Instruction Manual For

VALUE LINE

26"x 37" 29"x 41" 37"x 52" 41"x 58"
Cutting & Creasing Press

with

from

Value Line Machine Corp.

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NOTICE

The American National Standards Institute has adopted a new set of safety standards for **all** hand fed platen presses. We strongly urge that press users comply with these new standards. To obtain a copy of ANSI B65.5-1996, please contact:

NPES
1899 Preston White Drive
Reston, VA 22091-4367
703/264-7200-phone
703/620-0994-fax

Once you have reviewed these standards, we urge you to contact us if you need any further assistance.

FOREWORD

This Instruction Manual has been prepared to give you helpful information on the installation, operation, care and maintenance of Value Line Cutting and Creasing Presses, so that you may operate them at maximum efficiency and with a minimum of maintenance.

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Your Value Line Cutting and Creasing Press is skillfully designed and expertly constructed of high grade materials, and will easily meet all the service demands of normal use.

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To ensure the successful operation of the machine, it must be operated within its load limitations, using proper dies and makeready procedure. The machine should be kept well lubricated, reasonably clean, and free from foreign matter.

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Operators are urged to read this manual thoroughly before operating the machine. Throughout the manual, warnings are included as part of service and operating procedures. Warning signs are also placed on the machine to remind operators of hazards resulting from improper procedures. Our intention is to prevent accidents and to establish safe operating practices with these warnings.

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SECTION I
GENERAL DESCRIPTION

The Value Line Cutting and Creasing Press is a hand-fed Platen Press designed for use with steel rule dies for the manufacture of paper, corrugated and fiber boxes, display cutouts, paper toys, gaskets, greeting cards, automobile door and body panels, decals and many other products of the paper and plastic industries.

These machines are also used with electric die heaters for roll leafing, embossing and hot die cutting.

The words PLATEN or BRIDGE as used in this manual are synonymous and refer to the same part.

The Value Line of machines is constructed with a cast iron frame bridge and dual micrometer impression control. It is clutch operated, with a live flywheel, and is designed for continuous operation, manual start with automatic stop, automatic start and stop with adjustable dwell in the open and closed position. This machine is crank action in design.

MAIN PARTS

The main parts of the machine are the frame, bridge, connecting rods, flywheel, pinion shaft, main shaft and gear wheels.

DISTINGUISHING OPERATING FEATURES

The bridge makes a direct, square and theoretically perfect impact upon the die, rolling to the frame face, free and unrestrained with perfect parallelism.

Adjustable bridge lugs are provided for setting the face of the bridge parallel with the face of the frame.

The face of the frame is inclined from the vertical, eliminating the need for frisket fingers, as the processed sheet lies naturally against the bridge on this inclined angle.

All dies must be properly located so that the press load is balanced relative to the connecting rod pull. If this is impossible, then bearers must be used to balance the load and prevent tipping of the bridge, causing slippage of the bridge lugs. (See Makeready Instruction Manual.)

A hard steel cutting plate should always be used on the press. Use of a "soft" cutting surface will increase the press load and reduce die life. Proper makeready procedures will result in cutting operations which allow cutting without the necessity of the die contacting the cutting plate.

SECTION II
INSTALLATION

The complete machine comes with rust preventative on exposed surfaces to protect it from corrosion and is bolted to heavy skids to protect it from damage.

SELECTING LOCATION

Leave the press on skids until it is moved into its permanent position. See the floor plan for the area required and distribution of weight. A solid foundation is recommended for the machine. It should be located over the building beam supports if possible. Proper consideration of working space around the installation area and good lighting for the operator are important factors in selecting a location.

WARNING: Check the capacity of the lifting equipment in your plant before moving your new press.

LEVELING AND PLACEMENT OF AIR-LOC PADS

Remove the skids and place the vibration pads (if used) under the feet of the press. Thicker pads go down first, then the thinner pads. Place a machine level on the main shaft or on the pinion shaft, and drive wedges under the frame corners until a level position is obtained. Shims should be placed between thick and thin vibration pads. Remove the wedges and secure the press to the floor.

CLEANING PARTS

Uncrate all parts and clean thoroughly to remove all dirt, foreign matter and protective coatings. Check all parts of the machine to see that they are free from foreign matter that may be lodged in holes, pockets or gear teeth.

Check and clean out all oil holes to make sure they are not obstructed with dirt, grease or paint.

Instructions for Removing Parallel Bar

1. Wire main power lines from the disconnect switch to the press. (See wiring diagram)

2. Facing the lower right side of the back of the press attach the supplied crank handle to the gearbox and disengage the safety switch.

3. Turn the selector switch on the control panel to the **"BYPASS"** position and press the **"CYCLE START"** button.

4. While holding the **"CYCLE START"** button, turn the crank handle counterclockwise until the bridge opens.

5. Release the **"CYCLE START"** button.

6. Remove the parallel bar.

7. Return the selector switch to **"RUN"** position.

8. Remove the crank handle.

9. The press is now ready to run.

CAUTION:

TURN THE PRESS OVER VERY SLOWLY WITH THE FLYWHEEL RUNNING IN THE PROPER DIRECTION TO MAKE SURE ALL FUNCTIONS ARE IN PROPER WORKING ORDER BEFORE APPLYING FULL POWER. THE MAIN GEARS SHOULD REVOLVE AWAY FROM THE OPERATOR IN THE DIRECTION AS INDICATED BY THE ARROW ON THE SIDE OF THE GEAR.

WIRING

The machine is equipped with a master control console and panel box completely wired at the factory.

Only qualified personnel should install and service electrical equipment.

WARNING: **Only connect incoming electrical power as indicated on the enclosed wiring diagram.**

A separate, fused, wall disconnect switch should be installed for each machine.

LUBRICATION

WARNING: **Turn off main electrical power and stop the flywheel before applying any lubrication.**

Value Line presses have bearings that work under relatively slow speeds and extreme pressures. Proper lubrication affects the life of a press and is one of the most important items affecting its proper operation. Better results will be obtained by applying a small quantity of lubricant frequently rather than a large amount at long intervals.

We recommend SAE 30 oil in the lubrication system.

Starting Up a New Machine

Fill the oil reservoir. To fill lines and lubricate bearings before starting new machine, pull instant feed knob on Bijur Lubricator and release to allow pump to discharge. Repeat until oil is in evidence at all bearings.

Gears - New Machine

IMPORTANT: Before starting up a new machine, make sure all gear teeth are well lubricated. Lubricate manually if necessary. Never operate the machine with the gears dry.

Make sure that oil holes are free of dirt, paint, or any other foreign matter.

All areas of the machine that require oil lubrication are taken care of automatically by the Bijur lubricating system consisting of a pump unit which forces oil through a branched tubing line to Meter-Units, one of these being located at or near each bearing. The pump measures the total quantity of oil fed to the system and the Meter-Units proportion this quantity according to the individual requirements of the bearings.

Oil

Use only a clean oil of SAE 30 viscosity. **NEVER** use oil containing graphite, soap, or other foreign substances. Refill reservoir before oil level drops to the bottom of oil level gauge.

Meter Units

Meter-Units are self-contained, non-adjustable units. Letters stamped on them indicate the type and the flow rate; the higher the number, the greater the flow. The Meter-Units offer such high resistance to oil flow that they are the controlling factors in oil distribution. As a result, there is practically no variation in oil delivery, normally caused by flow resistance in the tubing, variation in bearing wear or initial fit. Check valves in the Meter-Units prevent reverse flow and keep the tubing full of oil at all times. A Meter-Unit may be mounted directly at a bearing, at an adjacent junction or at a tee head.

Use FJB Meter-Units with this pump.

Electric Motor or Variable Speed Drive

All lubricating points must be checked and lubricated in accordance with manufacturer's recommendations furnished with motor or drive.

Connecting Rod Bushings & Impression Sleeve Bearings

These bearings are lubricated by hand. Alemite fittings should be fed grease four times for an eight-hour shift.

Gears - Normal Operation

Lube lines are fed by the automatic lubricating system. Maintain oil level in oiling system and check occasionally for oil film on gear teeth.

Flywheel Bearings

The flywheel bearings are greased with Alemite fittings. Lubricate every six months.

CAUTION:
AN EXCESS QUANTITY OF GREASE WILL CAUSE BEARINGS TO RUN WARM AND CAUSE DAMAGE TO THE BEARING SEALS.

INSPECTION AND SERVICING

With the pump feeding the system, inspect for oil at the bearings: also, check that there are no leaks at the tubes or connections.

IF SOME BEARINGS ARE GETTING INSUFFICIENT OIL, INSPECT FOR:

1. Low oil level in reservoir
2. Broken or cracked tubes or loose connections. Wipe off tubes and connections, and watch for leaks. When replacing a tube, see that it is properly clipped to prevent vibration.
3. Flattened lubricator pump outlet tube.
4. Clogged lubricator pump filter. Remove filter disk and replace with a new one. Check every six months.
5. Dirt in Reservoir.

IF ONLY ONE BEARING IS GETTING INSUFFICIENT OIL, INSPECT FOR:

1. Flattened oil tube of loose connection to the meter-unit feeding this bearing.

2. Slow feeding Meter-Unit. Make sure oil reaches inlet of Meter-Unit when pump is feeding; also, check rate of feed with Meter-Unit connected so as to drip free. Should there be any questions as to the rate, compare it with a Meter-Unit of the same rate number on another part of the machine. If Meter-Unit is feeding a proper quantity in accordance with its rate number, and an increased feed is desired, use same type and next higher number. The Meter-Units are replaced complete with head. Never disassemble a Meter-Unit or drill it out, as this will ruin its operation. Do not try to test a Meter-Unit by blowing through them. **REMEMBER** oil flows through Meter-Units very slowly, and **IN ONE DIRECTION ONLY,** as indicated by the arrow plainly stamped on each Meter-Unit.

SECTION III
OPERATION

PRESS CYCLE - START /STOP

-Turn power on
-Put main motor into operation (always starting the motor at low speed) and select desired speed
-Press should be in the "run" mode
-Select desired cycle:

- **"SINGLE CYCLE"** allows one press cycle only with the press stopping in the open position (generally used for setting up).
- Auto cycle activates **"DWELL OPEN"** timer, allowing the press to stop in the opened position for the amount of time set on timer.
- Dwell closed activates dwell-closed timer, which allows the press to stop in the closed position for the amount of time set on the timer.
- Continuous allows press to run continuously

-Pull **"STOP/SAFE READY"** button out, placing it in the "ready position"
-Auxiliary safety must be placed forward in the "run" position
-Press cycle **"START"**
-To stop the machine, depress **"STOP/SAFE - READY"** button

IMPRESSION ADJUSTMENTS - DUAL MICROMETER DESIGN

The impression is adjusted using the dual micrometers. Each side of the bridge is adjusted separately. This allows for faster and more accurate makeready, reducing down time to a minimum.

First loosen the impression sleeve locking bolts using the supplied wrench. With the other end of the wrench, turn the impression sleeve to the desired setting and then re-tighten the lock bolts.

WARNING: Never advance one side of the bridge ahead of the other more than 0.015", or 1/64".

DO NOT PACK UNDER THE CUTTING PLATE IN PREFERENCE TO ADVANCING IMPRESSION BY MICROMETER ADJUSTMENTS.

CAUTION

NEVER TAKE AN IMPRESSION WITHOUT FIRST TIGHTENING THE LOCKING BOLTS ON IMPRESSION SLEEVE.
ALWAYS RETURN IMPRESSION ADJUSTMENT TO "0" WHEN STARTING A NEW JOB

MOUNTING DIES IN PRESS

Die Mounting

CAUTION: Before mounting die on press, refer to the safety standard for stand-alone presses, ANSI #B65.5-1996, section 18.2, Inch-safe-service method.

For your safety and for ease of operation, chaseless die mounting fasteners have been supplied with your press. Refer to the makeready manual for proper die setup procedures.

Centering Die

It is very important to have the center of force of the die located in line with the centerline of connecting rod pull to prevent unnecessary tipping of bridge and movement of the bridge lugs. To help center dies in the press, a die-mounting template has been supplied with the press.

CAUTION: Before mounting dies, turn off motor and return wrap around safety device to its back or "safe" position.

If it is necessary to have an unbalanced load, bearers should be inserted for balance. When using bearers, note that bearers increase the load on the press, while decreasing the available cutting load.

Die Heater Controls

Zone 1 controls the right side of the heater

Zone 2 controls the center of the heater

Zone 3 controls the left side of the heater

DIE LOADS AND PRESS CAPACITY

The engineers at Value Line have performed years of testing to determine the amount of force necessary to cut or emboss many materials.

The maximum tonnage recommended by various manufactures of cutting and creasing presses can become confusing when a comparison of machines is made unless the basis used by each company is defined and understood.

Die Loads

Cutting and Creasing loads can be determined by testing a sample using a specially constructed laboratory press. This test takes into consideration material grain, die construction, and stripping material load. The results can be converted to the maximum die size allowable to stay within recommended die cutting load ratings.

Press Loads

The total load on a press is usually much greater than the theoretical die cutting load and is made up of the following:

1. Loads created by die imperfections such as:
   A. Dull cutting rule
   B. Cutting rule of unequal height.
   C. Poor die design, specifying cutting rule of incorrect height, bevel, or thickness, or incorrect height of creasing rule, lumber or stripping material.
2. Load created by poor makeready that is soft or excessive.
3. Load created by material variations caused by changes in moisture content, grain density or thickness.
4. Excess load created by careless impression micrometer settings.
5. Load created by a worn machine components and the natural deflection of highly stressed parts.
6. Load created during cutting and creasing of material. This is the diecutting load used as a basis for Value Line recommendations.

The total press load will vary with the above conditions and can be up to 3 times the recommended die cutting load.

SAFE PLATEN PRESS OPERATION

The User's Responsibility

This section of the Instruction Manual is not intended as a Safety Code. Its purpose is to alert persons associated with platen presses to the importance of establishing safe operating and maintenance procedures.

Throughout this manual warnings have been inserted calling attention to safe practices and procedures. Day to day safety is a vital part of everyone's job. A press accident can result in loss of production, damage to the press, personal injury and breakdown of shop morale.

Make every effort to keep your presses safe for production. Daily press inspections, over and above normal maintenance, of all guarding and safety devices and brakes is a good way to start.

Guarding the Point of Operation

The "point of operation" is the area created when the platen reaches a position of parallelism with the die face just before contact between the die and material to be converted. The use of proper "point of operation" devices coupled with a well-trained operator is the best insurance against mishaps.

It is the responsibility of the employer to provide and insure the use of properly applied and adjusted devices on every operation performed on a platen press consistent with the dies being used, with the feeding methods being used, or other features unique to operation, so as to provide maximum protection to the operator.

Safety Devices

The following safety devices are provided with your press and are the minimum required for proper operation. Other devices may be required if the press is used for a purpose other than that for which it was originally intended.

1. WRAP AROUND SAFETY DEVICE

This device stops normal stroking of the press if the operator's hands are placed in the point of operation as the platen closes. The die should not be removed except when this device is placed in its back safety position, causing the platen to become inoperative.

2. PLATEN SAFETY DEVICE

Stops normal cycling of the press, when activated by the operator.

WARNING: This Auxiliary Safety Device & Platen Safety Device must be set and maintained according to the requirements of ANSI B65.5-1996.

Management Safety Tips

1. Make certain that the press operators are trained and instructed in safe methods of operation and provide adequate supervision to enforce safe operating procedures.

2. Set up a program of press inspection as required by ANSI 65.5-1996.

3. Establish a preventative maintenance program.

4. Make frequent evaluation checks of all press safety devices during actual production runs. Correct any unsafe conditions before resuming operation.

