

**DORINGER
MODEL D-350
CIRCULAR COLD SAWING MACHINE**

**OWNER'S MANUAL
OPERATOR'S INSTRUCTIONS
PARTS LIST
SAWBLADE RECOMENDATION CHART**

This Owner's Manual has been prepared specifically for:

MODEL: D-350

SERIAL #: _____

ELECTRICS: _____

SPEEDS: _____

VICE: _____

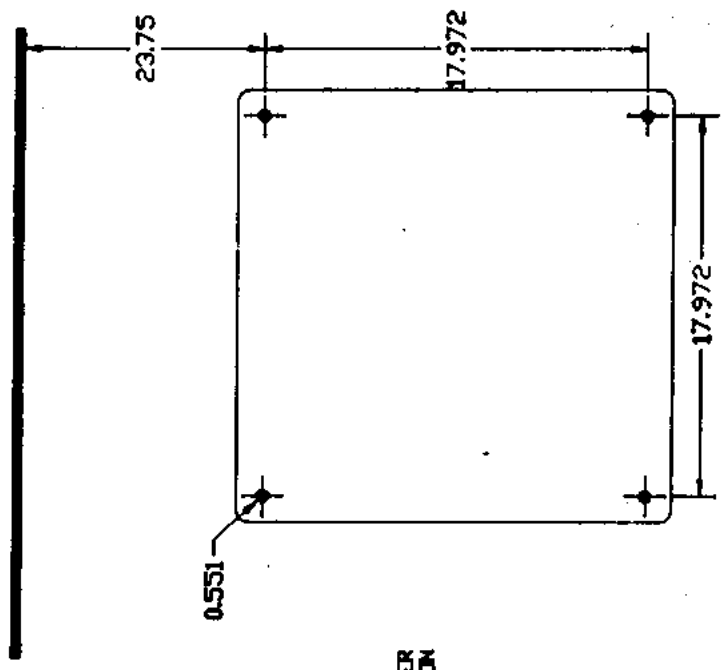
SAWBLADES: _____

FOR SALES & SERVICE CALL:

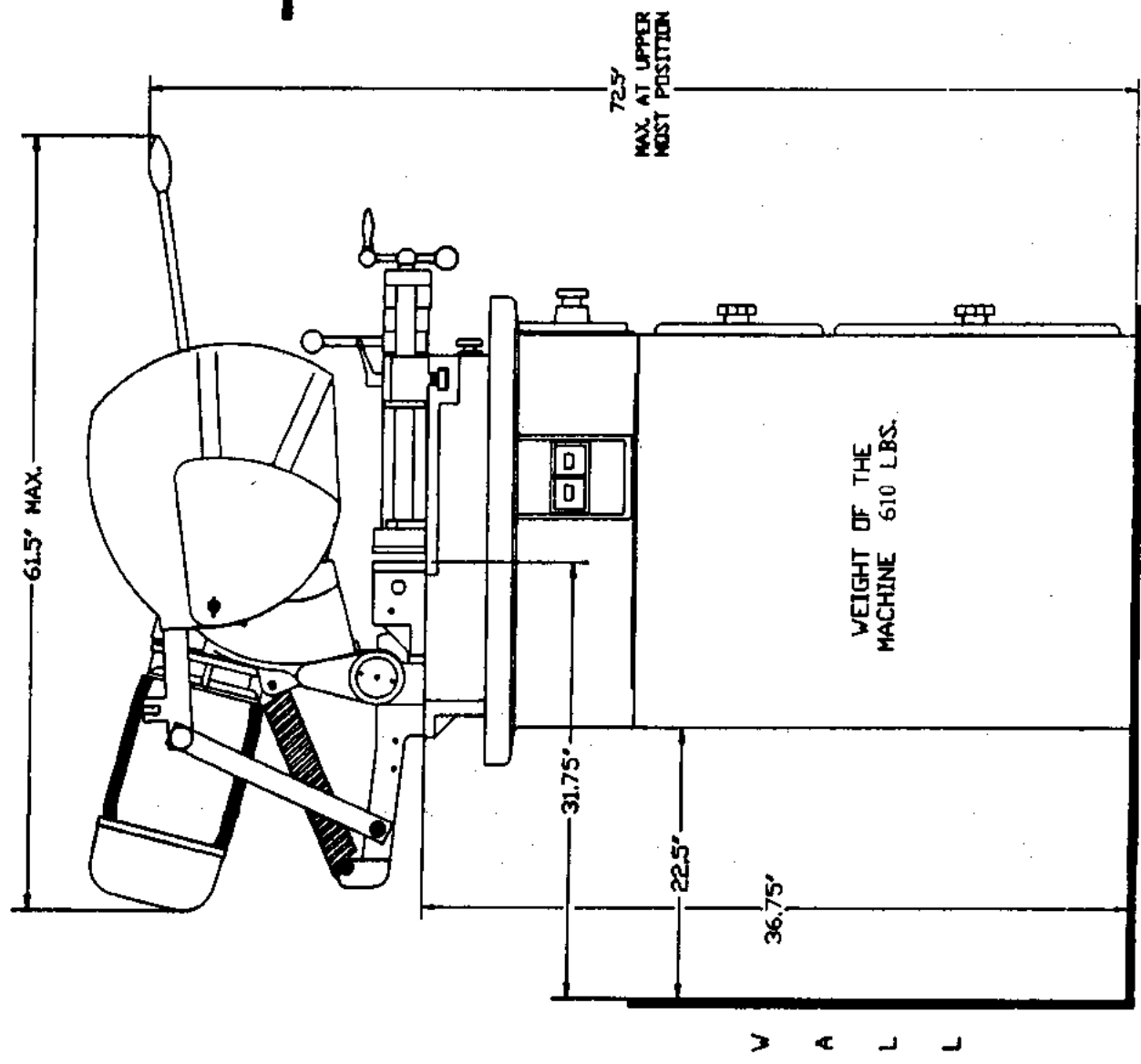
1-800-962-6800

OVERALL SIZE
&
MOUNTING DIMENSIONS

V A L L



MOUNTING HOLE DIMENSIONS



WEIGHT OF THE
MACHINE 610 LBS.

F L O O R

V A L L

CONNECTION TO THE POWER SUPPLY:

Check the voltage. Use an approved plug connection. When connecting directly to the supply system, install a lockable main switch.

Cables: 3-Ph.: 14/4 type So "Oil resist."

Earth = green

Phases = black, red, white

1-Ph.: 12/3 type So "Oil resist."

Earth = green

Phases = black, white

Direction of Rotation on 3-Ph machine:

If the machine is running in the wrong direction of rotation (see arrow on motor or saw guard), exchange two of the phase wires at the supply connection.

Front Switch: (7)

The front switch includes thermic overload protection. In case of an exchange of the switch, indicate the motor amperage when ordering the switch. Adjust it carefully.

While ordering a new, different motor, check the adjustment possibilities of the front switch. If they do not allow the adjustment of the new motor, exchange it to get the right overload protection.

Speed Selection (1):

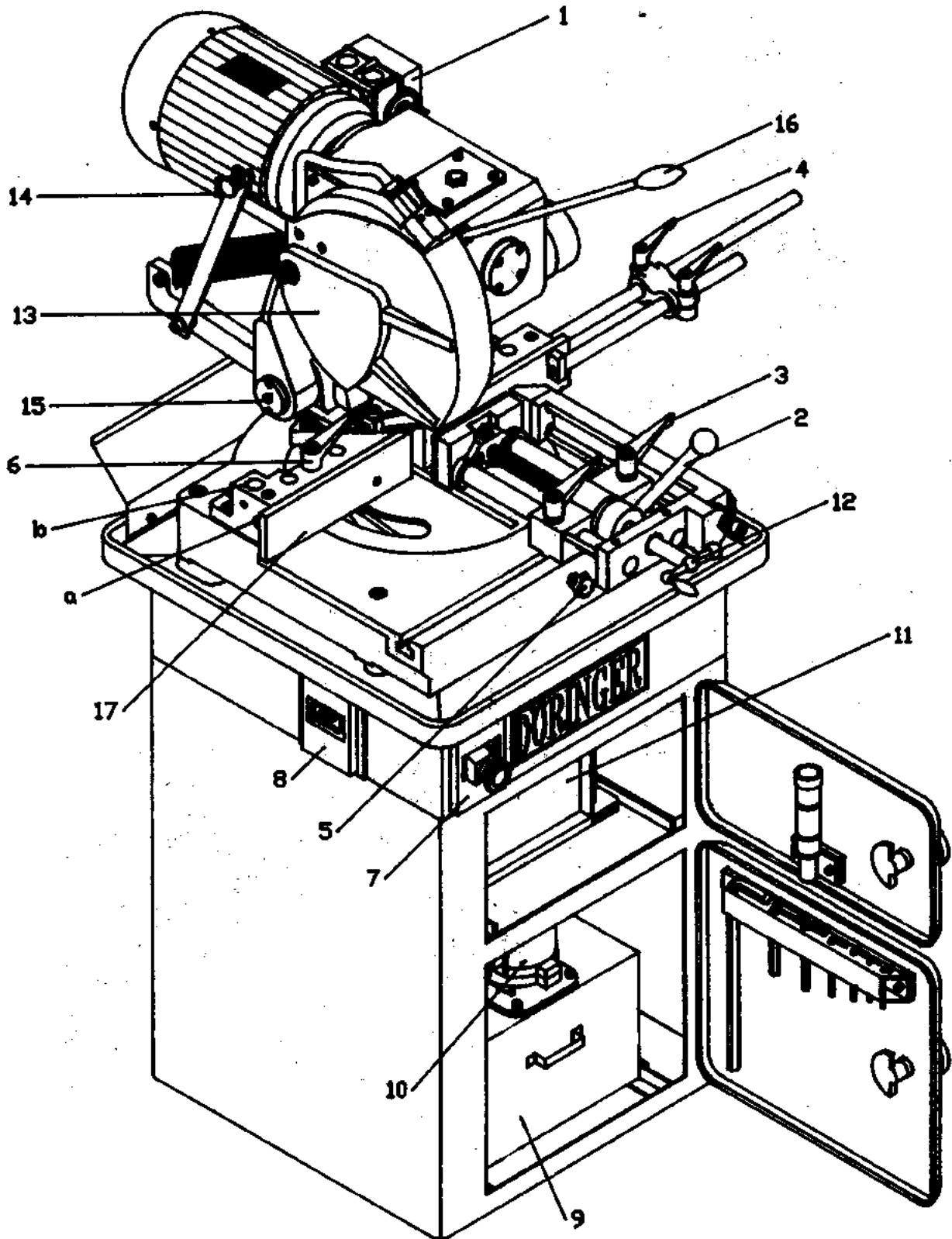
The 3-phase machines have a 2-speed switch that selects the speeds as follows:

60 Hz: Standard motor = 54/108 RPM
Slow speed motor = 27/54 RPM

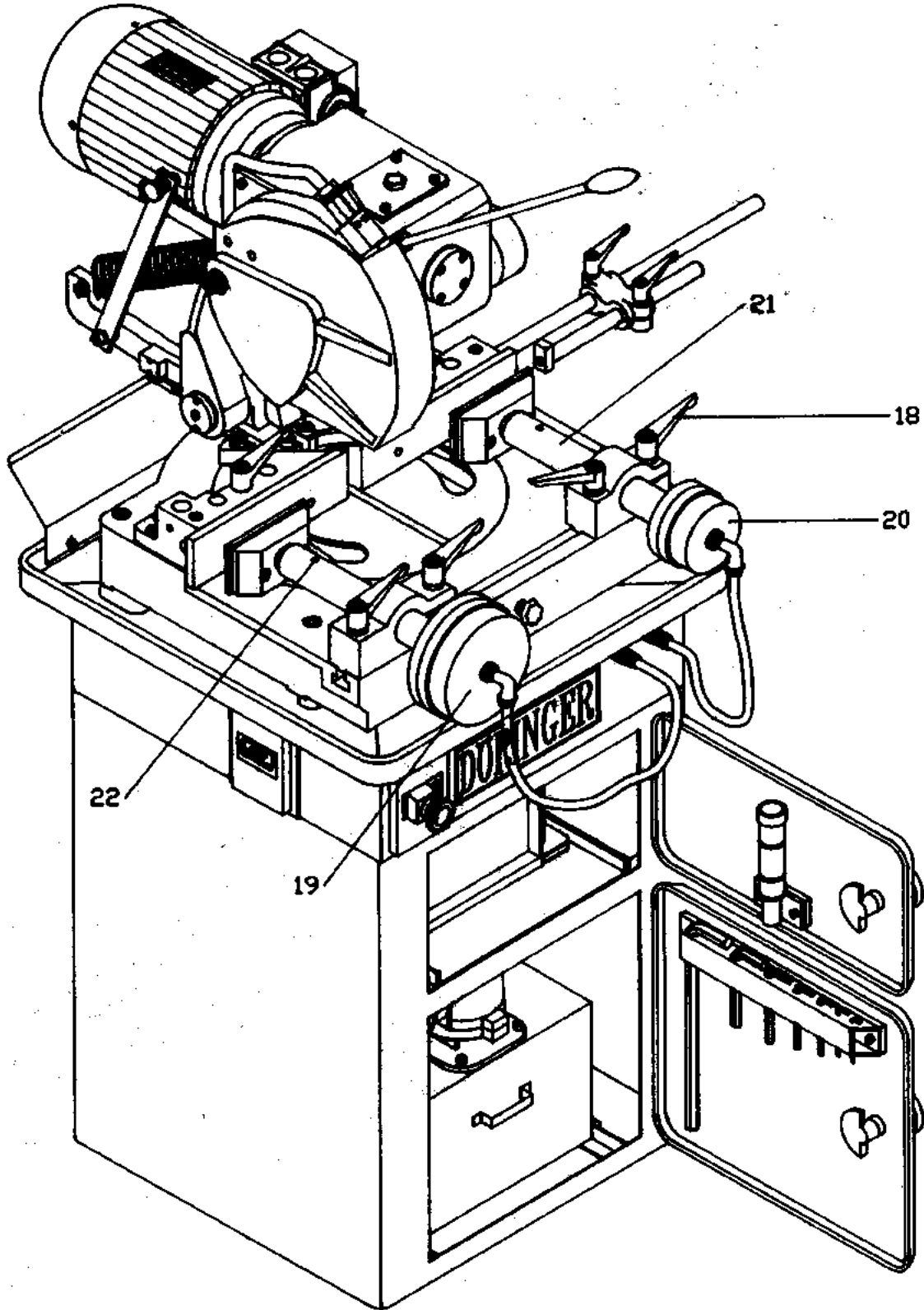
WARNING:

This machine has to be operated by persons who know the information in this booklet and know the safety and security instructions written therein. It is strictly prohibited to operate the saw with gloves or widely spaced clothes, they can be entangled by the running saw blade. Also prohibited to take off or alter the safety equipment so they will fail their purpose

DORINGER D-350
GENERAL VIEW OF MACHINE



DORINGER D-350
MACHINE WITH AIR CLAMPING UNIT
(DOUBLE AIR VICE)



Safety Guard System:

The double safety guard is made from cast aluminum. The outer guard is link-operated for the maximum operator's safety without jamming or scratching the material or clamping device. Use the second latch of the linkage only for cutting material of more than 2.5"(60 mm.) height.

