COMPACT HYDRAULIC SHEARING MACHINE

OPERATOR INSTRUCTION MANUAL



“CAUTION”-HYDRAULIC OIL SPECIFICATION

1. USE HYDRAULIC OIL AW46 SHELL BRAND or EQUIVALENT SPECIFICATION OF OTHER BRANDS.

2. FILL HYDRAULIC OIL INTO HYDRAULIC TANK UP TO 90% FULL.
   (BEFORE RUNNING THIS MACHINE, PLEASE DO NOT FORGET TO FILL HYDRAULIC OIL AW46 SHELL BRAND 50 LITERS INTO OIL TANK.)

DO NOT RELY ON OIL GAUGE WHICH SOMETIMES GIVE INCORRECT OIL-LEVEL INDICATION. DOUBLE-CHECK TO OIL TANK AND MAKE SURE OIL TANK IS, AT LEAST, 90% FULL.

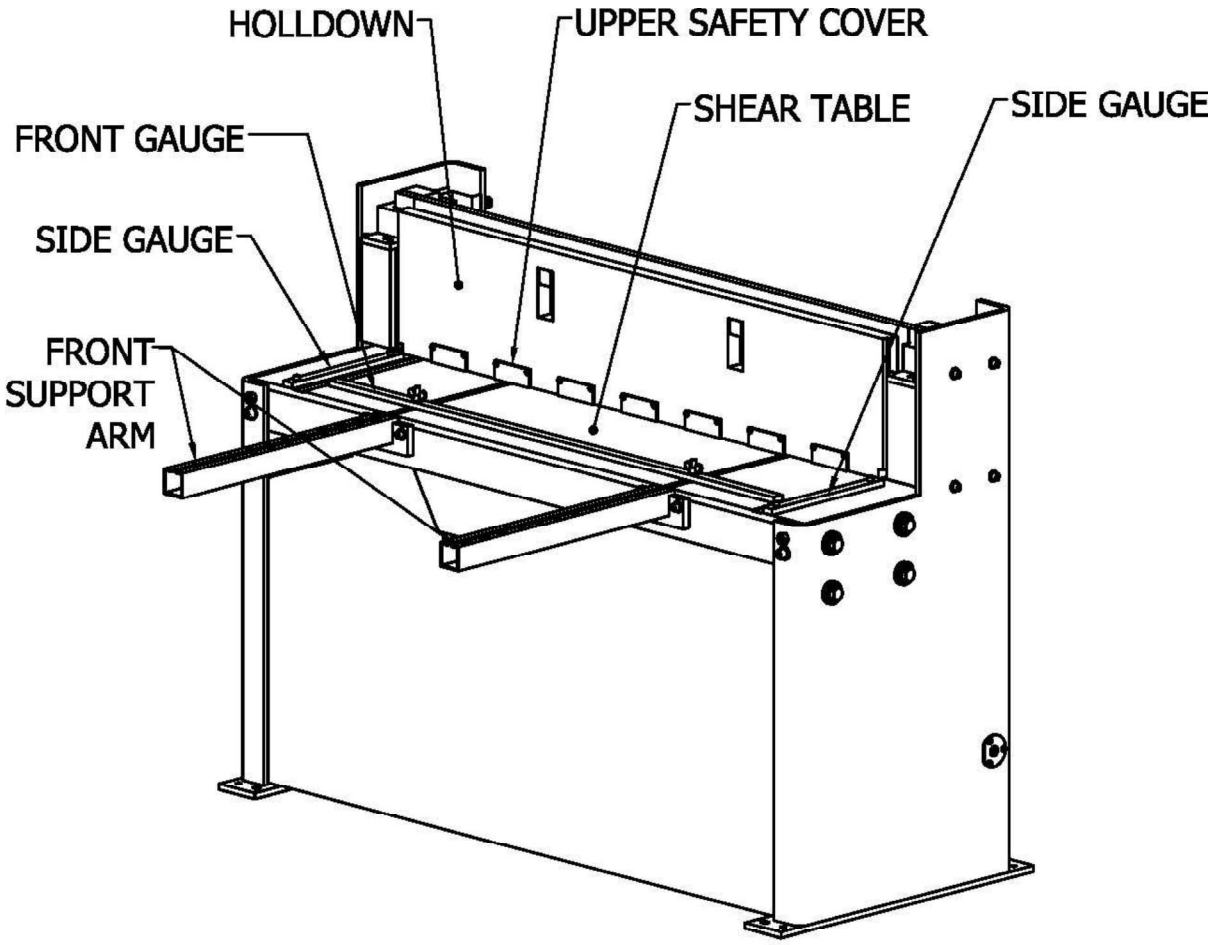
SHORTAGE OF HYDRAULIC OIL WILL CAUSE HYDRAULIC SYSTEM/PUMP BREAK-DOWN AND DAMAGE TO MAJOR MECHANICAL PARTS BECAUSE OF OVERHEAT.

