



OPERATOR'S MANUAL

Metal Working



HYDRAULIC SHEAR MODEL: SH-5203HD-NC

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Book 2 of 2

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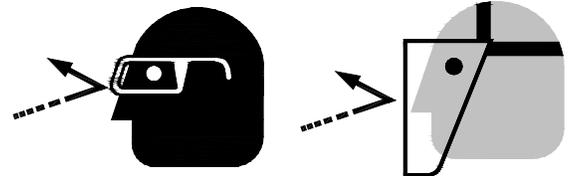


SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.



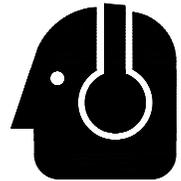
PROTECT EYES

Wear safety glasses or suitable eye protection when working on or around machinery.



PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protective devices such as ear muffs or earplugs to protect against objectionable or uncomfortable loud noises.



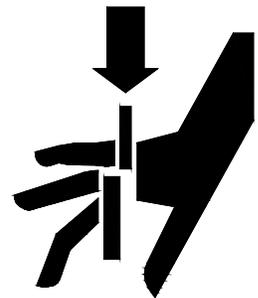
HYDRAULIC HOSE FAILURE

Exercise **CAUTION** around hydraulic hoses in case of a hose or fitting failure.



BEWARE OF SHEAR HAZARD

Blade is sharp. Placing hands or fingers near blade will result in cuts and possibly loss of fingers or limbs if placed in machine. **NEVER** place your hand or any part of your body in this machine.



EMERGENCY STOP BUTTON

In the event of incorrect operation or dangerous conditions, the machine can be stopped immediately by pressing the **E-STOP** button. Twist the emergency stop button clockwise (cw) to reset. Note: Resetting the E-Stop will not start the machine.





HIGH VOLTAGE

USE CAUTION IN HIGH VOLTAGE AREAS. DO NOT assume the power to be off.
FOLLOW PROPER LOCKOUT PROCEDURES.



SAFETY PRECAUTIONS



Metal working can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

Safety equipment such as guards, hold-downs, safety glasses, dust masks and hearing protection can reduce your potential for injury. But even the best guard will not make up for poor judgment, carelessness or inattention. **Always use common sense** and exercise **caution** in the workshop. If a procedure feels dangerous, don't try it.

REMEMBER: Your personal safety is your responsibility.



WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

Dear Valued Customer:

- All Baileigh machines should be used only for their intended use.
- Baileigh does not recommend or endorse making any modifications or alterations to a Baileigh machine. Modifications or alterations to a machine may pose a substantial risk of injury to the operator or others and may do substantial damage to the machine.
- Any modifications or alterations to a Baileigh machine will invalidate the machine's warranty.

Please enjoy your Baileigh machine!Please enjoy it SAFELY!

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** Learn the machine's application and limitations as well as the specific hazards.
2. **Only trained and qualified personnel can operate this machine.**



3. **Make sure guards are in place and in proper working order before operating machinery.**
4. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
5. **Keep work area clean.** Cluttered areas invite injuries.
6. **Overloading machine.** By overloading the machine, you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
7. **Dressing material edges.** Always chamfer and deburr all sharp edges.
8. **Do not force tool.** Your machine will do a better and safer job if used as intended. **DO NOT** use inappropriate attachments in an attempt to exceed the machine's rated capacity.
9. **Use the right tool for the job. DO NOT** attempt to force a small tool or attachment to do the work of a large industrial tool. **DO NOT** use a tool for a purpose for which it was not intended.
10. **Dress appropriately. DO NOT** wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
11. **Use eye and ear protection.** Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.
12. **Do not overreach.** Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
13. **Stay alert.** Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
14. **Check for damaged parts.** Before using any tool or machine, carefully check any part that appears damaged. Check for alignment and binding of moving parts that may affect proper machine operation.
15. **Observe work area conditions. DO NOT** use machines or power tools in damp or wet locations. Do not expose to rain. Keep work area well lighted. **DO NOT** use electrically powered tools in the presence of flammable gases or liquids.
16. **Blade adjustments and maintenance.** Always keep blades sharp and properly adjusted for optimum performance.
17. **Keep children away.** Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
18. Keep visitors a safe distance from the work area.
19. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep them out of reach of children.
20. **DO NOT operate machine if under the influence of alcohol or drugs.** Read warning labels on prescriptions. If there is any doubt, **DO NOT** operate the machine.



21. **Turn off** power before checking, cleaning, or replacing any parts.
22. Be sure **all** equipment is properly installed and grounded according to national, state, and local codes.
23. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!** **DO NOT** touch live electrical components or parts.
24. **DO NOT** bypass or defeat any safety interlock systems.
25. Learn the function and controls of the controller. Know the location of the **ON - OFF** switch and the “**E**”- **STOP** button.

TECHNICAL SUPPORT

Our technical support department can be reached at 920.684.4990, and asking for the support desk for purchased machines. Tech Support handles questions on machine setup, schematics, warranty issues, and individual parts needs: (other than die sets and blades).

For specific application needs or future machine purchases contact the Sales Department at: sales@baileigh.com, Phone: 920.684.4990, or Fax: 920.684.3944.



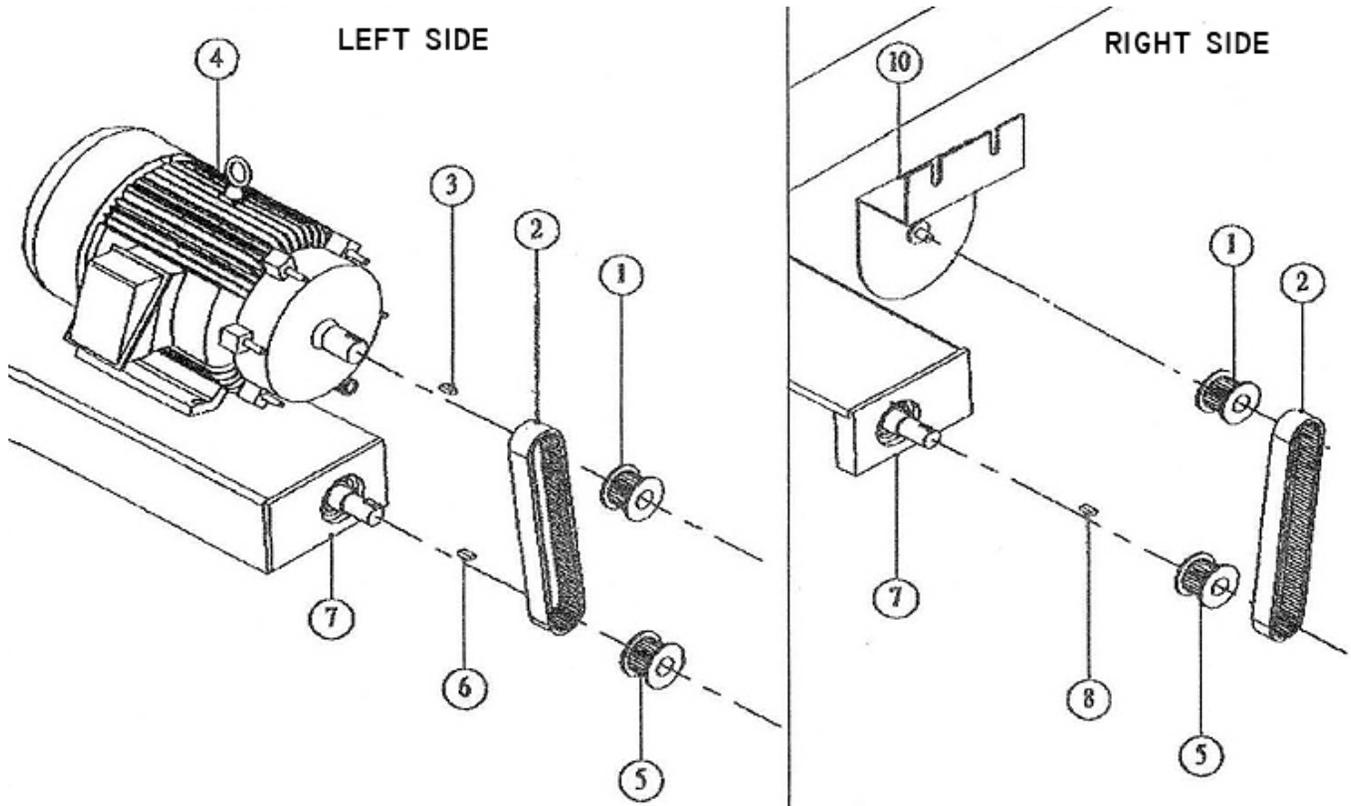
Note: *The photos and illustrations used in this manual are representative only and may not depict the actual color, labeling or accessories and may be intended to illustrate technique only.*



Note: *The specifications and dimensions presented here are subject to change without prior notice due to improvements of our products.*



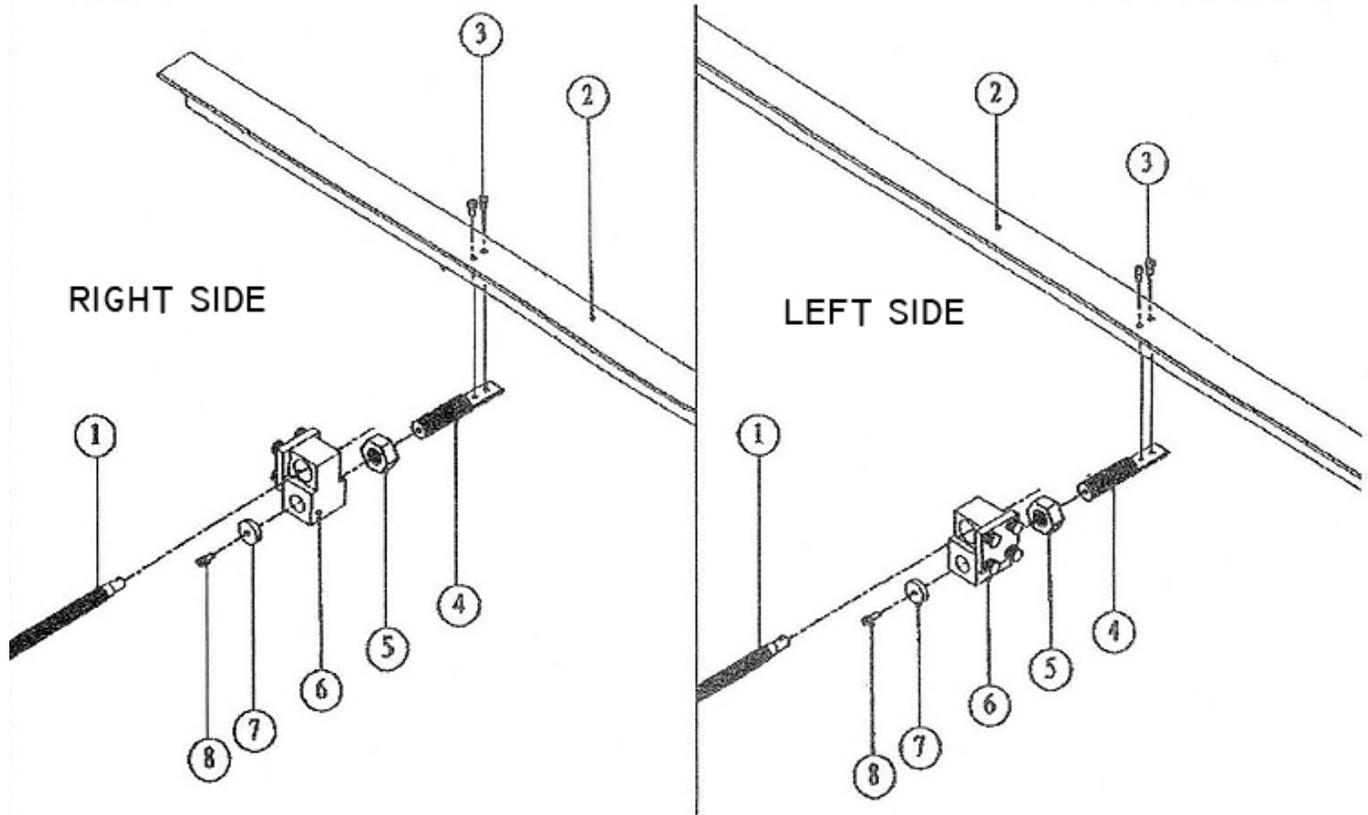
BACK GAUGE PARTS (1)