WARNING:

Never work with defective guard in case of an accident caused in a not engaged, or defective, or missing outer guard, the manufacturer of the machine is not liable.

Saw blade Sizes:

H.S.S. Saw blades with 40mm dia. center hole and 2 drive holes 12mm dia. on 64mm dia. circle.

275 X 2.0 X 40 MM

275 X 2.5 X 40 MM

315 X 2.5 X 40 MM

325 X 2.5 X 40 MM

350 X 2.5 X 40 MM

Never try T.C.T.sawblades. Segmental blades are not recommendable.

Change of the Saw blade:

Disengage the linkage (13).Lift the outer guard. Unscrew the left-hand screw and take off the counter plate holding the blade.Clean the counter plate carefully. When fixing the saw blade, pay attention to the direction of rotation and to the drive pins in the counter plate. Tightening the screw, turn back the saw blade to eliminate the backlash. Close the guard and check it in the following way.

How to Check the Safety Guard:

The knob (13) has to be engaged correctly. The outer guard has to cover the blade when using the standard latch of the linkage and the head being in rest position.

The outer guard has to move without jamming or scratching the material or the clamping device when the head is moved down wards.

NEVER WORK WITH A DEFECTIVE OR MISSING SAFETY GUARD

FOR TECHNICAL ASSISTANCE CALL TOLL FREE (800) 962-6800

Saw Blade Information

Material: H.S.S./DM05 with special steam treated (Vaporized) surface.

Application: For cutting iron, steel and stainless steel as well as non ferrous metals on high-speed.

Toothing: 80 -110 t for heavy sections and solid materials up to 60 mm dia. (2.4")

140 -160 t for sections ,pipes and tubes of 2-10mm (0.075"-.4") thickness and solids up to 30mm(1.2") dia.

160 -180 t for thin-walled sections and tubes up to 3mm (0.12") thickness.

220 -280 t for extremely thin-walled sections up to 1.5mm (0.06")thickness.
(Note: 1" = 25.4mm)

Tooth form: Curved tooth "HI-LO" System with roughing and finishing tooth: The higher tooth beveled on both sides machines the middle of the slot, the finishing tooth (2...3 p.c. lower) works out the side walls.

Rake Angle: 15-18 degrees for normal steel qualities, hard non-ferrous alloys
20-25 degrees for stainless steel and soft non-ferrous alloys
10-12 degrees for brass only.

Speed Selection:

Material	Motor Speed	Spindle Speed
Stainless steel sections:	850 RPM	27 RPM
Steel solids and bars:	1700 RPM	54 RPM
Thick walled steel sections:	1700 RPM	54 RPM
Tubes and sections:	3400 RPM	108 RPM
Non ferrous metals:	3400 RPM	108 RPM

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Coolant System:

The machine has a circulation cooling system. The centrifugal pump (10) is driven by an 1/8 hp motor located in the bottom part of base. The stop cock on top of the guard controls the fluid volume.

The coolant tray (11) in the base is removable to make cleaning of the machine easy.

Pay attention to a high quality lubricant and coolant fluid with high-pressure additives. Take care to the right mixing ratio and double the concentration when cutting stainless steel.

If the circulating fluid is disadvantageous when cutting special sections and tubings, use an air operated spray device to ensure good lubrication of the saw blade without having the running fluid on the material.

Cleaning of the coolant system:

Besides the standard cleaning of the coolant tray, wash the strainer every 4 - 6 weeks carefully in kerosene.

Clamping:

The clamping of the work piece is necessary to ensure safe and clean cuts.

NEVER CUT WITHOUT CLAMPING THE MATERIAL

Hand operated vice unit :

To adjust turn lever (2) to the left, crank the spindle to the material and tighten with lever (2). Clamping is effected within 1/3rd turn of the lever.

Air operated vice unit :

Clamping is effected through the valve behind the saw head as soon as the saw head is moved forward. The vice jaw opens when the head is lifted into the rest position. To adjust the sleeve, open right (18), move sleeve (21) up to 2-3 mm (app. 0.1") to the material and tighten the lever firmly. Max. movement of the air cylinder is 8mm (0.3") according to the operator's safety Regulations.

Keep the surface of the sleeve clean.

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Moving the whole clamping Unit:

It can be used on the right or left side of the saw blade and can be moved close to the saw blade in any mitering position. Loosen screws (18) both, move and tighten. Make sure the moving safety guard on the saw blade can not touch the vice unit.

A second unit can be helpful for burrfree cuts and pressure sensitive materials.

Miter Adjustment:

Loosen lever (6) on left and screw (6a) on right. Pull the knob (5) and turn the head. The knob fixes the turn table at 45 and 0 degrees. For other positions, clamp the table with lever (6) and screw (6a).

Check the vice and saw blade so they will not touch in operation.

Sliding Rear Jaws:

The rear jaws can be moved close to the saw blade to ensure a safe and clean cut to of thin sections. Check their positions after every change of the mitering angle.

For thick-walled sections, construction profile and solid bars, it is not necessary to set these jaws close to the saw blade. Adjust them so you do not need to alter their positions when mitering left & right. For large sections, enlarge the capacity by taking off the rear jaws.

Cutting Information:

Pressure sensitive materials can be cut easily using profiled jaws. to fix them take off the standard jaws.

Stainless steel cut in the slow speed only. For serial cuts, use a slow-speed motor. More details see "Saw blade information".

Solids and bars with more than 30 mm (1.5") dia. in the slow speed. Do not try segmental blades, they stress the machine.

Short pieces clamp firmly and cut carefully. Otherwise they will roll or vibrate and may break the blade.

Noise level:

General figures are hard to set up. They depend on the size of material, saw blade condition and toothing geometry. Choosing the right combination, a level of 80 - 85 dB(a) can be reached.

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Second Clamping unit:

The model D 350, can be equipped with an additional clamping unit. It enables clamping on both sides of the saw blade. The cut-off piece can not jump away, so it will have no burr at all.

Pressure sensitive material can be held carefully and safe using profiled extra jaws.

Air Clamping unit:

This version is supplied with an air servicing unit that includes water separator, pressure regulator and automatic oil spray unit.

The valve behind the saw head controls the movement of the vice cylinder and is adjusted by the manufacturer. It actuates the cylinder immediately after the saw head is lifted from rest position.

Operating Pressure: Max. 6 bar. Adjust the air pressure according to the material to be cut.

Maintenance instructions see page

Pivot Bearings Adjustment:

Disengage the restoring spring behind the saw head. Remove the covers(15). Tighten the screws in the bearing shaft using the key "SW 8" until the saw head moves without play. Screw on the covers again and engage the spring.

Length stop:

Length stop can be used on both sides of the machine. Fitting hole: (a)

Top Clamping Device:

A hand operated top clamp can be fit onto the machine. Fitting hole: (b)

Main Spindle Adjustment:

The axial clearance of the main spindle can be adjusted from the right side. Take off the right cover and adjust the nuts. Check both nuts and block them by anti-twist plate.

Worm Shaft Adjustment:

Remove front gear cover. Remove or add an extra shim.

A too strong adjustment can damage bearings

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Maintenance Instructions:

Gear unit: Exchange oil once every year.

Use Gear oil, e.g. SAE-90 type.

(138) = Draining screw

(132) = Filling screw

(137) = Oil window.

The window shows the oil level when the head is in rest position.

(See parts list drawing on page 35-12)

Grease Points: (15),(22) grease weekly with E.P. grease.

Hand vice: Oil weekly the guide bars with machine oil. Grease weekly the spindle with E.P. grease.

Air vice: NEVER grease the surface of the sleeve, it would slip when clamping.

Air serv. Unit: Check the oil level in the right weekly. The spray is adjusted so that within 20-30 movements one drop of oil is lubricating the vice cylinder.

Parts & Equipment: Indicate type & number of your machine (See name plate on the gear box).

Extra Equipment:

Second vice unit: hand operated.

Top clamping device: hand operated.

Fixing hole on the left side of the machine:(b)

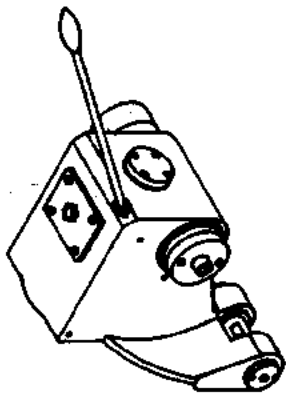
Length stop: without graduation, 1 meter(40")

Fixing holes left and right: (a)

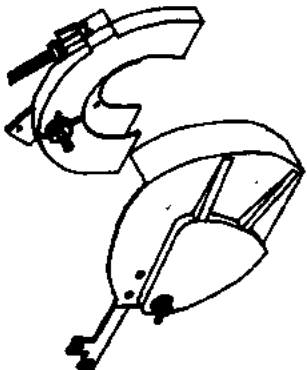
Also available in 1.5 and 3 meters length.

