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1. WARRANTY

PRODUCT



WARRANTY

PURPOSE OF POLICY

The policy covers correction of defects in workmanship and/or materials called to the attention of Coneqtec/Universal and is subject to all conditions of the warranty.

STATEMENT OF WARRANTY

Coneqtec/Universal warrants its products for up to one year from the purchase date when correctly used under normal operating conditions. Coneqtec/Universal makes no other warranty expressed or implied.

This warranty shall not apply to any products that have been altered, changed or repaired in any manner whatsoever. Nor shall it apply to any product which has been subject to misuse, negligence or accident.

The exclusive and sole remedy for breach of contract (including breach of any express or implied warranty) shall be limited to repair, modification or replacement at the sole discretion of Coneqtec/Universal, of non-conforming products as aforesaid. Coneqtec/Universal shall not in any event be liable to anyone. Faulty or suspect parts must be returned to Coneqtec/Universal at user's cost.

GENERAL

Coneqtec/Universal reserves the right to make changes or improvements in design or construction of any part without incurring the obligation to install such changes on any unit previously delivered.

WARRANTY PARTS & LABOR PROCEDURES

WARRANTY PARTS & LABOR POLICY

Warranty parts credits will be allowed for the replacement parts that prove in the company's judgment to be defective in material or workmanship on machines sold to the original purchaser. No consideration whatsoever will be made on used, second-hand, altered or rebuilt machinery.

Only genuine Coneqtec/Universal parts will be used in correction of defective products. Any parts used that are not of Coneqtec/Universal origin will not be warranted unless prior Coneqtec/Universal approval has been granted.

Warranty labor will be paid at \$40 per hour based on flat rates established by Coneqtec/Universal; however, no mileage or mileage time will be reimbursed.

Warranty will not be paid if the dealer is not capable of doing the testing that is required by Coneqtec/Universal (this pertains to hydraulic testing and the use of pressure testing equipment) to determine the location or source of the problem.

OWNER RESPONSIBILITY

Every owner is responsible for the machine's proper use and maintenance. Parts that are simply worn out through normal wear and tear, or abused or damaged due to lack of maintenance or adjustment are not subject for warranty consideration.

DEALER RESPONSIBILITY

Coneqtec/Universal requires that the dealership has a service center that is staffed and has the ability to setup and do pre-delivery on all units prior to delivery and to do testing that is required by Coneqtec/Universal in the event that there is a problem with the machine.

It is also required that the dealers instruct the customer on the proper operation and safety procedures.

WARRANTY PROCEDURE

Warranty will not be considered on the following unless it can be proved there is negligence in workmanship or materials.

Wear items such as pics, pic blocks, blades and cutters.

Hoses that have been worn or damaged by use.

PROCEDURE FOR CLAIM

Prior to starting any warranty work please call Coneqtec/Universal for approval and notification of flat rate allowances. All warranty claims must be received within thirty days of warranty repair in order to be a valid warranty claim. Otherwise warranty claim will be denied. A copy of the parts invoices and shop work orders must be submitted with the warranty form, and the form must be filled out completely with all customer and machine information. The warranty/RGA form with parts should then be sent to the designated location stated on form. Coneqtec/Universal will pay only standard Fed Ex or LTL truck freight on warranty items.

All warranty credits will be applied to the dealer's account.

Revised 11/1/01

2. CHECKLIST

DEALERS'S FILE COPY

1.1 PRE-DELIVERY

After the Pattern Mill has been completely setup and attached to the host machine, inspect the following. Check off each item after the prescribed action is taken.

Check that:

- ◆ No parts of the unit have been damaged in shipment. Check for things such as dents and loose or missing parts; correct or replace components as required.
- ◆ All bolts and fasteners are in place and tightly secured.
- ◆ All grease fittings have been properly lubricated; see Lubrication information in this manual.
- ◆ All Decals are in place and securely attached.
- ◆ The Serial Number of your unit is recorded in the space provided on this page.
- ◆ Then, test run the unit while checking that all components are operating correctly.

I acknowledge that the procedures were performed on this unit as outlined above

DEALERSHIP NAME

DEALER REPRESENTATIVE'S NAME

DATE CHECKLIST FILLED OUT

SERIAL NUMBER

1.2 DELIVERY

The following Checklist is an important reminder of the valuable information that **MUST** be passed on to the Customer at the time the unit is delivered. Check off each item as you explain it to the Customer.

- ◆ Give the customer his Operators Manual. Instruct him to be sure to read and completely understand its contents **BEFORE** operating the unit.
- ◆ Explain and review with him the **SAFETY** information in this manual.
- ◆ Explain that regular cleaning and lubrication are required for proper operation and long life. Review with him the Lubrication information in this manual.
- ◆ Explain and review with him the Service & Maintenance information in this manual.
- ◆ Completely fill out the Owners Registration, including the Customer's signature and return it to the manufacture.

I acknowledge that the above points were reviewed with me at the time of delivery.

CUSTOMER'S SIGNATURE

DATE DELIVERED

2. CHECKLIST

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DATE DELIVERED

3. INTRODUCTION

The **PATTERN MILL** was designed as an attachment machine for use on host machines, such as skidsteer loaders, front end loaders and motor graders. The information contained in this manual refers only to the Pattern Mill machine. Information regarding the valves used to control oil flow to the Pattern Mill attachment can be found in the host machines manual.

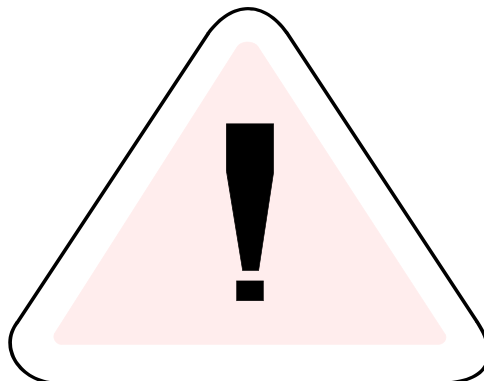
The information contained within is provided to assist you in preparing, adjusting, maintaining and servicing your machine. More importantly, this manual provides an operating plan for safe and proper use of your machine. Major points of safe operation are detailed in the safety chapter of this manual. Refer to the table of contents for an outline of this manual.

Modern machinery has become more sophisticated and, with that in mind, you must read and understand the contents of the manual **COMPLETELY** and become familiar with your new machine before attempting to operate it.

Terms such as “right” and “left” as used in the manual, are as though the reader is sitting in the host machine’s operator seat and facing the Pattern Mill.

Throughout this manual, information is provided which is set in bold type and introduced by the word **NOTE**. Be sure to read carefully and comply with the message or directive given. Following this information will improve your operating or maintenance efficiency, help you to avoid costly breakdowns or unnecessary damage, and extend the life of your machine.

The Manufacturer and Society of Automotive Engineers have adopted this **SAFETY ALERT SYMBOL** to pinpoint characteristics that, if not properly followed, can create a safety hazard. When you see this symbol in this manual or on the unit itself, you are reminded to **BE ALERT! YOUR SAFETY IS INVOLVED!**



The manufacturer reserves the right to make changes or improvements in the design or construction of any part without the obligation to install such changes on any unit previously delivered.

4. SPECIFICATIONS

PATTERN MILL

MODEL	STANDARD DRUM WIDTH	WIDTH	NO. PICS

DRUM CUTTING WIDTH (OPTIONAL) 4 to 18 inches (100 to 450mm)
(MAXIMUM DRUM NO WIDER THAN STANDARD DRUM IN EACH MODEL)

MAXIMUM TILT ANGLE 15 Degrees left & right (AP300-600)

SIDE SHIFT TRAVEL 24 inches (610mm)

WEIGHT* 1900 lbs 865 kg

* Weights are for fully hydraulic Pattern Mill equipped for use on skidsteer loaders and are approximate due to optional equipment.

5 . S A F E T Y

BEFORE YOU ATTEMPT TO OPERATE THIS EQUIPMENT, READ AND STUDY THE FOLLOWING SAFETY INFORMATION. IN ADDITION, MAKE SURE THAT EVERY INDIVIDUAL WHO OPERATES OR WORKS WITH THIS EQUIPMENT IS FAMILIAR WITH THESE SAFETY PRECAUTIONS.