3. CHANGE HYDRAULIC OIL EVERY 6 MONTHS.

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FUNCTION DIAGRAM



GENERAL INFORMATION

Your hydraulic power shear is equipped with fully integrated hydraulic unit. The system includes starter with selector switch for single stroke hydraulic pump and tank, double acting cylinders, electrically operating hydraulic valve, pressure relief valve for safety, foot switch and stroke control. Electrical service for 3 phases, 220, 380, 440 voltage as required.

Sheet metal covers are furnished for front and rear of the machine to guard the hydraulic system, the foot switch is also equipped with guard. Operator has complete control of cutting action which is smooth, quiet and provides clean, burp-free shearing. For additional safety, the knife bar is designed to return to the top of stroke at any point in the stroke in which the operator removes his foot from the foot switch.

The knife bar on compact hydraulic shear unit automatically returns to the top of the stroke when the lower limitation is reached.

RECEIVING INSTRUCTION

Your hydraulic power shear is carefully inspected, crated and left our plant in a perfect condition.

For your protection, examine crates, containers and protective covering upon receiving immediately.

Any external evidence of missing or damage must be noted on the freight bill (or express receipt), and signed by the carrier's agent. Failure to list or damage may result in the carrier refusing to honor your claim. Promptly file your claim.

Concealed missing or damage means missing or damage which does not became apparent until the crate and covers have been removed. Contact the carriers, as soon as the concealed missing or damage is discovered. Make the written request for inspection as once and hold the equipment for the transportation company's inspector. Then file a claim with the carrier since such a missing or damage is his responsibility.

INSTALLATION

The shear should be installed indoors on a solid floor which is a level and free vibration.

The machine may be anchored to the floor by using anchor bolts, or inserts commented into the floor. Front and rear covers, using a hex key to loosen the button head hex socket cap screws.

Use water to clean all protective coating off the machine. After cleaning, re-coat with a light coat of lubricating oil.

The shear should be removed from the shipping skid, and place directly over the mounting bolts. Use a precision level on the table surface, level the machine to within 0.2mm per meter front to back, and left to right.

Securely tighten the mounting bolts and re-check for any possible change. Install the table, back-gauge racks, back-gauge supports, back-gauge stop & front supports in accordance with the illustrations.

Lubricate the treadle bearings, knife-bar slides, link pins and all function points with light lubricating oil.

Shear to connecting power to the shear; check the blade clearance as below:

1. Allowed the knife bar to slowly drop and the cutting edges to begin to interfere. Check with a feeler gauge for 0.8mm clearance between blades on the right side.
2. Check the blade clearance from the right to the left as the knife-bar moves downwardly. The clearance should be 0.8mm on each side & 0.6mm in the center. The clearance must be checked at the exacting point of intersection of the blades to obtain accurate indications.
3. If clearance is not correct loosen the table bolt & move the table in or out. Use the square heart set screws to push the table in (= reduce clearance), and the hex socket cap screws to pull the table out (= increase clearance). Use the control screws alternately so as not to force one screw against the other & to maintain complete control over the table as all times. Check clearances after the table bolts have been tightened and the control screws snuggled up to determine if any settings have changed.
4. To change the clearance as the center of the blade, adjust the nut.
5. This blade clearance checking and adjustment procedures must be followed whenever the blades are changed or reversed.
6. Check with feeler gauge between the wear plate and the knife bar along the lower gear surface and top rear surface that a proper clearance has been established.
7. Repeats step 2 through 6 on the L.H. end of the shear.
8. Check blade clearance and adjust it necessary.

BLADE CARE

Like all power shears, this machine has high-carbon / high-chrome alloy tool steel blade with cutting edges on the bottom blade and two edges on the top blades are quickly and easily reversible when one edge is dull. The multiple shearing edges prolong blade lift considerably. Never permit the blade to rub each other. Lubricate the blade with light oil when shearing stainless steel or galvanized material. Brush oil on the lower blade; the upper blade will pick up oil during the shearing cycle. Keep the blade sharp. Turn or change blades as soon as a burr is noted on the sheared stock. It is to recommend that a spare ser of blades be held in stock so as not to impair production during grinding.

When A : Edges have been used, it will be necessary to have the blade ground. The blades should be ground so that the variation is no greater than 0.025mm within 3048mm and 0.05mm from the end to end.

When re-installing re-ground blades, install shim stock under the lower edge to bring the blade up flush with the table.

CAUTION

Power must be disconnected from the shear when working in the area of the blades. Use extreme ware in handling blades. They are sharp and can cut hand if allowed to slip or twist.

KNIFE BAR WAYS ADJUSTMENT

The ram ways are adjustable to affect the wear that will occur during gears of service. The adjustment will only be required about every five (5) gears, unless the shear is allowed to operate unleveled which causes a twisting action and premature ways wear.