Item	Description
A1	Pulley
A2	Belt
A3	Key
A4	Motor 1/2hp (.4kw)
A5	Pulley
A6	Key
A7	Ball Screw Set (Front)
A8	Key
A9	Ball Screw Set (Front)
A10	Encoder Seat



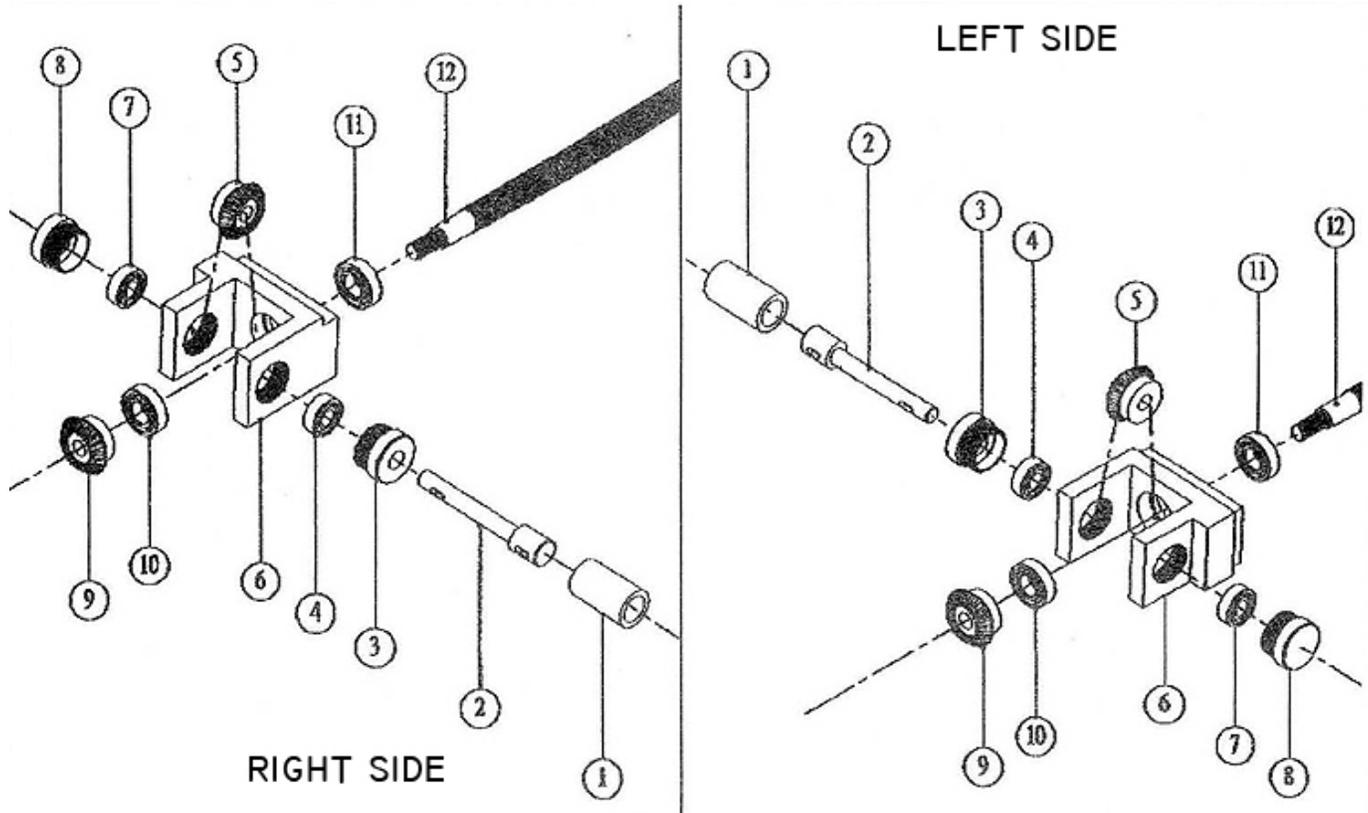
BACK GAUGE PARTS (2)



Item	Description
B1	Ball Screw
B2	Back Gauge Stop
B3	Screw, Hex Head 3/8" x 1"
B4	Support Arm
B5	Nut
B6	Ball Screw Seat
B7	Washer
B8	Screw, Hex Socket Head 1/2" x 1-3/4"



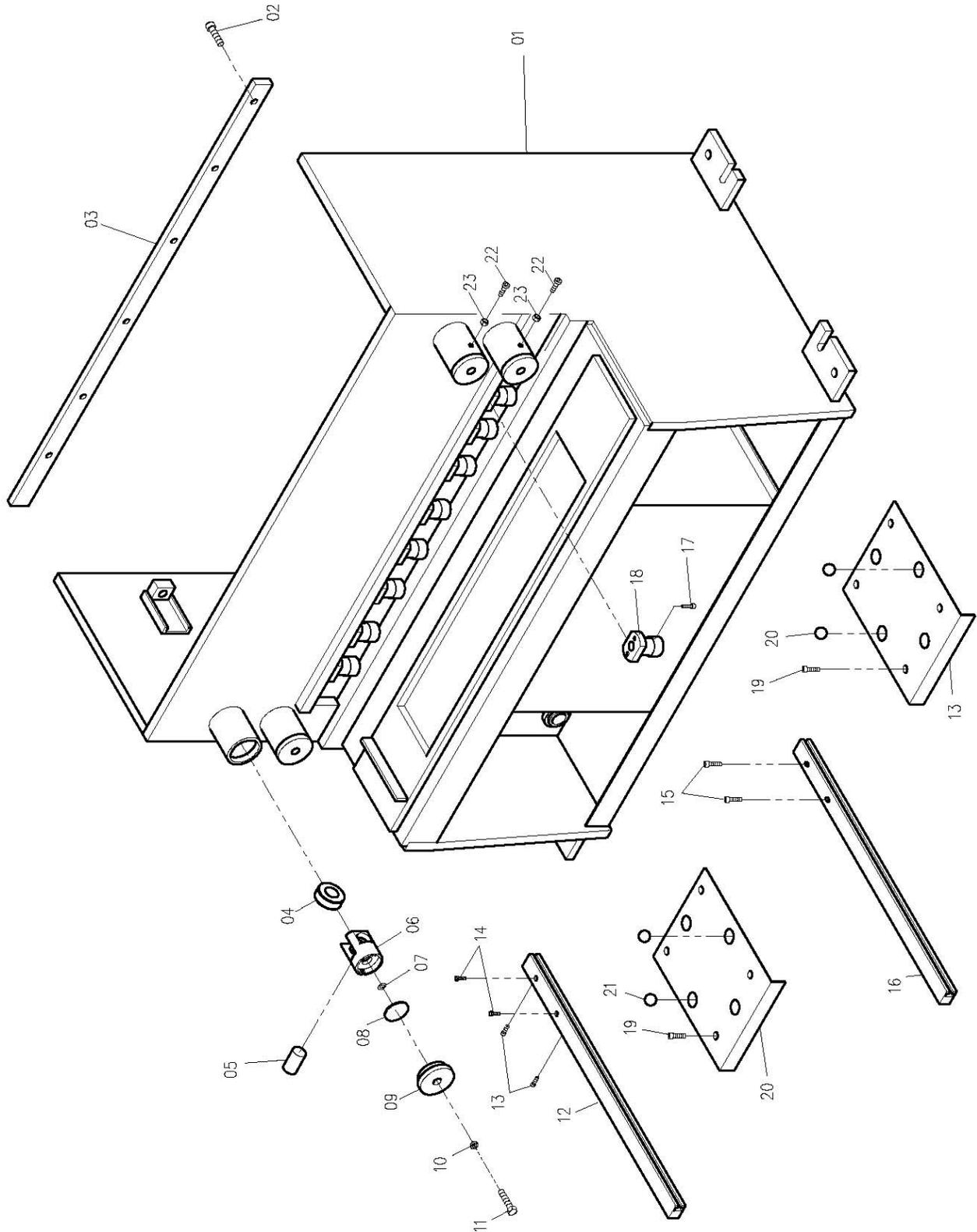
BACK GAUGE PARTS (3)

