



DTX 300

DTX 400

DTX 4/600

Hydraulic Alligator Shear

Instructions

Use and Maintenance

Spare Parts

GENSCO EQUIPMENT (1990) INC
53 Carlaw Avenue, Toronto, Canada M4M 2R6
Tel: 416-465-7521 Fax: 416-465-44899

ACROSS THE USA 1-800-268-6797
EMAIL: info@genscoequip.com
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WARNING

Read related safety precautions before operating this machine. Failure to follow safety instructions may result in serious personal injury.

WARNING

In order to clearly show details of this machine, some covers, shields, guards, barriers, devices, or doors, have either been removed or shown in an "open" position. All such protective components must be installed in position before operating this machine. Failure to follow this instruction may result in serious personal injury.

WARNING

Failure to follow instructions on this page may result in serious personal injury.

SAFETY PRECAUTIONS

IMPORTANT

These safety precautions have been prepared to assist the operator and maintenance personnel in practicing good shop safety procedures.

Operator and maintenance personnel must read and understand these precautions completely before operating, setting up, running, or performing maintenance on the machine.

These precautions are to be used as a guide to supplement safety precautions and warnings in the following:

- a. All other manuals pertaining to the machine.
- b. Local, plant, and shop safety rules and codes.
- c. Federal and national safety laws and regulations.

See the latest edition of the OCCUPATIONAL SAFETY AND HEALTH STANDARDS, available from the DEPARTMENT OF LABOR, WASHINGTON, D.C. LABOR, WASHINGTON, D.C.

GENERAL SAFETY INSTRUCTIONS & CONSIDERATIONS

PERSONAL SAFETY

Machine owners, operators, setup personnel, maintenance, and service personnel, must be aware of the fact that constant day-to-day safety procedures are a vital part of their job. Accident prevention must be one of the principal objectives of the job, regardless of what activity is involved.

Know and respect your machinery. Read and practice the prescribed safety and checking procedures. Make sure that everyone who works for, with, or near you, fully understands and, more importantly, complies with the following safety precautions and procedures when operating this machine.

Sudden movements, loud noises, horseplay, etc., must be avoided. These distractions may result in unsafe conditions for those working near the machinery.

Observe and follow safety instructions such as, *NO SMOKING*, *HIGH VOLTAGE*, *DANGER*, etc., in your working area.

Accidents can occur that result in serious personal injury to yourself or others due to clothing and other articles becoming entangled in cutters, hand wheels, levers, or moving machine elements. The following suggestions, if followed, will help you to avoid such accidents: neckties, scarfs, gloves, loose hanging clothing, and jewelry such as watches, rings, or necklaces must not be worn around moving machinery. Restrain long hair with a cap or net. Wear gloves when handling rough, sharp, or hot parts.

Use safety protective equipment. Wear clean and approved eye or face protection. Safety-toe shoes with slip-proof soles can help you avoid injury. Keep your protective equipment in good condition.

Never operate or service this equipment if affected by alcohol, drugs or other substances or conditions which decrease alertness or judgment.

WARNING

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WORK AREA SAFETY

Always keep your work area clean. Dirty work areas with such hazards as oil, debris, or water on the floor, may cause someone to fall to the floor,,into the machine, or onto other objects resulting in serious personal injury.

Make sure your work area is free of hazardous obstructions and be aware of protruding machine parts.

Return tools and similar equipment to their proper storage place immediately after use. Keep work benches neat, orderly, and clean.

Report unsafe working conditions to your supervisor or safety department; items such as: worn or broken flooring, as well as ladders, handrails, platforms or scaffolds, that are unstable or slippery. Items such as these, must be reported and repaired before use. Do not use skids, work pieces, stock, machines, tote pans,, and boxes as makeshift climbing aides.

TOOL SAFETY

Sharp-edged cutting tools must be handled with gloves or a shop cloth. Inspect cutting tools before use and reject defective tools.

Remove hand tooling such as wrenches, measuring equipment, hammers, and other miscellaneous parts from the machine immediately after usage.

LIFTING AND CARRYING SAFETY

Contact a supervisor if you have any questions or are not sure about the proper procedures for lifting and carrying.

Before lifting or carrying an object, determine the weight and size by referring to such things as tags, shipping data, labels, marked information, or manuals.

Use power hoists or other mechanical lifting and carrying equipment for heavy, bulky, or hard-to-handle objects. Use hookup methods recommended by your safety department and know the signals for safely directing a crane operator.

Never place any part of your body under a suspended load or move a suspended load over any part of another person's body. Before lifting,,be certain that you have a safe spot for depositing the load. Never work on a component while it is hanging from a crane or other lifting mechanism.

Always inspect slings,,chains,, hoists,, and other lifting devices prior to use. Do not use lifting devices found to be defective or questionable.

Never exceed the safety rated capacity of cranes,,hoists,,slings,,eyebolts, and other lifting equipment. Follow standards and instructions applicable to any lifting equipment you use. (For example, ANSI Standard B18.15,,available from the American National Standards Institute. Inc., 1430 Broadway, New York, New York 10018, contains information concerning safe lifting loads for different size eyebolts, for various angles of lift, and application instructions for safe use of eyebolts.)

WARNING

Failure to follow instructions on this page may result in serious personal injury.

Before inserting an eyebolt, be certain that both the eyebolt and the hole have the same size and type threads. To attain safe working loads, at least 90% of the threaded portion of a standard forged eyebolt must be engaged.

INSTALLATION AND RELOCATION SAFETY

Before lifting the machine, consult the machine manual for proper methods and procedures.

An electrician must read and understand the electrical schematics prior to connecting the machine to the power source. After connecting the machine, test all aspects of the electrical system for proper functioning. Always make sure the machine is grounded properly. Place all selector switches in their OFF or neutral (disengaged) position. The doors of the main electrical cabinet must be closed and the main disconnect switch must be in the OFF position after the power source connection is complete.

Always lock the main disconnect device in the OFF position if the machine is left unattended unless the machine is part of an unmanned manufacturing system and in a production cycle.

When the machine is installed, be sure that the motors rotate in the proper indicated direction.

SETUP AND OPERATION SAFETY

Read and understand all the safety instructions before setting up, operating, or servicing this machine. Assign only qualified personnel, instructed in safety and all machine functions, to operate or service this machine.

Operators and maintenance personnel must carefully read, understand, and fully comply with all machine-mounted warning and instruction labels. Do not paint over, alter or deface these labels, or remove them from the machine. Replace all labels which become illegible.

Safety guards, shields, barriers, covers, and protective devices must be connected or in place before operating the machine.

All safety features, disengagements, and interlocks must be in place and functioning correctly prior to operation of this equipment. Never by-pass or wire around any safety device.

Keep all parts of your body off the machine table or table edge and out of the path of moving units, trip dogs, and trip plungers during operation. Items such as these should be clear of the working area. Never lean on a machine or reach over or through a machine. You can become entangled in tooling and other moving elements or you may accidentally activate start buttons, feed controls, rapid traverse controls, power work holding control, or similar devices.

WARNING

Failure to follow instructions on this page may result in serious personal injury.

During operation, be attentive to the machining process. Excessive vibration, unusual sounds, etc., can indicate problems requiring your immediate attention. Watch for conditions such as packed chips or grit which can cause breakage of tooling or machine elements.

Shut off power to the machine when leaving the operating area or at the end of your work period. Never leave the machine running unattended unless the machine is part of an unattended manufacturing system and in a production cycle. Turn the master disconnect device to the OFF position before cleaning the machine at the end of the work day or when guards or covers are removed that expose hazardous areas.

MAINTENANCE SAFETY

Do not attempt to perform maintenance on this machine until you read and understand all the safety instructions.

Assign only qualified service or maintenance personnel to perform maintenance and repair work on this machine. Consult the service manual before attempting any service or repair work and when in doubt contact the factory. Use only original replacement parts: others may impair the safety of the machine. Before performing maintenance or service work, Warning or Danger signs must be placed conspicuously about the machine. Before detaching counterweights or driving mechanisms, vertical sliding parts must be blocked properly. See the section on HOW TO SET-UP AND OPERATE YOUR MACHINE in this manual for proper dismantling procedures.

Before removing or opening any electrical enclosure, cover, plate, or door, be sure that the Main Disconnect Switch is in the OFF position. If any tool is required to remove a guard, cover, bracket, or any basic part of this machine, place the Main Disconnect Switch in the OFF position and lock it in the OFF position. If possible, post a sign at the disconnect switch indicating that maintenance is being performed.

Whenever maintenance is to be performed in an area away from the disconnect and the disconnect is not locked, tag all start button stations with a DO NOT START tag. Adequate precautions, such as locks on circuit breakers, warning notices, or other equally effective means must be taken to prevent electrical equipment from being electrically activated when maintenance work is being performed.

Before attempting to adjust, repair, or perform maintenance on electrical circuits connected with yellow wires, first find the source of power, turn it off, and lock it in the OFF position. Machine tool interlock control circuits connected with yellow wires are powered from a source away from the machine and carry voltage even when the machine's main disconnect device is turned to the OFF position.

When removing electrical equipment, place number or labeled tags on those wires not marked. If wiring is replaced, be sure it is of the same type, length, size, and has the same load carrying capacity.

Close and securely fasten all guards, shields, covers, plates, or doors before power is reconnected.

DANGER: HIGH VOLTAGE

Before working on any electrical circuits, turn the machine Main Disconnect Device "OFF" and lock it.

**UNDER NO
CIRCUMSTANCES MAY ANY
MAINTENANCE,
CLEANING, REPAIR,
ALTERATION,
ASSEMBLY, OR
DISASSEMBLY OF THIS
MACHINE, OR ANY OF ITS
PARTS, BE ATTEMPTED
WHILE THE MACHINE IS IN
OPERATION OR
CONNECTED TO POWER.**

**FAILURE TO FOLLOW THIS
INSTRUCTION MAY RESULT
IN DEATH OR SERIOUS
PERSONAL SHOCK INJURY.**

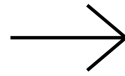
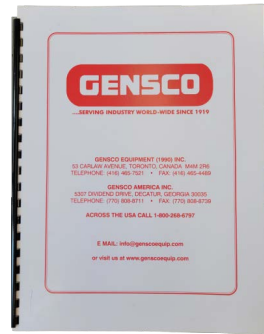
WARNING

Failure to follow instructions on this page may result in serious personal injury.

An electrical technician must analyze the electrical system to determine the possible use of power retaining devices such as capacitors. Such power retaining devices must be disconnected, discharged, or made safe before maintenance is performed.

Working space around electrical equipment must be clear of obstructions. Provide adequate illumination to allow for proper operation and maintenance.

DO
NOT
OPERATE
WITHOUT
GUARDS
IN PLACE



THIS MANUAL MUST BE KEPT WITH THE MACHINE AND SHOWN AND EXPLAINED TO EVERY EMPLOYEE. IT IS THE OWNER'S RESPONSIBILITY TO EXPLAIN SAFETY AND USER GUIDELINES AND TRAIN THE EMPLOYEE IN THE SAFE OPERATION OF THIS MACHINE.