The proper running clearance is 0.038mm to 0.05mm and should be maintained at all times in order to get the maximum life from the blades & quality work from the shear.

The adjustment procedure is as follows:

1. Disconnect electrical power from the machine.
2. Loosen the lock nuts on the three square head set screw located at the front gib area of r.h. end heading.
3. Run center set screw in tight to take up excess clearance.
4. Run in the top and bottom screws until they strike the wear plate, the back off 1/16 of turn and tighten lock nuts.
5. Take off on the center set screw until it comes in line with the top and bottom screws, tighten lock nuts.

SUGGESTED KNIFE CLEARANCE

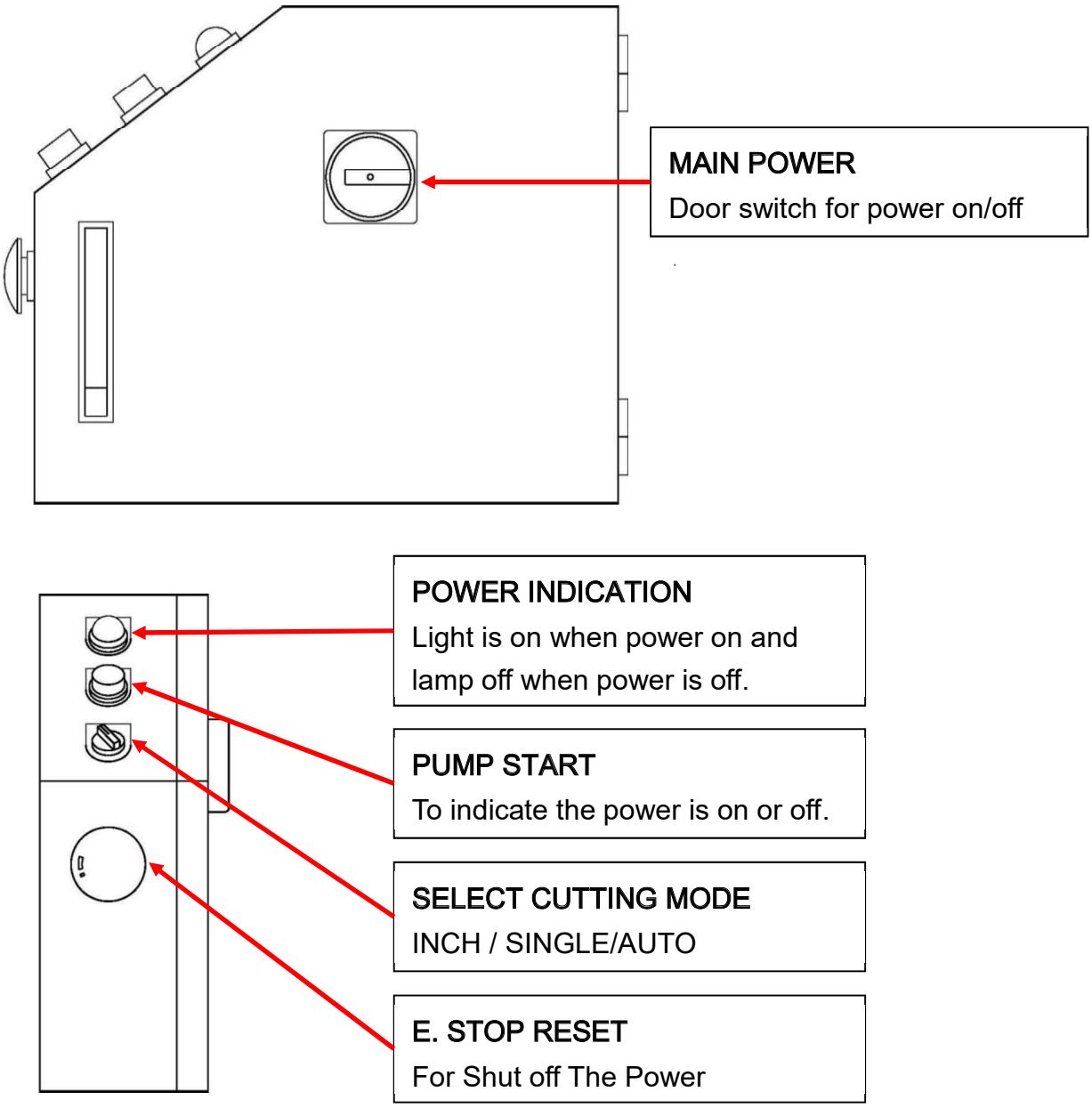
METAL THICKNESS		KNIFE CLEARANCE
16	Gauge	.002”-.005”
14	Gauge	.003”-.006”
12	Gauge	.004”-.008”
10	Gauge	.006”-.009”
3/16	Inch	.009”-.013”
1/4	Inch	.010”-.018”
3/8	Inch	.020”-.028”
1/2	Inch	.030”-.040”
5/8	Inch	.040”-.050”
3/4	Inch	.050”-.065”
1	Inch	.070”-.090”
1-1/4	Inch	.090”-.120”
1-1/2	Inch	.110”-.150”