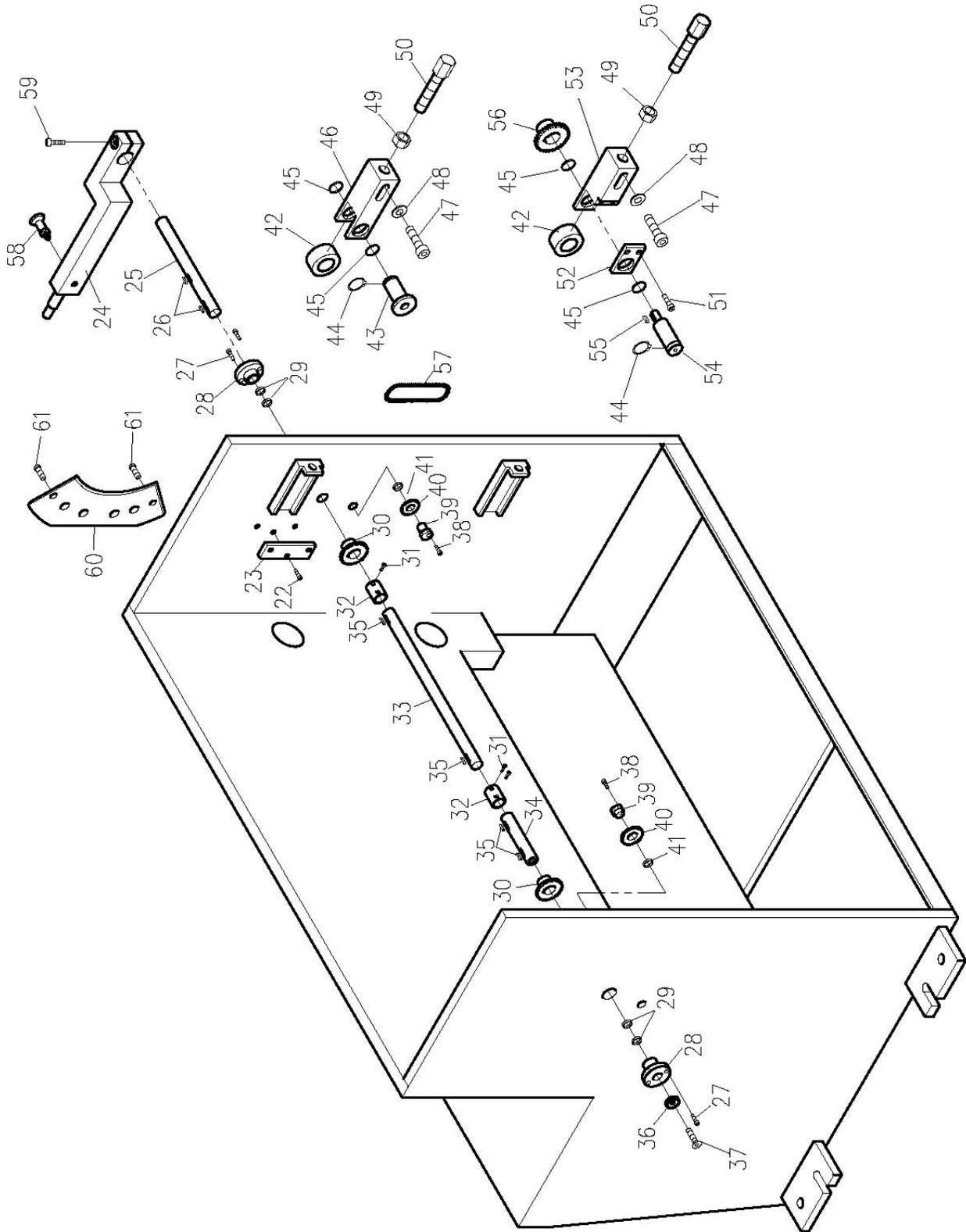


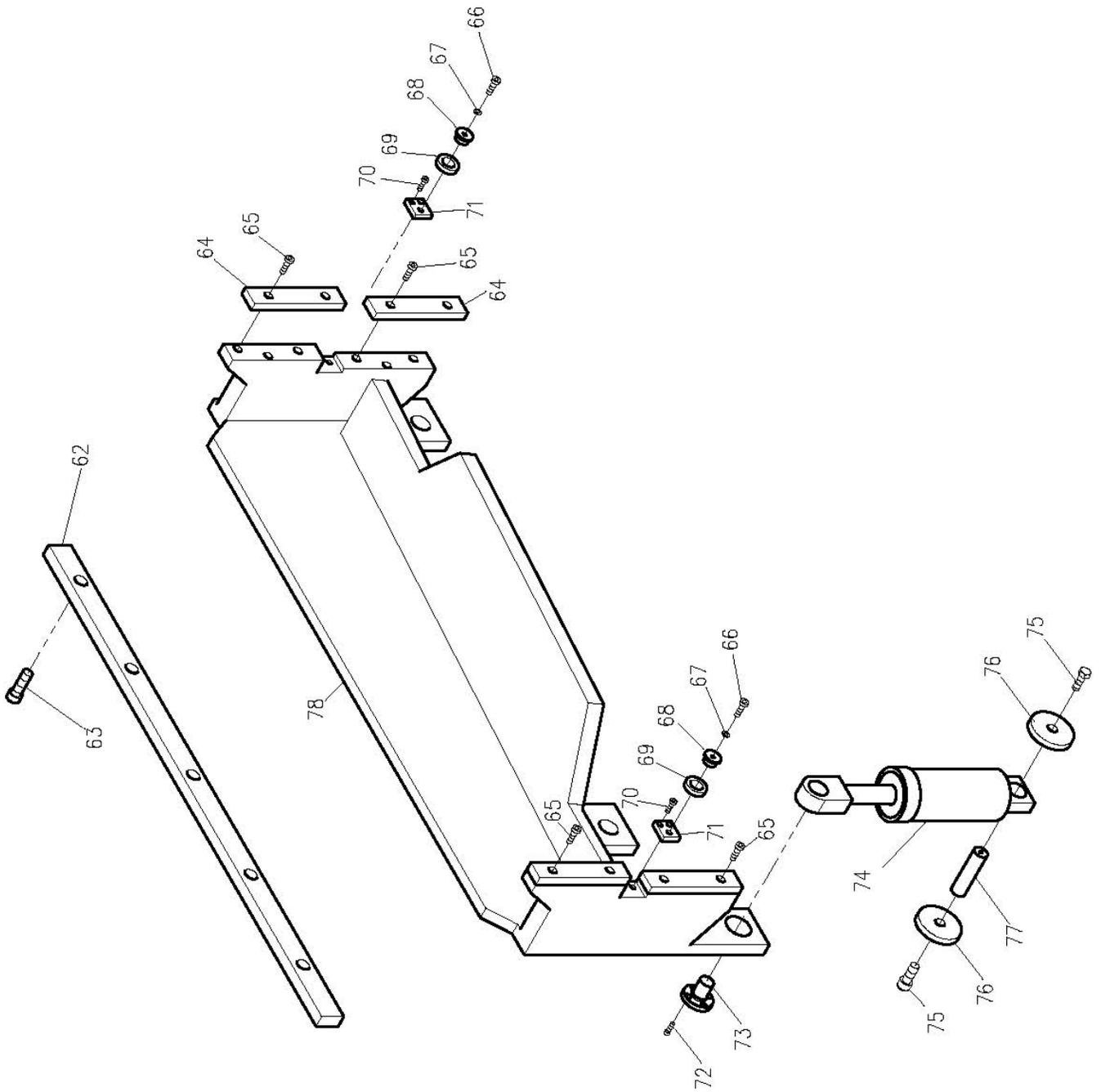
Item	Description
C1	Coupler
C2	Shaft
C3	Bearing Seat
C4	Bearing
C5	Bevel Gear
C6	Ball Screw Set (Back)
C7	Bearing
C8	Bearing Seat
C9	Bevel Gear
C10	Bearing
C11	Bearing
C12	Ball Screw



MAIN FRAME ASSEMBLY PART DIAGRAM









Main Frame Assembly Part List

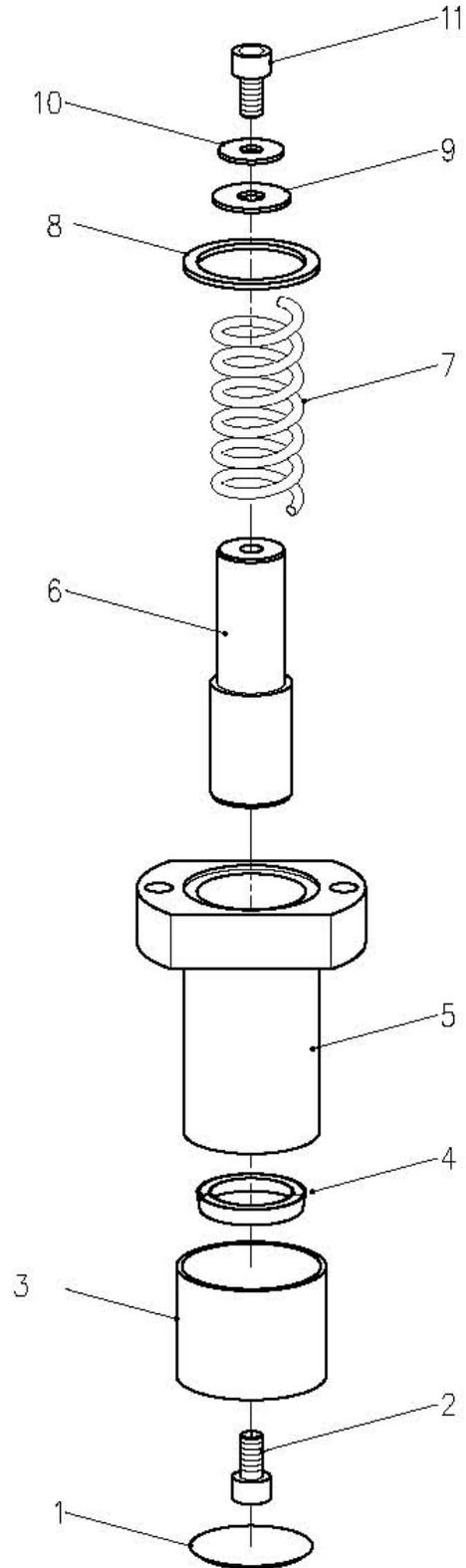
Item	Description	Item	Description
01	Bottom Beam Assembly	40	Chain Sprocket
02	Screw	41	DU Bearing
03	Upper Knife	42	Bearing
04	Bearing	43	Bearing Shaft
05	Bearing Shaft	44	Snap Ring
06	Bearing Block	45	DU Bearing
07	Washer	46	Adjusting Block
08	Division Plate	47	Screw
09	Bearing Block Cover	48	Washer
10	Nut	49	Nut
11	Screw	50	Adjusting Screw
12	Side Gauge	51	Screw
13	Screw	52	Side Plate
14	Screw	53	Adjusting Block
15	Screw	54	Bearing Shaft
16	Supporting Arm	55	Key
17	Screw	56	Chain Sprocket
18	Hold Down	57	Chain
19	Screw	58	Indexing Plungers
20	Table Plate	59	Screw
21	Steel Ball	60	Knife Clearance Scale
22	Screw	61	Screw
23	Nut	62	Lower Knife
24	Knife Clearance Indicate Handle	63	Screw
25	Chain Sprocket Shaft	64	Wear Plate
26	Key	65	Screw
27	Screw	66	Screw
28	Bearing Sleeve	67	Nut
29	Du	68	Bearing Shaft
30	Chain Sprocket	69	Bearing
31	Screw	70	Screw
32	Sleeve Coupling	71	Stool Plate
33	Coupling Shaft	72	Screw



Item	Description	Item	Description
34	Chain Sprocket Shaft	73	Cylinder Pin
35	Key	74	Cylinder
36	Shaft Filler Washer	75	Screw
37	Screw	76	Shaft Filler Washer
38	Screw	77	Cylinder Pin
39	Chain Adjuster		