The manufacturer always takes the operator and their safety into consideration when designing machinery. Guards are provided on exposed moving parts for the operator's protection, however, some areas cannot be guarded or shielded in order to assure proper operation. In addition, the operator's manual and decals on the machine itself warn you of further danger and should be read and observed closely.

The **SAFETY ALERT SYMBOL** above means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!** It stresses an attitude of “**HEAD UP**” for safety and can be found throughout this operators manual and on the unit itself.

REMEMBER: The careful operator is the best operator. Most accidents are caused by human error. Certain precautions must be observed to prevent the possibility of injury or damage.

Please read the rules listed below for safe operation **BEFORE** you operate this equipment.

Use of words **CAUTION**, **WARNING**, or **DANGER**, herein and on the machine itself, signal three degrees of hazard.

CAUTION is used for general reminders of good safety practices or to direct attention to unsafe practices.

WARNING is used to denote a specific potential hazard.

DANGER is used to denote the most serious specific potential hazard.

5.1 MANDATORY SAFETY SHUTDOWN

Work of any type on machinery is always more dangerous when the machine is operating. **BEFORE** cleaning, lubricating, or servicing this unit, the following **MANDATORY SAFETY SHUTDOWN PROCEDURE** should **ALWAYS** be followed:

1. Move host machine's propulsion control to the neutral position and idle engine down.
2. Shut off Pattern Mill.
3. Position Pattern Mill that it is completely resting on the ground or floor.
4. Engage the host machine's hand brake.
5. Move the host machine's throttle to the slow idle position, shut the Engine off and Remove the Ignition Key.
6. Relieve hydraulic pressure by moving the Hi-flow and cylinder control levers in both directions.

ONLY when you have taken these precautions can you be sure it is safe to proceed. Failure to follow the above procedures could lead to death or serious bodily injury!

Some diagrams used herein may show Door(s), Guard(s), or Shield(s) open or removed for illustration purposes **ONLY! BE SURE** that all Door(s), Guard(s), and Shield(s) are in their proper position(s) and securely attached **BEFORE** operating the Pattern Mill!

Read and observe ALL Safety information and Decals on the host machine and Pattern Mill **BEFORE** operating the unit! In addition, familiarize yourself with ALL of the Safety Devices and periodically check that they are functioning properly!

Refer to the **SAFETY** chapter of the host machine's operator manual and observe ALL Safety recommendations set forth in that manual!

BE SURE to raise the Pattern Mill clear of the ground **BEFORE** attempting to traverse it sideways!

CAREFULLY inspect ALL hydraulic hoses and connections on a routine basis; **NEVER** use your hand, escaping fluid under pressure can cause serious injury!



BE SURE to exercise the **MANDATORY SAFETY SHUT DOWN PROCEDURE BEFORE** proceeding to do any work on the Pattern Mill!

BE SURE the Pattern Mill is properly placed in the “Service Position” and resting on the ground, **BEFORE** attempting to work on the Drum.

BEFORE transporting the Pattern Mill, **BE SURE** to raise the unit completely clear of the ground and turn it off.

When replacing Pics, **BE SURE** to use only a soft or lead headed hammer, when inserting the Pics into the Holders.

ALWAYS wear Safety Glasses with Side Shields, when striking metal against metal! In addition, it is recommended that a softer (non-chipable) material be used to cushion the blow. Failure to heed could result in serious injury to the eye(s) or other part(s) of the body!

ALWAYS wear proper clothing and covering when working with or on the Pattern Mill!

DO NOT attempt to move the Pattern Mill sideways while it is on the ground!

DO NOT attempt to work on the Pattern Mill or host machine with the hydraulics live! **BE SURE** to relieve the hydraulic pressure, by shutting down the engine and moving all control levers to relieve hydraulic pressure **BEFORE** attempting to disconnect any hoses or **BEFORE** proceeding to remove the Pattern Mill from the host machine.

DO NOT treat the Pattern Mill like a Bucket, it can be damaged by contact with solid objects, as well as upset the stability of the host machine!

DO NOT hit the Pics with a steel hammer as this could cause steel chips to fly, causing injury to the eyes or face.

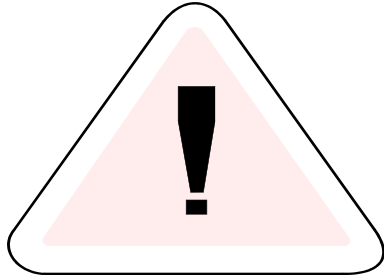
REMEMBER! It is the owner’s responsibility for communicating information on the safe use and proper operation and maintenance of this machine!

6 . O P E R A T I O N

6.1 FOREWARD

The Planer must be attached to a host machine equipped to provide the necessary hydraulics and operational controls. As there are many different host machines available, this manual will only deal with the generic operation of the planer. Anyone attempting to attach and operate the Planer must first have the knowledge and skill of operating the host machine's controls. Information regarding the host machine's controls and attaching Procedure is found in the host machine's Operators Manual.

7. DAILY MAINTENANCE

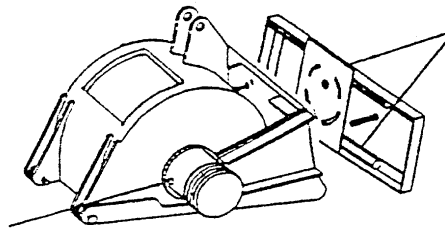


CAUTION: NEVER attempt to do any Maintenance to the Planer while it is running. Exercise the **MANDATORY SAFETY SHUTDOWN PROCEDURE BEFORE** proceeding.

NOTE: Careful attention to the daily maintenance routines will go a long way toward ensuring efficient planer operation.

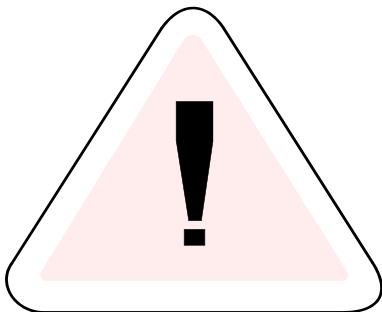
1. At the start of each day, lubricate the grease fittings at the end of the carriage arm on each side of the planer housing. Standard shop gun grease will suffice.
2. Check cross slide rods and tilt plates for lubrication. Clean away any dust or dirt and apply oil to these areas.

TWO GREASE FITTINGS
ON EACH SIDE



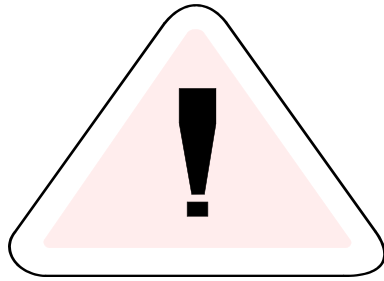
OIL BETWEEN
PIVOT PLATES
AND ON SLIDE
RODS

3. Using the correct size wrenches, retighten any loose hardware
4. Inspect for any loose hydraulic fittings or damaged hoses; retighten or replace as required.



WARNING: NEVER use your hands to check for Hydraulic leaks. Escaping fluid under pressure can Cause serious injury! If injured by escaping fluid, see A doctor at once. If proper medical treatment is **NOT** Administered **IMMEDIATELY** serious infection or Reaction can develop.

5. At least twice daily check all pics for freedom of rotation and wear. Replace all pics that are not rotating freely or are badly worn. Failure to do so will result in poor performance and premature Pic Block wear. Follow the procedure outlined under Pic Removal and Replacement.



7.1 PIC REMOVAL AND REPLACEMENT

To achieve maximum pic life and optimum performance the pics will require replacement for the following reasons:

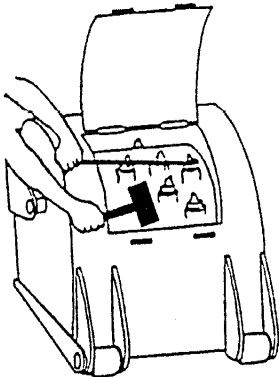
1. They are broken or worn.
2. They are seized in the pic holder and do not rotate freely.