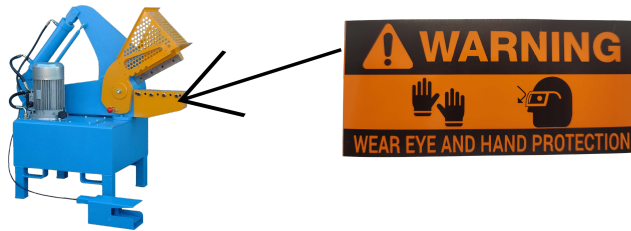
CE MANUEL DOIT ÊTRE CONSERVÉ AVEC LA MACHINE ET MONTRÉ ET EXPLIQUÉ À CHAQUE EMPLOYÉ. IL EST DE LA RESPONSABILITÉ DU PROPRIÉTAIRE D'EXPLIQUER LES DIRECTIVES DE SÉCURITÉ ET D'UTILISATION ET DE FORMER LES EMPLOYÉS À L'UTILISATION SÉCURITAIRE DE CETTE MACHINE.

ESTE MANUAL DEBE MANTENERSE CON LA MÁQUINA Y MOSTRARSE Y EXPLICAR A CADA EMPLOEADO. ES RESPONSABILIDAD DEL PROPIETARIO EXPLICAR LAS NORMAS DE SEGURIDAD Y USO Y CAPACITAR A LOS EMPLEADOS EN LA OPERACIÓN SEGURA DE ESTA MÁQUINA.

DANGER!

READ BEFORE OPERATING MACHINE

- ❖ **IF THIS MACHINE DOES NOT HAVE A GUARD INSTALLED DO NOT OPERATE!**
- ❖ **ENSURE SAFETY STICKERS ARE IN PLACE, HAVE NOT BEEN REMOVED, AND ARE REPLACED AFTER MAINTANANCE OR IF FADED**
- ❖ **WEAR SAFETY GLOVES AND EYE PROTECTION AT ALL TIMES.**

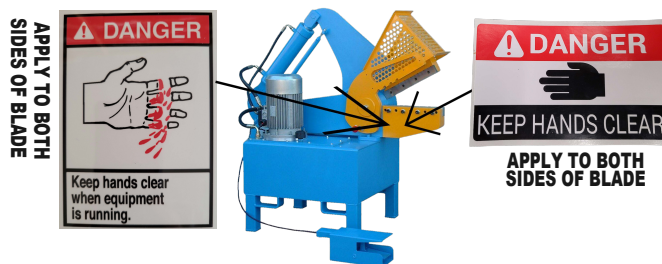


UNDER NO CIRCUMSTANCES IS THIS MACHINE TO BE OPERATED WITHOUT THE GUARD PROPERLY INSTALLED AND SET TO THE LOWEST POSSIBLE POSITION.



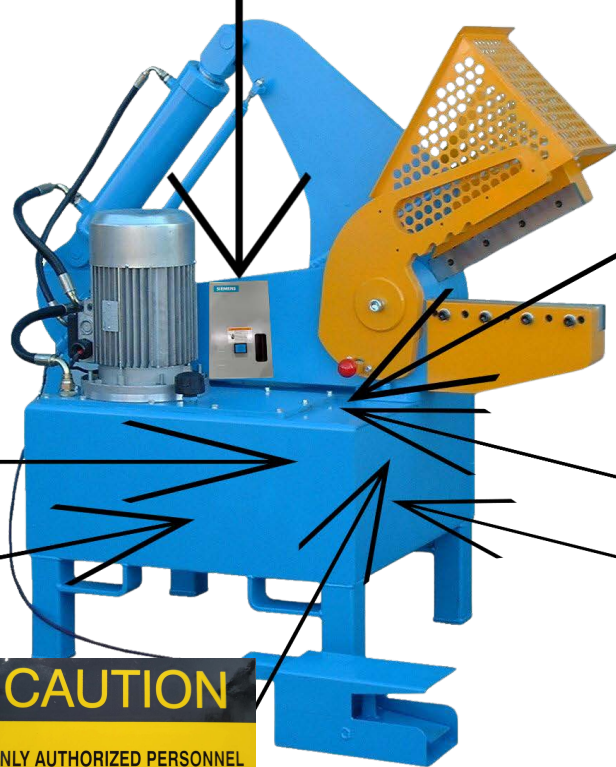
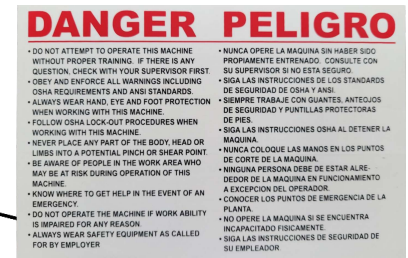
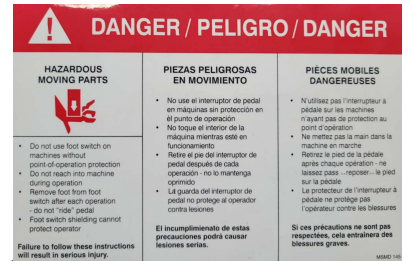
DO NOT REACH INTO THE MACHINE OR PLACE YOUR HANDS NEAR THE BLADES AT ANY TIME WITH THE MACHINE ON.

DO NOT ATTEMPT TO TOUCH THE BLADES OR TO CLEAN THE BLADES OR ANY PART OF THE SHEARING AREA WITH THE RUNNING.



DO NOT CLEAN THE MACHINE OR PERFORM ANY MAINTENANCE WITH THE MACHINE RUNNING.





KEEP THE MACHINE AND THE ENTIRE WORK AREA CLEAN.

DO NOT CLEAN UP ANY SCRAP AROUND THE MACHINE WITH THE MACHINE ON.

DO NOT FORCE MATERIAL INTO THE MACHINE.

DO NOT ATTEMPT TO SHEAR: ENCLOSED CONTAINERS, CYLINDERS, JARS, GAS AND PROPANE CYLINDERS AND ANYTHING THAT MAY CONTAIN EXPLOSIVE, VOLATILE OR ACIDIC MATERIAL. DO NOT ATTEMPT TO SHEAR HARDENED STEEL PINS OR ANY MATERIAL YOU ARE UNSURE OF. IF YOU ARE UNSURE OF WHAT YOU ARE SHEARING, STOP, TURN OFF MACHINE AND ASK FOR MORE INFORMATION.

KNOW WHO IS WORKING AROUND YOU AND MAKE SURE NO ONE ELSE COULD COME CLOSE TO THE SHEAR AREA OR COULD BE HURT BY OBJECTS THROWN WHEN SHEARED.



Place Behind

IT IS STRICTLY FORBIDDEN TO ATTEMPT ANY REPAIRS, MAINTENANCE, LUBRICATION OR CLEANING OF THIS MACHINE WHILE IT IS IN OPERATION. DISCONNECT, LOCK OUT AND TAG OUT MACHINE PER OSHA OR LOCAL EQUIPELNT REQUIREMENTS. FAILURE TO DO SO CAN CAUSE DEATH OF SERIOUS INJURY.

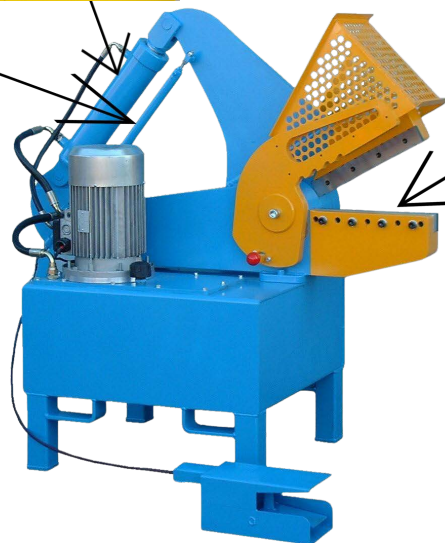
DANGER!

READ BEFORE OPERATING MACHINE

Moving hydraulic cylinder. Potential pinch point. Do not touch moving rod.



Moving control rod for jaw opening. Potential pinch point. Do not touch rod or spring mechanism while in operation.



Moving shear blade. Keep hands away from blades at all times. Do not rest hand on knife seat. Use guard at all times. Keep hand outside of guard.

DAILY MAINTANANCE

READ BEFORE OPERATING MACHINE

HYDRAULIC HOSES & FITTINGS

High pressure hydraulic oil. Check daily for leaks. Maintain hoses in good condition. Keep clean.

ELECTRICAL MOTOR, WIRING & CONTROL PANEL

Maintain all components. Keep clean check for cut electrical wires daily.

FOOT PEDAL

Make sure foot pedal and control cable are working properly. Keep foot pedal area clean.

WARNING

USE OF FOOT CONTROLS ON MACHINERY, THAT LACK EFFECTIVE POINT OF OPERATION SAFE GUARDS, CAN CAUSE SERIOUS INJURY TO THE OPERATOR!!

Foot controls should only be used where "Point of Operation" and "Pinch Point" guarding devices have been properly installed and are utilized so that it is IMPOSSIBLE for the operator's hands and fingers to remain within the point of operation during the machine cycle.

IT IS THE RESPONSIBILITY OF THE USER to determine the suitability of a foot control for the user's intended use. Also to determine that the foot control chosen by the user, wiring up and installation, will comply with all Federal State, local safety, health regulations and codes.

DEFINITIONS:

POINT OF OPERATION- The point or area of the machine or equipment where the piece of material is actually positioned and work is being performed during any process such as cutting, shearing, forming, welding, riveting, assembling, etc.

PINCH POINT- Any point at which it is possible for a portion of the body to be caught and injured between a moving machine, equipment, or work piece parts.

DELTAX RESERVES THE RIGHT TO ALTER THE PRODUCT SPECIFICATION OR TECHNICAL INFORMATION IN ANY WAY WITHOUT GIVING PRIOR NOTIFICATION.

ALL RIGHTS AND TECHNICAL MATTERS RELATING TO THE PRODUCT REMAIN THE PROPERTY OF DELTAX AND MAY NOT BE COPIED, REPRODUCED MANUFACTURED OR USED FOR DESIGN DERIVATIVES NOR ANY INFORMATION TRANSFERRED IN WHOLE OR IN PART, TO ANY UNAUTHORISED PARTY WITHOUT THE EXPRESSLY WRITTEN CONSENT OF THE ABOVE NAMED COMPANY.

THE WARRANTY OF THIS MACHINE CAN BE INVALIDATED BY OPERATIONAL ABUSE AND, IN CERTAIN CIRCUMSTANCES, THE OPERATOR MAY BE LIABLE UNDER SECTIONS OF THE HEALTH AND SAFETY AT WORK ACT 1974. IT IS STRONGLY URGED THAT THE CUSTOMER STUDY THE ACT BEFORE OPERATING THE MACHINERY. IT IS RECOMMENDED THAT PROTECTIVE CLOTHING IS WORN WHILST OPERATING THE MACHINERY.

WARNING

DO NOT ATTEMPT TO TOUCH OR CLEAN THE BLADES WITH THE MACHINE ON.

DO NOT ATTEMPT TO FORCE MATERIAL INTO THE MACHINE.

DO NOT ATTEMPT TO SHEAR: ENCLOSED VESSELS, CYLINDERS, GAS BOTTLES, ETC. EXPLOSIVES, VOLATILE OR ACID MATERIAL, HARDENED STEEL PINS, OR OTHER HARDENED PARTS.

ALWAYS ISOLATE THE MACHINE BY SWITCHING OFF AND REMOVING THE PLUG BEFORE ANY SERVICE WORK IS CARRIED OUT, OR WHEN NOT IN USE. ALWAYS KEEP THE MACHINE IN A CLEAN, DRY AND TIDY ENVIROMENT. ALWAYS WORK SAFELY WITH DUE RESPECT TO YOURSELF AND OTHERS.