HOLD DOWN CYLINDER PARTS DIAGRAM

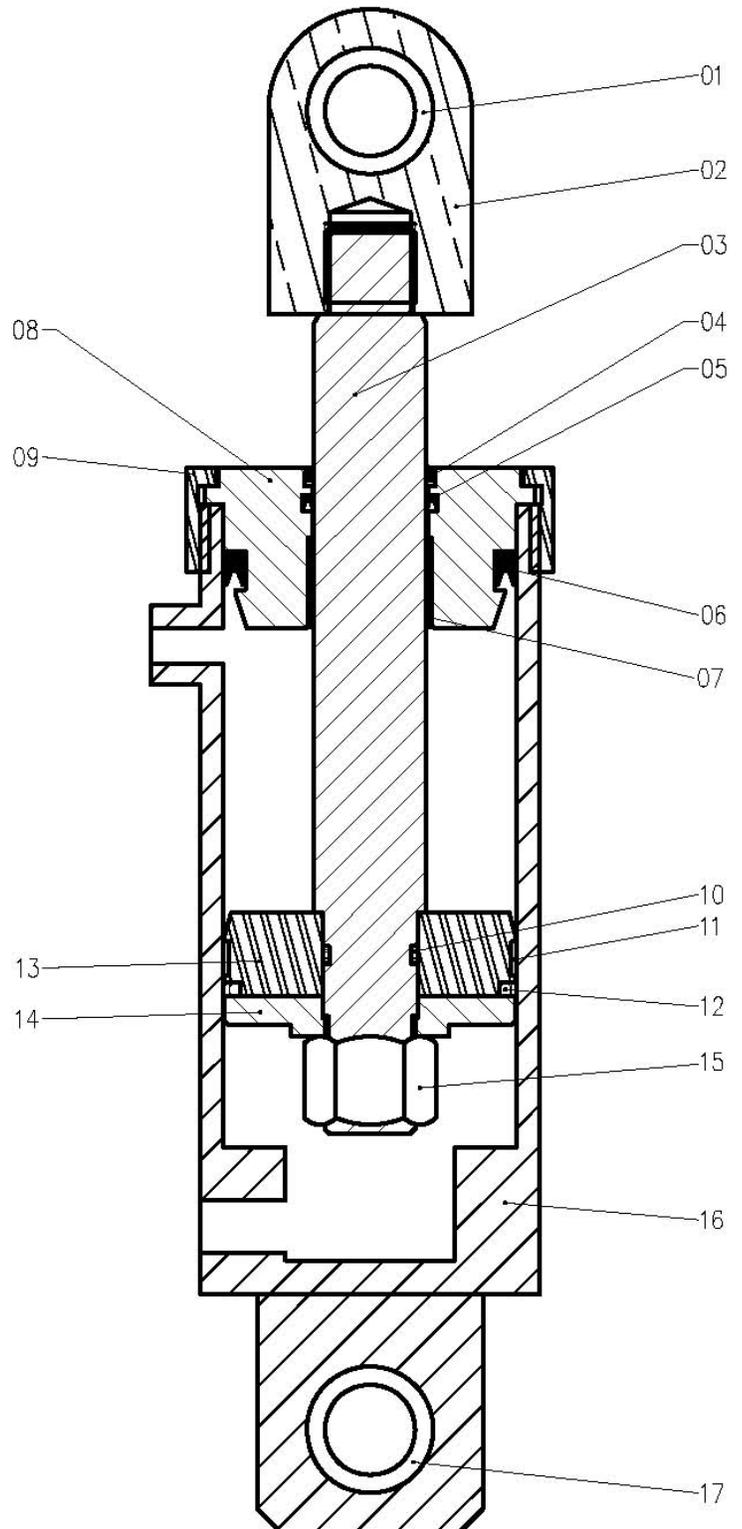


Hold Down Cylinder Parts List

Item	Description
01	Rubber Pad
02	Screw
03	Cover
04	Oil Seal
05	Cylinder Pipe
06	Piston Rod
07	Spring
08	Dual Backup Ring
09	Washer
10	Washer
11	Screw



SHEARING CYLINDER PARTS DIAGRAM

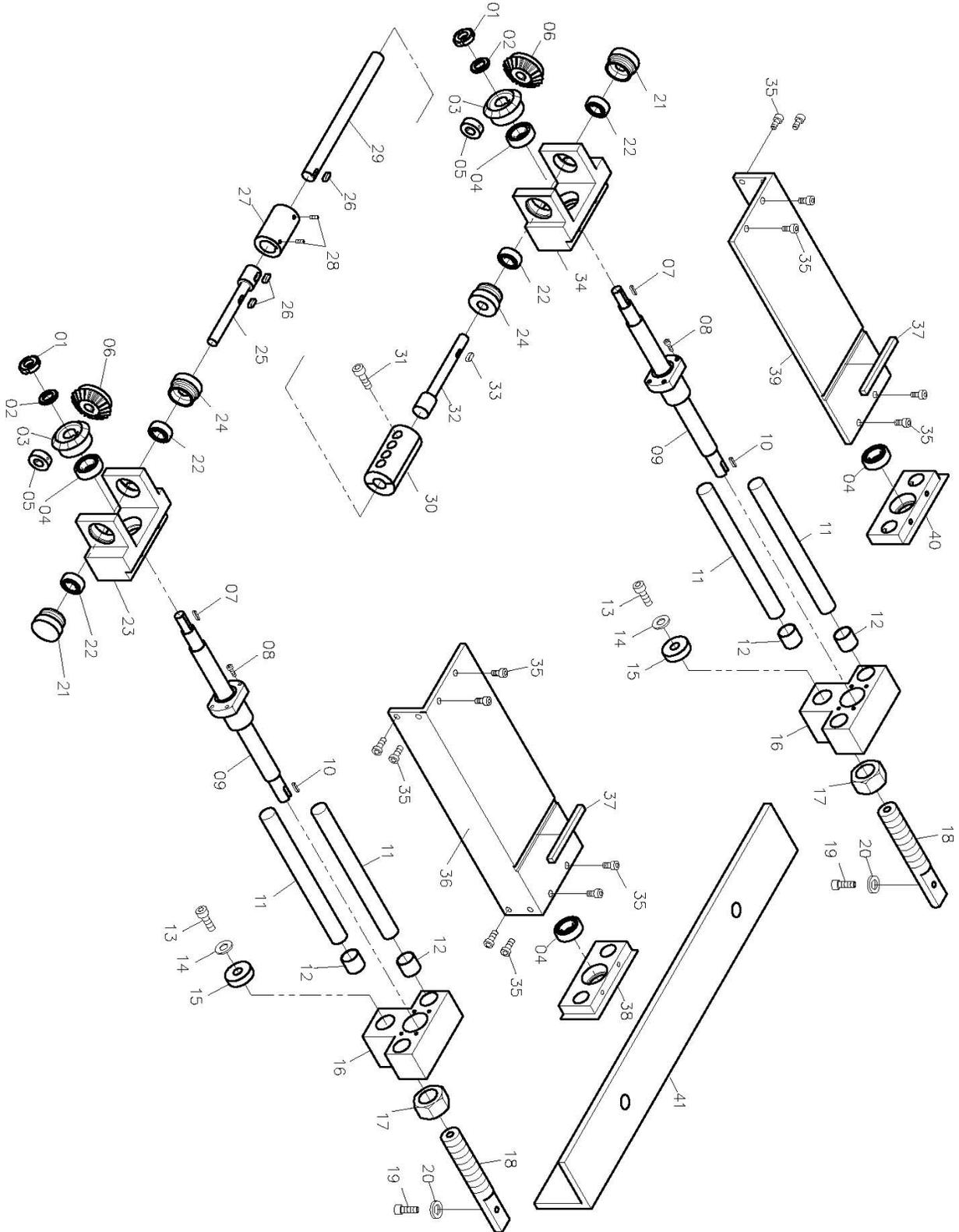


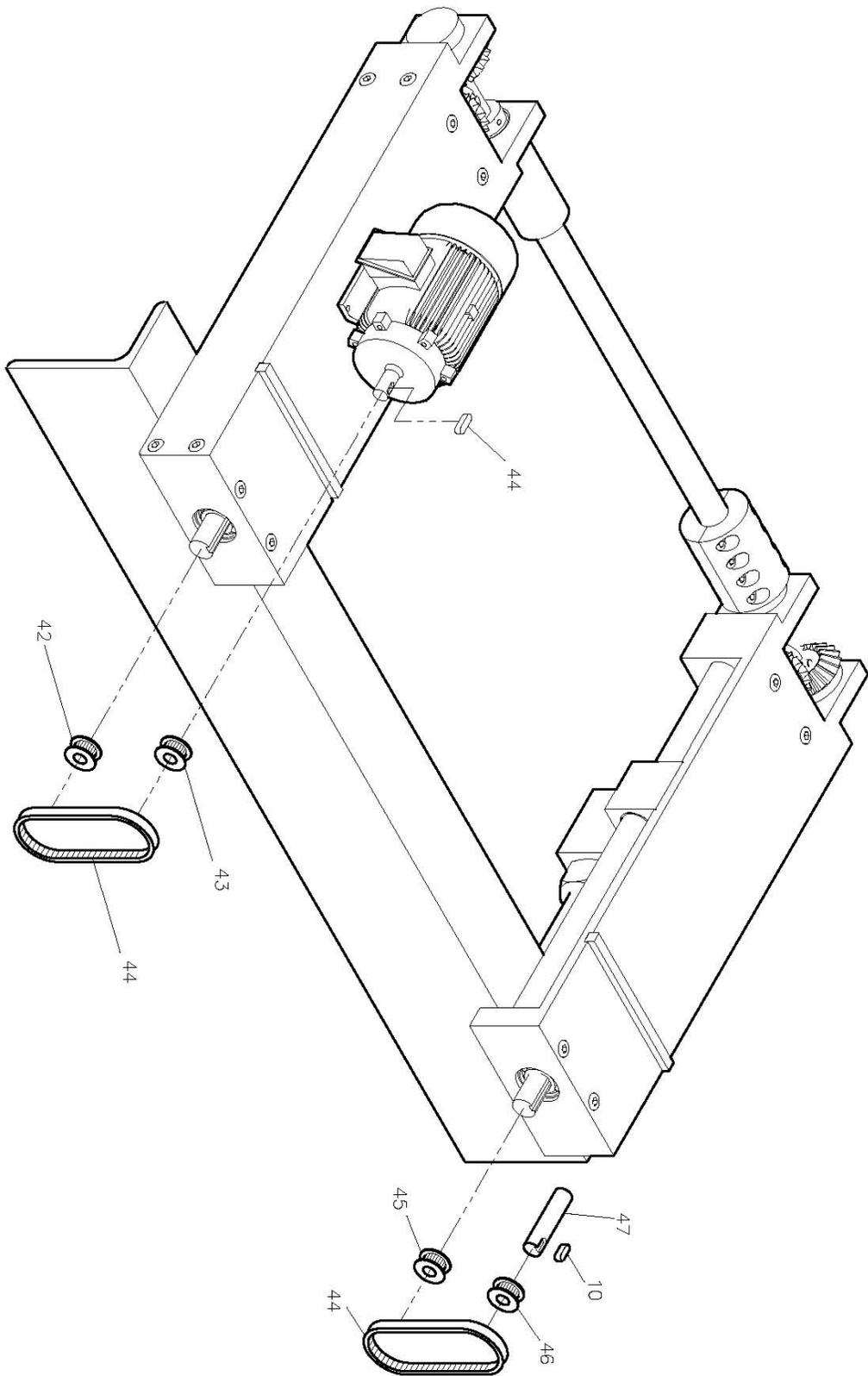
Shearing Cylinder Parts List

Item	Description
01	Bearing
02	Connector Block
03	Piston Rod
04	Dust Scrapping Ring
05	O-Ring
06	O-Ring
07	Piston Rod Bushing
08	Cylinder Head
09	Cylinder Head Cover
10	Piston Seal Double Action & O-Ring
11	Wear-Resistant Ring
12	Oil Seal
13	Main Piston
14	Piston
15	Piston Rod Bottom Nut
16	Cylinder Pipe
17	Bearing