7.1.1 REMOVAL

WARNING: ALWAYS wear safety glasses with side shields when striking metal. Failure to heed could result in serious injury to the eyes or other parts of the body!

To remove pic(s), open the top access door:

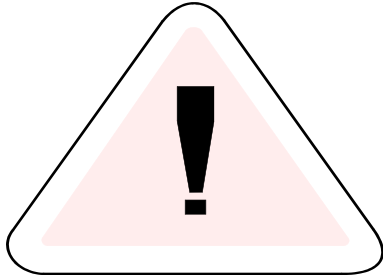
1. Rotate the drum until the pic to be removed is conveniently accessible.
2. Hold the Pic Removal Tool in one hand and place the jaws in the groove of the pic, with the offset handle pointing away from the pic holder.



3. Using a lead hammer or rubber-headed mallet, hit the raised pad on the tool until the pic starts to move and continue to tap it out.

NOTE: If the pic does not have a groove, use a PIC Punch and a lead hammer or rubber headed mallet to drive the pic out of the holder from the back side.

7.1.2 REPLACEMENT



WARNING: ALWAYS wear safety glasses with side shields when striking metal. Failure to heed could result in serious injury to the eye (s) or other part (s) of the body!

To replace a pic proceed as follows:

1. With the Pic Removal Tool in one hand, position the new pic in the jaws of the tool so that the raised pad of the tool is pointing in the same direction as the pic point.
2. Position the stem of the pic in the hole of the pic holder.
3. With a lead hammer or rubber-headed mallet, hit the raised pad of the tool to start the pick into the holder.
4. Then, with one strong blow, strike the tool pad to pop the pic into the hole of the holder.

The pic is properly seated when its shoulder is against the face of the Pic Holder. **BE SURE** to test that the pic rotates freely.

NOTE: If the pic does not have a groove, position the stem of the pic in the hole in the holder and, using a lead hammer or rubber-headed mallet, lightly hammer the point of the pic until the pic is seated in the holder.

7.2 CHANGING A DRUM

Place the planer in a convenient position.

1. Remove the lower depth cylinder pin and depth gauge.
2. Disconnect and remove the long valve actuating rod between the cam follower shaft and the bell crank.
3. Disconnect the short valve actuating rod at the valve.
4. Remove the two bolts at the lower end of the bell crank stand where it is connected to the trolley. Remove the stand and bell crank.
5. Remove the three 1/2" capscrews on each side of the front section of the Pattern Mill (Item 16) and remove the front section.

6. Raise the planer high enough to allow the trolley assembly to pivot out in front of the planer, lower the planer while backing the host machine so that the trolley extends forward, lower the planer to the ground.
7. Remove the three capscrews holding the right hand planer carriage arm to the planer rear pivot plate. Remove the capscrew at the center of the housing side plate and set the carriage arm aside.
8. Remove the four countersunk socket head cap screws securing the casing side plate to the casing and the eight (8) mm socket head cap screws around the center pivot. Use a hammer to knock the side plate off its dowels. Remove the bearing housing off the axle. Set side plate and housing aside. **SEE ILLUSTRATION ON PAGE 18.**
9. Remove the four planer motor bolts and pull the motor out of the drum. Some motors are difficult to remove and may require a pulling device.
 - a. Insert 5/8" nuts in the cutouts, thread a 5/8" cap screw with as many threads as available through each motor bolt hole and through each nut.
 - b. Tighten cap screws evenly to pull motor from shaft.
10. After the motor has been removed, pull drum and shaft out of the bearings.
11. Reverse instructions 1 through 4 to complete the drum change. When installing the motor, clean shaft bore and motor shaft, and coat with an anti-seize.

7.3 SETUP FOR RUMBLE STRIP AND INLAID REFLECTORS

The 56648 combo drum will permit the cutting of 16" wide rumble strips as well as 5" wide inlaid reflectors. The center 5" wide portion of the drum has the pic blocks marked with dots of weld. Some have 1 (one) dot and some have 2 (two) dots. To cut rumble strips put pics in all blocks with 1 (one) weld dot and those with no dots (68 pics).

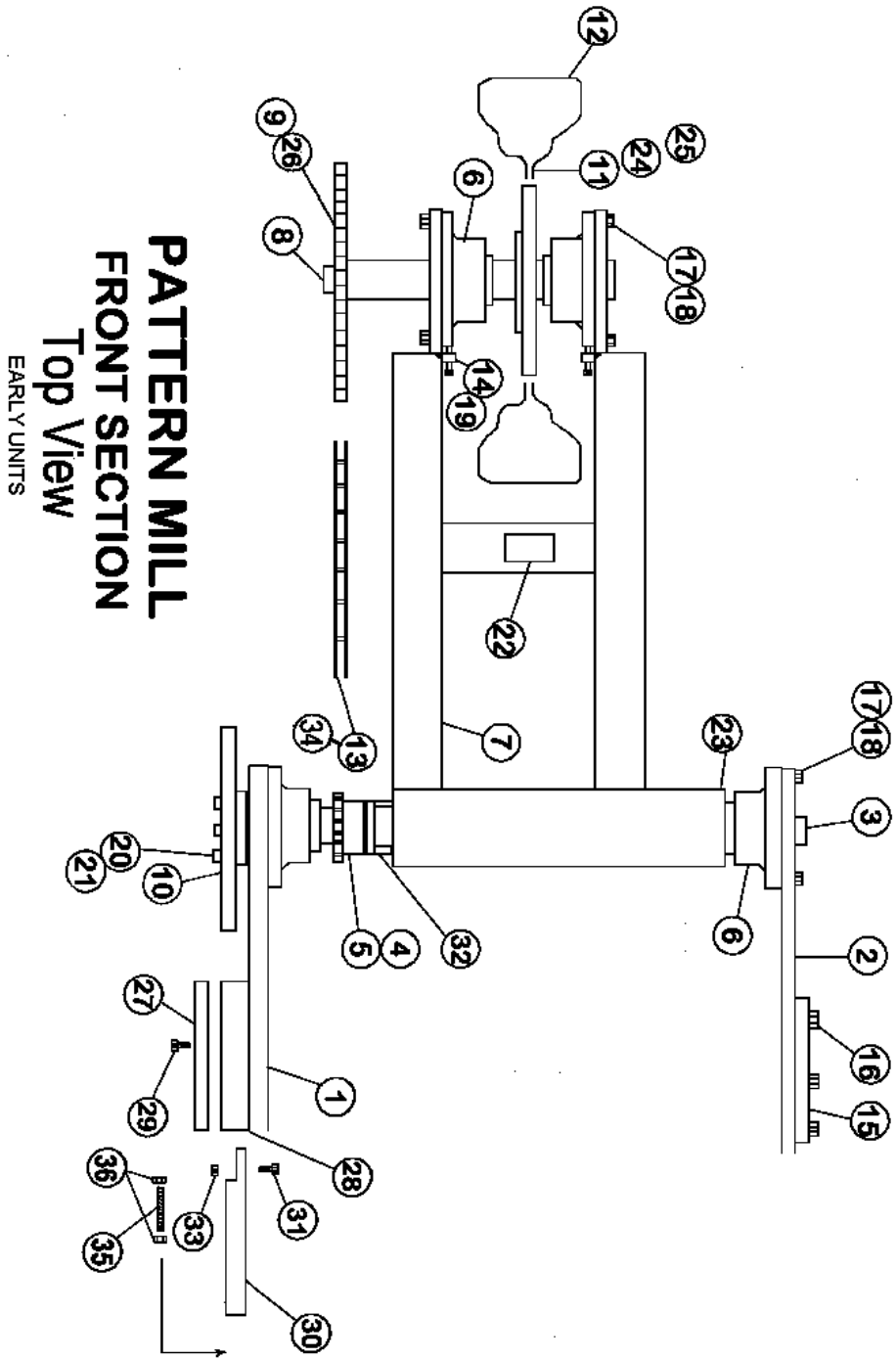
To cut 5" wide inlaid reflectors put pics only in blocks with 1 (one) and 2 (two) dots.