FOR TECHNICAL ASSISTANCE CALL TOLL FREE (800) 962-6800

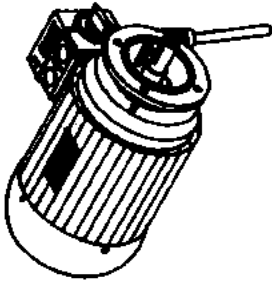
DETAIL PARTS LIST ON FOLLOWING PAGES



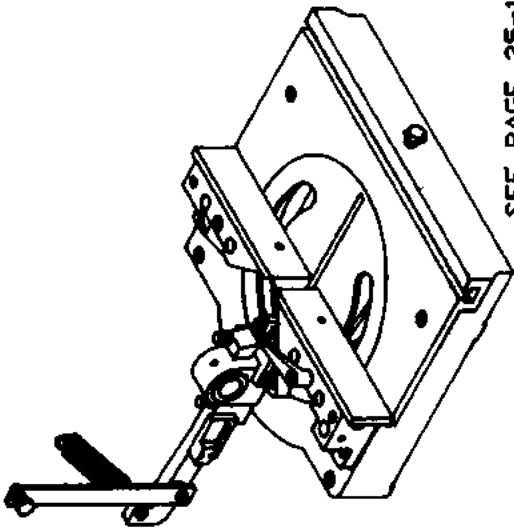
SEE PAGE 35-12



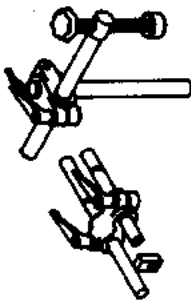
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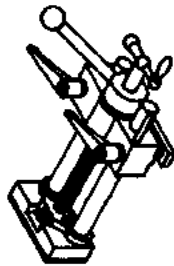
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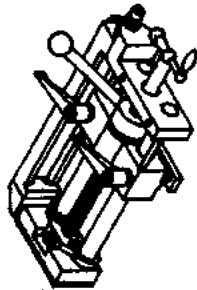
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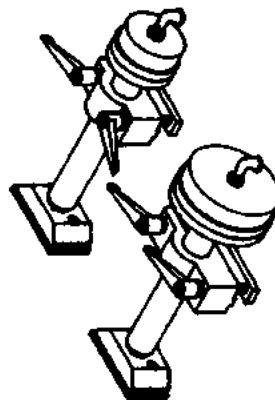
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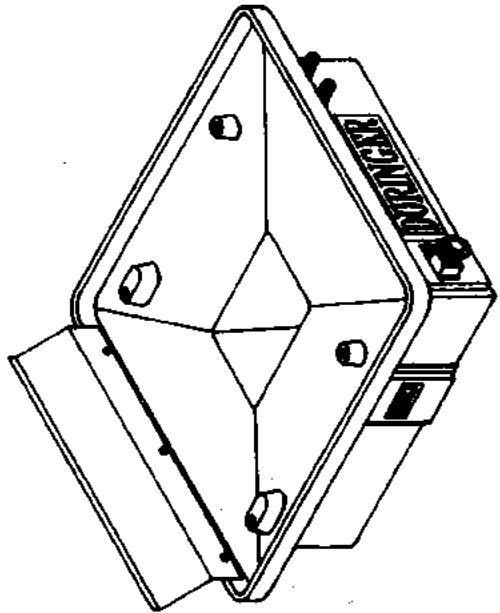
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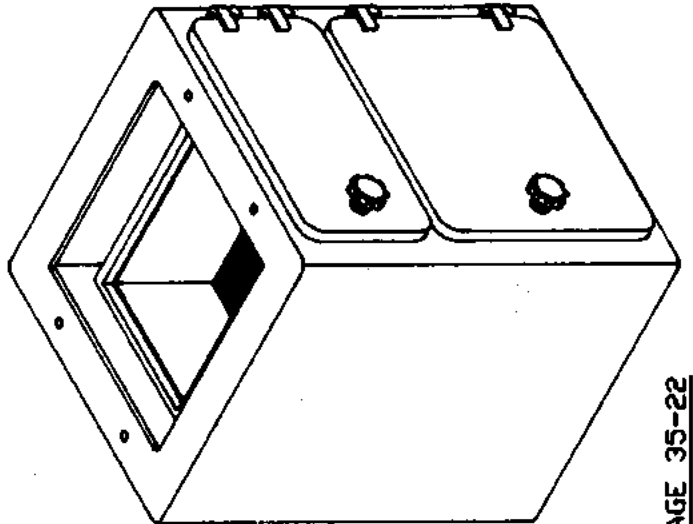
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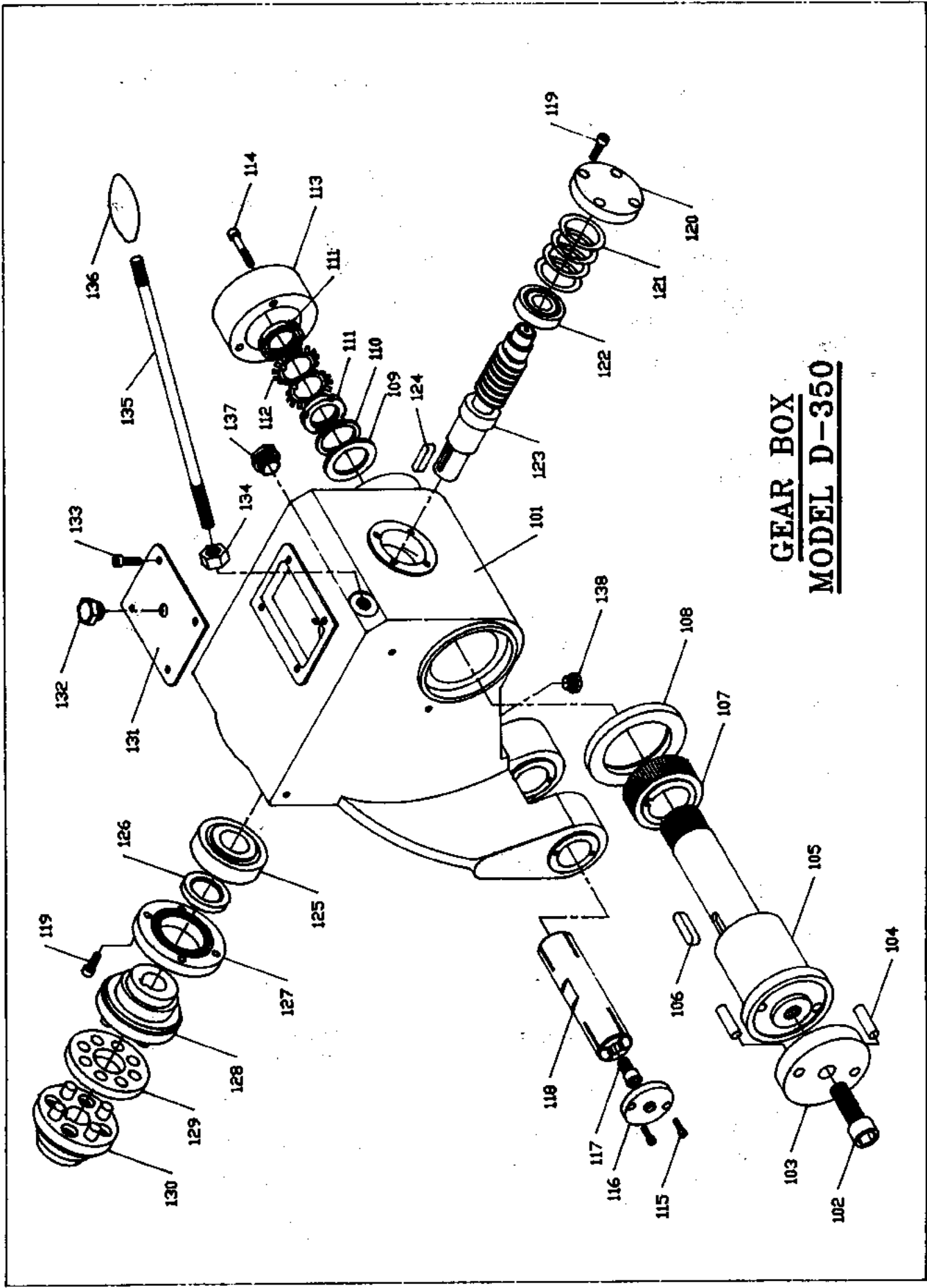
SEE PAGE 35-19



SEE PAGE 35-20&21

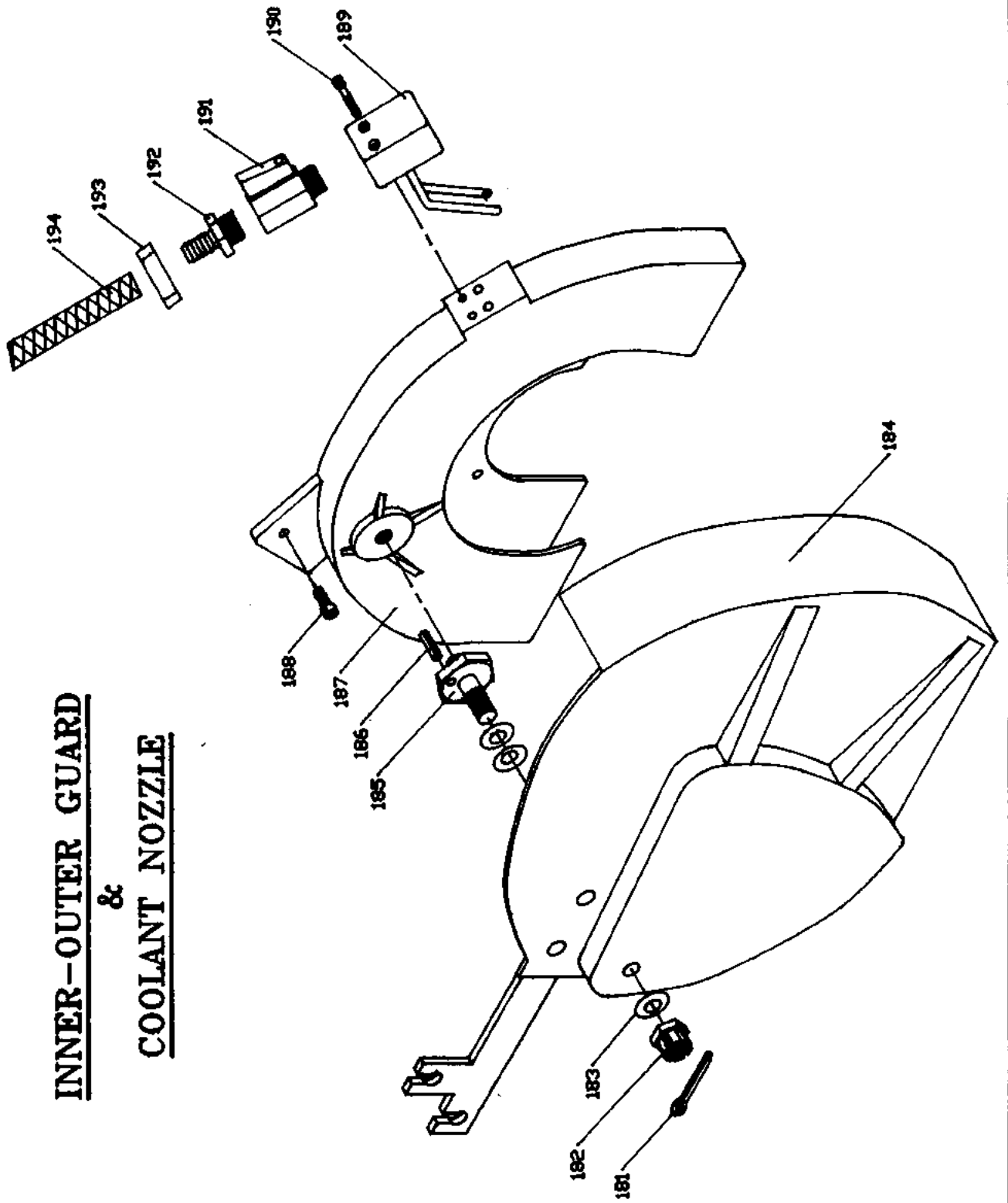


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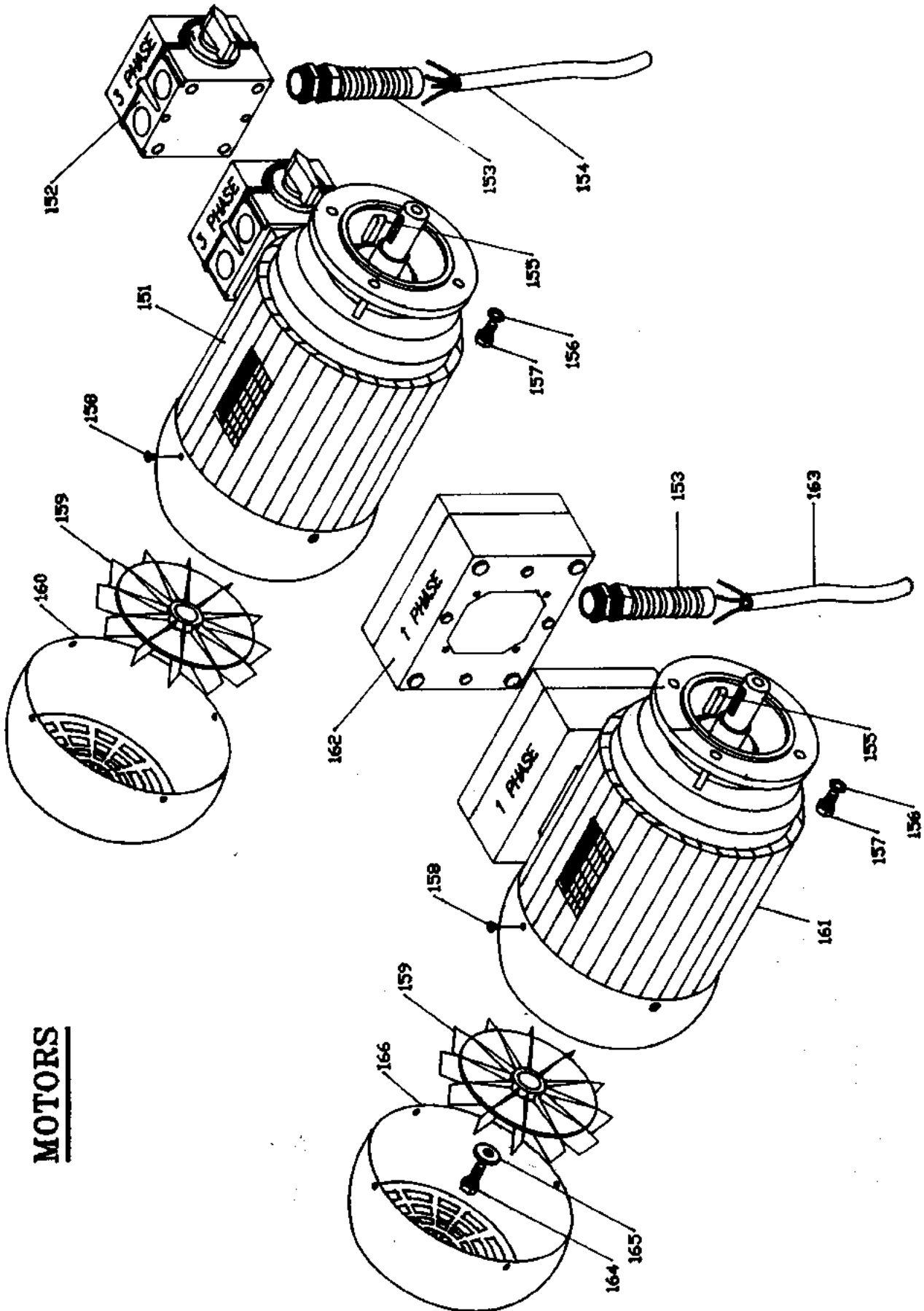