5. Provide a clean, safe, uncluttered area around each press.

6. Stop the press immediately when a malfunction is reported and correct before resuming operation.
7. Establish, publish and enforce a firm policy of safety regulations.
8. Take immediate action to prevent a recurrence of all "close calls" before they become accidents.
9. Never change wiring.
10. Never change air piping.
11. Never substitute component parts.
12. Dies and stripping material should be checked and maintained for proper cutting and stock ejection.
13. Never run a press that has been modified.
14. Only use the press for its intended use.

Press Operator's Safety Tips

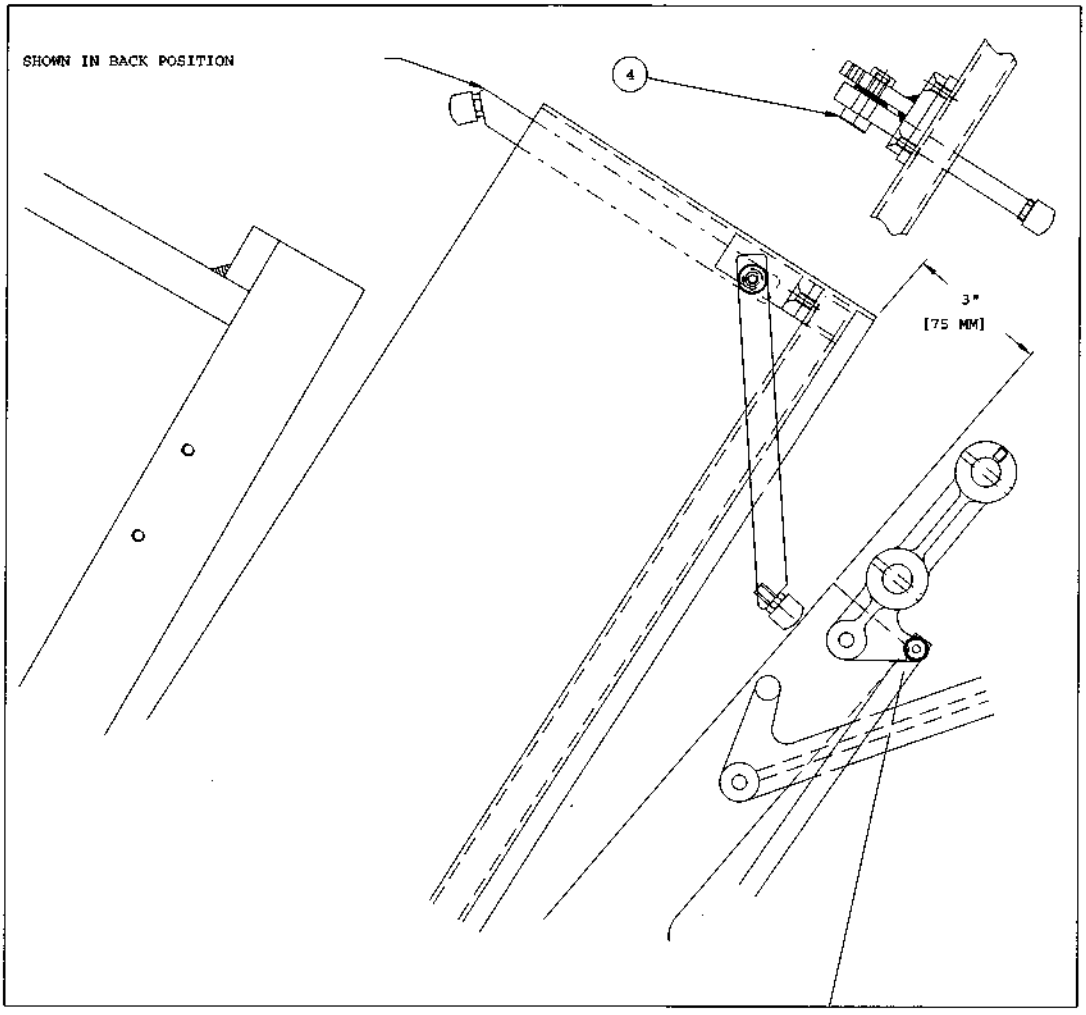
1. Operator should never operate with any press or safety device malfunction.
2. Perform daily inspections as required by ANSI B65.5-1996 Section 16.3.1 (Refer to Safety Test Trip, and see figure 3.4)
3. Make a pre-operation check of all operating controls, safeguarding devices, bottom and side sheet or material guides, alert signals, die and material being worked.
4. Never attempt to correct or remove misfed sheets before stopping the platen in the fully open position. Report die trouble to supervisor.
5. Never operate, service or adjust the press, or install dies without proper understanding of the instructions in the Instruction Manual.
6. Never sit on, stand on or bend over the platen with the flywheel turning.
7. Never makeready or set stock guides before stopping the motion of the flywheel.
8. Obey alert or warning signals on the press.
9. Stop the machine if it malfunctions. Report any questionable operation, unusual action, unsafe condition or improper maintenance to the proper person.
10. When changing setting of press controls for a different mode of operation, test the machine cycle to be sure it operates as expected.
11. Check the work area to be sure it is free of objects that could cause one to slip or trip.
12. Wear proper personal protective equipment specified by the employer.
13. Shut off power to the press when it is not in use.
14. Never talk to another person while feeding the press.
15. Never reach over, under or around press safety devices or try to bend, check, modify or remove, point of operation safety devices.

16. Develop a sense of personal safety awareness. Observe all safety regulations. Be on the lookout for hazardous conditions and discuss control of them with your supervisor.

17. Always follow all operating procedures outlined in ANSI B65.5-1996

Safety Test Trip

The auxiliary safety test trip is a device to measure the acceptable distance between the platen and the die mounting surface after the wrap around safety device is actuated. The test trip is installed by slipping the trip over the bolts, shown in the assembly drawing. When the platen is cycled, the test trip contacts the top surface of the platen, causing the tripped wrap around safety device to stop the press. To run the test, the press should be operating at its highest speed, to ensure that the requirement for the minimum remaining distance is met at **all** operating speeds. After the platen strikes the removable test trip, the remaining distance should be no less than 100mm between the platen and the die-mounting surface. **The 1996 safety standard states that operators MUST run this test before regular operation every day to guarantee the proper working condition of the safety device and braking system.** Return the safety test trip to back position after successful completion of the test for normal operation of the machine. Below is a diagram of the proper test procedure.



SECTION IV
CARE & MAINTENANCE

GENERAL CARE

In order to get the most efficiency from your Value Line Cutting and Creasing Press, it should be given the good care due any precision machine. It should be kept reasonably clean and free from foreign matter. Do not allow waste material to collect in bridge cam well, on rocker seats, or in gear teeth.

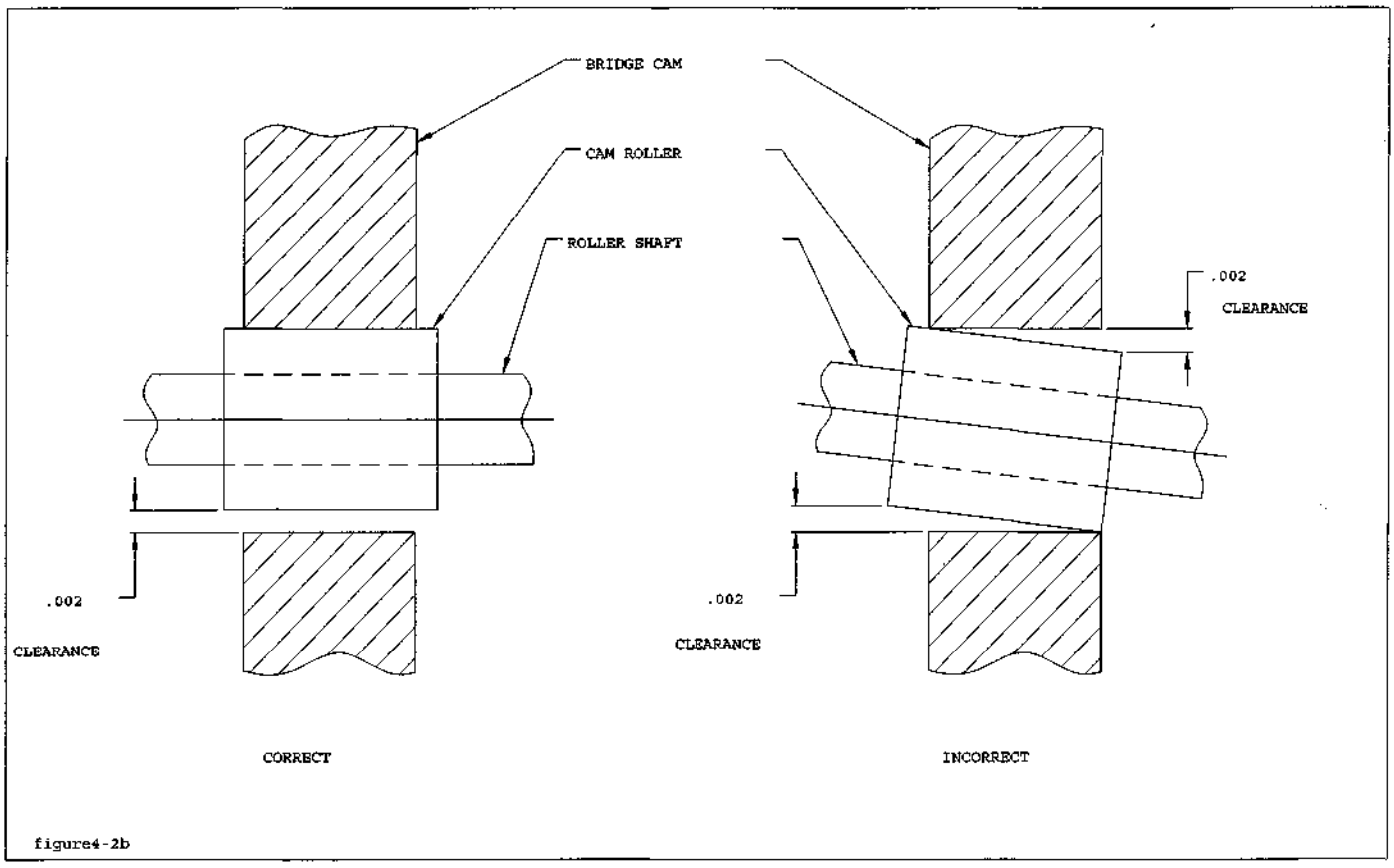
While the press is ruggedly built of high quality materials and relatively trouble free, you should carefully follow all operating instructions, and check the machine for proper adjustments and wear at the first indication of improper performance.

Keep the machine properly lubricated at all times and do not abuse it by overloading, either with too heavy a job, poor makeready, dull dies, or variations in material conditions such as thickness, moisture content, and grain.

RESETTING BRIDGE FACE PARALLEL WITH FRAME FACE

PROCEDURE FOR SQUARING BRIDGE & ADJUSTING BRIDGE CAM ROLLER ON VALUE LINE PRESSES

1. Cycle the press until the top bridge lugs are just on top of the frame rocker plates.
2. Turn off all power to the press and make sure flywheel motion has stopped.
3. Place the parallel bar (shipped with the press) into the machine, hanging it from the top of the platen by the pin sticking out from the edge of the bar near the top. Be sure to place the bar an equal distance from each side of the platen.
4. With the special crank supplied with the press, move the bridge so that the bar is very close to contacting the frame face (about .010").
5. Adjust the impression to lightly squeeze the parallel bar in the press. Be sure that both sides are adjusted such that the indicators read exactly the same. The platen should not be tipped from side to side.
6. Loosen both the top and the bottom bridge lugs.
7. With the crank, move the bridge to firmly squeeze the parallel bar in the press.
8. Adjust the bridge lugs so that they are firmly against the bridge guide (tighten both the top and bottom securely).
9. Adjust the cam roller using the eccentrics on either end of the roller shaft such that the roller turns freely after locking the adjusting eccentrics in place, as they may move while you tighten the locks.
10. With the crank turn in the opposite direction until the top bridge lug is within 1/4" of leaving the rocker plates.
11. Remove the parallel bar.



12. Using a .002" feeler gauge, check the clearance between each side of the roller and the cam way. The .002" feeler should slide completely through from side to side without obstruction on one side of the cam way. On the opposite side of the cam way you should be unable to start the feeler gauge in any position. This test is performed to assure that the cam roller is parallel to the cam way and does not make contact with the front of the cam way on one end of the roller and the rear of the cam way with the other end of the roller.

13. Return the impression adjustments to zero settings on each side and mount your die. Be sure the die is mounted such that the load is centered in the press. There is a tapped hole located at the center of the machine. Use that hole for reference whenever you mount a die. If you subject the press to unbalanced loads you may have to repeat this squaring procedure.

CAUTION

IF THE BRIDGE CAM ROLLER STANDS MOVE FROM THEIR SELECTED SETTING, WEAR AND CAM BREAKAGE MAY RESULT. CHECK SCREWS PERIODICALLY.

SECTION V
TROUBLE SHOOTING

BRIDGE STUCK ON CENTER

A. Turn off the main motor and wait until the flywheel comes to a complete stop.

B. Follow the procedure for the removal of the parallel bar.

C. Turn the flywheel in the direction opposite the arrow.

D. Once the press opens, remove any obstructions and inspect the makeready and the press for damage.

E. Return the press to "run" condition.

CAUSES OF BRIDGE CAM FAILURE

1. Worn bridge cam and bridge cam roller
2. Bridge cam roller shaft out of adjustment
3. Bridge face not parallel with frame face, causing it to rise on impressions.
4. Bridge lugs adjusted improperly, causing straining action with motion of bridge cam.
5. Machine operating backwards.
6. Machine operating at excessive speeds.
7. Bridge Cam Roller Stand Bolts loose.

CAUSES OF BRIDGE LUGS SLIPPING

1. Dies mounted off center or unbalanced load.
2. Cutting rule in die is dull.
3. Extra stock fed into, or fell into press.
4. Parts of die, such as rule or quoins, fall into the press.
5. Tools left on steel cutting plate.
6. Lug bolts loose.
7. Bridge Cam Roller out of adjustment.

BRIDGE FACE NOT PARALLEL WITH FRAME FACE - RESULTING PROBLEMS

1. Bridge lifts on impression
2. Cutting rules are abused and become dull.
3. Uneven cut top to bottom.
4. Overload of press.
5. Unnecessary makeready
6. Steel cutting plate is cut into and damaged.
7. Slippage of bridge lugs.
8. Bridge Cam failure
9. Unsatisfactory die cutting.

MAKEREADY PROBLEMS

If the makeready is soft due to special low rule, or for other reasons, the job will continually fade away and will also tend to dull the cutting rule more than necessary.

Never use more than .003 gummed paper for spotting up. Gummed paper .006" thick will bear the form off and cause overloading of the press.

Never use any kind of tape other than make-ready tape.

If a soft steel plate or brass plate is substituted for hard cutting plates, it is very likely that the machine will be overloaded, causing a main shaft, bridge shaft, crank pin, or connecting rods to break.

Fiberboards that have been bonded together with silica, and also metal lined boards, which have uneven perforations and are used for blow out proof gaskets, cause considerable trouble in fading out of work.

Plastics of varying density may cause inconsistent cutting.

Variation in moisture content of board and change in direction of grain will affect die cutting results.

