Refer to Health and Safety Precautions before starting work. If in doubt contact SISIS EQUIPMENT LIMITED

WARNING!

**Risk of Danger
Risk of Hot Surface**

AVOID UNNECESSARY CONTACT WITH HOT OIL AND COMPONENTS. PROTECTIVE CLOTHING AND GLOVES ARE RECOMMENDED IF DRAINING OIL WHEN THE COMPRESSOR IS HOT.

Drain air from pipework.

Wait until air end vent down cycle is complete.

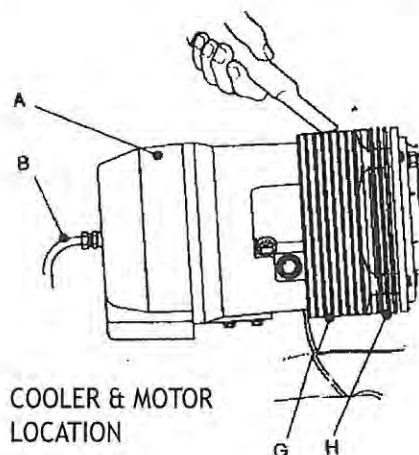
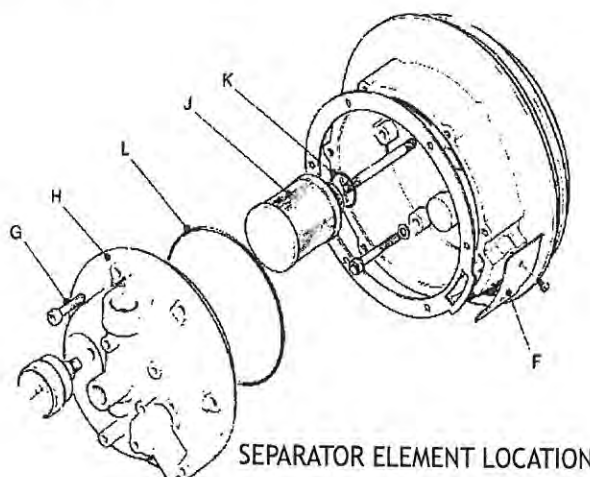
Check that air end pressure gauge reads zero.

WARNING ! DO NOT PROCEED UNTIL GAUGE READS ZERO!

REMOVAL OF AIR INTAKE FILTER

The air filter is located beneath the filter cover (A). Pipe (B) will need to be removed to gain access.

Remove air outlet pipe (B).

COOLER & MOTOR
LOCATION

SEPARATOR ELEMENT LOCATION

WARNING! RISK OF Danger

If any air escapes before outlet pipe is fully removed **STOP!** Air line is pressurised! **DO NOT** remove until all pressure is lost. **DO NOT** allow any compressed air jets to make contact with your body.

Unscrew the two cowl retaining screws (C). Remove cowl (A) from separator casing.

Unclip air filter (D) from the retaining clip (F) and discard.

NOTE : Air filter may contain traces of oil and must be disposed of in an approved manner.

Unclip air filter support (E) and clean separator casing and inside of cowl

REPLACING THE OIL SEPARATOR ELEMENT

Remove cap head screws (G)

Gently tap the end cover (H) until it is clear of the separator casing.

Unscrew the oil separator element (J) and discard

NOTE : Oil separator element contains oil and must be disposed of in an approved manner.

Fit a new separator element. Ensure that the O ring (K) is in place. Do not over tighten.

Refit end cover (H). Ensure end cover is positioned correctly and bolt holes are in line. Be careful not to damage O ring (L) when refitting.

Refit cap head screws (G). Tighten to 14 Nm.

REPLACEMENT OF AIR INTAKE FILTER

Reinstate air filter support (E). Fit a new air filter (D) and secure both ends using the retaining clip (F).

Refit cowl (A) and secure in place with retaining screws (C). Reconnect pipe (B)

OIL DRAINING PROCEDURE

Remove filler plug (A), discard bonded seal (B)

Place container, at least 2.0 litre capacity, beneath drain plug (D) and combination cooler drain plug (E). PUAS models.

Carefully remove drain plug (D) and discard bonded seal (C). Collect all the oil that drains from the compressor.

CAUTION! Care must be taken when removing and reinstating drain plug (E) as excessive unsupported force could cause damage to the cooler.

Support the T piece with a spanner before loosening the drain plug retainer (F).

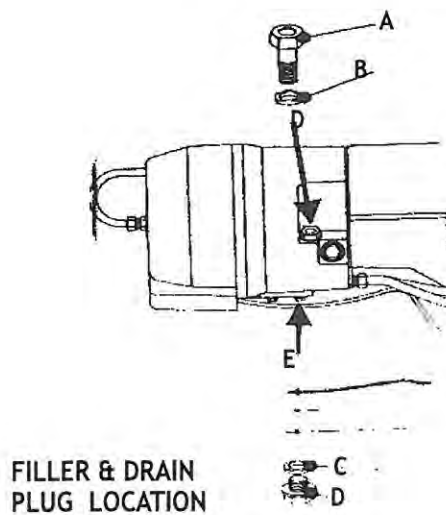
Remove drain plug (E) and collect oil from cooler.

NOTE! Any waste oil collected must be disposed of in an approved manner.

OIL FILLING PROCEDURE

Refit drain plug (E) and drain plug retainer (F). Ensure that the T piece is supported while tightening.

Refit drain plug (D) using a new bonded seal. Tighten to 20 Nm.



Fill to overflow with an approved oil (e.g. Fluid Force 2000)

Refit filler plug (A) using a new bonded seal. Tighten to 40Nm.

Test run compressor.

Check pressure, temperature and oil level.

Inspect for oil leaks.