STANDARD SHEET GAUGES

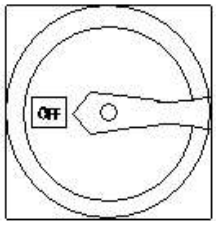
GAUGE NO.	THICKNESS INCHES	GAUGE NO.	THICKNESS INCHES
30	.0120	16	.0598
29	.0135	15	.0673
28	.0149	14	.0747
27	.0164	13	.0897
26	.0179	12	.1046
25	.0209	11	.1196
24	.0239	10	.1345
23	.0269	9	.1495
22	.0299	8	.1644
21	.0329	7	.1793
20	.0359	6	.1943
19	.0418	5	.2092
18	.0478	4	.2242
17	.0538	3	.2391

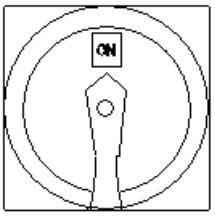
ELECTRICAL

Electrical connection must be made by a qualified electrical. The hydraulic shear is connected at the factory for the A.C. input voltage special by the customer. After connected, jog the motor by means of the pump start & stop push buttons to ascertain rotation. The motor should rotate in accordance with the rotation arrow. (Counterclockwise facing the coupling end.)

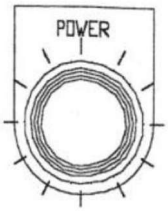


START MACHINE POWER:



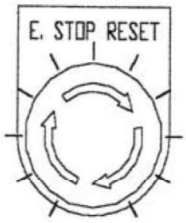


Turn clockwise direction to “ON” position



Power lamp is “ON”

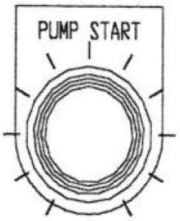
START HYDRAULIC PUMP MOTOR:



E stop button is “ON””



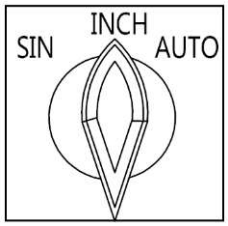
Reset E. stop button to “OFF”



Press pump start push button

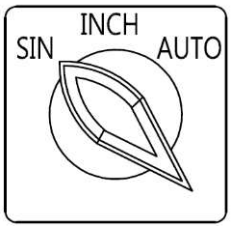
SELECT CUTTING MODE & FOOT SWITCH:

INCH MODE:



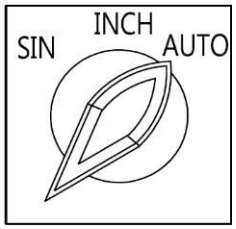
Step the foot switch one time, machine cutting one time only.
If operator remove his foot from foot switch, the blade stop move immediately.

SINGLE MODE:



Step the foot switch constantly, machine will cut the workpiece one time only.
If operator remove his foot from foot switch, the blade will back to the original point automatically

AUTO-MODE:

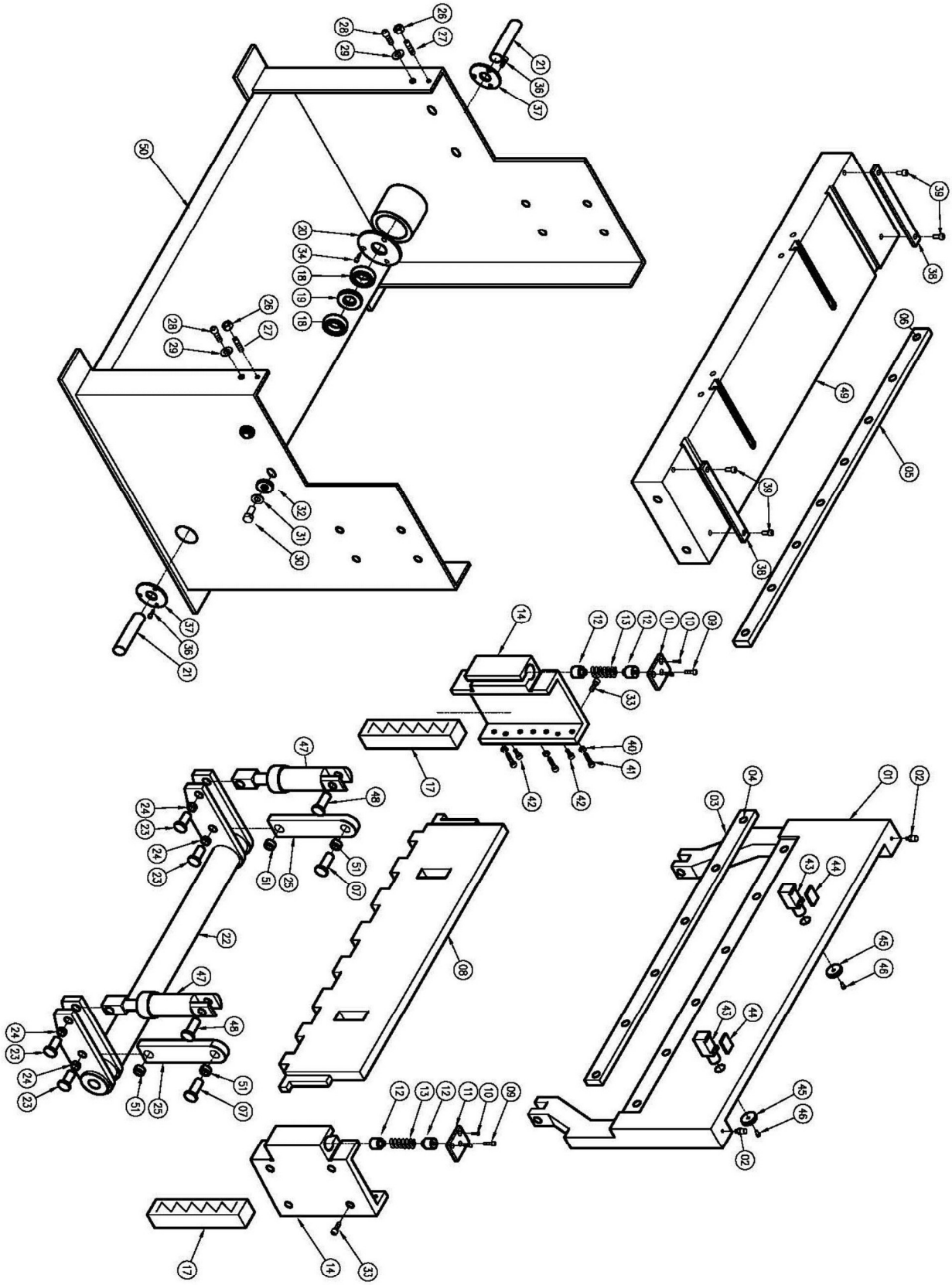


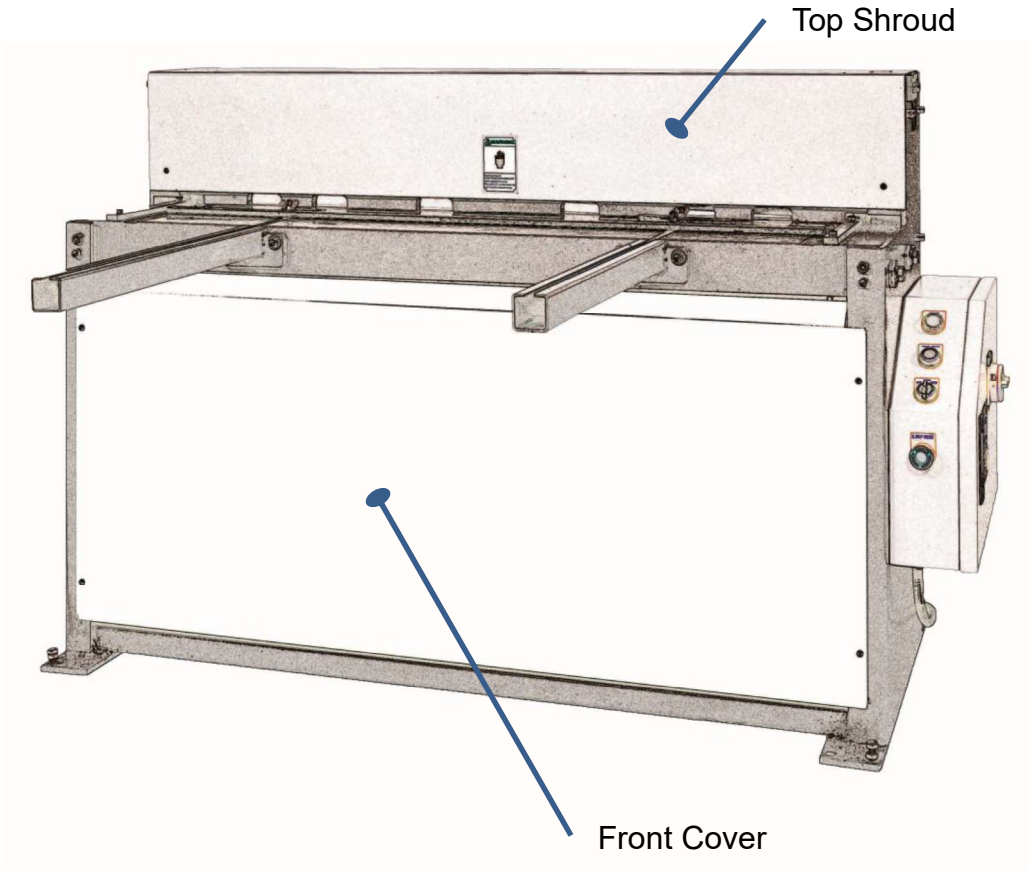
Step the foot switch constantly, machine will cut the workpiece constant. (Up and down till remove from the foot switch)
If operator remove his foot from foot switch, the blade will back to the original point automatically