WARRANTY

ALL ORDERS FOR PRODUCT ARE SUBJECT TO THE FOLLOWING:

Gensco Equipment (1990) Inc. warrants each product to be free from defects in material and workmanship under normal use and service. Gensco Equipment's obligation under this warranty is limited to repairing or supplying, at your option: a part or parts to replace any defective part or parts which fail, within one (1) year from date of original sale. No product shall be returned without prior authorized approval, and if authorized, the transportation charges shall be prepaid to Gensco Equipment, Toronto, Canada, or Gensco America, Decatur, GA. Unauthorized returns will not be accepted.

The provisions of this warranty shall not apply to any part or parts which have been subject to misuse, negligence, or accident, or which have been repaired or altered outside of Gensco Equipment's service department in any way, so, as in the judgment of Gensco Equipment, to affect adversely its performance, stability, or reliability.

Gensco Equipment neither assumes nor authorizes anyone to assume on Gensco Equipment's behalf, any other obligation or liability for any loss or damage, either direct, incidental or consequential, resulting from, or arising out of, or in connection with, any of its defective part or parts.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANT ABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND OF ANY OTHER OBLIGATION OR LIABILITY ON THE PART OF GENSCO EQUIPMENT OF ANY NATURE WHATSOEVER.

RETURN POLICY

A Returned Goods Authorization must be obtained from Gensco Equipment prior to the return of any product. All shipments to us must be sent freight prepaid. Upon inspection, should the Quality Control Department determine the product to be defective, credit will be issued accordingly.

For product returned in an "as new" condition, the restocking charges are as follows:

RETURNED FROM DATE OF ORIGINAL SHIPMENT	STOCK ITEMS	SPECIAL ORDER ITEMS
120 Days	20%	50%

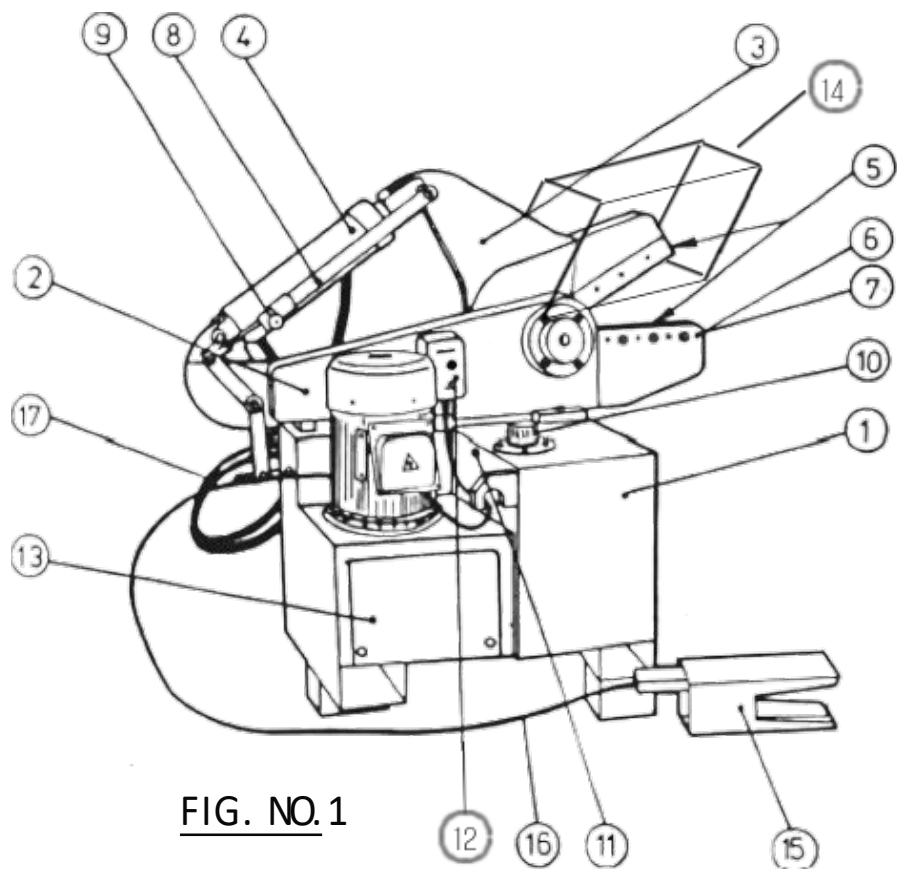


FIG. NO. 1

- | | |
|------------------------------|-------------------------------------|
| 1. Tank unit | 11. Hydraulic oil level sight glass |
| 2. Shear Body | 12. Electric control box |
| 3. Shear head | 13. Covers |
| 4. Hydraulic cylinder | 14. Guard |
| 5. Blades | 15. Foot control pedal |
| 6. Blade securing bolts | 16. Control cable |
| 7. Blade adjusting screws | 17. Incoming mains lead |
| 8. Stroke limiting cylinder | |
| 9. Stroke adjustment knob | |
| 10. Hydraulic oil filler cap | |

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HOW TO SET-UP AND OPERATE YOUR MACHINE

- a) Upon delivery it will be necessary to connect the electrics and foot control cable. These will be found coiled inside the machine, and can be accessed by the removal of the side cover mounted around the electrical box (see Fig. 1; items 12 & 13)
- b) The machine must be positioned on level hard standing.
- c) A wall isolator is required with a socket and a plug. 3 phase: 15 amp supply.
- d) Link the foot pedal and control cable together (see Fig. 1; items 15 & 16) as drawn below, taking great care not to overbend or deform the control cable.

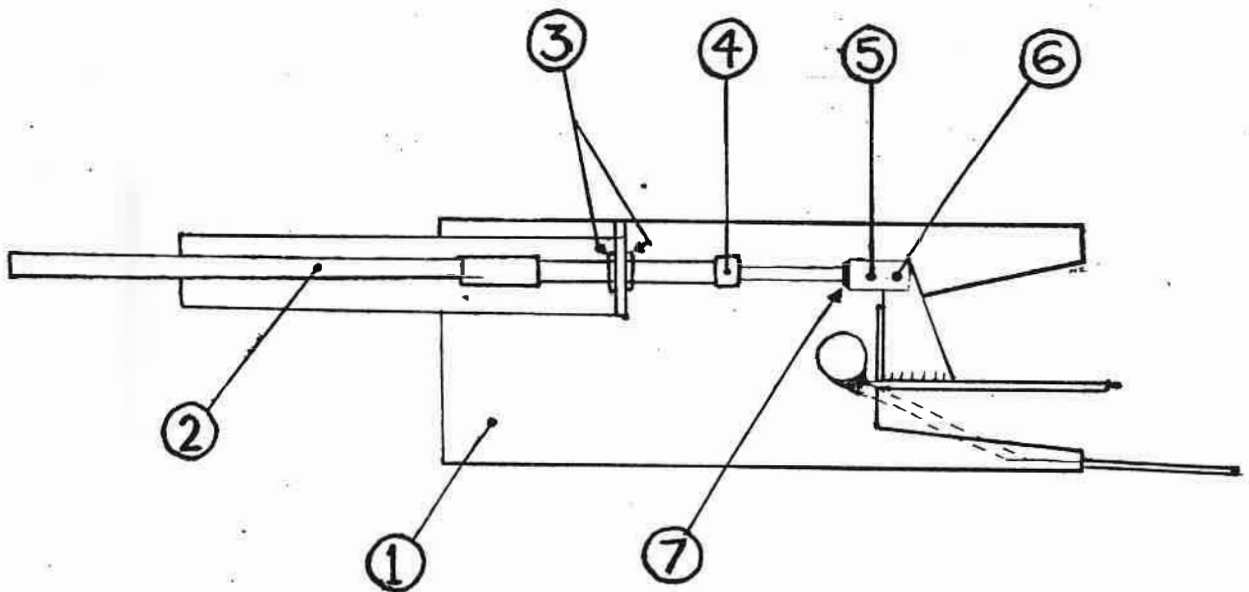


FIG.2

- | | |
|--------------------------|--------------------------------|
| 1. FOOT PEDAL | 4. PROTECTION CAP |
| 2. CONTROL CABLE | 5. CLEVIS |
| 3. ADJUSTER AND LOCKNUTS | 6. CLEVIS RETAINING PIN & CLIP |
| | 7. LOCKNUT |

Assemble the items as shown so that when the foot pedal is fully depressed, a gap of approximately 2mm. exists. This position being adjustable by item 3 in Fig. 2. Do not overtighten these locknuts.

- e) A competent electrician is required for any electrical installation or service. Ensures rotation is correct (i.e. with the rear cover removed the motors shall run in the same direction as the white arrow or when viewed from the rear in a clockwise direction. Single phase machines can be directly plugged into a socket as a plug is supplied.
- f) The equipment runs on a hydraulic pressure system which is set on leaving the factory and should not be tampered with.

OPERATION

THE WARRANTY OF THIS MACHINE CAN BE INVALIDATED BY OPERATIONAL ABUSE AND IN CERTAIN CIRCUMSTANCES THE OPERATOR MAY BE LIABLE UNDER SECTIONS OF THE HEALTH AND SAFETY ACT OF 1974. IT IS STRONGLY URGED THAT THE CUSTOMER STUDIES THE ACT BEFORE OPERATING THE SHEAR. THE ACT REQUIRES THAT THE PERSON OPERATING THE SHEAR WEARS GOGGLES, GLOVES, APRON AND PROTECTIVE FOOTWEAR.

ENSURE THAT THE AREA AROUND THE MACHINE IS CLEAR. PRACTISE CONTROLS BEFORE CUTTING.

DO NOT ATTEMPT TO SHEAR: ENCLOSED VESSELS, CYLINDERS, GAS BOTTLES, ETC. EXPLOSIVE. VOLATILE OR ACID MATERIALS, HARDENED STEEL PINS OR PARTS.

- g) After setting up the machine, practice the controls. Become accustomed to the feel of how it responds with different pressures on the foot pedal and how the head returns to a safe position as soon as the foot is removed from the pedal. **Make sure the pedal is adjusted properly.** (See paragraph d)).

Make sure that the pedal is not obstructed in any way (i.e. pieces of material not allowing it to be fully depressed) or that the cable is not bent or damaged in any way, these points are **most important** for the correct control and functioning of the shear!

- h) Stroke Adjuster. The stroke of the head can be shortened to suit the type of work at hand. This is done by repositioning the sliding clamp on the stroke rod which is mounted alongside the ram.
(see Fig. 1 items 8&9)

To shorten the stroke start machine and take the head down to the required opening position. Switch off machine, slacken the thumbscrew on the adjuster, and slide the block up to contact the end of the stroke cylinder. Retighten the thumbscrew.

Lengthening the stroke is the same procedure but the adjuster is moved down the rod away from the stroke cylinder.

- i) Metal cleaning and cropping. Position the foot pedal for the most comfortable operating stance, in front or just offset from the blades. Use a bin or tray to collect cleaned materials. Try where possible to locate the work in one of the blade notches. Bring the top blade down onto the work then gently crack through.

When holding material in the jaws never put your hands or fingers in a position where they may become trapped by the material being sheared, or in the way of the shear blades themselves. It is better to allow the material to be taken from your hands rather than gripping the material, or allowing your hands to be forced into a position where they could be in danger. Also beware of hard brittle materials ie. Phosphorous Bronze which tends to splinter when sheared. Eye protection should be worn.

Always try to shear material as far back in the throat as possible this will be quicker, safer and will keep the machine under minimal stress. Do switch the machine off when work is finished.

Never underestimate the power of the machine and treat it with the respect it deserves. Remember personal safety and responsible working practises at all times.