7.4 DRUM DEPTH ADJUSTMENT

To adjust the cutting depth of the drum, loosen the nuts 19&28 adjacent to turnbuckle 11 on page 20. To increase the cutting depth shorten the adjusting rod. To decrease the cutting depth lengthen the adjusting rod. Retighten the lock nuts. One complete turn of the turnbuckle will adjust the depth by approximately 1/16". Be sure to keep the upper rod 6 from turning while adjusting depth.

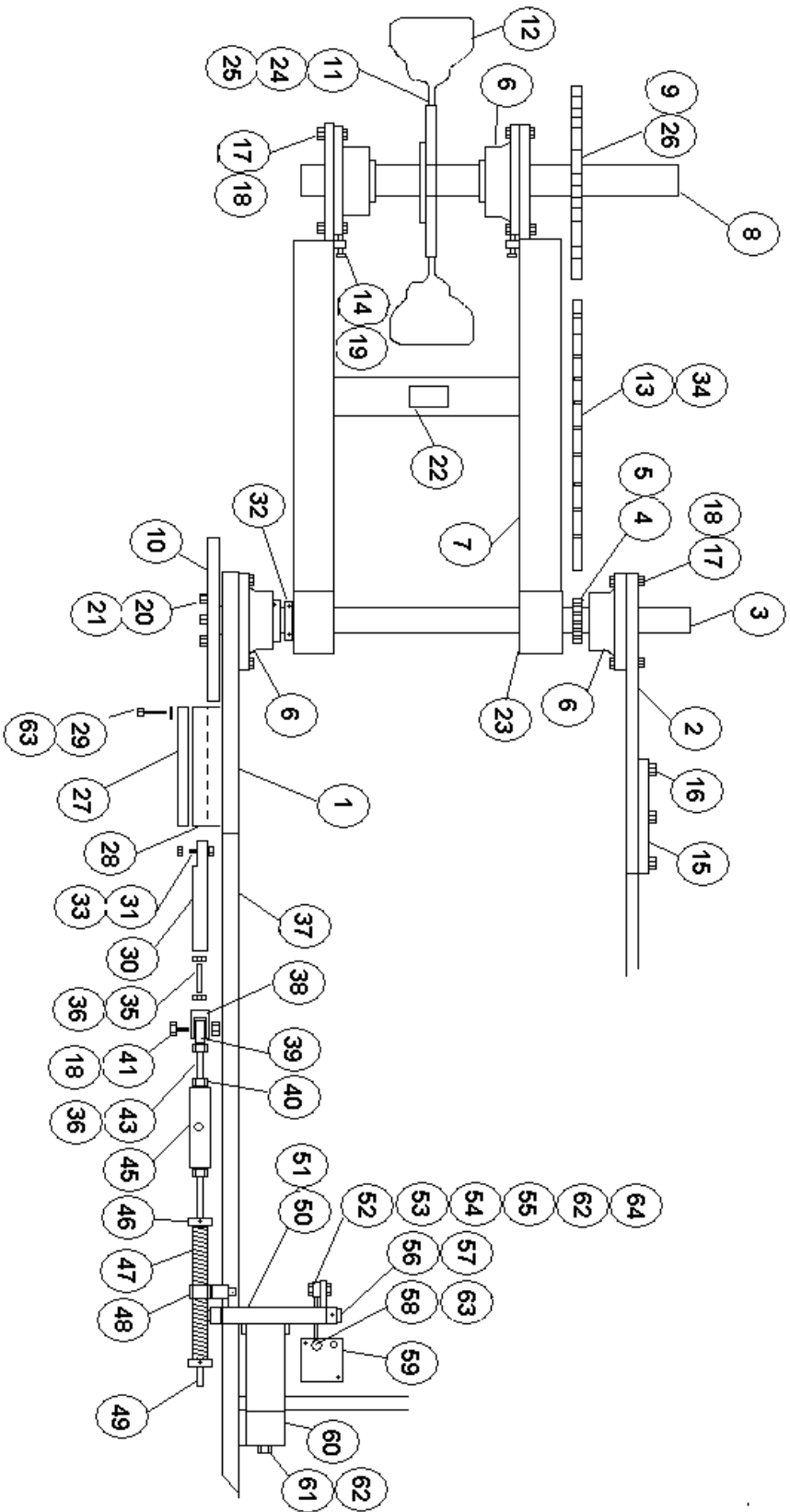
7.5 SLIDING THE PATTERN MILL

To slide the Pattern Mill right or left move the lever of the valve attached to the back of the Pattern Mill cowl. The lever is on the right side of the valve (See pages 32 and 22)