FAULT FINDING

<i>Symptom</i>	<i>Action</i>
<p>Over Pressure Air end safety valve blowing Air pressure gauge reads : >10.4 bar (PURS) High temperature, low air output</p>	<p>Check that air end pressure gauge returns to ZERO when compressor is switched off. If not renew</p>
<p>Over Temperature Very hot to touch Low air output, high oil discharge Compressor seizes</p>	<p>Check temperature in thermometer pocket. If >95°C then:-</p> <p>a) Compressor location, check:- Ambient temperature too high (>40°C) Air intake temperature too high Air intake located near heat source Excessively dusty conditions</p> <p>b) Air end, check:- Oil level too low Wrong type or grade of oil Oil cooler blocked Prolonged running off load</p>
<p>Low Air Output (down on flow) Malfunction of air tools/equipment Pressure gauges reading low Rapid pressure loss from air end on stopping Rapid pressure loss from air line when compressor switched off</p>	<p>Carry out air delivery test. If less than specification, check air-end for"- Blocked air intake filter Blocked separator element M.P.V. stuck closed Air leaks from air end</p> <p>If correct, check air line system for:- Excessive air demand Air leak in air line system Restriction in air line system Pipework/equipment too small</p>
<p>High Oil Discharge (oil carry over) Oil visible in tools and equipment Excessive oil usage High temperature</p>	<p>Quantify oil discharge rate. If >5ppm, check for:- Wrong type of grade of oil Ambient temperature >40°C Air intake temperature too high Compressor not positioned on a level site Blocked oil return plug Faulty separator element</p> <p>If within specification, check for:- Excessive air demand Air leaks in air line system Too many stop/start cycles per hour</p>
<p>Low Operating Temperature In addition to the 4 main categories, running the compressor below its optimum operating temperature may cause an addition problem. If the compressor fails to reach its optimum temperature water vapour drawn in from atmosphere condenses inside the oil chamber.</p>	
<p>High oil discharge but oil level does not fall you have a problem. High power, low air output. Compressor seizes</p>	<p>Remove oil drain plug, if water drains out before oil then Make sure compressor is working (machine running) for 30 mm per 1 hour</p>