Consult Make-ready manual for proper make-ready instructions

PROBLEMS WITH THE PRESS (INCONSISTENT CUTTING)

A. Impression sleeve lock bolts loose.

B. Crank pins loosened or bent.

C. Worn main shaft bushings, or a broken main shaft

D. Connecting rod bushings are worn

E. Worn or stretched connecting rod

F. Insufficient impression to take up machine clearance.

G. Bridge lugs slipped.

H. Impression sleeves badly worn.

I. Fatiguing of parts.

INTERRUPTED MACHINE CYCLES

A. Auxiliary wrap-around safety device Micro-Switches are set too critically and are actuated by vibration. **WARNING:** Micro-Switch must be set for less than 1/2" movement of auxiliary safety device to stop press.

B. Platen Safety Trip Device should have at least 1/16" Gap Between actuating plunger and microswitch.

Electrical System Failure

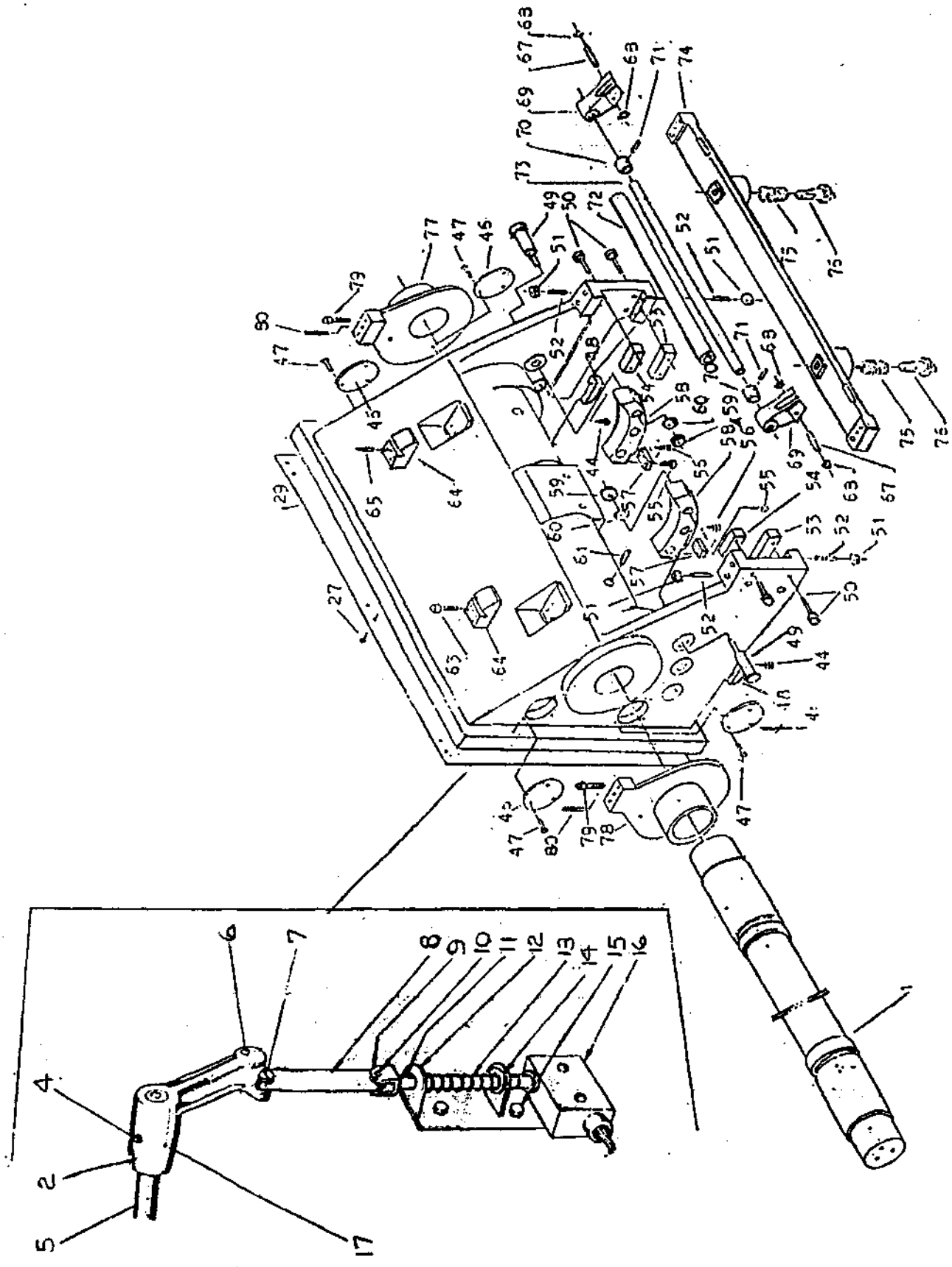
1. Check all connections in panel box and floor console for loose wires, which may cause faulty operation of relays.
2. All relays should be firmly seated in their sockets
3. Check fuses
4. Check for broken wires

PLATEN ASSEMBLY FIG. 1

	DESCRIPTION	PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1.	PLATEN SHAFT	V26-1-1	V29-1-1	V37-1-1	V41-1-1
2.	RH TIE ROD END	C-120-AL	C-120-AL	C-120-AL	C-120-AL
3.	LH TIE ROD END	C-181-DL	C-181-DL	C-181-DL	C-181-DL
4.	1/4-20X3/8 SET SCREW	428	428	428	428
5.	SAFETY TIE ROD	55097	55027	55109	55074
6.	3/8X1 1/2 DOWEL PIN	982-4	982-4	982-4	982-4
7.	3/8X1/4 SHOULDER SCR	603-4	603-4	603-4	603-4
8.	SAFETY LINK	2123-A	2123-A	2123-A	2123-A
9.	SAFETY PLUNGER YOKE	457-2	457-2	457-2	457-2
10.	1/8 X 13/16 ROLL PIN	458-2	458-2	458-2	458-2
11.	SAFETY TRIP PLUNGER	17491	17491	17491	17491
12.	SAFETY SWITCH BRACKET	17490-C	17490-C	17490-C	17490-C
13.	SAFETY PLUNGER SPRING	7007	7007	7007	7007
14.	SAFETY PLUNGER WASHER	A-636	A-636	A-636	A-363
15.	5/16-18X1 FLAT HD SCR	614-1	614-1	614-1	614-1
16.	LIMIT SWITCH	E-200	E-200	E-200	E-200
17.	3/16X1 1/2 ROLL PIN	481-2	481-2	481-2	481-2
18.	SAFETY CANVAS	2739	2670	17597	C-896
27.	SCREW M 8 X 20 FLAT HD	209-6	209-6	209-6	209-6
29.	HARD CUTTING PLATE	55070	55007	55108	55028
45.	HOLE COVER	V26-1-45	V29-1-45	V37-1-45	V41-1-45
47.	SCREW M 5 X 8	V26-1-47	V29-1-47	V37-1-47	V41-1-47
48.	LIMIT JOGGING BLOCK	V26-1-48	V29-1-48	V37-1-48	V41-1-48
49.	PIN	V26-1-49	V29-1-49	V37-1-49	V41-1-49
50.	SCREW M 10 X 40	V26-1-50	V29-1-50	V37-1-50	V41-1-50
51.	NUT M10	V26-1-51	V29-1-51	V37-1-51	V41-1-51
52.	SCREW M 10 X 50	V26-1-52	V29-1-52	V37-1-52	V41-1-52
53.	LOWER LUG	V26-1-53	V29-1-53	V37-1-53	V41-1-53
54.	UPPER LUG	V26-1-54	V29-1-54	V37-1-54	V41-1-54
55.	SCREW M6 X 16	V26-1-55	V29-1-55	V37-1-55	V41-1-55
56.	SCREW M6 X 12	V26-1-56	V29-1-56	V37-1-56	V41-1-56
57.	ROCKER WEAR PLATE	V26-1-57	V29-1-57	V37-1-57	55091
58.	ROCKER	V26-1-58	V29-1-58	V37-1-58	V41-1-58
58A	ROCKER	V26-1-58A	V29-1-58A	V37-1-58A	V41-1-58A
59.	NUT M18	V26-1-59	V29-1-59	V37-1-59	V41-1-59
60.	WASHER 18	V26-1-60	V29-1-60	V37-1-60	V41-1-60
61.	SCREW M16 X 35	V26-1-61	V29-1-61	V37-1-61	V41-1-61
63.	SCREW M12 X 50	V26-1-63	V29-1-63	V37-1-63	
64.	IMPRESSION LOCK	V26-1-64	V29-1-64	V37-1-64	
65.	PIN 6 X 35	V26-1-65	V29-1-65	V37-1-65	

PLATEN ASSEMBLY CONT.

DESCRIPTION		PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
67.	PIN	V26-1-67	V29-1-67	V37-1-67	
68.	COLLAR 10	V26-1-68	V29-1-68	V37-1-68	
69.	IMP PIVOT BLOCK	V26-1-69	V29-1-68	V37-1-68	
70.	SLEEVE	V26-1-70	V29-1-70	V37-1-70	
71.	PIN 4 X 30	V26-1-71	V29-1-71	V37-1-71	
72.	SLEEVE	V26-1-72	V29-1-72	V37-1-72	
73.	IMP THROWOFF HANDLE	V26-1-73	V29-1-73	V37-1-73	
74.	IMP THROW-OFF BAR	V26-1-74	V29-1-74	V37-1-74	
75.	SPRING	V26-1-75	V29-1-75	V37-1-75	
76.	IMPRESSION LOCK	V26-1-76	V29-1-76	V37-1-76	
77.	THROW-OFF SLEEVE RH	V26-1-77	V29-1-77	V37-1-77	
78.	THROW-OFF SLEEVE LH	V26-1-78	V29-1-78	V37-1-78	
79.	SCREW M12 X 40	V26-1-79	V29-1-79	V37-1-79	V41-1-79
80.	PIN 8 X 50	V26-1-80	V29-1-80	V37-1-80	V41-1-80
81.	PLATEN	V26-1-81	V29-1-81	V37-1-81	V41-1-81



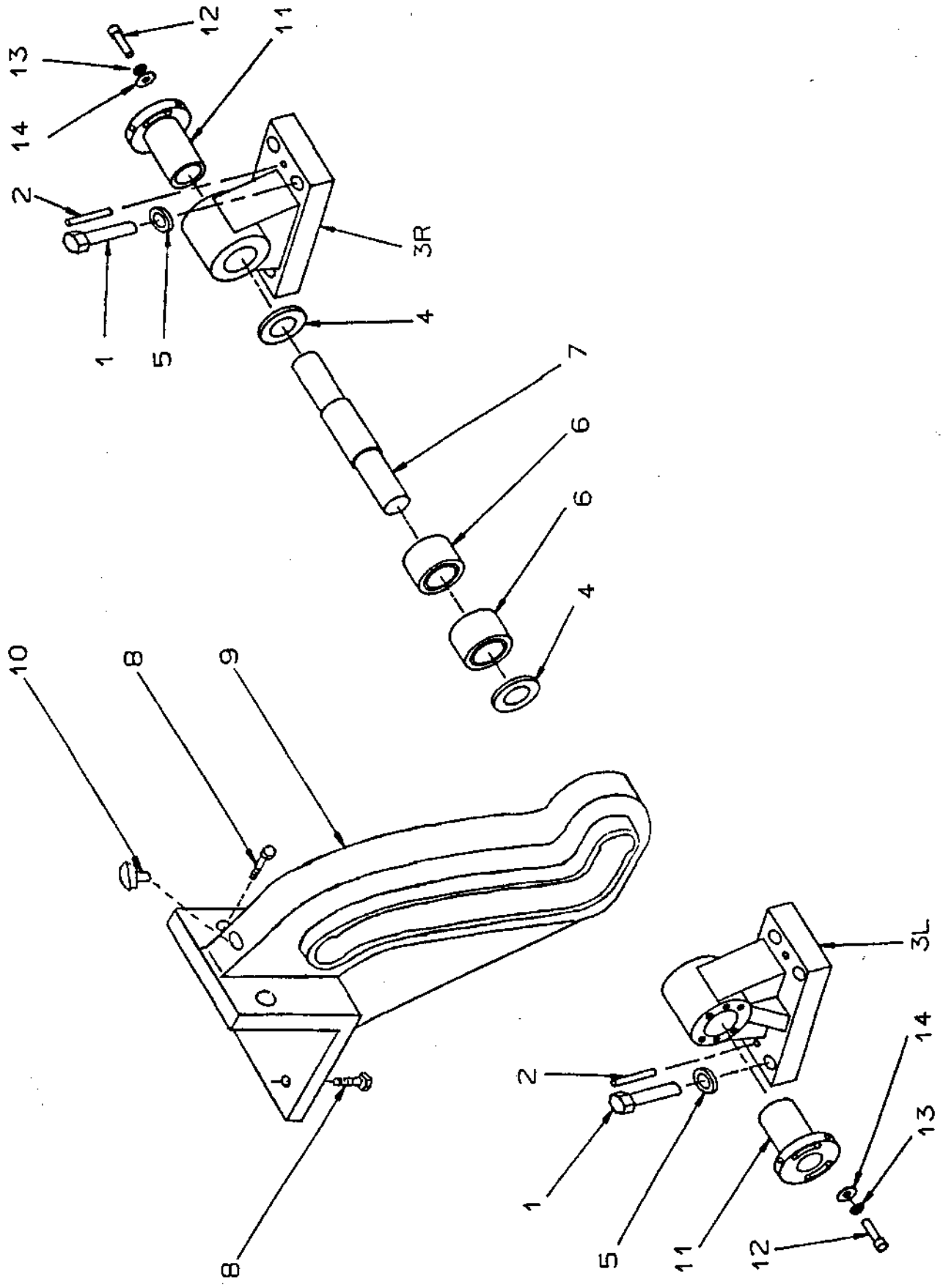
BRIDGE CAM ASSEMBLY FIG. 2

DESCRIPTION		PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1.	BOLT M16X55	V29-2-1	V29-2-1	V29-2-1	V29-2-1
2.	PIN 8X50	V29-2-2	V29-2-2	V29-2-2	V29-2-2
3L.	LH CAM STAND	V26-2-3L	V29-2-3L	V37-2-3L	V41-2-3L
3R.	RH CAM STAND	V26-2-3R	V29-2-3R	V37-2-3R	V41-2-3R
4.	CENTRAL WASHER	V29-2-4	V29-2-4	V29-2-4	V29-2-4
5.	16 LOCK WASHER	V29-2-5	V29-2-5	V29-2-5	V29-2-5
6.	BEARING	V29-2-6	V29-2-6	V29-2-6	V29-2-6
6A.	CENTER BEARING SPACER			V29-2-6A	
7.	CAM FOLLOWER SHAFT	V26-2-7	V29-2-7	V37-2-7	V41-2-7
7A.	ECCENTRIC SHAFT		V29-2-7A		
8.	BOLT M16X50	V29-2-8	V29-2-8	V29-2-8	V29-2-8
9.	BRIDGE CAM	V26-2-9	V29-2-9	V37-2-9	V37-2-9
10.	BUMPER	V29-2-10	V29-2-10	V29-2-10	V29-2-10
11.	ECCENTRIC BRUSHING	V26-2-11	V29-2-11	V37-2-11	V41-2-11
12.	M8X35 SOC HD CAP SCR	205-6	205-6	205-6	205-6
13.	M8 LOCK WASHER	1050	1050	1050	1050
14.	M8 FLAT WASHER	1049	1049	1049	1049
15.	CENTER ROLLER				V41-2-15