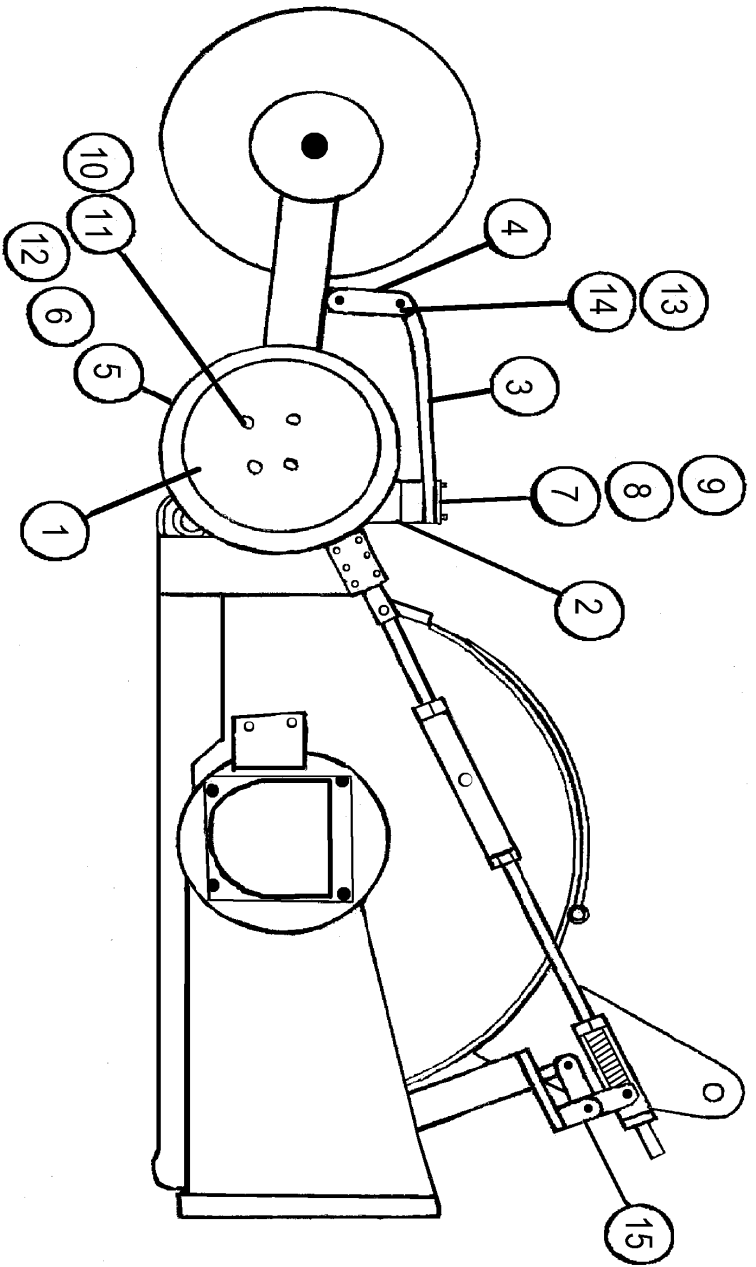
**PATTERN MILL PARTS LIST
TOP VIEW**

ITEM	PART #	DESCRIPTION	QTY
1	56287	Bracket Pattern Disc Shaft	1
2	56288	Bracket Bearing	1
3	56289	Shaft Assy	1
4	56292	Sprocket 15 Tooth Rumble strip	1
5	56293	Bushing H x 1 1/2	1
6	56294	Bearing	4
7	56295	Wheel Pivot Assy	1
8	56301	Shaft Drive Sprocket	1
9	56302	Sprocket 35 Tooth Rumble strip	1
10	56284	Pattern Disc Rumble Strip	1
10	57107	Pattern Disc 24" Rumble Strip	1
10	56636	Pattern Disc Inlaid Reflectors	1
11	56303	Wheel Rim	1
12	56304	Tire	1
13	56305	Chain #40	1
14	56306	Bolt Chain Adjustment	2
15	56307	Plate	2
16	50A-0810	HHCS 1/2 - 13 x 1 1/4	6
17	50A-0814	HHCS 1/2 - 13 x 1 3/4	16
18	30C-08	Nut 1/2 - 13 Nylok	16
19	30A-06	Nut 3/8-16	2
20	50A-0608	HHCS 3/8 - 16 x 1	4
21	14C-06	Washer 3/8 Flat	4
22	56332	Boss Spring	1
23	56342	Bearing	2
24	56356	Stud	6
25	56357	Nut	6
26	56343	Bushing P x 1 1/2	1
27	56554	Cap Roller Follower Guide	1
28	56321	Roller Follower Guide	1
29	50A-0522	HHCS 5/16- 18 x 2 3/4	6
30	56323	Roller Follower Bar	1
31	56349	Roller Follower	1
32	56501	Collar	2
33	31A-06	Nut	1
34	56563	Master Link	1
35	56323-3	Threaded Rod	1
36	30A-06	Nut 3/8-16	2



PATTERN MILL COMPONENTS
TOP VIEW
 LATER UNITS

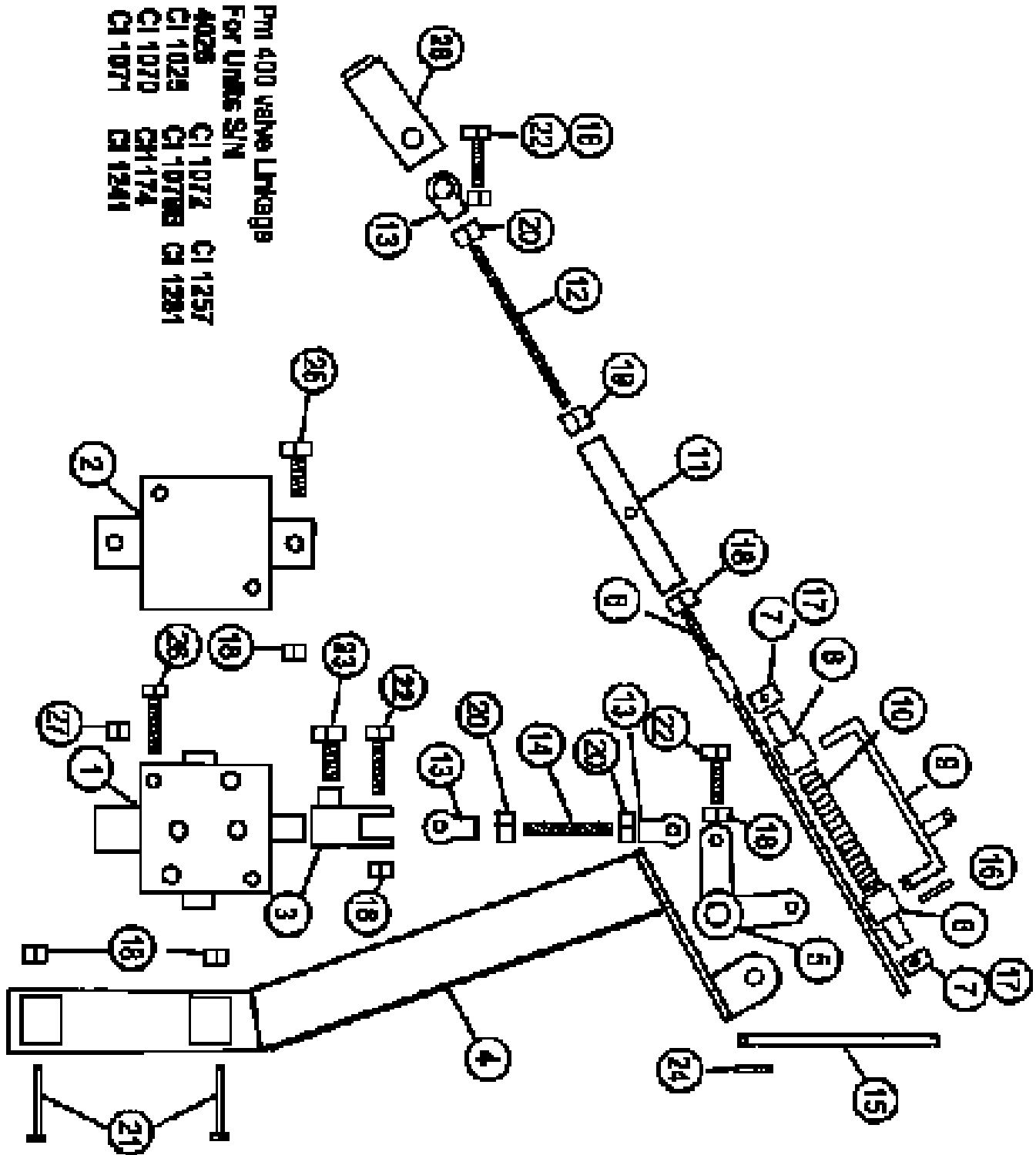
PM 400 FRONT SECTION							
S/N C11281 AND UP							
ITEM	P/N	DESCRIPTION	QTY	ITEM	P/N	DESCRIPTION	QTY
1	56287	Bracket Bearing LH	1	41	50A-081	HHCS 1/2-13x1 1/2"	2
2	56288	Bracket Bearing RH	1	43	57289	Rod Assy Lower Valve Control	1
3	56289	Shaft Assy Driven	1	45	57290	Turn Buckle	1
4	56292	Sprocket 15 Tooth	1	46	57293	Override Spring Stop	2
5	56293	Bushing Hx1 1/2	1	47	57294	Spring Override	2
6	56294	Bearing	4	48	57292	Pivot Pin Override Spring	1
7	57195	Wheel Pivot Assy	1	49	57288	Rod Assy Upper Valve Control	1
8	56301	Shaft Drive	1	50	56316	Bellcrank	1
9	56302	Sprocket 35 Tooth Rumble Strip	1	51	57395	Bushing Bellcrank	2
10	26284	Pattern Disc Rumble Strip 12" Spacing	AR	52	50A-061	HHCS 3/8-16x1 1/2"	1
10	57107	Pattern Disc Rumble Strip 24" Spacing	AR	53	56564	Sherical Rod End 3/8"	2
10	56636	Pattern Disc Inlaid Reflectors 48"x 13/16"	AR	54	56653	Rod Link	1
10	57689	Pattern Disc Inlaid Reflectors 77"x13/16"	AR	55	50A-061	HHCS 3/8-16x1 3/4"	1
11	56303	Wheel Rim	1	56	56656	Bellcrank Pivot Shaft	1
12	56304	Tire	1	57	13C-061	Rollpin 3/16x1	1
13	56305	Chain #40	AR	58	56983	Adapter Valve spool	1
14	56306	Bolt Chain Adjust	2	59	56497	Valve	1
15	56307	Plate Bearing Mount	2	60	56315	Mount Bellcrank	1
16	50A0810	HHCS 1/2-13x1 1/4"	6	61	50A-062	HHCS 3/8-16x3"	2
17	50A0814	HHCS 1/2-13x 1 3/4"	16	62	30C-06	Nut 3/8-16 Nylok	4
18	30C-08	Nut 1/2-13 Nylok	16	63	56654	Capscrew Modified	1
19	30A-06	Nut 3/8-16	2	64	31A-06	Nut 3/8-24	2
20	50A-0608	HHCS 3/8-16x1"	4				
21	14C-06	Washer Flat 3/8"	4				
22	56332	Boss Leaf Spring					
23	57554	Bearing Needle	2				
24	56356	Stud Wheel	6				
25	56357	Nut Lug	6				
26	56343	Bushing Px1 1/2"	1				
27	56554	Cap Roller Follower Guide	1				
28	56321	Guide Roller Follower	1				
29	50A-0522	HHCS 5/16-18x2 3/4"	6				
30	56323	Bar Roller Follower	1				
31	56349	Roller Follower	1				
32	56501	Coller Split	1				
33	31A-06	Nut 3/8-24	1				
34	56563	Master Link	1				
35	57836	Threaded Rod 1/2x2"	1				
36	30A-08	Nut 1/2-13	4				
37		Trolley Side Plate					
38	57291	Clevis Cam Follower	1				
39	57482	Sherical Rod End	1				
40	30ALH-08	Nut 1/2-13 Left Hand Thread	1				