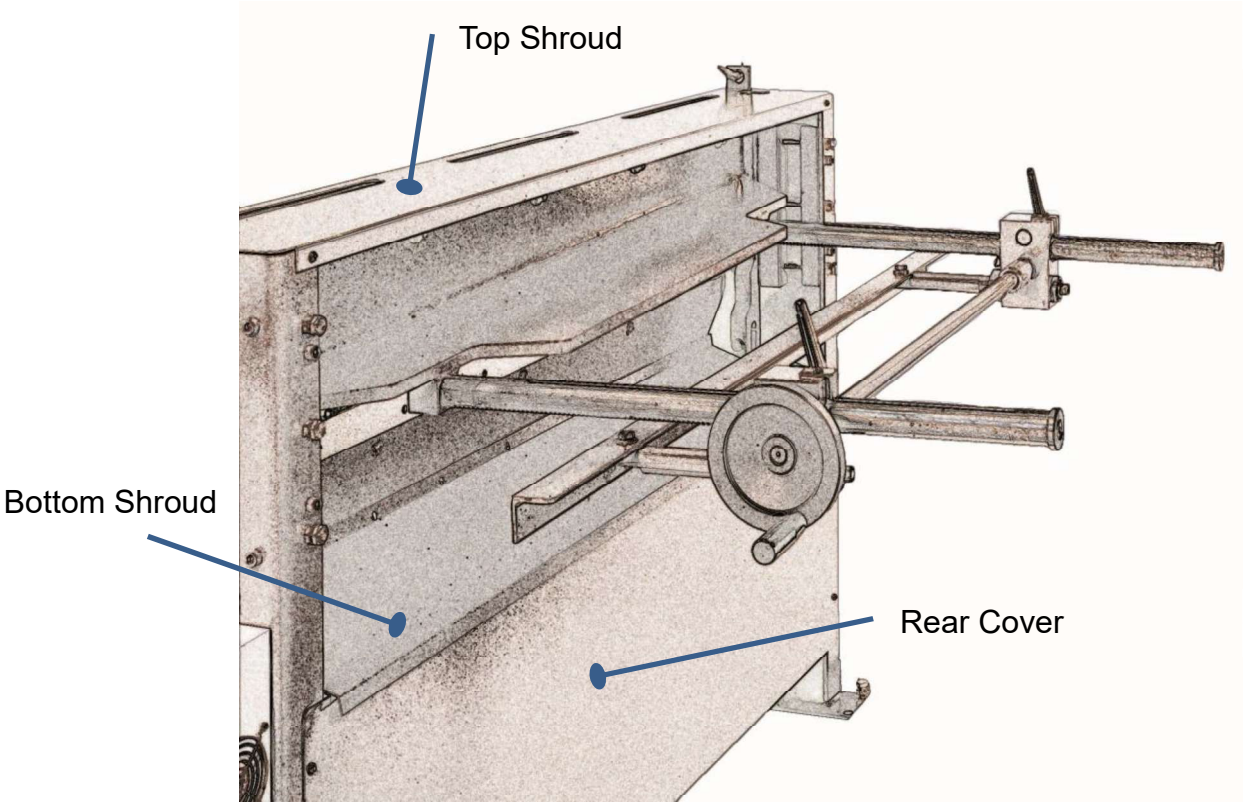
TROUBLE SHOOTING CHART

TROUBLE	CAUSE	REMEDY
Burr or sheared edge	Dull, blades Excessive blade Clearance Excessive clearance In knife-bar ways Poor grade of material	Turn or sharpen blades Adjust blades Adjust knife-bar ways Use higher grade steel
Camber, twist and bow	Bottom blade not level with table dull blades	Adjust blades-shim after grinding turn or sharpen blades
Kick back of stock	Bottom blade not Level with table Not enough hold down pressure Dull blade	Adjust blades-shim Check springs and holddown Turn or change blade
Pump motor will not run	No electrical Power to pump motor disconnect open or fuses open Motor burned out Motor starter does no cause	Close 3 phase Disconnect, check power fuses Replace motor Check fuse(f1) start; Switch stop switch, Motor starter coil and overloads
Pump motor runs slow	One fuse open Motor is single phasing	Replace open Fuse
Pump motor runs, shear does not operate	Electrical circuit open Hydraulic circuit	Check foot-switch control relay contacts. Down-solenoid coil. Check for stuck valve, pump, pressure low, Cylinders by passing oil.
Shear operates down but will not return to up when foot is removed from foot switch	Defective limit switch	Replace limit switch
Shea operates down but returns to the up position slowly	No hydraulic Pressure to lower cylinder defective limit Switch Defective up solenoid	Check for stuck valve Replace limited s/w Replace solenoid coil complete valve.