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PARTS LIST & DRAWINGS

JAVELIN

MACHINE REFERENCE	JA/1500
SERIAL NUMBER
CN CODE	8432 29 10

SALES/SPARES 01625 503030
Website www.sisis.com

Figure 1

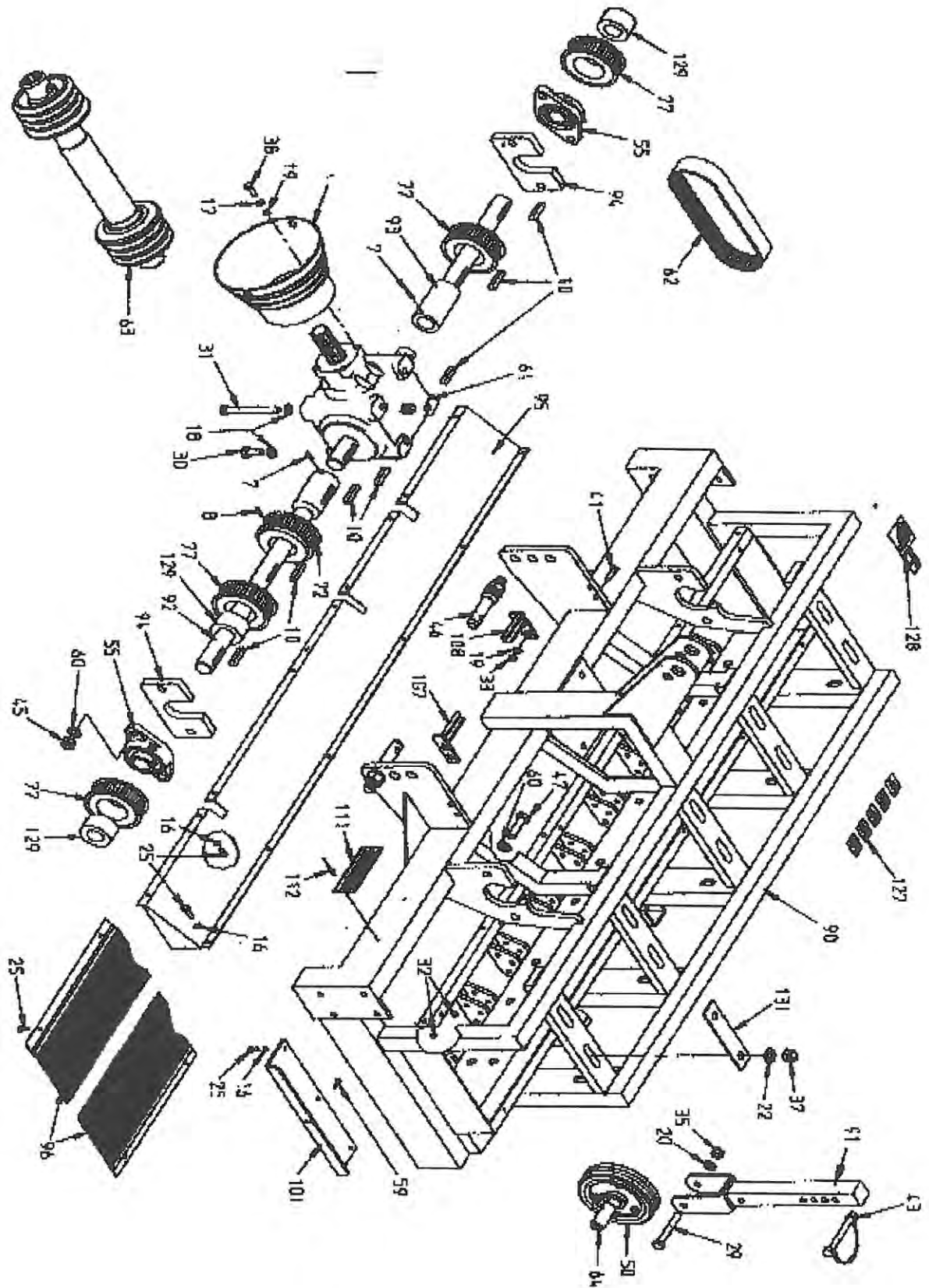


Figure 2

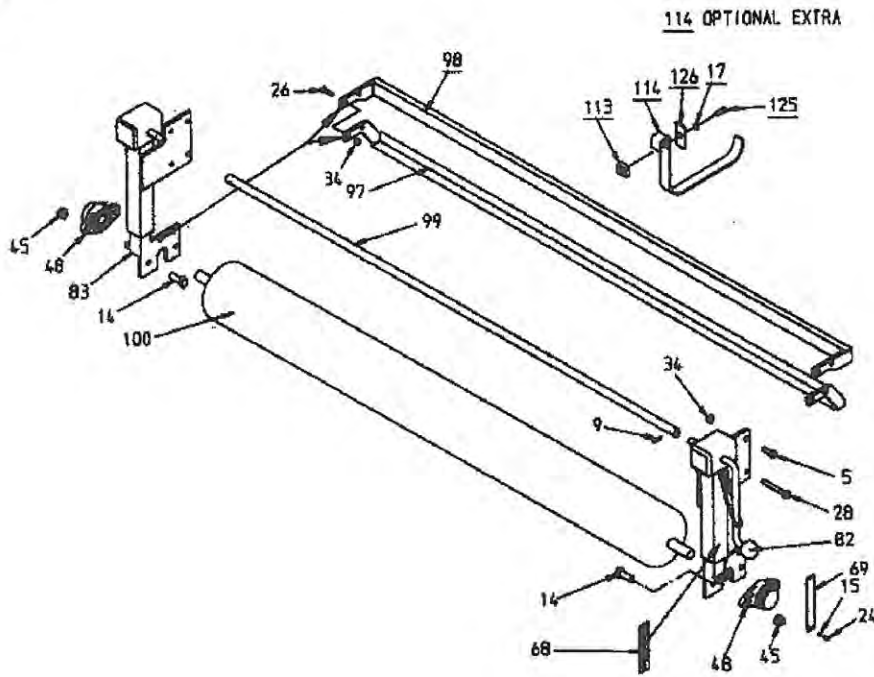


Figure 4

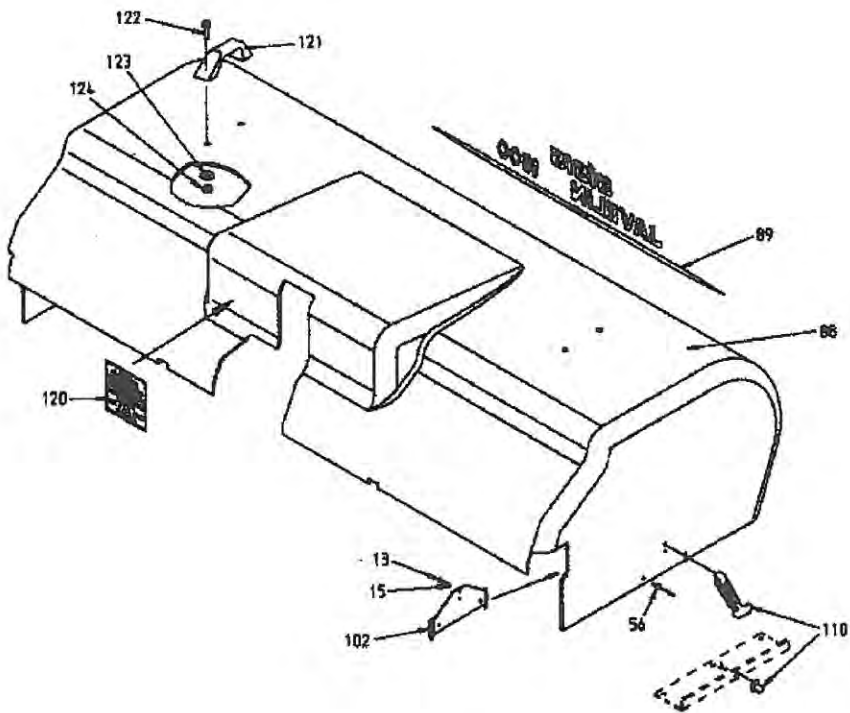
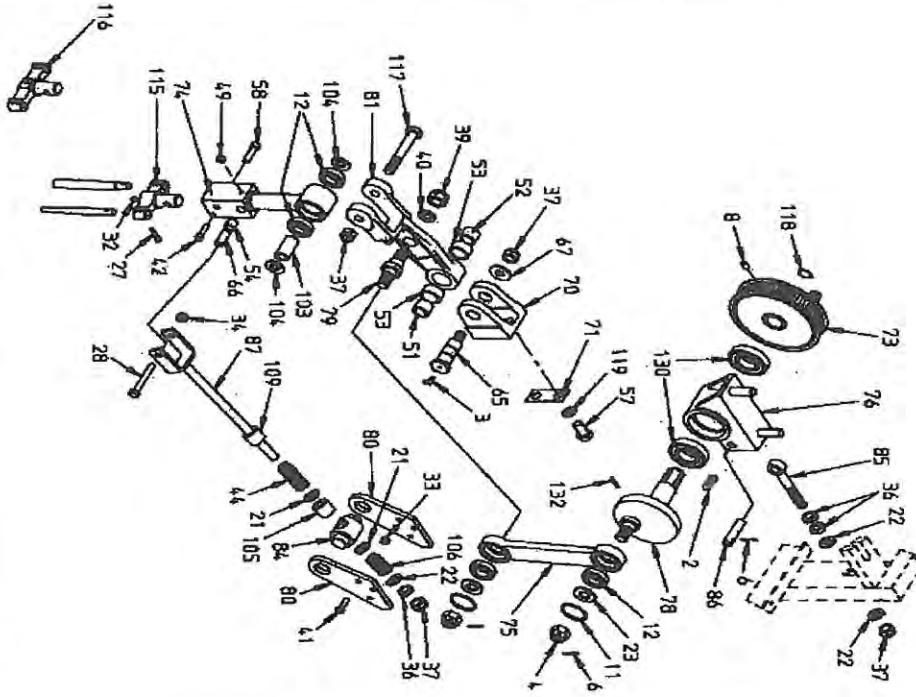
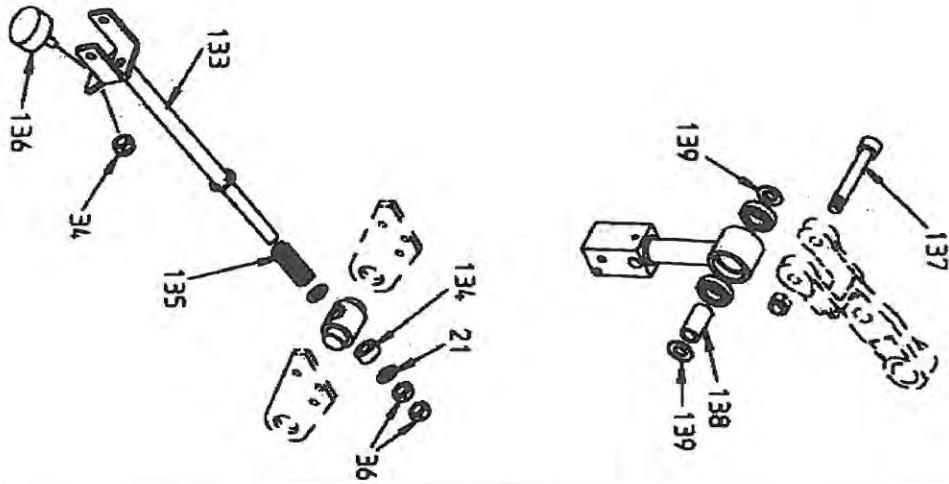