GEAR BOX
MODEL D-350

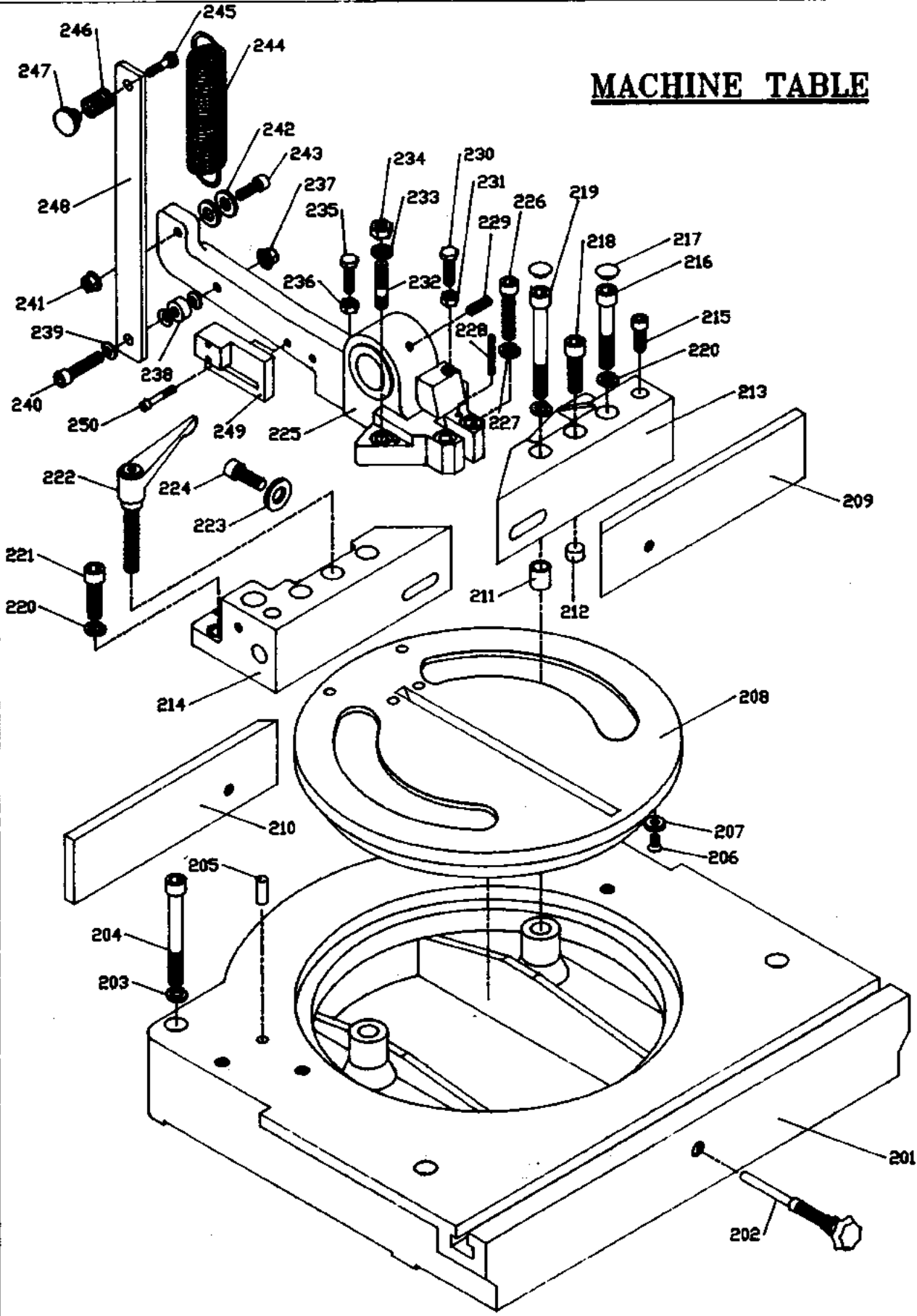
INNER-OUTER GUARD
&
COOLANT NOZZLE



MOTORS



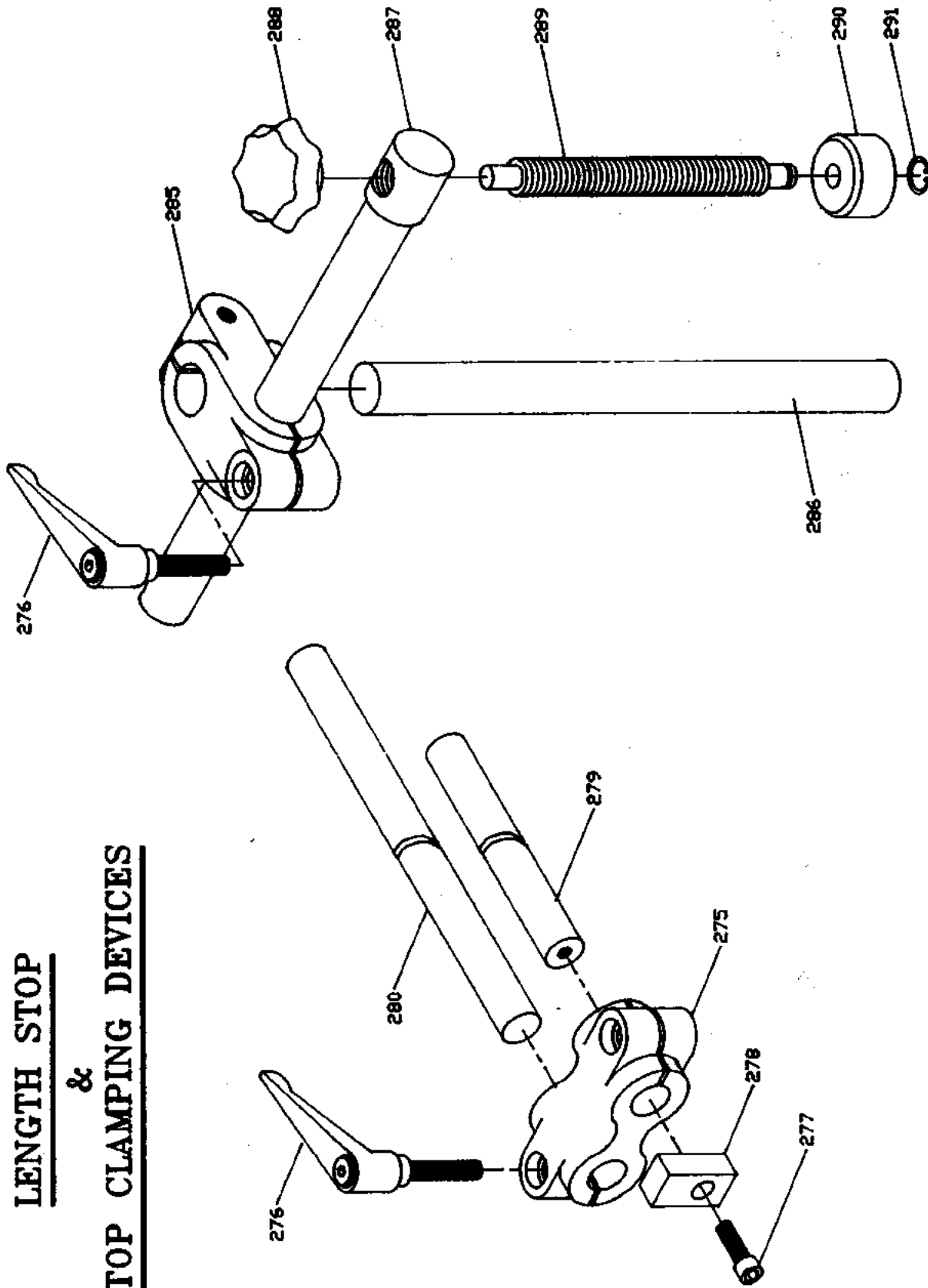
MACHINE TABLE



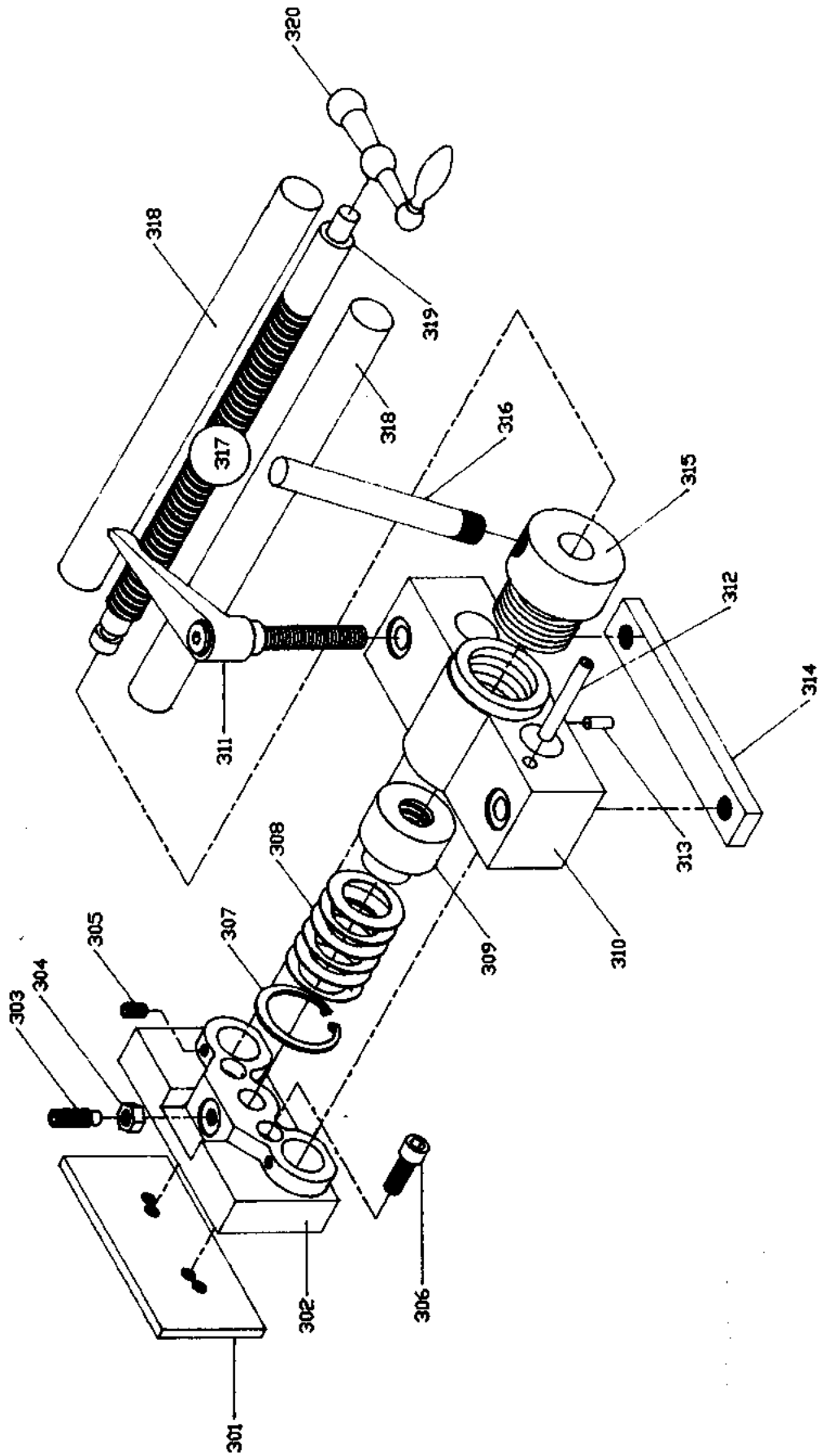
LENGTH STOP

&

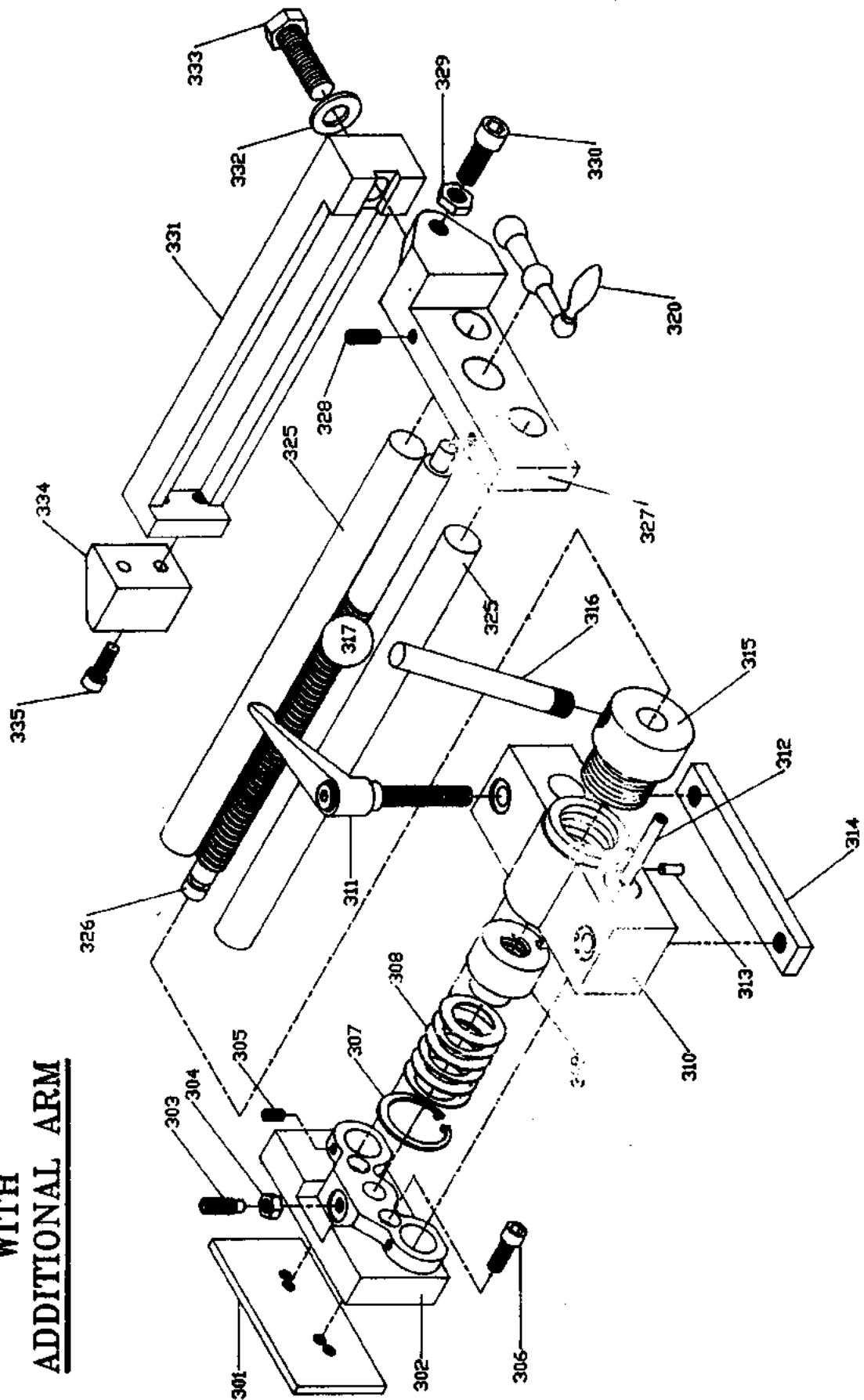
TOP CLAMPING DEVICES



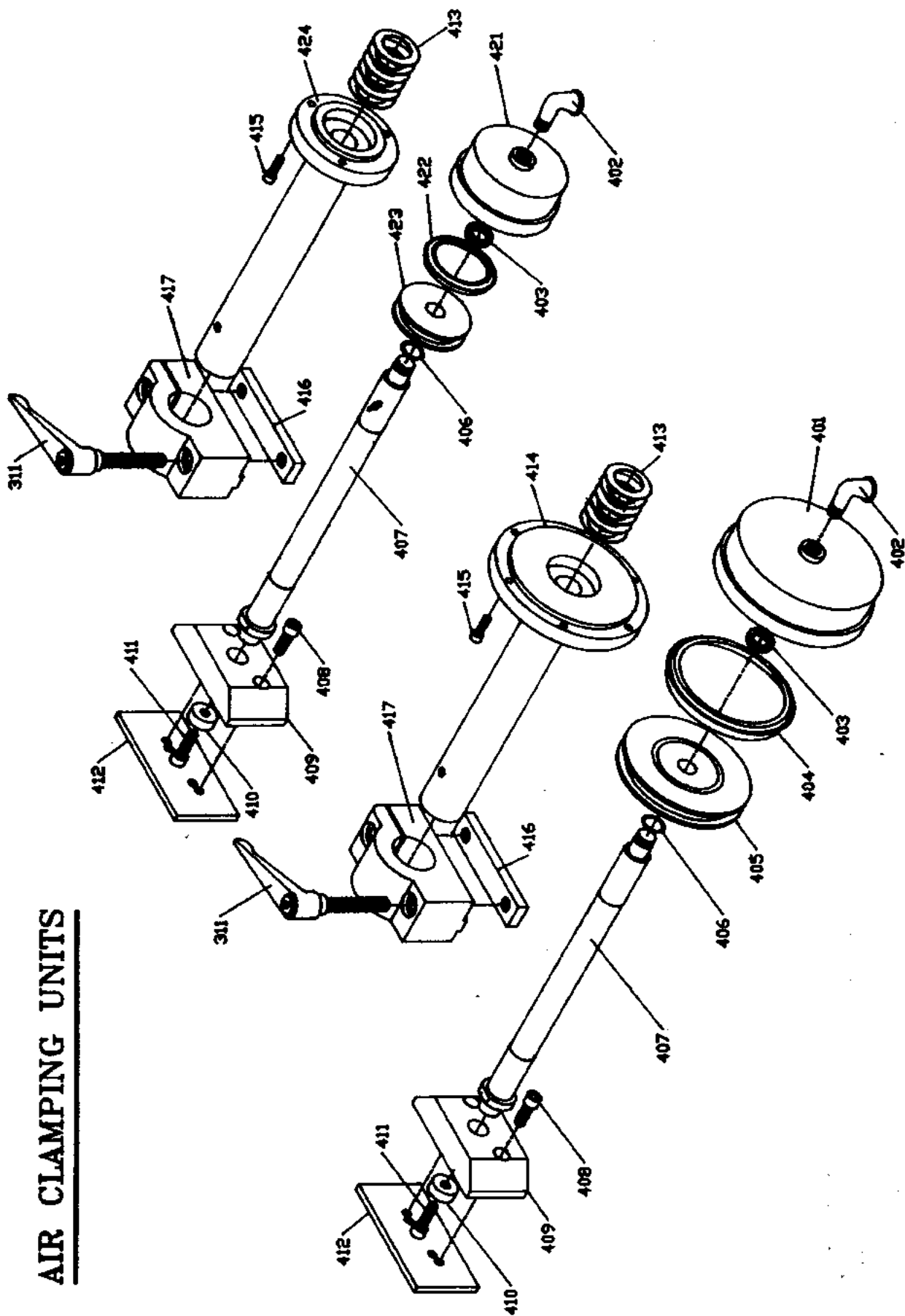
MECHANICAL VICE



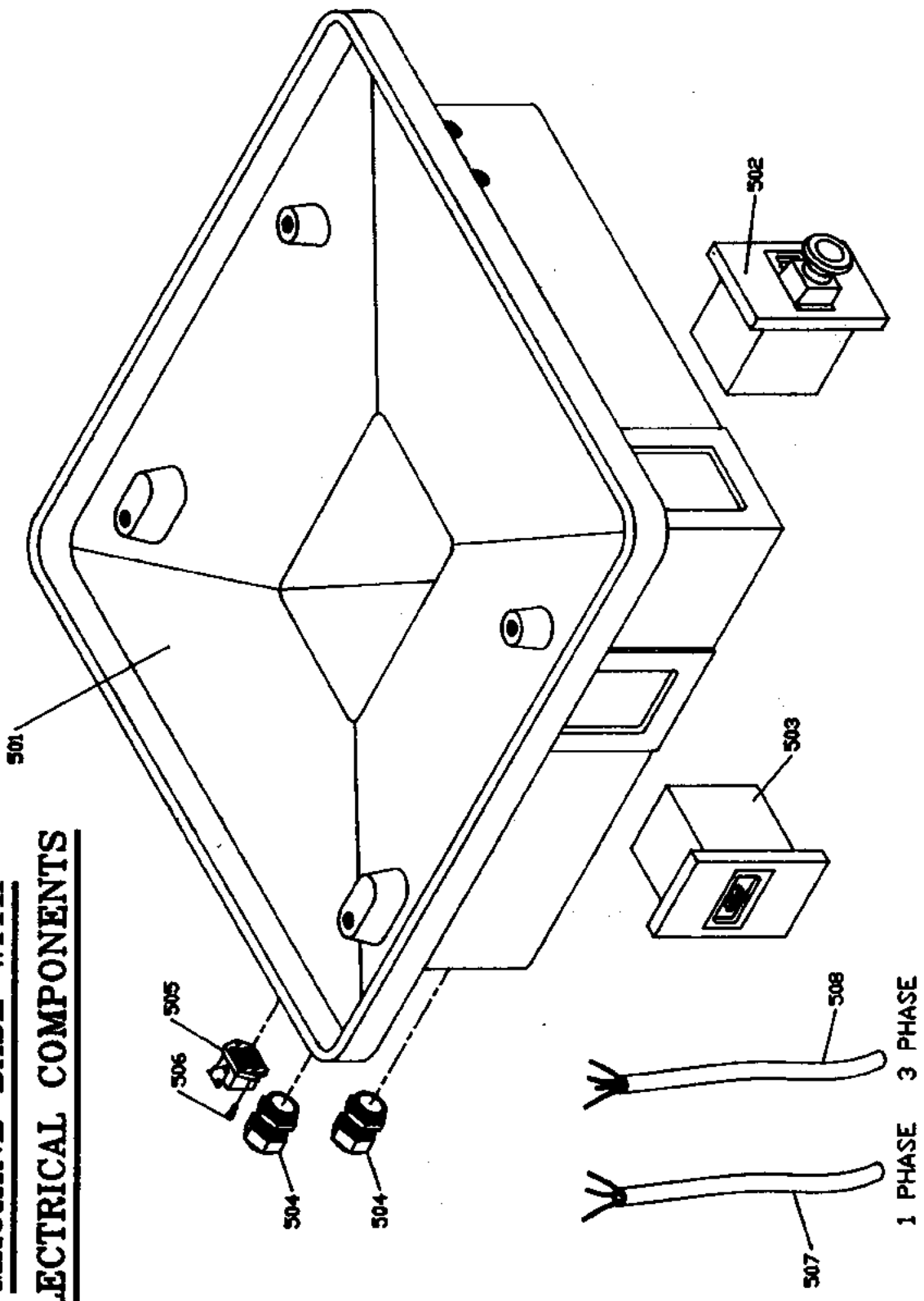
MECHANICAL VICE
WITH
ADDITIONAL ARM



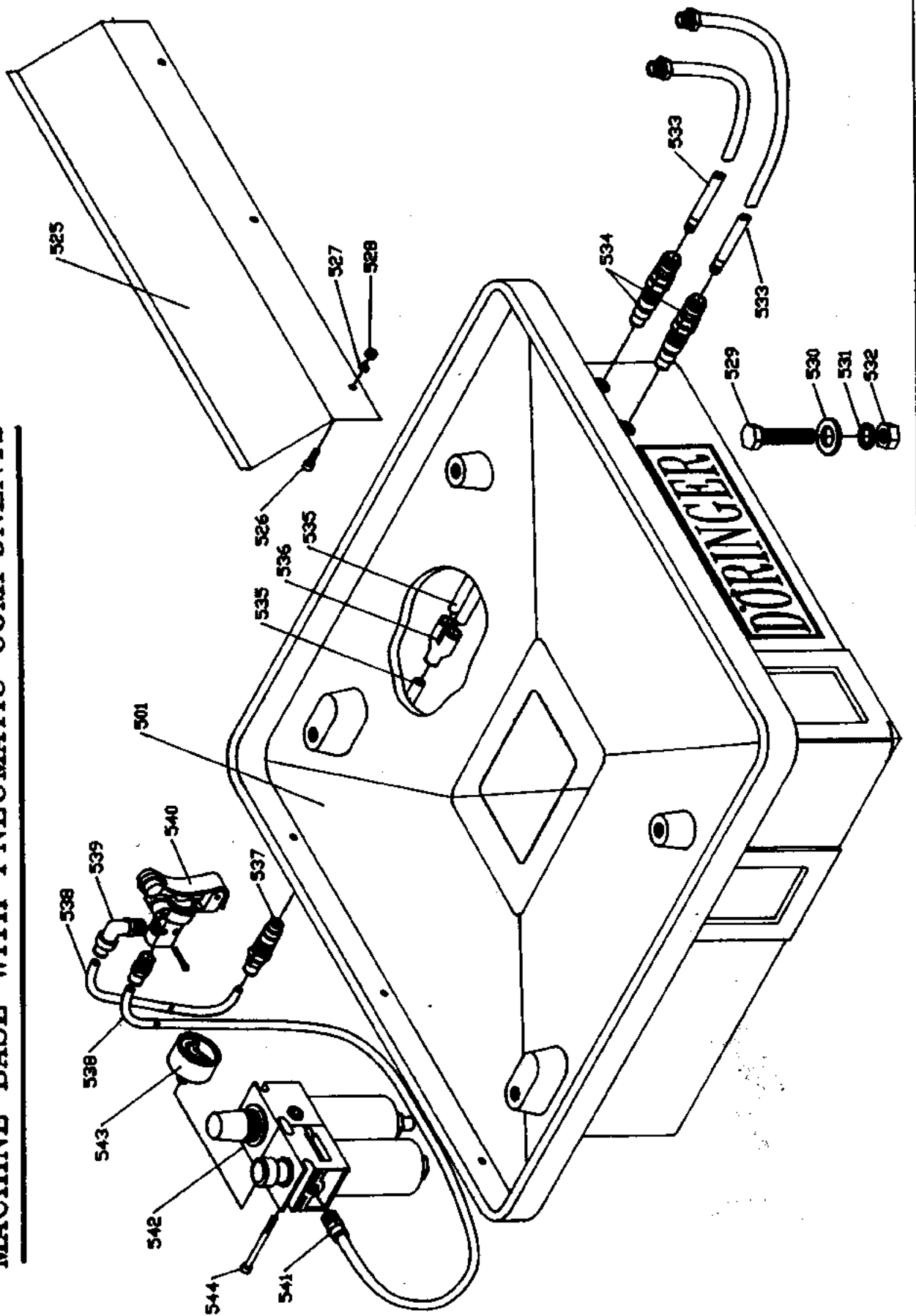
AIR CLAMPING UNITS



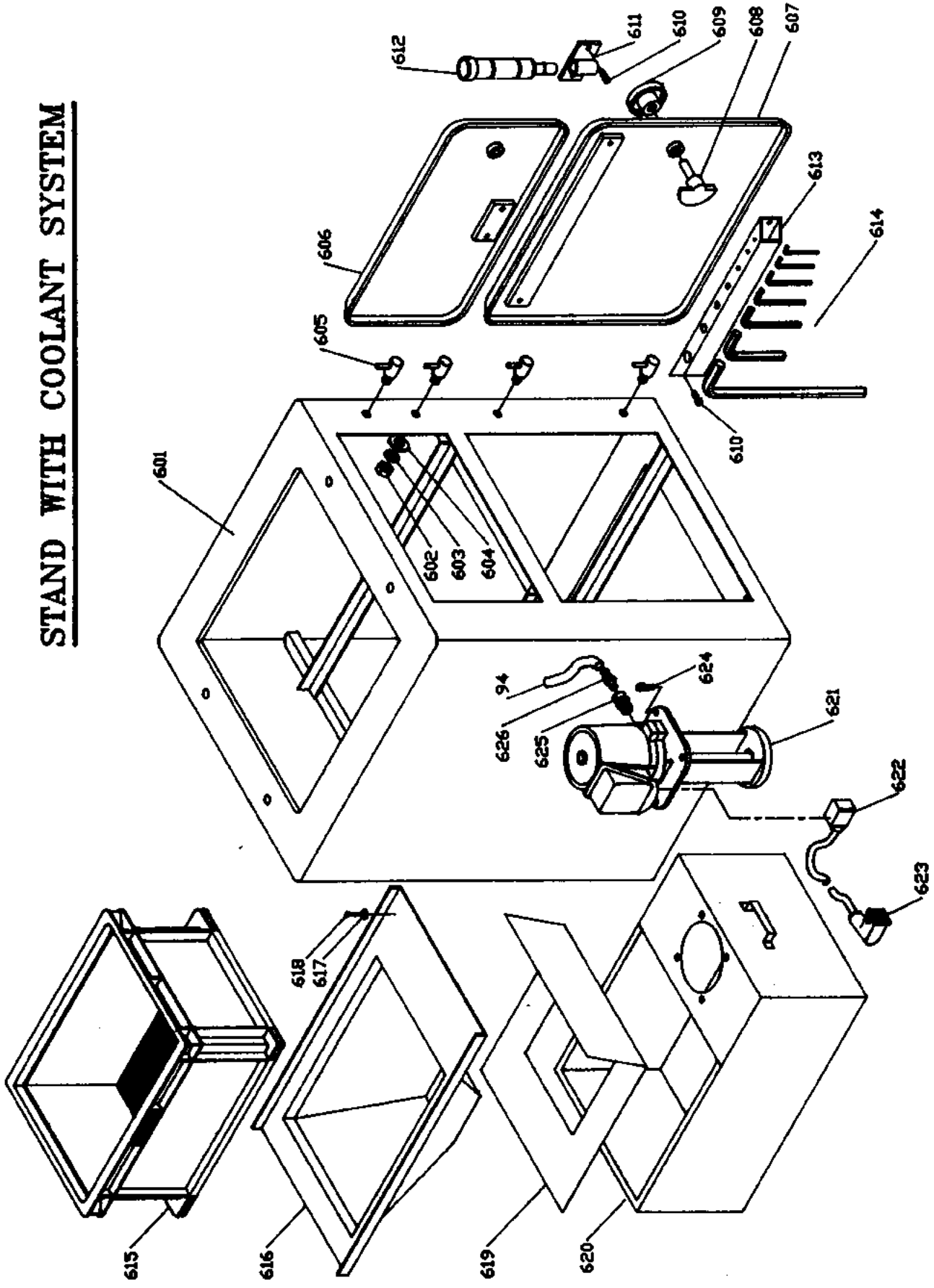
MACHINE BASE WITH
ELECTRICAL COMPONENTS



MACHINE BASE WITH PNEUMATIC COMPONENTS



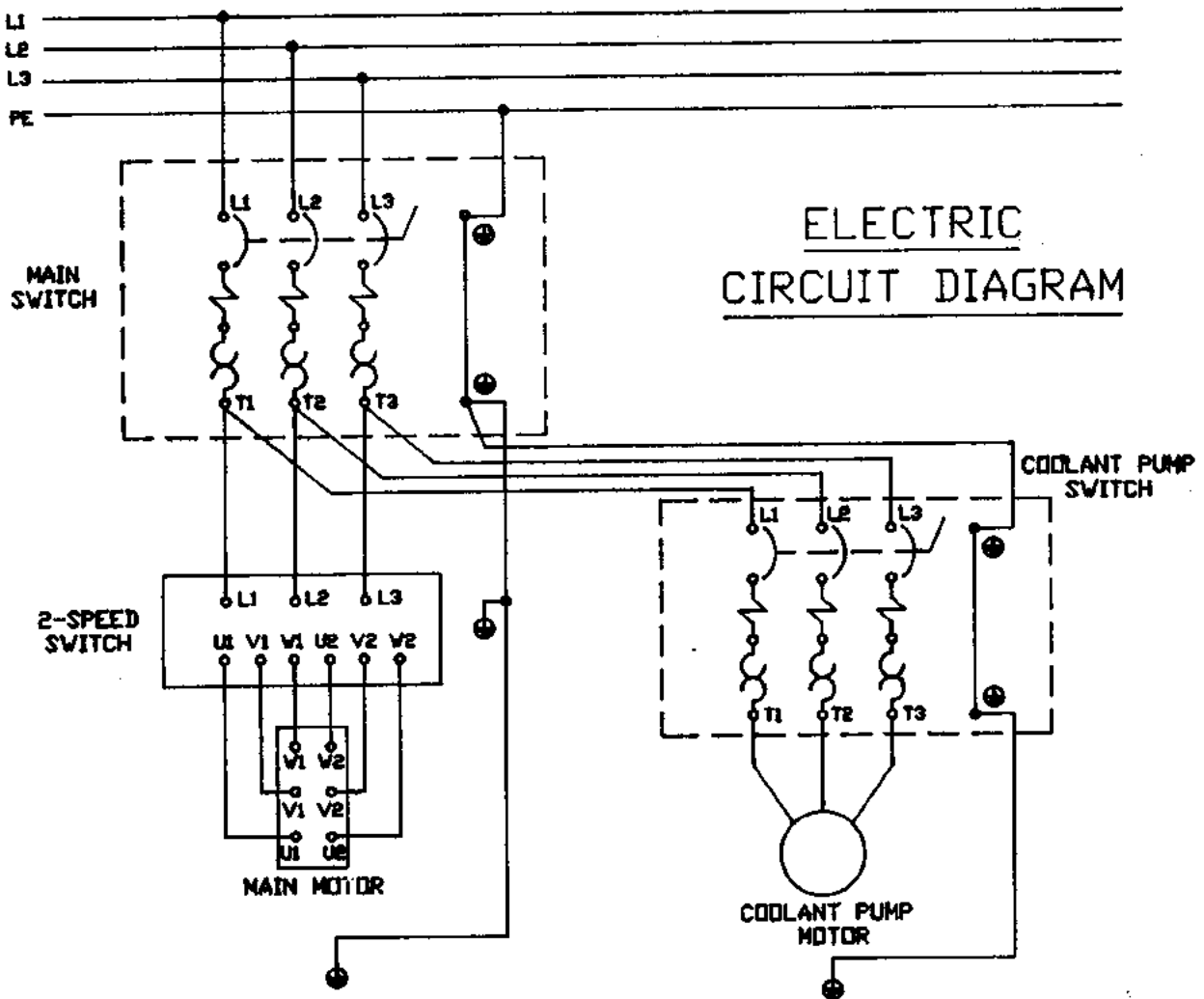
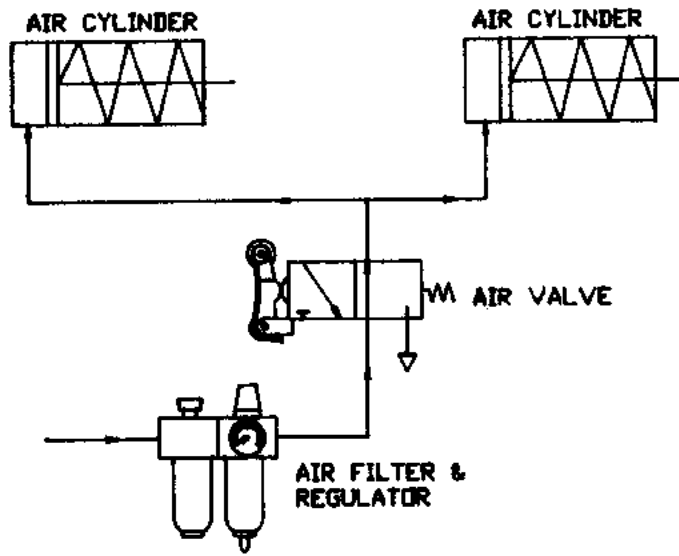
STAND WITH COOLANT SYSTEM



DORINGER MODEL D-350

100 GEAR BOX, ASSEMBLED	213 MATERIAL STOP, RIGHT	334 JAW
101 GEAR BOX HOUSING, MACHINED	214 MATERIAL STOP, LEFT	335 BOLT
102 LEFT HAND BOLT	215 BOLT	400 CYLINDER LRG, ASSEMBLED
103 COUNTER PLATE	216 BOLT	401 CYLINDER CUP
104 DRIVE PINS	217 BOLT COVER	402 FITTING
105 MAIN SPINDLE	218 BOLT	403 NUT
106 KEY	219 BOLT	404 SEAL
107 WORM GEAR	220 WASHER	405 PISTON
108 MAIN SEAL	221 BOLT	406 SEAL
109 FLAT BEARING	222 LOCKING HANDLE	407 SHAFT
110 SPACER	223 WASHER	408 BOLT
111 TENSION NUT	224 BOLT	409 JAW
112 LOCKING WASHER	225 PIVOT BRACKET	410 SPACER
113 SIDE COVER	226 BOLT	411 BOLT
114 BOLT	227 WASHER	412 SURRATED JAW
115 BOLT	228 HOLLOW PIN	413 DISC SPRING
116 PIVOT COVER	229 SET SCREW	414 PISTON GUIDE
117 CONICAL BOLT	230 BOLT	415 BOLT
118 PIVOT SHAFT	231 NUT	416 SLOT NUT
119 BOLT	232 STUD	417 PILLON BLOCK
120 FRONT COVER	233 WASHER	420 CYLINDER SMALL, ASSEMBLED
121 SHIMS	234 NUT	421 CYLINDER CUP
122 BEARING	235 BOLT	422 SEAL
123 WORMSHAFT	236 NUT	423 PISTON
124 KEY	237 NUT	424 PISTON GUIDE
125 BEARING	238 SPACER	500 BASE, ASSEMBLED
126 SEAL	239 DISC SPRING	501 BASE
127 REAR COVER	240 BOLT	502 MAIN SWITCH
128 COUPLER, GEAR SIDE	241 NUT	503 PUMP SWITCH
129 RUBBER PAD	242 WASHER	504 CABLE GLAND
130 COUPLER, MOTOR SIDE	243 BOLT	505 PIN CONNECTOR, FEMALE
131 TOP COVER	244 SPRING	506 BOLT
132 OIL CAP	245 LOCKING BOLT	507 CABLE, 1 PHASE
133 BOLT	246 TENSION SPRING	508 CABLE, 3 PHASE
134 NUT	247 KNOB	525 SPLASH COVER
135 HANDLE	248 BRACKET	526 BOLT
136 KNOB	249 BRACKET	527 WASHER
137 SIGHT GLASS	250 BOLT	528 BOLT
151 MOTOR ASSEMBLED, 3PH.	275 BRACKET	529 BOLT
152 2 SPEED SWITCH	276 CLAMPING HANDLE	530 WASHER
153 CABLE GLAND	277 BOLT	531 LOCK WASHER
154 CABLE 3 PHASE	278 BRACKET	532 NUT
155 KEY	279 SHORT BAR	533 ROSE ASSEMBLED
156 BOLT	280 LONG BAR	534 COUPLER COMPLETE
157 WASHER	285 BRACKET	535 ROSE
158 SCREW	286 VERTICAL BAR	536 3 WAY FITTING
159 FAN, 3PHASE	287 HORIZ. BAR	537 2 WAY FITTING
160 FAN COVER, 3 PHASE	288 HANDLE	538 ROSE