KEEP THE MACHINE CLEAR OF DEBRIS

DO
NOT
OPERATE
WITHOUT
GUARDS
IN PLACE

PERIODIC ROUTINE MAINTENANCE

Daily (operator)

In use, check that blades do not become loose and head does not move excessively.

Check oil for overheating and correct level.

Check against damage to blades causing wedging.

Be particularly watchful against sudden loss of pressure or speed.

Weekly

Check visually for loose nuts or bolts and tighten with correct tools.

Grease 4 points Head pin, Trust pad, Ram pivots, every 20 hours operation.

Grease the head pin until the grease squeezes out of thrust bearings.

Grease the thrust pad approx. 4 strokes of gun.

Grease the ram pivots until grease squeezes through clevis sides.

Monthly 80 Hours

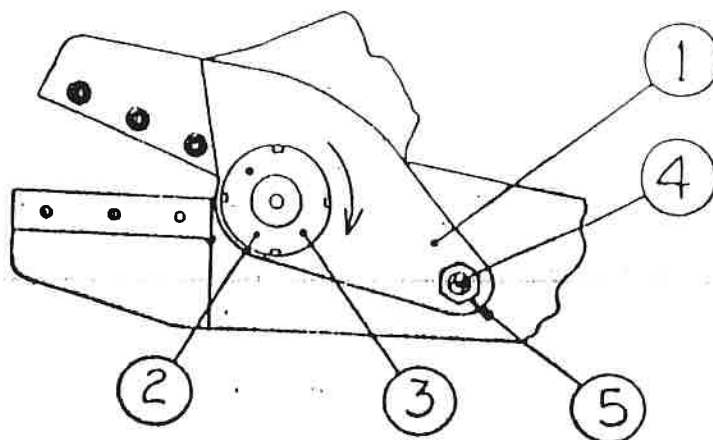
Check head thrust bearings and thrust pad for tightness. Looseness is readily apparent by side shift of head. If loose follow service procedure.

6 Months 500' Hours

Lightly grease electric motor bearings. Check electrical connections.
Check for worn out parts requiring replacement.

SERVICE PROCEDURES

a) Head Adjustment

FIG. 3

- 1 HEAD
- 2 TORQUE RING
- 3 LOCKING SCREW
- 4 ADJUSTER PIN
- 5 LOCKING NUT

To carry out adjustment of the head follow the procedure below.

- 1 Release lower blade.
- 2 Release locking nut (item 5) and undo adjuster pin (item 4) two full turns.
- 3 Take out locking screws (item 3) from the torque ring (item 2). There should be 2 locking screw in each hole using an allen key provided.
- 4 Firmly tighten the torque ring (item 2) with either a special key or a piece of copper bar and club hammer, knocking the ring in a clockwise motion until it becomes firm and tight.
- 5 Re-insert the locking screw (item 3) making sure the first screws in bite firmly home, and the following screws lock in position.
- 6 Screw home the adjuster pin (item 4) until it comes to a dead stop Do Not Keep Tightening. The pin has to be fully home but not overtightened as deflection of the head will occur. When in position firmly tighten the locking nut (item 5).
- 7 Re-set blades (see service procedure) then fully grease the machine.

b) Blade Adjustment

Blades are four sided and can be turned to give a new cutting edge. Check for excessive damage and remove any protrusions by grinding to allow the blade to re-seat.

Adjustment is always carried out when the head is tightened, or the blades are turned to give a new edge and of course when ever it is necessary.

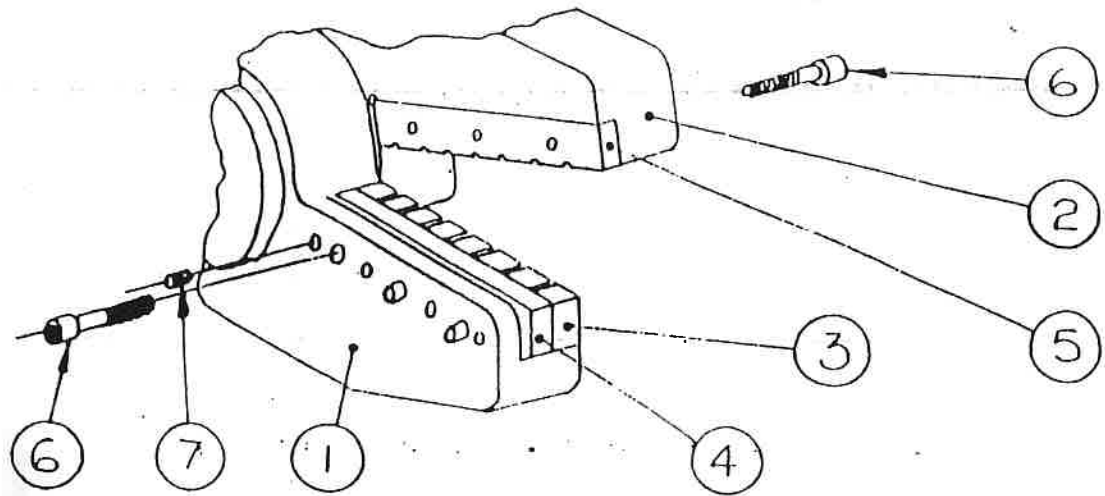


FIG. 4

- | | | | |
|---|---------------|---|-----------------|
| 1 | SHEAR BODY | 5 | UPPER BLADE |
| 2 | SHEAR HEAD | 6 | SECURING BOLT |
| 3 | LOWER BLADE | 7 | ADJUSTING SCREW |
| 4 | BACK-UP BLADE | | |

- 1 Withdraw all securing bolts (item 6) using allen key provided and a piece of tube. Take out all blades (items 3,4 & 5) clean off and make sure threads are free of dirt, withdraw adjusting screws (item 7). Clean all threads on bolts and in shear body and make sure blade seats are free from any dust, burrs etc.
- 2 Re-fit upper blade (item 5) with securing bolts lightly greased on thread. Make sure the blade is fully seated and then firmly tighten with allen key and tube.
- 3 The head if not already shall be required to be in the down position with the machine switched off (see fig. 5). Place back up blade and lower blade (items 3 & 4) in position and loosely replace lightly greased securing bolts and adjusting screws (items 6&7).
- 4 Position blade by screwing in the two outside adjusting screws until the blades touch at each end (see fig. 7). Do not over tighten.

Hand tighten the two outside securing bolts (see fig. 7) and then hand tighten all the inner adjuster screws on to the back up blade. Now firmly tighten all the securing bolts with allen key and tube.

Make sure the blade has not kicked over as in Fig. 6 but seated squarely as in fig. 5.

The blades should be just together over their full length when looked down upon in fig. 7. Fine adjust may be necessary to achieve this. It is most important that the blades do not rub and that all securing bolts are very tight after the operation is completed.

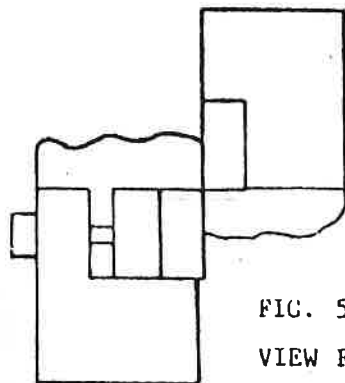


FIG. 5
VIEW FROM END

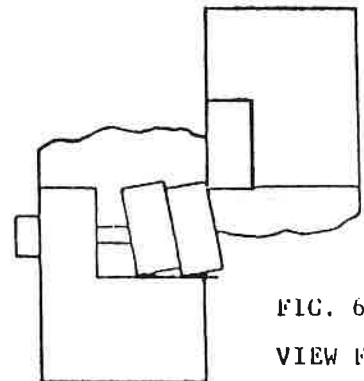


FIG. 6
VIEW FROM END

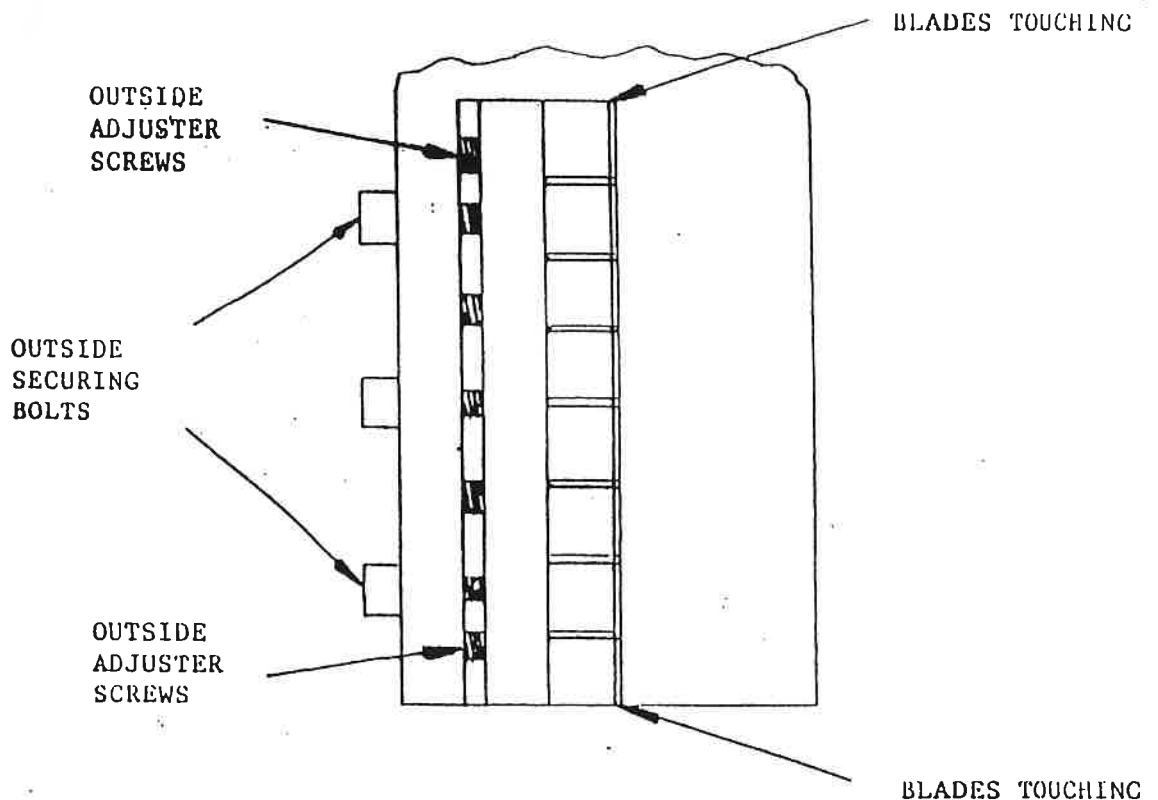


FIG. 7
VIEW FROM ABOVE

c) Grease, oil lubrication, oil hydraulic.

- 1 Make sure the machine is regularly greased with a high quality, clean grease, the four main grease areas being, Head Pin, thrust Pad and Ram Pivots all are yellow indicated areas on the machine. Sub areas being Wheels, Towbar, Electric Motors (where necessary).
- 2 Lubricating oil, generally smear oil over moving parts of machine inside and out to protect and lubricate, a general lubricating oil is recommended.
- 3 Check level and quality of hydraulic oil regularly. The level being at the top of the sight glass with the ram fully retracted. Fill through filler cap (item 10 Fig. 1) with Shell Tellus 37 or equivalent good quality hydraulic oil. Do not use old oil! Access to the twin filters is through the complete removal of the filler cap and they are situated in the lower opposite part of the tank.

d) For control cable setting etc. see "How to set up your machine" (item B)

Periodic Routine Maintenance
Always Switch Machine Off and Isolate

Daily (Operator)

In use, check that blades do not become loose and head does not move excessively. Check oil for overheating and correct level using the sight glass positioned at rear of the main tank.