PM 400 SIDE VIEW

PATTERN MILL PARTS LIST SIDE VIEW

<u>ITEM</u>	<u>PART#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	56284	Pattern Disc Rumble Strip 12" Centers	1
1	57107	Pattern Disc Rumble Strip 24" Centers	1
1	56636	Pattern Disc Recessed Markers	1
2	56333	Leaf Spring Mount	1
3	56550	Leaf Spring	1
4	56337	Leaf Spring Shackle	2
5	56507	Pattern Disc Enclosure	1
6	56508	Pattern Disc Cover	1
7	56339	Leaf Spring Top Plate	1
8	50A-0410	Capscrew 1/4-20 x 1 1/2	4
9	30C-04	Nylok Nut 1/4-20	4
10	50A-0608	Capscrew 3/8-16 x 1	4
11	14C-06	Washer 3/8 SAE	4
12	63G-0804	Self Tapping Screw	4
13	50A-0826	Capscrew 1/2-13 x 3 1/4	2
14	30C-08	Nylok Nut 1/2-13	2
15	See Page 20 & 21 For Valve Linkage Details		
16	Bellows (not shown)		1



PATTERN MILL VALVE LINKAGE

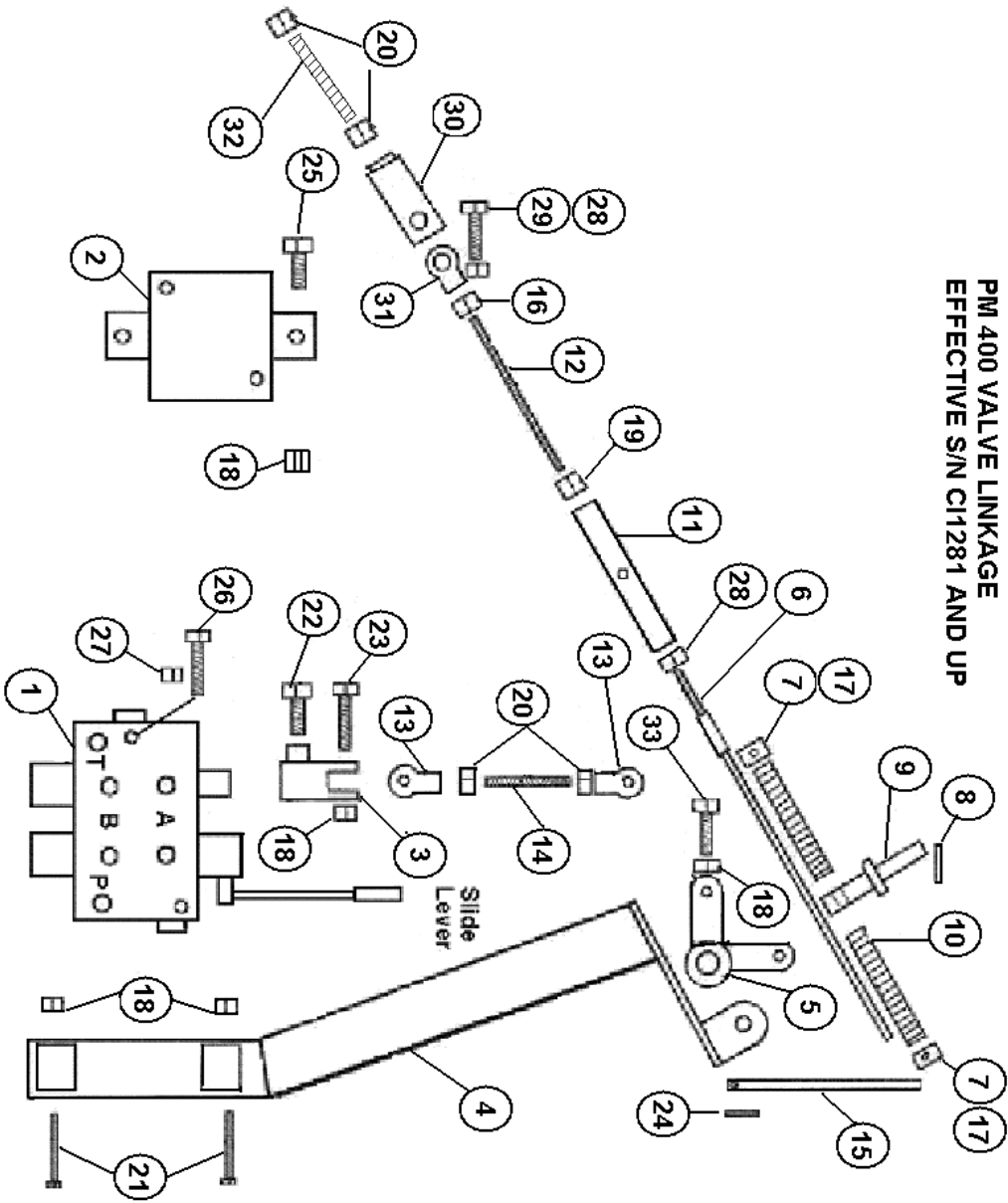
ITEM	PART#	DESCRIPTION	QTY
1	56497	Valve	1
2	56308	Valve Bracket	1
3	56589	Valve Spool Adapter BM 20 Valve	1
4	56315	Bell crank Mount	1
5	56316	Bell crank	1
6	56591	Rod Assy Upper Valve Control	1
7	56362	Override Spring Stop	2
8 See Note	56346	Override Spring Follower	2
9 See Note	56345	Override Spring Holder	1
10 See Note	56549	Override Spring	1
11	56590	Turnbuckle Valve Control	1
12	56592	Rod Assy Lower Valve Control	1
13	56564	Spherical Rod Ends	3
14	56653	Link Rod	1
15	56656	Bell crank Pivot Shaft	1
16	13C-0416	Roll Pin 1/8 x 1	1
17	72F-0508	Setscrew 5/16-18x1/2	2
18	30C-06	Nut 3/8-16	8
19	30CLH-06	Nut 3/8-16 Left Hand Thread	1
20	31A-06	Nut 3/8-24	3
21	50A-0624	Capscrew 3/8-16 x 3	2
22	56654	Capscrew 3/8-16 x 1 1/2 Modified	1
23	50A-0614	Capscrew 3/8-16 x 1 3/4	1
24	13C-0616	Roll Pin 3/16 x 1	1
25	50A-0610	Capscrew 3/8-16 x 1 1/4	2
26	50A-0520	Capscrew 5/16-18 x 2 1/2	2
27	30C-05	Nut 5/16-18 Nylok	2
28	56323-2	Clevis 3/8" Pin	1

THIS ASSEMBLY USED ON S/N

4026, CI 1025, CI 1070, CI 1071, CI 1072, CI 1078B, CI 1174, CI 1241, CI 1257
CI 1281 ONLY.

Note: Items 8,9.&10 Are Replaced By 57021 And An Additional 56549 Spring
On S/N 1241, 1257, & 1281.