BRIDGE CAM ASSEMBLY FIG. 2A

DESCRIPTION		PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1.	BOLT M16X55	V29-2-1			
2.	PIN 8X50	V29-2-2			
3L.	LH CAM STAND	V26-2-3L			
3R.	RH CAM STAND	V26-2-3R			
4.	5/16-18 SET SCREW	283-6			
5.	16 LOCKWASHER	V29-2-5			
6.	CAM ROLLER	V26-2-16			
7.	ECCENTRIC SHAFT	V26-2-7			
8.	BOLT M16X50	V29-2-8			
9.	BRIDGE CAM	V26-2-9			
10.	BUMPER	V29-2-10			

CAM HOSE ASSY 1258-SU 1258-SU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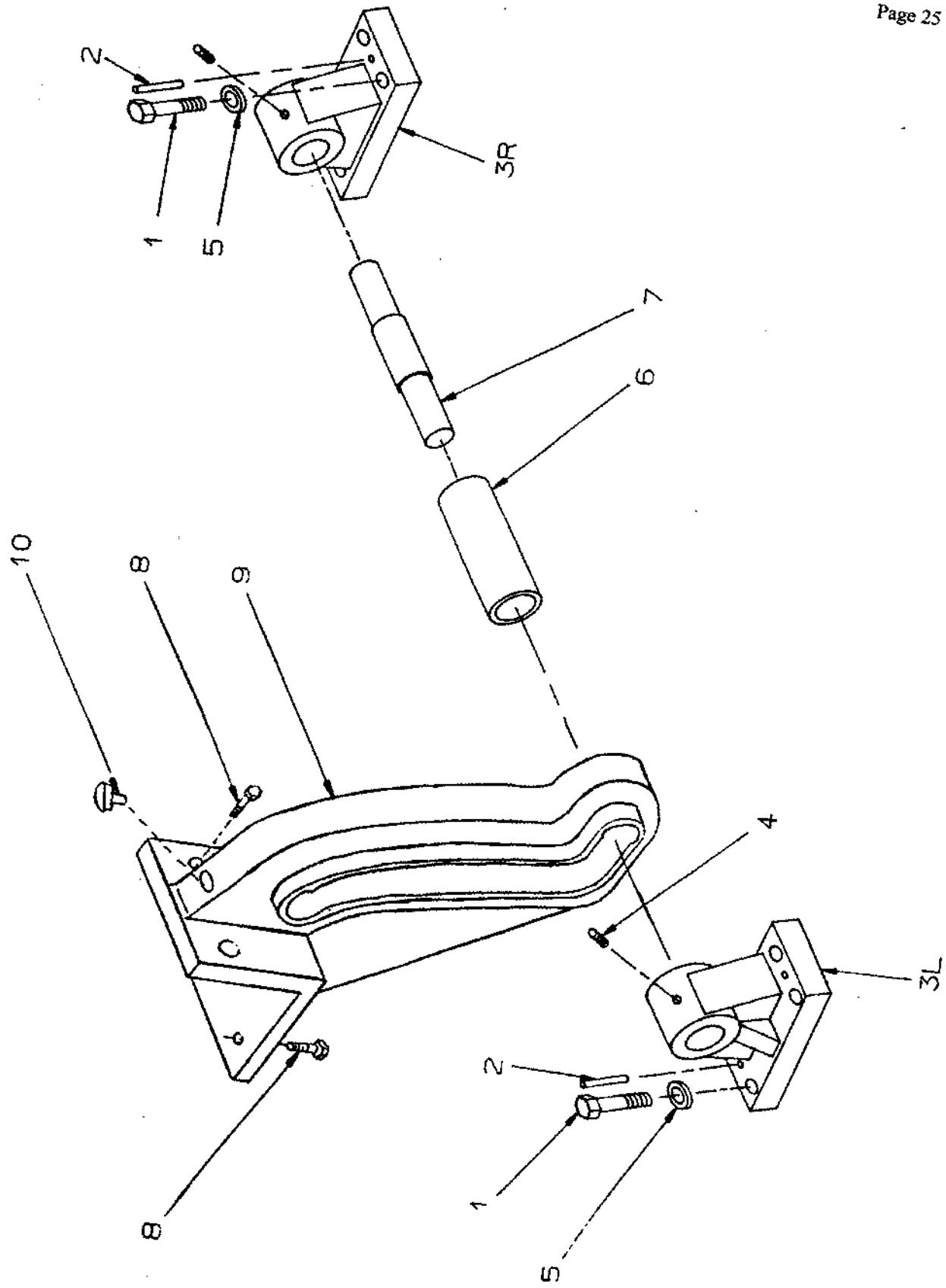
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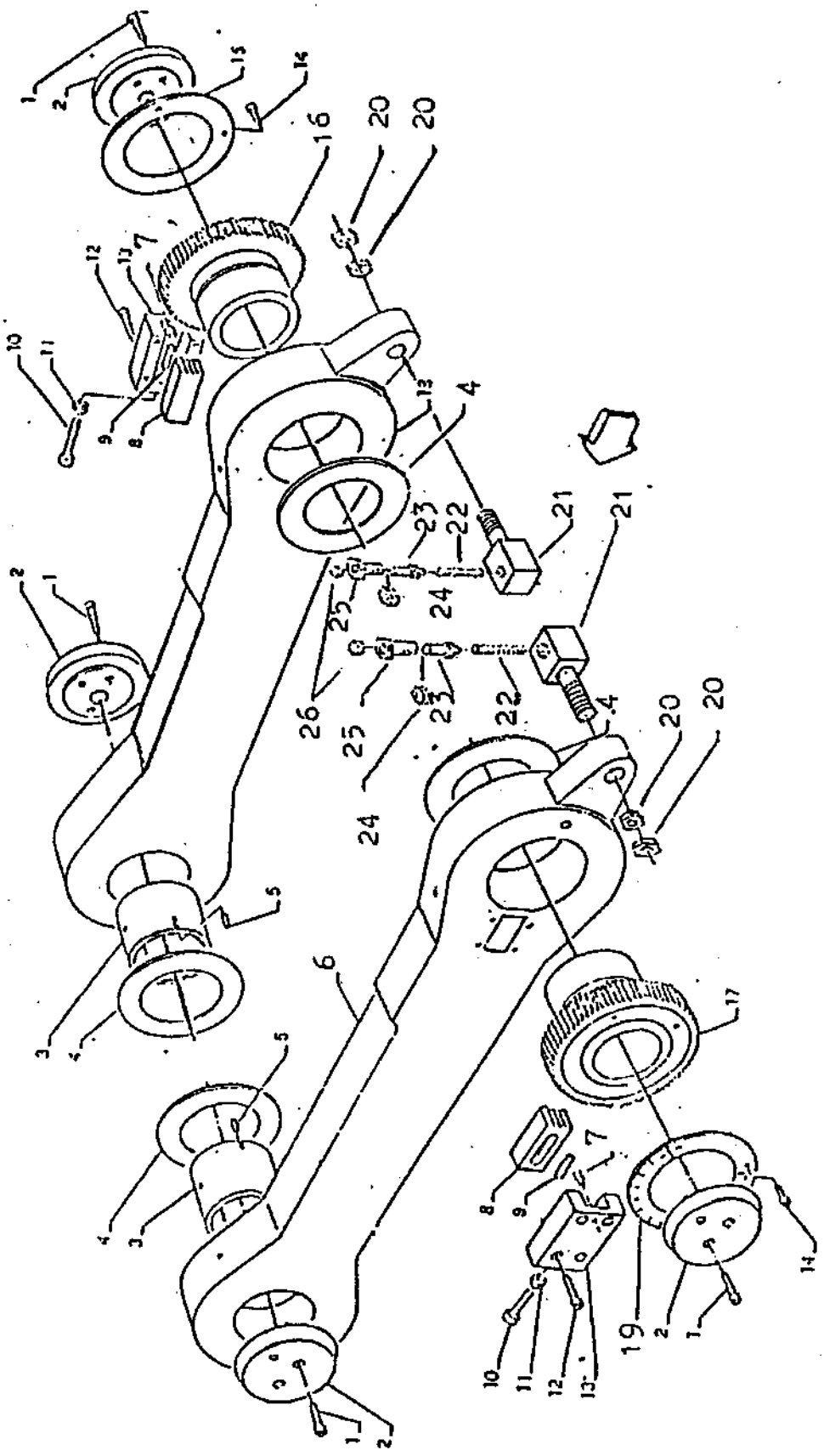
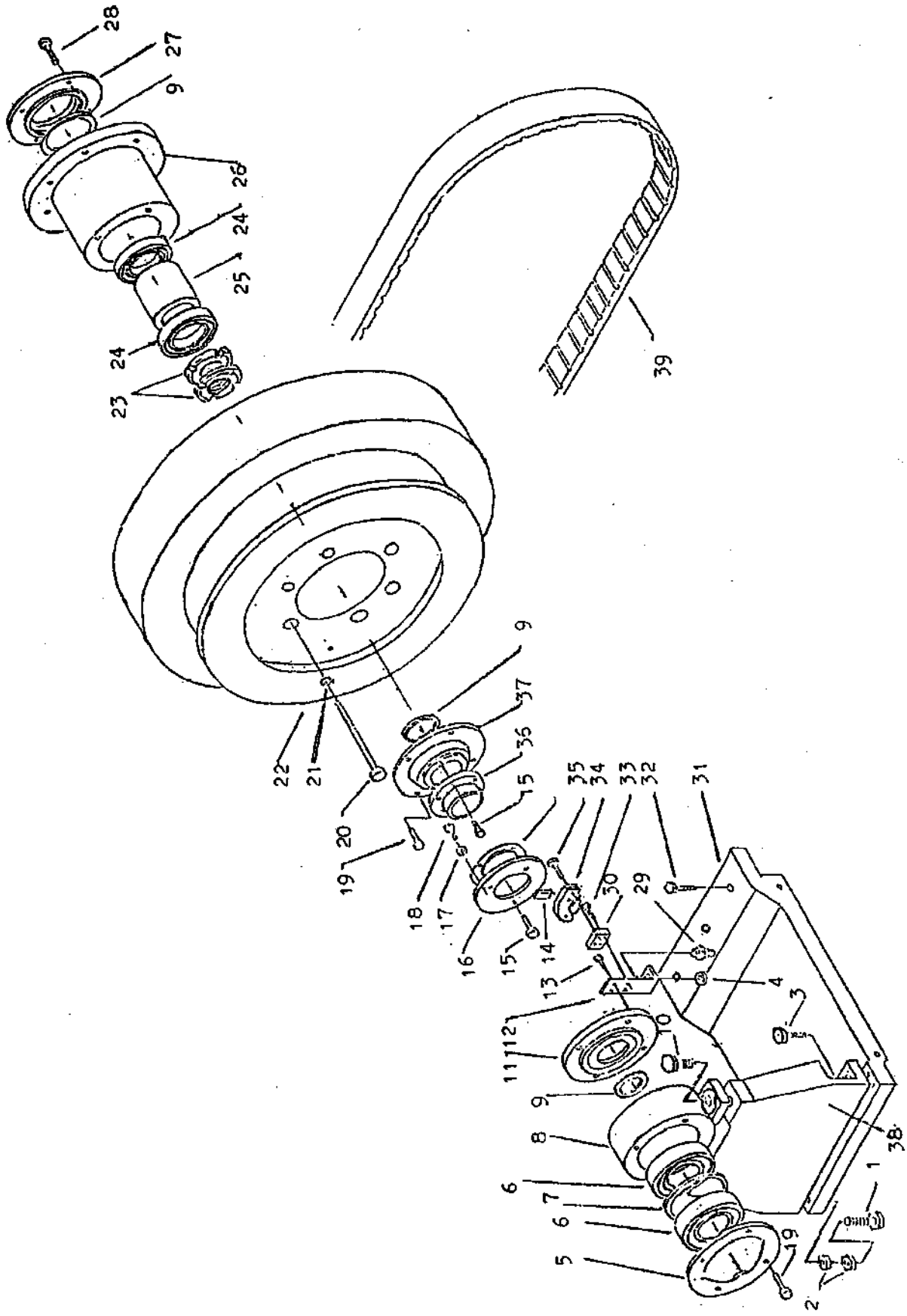
CONNECTING ROD ASSEMBLY FIG. 4

DESCRIPTION	PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1. SCREW M8X20	V29-4-1	V29-4-1	V29-4-1	V29-4-1
2. END CAP	V26-4-2	V29-4-2	V37-4-2	V41-4-2
3. CONN ROD BUSHING	V26-4-3	V29-4-3	V37-4-3	V41-4-3
4. CONN ROD WASHER	V26-4-4	V29-4-4	V37-4-4	V41-4-4
5. SCREW M5X12	V29-4-5	V29-4-5	V29-4-5	V29-4-5
6. CONN ROD (LEFT)	V26-4-6	V29-4-6	V37-4-6	V41-4-6
7. PIN	V29-4-7	V29-4-7	V29-4-7	V29-4-7
8. IMP SLEEVE LOCK	V26-4-8	V29-4-8	V37-4-8	V29-4-8
9. SPRING	V26-4-9	V29-4-9	V37-4-9	V29-4-9
10. BOLT M8X35	V29-4-10	V29-4-10	V29-4-10	V29-4-10
11. NUT M8	V29-4-11	V29-4-11	V29-4-11	V29-4-11
12. SCREW M8X30	V29-4-12	V29-4-12	V29-4-12	V29-4-12
13. IMP LOCK GUIDE	V26-4-13	V29-4-13	V37-4-13	V41-4-13
14. RIVET 3X8	V29-4-14	V29-4-14	V29-4-14	V29-4-14
15. SCALE (RIGHT)	V26-4-15	V29-4-15	V37-4-15	V41-4-15
16. RH IMP ADJ SLEEVE	V26-4-16	V29-4-16	V37-4-16	V41-4-16
17. LH IMP ADJ SLEEVE	V26-4-17	V29-4-17	V37-4-17	V41-4-17
18. RH CONN ROD	V26-4-18	V29-4-18	V37-4-18	V41-4-18
19. SCALE (LEFT)	V26-4-19	V29-4-19	V37-4-19	V41-4-19
20. NUT M20X2	V29-4-20	V29-4-20	V29-4-20	V29-4-20
21. IMP STOP BLOCK	V26-4-21	V29-4-21	V37-4-21	V41-4-21
22. SPRING	V29-4-22	V29-4-22	V29-4-22	V29-4-22
23. IMP STOP ROD	V26-4-23	V29-4-23	V29-4-23	V29-4-23
24. NUT	V26-4-24	V29-4-24	V37-4-24	V41-4-24
25. IMP THROW-OFF STOP	V26-4-25	V29-4-25	V37-4-25	V41-4-25
26. CAP	V26-4-26	V29-4-26	V37-4-26	V41-4-26