PARTS DIAGRAM




Top Shroud
Front Cover

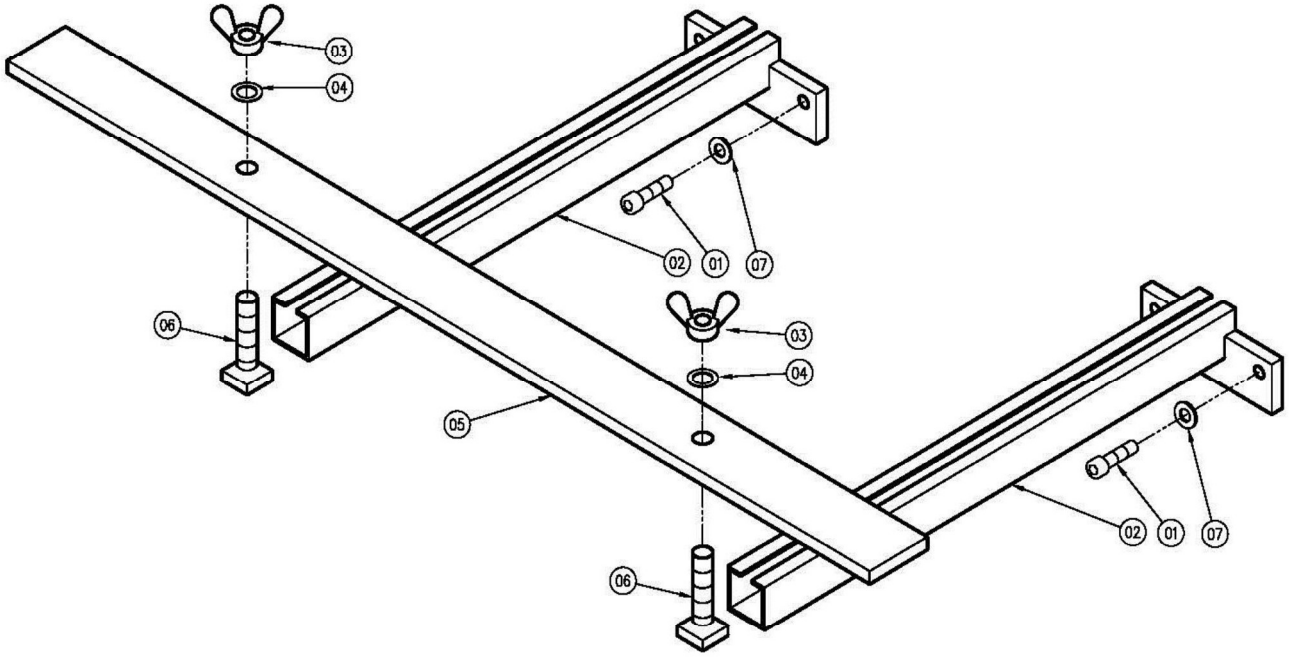

Top Shroud
Bottom Shroud
Rear Cover

BASIC UNITS

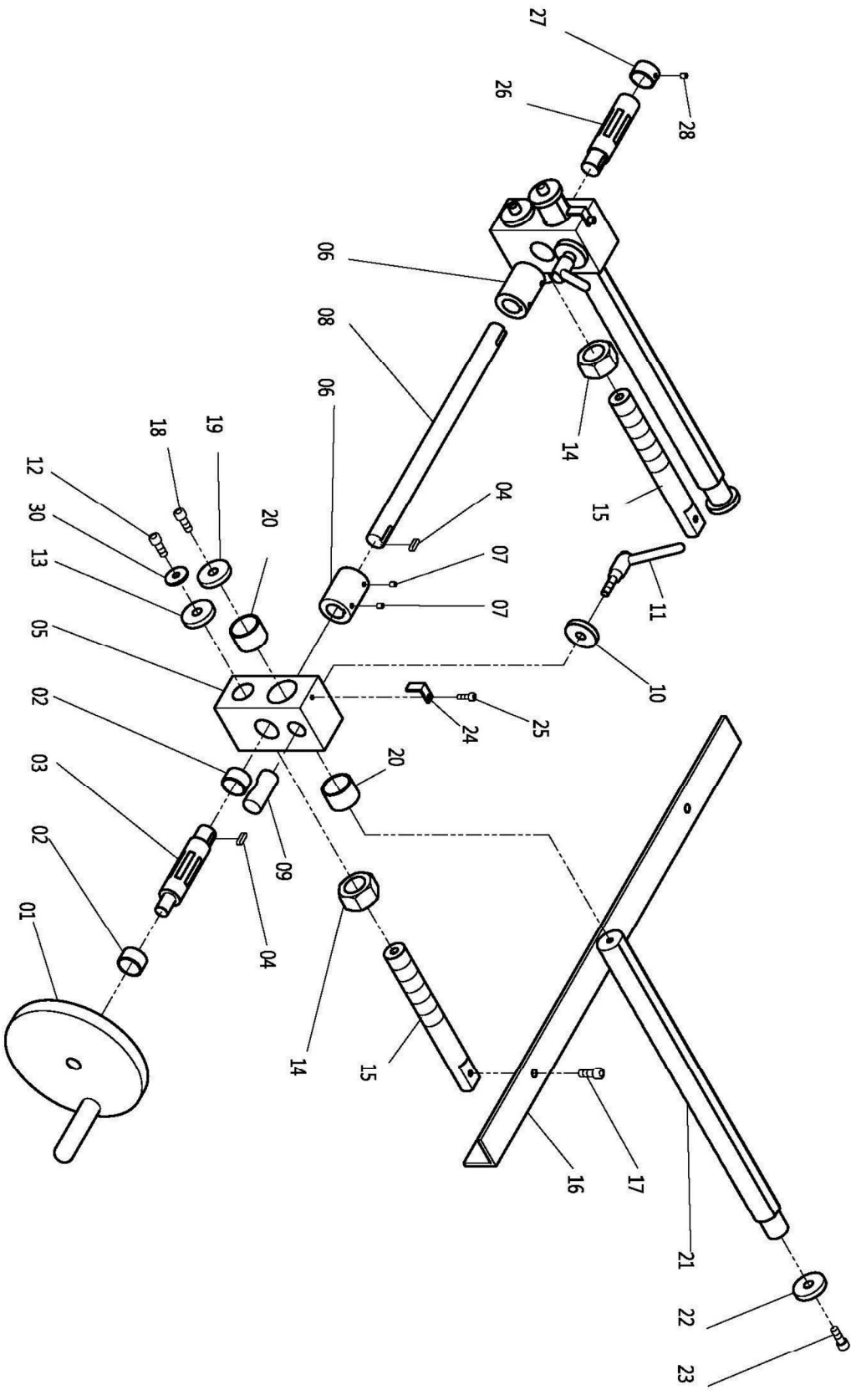
Index No.	Description
1	Upper Beam Assy.
2	Oil Cup
3	Upper Knife
4	1/2"Hhcs -Upper Knife
5	Lower Knife
6	1/2"Hhcs -Lower Knife
7	Pin
8	Hold Down
9	Spring Adjusting Screw
10	Screw
11	Cover
12	Spring Positioning Bushing
13	Spring
14	Slide Housing
17	Slide Block
18	Bearing
19	Spacer
20	Cover
21	Pin
22	Bottom Balance Bar
23	Pin
24	Bushing
25	Link Plate
26	Nut
27	Screw
28	Screw
29	Washer
30	Screw
31	Washer
32	Spacer
33	Screw
34	Screw
36	Screw
37	Cover-Off Side
38	Plate Shear Guide
39	Screw
40	Nut

Index No.	Description
41	Adjusting Screw
42	Screw
43	Hold Down Supporting Pillow
44	Urethane
45	Shaft Filler Washer
46	Screw
47	Hydraulic Cylinder
48	Cylinder Pin
49	Table Platen
50	Bottom Base Assy.
51	Bushing
##	Top Shroud
##	Front Cover
##	Bottom Shroud
##	Rear Cover

FRONT GAUGE



Index No.	Description
1	Screw
2	Work Piece Support
3	Wing Nut
4	Washer
6	“T” Screw
7	Washer


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MANUAL BACK GAUGE

Index No.	Description
1	Hand Wheel
2	Bushing
3	Rack Wheel-Right Side
4	Key
5	Rack Block
6	Connecting Sleeve
7	Set Screw
8	Coupling Rod
9	Locking Shaft
10	Washer
11	Plastic Handle
12	Screw
13	Shaft Filler Washer
14	Nut
15	Adjusting Rod
16	Angle Stoppers
17	Screw
18	Screw
19	Shaft Filler Washer
20	Bushing
21	Rack Rod
22	Shaft Filler Washer
23	Screw
24	Dial Indicator
25	Screw
26	Rack Wheel - Left Side
27	Collar
28	Screw
30	Washer