PM 400 VALVE LINKAGE
EFFECTIVE S/N C11281 AND UP

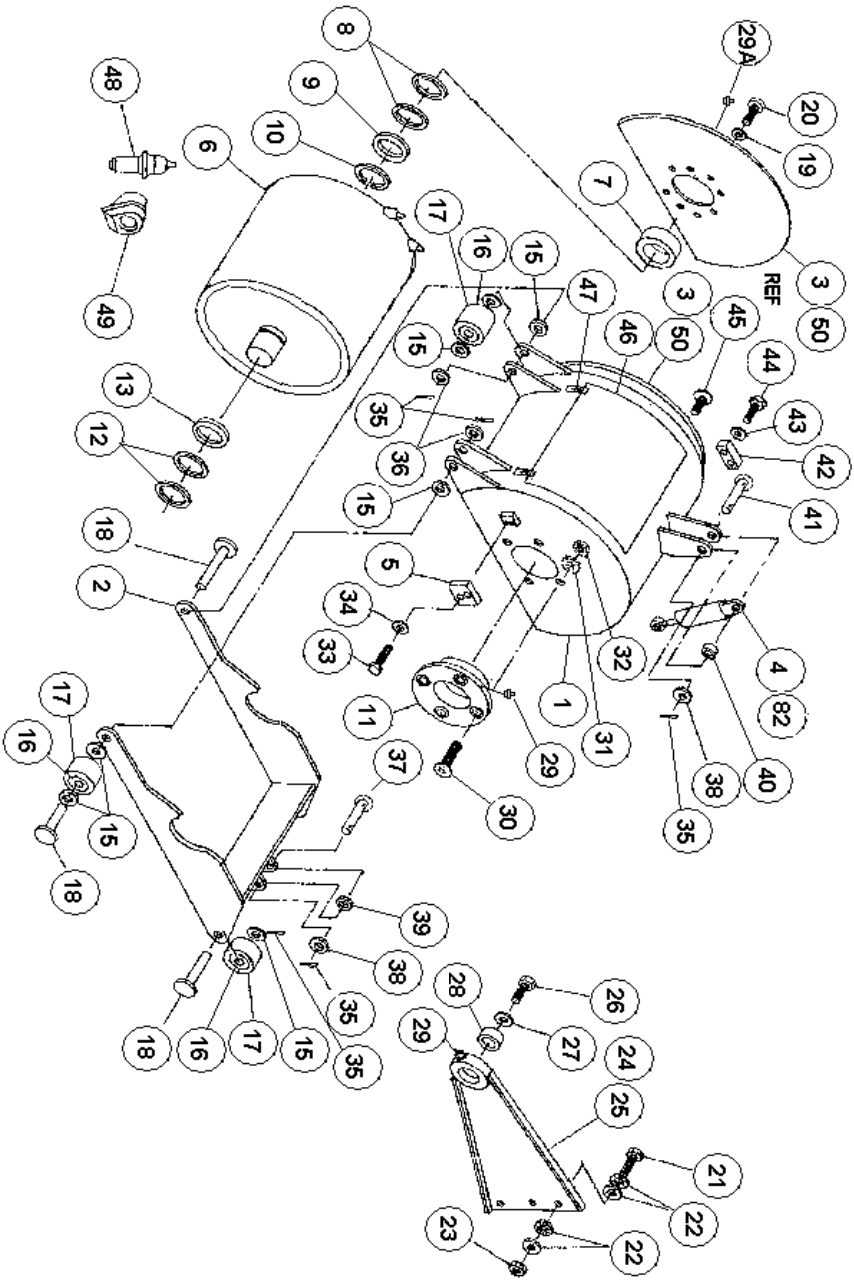


PATTERN MILL VALVE LINKAGE

ITEM	PART#	DESCRIPTION	QTY
1	56497	Valve	1
2	56308	Valve Bracket	1
3	56983	Valve Spool Adapter BM 40 valve	1
4	56315	Bell crank Mount	1
5	56316	Bell crank	1
6	57288	Rod Assy Upper Valve Control	1
7	557293	Override Spring Stop	2
8	13C-0616	Roll Pin	1
9	57292	Pivot Pin Override Spring	1
10	57294	Override Spring	2
11	57290	Turnbuckle Valve Control	1
12	57289	Rod Assy Lower Valve Control	1
13	56564	Spherical Rod End 3/8"	2
14	56653	Link Rod	1
15	56656	Bell crank Pivot Shaft	1
16	31A-08	Nut 1/2-20	1
17	72F-0508	Setscrew 5/16-18x1/2	2
18	30C-06	Nut 3/8-16	6
19	30ALH-08	Nut 1/2-13 Left Hand Thread	1
20	31A-06	Nut 3/8-24	2
21	50A-0624	Capscrew 3/8-16 x 3	2
22	56654	Capscrew 3/8-16 x 1 1/2 Modified	1
23	50A-0614	Capscrew 3/8-16 x 1 3/4	1
24	13C-0616	Roll Pin 3/16 x 1	1
25	50A-0610	Capscrew 3/8-16 x 1 1/4	2
26	50A-0520	Capscrew 5/16-18 x 2 1/2	2
27	30C-05	Nut 5/16-18 Nylok	2
28	30A-08	Nut 1/2-13	2
29	50A-0812	Capscrew 1/2-13 x 1 1/2	1
30	57291	Clevis 1/2"	1
31	57482	Spherical Rod end 1/2"	1
32	57836	Rod Threaded	1
33	50A-0612	Capscrew 3/8-16x1 1/2	1

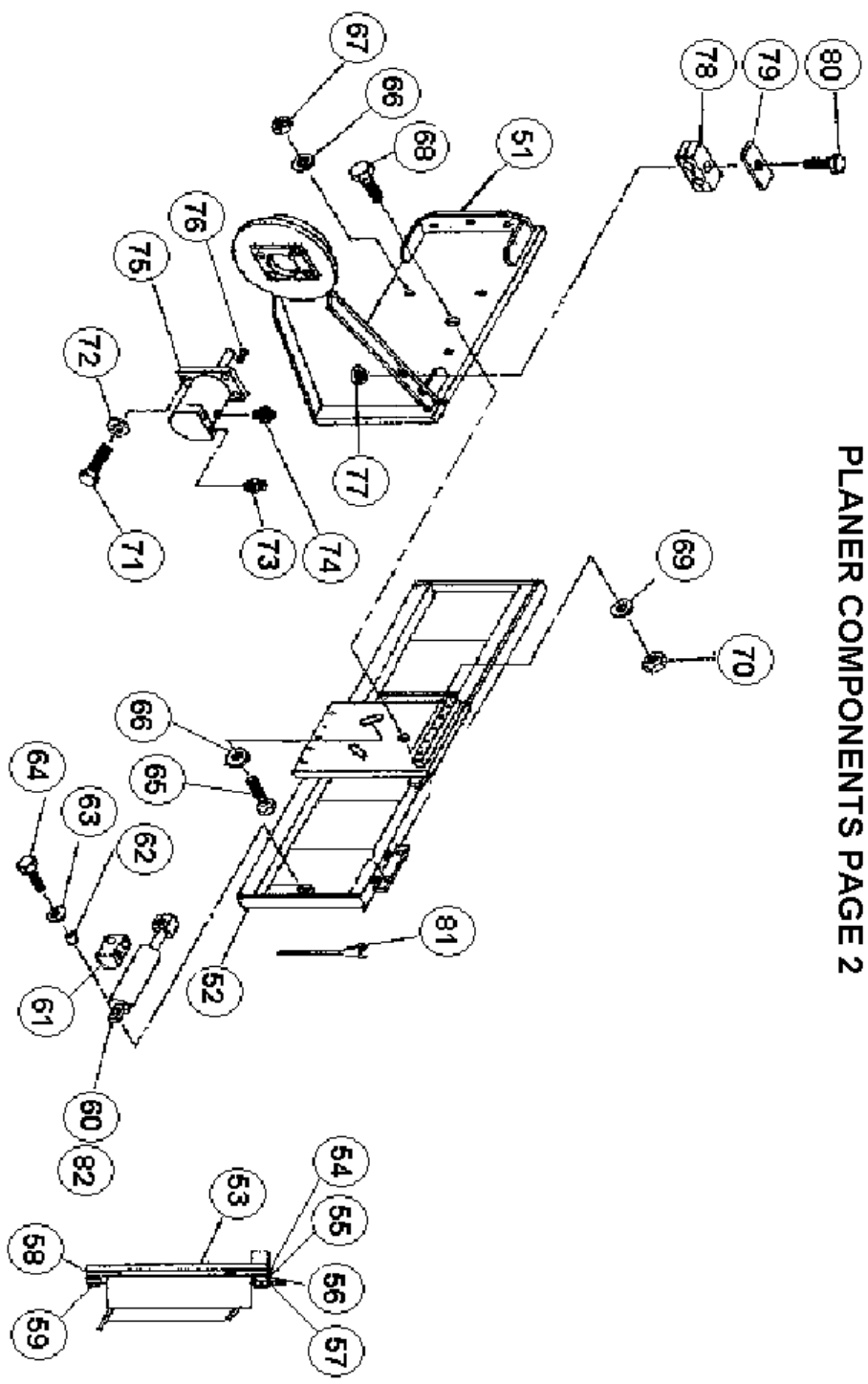
THIS VALVE LINKAGE EFFECTIVE S/N CI 1281 and up