161 MOTOR ASSEMBLED, 1PH.	289 THREADED ROD	539 ELBOW FITTING
162 CONNECTION BOX	290 CLAMP. PAD	540 ACTUATING VALVE
163 CABLE 1PH.	291 RETAINING RING	541 FITTING
164 BOLT	300 VICE, ASSEMBLED	542 REGULATOR
165 WASHER	301 SURRATED JAW	543 MANOMETER
166 FAN COVER 1PH.	302 JAW CASTING	544 BOLT
181 GOTTIE PIN	303 SET SCREW	600 MACHINE STAND, ASSEMBLED
182 NUT	304 NUT	601 MACHINE STAND
183 SPRING DISC	305 SET SCREW	602 NUT
184 OUTER GUARD	306 BOLT	603 WASHER
186 GUARD SPINDLE	307 RETAINER RING	604 WASHER
187 INNER GUARD	308 SPRING DISC	605 HINGE
188 BOLT	309 VICE NUT	606 TOP DOOR
189 COOLANT NOZZLE	310 VICE BLOCK	607 BOTTOM DOOR
190 BOLT	311 LOCKING HANDLE	608 LATCH
191 VALVE	312 HOLLOW PIN	609 DOOR KNOB
192 FITTING	313 GROOVED PIN	610 BOLT
193 CLAMP	314 SLOT NUT	611 GREASE GUN HOLDER
194 COOLANT HOSE	315 QUICK ACTION NUT	612 GREASE GUN
200 TABLE ASSEMBLED	316 HANDLE	613 ALLEN WRENCH HOLDER
201 CLAMPING TABLE	317 KNOB	614 ALLEN WRENCH SET
202 BLOCKING PIN	318 GUIDE BAR	615 CRIP TRAY
203 WASHER	319 LEAD SCREW	616 COOLANT FUNNEL
204 BOLT	320 CRANK HANDLE	617 WASHER
205 DOWEL PIN	325 GUIDE BAR	618 SCREW
206 BOLT	326 LEAD SCREW	619 SPLASH COVER
207 WASHER	327 BRACKET	620 COOLANT TANK
208 ROTARY TABLE	328 SET SCREW	621 COOLANT PUMP
209 WEAR JAW, RIGHT	329 NUT	622 CABLE GLAND
210 WEAR JAW, LEFT	330 BOLT	623 PIN CONNECTOR, MALE
211 GUIDE BUSHING	331 ARM BRACKET	624 BOLT
212 CLAMPING PAD	332 WASHER	625 COUPLER, FEMALE
	333 BOLT	626 PLUG

AIR CIRCUIT DIAGRAM





DORINGER COLD SAWS, INC.

Manufacturers of Circular Metal Sawing Machinery

13400 Estrella Avenue, Gardena, California 90248
 Telephone: (310) 366-7766 Fax: (310) 366-7490
 Call Toll Free (800) 962-6800

PRICE LIST

Effective June, 2000

SAWBLADES – COOLANT - SHARPENING

GENUINE DORINGER HIGH SPEED STEEL COLD SAWBLADES

GENUINE DORINGER Sawblades are manufactured of Super High Speed Steel, heat treated and hardened to 63-65 Rc. Every DORINGER sawblade is individually hammered and inspected to guarantee minimum run-out with-in German DIN standards. Each sawblade has a black oxide coating, vapor treated to insure maximum coolant coverage, longest sawblade life, and maximum performance. GENUINE DORINGER Sawblades are the finest cold sawblades manufactured anywhere in the world.

INCH	10"	11"	12"	12.5"	13"	14"	16"	17"	18"
MM	250mm	275mm	300mm	315mm	325mm	350mm	400mm	425mm	450mm
PRICE	\$72.00	\$92.00	\$122.00	\$132.00	\$142.00	\$152.00	\$242.00	\$292.00	\$372.00

ORIGINAL DORINGER H-32 COOLANT CONCENTRATE