FLYWHEEL WHEEL ASSEMBLY FIG. 6

DESCRIPTION		PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1.	BOLT M10X35	V29-6-1	V29-6-1	V29-6-1	V29-6-1
2.	NUT M10	V29-1-51	V29-1-51	V29-1-51	V29-1-51
3.	BOLT M12X40	V29-6-3	V29-6-3	V29-6-3	V29-6-3
4.	NUT	V29-6-4	V29-6-4	V29-6-4	V29-6-4
5.	END PLATE	V26-6-5	V29-6-5	V37-6-5	V41-6-5
6.	BEARING	55123	55123	V37-6-6	55123
7.	BEARING SPACER	V26-6-7	V29-6-7	V37-6-7	V41-6-7
8.	BEARING HOUSING	V26-6-8	V29-6-7	V37-6-7	V41-6-7
9.	OIL SEAL	V26-6-9	V29-6-9	V37-6-9	V41-6-9
10.	BOLT M12X30	V29-6-10	V29-6-10	V29-6-10	V29-6-10
11.	END CAP	V26-6-11	V29-6-11	V37-6-11	V41-6-11
12.	BRUSH SUPPORT	V26-6-12	V29-6-12	V37-6-12	V41-6-12
13.	SCREW M5X10	V29-6-13	V29-6-13	V29-6-13	V29-6-13
14.	BRUSH	V29-6-14	V29-6-14	V29-6-14	V29-6-14
15.	SCREW M6X12	V29-1-56	V29-1-56	V29-1-56	V29-1-56
16.	BRUSH RING	V26-6-16	V29-6-16	V37-6-16	V41-6-16
17.	WASHER 5	V29-6-17	V29-6-17	V29-6-17	V29-6-17
18.	SCREW M5X8	V29-6-18	V29-6-18	V29-6-18	V29-6-18
19.	SCREW M6X20	V29-6-19	V29-6-19	V29-6-19	V29-6-19
20.	BOLT M10X130	V29-6-20	V29-6-20	V29-6-20	V29-6-20
21.	WASHER 10	V29-6-21	V29-6-21	V29-6-21	V29-6-21
22.	FLYWHEEL	V26-6-22	V29-6-22	V37-6-22	V41-6-22
23.	NUT M52X1.5	V26-6-23	V29-6-23	V37-6-23	V41-6-23
24.	BEARING	V26-6-24	512-6	V37-6-24	55195
25.	BEARING SPACER	V26-6-25	V29-6-25	V37-6-25	V41-6-25
26.	FLANGED HOUSING	V26-6-26	V29-6-26	V37-6-26	V41-6-26
27.	END CAP	V26-6-27	V29-6-27	V37-6-27	V41-6-27
28.	SCREW M8X20	V29-4-1	V29-4-1	V29-4-1	V29-4-1
29.	ELECTRICAL CONNECTOR	V26-6-29	V29-6-29	V37-6-29	V41-6-29
30.	BRUSH SEAT	V26-6-30	V29-6-30	V37-6-30	V41-6-30
31.	BASE	V26-6-31	V29-6-31	V37-6-31	V41-6-31
32.	BOLT M12X50	V26-6-32	V29-6-32	V37-6-32	V41-6-32
33.	SCREW	V26-6-33	V29-6-33	V37-6-33	V41-6-33
34.	BRUSH HOLDER	V26-6-34	V29-6-34	V37-6-34	V41-6-34
35.	SCREW M4X20	V26-6-35	V29-6-35	V37-6-35	V41-6-35
36.	BRUSH RING SEAT	V26-6-36	V29-6-36	V37-6-36	V41-6-36
37.	FLYWHEEL END CAP	V26-6-37	V29-6-37	V37-6-37	V41-6-37
38.	OUTBOARD SUPPORT	V26-6-38	V29-6-38	V37-6-38	V41-6-38
39.	V-BELT	577-6C	460-6C	760-6	864-6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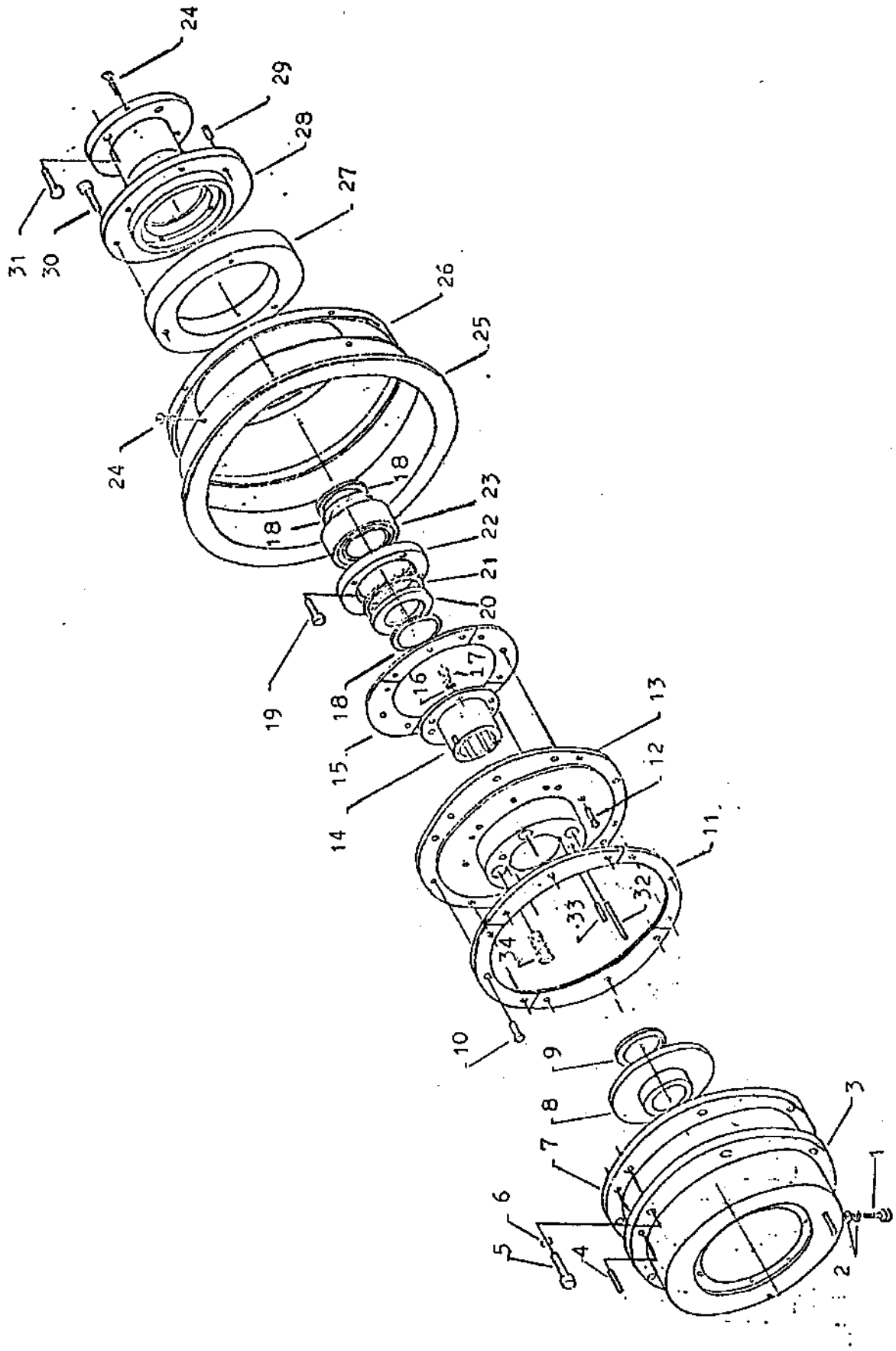
ELECTROMAGNETIC CLUTCH FIG. 7

DESCRIPTION		PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1.	BOLT M5X10	V29-7-1	V29-7-1	V29-7-1	V29-7-1
2.	WASHER 5	V29-6-17	V29-6-17	V29-6-17	V29-6-17
3.	MAGNETIC YOKE	V26-7-3	V29-7-3	V37-7-3	V41-7-3
4.	PIN 10 JAX28	V29-7-4	V29-7-4	V29-7-4	V29-7-4
5.	SCREW M8X22	V29-7-5	V29-7-5	V29-7-5	V29-7-5
6.	WASHER 8	V29-7-6	V29-7-6	V29-7-6	V29-7-6
7.	FRICTION RING	V26-7-7	V29-7-7	V37-7-7	V41-7-7
8.	COLLAR	V26-7-8	V29-7-8	V37-7-8	V41-7-8
9.	OIL BAFFLE RING	V26-7-9	V29-7-9	V37-7-9	V41-7-9
10.	10-32x1/4 BRASS FL HD SCR	661-6	661-6	661-6	661-6
11.	FRICTION PIECE	V26-7-11	V29-7-11	V37-7-11	V41-7-11
12.	10-32x1/4 BRASS FL HD SCR	661-6	661-6	661-6	661-6
13.	ARMATURE	V26-7-13	V29-7-13	V37-7-13	V41-7-13
14.	SPLINED HUB	V26-7-14	V29-7-14	V37-7-14	V41-7-14
15.	BRAKE LINING	V29-7-15	V29-7-15	V37-7-15	V41-7-15
16.	WASHER 8	V29-7-6	V29-7-6	V29-7-6	V29-7-6
17.	SCREW M6X16	V29-1-55	V29-1-55	V29-1-55	V29-1-55
18.	COLLAR 60	V29-7-18	V29-7-18	V29-7-18	V29-7-18
19.	SCREW M6X16	V29-1-55	V29-1-55	V29-1-55	V29-1-55
20.	CENTER COLLAR	V26-7-20	V29-7-20	V37-7-20	V41-7-20
21.	OIL SEAL	V26-7-21	V29-7-21	V37-7-21	V41-7-21
22.	COVER	V26-7-22	V29-7-22	V37-7-22	V41-7-22
23.	BEARING	V26-7-23	V29-7-23	V37-7-23	305-6
24.	SCREW M6X8	V29-7-24	V29-7-24	V29-7-24	V29-7-24
25.	MAGNET COVER	V26-7-25	V29-7-25	V37-7-25	V41-7-25
26.	BRAKE SEAT COVER	V26-7-26	V29-7-26	V37-7-26	V41-7-26
27.	BRAKE RING	V26-7-27	V29-7-27	V37-7-27	V41-7-27
28.	BRAKE SEAT	V26-7-28	V29-7-28	V37-7-28	V41-7-28
29.	SCREW M10X25	V29-7-29	V29-7-29	V29-7-29	V29-7-29
30.	SCREW M10X35	V29-7-30	V29-7-30	V29-7-30	V29-7-30
31.	SCREW M12X30	V29-7-31	V29-7-31	V29-7-31	V29-7-31
32.	PIN 12jc4X35	V29-7-32	V29-7-32	V29-7-32	V29-7-32
33.	SCREW M8X20	V29-4-1	V29-4-1	V29-4-1	V29-4-1
34.	SPRING	267-6	V29-7-34	V37-7-34	V41-7-34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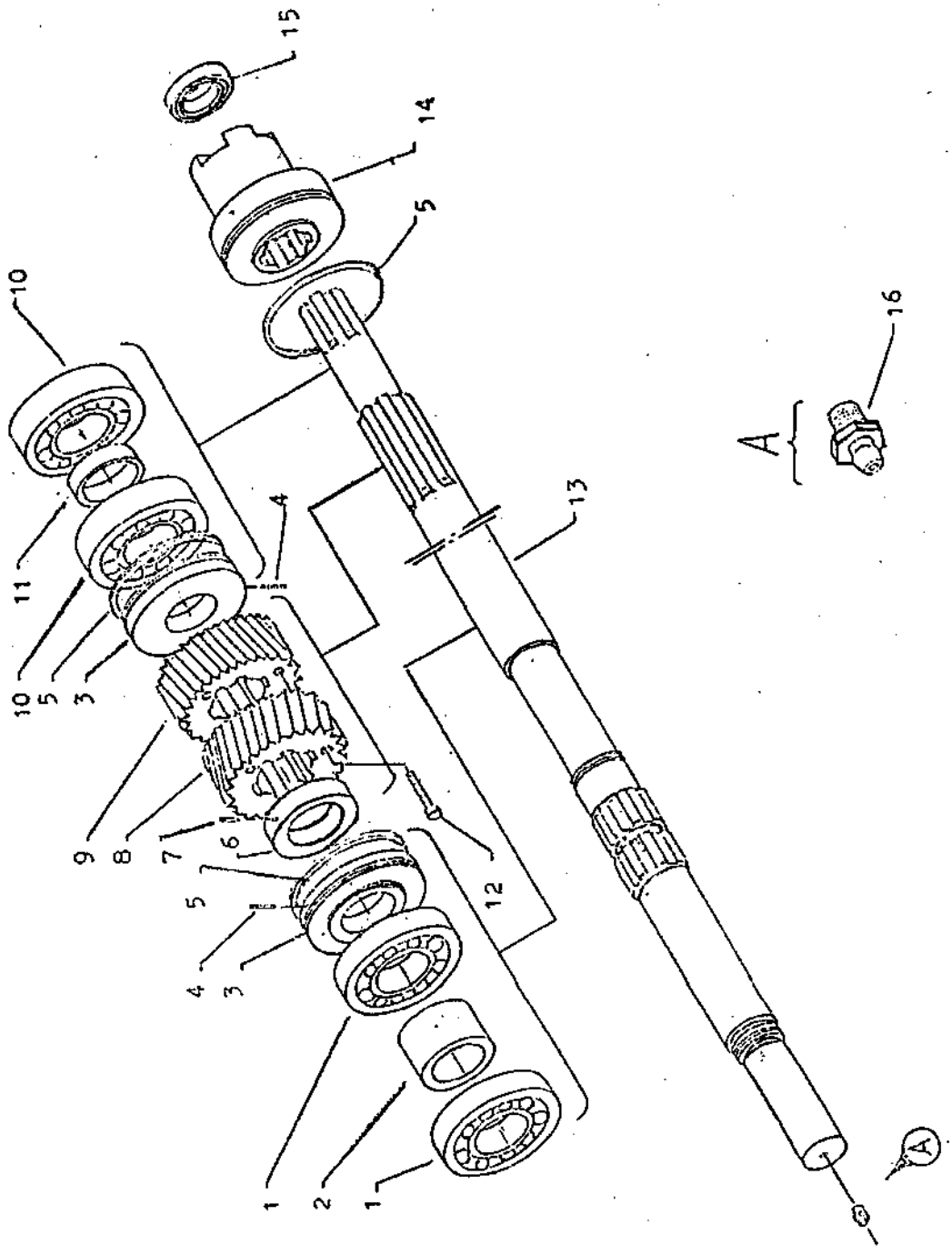
FLYWHEEL SHAFT ASSEMBLY FIG. 8