Check damage to blades causing wedging.

Be particularly watchful against sudden loss of pressure or speed.

Check for any loose fittings, nuts and bolts, leaks etc.

Always check machine is functioning correctly before commencing work.

Weekly

Check visually for loose nuts or bolts and tighten with correct tools.

Check hydraulic hoses for wear or abrasions, replace where necessary.

Check for any oil leaks and rectify where necessary. Be aware that any spillage would constitute a slipping hazard.

Grease the 4 points with a good multipurpose HP grease. Head Pin, Main Ram Pins, Thrust Pad

Grease the head pin until grease squeezes out of thrust bearings.

Grease the thrust pad approx, 4 strokes of gun.

Grease the ram pins until grease squeezes through the sides of the clevis.

Clean machine and remove any debris.

As above.

Monthly 80 Hours

Check head thrust bearings and thrust pad for tightness, Looseness is readily apparent by side shift of the head. If loose follow service procedure.

As above.

6 Months 500 Hours

If the electric motor is fitted with grease points, lightly grease motor bearings.

Check electrical connections.

Check for worn out parts requiring replacement.

Always remember to work the machine efficiently, if for example the machine is fitted for automatic cycling remember to switch off when not in use. Not only is it dangerous to leave a machine running even in an idle situation but it will have an adverse effect on the wearing parts. Some wearing parts include blades, bearings, oil seals etc.

As above.

Switch Off and Isolate to carry out any service work

PROBLEM

CAUSE

MACHINE HAS NO POWER

DAMAGED CABLE
OBSTRUCTION IN THE FOOT PEDAL
MOTOR NOT RUNNING PROPERLY, OR IN WRONG DIRECTION.
OIL SEALS
RELIEF VALVE SETTINGS HAVE BEEN CHANGED

MOTOR NOT RUNNING PROPERLY

MOTOR 2 PHASING
CHECK ELECTRICAL CONTACTS ALL THE WAY DOWN THE LINE
FUSES

HEAD MOVEMENT

ADJUST HEAD
TURN BLADES TO NEW EDGE

MACHINE NOT CHANGING FROM FORWARD TO BACKWARD STROKE OR DOING SO WHEN IT SHOULD NOT

MAKE SURE STROKING CYLINDER ROD IS CLEAN (ITEM 8 FIG.1)
OR REAR LINK BOLTS ARE NOT OVER TIGHTENED

LOSS OF OIL

CHECK ALL FITTINGS FOR LEAKS
CLEAN SUSPECT AREA AND IDENTIFY LEAK PROBLEM

NOISY

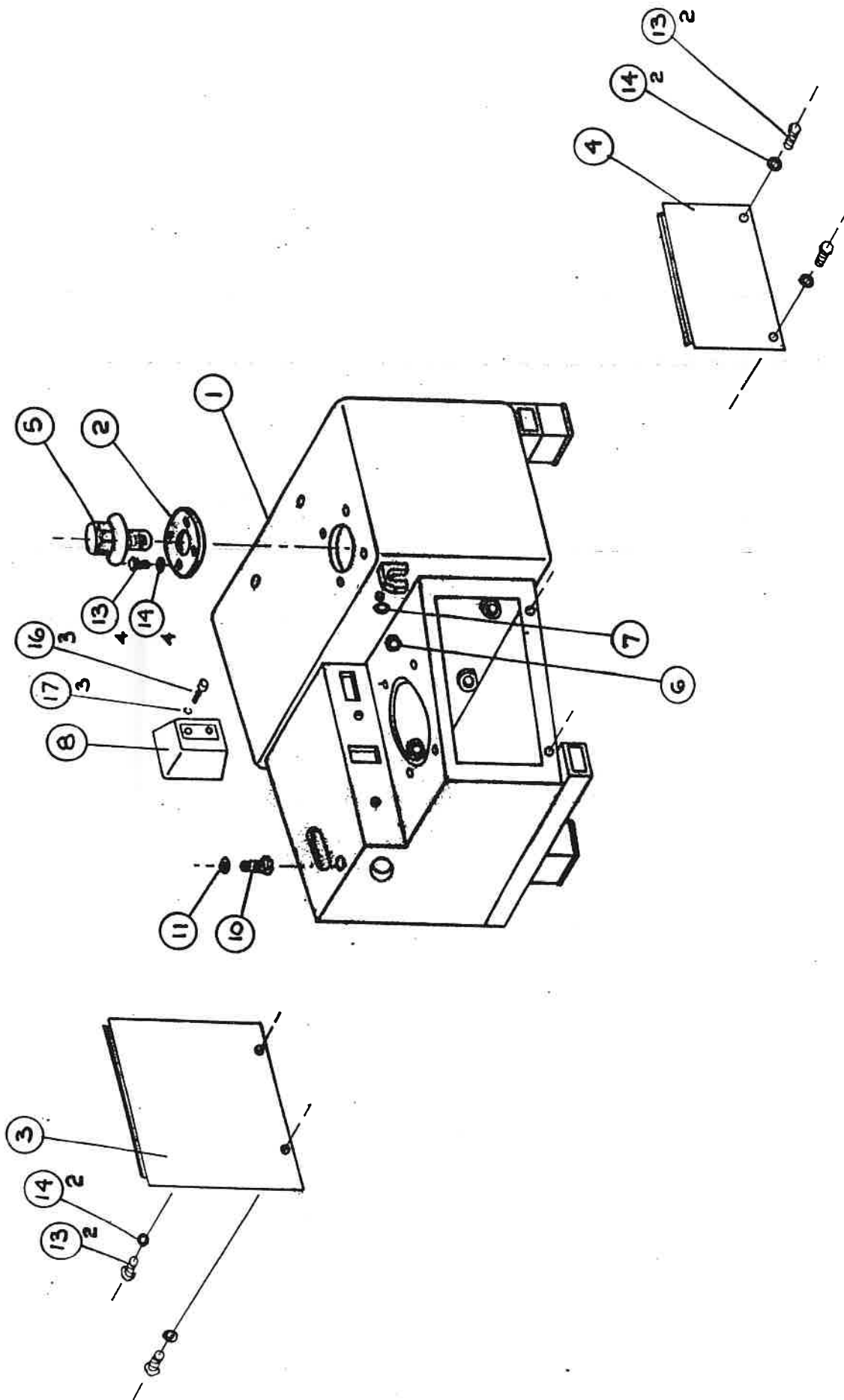
CHECK ALL BOLTS FOR TIGHTNESS
CHECK OIL LEVEL

MACHINE WILL NOT RUN

CHECK ELECTRICS
HYDRAULIC LOCK UNDER LOAD CAUSING FUSING VALVE NOT CHANGING OVER PROPERLY
CHECK CONTROL CABLE FOR OPERATION AND DAMAGE.

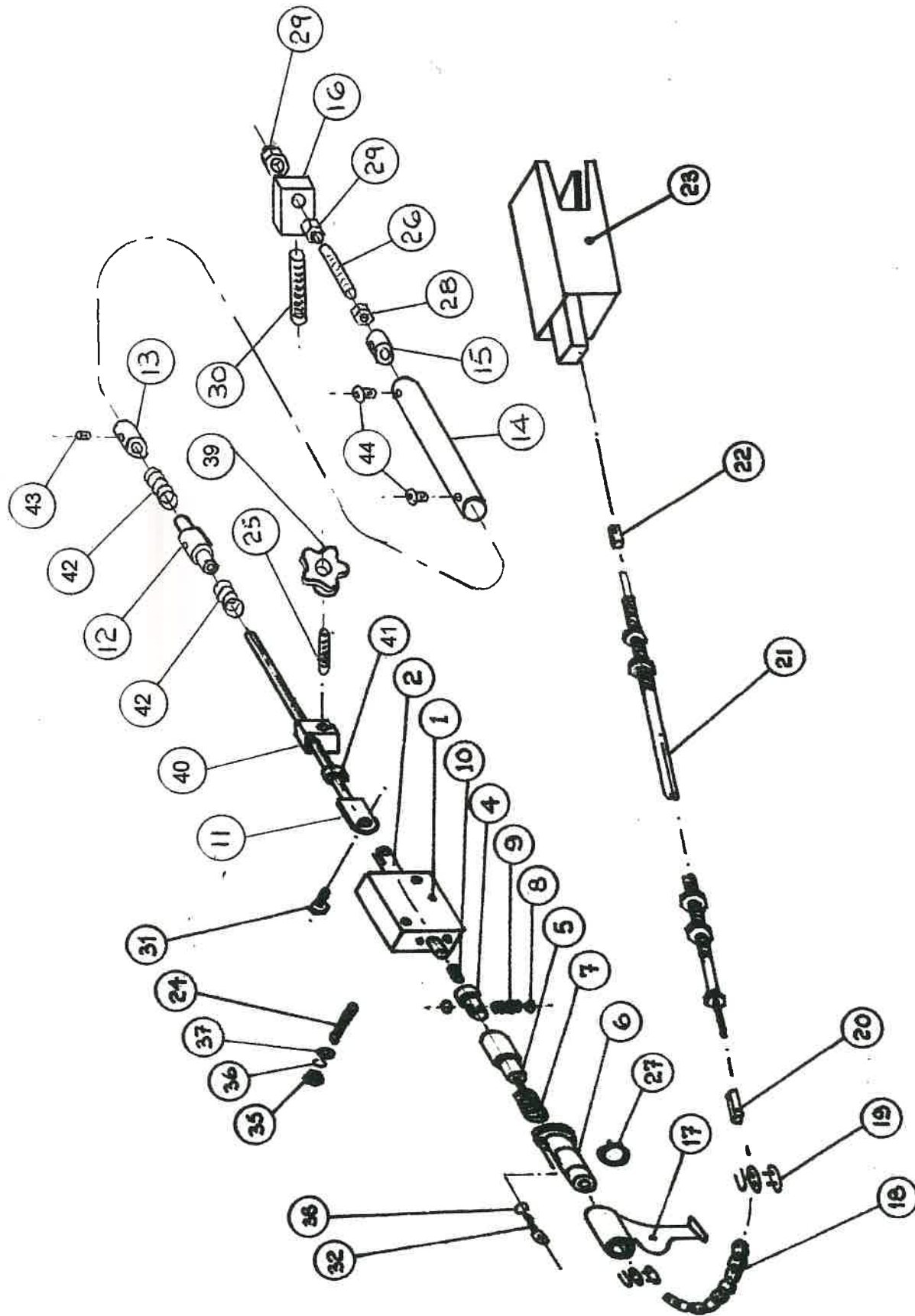
EXCESS HYDRAULIC OIL HEAT

NOTE! ALWAYS USE A QUALIFIED ELECTRICIAN FOR ANY ELECTRICAL MAINTAINENCE.