ORIGINAL DORINGER H-32 Coolant was developed and is manufactured specifically for chip making machinery and cold sawing. H-32 is a synthetic coolant offering maximum lubricity and cooling quality. The coolant conducts the heat of sawing keeping the sawblade cool to ensure maximum blade life, and keeping the work piece cool ensuring no distortion, discoloring, and ease of handling. The synthetic H-32 requires no degreasing. Mix coolant with water 6:1 for light cutting, 3:1 for heavy cutting. Check with factory for proper ratios for other applications. E.P.A. approved. MSDS provided with each order. 1 & 5 gallons shipped via UPS.

QUANTITY	1 GALLON JUG	5 GALLON PAIL	55 GALLON DRUM
CONCENTRATED DORINGER H-32	\$22.00	\$79.00	\$782.50

SAWBLADE SHARPENING SERVICE

DORINGER MANUFACTURING CO. offers the finest quality of sawblade reshaping and retoothing service. We have the most modern automatic sharpening machines and factory trained operators. All sawblades are reshaped in-house, never contracted out.. U.P.S. the sawblades to us, we have a 2 day turnaround, and we will U.P.S. the blades back to you. We have a free pick-up and delivery service for customers in the greater Los Angeles and Orange county area.

We invite new customers to try our sharpening service. Call factory for free reshaping offer. You'll notice the DORINGER difference.

SIZE	10"	11"	12"	13"	14"	15"	16"	17"	18"
RESHARPENING	\$15.00	\$16.50	\$18.00	\$19.50	\$21.00	\$22.50	\$24.00	\$25.50	\$27.00
RETOOTHING & RESHARPENING	\$29.00	\$30.50	\$32.00	\$33.50	\$35.00	\$36.50	\$38.00	\$39.50	\$41.00

SAWBLADE RECOMMENDATION SHEET

TUBE & PIPE WALL THICKNESS	SAWBLADE DIAMETER				
	250mm-10"	300mm-12"	315mm-12" 325mm-13"	350mm-14"	400mm-16" 450mm-18"
.025 - .065	240T	280T	280T	360T	360T
.065 - .095	180T	220T	220T	280T	280T
.095 - .125	140T	180T	180T	220T	240T
.125 - .187	120T	140T	160T	180T	220T
.187 - .312	90T	110T	140T	140T	180T
.312 & ABOVE	90T	80T	80T	110T	-

SOLID MATERIAL DIAMETER	SAWBLADE DIAMETER				
	250mm-10"	300mm-12"	315mm-12" 325mm-13"	350mm-14"	400mm-16" 450mm-18"
.0250	140T	180T	220T	280T	360T
0.250 - 0.750	120T	140T	160T	180T	220T
0.750 - 1.250	80T	110T	110T	140T	160T
1.250 - 2.0	80T	80T	80T	110T	-
2.0 & ABOVE	60T	60T	80T	-	-

CUTTING TIPS

- Let the saw do the work. Do not pull down too hard on the handle. Too much pressure increases chattering and vibration and decreases sawblade life.
- Make sure sawblade is tightly secured to main spindle (left-hand thread).
- Make sure material being cut is tightly viced in saw.
- When cutting non-ferrous materials, cut at highest available speed, using largest diameter available sawblade, with one level coarser than above recommended chart.
- When cutting stainless or alloy steels, cut at lowest available speed, using smallest diameter sawblade, with one level finer than above recommended chart, and enrich your coolant.