DESCRIPTION		PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1.	BEARING	V26-8-1	V29-8-1	V37-8-1	V41-8-1
2.	CENTER SPACER	V26-8-2	V29-8-2	V37-8-2	V41-8-2
3.	BEARING COLLAR	V26-8-3	V29-8-3	V37-8-3	V41-8-3
4.	SCREW M6X20	V29-6-19	V29-6-19	V29-6-19	V29-6-19
5.	OIL SEAL	V26-8-5	V29-8-5	V37-8-5	V41-8-5
6.	COLLAR 60	V29-7-18	V29-7-18	V29-7-18	V29-7-18
7.	SCREW M8X20	V29-4-1	V29-4-1	V29-4-1	V29-4-1
8.	LEFT PINION	V26-8-8	V29-8-8	V37-8-8	V41-8-8
9.	RIGHT PINION	V26-8-9	V29-8-9	V37-8-9	V41-8-9
10.	BEARING	V26-8-10	V29-8-10	V37-8-10	V41-8-10
11.	CENTER COLLAR	V26-8-11	V29-8-11	V37-8-11	V41-8-11
12.	SCREW M6X50	V29-8-12	V29-8-12	V29-8-12	V29-8-12
13.	TRANSMISSION SHAFT	V26-8-13	V29-8-13	V37-8-13	V41-8-13
14.	CLUTCH	V26-8-14	V29-8-14	V37-8-14	V41-8-14
15.	BEARING	V26-8-15	V29-8-15	V37-8-15	V41-8-15
16.	GREASE NIPPLE	V29-8-16	V29-8-16	V29-8-16	V29-8-16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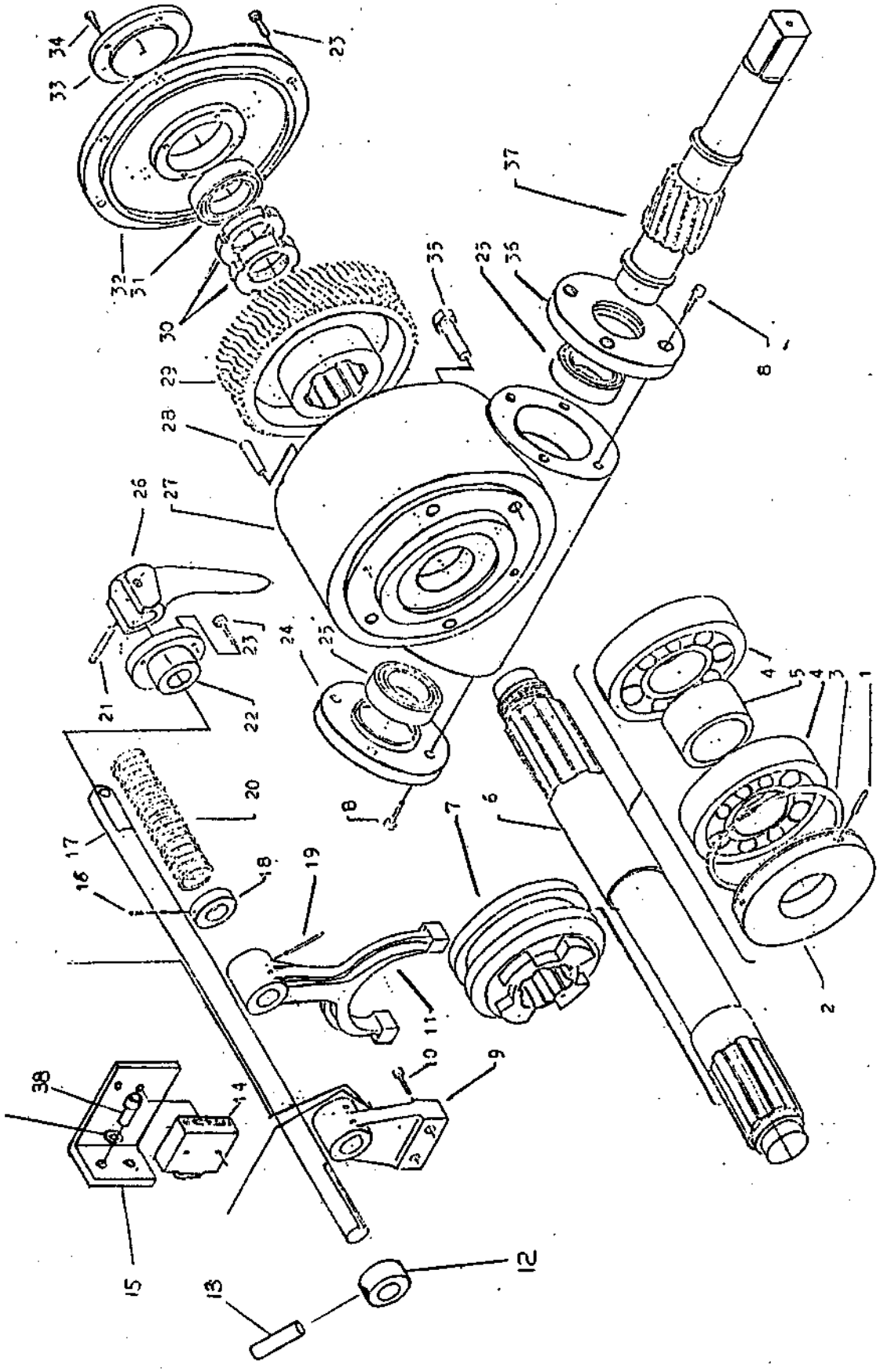
HAND CRANK GEAR BOX FIG. 9

DESCRIPTION	PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1. SCREW M6X20	V29-6-19	V29-6-19	V29-6-19	V29-6-19
2. COLLAR	V26-9-2	V29-9-2	V29-9-2	V29-9-2
3. OIL SEAL	V26-9-3	V29-9-3	V29-9-3	V29-9-3
4. BEARING 1310	V26-9-4	V29-9-4	V29-9-4	V29-9-4
5. SPACER	V26-9-5	V29-9-5	V29-9-5	V29-9-5
6. CONNECTING SHAFT	V26-9-6	V29-9-6	V37-9-6	V41-9-6
7. SLIDING CLUTCH		V29-9-7	V29-9-7	V29-9-7
8. SCREW M8X20		V29-6-28	V29-6-28	V29-6-28
9. LEVER SUPPORT		V29-9-9	V29-9-9	V29-9-9
10. SCREW M8X30		V29-4-12	V29-4-12	V29-4-12
11. BRACKET		V29-9-11	V29-9-11	V29-9-11
12. SWITCH ACTUATOR		55023	55023	55023
13. 3/16X1 1/4 DOWEL PIN		464-2	464-2	464-2
14. LIMIT SWITCH		E-200	E-200	E-200
15. SWITCH BRACKET		55022	55022	55022
16. SCREW M6X10		V29-9-16	V29-9-16	V29-9-16
17. LEVER		V29-9-17	V37-9-17	V41-9-17
18. COLLAR 19		V29-9-18	V29-9-18	V29-9-18
19. PIN 5X32		V29-9-19	V29-9-19	V29-9-19
20. SPRING		V29-9-20	V29-9-20	V29-9-20
21. SCREW M8X20		V29-9-21	V29-9-21	V29-9-21
22. LEVER SLEEVE		V29-9-22	V29-9-22	V29-9-22
23. SCREW M6X16		V29-1-55	V29-1-55	V29-1-55
24. WORM COVER		V29-9-24	V29-9-24	V29-9-24
25. BEARING 2007107		V29-9-25	V29-9-25	V29-9-25
26. HANDLE		V29-9-26	V29-9-26	V29-9-26
27. WORM GEAR BOX		V29-9-27	V29-9-27	V29-9-27
28. PIN 8X35		V29-9-28	V29-9-28	V29-9-28
29. WORM GEAR		V29-9-29	V29-9-29	V29-9-29
30. NUT M36X1.5		V29-9-30	V29-9-30	V29-9-30
31. BEARING 106		V29-9-31	V29-9-31	V29-9-31
32. WORM GEAR BOX COVER	V26-9-32	V29-9-32	V29-9-32	V29-9-32
33. BEARING CAP	V26-9-33	V29-9-33	V29-9-33	V29-9-33
34. SCREW M6X14	V29-9-34	V29-9-34	V29-9-34	V29-9-34
35. BOLT M12X38	V29-9-35	V29-9-35	V29-9-35	V29-9-35
36. COVER		V29-9-36	V29-9-36	V29-9-36
37. WORM		V29-9-37	V29-9-37	V29-9-37
38. 1/4-20X1/2 SCREW		799-2	799-2	799-2
39. 1/4 LOCK WASHER		516	516	516
40. CRANK	V29-9-40	V29-9-40	V29-9-40	V29-9-40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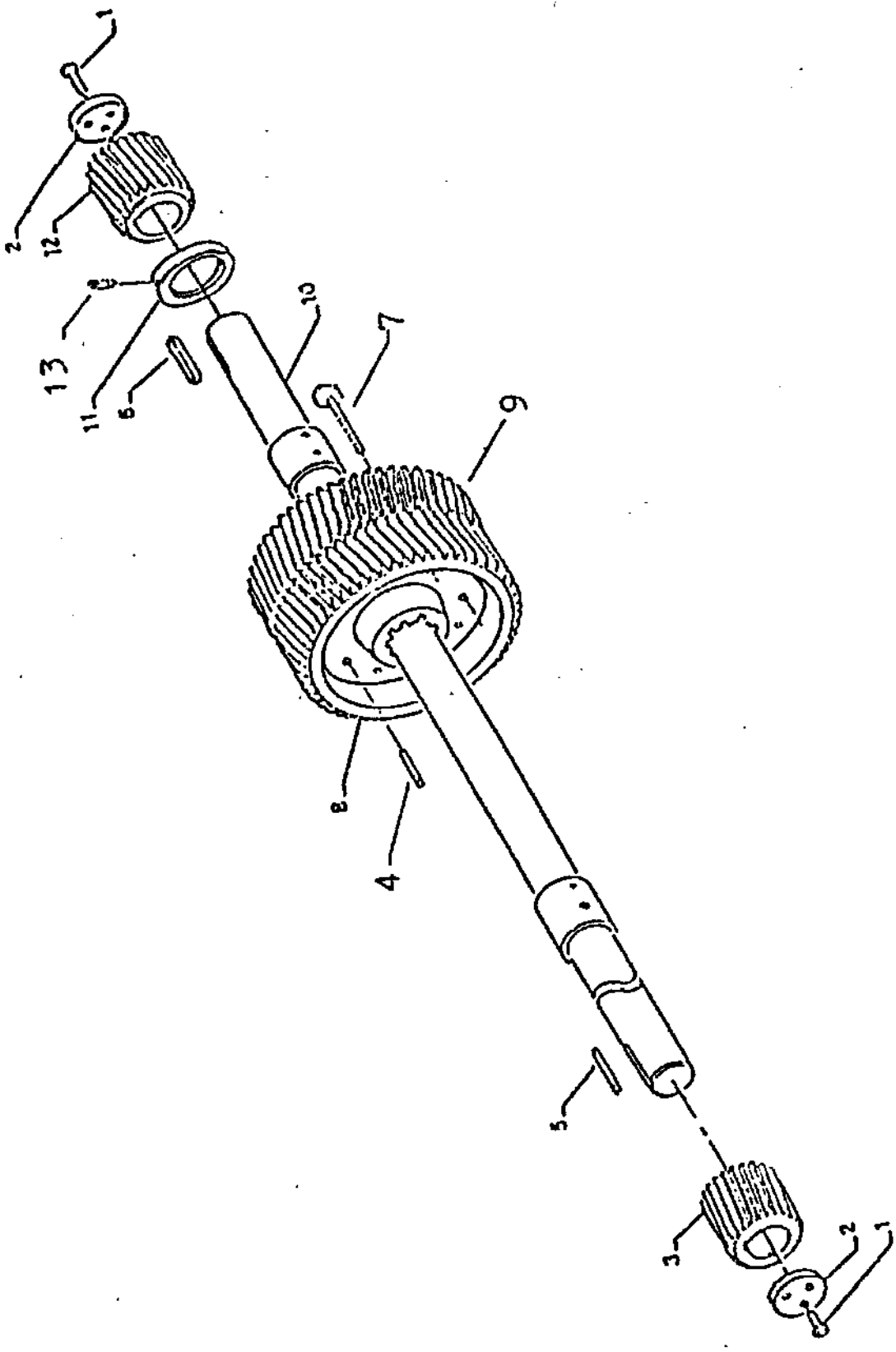
PINION SHAFT ASSEMBLY FIG. 10

DESCRIPTION		PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1.	SCREW M8X20	V29-4-1	V29-4-1	V29-4-1	V29-4-1
2.	END CAP	V26-10-2	V29-10-2	V37-10-2	V41-10-2
3.	RH MAIN GEAR PINION	V26-10-3	V26-10-3	V26-10-3	V26-10-3
4.	PIN	V29-10-4	V29-10-4	V29-10-4	V29-10-4
5.	KEY	V26-10-5	V29-10-5	V37-10-5	V41-10-5
7.	BOLT M12X50	V29-10-7	V29-10-7	V29-10-7	V29-10-7
8.	RIGHT INT BEVEL GEAR	V26-10-8	V29-10-8	V37-10-8	V41-10-8
9.	LEFT INT. BEVEL GEAR	V26-10-9	V29-10-9	V37-10-9	V41-10-9
10.	PINION SHAFT	V26-10-10	V29-10-10	V37-10-10	V41-10-10
11.	COLLAR	V26-10-11	V29-10-11	V37-10-11	V41-10-11
12.	LH MAIN GEAR PINION	V26-10-12	V29-10-12	V37-10-12	V41-10-12
13.	SCREW	V26-10-13	V29-10-13	V37-10-13	V41-10-13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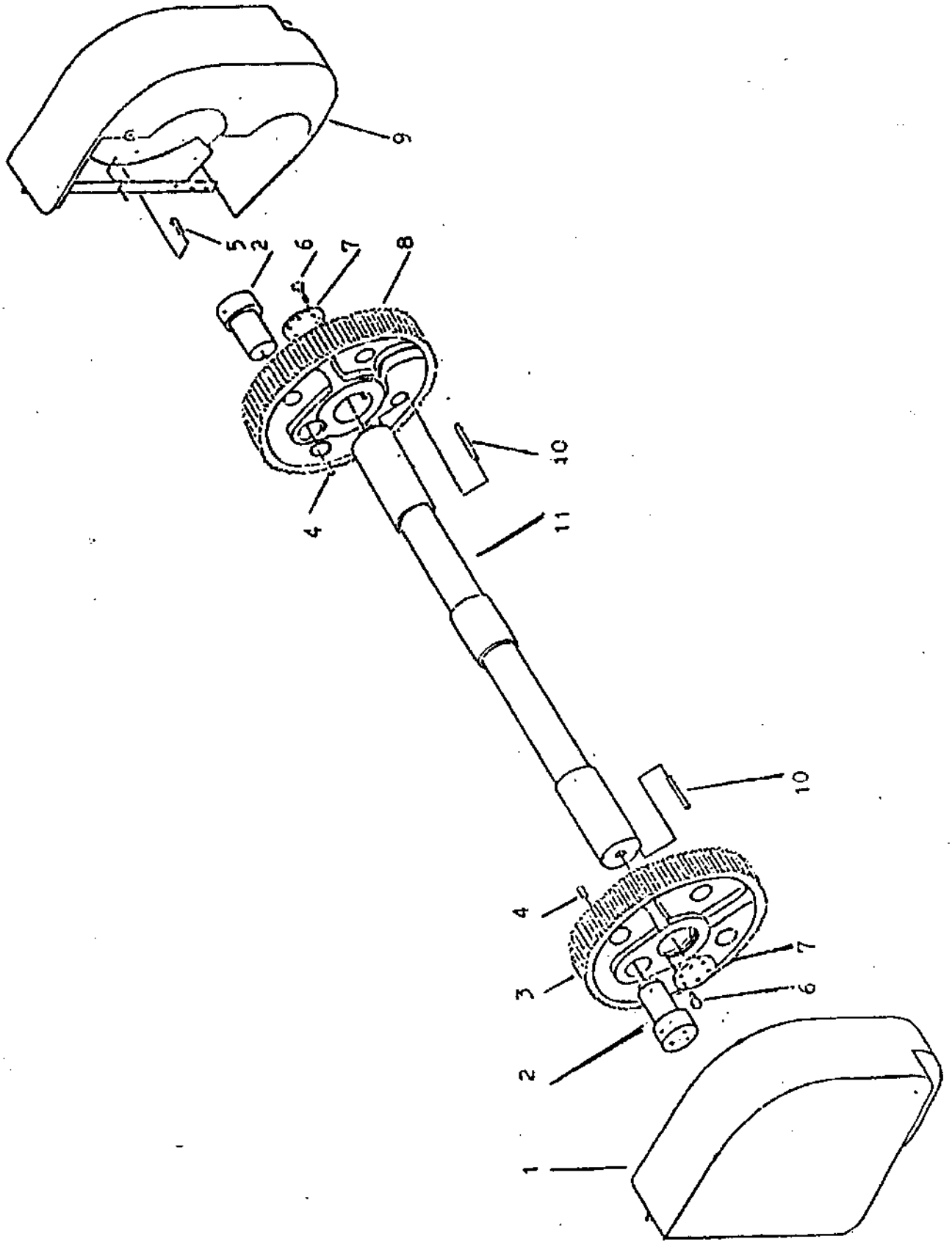
MAIN SHAFT ASSEMBLY FIG.11