Figure 3

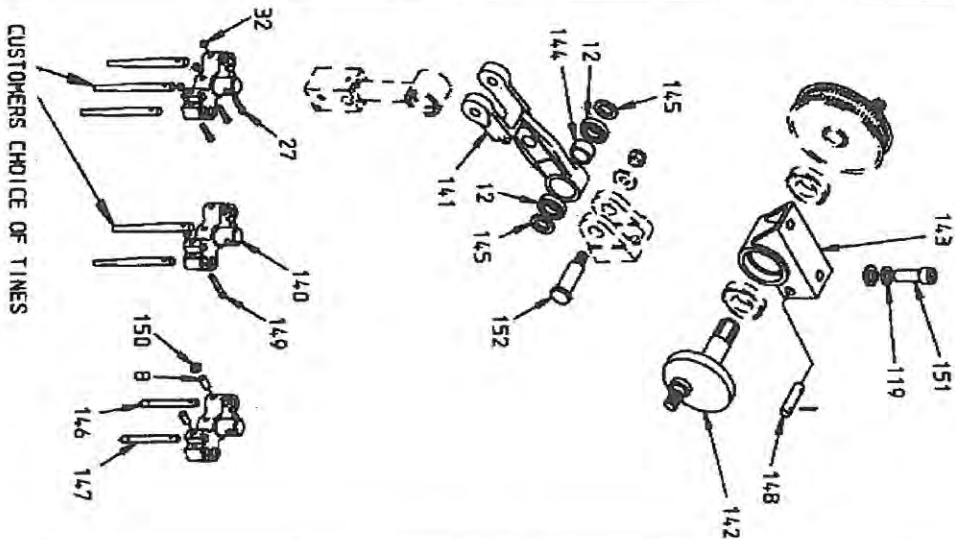
Up to and inc. serial number 978-31964



From serial number 978031971



From October 2006



GENERAL ASSEMBLY

<i>item</i>	<i>part</i>	<i>description</i>	<i>qty</i>	<i>item</i>	<i>part</i>	<i>description</i>	<i>qty</i>
1	1734	implement shield	1	57	21017	setscrew	20
2	1935	parallel key	5	58	22074	cap head setscrew	10
3	1948	grease nipple	10	59	21511	countersunk setscrew	2
4	1/1888	castle nut	20	60	21580	washer	8
5	1951	setscrew	4	61	21864	gearbox	1
6	1991	split pin	30	62	21891	toothed belt	5
7	8153	grub screw	4	63	33226	PTO shaft	1
8	8154	grub screw	27	64	33061	jockey wheel shaft	1
9	8161	sel lok pin	2	65	33198	swivel pin	10
10	8167	parallel key	7	66	33229	spacer bush	10
11	8190	circlip	20	67	33230	washer	10
12	8259	ball bearing	60	68	33539	depth label	1
13	8353	setscrew	4	69	33540	indicator	1
14	8916	setscrew	4	70	33802	pivot arm mount	10
15	1/1060	spring washer	8	71	33804	tab washer	10
16	1/1061	spring washer	22	72	35855	pulley 40 teeth	1
17	1/1062	spring washer	4	73	35856	pulley 64 teeth	5
18	1/1065	spring washer	4	74	36916	tine holder	10
19	1/1072	plain washer	8	75	35860	link	10
20	1/1076	plain washer	1	76	35864	bearing	5
21	1/1079	plain washer	30	77	21930	pulley 40 teeth	4
22	1/1080	plain washer	20	78	35910	cranksahft	5
23	36477	washer	20	79	35932	crankpin	10
24	1/1091	setscrew	2	80	35934	pivot plate	20
25	1/1095	setscrew	34	81	35935	pivot arm	10
26	1/1120	bolt	4	82	35937	left hand jack	1
27	8933	setscrew	20	83	35938	right hand jack	1
28	1/1134	bolt	10	84	35946	shaft swivel	10
29	1/1150	bolt	1	85	35959	adjuster	5
30	1/1153	setscrew	2	86	35960	swivel	5
31	1/1172	bolt	2	87	35961	spring fork	10
32	1/1218	nut	52	88	36264	cover	1
33	1/1220	nut	64	89	36297	label	1
34	1/1223	nut	20	90	36371	frame assembly	1
35	1/1228	nut	1	91	36381	drop leg	1
36	1/1230	nut	30	92	36383	left hand shaft	1
37	1.1231	nut	45	93	36384	right hand shaft	1
38	1/1436	setscrew	4	94	36385	bearing spacer	2
39	1/1634	nut	10	95	36386	infill panel	1
40	1/1635	spring washer	10	96	36387	brush	2
41	1/1647	setscrew	64	97	36388	roller scraper	1
42	20005	cap head screw	10				
43	8436	locking pin	1	99	36391	jacks crossbar	1
44	20316	spring	10	100	36392	roller	1
45	20321	nut	8	101	36393	cover mount	2
46	20327	implement mounting pin	2	102	36394	cover plate	2
47	20522	bolt	4	103	36395	bearing spacer	10
48	20623	bearing with end cap	2	104	36396	bearing washer	20
49	1947	grease nipple	10	105	36407	spacer	10
50	20726	wheel	1	106	21958	spring	10
51	20770	bearing inner race	10	107	36409	cover mount	1
52	20771	bearing inner race	10	108	36410	cover mount	1
53	20772	bearing	20	109	36411	collar	10
54	20774	bearing	20	110	HUHTM407	bonnet catch	2
55	20927	bearing	2	111	3600	nameplate	1
56	20997	pop rivet	4	112	1871	pop rivet	2

item	part	description	qty
115	36904	twin tine foot	10
116	36415	triple tine foot	10
117	20924	bolt	10
118	21895	circlip	5
119	1/1066	spring washer	30
120	31154	label	1
121	20491	handle	2
122	8228	setscrew	4
123	8303	washer	4
124	1/1217	nut	4