300-50

LS 300		SERIES SHEAR		ITEM LIST FOR DRG N° 300-50				
ITEM N°	DESCRIPTION	N° OFF	SIZE					
1	TANK ASSEMBLY	1						
2	OIL COVER PLATE	1						
3	L.H. SIDE COVER	1						
4	R.H. SIDE COVER	1						
5	OIL FILLER ASSEMBLY	1						
6	OIL SIGHT GLASS	1						
7	OIL WASHER	1						
8	SWITCH BOX	1						
9								
10	HEX SKT CAPSCREW	1						
11	SPRING WASHER	1						
12								
13	HEX SCREW	8						
14	WASHER	8						
15								
16	CH. HD SCREW	3						
17	SPRING WASHER	3						
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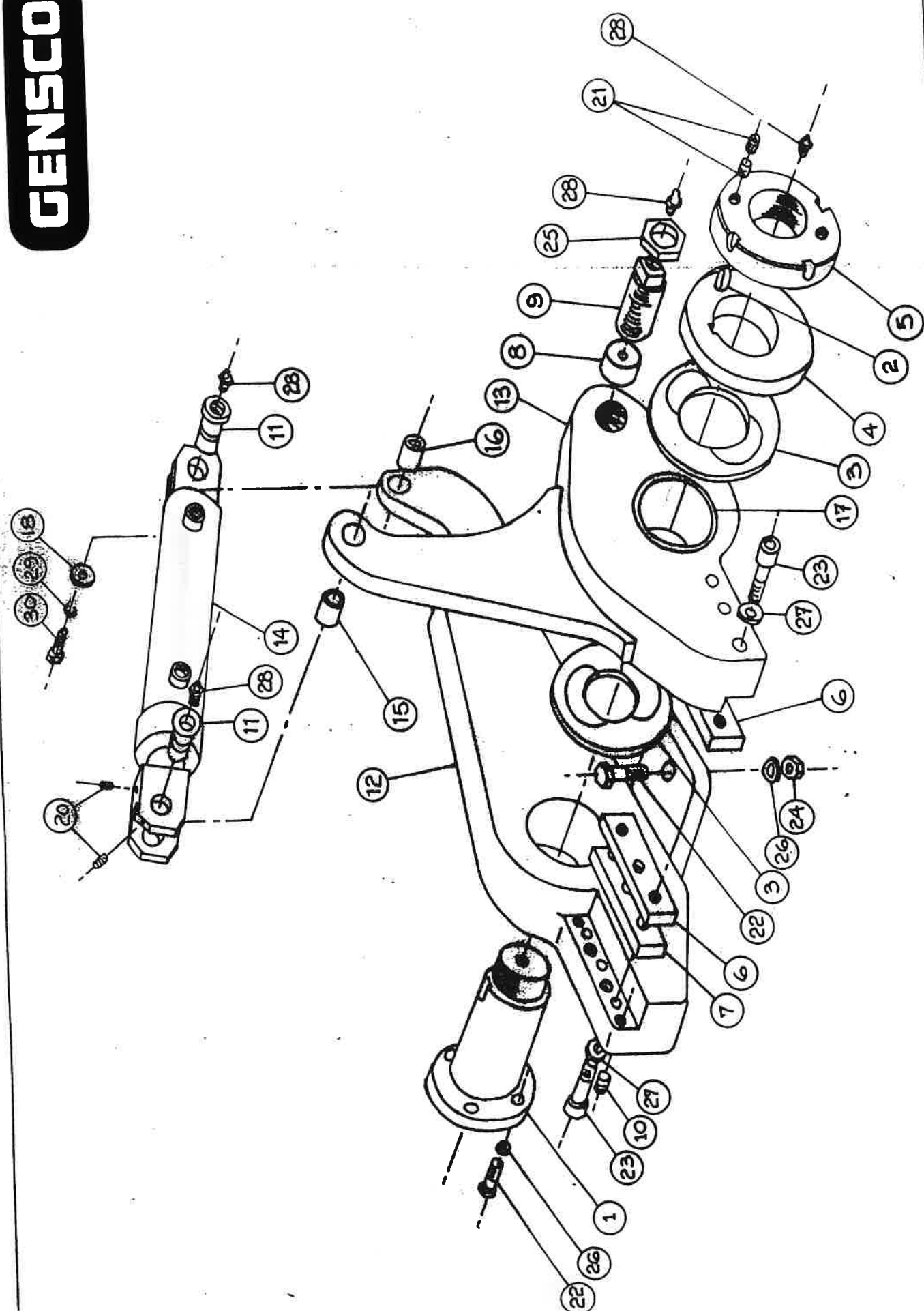


300s SERIES SHEAR

ITEM LIST FOR DRG No.300-51

ITEM No.	CODE	DESCRIPTION	SIZE	No.OFF
01	300-51-01	Valve Body		1
02	300-51-02	Valve Spool		1
03				
04	300-51-04	Detent Plunger		1
05	300-51-05	Detent Capsule		1
06	300-51-06	Detent Housing		1
07	300-51-07	Valve Spring		1
08	300-51-08	Detent Ball Bearing		2
09	300-51-09	Detent Spring		1
10	300-51-10	Retaining Screw		1
11	300-51-11	Stroke Rod Assy		1
12	300-51-12	Stroke Spring Holder		1
13	300-51-13	Stroke Piston		1
14	300-51-14	Stroke Air Barrel		1
15	300-51-15	Stroke Barrel End Cap		1
16	300-51-16	Stroke Swivel Block		1
17	300-51-17	Chain Swivel Guide		1
18	300-51-18	Chain		1
19	300-51-19	Chain Link		2
20	300-51-20	Chain Connecting Block		1
21	300-51-21	Control Cable		1
22	300-51-22	Connecting Clevis		1
23	300-51-23	Foot Control Pedal		1
24	300-51-24	Valve Stud		2
25	300-51-25	Stroke Adjuster Stud		1
26	300-51-26	Stroke Connecting Stud		1
27	300-51-27	Circlip		2
28	300-51-28	Nut		1
29	300-51-29	Locking Nut		2
30	300-51-30	Stroke Swivel Stud		1
31	300-51-31	Valve Link Pin		1
32	300-51-32	Cap Screw		2
33				
34				
35	300-51-35	Nut		2
36	300-51-36	Spring Washer		2
37	300-51-37	Washer		2
38	300-51-38	Spring Washer		2
39	300-51-39	Lock Knob		1
40	300-51-40	Adjuster Stop		1
41	300-51-41	Final Stop		1
42	300-51-42	Stroke Spring		2
43	300-51-43	Grub Screw		2
44	300-51-44	Locking Screw		4
45				

NB. On Single Stroke M/Cs Items 4, 9 and 8 are omitted. Item 5 changes.



DTX300, 400, 4/600.

LS 300 SERIES SHEAR

HEAD ASSEMBLY

DRG-N° 300-52

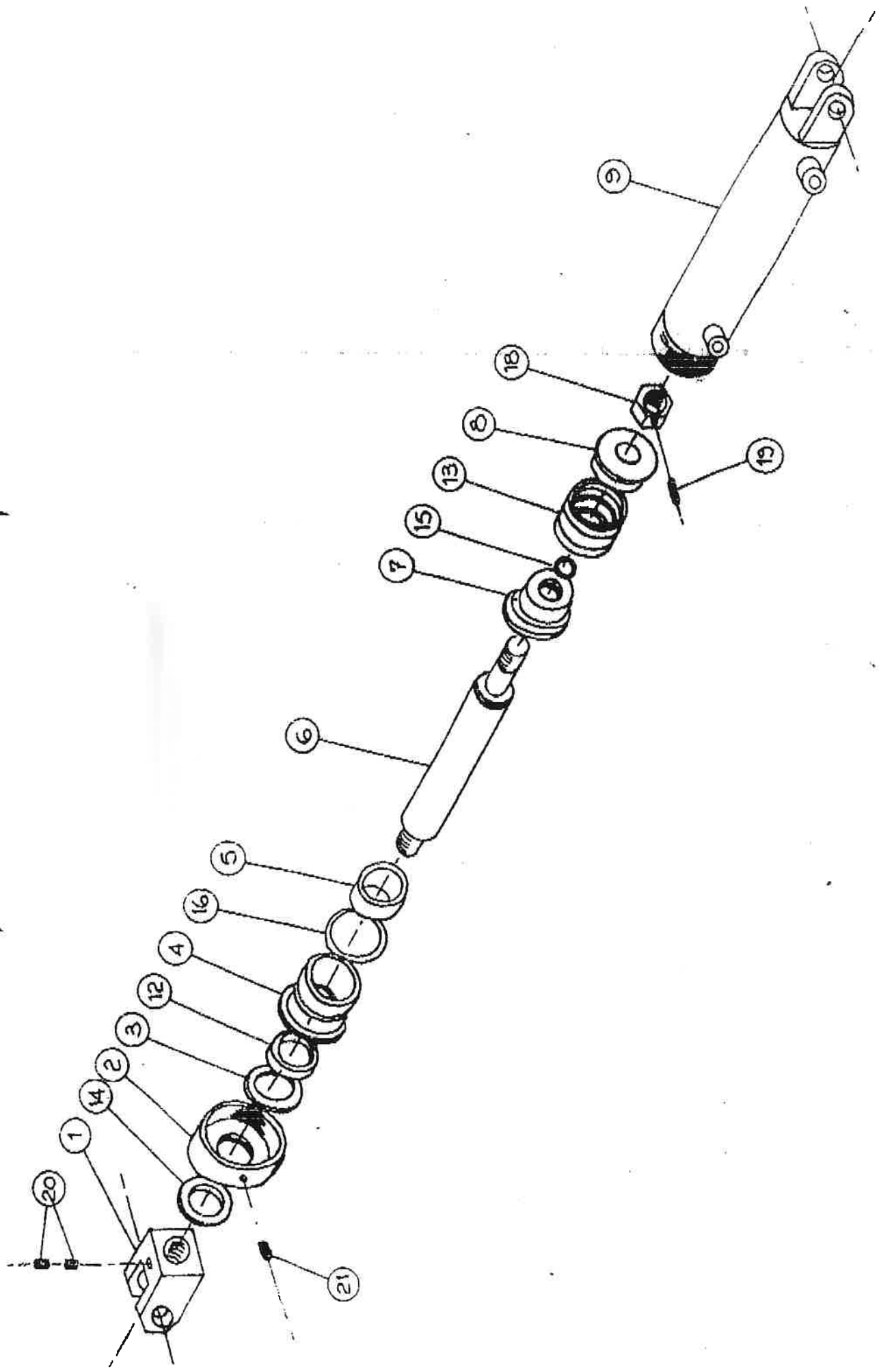
LS 300

SERIES SHEAR

ITEM LIST FOR DRG N° 300-52

ITEM NO	DESCRIPTION	Nº OFF	SIZE				
1	HEAD PIN	1					
2	KEY	1					
3	THRUST BEARING	2					
4	TORQUE RING	1					
5	LOCK NUT	1					
6	BLADE	PAIR					
7	BACK UP BLADE	1					
8	THRUST PAD	1					
9	THRUST ADJUSTER	1					
10	BLADE ADJUSTER	MULTIPLE					
11	RAM CLEVIS PIN	2					
12	SHEAR BODY	1					
13	SHEAR HEAD	1					
14	RAM	1					
15	HEAD FIN P.B BEARING	1					
16	TAIL FIN P.B BEARING	1					
17	MAIN HEAD BEARING	1					
18	PIN KEEPER	1					
19							
20	GRUB SCREW.	2					
21	GRUB SCREW.	2					
22	HEX BOLT	6					
23	CAP SCREW	MULTIPLE					
24	HEX NUT	2					
25	HEX NUT	1					
26	SPRING WASHER	3					
27	WASHER	MULTIPLE					
28	GREASE NIPPLE	4					
29	SPRING WASHER	1					
30	HEX BOLT	1					
31							