N.C. BACK GAUGE PARTS DIAGRAM





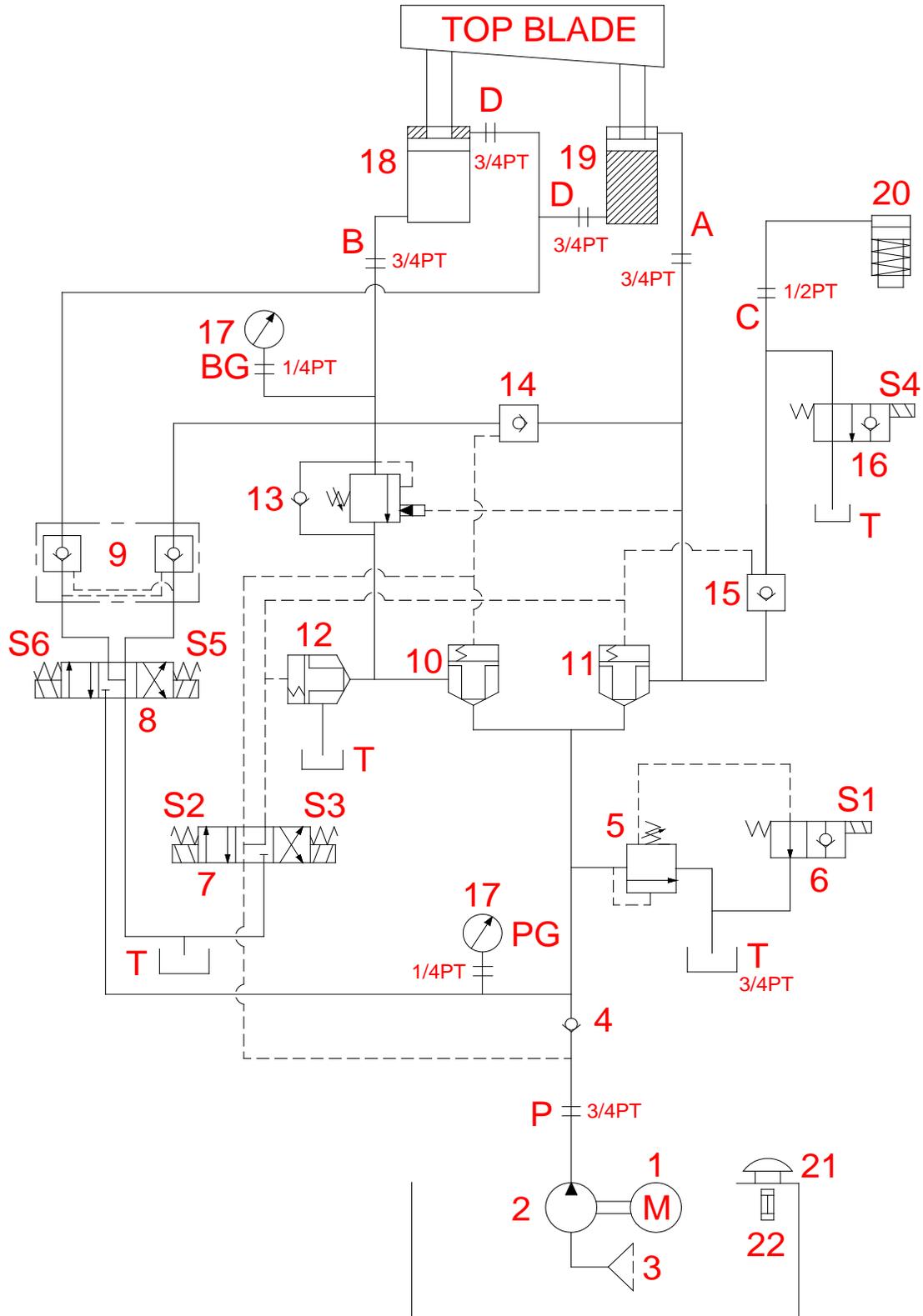


N.C. Back Gauge Parts List

Item	Description	Item	Description
01	Nut	25	Bevel Gear Shaft
02	Washer	26	Key
03	Bevel Gear	27	Sleeve Coupling
04	Bearing	28	Screw
05	Adjusting Nut	29	Coupling Shaft
06	Bevel Gear	30	Sleeve Coupling
07	Key	31	Screw
08	Screw	32	Bevel Gear Shaft
09	Ball Screw	33	Key
10	Key	34	Front Bearing Block
11	Guide Bar	35	Screw
12	DU Bearing	36	Ball Screw Cover
13	Screw	37	Key
14	Washer	38	Rear Bearing Block
15	Shaft Filler Washer	39	Ball Screw Cover
16	Ball Screw Block	40	Rear Bearing Block
17	Nut	41	Angel Stopper
18	Adjusting Rod	42	Timing Belt Wheel
19	Screw	43	Timing Belt Wheel
20	Washer	44	Timing Belt
21	Bearing Nut	45	Timing Belt Wheel
22	Bearing	46	Timing Belt Wheel
23	Front Bearing Block	47	Encoder Shaft
24	Bearing Nut		

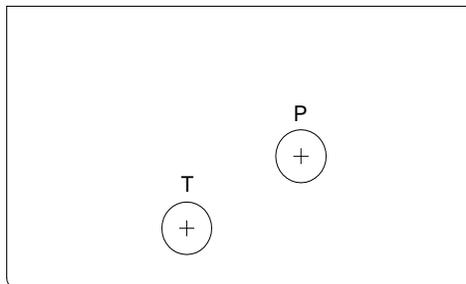
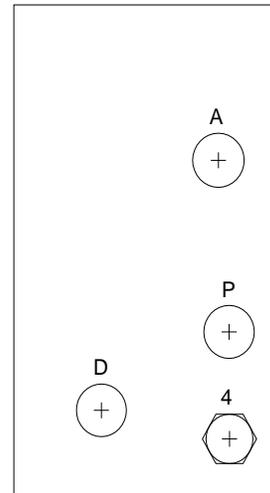
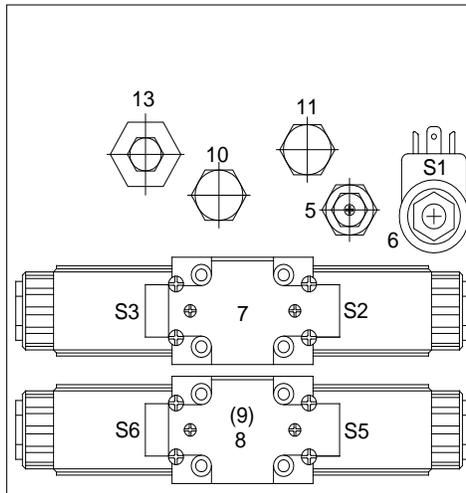
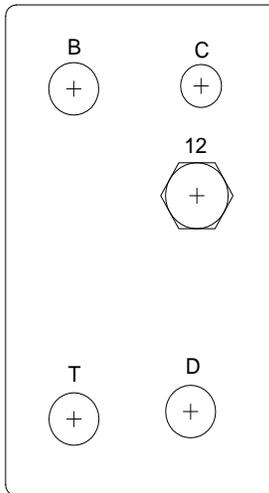
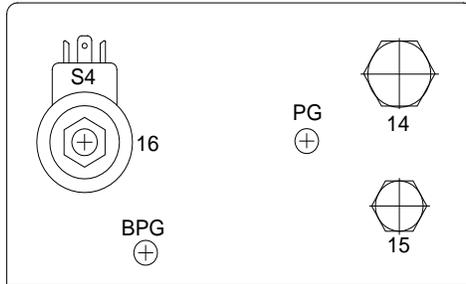


HYDRAULIC SCHEMATIC





MANIFOLD BLOCK



OPERATION	SOLENOID					
	S1	S2	S3	S4	S5	S6
CUTTING HOLD-DOWN, DOWN	▲	▲		▲		
BLADE, UP	▲		▲	▲		
HOLD-DOWN, UP						
TOP BLADE ANGLE, LARGE	▲				▲	
TOP BLADE ANGLE, SMALL	▲					▲