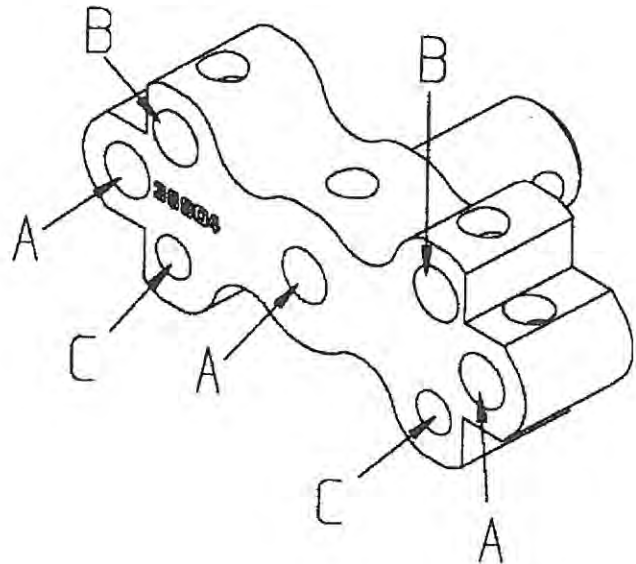
127	36514	timing label	1
128	36515	timing label	1
129	21935	taper lock bush	4
130	20722	bearing	10
131	36500	cover plate	5
132	20444	sel lok pin	5
133	36651	spring fork	10
134	36407	rubber spacer	10
135	21987	compression spring	10
136	20080	rubber buffer	10
137	21997	cap head bolt	10
138	36683	bearing spacer	10
139	36684	bearing washer	20
140	36904	multi tine foot	10
141	36911	pivot arm	10
142	36913	cranksahft	5
143	36914	bearing unit	5
144	36917	spacer	10
145	36918	washer	20
147	36949	plain aer tine	10
148	37198	swivel	5
149	22110	caphead bolt	20
150	1/1221	lock nut	20
151	22277	caphead bolt	10

TINE PLATE ASSEMBLY

item	part	description	qty
1	31623	tine plate	10
2	31606	tine	80
3	1424	countersunk head setscrew	20
4	1228	nyloc nut	20
5	1/1220	nyloc nut	80
6	1/1221	half nut	80

VIEW OF BOTTOM OF MULTI TINE FOOT

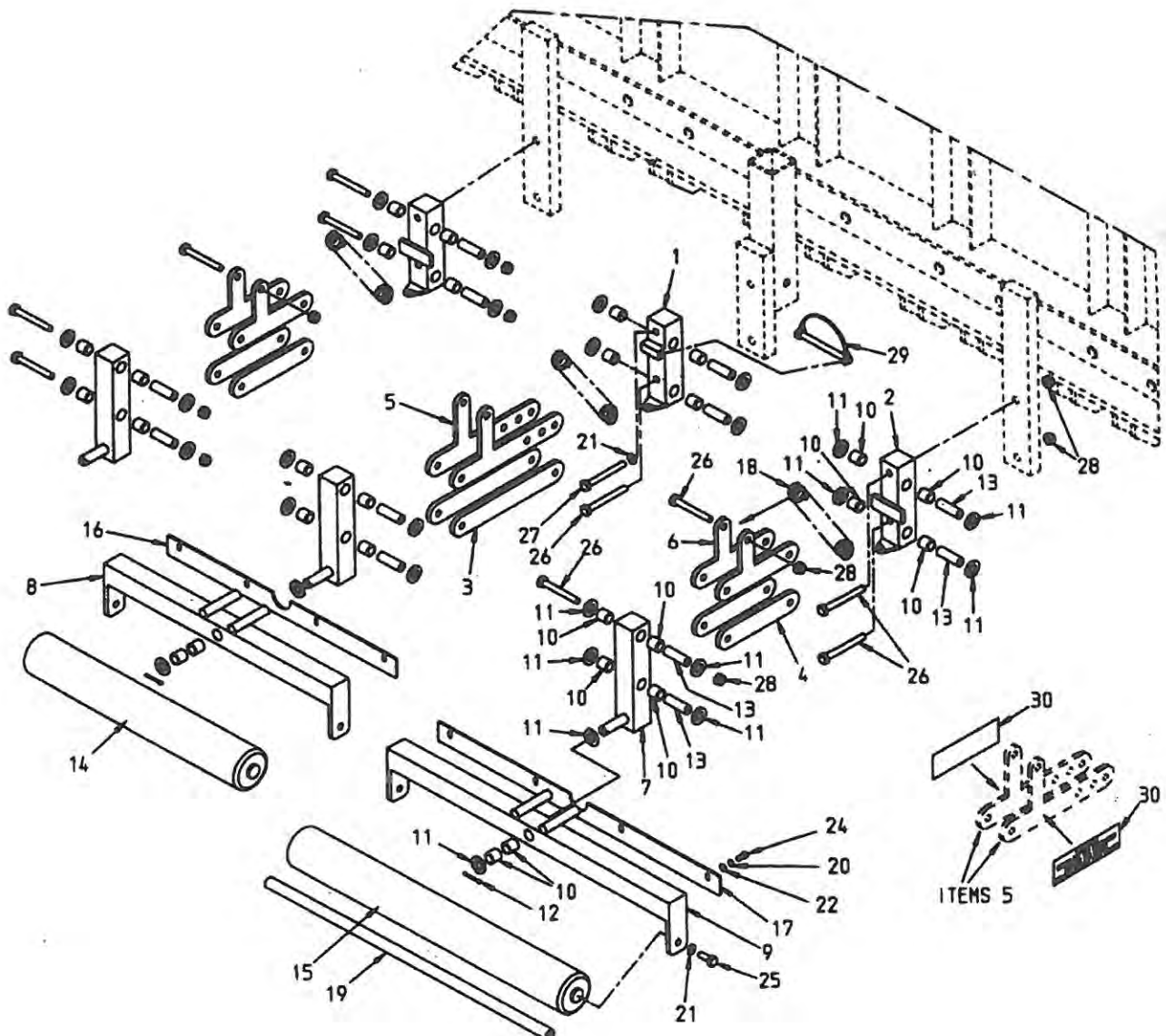
- A 2in spacing
B 3inch spacing
C air tines