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DTX 300, 400, 4/600

LS 300 SERIES SHEAR

HYDRAULIC RAM ASSEMBLY

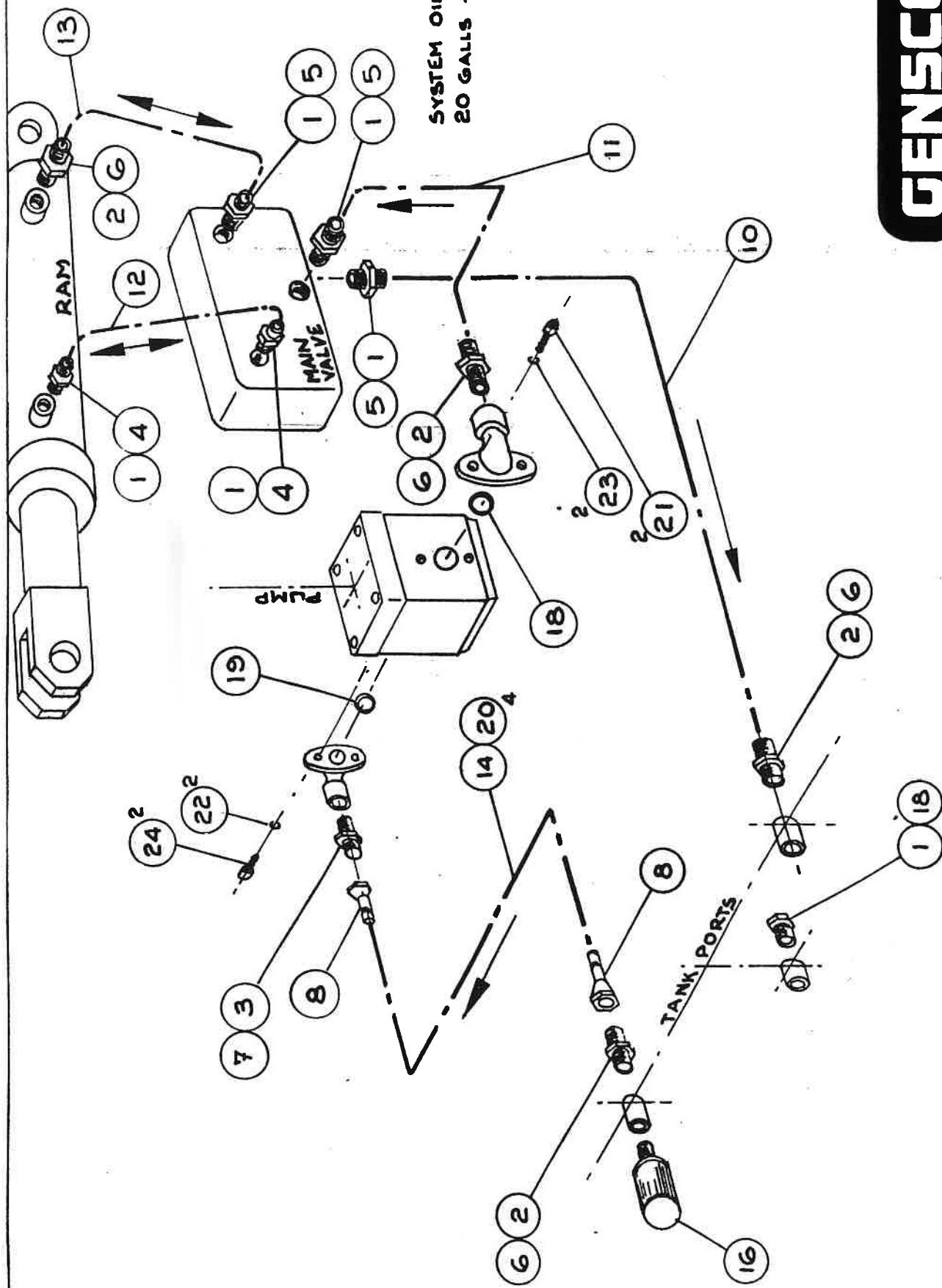
DRG NO 300-53

LS 300

SERIES SHEAR

ITEM LIST FOR DRG N° 300-53

ITEM NO	DESCRIPTION	Nº OFF	SIZE				
1	CLEVIS	1					
2	END CAP	1					
3	PACKER P.B.BEARING	1					
4	GLAND	1					
5	GLAND P.B.BEARING	1					
6	RAM ROD	1					
7	PISTON HEAD	1					
8	HALF PISTON	1					
9	RAM CYLINDER	1					
10							
11							
12	SINGLE ACTING SEAL	1					
13	DOUBLE ACTING SEAL	1					
14	WIPER SEAL	1					
15	'O'-RING	1					
16	'O' RING	1					
17							
18	HEX NUT	1					
19	GRUB SCREW	1					
20	GRUB SCREW	2					
21	GRUB SCREW	1					
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DT X 300, 400, 4/600.

LS 300 SERIES SHEAR

TITLE HYDRAULIC CIRCUIT ASSEMBLY

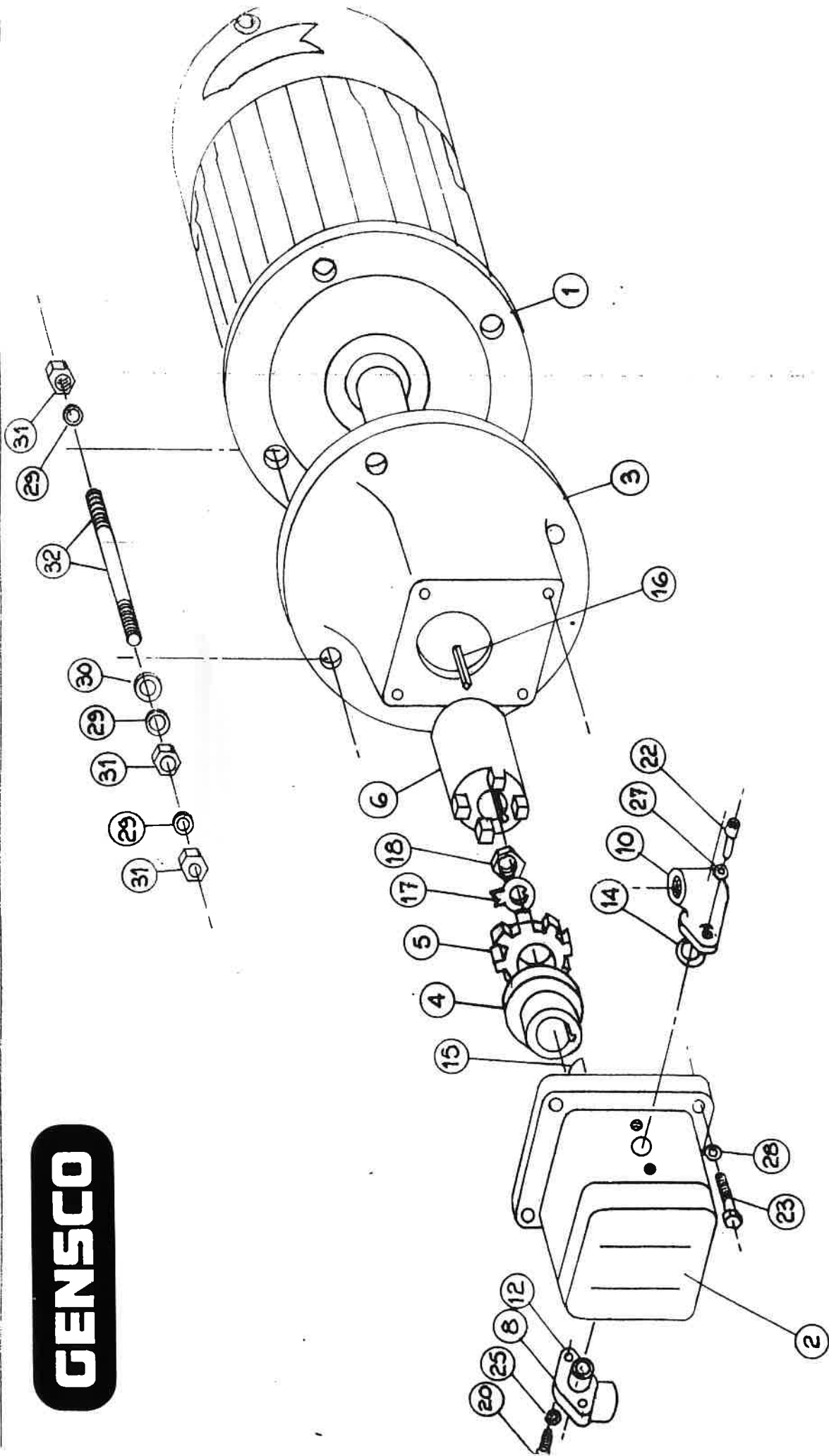
DRG N° 300-54

LS 300 SERIES SHEAR

ITEM LIST FOR DRG NO 300-54

ITEM NO	DESCRIPTION	Nº OFF	SIZE				
1	HYDRAULIC SEAL	6	1/2" BSP				
2	HYDRAULIC SEAL	4	3/4" BSP				
3	HYDRAULIC SEAL	1	3/8" BSP				
4	HYDRAULIC FITTING	2	1/2" BSP				
5	HYDRAULIC FITTING	3	1/2"-3/4 BSP				
6	HYDRAULIC FITTING	4	3/4" BSP				
7	HYDRAULIC FITTING	1	3/8"-3/4 BSP				
8	SOFT STRAIGHT FITTING	2	3/4" BSP				
9							
10	HYDRAULIC PIPE	1					
11	HYDRAULIC PIPE	1					
12	HYDRAULIC PIPE	1					
13	HYDRAULIC PIPE	1					
14	HYDRAULIC HOSE	1					
15							
16	OIL FILTER	1					
17							
18	O RING	1					
19	O RING	1					
20	JUBILEE CLIP	4					
21	HEX SOCKET CAPSCREW	2					
22	HEX SOCKET CAPSCREW	2					
23	SPRING WASHER	2					
24	SPRING WASHER	2					
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DTX 300, 400, 4/600