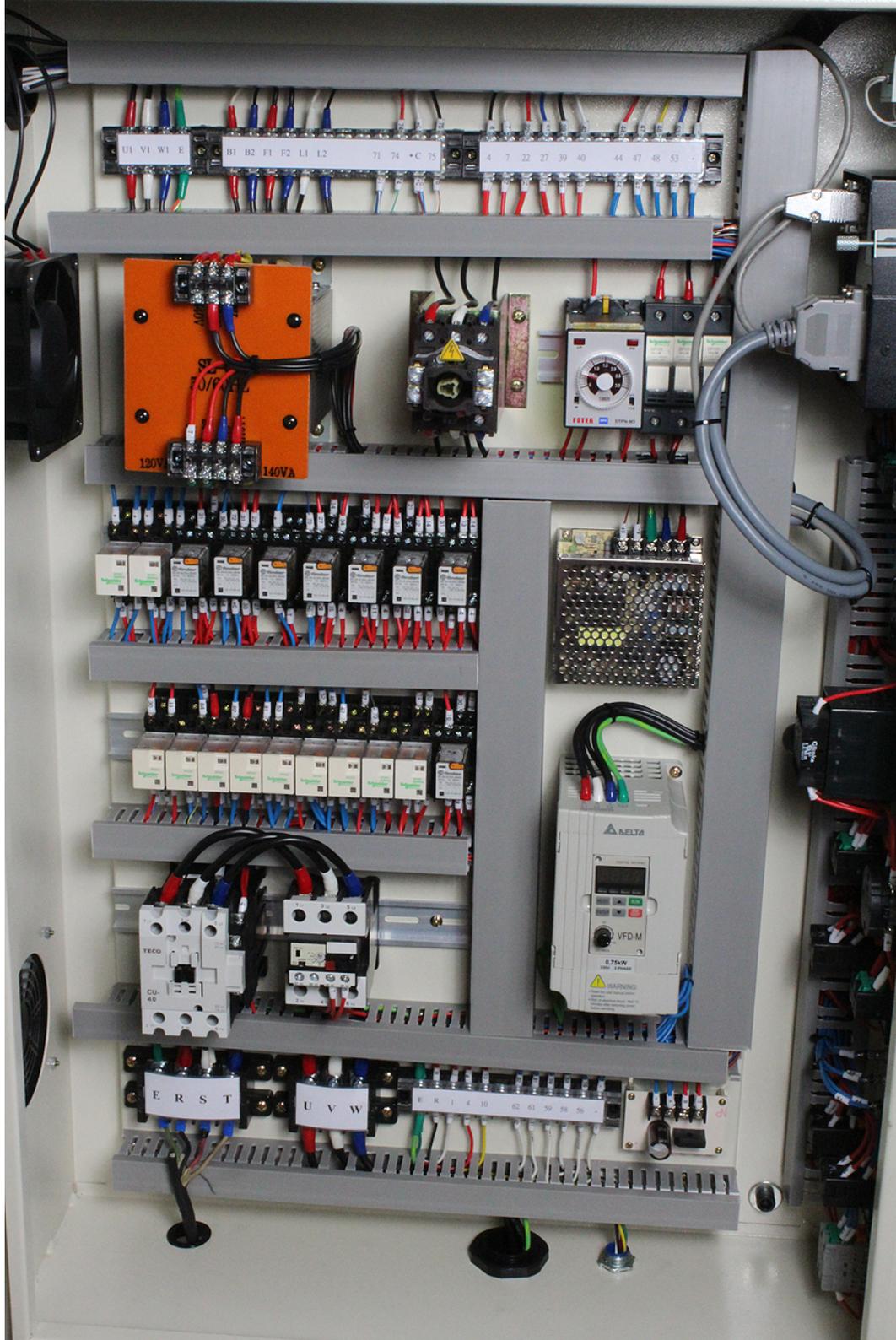


HYDRAULIC COMPONENT IDENTIFICATION

Item	Description	Part No.
1	Motor 15hp (11.2kw), 220V, 3ph, 60hz	HPX4P
2	Pump	VQ15-19-F-RRL-03
3	Strainer	MF-10
4	Check Valve	CV13A2050N
5	Relief Valve	RVCA LAN
6	2 Way NO Poppet Solenoid Valve	SV08-21
7	Solenoid Valve	DG4V-3-7C
8	Solenoid Valve	DG4V-3-6C
9	Modular Pilot Operated Check Valve	MPC-02W
10	Logic Valve	LODC XDN
11	Logic Valve	LODC XDN
12	Logic Valve	LOFC XDN
13	Counter Balance Valve	CBEA-LHN
14	Check Valve	COFA-XCN
15	Check Valve	CODA-XCN
16	2 Way NO Poppet Solenoid Valve	SV10-23
17	Pressure Gauge	AT-63mm*280Kg
18	Hydraulic Cylinder	120mm dia.
19	Hydraulic Cylinder	110mm dia.
20	Hold-Down Cylinder	20mm dia.
21	Air Breather	HY-08
22	Oil Level w/Thermometer	LG-5A
23	Modular Throttle Valve	MTC-02W