DESCRIPTION		PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1.	RH MAIN GEAR GUARD	V26-11-1	V29-11-1	V37-11-1	V41-11-1
2.	CRANK PIN	V26-11-2	V29-11-2	V37-11-2	V41-11-2
3.	RH MAIN GEAR	V26-11-3	V29-11-3	V37-11-3	V41-11-3
4.	SCREW M12X20	V9-11-4	V29-11-4	V29-11-4	V29-11-4
5.	SCREW M5X8	V29-11-5	V29-11-5	V29-11-5	V29-11-5
6.	SCREW M8X20	V29-4-1	V29-4-1	V29-4-1	V29-4-1
7.	END CAP	V26-11-7	V29-11-7	V37-11-7	V41-7-11
8.	LH MAIN GEAR	V26-11-8	V29-11-8	V37-11-8	V41-11-8
9.	LEFT MAIN GEAR GUARD	V26-11-9	V29-11-9	V37-11-9	V41-11-9
10.	PIN 20jc4x80	V29-11-10	V29-11-10	V29-11-10	V29-11-10
11.	MAIN SHAFT	V26-11-11	V29-11-11	V37-11-11	V41-11-11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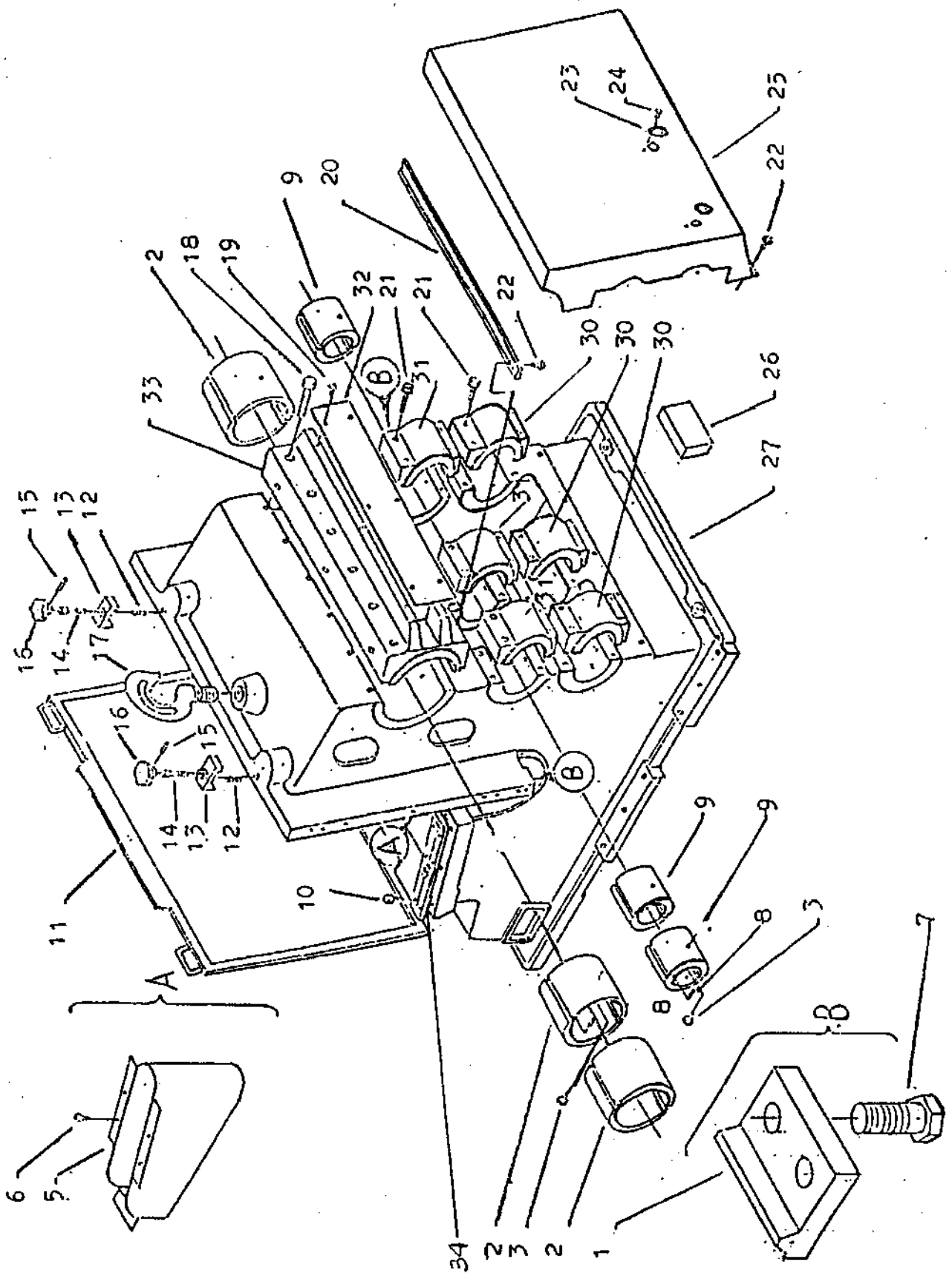
MACHINE BASE ASSEMBLY FIG.12

DESCRIPTION	PART NUMBER PRESS SIZE 26X37	29X41	37X52	41X58
1. RIGHT CHASE SUPPORT	V26-12-1	V29-12-1	V37-12-1	V41-12-1
2. MAIN SHAFT BUSHING	V26-12-2	V29-12-2	V37-12-2	V41-12-2
3. SCREW M8X8	V29-12-3	V29-12-2	V29-12-2	V29-12-2
5. BRIDGE CAM OIL TUB	V26-12-5	V29-12-5	V37-12-5	V41-12-5
6. SCREW M8X10	V29-12-6	V29-12-6	V29-12-6	V29-12-6
7. BOLT M12X30	V29-6-10	V29-6-10	V29-6-10	V29-6-10
8. PIN B10X20	V29-12-8	V29-12-8	V29-12-8	V29-12-8
9. PINION SHAFT BUSHING	V26-12-9	V29-12-9	V37-12-9	V41-12-9
10. SCREW M10X20	V29-12-10	V29-12-10	V29-12-10	V29-12-10
11. CHASE	V26-12-11	V29-12-11	V37-12-11	V41-12-11
12. SPRING	V29-12-12	V29-12-12	V29-12-12	V29-12-12
13. CHASE LOCK	V29-12-13	V29-12-13	V29-12-13	V29-12-13
14. SCREW	V29-12-14	V29-12-14	V29-12-14	V29-12-14
15. PIN A4X32	V29-12-15	V29-12-15	V29-12-15	V29-12-15
16. HANDLE 16X65	V29-12-16	V29-12-16	V29-12-16	V29-12-16
17. EYEBOLT	V26-12-17	V29-12-17	V37-12-17	V41-12-17
18. SCREW M16X110	V29-12-18	V29-12-18	V29-12-18	V29-12-18
19. SCREW M5X6	V29-12-19	V29-12-19	V29-12-19	V29-12-19
20. SHELF	V26-12-20	V29-12-20	V37-12-20	V41-12-20
21. BOLT M12X80	V29-12-21	V29-12-21	V29-12-21	V29-12-21
22. SCREW M6X12	V29-1-56	V29-1-56	V29-1-56	V29-1-56
23. WINDOW COVER	V29-12-23	V29-12-23	V29-12-23	V29-12-23
24. RIVET	V29-12-24	V29-12-24	V29-12-24	V29-12-24
25. BACK COVER	V26-12-25	V29-12-25	V37-12-25	V41-12-25
27. MACHINE BASE	V26-12-27	V2 9-12-27	V37-12-27	V41-12-27
30. TRANSMISSION SHAFT CAP	V26-12-30	V29-12-30	V37-12-30	V41-12-30
31. INT. SHAFT CAP	V26-12-31	V29-12-31	V37-12-31	V41-12-31
32. BACK COVER	V26-12-32	V29-12-32	V37-12-32	V41-12-32
33. MAIN SHAFT CAP	V26-12-33	V29-12-33	V37-12-33	V41-12-33
34. ROCKER SEAT PLATE	V26-12-34	V29-12-34	V37-12-34	V41-12-34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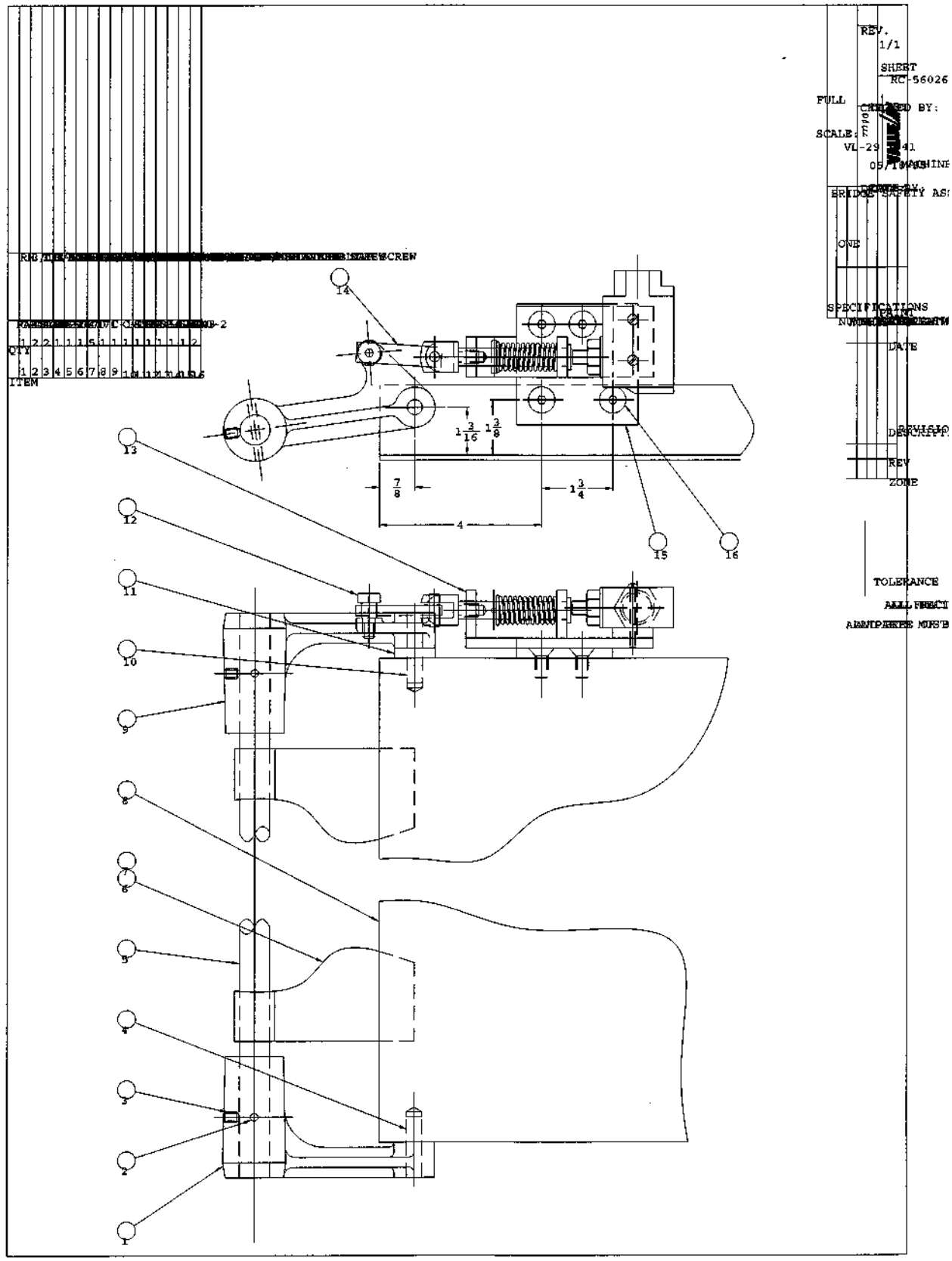
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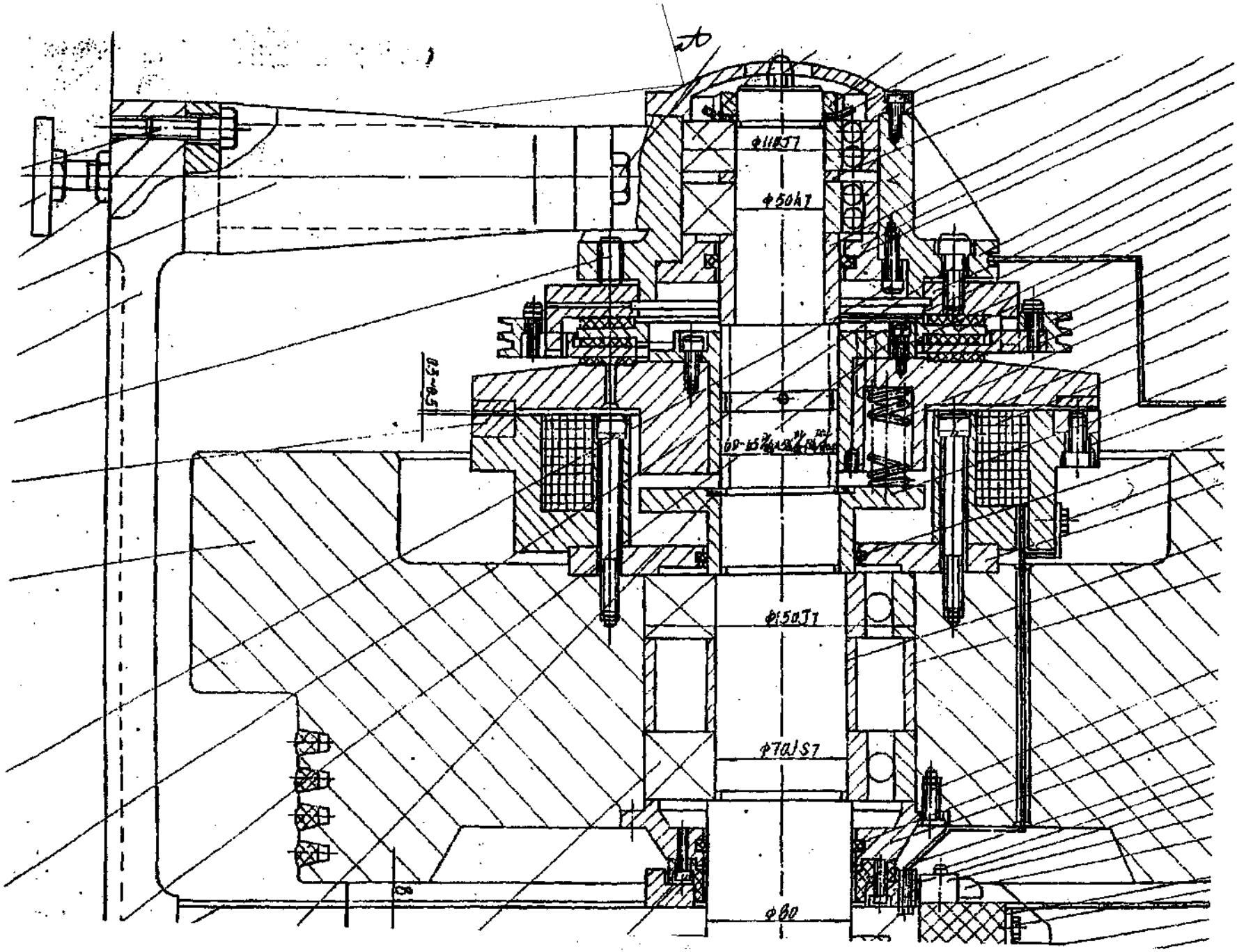