DORINGER MANUFACTURING CO., INC.
 Manufacturers of Circular Metal Sawing Machinery
 HSS Sawblades – Sharpening Specialists

13400 Estrella Avenue, Gardena, California 90248
 Telephone: (310) 366-7766 Fax: (310) 366-7490
 Toll Free: (800) 962-6800

PARTS LIST & OPERATING INSTRUCTIONS

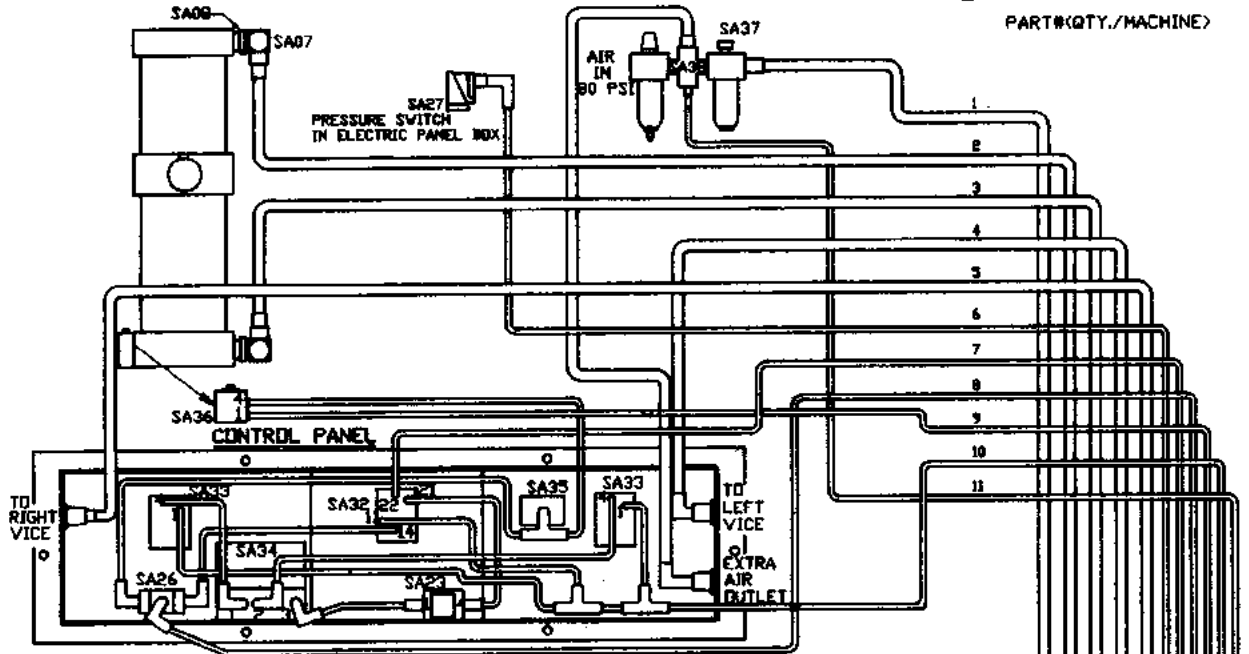
FOR

SEMI AUTOMATIC MACHINE D-350

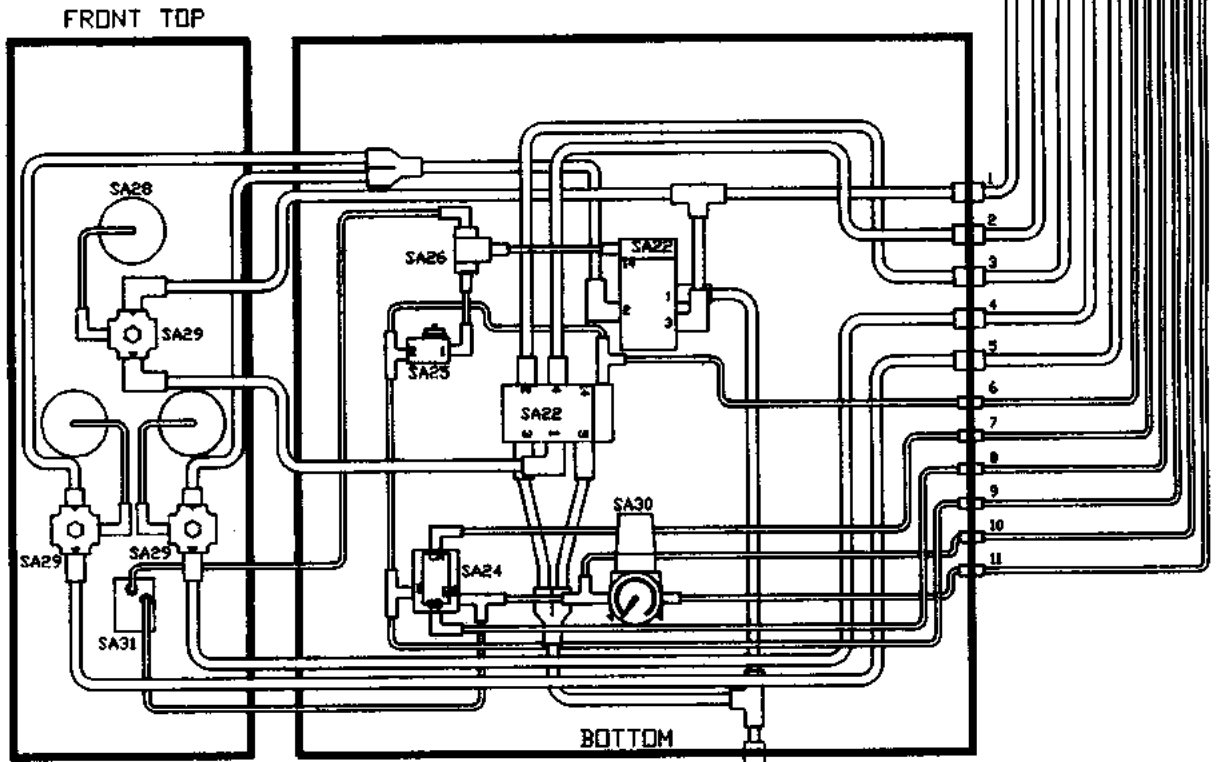
AIR SYSTEM

- | | | | | | |
|--|--------|--|--------|--|--------|
| | F1(12) | | F6(6) | | F1K(6) |
| | F2(8) | | F7(10) | | F12(4) |
| | F3(2) | | F8(2) | | F13(2) |
| | F4(2) | | F9(1) | | F14(1) |
| | F5(6) | | F10(3) | | F15(3) |

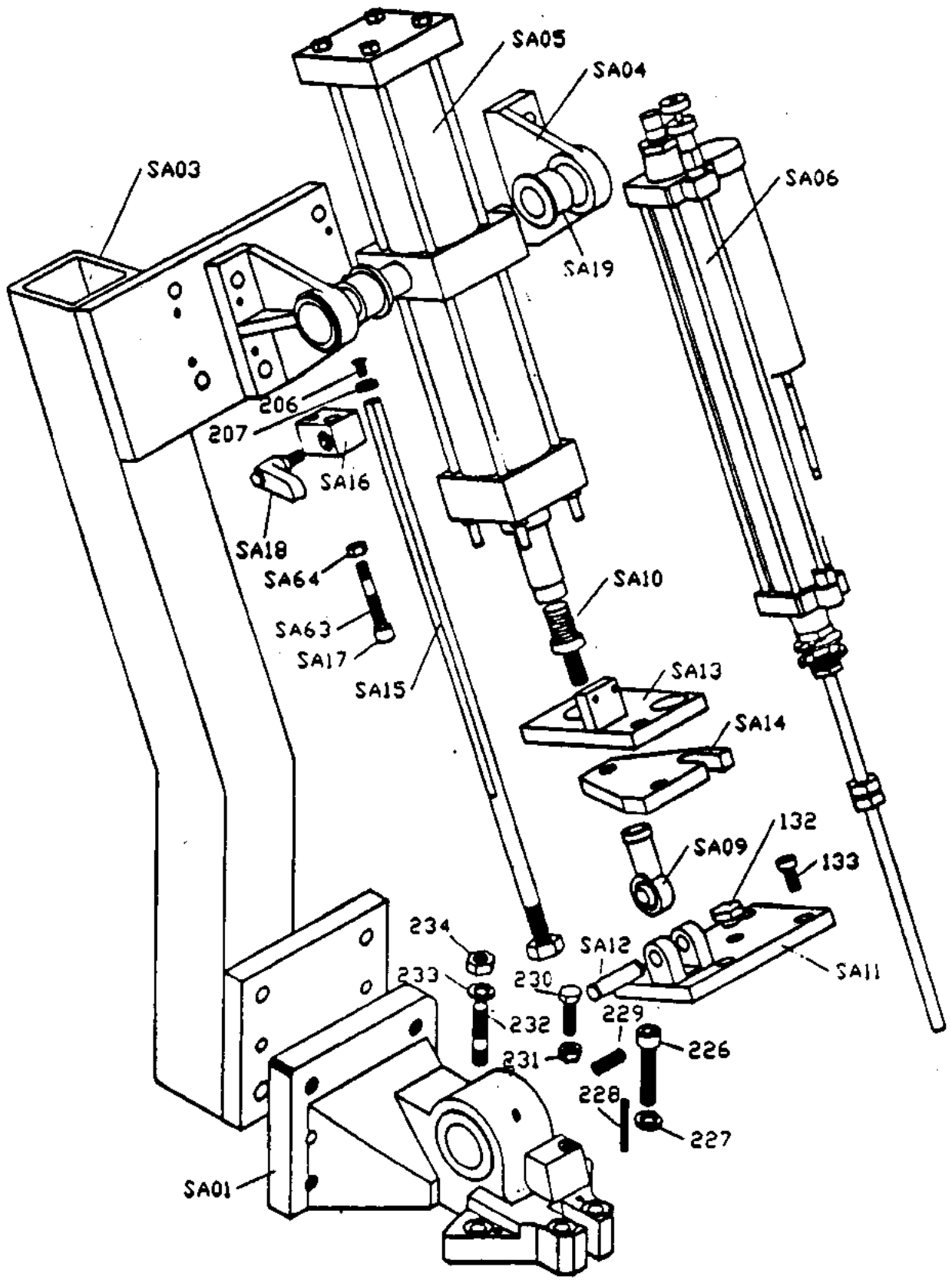
PART#(QTY./MACHINE)



FRONT CONTROL BOX DETAIL



PNEUMATIC CONTROL PANEL



PARTS LIST

SA01	Bearing bracket	SA26	Shuttle Valve	SA50	Pipe Tee 1/4 X 1/4 X 1/4
SA02	Cylinder Mtg. Column	SA27	Pressure Switch	SA51	Pipe Nipple 1/4Th. X 1/4Th. Female to Tube
SA03	End plates (Top & Bottom)	SA28	Pressure Gauge	SA52	5/32 X 1/4 Female Th.
SA04	Cylinder Brackets	SA29	Pressure Regulator	SA53	Bulk Head Union (5/16 Tubes)
SA05	Cylinder(2.5" Bore, 12" Stroke)	SA30	Mini Regulator with gauge	SA54	Bulk Head Union (5/32 Tubes)
SA06	Hydro Check (12" Stroke)	SA31	Push Button & Valve	SA55	Bolts M3X25 (Relay valve)
SA07	Flow control Valve(Cylinder)	SA32	Push Button & valve (emergency)	SA56	Bolts M3x30(AIR, SOL)
SA08	Bushing (1/4"x 1/4")	SA33	Push Button & Valve (Start)	SA57	Bolts M3x20(FCV)
SA09	Spherical connector With	SA34	2 Hand start Module	SA58	Bolts M5x10(Mini Regulator)
SA10	Stud	SA35	Counter	SA59	Bolts M4x30
SA11	Cover Plate	SA36	Limit valve	SA60	Tubing 5/32 O.D.
SA12	Pin	SA37	Air Filter Regulator Unit	SA61	Tubing 5/16 O.D.
SA13	Hyd.Check Mtg. Plate	SA38	Cross	SA62	Spiral Wrap
SA14	Moving Plate	SA39	Electric Panel	SA63	Spring
SA15	Limit Valve Rod	SA40	Enclosure for Pneumatic Ckt.	SA64	Nut
SA16	Adjustable Block		Elbows		
SA17	Adj. Blk. Pin	SA41	5/16 X 1/4Th.		
SA18	Handle	SA42	5/32 X 1/8Th.		
SA19	Cyl Bushing	SA43	5/32 X 10-32 Th.		
SA20	Front Panel Box		Straights		
SA21	Panel Guards	SA44	5/16 X 1/4		
SA22	Air Pilot valve	SA45	5/32 X 1/8 Th.		
SA23	Solenoid Valve	SA46	5/32 X 1/4		
SA24	Relay Valve		Tees		
SA25	Flow control (Delay)	SA47	5/16 X 5/16 X 5/16		
		SA48	5/32 X 5/32 X 5/32		
			Threaded Tee		
		SA49	5/32 X 10-32 Th.		

WORKING CYCLE:

Notice: Before starting test the working cycle without work-piece.

Switch on the main switch and **release the emergency stop button.**

Select the motor speeds by the switch on the motor.

Now feed the material (Not in test cycle)

Push both the start buttons at once.

The saw head moves down the quick motion way while the vices clamp automatically and the motor starts.

The machine cuts the material in controlled power stroke.