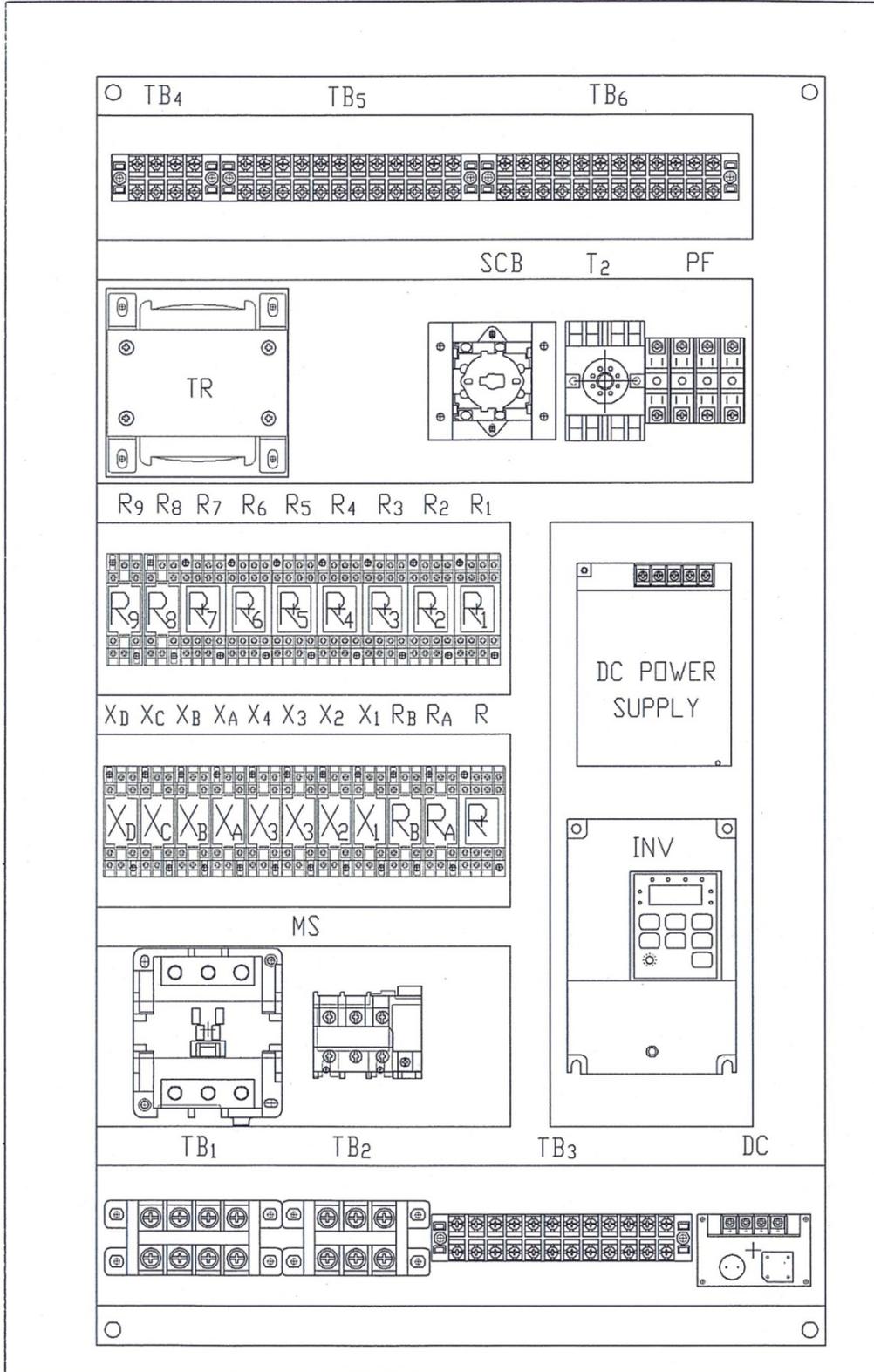


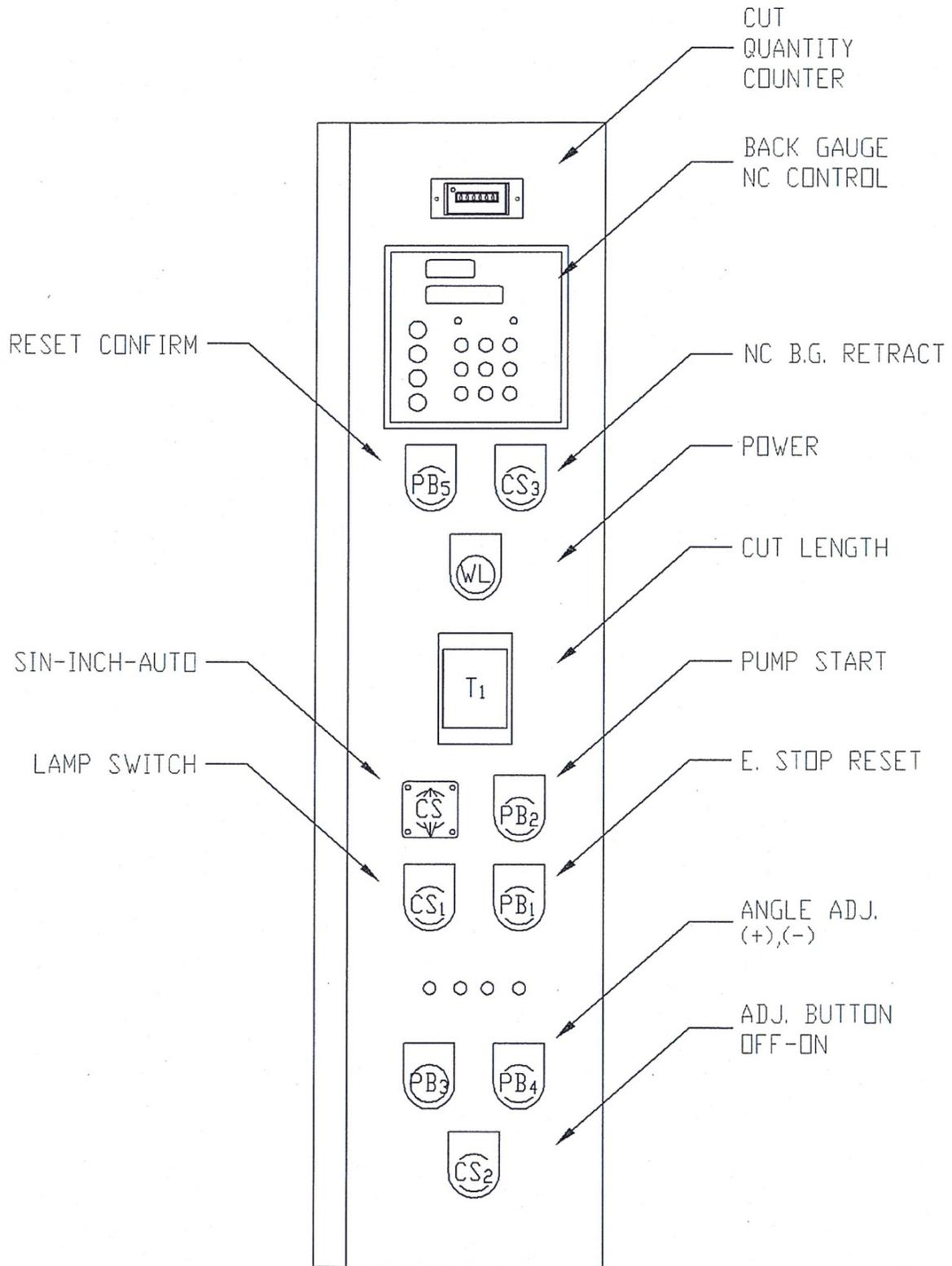
ELECTRICAL ENCLOSURE BACK PANEL





ELECTRICAL COMPONENT IDENTIFICATION







Electrical Parts List

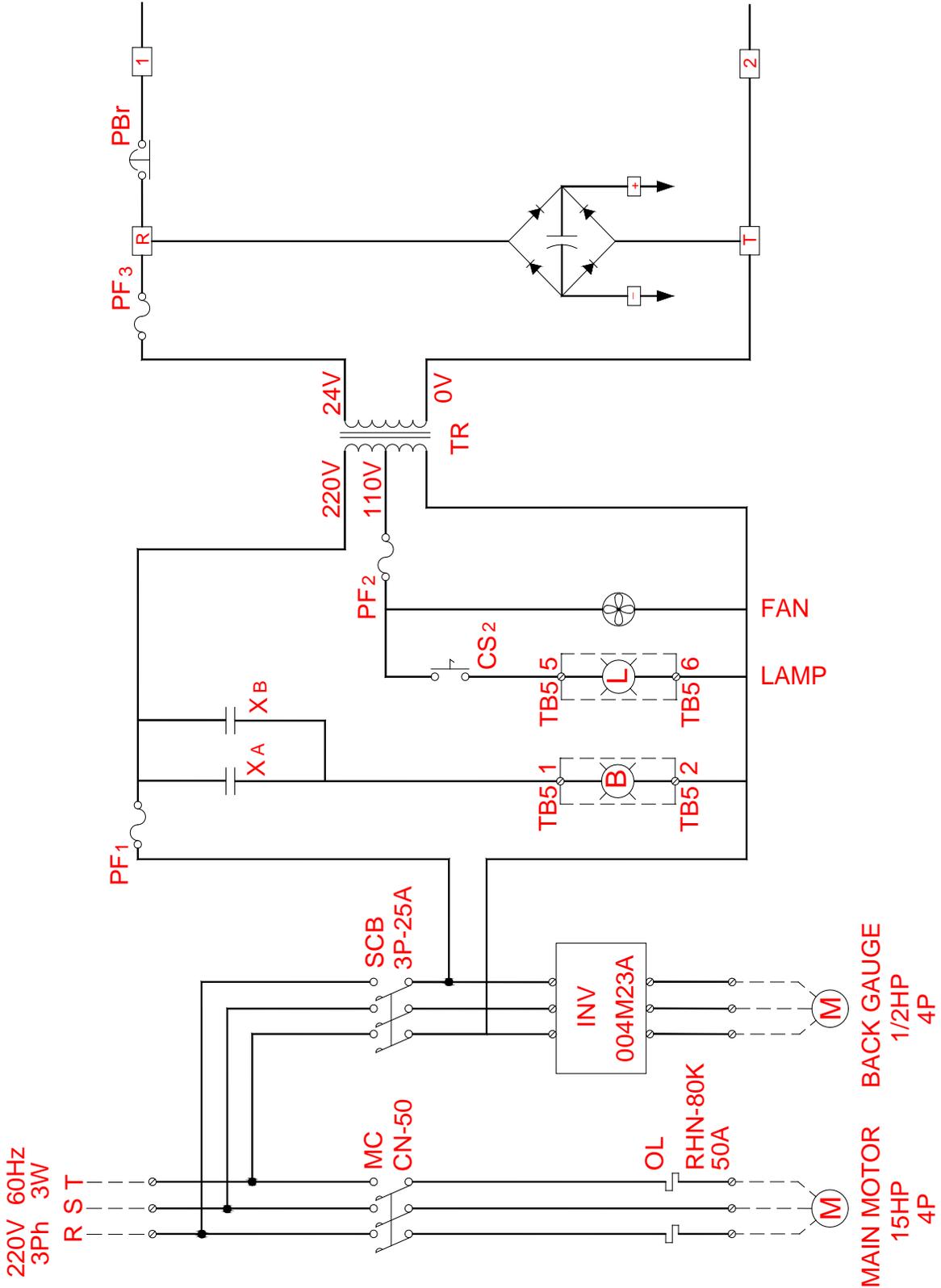
Item	Description	Part No.
SCB	Main Switch	P1-25
MCM	Magnetic Switch	HUO-50 24VAC 50A
INV	Inverter	004M23A
TR	Transformer	1Ph, 220-440/110-24V
PF	Fuses	10 x 38mm @ 2A, 2A, 10A
DC	Power Supply	DC 24V 8A 2200uf
RF	Fan	4" 110VAC
R1 - R7, R	Power Relay	MY-4 AC 24V RXM4LB1B7
R8, R9, RA, RB	Power Relay	MY-2 AC 24V RXM2LB1B7
X1 – X4, XA – XD	Power Relay	MY-2 DC 24V RXM2LB1BD
T1	On Delay Timer	STPN-M3 5A 250V 3 SEC
T2	On Delay Timer	STPY-M3 5A 250V 3 SEC
TB1	Transfer Bus	4P 60A
TB2	Transfer Bus	3P 60A
TB4	Transfer Bus	3P 35A
TB3, TB5, TB6	Transfer Bus	12P 25A
N	Counter	CSK6-Y DC 24V
WL	Pilot Light	30, 24V, WHITE
PB1	Pushbutton	30, 1A1B RED (LOCK)
PB2	Pushbutton	30, 1A1B, 24V GREEN
PB3 – PB5	Pushbutton	30, 1A1B
CS	Cam Switch	T-16EF48D1
CS1 – CS3	Selector Switch	30, 1A1B

Additional Electrical Components

Item	Description	Part No.
	LIMIT SWITCH	OMRON #D4V-8108Z
	PROXIMITY SWITCH	FOTEK #PM12-04N
	FLUORESCENT LAMP	FL 40G/38

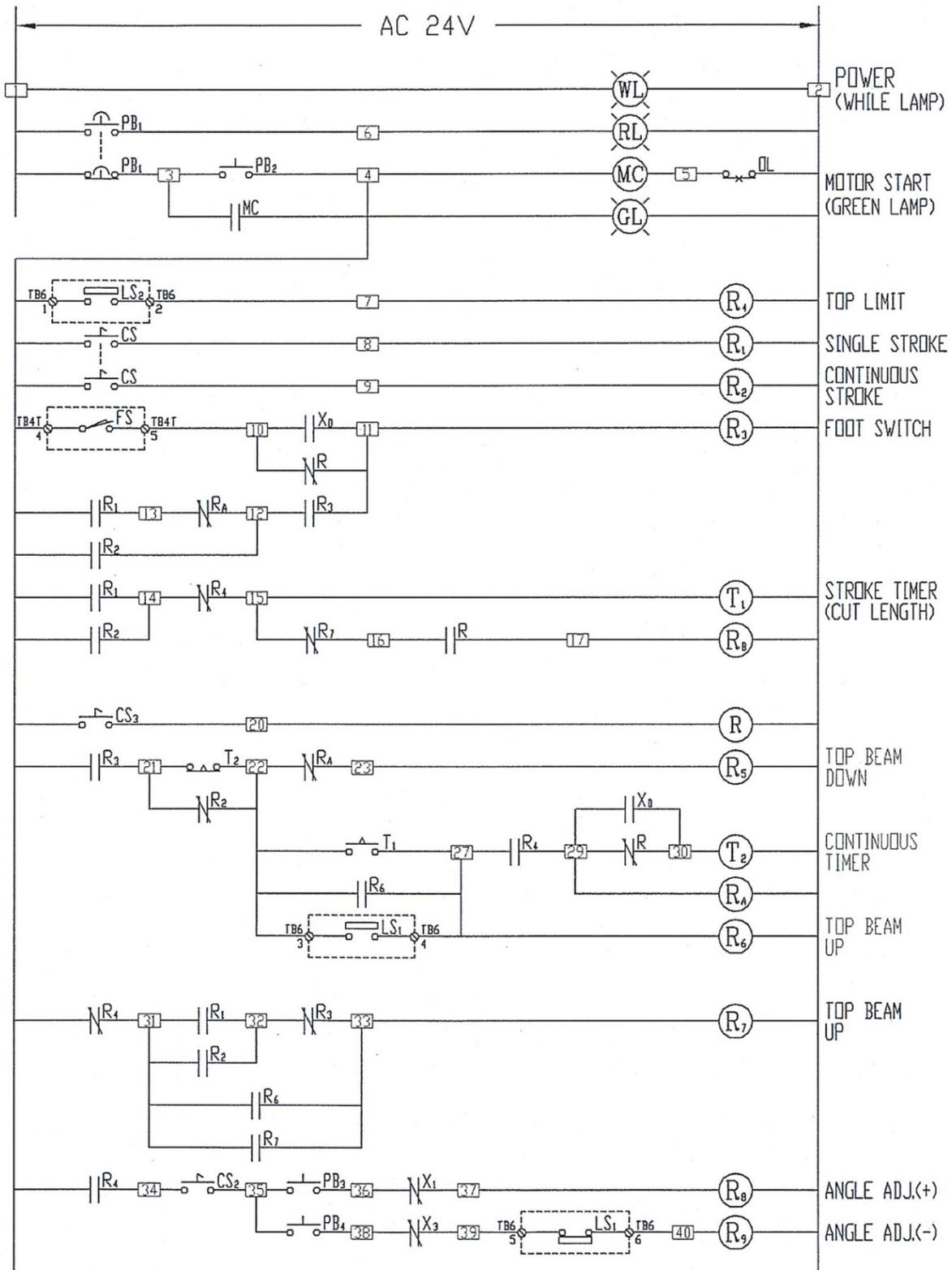


ELECTRICAL SCHEMATIC (Sheet. 1)



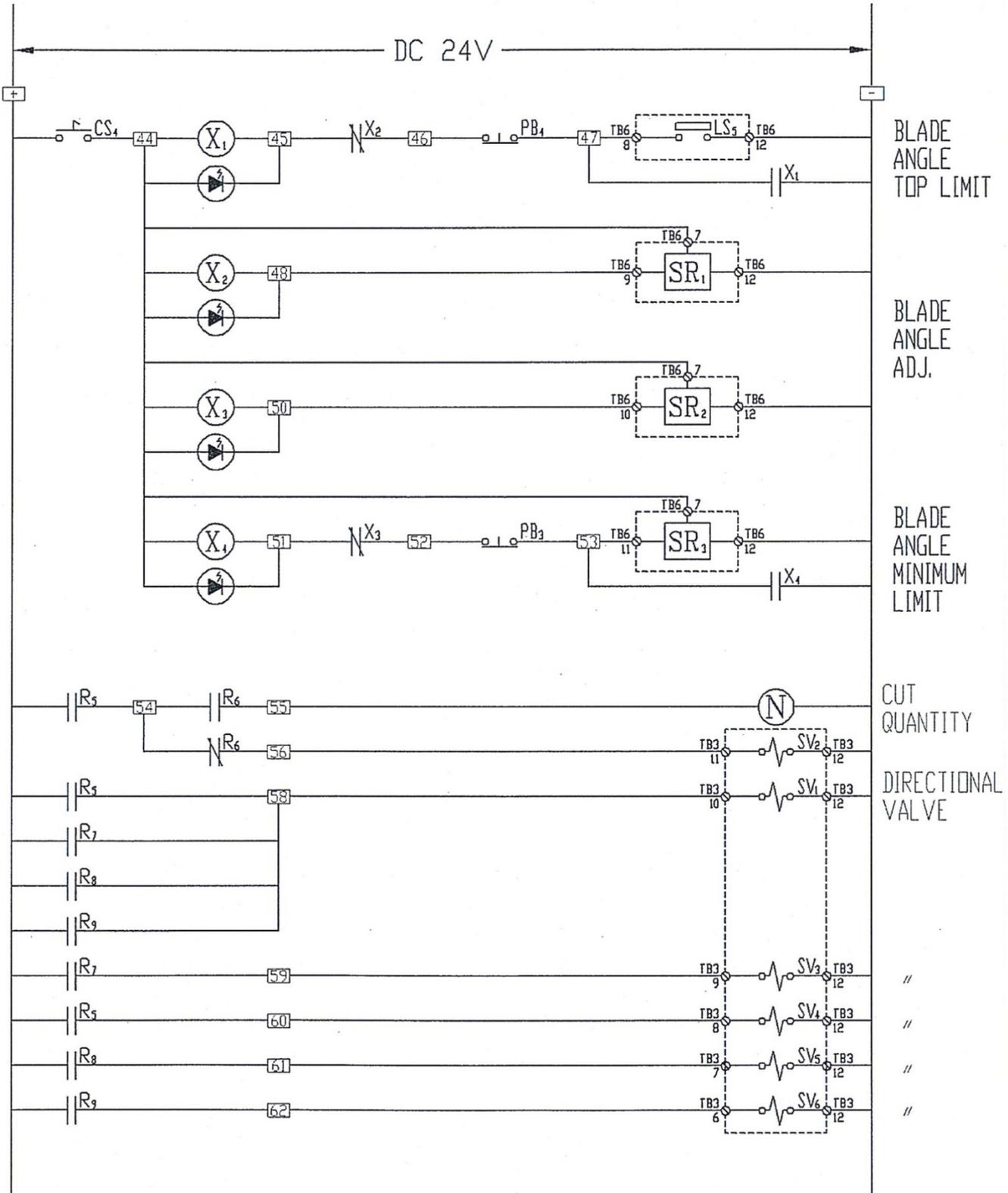


ELECTRICAL SCHEMATIC (Sheet 2)