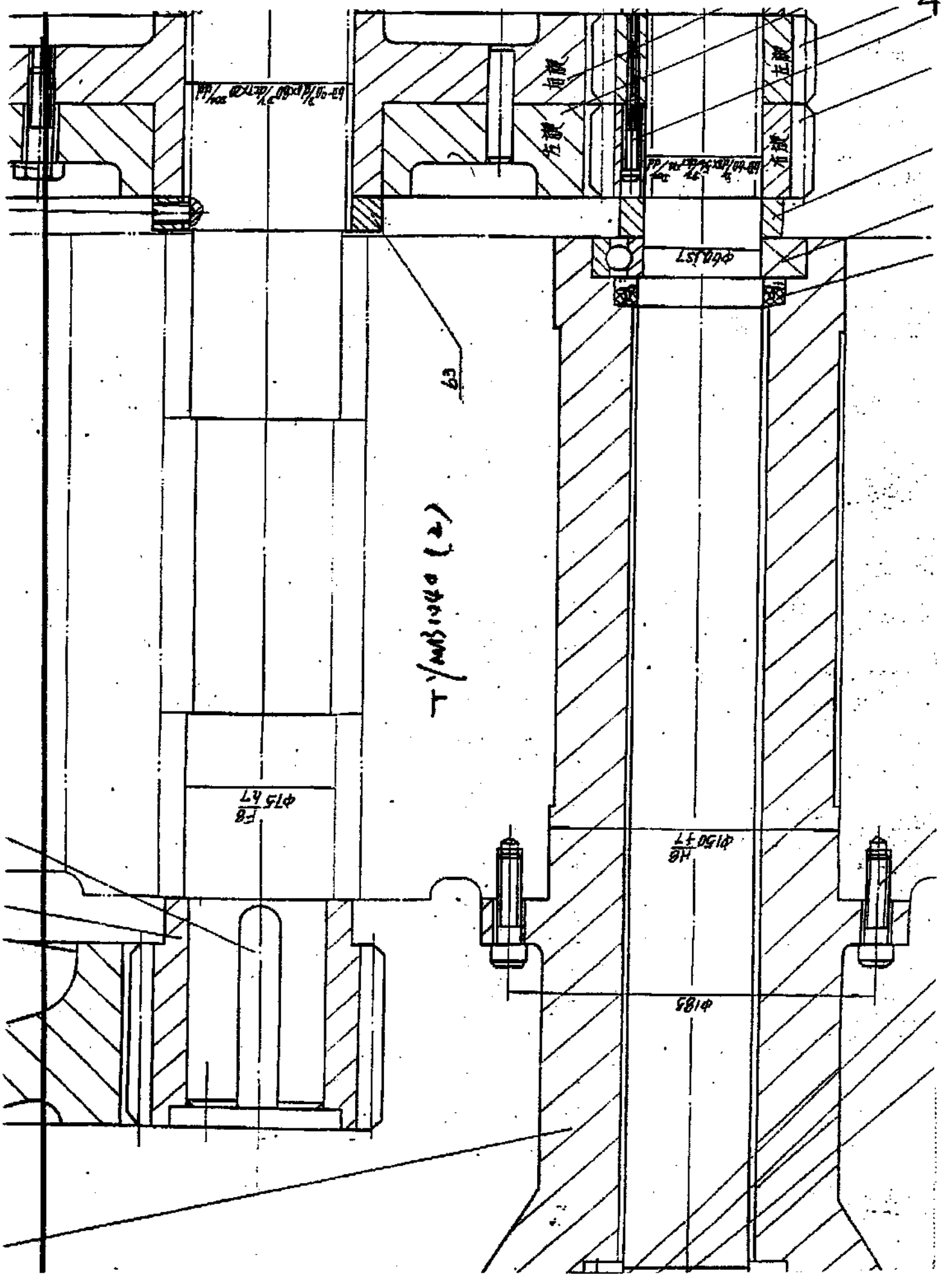

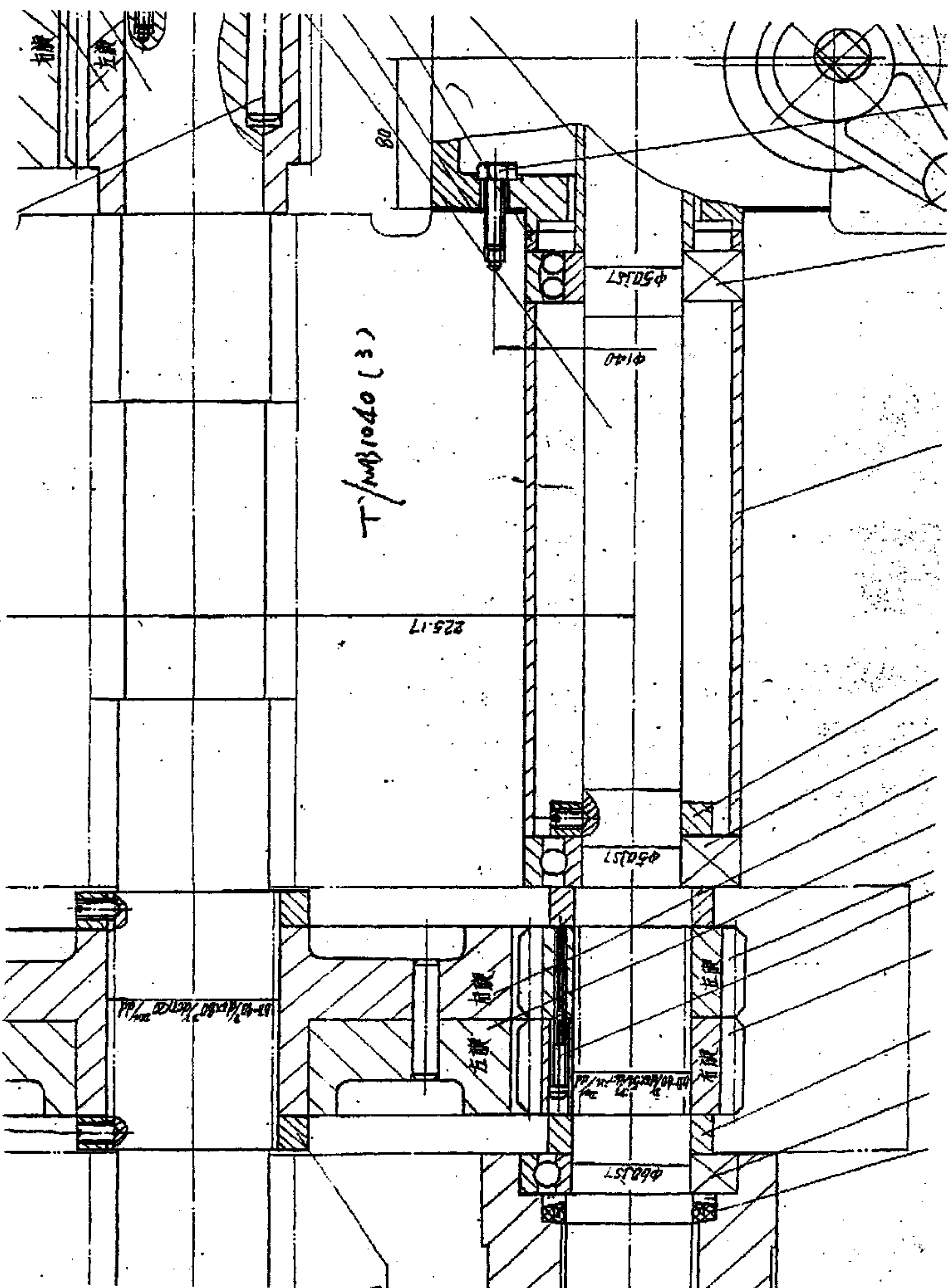

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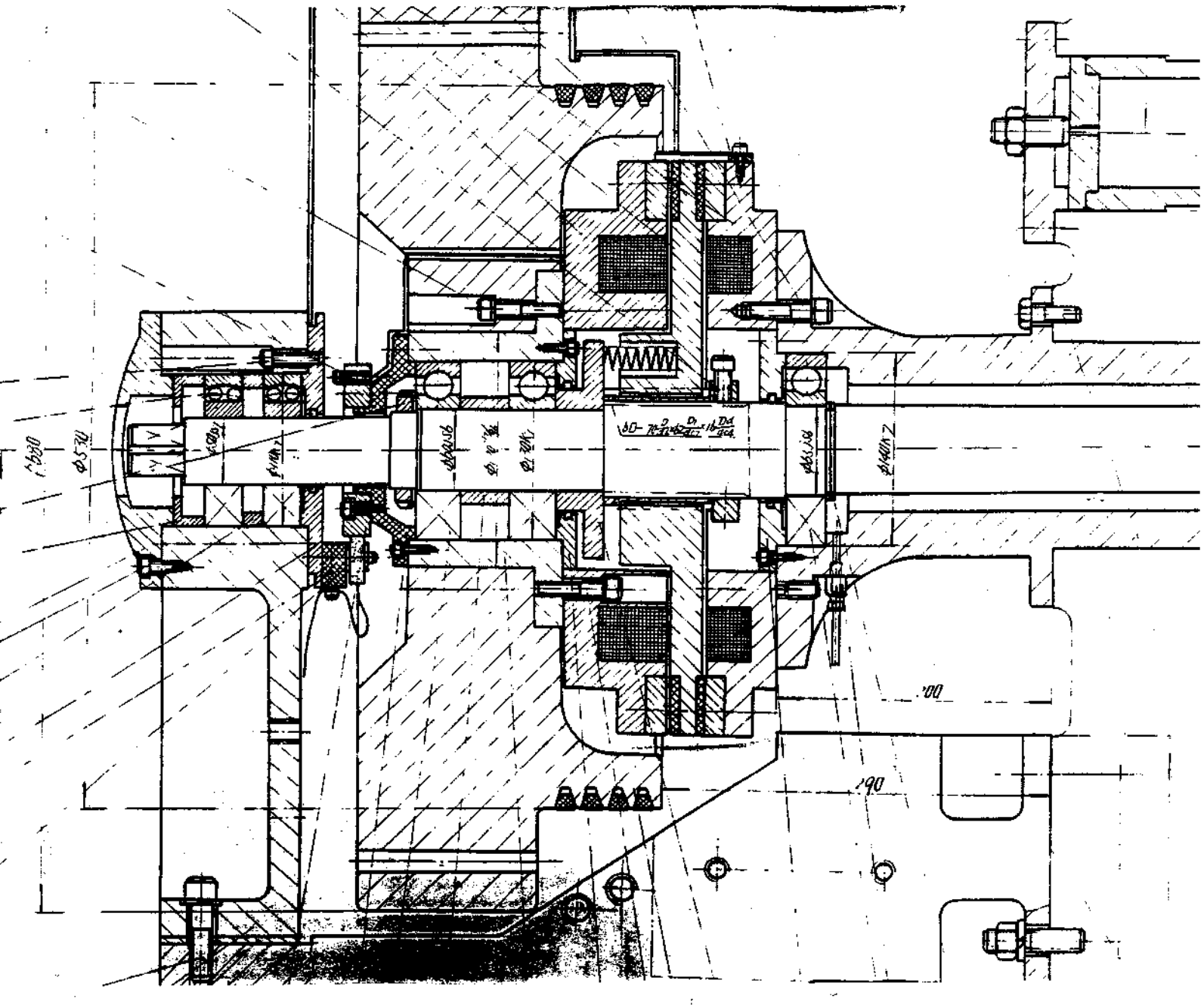

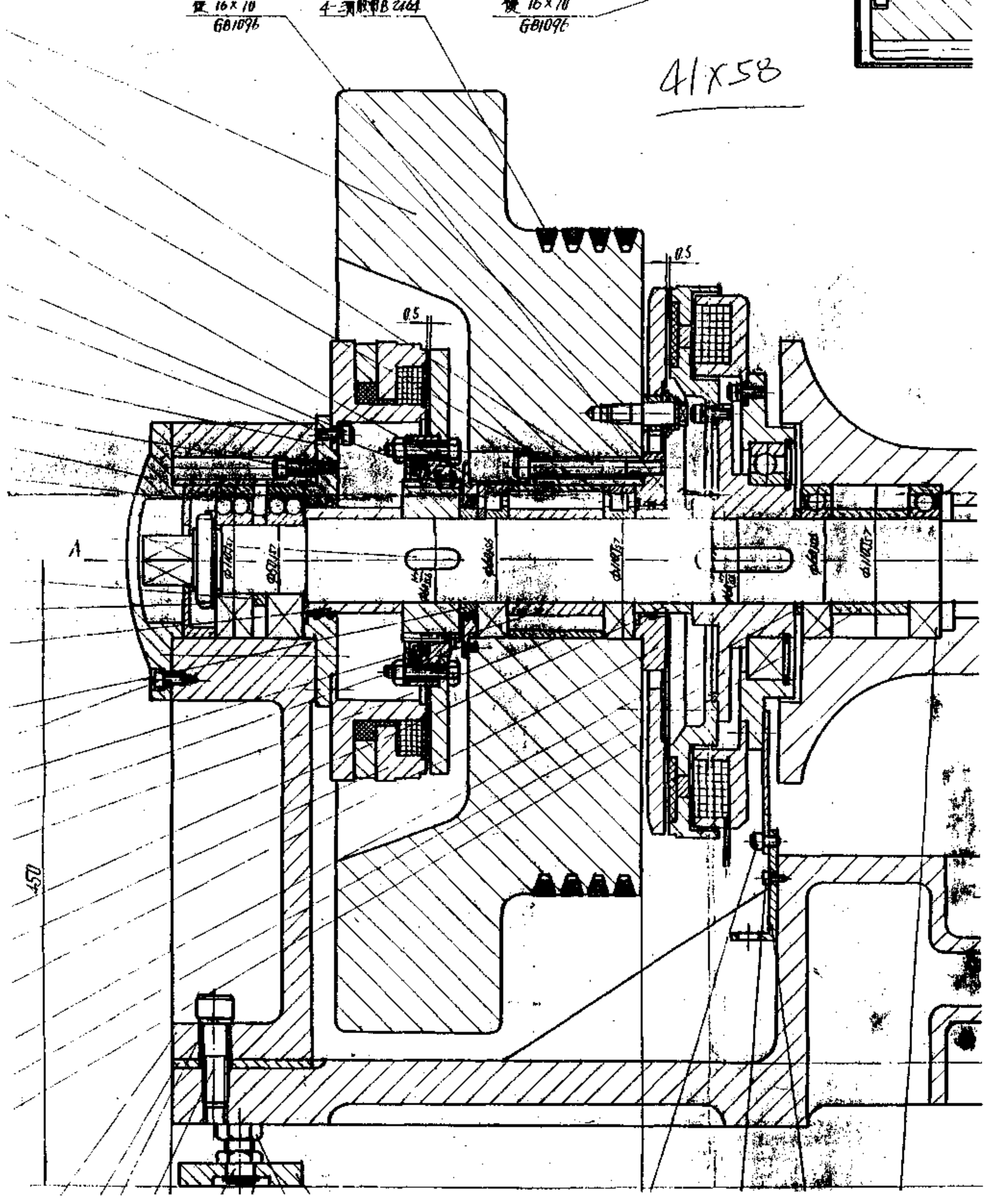

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