**TURF RETAINER (optional extra)**

item	part	description	qty
17	1/1062	spring washer	31
98	36389	turf retainer mount	1
113	21308	nut	31
114	36390	turf retainer	31
125	1/1105	bolt	31
126	36489	clamp	31

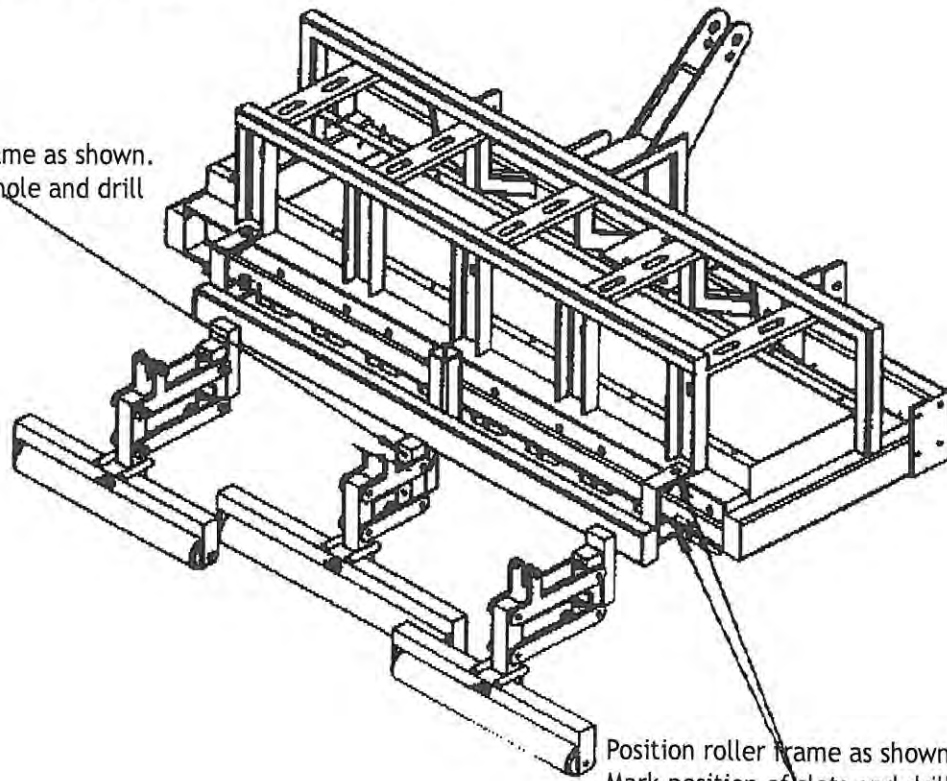
PRESSURE ROLLER Mk. 2

item	part	description	qty	item	part	description	qty
1	36601	pivot bracket	1	16	33593	scraper	1
2	32462	pivot bracket	2	17	32464	scraper	2
3	32460	bottom link arm	2	18	20692	spring	3
4	36603	bottom link arm	4	19	32457	roller shaft	2
5	32459	top arm	2	20	1/1061	spring washer	12
6	36602	top link arm	4	21	1/1063	spring washer	7
7	32463	roller pivot bracket	3	22	1/1071	washer	12
8	33592	roller frame	1	23	1/1073	washer	36
9	32458	roller frame	2	24	1/1095	setscrew	12
10	20606	bush	28	25	1/1118	setscrew	6
11	1/1080	washer	28	26	1/1134	bolt	20
12	1044	split pin	3	27	1/1228	bolt	1
13	32461	pivot pin	12	28	1/1223	nyloc nut	20
14	33591	roller	1	29	20274	locking pin	1
15	7226	roller	2	30	37381	remove pin label	4

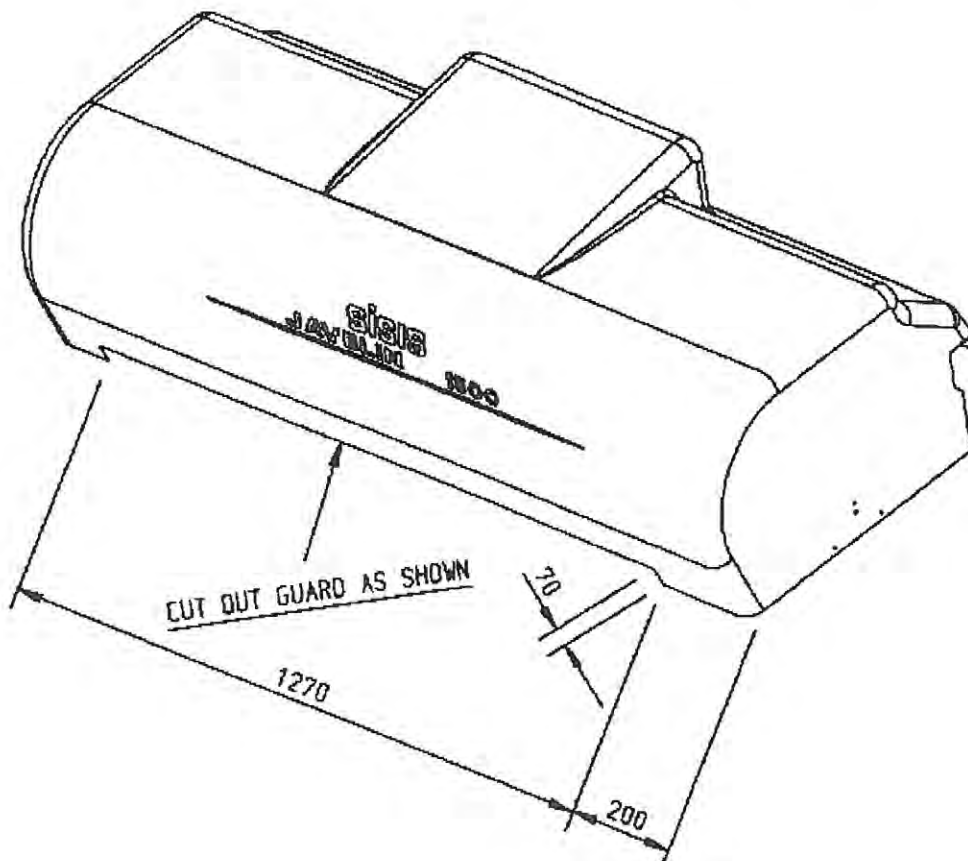


PRESSURE ROLLER RETRO FIT

Position roller frame as shown.
Mark position of hole and drill
1 off \varnothing 11 hole