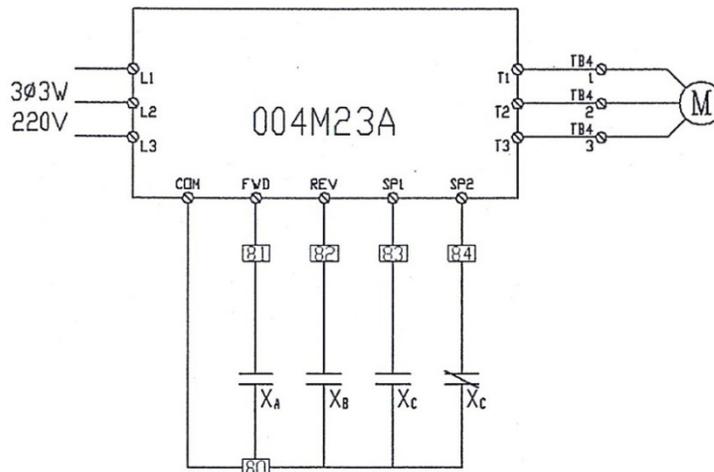
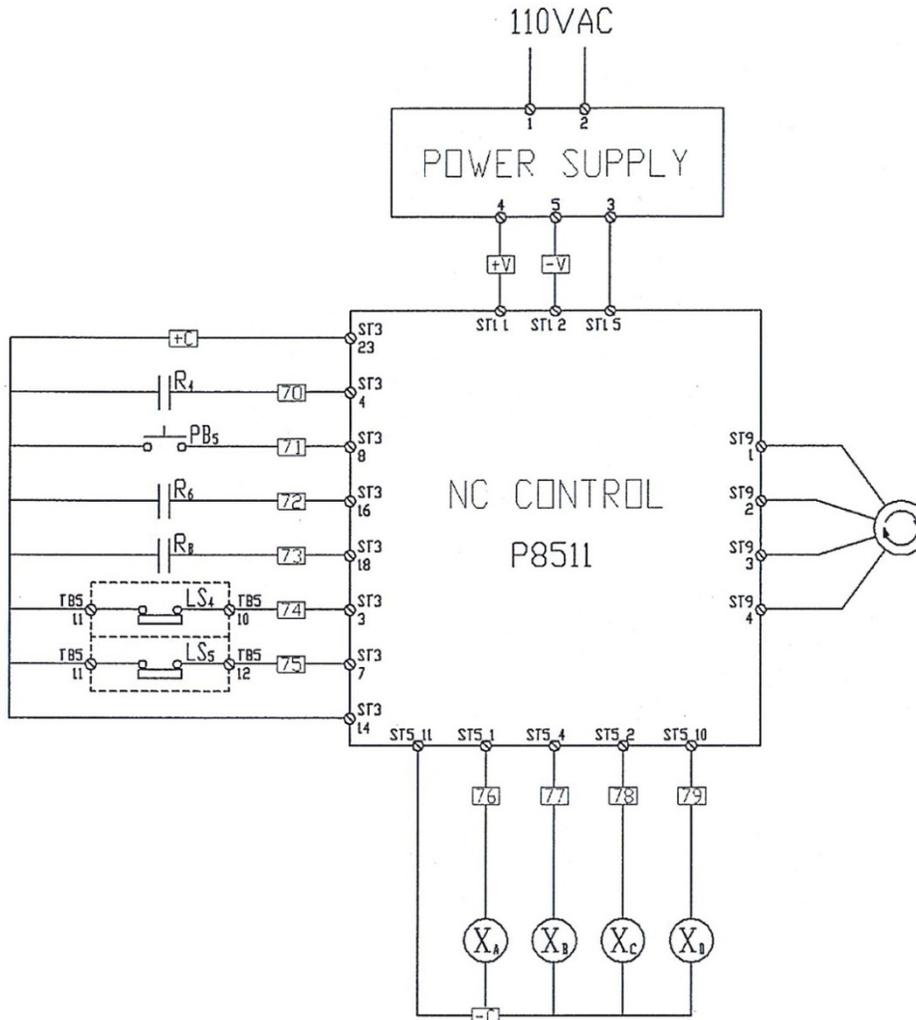


ELECTRICAL SCHEMATIC (Sheet 3)



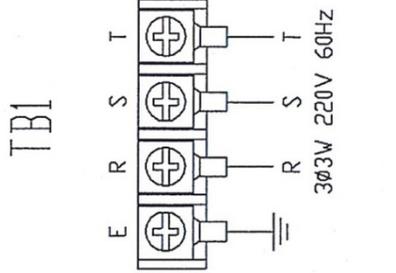
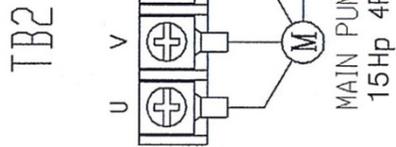
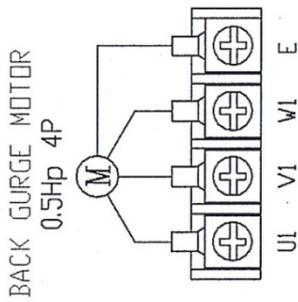
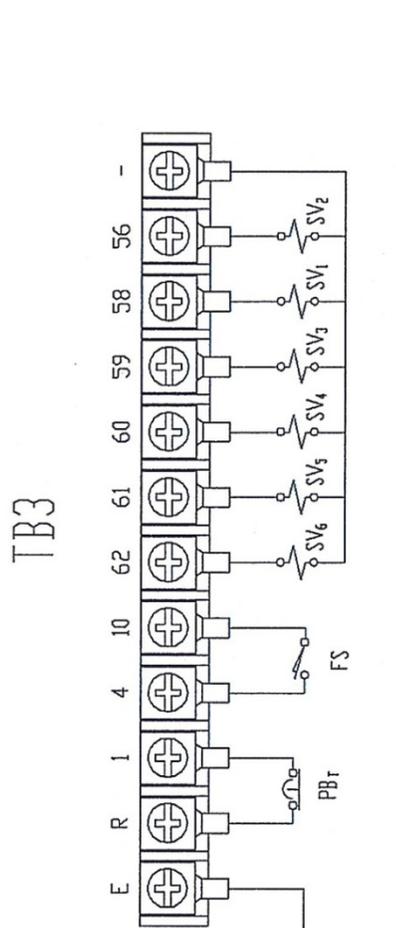
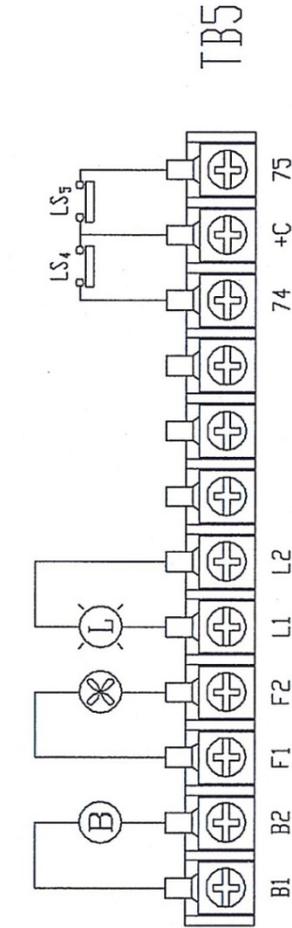
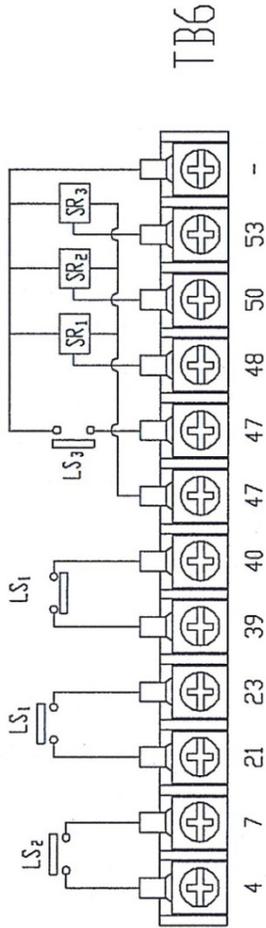


ELECTRICAL SCHEMATIC (Sheet 4)





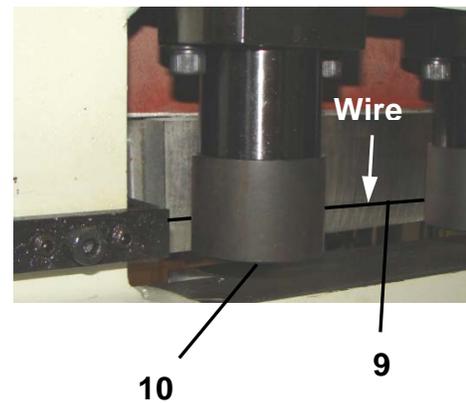
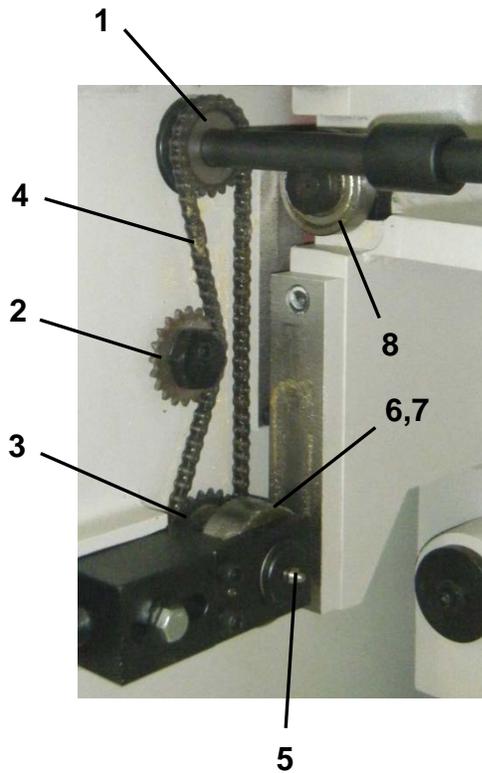
ELECTRICAL WIRE TERMINALS





MECHANICAL REPLACEMENT PARTS

Item	Description	Part No.
1	Top sprocket	Hardened Teeth
2	Idler sprocket	20T Hardened Teeth
3	Bottom sprocket	Hardened Teeth
4	Roller chain	
5	Grease fitting	
6	Roller wheel	
7	Roller wheel bearing	
8	Bearing wheel	
9	Shadow wire	(by the foot)
10	Hold down rubber pad	SH8010



Shown with guards removed.
(For Identification Only!)



TROUBLESHOOTING



WARNING: Make sure the electrical disconnect is OFF before working on the machine.

SYMPTOM	POSSIBLE CAUSE (S)	CORRECTIVE ACTION
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 hold-down 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
Shear 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.



NOTES



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