LS 300 SHEAR SERIES

PUMP-MOTOR ASSEMBLY

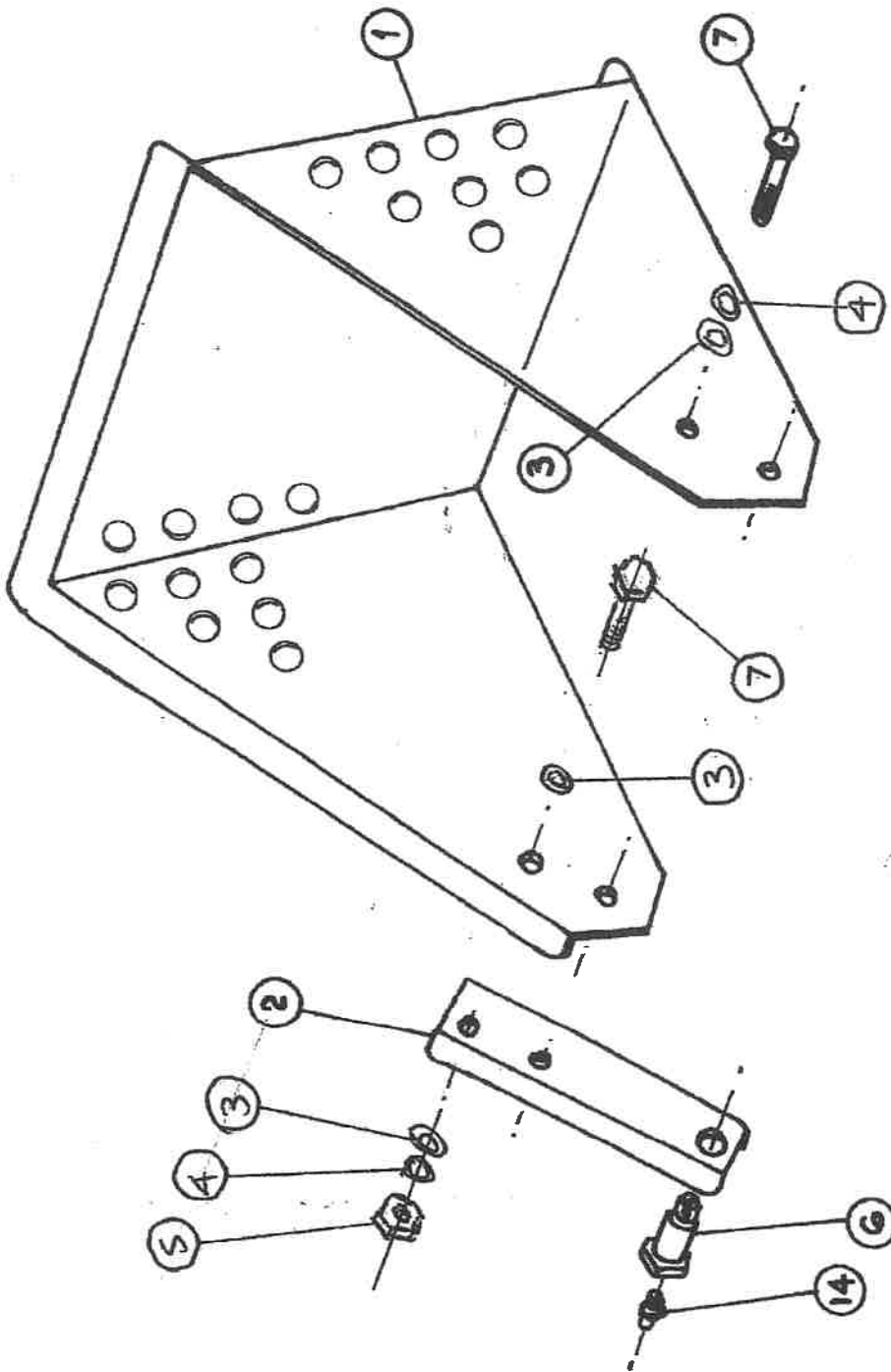
DRG. N° 300-55

LS 300

SERIES SHEAR

ITEM LIST FOR DRG N° 300-55

ITEM N°	DESCRIPTION	N° OFF	SIZE				
1	ELECTRIC MOTOR	1					
2	HYDRAULIC PUMP	1					
3	BELLHOUSING	1					
4	PUMP COUPLING	1					
5	COUPLING CENTER	1					
6	MOTOR COUPLING	1					
7							
8	OUTPUT ELBOW	1					
9							
10	INPUT ELBOW	1					
11							
12	OUTPUT O'-RING	1					
13							
14	INPUT O'-RING	1					
15	PUMP KEY	1					
16	MOTOR KEY	1					
17	TAB WASHER	1					
18	LOCK NUT	1					
19							
20	CAP SCREW	2					
21							
22	CAP SCREW	2					
23	HEX BOLT	4					
24							
25	SPRING WASHER	2					
26							
27	SPRING WASHER	2					
28	SPRING WASHER	4					
29	SPRING WASHER	12					
30	WASHER	4					
31	HEX NUT	12					
32	STUDDING	4					



DTX 300, 400, 4/600
SERIES SHEAR

HEAD GUARD ASSEMBLY

DEG.No. DT x 300/400/4600-56



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REMEDIES OF SELLER: Upon default by Buyer, Buyer agrees to reimburse Seller all attorney fees and court costs incurred by Seller in connection therewith. Buyer agrees that any of the following shall constitute an event of default which shall enable Seller, at its option, to cancel any unexecuted portion of this order or to exercise any right or remedy which it may have by law: (a) the failure of Buyer to perform any term or condition contained herein; (b) any failure of Buyer to give required notice; (c) the insolvency of Buyer or its failure to pay debts as they mature, an assignment by Buyer for benefit of its creditors, the appointment of receiver for Buyer or for the materials covered by this order or the filing of any petition to adjudicate Buyer bankrupt; (d) the death, incompetence, dissolution or termination of existence of Buyer; (e) a failure by Buyer to provide adequate assurance of performance within ten (10) days after a justified demand by Seller or (f) if Seller, in good faith, believes that Buyer's prospect of performance under this Agreement is impaired. All rights and remedies of Seller herein are in addition to, and shall not exclude, any rights or remedies that Seller may have by law. In the event it becomes necessary to incur any expense for collection of any overdue account, reasonable collection charges, including reasonable attorneys' fees, will be added to the balance due and Buyer shall pay all such charges.

GOVERNING LAW: This transaction shall be governed in all respects by the laws of the Province of Ontario (excluding choice of law provisions). All actions, regardless of form, arising out of or related to this transaction or the products sold hereunder must be brought against Seller within the applicable statutory period, but in no event more than **ONE (1) YEAR** after the date of invoice.

DELIVERY: Seller will make a good faith effort to complete delivery of the equipment as indicated by Seller in writing, but Seller assumes no responsibility or liability and will accept no back charge for loss or damage due to delay or inability to deliver, whether or not such loss or damage was made known to Seller, including, but not limited to, liability for Seller's non-performance caused by acts of God, war, labor difficulties, accidents, inability to obtain materials, delays of carriers, contractors or suppliers or any other causes of any kind whatever beyond the control of Seller. Under no circumstances shall Seller be liable for any special, consequential, incidental, indirect, or liquidated damages, losses, or expense (whether or not based on negligence) arising directly or indirectly from delays or failure to give notice of delay.

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INDEMNIFICATION: The Buyer shall at its own expense apply for and obtain any permits and inspections required for the installation and/or use of the products. Seller makes no promise or representation that the products or services will conform to any federal (CANADIAN or AMERICAN) provincial, state or local laws ordinances, regulations, codes or standards, except as particularly specified and agreed upon in writing by an authorized representative of Seller..

Seller shall not be responsible for any losses or damages sustained by the Buyer or any other person as a result of improper installation or misapplication of the equipment. Buyer shall defend, indemnify and hold harmless Seller and its agents and employees against any loss, damage, claim, suit, liability, judgment or expense (including, without limitation, attorney's fees) arising out of or in connection with any injury, disease or death of persons (including, without limitation, Buyer's employees and agents) or damage to or loss of any property or the environment, or violation of any applicable laws or regulations resulting from or in connection with the sale, transportation, installation, use, or repair of the products by Buyer or of the information, designs, services or other work supplied to Buyer, whether caused by the concurrent and/or contributory negligence of Buyer, Seller, or any of their agents, employees or suppliers. The obligations, indemnities and covenants contained in this paragraph shall survive the consummation or termination of this transaction.

INSPECTION AND ACCEPTANCE: Claims for damage, shortage or errors in shipping must be reported within one (1) day following delivery to Buyer. Buyer shall have seven (7) days from the date Buyer receives any products to inspect such products and services for defects and nonconformance which are not due to damage, shortage or errors in shipping and notify Seller, in writing, of any defects, nonconformance or rejection of such products. After such seven (7) day period, Buyer shall be deemed to have irrevocably accepted the products, if not previously accepted. After such acceptance, Buyer shall have no right to reject the products for any reason or to revoke acceptance. Buyer hereby agrees that such seven (7) day period is a reasonable amount of time for such inspection and revocation. Buyer shall have no right to order any change or modification to any product or service previously ordered by Buyer or its representatives or cancel any order without Seller's written consent and payment to Seller of all charges, expenses, commissions and reasonable profits owed to or incurred by Seller. Specially fabricated or ordered items may not be canceled or returned, and no refund will be made. The sole and exclusive remedy for merchandise alleged to be defective in workmanship or material will be the replacement of the merchandise subject to the manufacturer's inspection and warranty.



RETURNS: Seller at its discretion may allow Buyer to return any product which Seller normally stocks with no restocking charge if: (i) it is in new condition, suitable for resale with all its original parts and (ii) it has not been used, installed, modified, rebuilt, reconditioned, repaired, altered or damaged. Special orders or non-stock items may not be returned without authorization of Seller AND only if the manufacturer will accept the return. Except for items Seller stocks which meet (i) and (ii), above, credit memoranda issued for authorized returns shall be subject to the following deductions: (a) cost of putting items in salable condition; (b) transportation charges, if not prepaid; and (c) handling and restocking charges.

SHIPMENTS: All products are shipped F.O.B., point of shipment. Risk of loss shall transfer to the Buyer upon tender of goods to Buyer, Buyer's representative, or common carrier. The cost of any special packing or special handling caused by Buyer's requirements or requests shall be added to the amount of the order. If Buyer causes or requests a shipment delay, or if Seller ships or delivers the products erroneously as a result of inaccurate, incomplete or misleading information supplied by Buyer or its agents or employees, storage and all other additional costs and risks shall be borne solely by Buyer. Claims for products damaged or lost in transit should be made by Buyer to the carrier, as Seller's responsibility ceases upon tender of goods to Buyer, Buyer's representative or common carrier.

TAXES & PRICES: All prices listed and quoted by the Seller are exclusive of any federal, state, provincial or municipal sales, use or other similar taxes which Seller may be required to collect or pay upon such sale or delivery of its materials to Buyer and Buyer shall be responsible for payment of such taxes, unless otherwise stated on the quote form.

The amount of any sales, excise or other taxes, if any, applicable to the products shall be added to the purchase price and shall be paid by Buyer unless Buyer provides Seller with an exemption certificate acceptable to the taxing authorities. Any taxes which Seller may be required to pay or collect under any existing or future law, upon or with respect to the sale, purchase, delivery, storage, processing, use or consumption of any of the products, including taxes upon or measured by the receipts from the sale thereof, shall be for the account of the Buyer, who shall promptly pay the amount thereof to Seller upon demand.

SEVERABILITY: These terms and conditions of sale shall not be construed against the party preparing them, but shall be construed as if all parties jointly prepared these terms and conditions of sale and any uncertainty or ambiguity shall not be interpreted against any one party. If any provision hereof is held to be illegal, invalid or unenforceable under any present or future laws, such provision shall be fully severable and the terms and conditions herein shall be construed and enforced as if such illegal, invalid or unenforceable provision had never been made a part hereof. The remaining provisions herein shall remain in full force and effect and shall not be affected by such illegal, invalid or unenforceable provisions or by their severance here from.

SET-OFF: Buyer shall not be entitled to set-off any amounts due Buyer against any amount due Seller in connection with this transaction.

NON-WAIVER: Seller's failure to insist upon the strict performance of any term or condition herein shall not be deemed a waiver of any of Seller's rights or remedies hereunder, nor of its right to insist upon the strict performance of the same or any other term herein in the future. No waiver of any term or condition hereunder shall be valid unless in writing and signed by Seller's Branch Manager.

ENTIRE AGREEMENT: This document constitutes the entire, complete, and exclusive agreement between the parties with respect to the subject matter hereof and contains all the agreements and conditions of sale; no course of dealing or usage of the trade shall be applicable unless expressly incorporated herein. The terms and conditions contained herein may not be added to, modified, superseded or otherwise altered except by a written modification signed by the Seller's Branch Manager. All transactions shall be governed solely by the terms and conditions contained herein.