Position roller frame as shown.
Mark position of slots and drill
4 off \varnothing 13 hole





PARTS LIST & DRAWINGS

AER-AID as fitted to Javelin

MACHINE REFERENCE

AA/JV

SERIAL NUMBER

.....

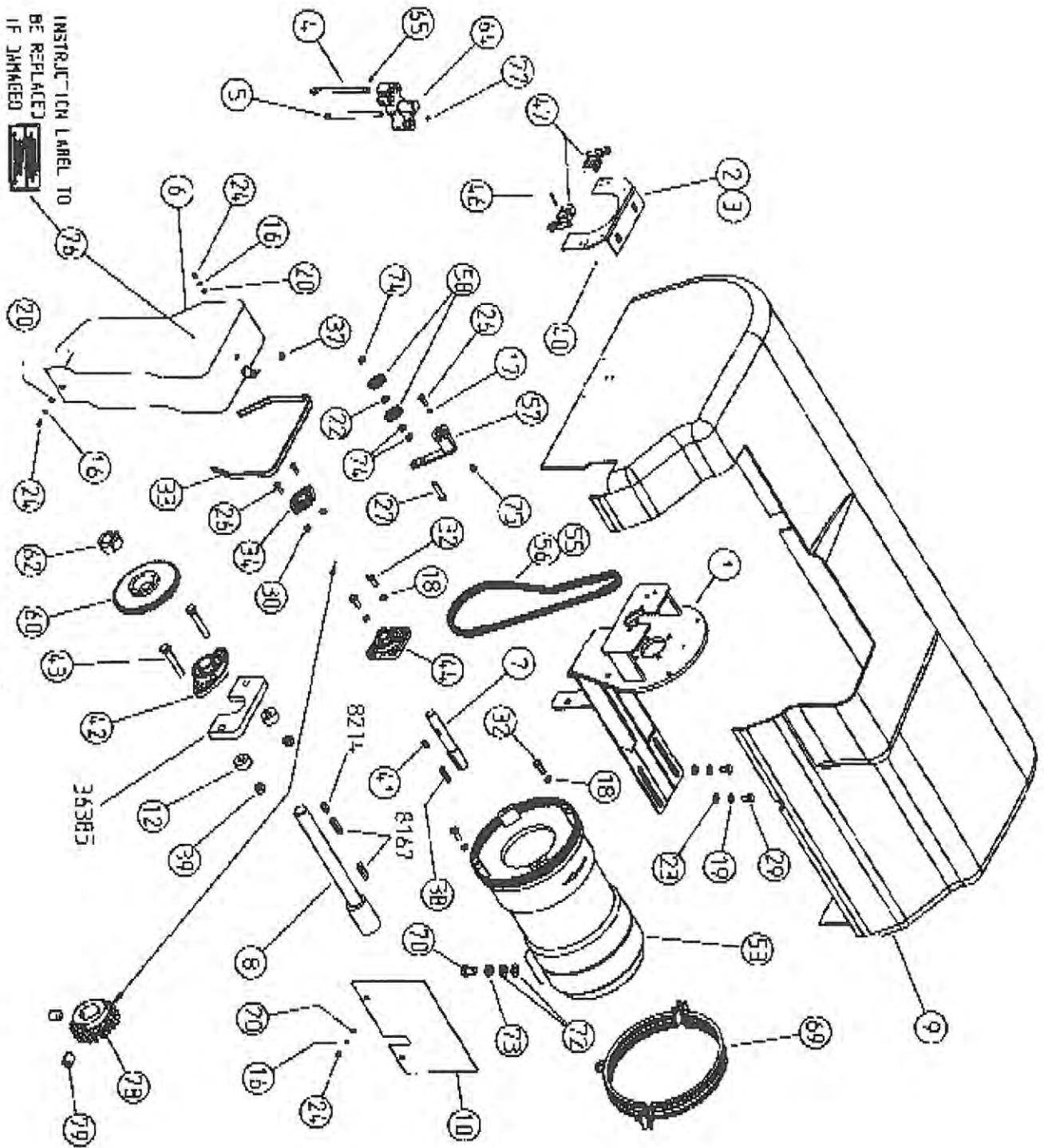
CN CODE

8432 29 10

SALES/SPARES 01625 503030

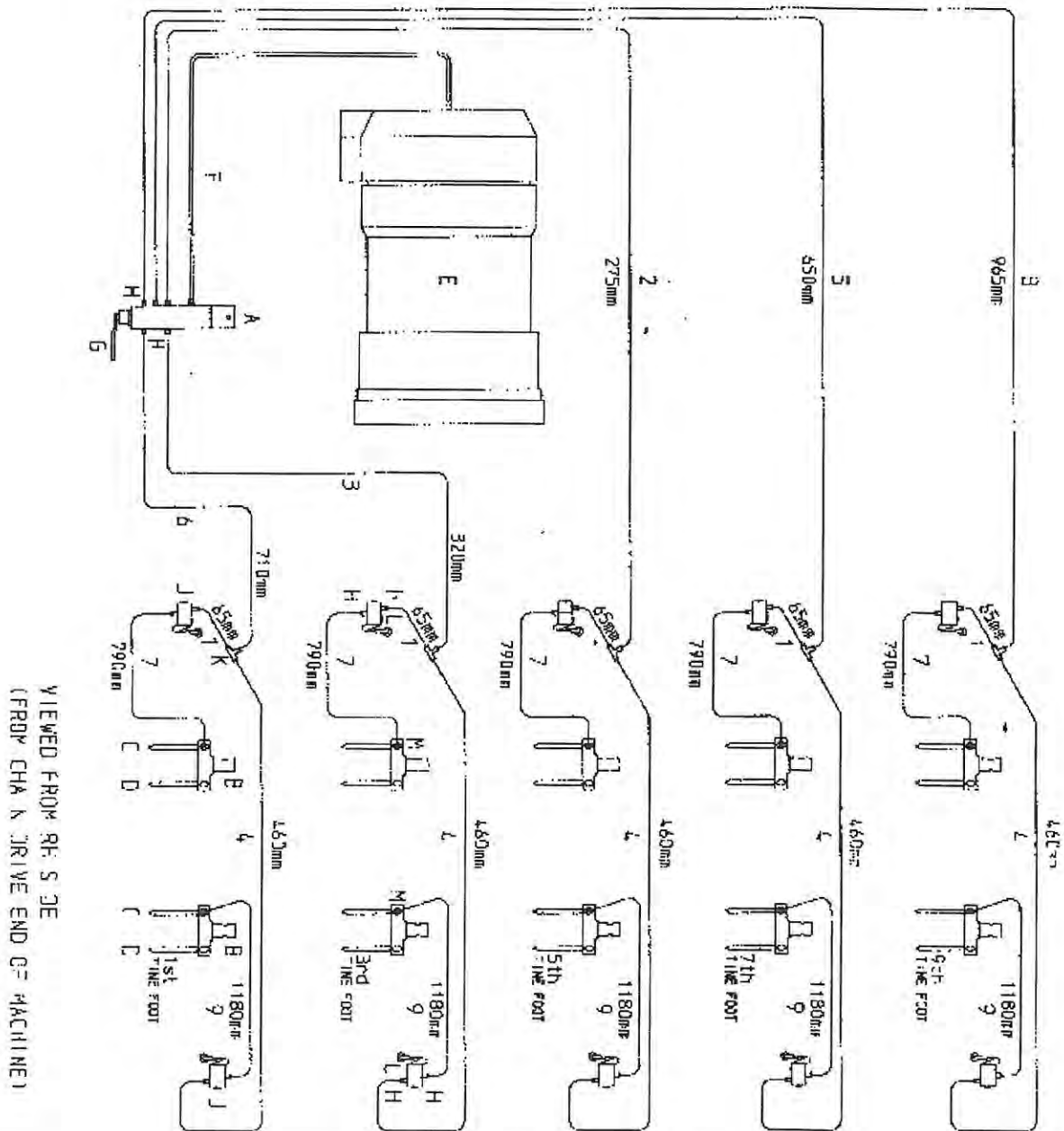
Website www.sisis.com

<i>item</i>	<i>part</i>	<i>description</i>	<i>qty</i>	<i>item</i>	<i>part</i>	<i>description</i>	<i>qty</i>
1	36825	compressor bracket	1	59	22056	parallel rect key	1
2	36831	valve plate LH	2	60	22057	chain pinion	1
3	36832	valve plate RH	3				
4	36948	air tine	10	62	22059	taper ock bush	1
5	36949	plain air tine	10				
6	36933	chain guard	1	64	39604	multi tine foot	10
7	36838	compressor shaft	1	65	8154	socket setscrew	20
8	36839	drive shaft	1	66	1356	cable tie	40
9	36840	cover	1	67	11163	cable tie	6
10	36843	cover plate	1	68	36869	decal	2
11	36844	mainifold lock	1	69	22070	compressor band	1
12	36846	spacer	2	70	22071	setscrew	1
13	36848	decal	2	71	35898	spacer	1
14	36849	decal	2	72	1/1079	washer	2
15	36862	hose	1	73	1/1066	spring washer	1
16	1/1061	spring washer	7	74	1/1222	half nut	3
17	1/1062	spring washer	1	75	1/1671	setscrew	1
18	1/1063	spring washer	8	76	36934	decal	1
19	1/1065	spring washer	4	77	8067	socket setscrew	10
20	1/1071	washer	5	78	37196	chain pinion	1
21	1/1072	washer	3	79	8153	grub screw	2
22	1/1073	washer	5				
23	1/1078	washer	4				
24	1/1094	setscrew	5				
25	1/1100	bolt	2				
26	1/1105	setscrew	3				
27	1/1125	setscrew	1				
28	1/1141	bolt	1				
29	1/1152	setscrew	4				
30	1/1220	nyloc nut	4				
31	1/1221	half nut	1				
32	1951	setscrew	8				
33	3171	rubber strip	3m				
34	8032	bearing	1				
35	8217	adaptor	1				
36	8227	bonded washer	1				
37	20056	blanking plug	1				
38	20126	parallel key	1				
39	20321	nyloc nut	2				
40	20431	nyloc nut	35				
41	20684	parallel rect. key	1				
42	20927	bearing	1				
43	22061	bolt	2				
44	22041	bearing	1				
45	22042	setscrew	2				
46	22043	setscrew	30				
47	22044	roller lever valve	10				
48	22045	push in T connector	5				
49	22046	male stud	25				
50	22047	plug with sealing ring	10				
51	22048	tubing	16m				
52	22049	ball valve	1				
53	22050	compressor	1				
54	22051	male stud	10				
55	22052	roller chain	1				
56	22053	half link	1				
57	22054	tensioner	1				
58	22055	sprocket	2				



PNEUMATIC DIAGRAM issue 2 Viewed from Rh side (from chain drive end of machine)

item	part	description	qty	item	part	description	qty
A	36844	manifold block	1	1	22048	tubing 65mm long	5
B	36904	twin tine foot	10	2	22048	tubing 275mm long	1
C	336948	air tine	5	3	22048	tubing 320mm long	1
D	36949	plain air tine	5	4	22048	tubing 460mm long	5
E	22050	compressor	1	5	22048	tubing 650mm long	1
F	36862	hose	1	6	22048	tubing 710mm long	1
G	22049	ball valve	1	7	22048	tubing 790mm long	5
H	22046	male stud	25	8	22048	tubing 965mm long	1
J	22044	roller lever valve	10	9	22048	tubing 1180mm long	5
K	22045	T connector	5				
L	22047	plug + sealing ring	10				
M	22051	male stud	10				



VIEWED FROM RH SIDE
(FROM CHAIN DRIVE END OF MACHINE)