Reaching the cutting depth control valve the head moves back by quick motion while the motor switches off.

Now the vices open and the material can be supplied again.

The feeding device works with feed-back cushion braking the speed of sawhead moving back. Adjust it by screw on side of the cylinder head.

In case of a quick interrupt after pushing the start buttons the Emergency stop button cuts off electric system and open vices after a small time delay. For next cut release the emergency buttons by turning it clockwise.

Pressure regulator for down feed pressure is in the front of the pneumatic panel set it to 80 PSI.

Separate pressure regulators for each vices are also provided in the front of pneumatic panel.

To adjust the vice pressure push black push button and hold it while you are changing the pressure.

Two-Hand Safety Start on control panel.

The working cycle only starts when both "start buttons are pushed together.

Warning: Both START buttons must be pushed by hand Do not bridge them neither by mechanical parts nor by altering the air circuit. In case of an accident caused in a bridged start button to start by one hand only, the manufacturer of the machine is not liable.

Emergency Stop Button:

Pushing the Emergency Stop button during the working cycle the saw head immediately moves back into rest position switches off the motor and also open both vices.

Adjustment of the Feeding Device:

Engagement of moving plate #SA14 with adjustable nuts on hydrocheck piston rod changes quick motion to power stroke. The speed of the controlled power stroke can be varied infinitely by the precision adjustment knob on top of the hydrocheck. The cutting depth control block(Adjustable block) #SA16 limits the power stroke after the machine has cut through the material. The saw head moves back by quick motion in to the rest position.

Position the nut on hydrocheck and lock it with lock nut, so that quick down feed motion changes in to controlled power stroke just a short before saw blade reaches the work-piece.

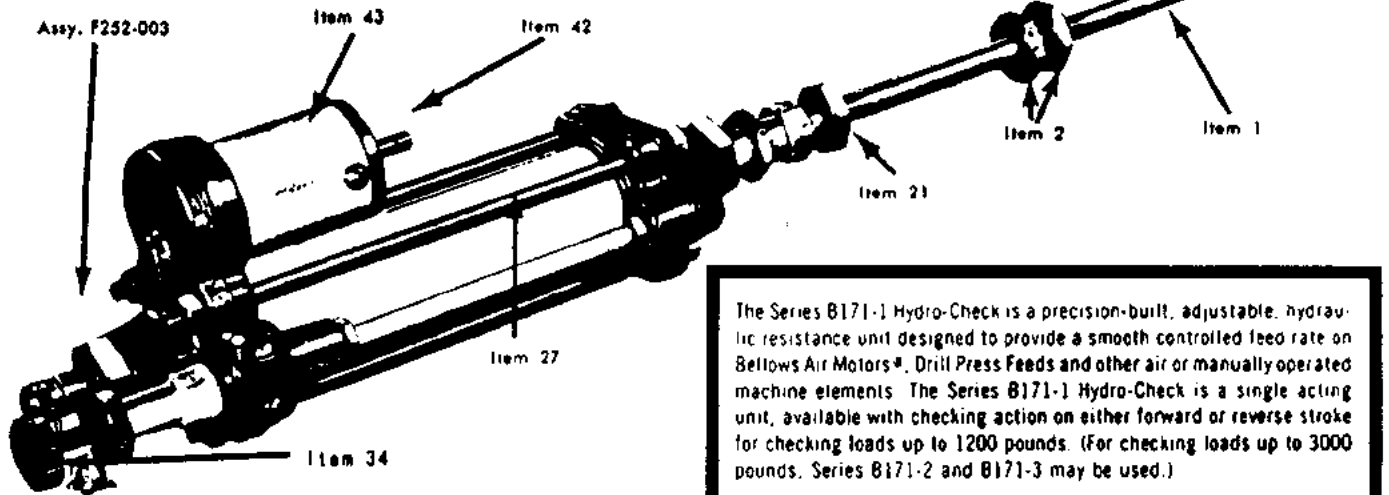
Adjust the control block #SA16 for the cutting depth so that the valve #SA36 will actuate the saw head return movement immediately after cutting through.

Controlled power stroke is the actual travel speed of sawblade cutting the material. This is set by the person that is operating the machine. This speed is not preset by factory because different materials with different dimensions will be cut at down speed that operator feels are adequate for that particular application.

ADJUSTING THE VICES:

Loosen screws on the vice block, move the vices up to 0.04" to the work-piece and fasten the screws firmly.

Operating Instructions and Parts List



The Series B171-1 Hydro-Check is a precision-built, adjustable, hydraulic resistance unit designed to provide a smooth controlled feed rate on Bellows Air Motors®, Drill Press Feeds and other air or manually operated machine elements. The Series B171-1 Hydro-Check is a single acting unit, available with checking action on either forward or reverse stroke for checking loads up to 1200 pounds. (For checking loads up to 3000 pounds, Series B171-2 and B171-3 may be used.)

OPERATING PRINCIPLE: The Hydro-Check consists basically of a checking cylinder (Item 27), checking piston rod (Item 1), adjustable needle valve (Item 34), and a balance cylinder (Item 43).

The checking piston rod may be directly attached or linked to a moving machine part. As the piston rod is pulled out, oil in the checking cylinder is forced, by the moving piston, through the transfer tube, through the needle valve, into the rear end of the checking cylinder. On the return or non-checking stroke, the hydraulic oil returns through the piston valve and the unit is ready for another checking stroke.

The balance cylinder assembly (Item 43) automatically compensates for the volumetric displacement of the checking piston rod. An indicator rod (Item 42), attached to the balance cylinder piston, indicates the amount of oil in the Hydro-Check. Three grooves on the indicator rod show when and how much oil should be added to maintain correct hydraulic volume. Make-up oil is added through filling valve (Assy. F252-003) with a model B161-003 oil fill gun.

MOUNTING: The Hydro-Check can be operated in any position provided it is mounted directly in-line or parallel to the force it is to control. If unit is mounted parallel, the force or power supply should be guided by ways or guide rods to prevent side strain on the Hydro-Check piston rod. The in-line type of mounting is the most desirable type to use on any application. Series B171-1 Hydro-Checks are available with a threaded piston rod guide and lock nut for nose mounting or pivot brackets and rod clevis for pivot mounting.

CHECKING STROKE ADJUSTMENT: The mechanical linkage to the element being controlled, moving between two piston rod lock nuts, actuates the Hydro-Check. The point at which checking action begins is determined by position of the second lock nut (Item 2) on threaded piston rod. Thus, any portion of the full stroke length may be used for checking. The forward piston rod lock nut is used to lock the second in position. The actuating element engages the first lock nut on return stroke to retract the piston rod.

The first or innermost piston rod lock nut (Item 21) must be kept at back end of piston rod thread to prevent Hydro-Check piston from bottoming against rear cylinder head. This nut is locked in position with a socket head set screw.

CAUTION: Before applying checking load, be sure stroke of Hydro-Check is long enough to prevent power source from bottoming Hydro-Check piston against front head and possibly damaging Hydro-Check.

ADJUSTMENT OF CHECKING RATE: Checking Speed is controlled by turning the knurled needle valve knob (Item 34). Rate is reduced as the knob is turned clockwise and increased as it is turned counter clockwise.

OIL LEVEL: Amount of oil in Hydro-Check is indicated by position of balance cylinder indicator rod (Item 42). The position is determined by grooves on the rod. Proper oil level is indicated when, with threaded piston rod extended, the second indicator groove is flush with balance cylinder head. When threaded piston rod is retracted, the third innermost groove should be flush with cylinder head. Oil should be added when groove nearest end of indicator rod becomes flush with face of balance cylinder head, when threaded piston rod is fully extended.

NOTE: Use our F442 hydraulic oil only. If circumstances require temporary use of another type of oil, drain and thoroughly flush the Hydro-Check system. Then refill with substitute oil.

DISMANTLING AND REASSEMBLING: Always use care in dismantling and reassembling Hydro-Check to be sure cylinders, piston seals and piston rod seals are not damaged. Replace any damaged packings before reassembling.

SERVICE KIT: A convenient means of stocking parts subject to replacement through normal operation. Order Kit Number 8732-471.

ADDING OIL: Before replacing filler valve, the main cylinder should be filled with our F442 hydraulic oil, as follows:

1. Stand Hydro-Check upright with piston rod pointed downward and fully extended.
2. Slowly pour oil into cylinder until level with filler valve opening.
3. Move piston rod in and out slightly ($1/16$ " to $1/8$ ") to release any air trapped under piston assembly.
4. Allow Hydro-Check to stand in upright position for a short while to allow air to escape.
5. Replace filler valve.
6. Use B161-003 oil gun to bring Hydro-Check to proper level, indicated by grooves on indicator rod. Air must be bled from oil gun before filling Hydro-Check. Stand Oil Gun with nozzle pointing up. Cause oil to flow from nozzle until it runs clear of air bubbles.
7. Follow Air Bleeding procedure to remove all traces of trapped air.

CONTINUED ON BACK COVER

BLEEDING AIR FROM OIL: Retract Hydro-Check piston rod and hold retracted. Fill Hydro-Check until oil bleeds from small hole in balance cylinder. (Air must be bled from oil gun before filling Hydro-Check.) Slowly cycle piston rod. Stand Hydro-Check for a period of time with fill valve in highest position. Using a small rod (paper clip), open fill valve and allow air to bleed off. Fill again with bleed hole in balance cylinder in the highest position and with piston rod retracted. Allow a clear stream of oil to flow from small hole in balance cylinder. Using small rod release a quantity of oil from fill valve so Hydro-Check is not over-filled (third innermost groove on indicator rod flush with balance cylinder head with threaded rod retracted). Hydro-Check is now ready for use.

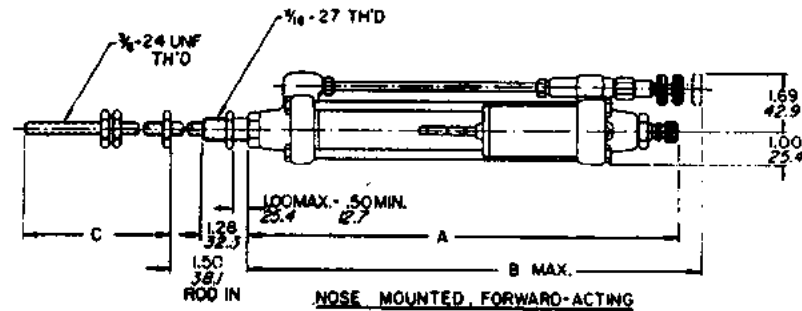
IRREGULAR CHECKING ACTION: The presence of air in Hydro-Check will cause irregular checking action. Air can be detected by a spongy feel when pressing on balance cylinder rod, or by sound of air passing through needle valve when in operation. Follow Air Bleeding procedure to remove all traces of trapped air.

WARRANTY

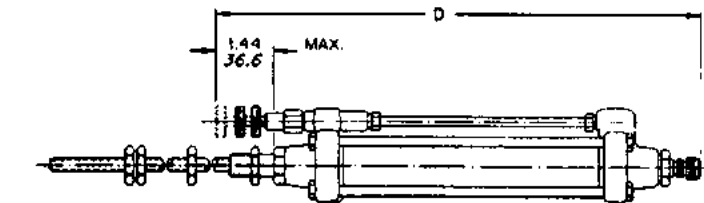
This product is guaranteed against defective workmanship and material for a period of six months from date of purchase. If received at the factory within 180 days of purchase, shipping charges pre-paid, any part claimed defective and confirmed as such by the factory will be replaced no charge, FOB factory.

WARRANTY: This warranty is voided if repair of the product has been attempted by others or if it has been altered in any manner.

DIMENSIONAL DRAWING



NOSE MOUNTED, FORWARD-ACTING



NOSE MOUNTED, REVERSE-ACTING

STROKE		2"	4"	6"	9"	12"	15"	18"
A	inch	7.88	9.88	11.88	14.88	17.88	20.88	23.88
	mm	200.2	251.0	301.8	378.0	454.2	530.4	606.6
B	inch	8.50	10.50	12.50	15.50	18.50	21.50	24.50
	mm	215.9	266.7	317.5	393.7	469.9	546.1	622.3
C	inch	10.00	10.00	10.00	10.00	12.00	15.00	18.00
	mm	254.0	254.0	254.0	254.0	304.8	381.0	457.2
D	inch	9.31	11.31	13.31	16.31	19.31	22.31	25.31
	mm	236.5	287.3	338.1	414.3	490.5	566.7	642.9

HOW TO ORDER SERIES B171-1 HYDRO CHECK: Series number (B171-1) is followed by code numbers for type of mounting, valve arrangement and stroke length. Complete the code number (1111) by replacing the two blocks with two digits for the valve selected from the Valve Option Table. For example Model B171-11011 is nose mounted, standard control valve, and 2" stroke length. Model B171-13013 is pivot mounted, standard control valve, and 6" stroke length.

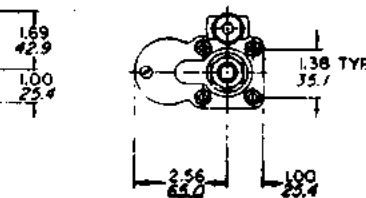
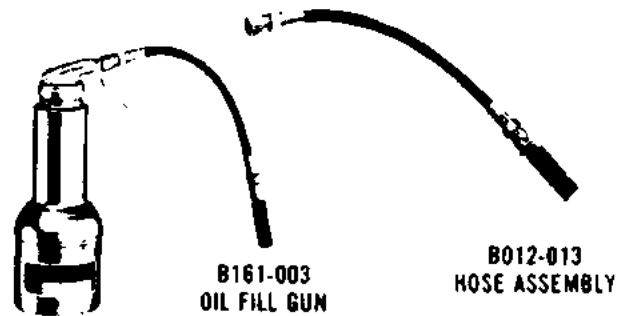
MOUNTING STYLE	2" STROKE	4" STROKE	6" STROKE	9" STROKE
NOSE	1001	1002	1003	1004
PIVOT	3001	3002	3003	3004

MOUNTING STYLE	12" STROKE	15" STROKE	18" STROKE
NOSE	1005	1006	1007
PIVOT	3005	3006	3007

VALVE OPTIONS

- 01.....Standard Valve, Forward-Acting
- 02.....Standard Valve, Reverse-Acting

CAUTION: Make sure power and air are disconnected from parent machine before making any adjustments.



PIVOT MOUNTING