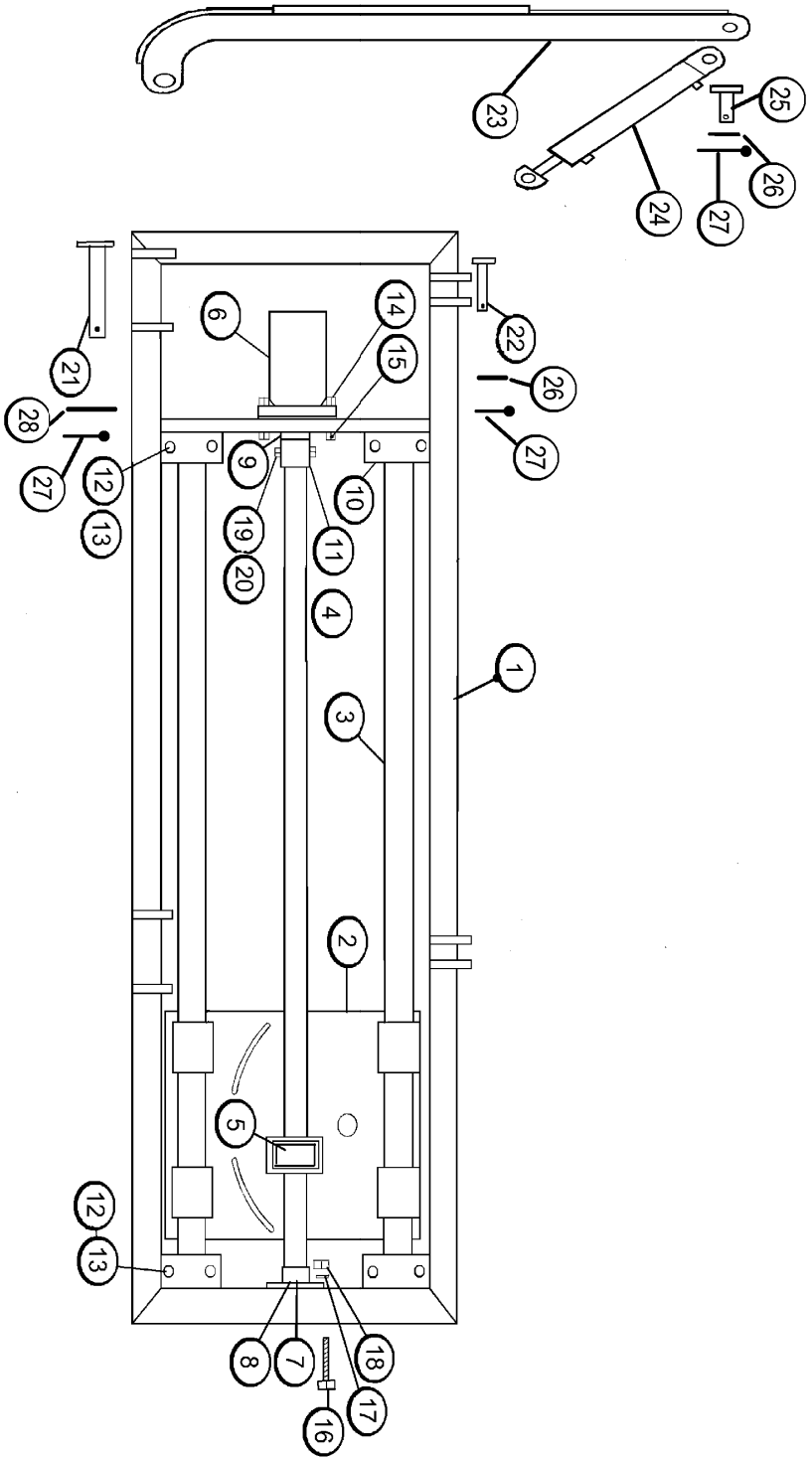
PLANER COMPONENTS PAGE 1



PLANER COMPONENTS PAGE 1			
ITEM	PART NO.	DESCRIPTION	QTY
1	54207	Planer Cowl AP 450	1
2	54302	Depth Trolley	1
3	54219	Removable Side Plate	1
4	55183	Depth Cylinder	1
5	42029	Retainer Plate	1
6	56647	Drum Rumble Strip	1
6	56648	Combo Drum Rumble & Inlaid Reflectors	AR
7	42008	Housing Bearing & Seal	1
8	42009	Bearing RH Side 80 mm	2
9	54990	Seal RH Side 95mm	1
10	42024	Snap Ring	1
11	55307	Hub Motor Carrier	1
12	56378	Bearing Motor Side 95mm	2
13	56179	Seal Motor Side 100mm	2
15	42015	Spacer	10
16	42014	Bearing Wheel	8
17	42013	Wheel	1
18	52596	Axle Front	2
18	42016	Axle Rear	2
19	314A-08	Washer Lock 8mm If Metric	8
20	50A-1012	SHCS M8x30mm If Metric	8
20	42030A	Bolt With Grease Zerk Fitted	AR
21	50A-1016	HHCS 5/8-11x 2	3
22	56283	Washer Nordlok 5/8"	6
23	30C-10	Nut 5/8" Nylok	3
24	54395	Arm Detachable	1
25	80441	Decal danger pinch	1
26	50A-1010	HHCS 5/8-11x1 1/4"	1
27	42020A	Washer retaining	1
28	55545	Bushing	1
29	29A-025	Grease Zerk 1/8" NPT	2
29A	29F-01	Grease Zerk 1/4-28	1
30	42050	CSCS M16x55 If Metric	4
30	50E-1018	CSCS 5/8-11x2.25 If SAE	4
31	14A-10	Washer Lock 5/8"	4
32	330A-16	Nut M16	4
32	30A-10	Nut 5/8-11	4
33	50A-1012	HHCS 5/8-11xd 1 1/2"	2
34	14A-10	Washer Lock 5/8-11	2
35	13A0628	Cotter Pin 3/16x1 3/4"	6
36	42026	Washer Flat SAE 1 3/16 ID	4
37	42019	Pin Lower Depth Cyl	1
38	14C-16	Washer Flat SAE 1" ID	2
39	54559	Spacer Lower	2
40	54558	Spacer Upper	2
41	52232	Pin Upper Depth Cyl	1
42	54332	Stop Carriage Arm	1
43	14A-08	Washer Lock 1/2"	2
44	50A-0820	HHCS 1/2-13x 2 1/2"	2
45	42030	CSCS M16x35 If Metric	4
45	50E-1012	CSCS 5/8-11x 1 1.2" If SAE	4
46	54216	Access Door	1
47	54570	Latch door	2
48	10150	Pics	68
49	40028	Pic Blocks	68
50	80440	Decal Danger Rotating	3

PLANER COMPONENTS PAGE 2

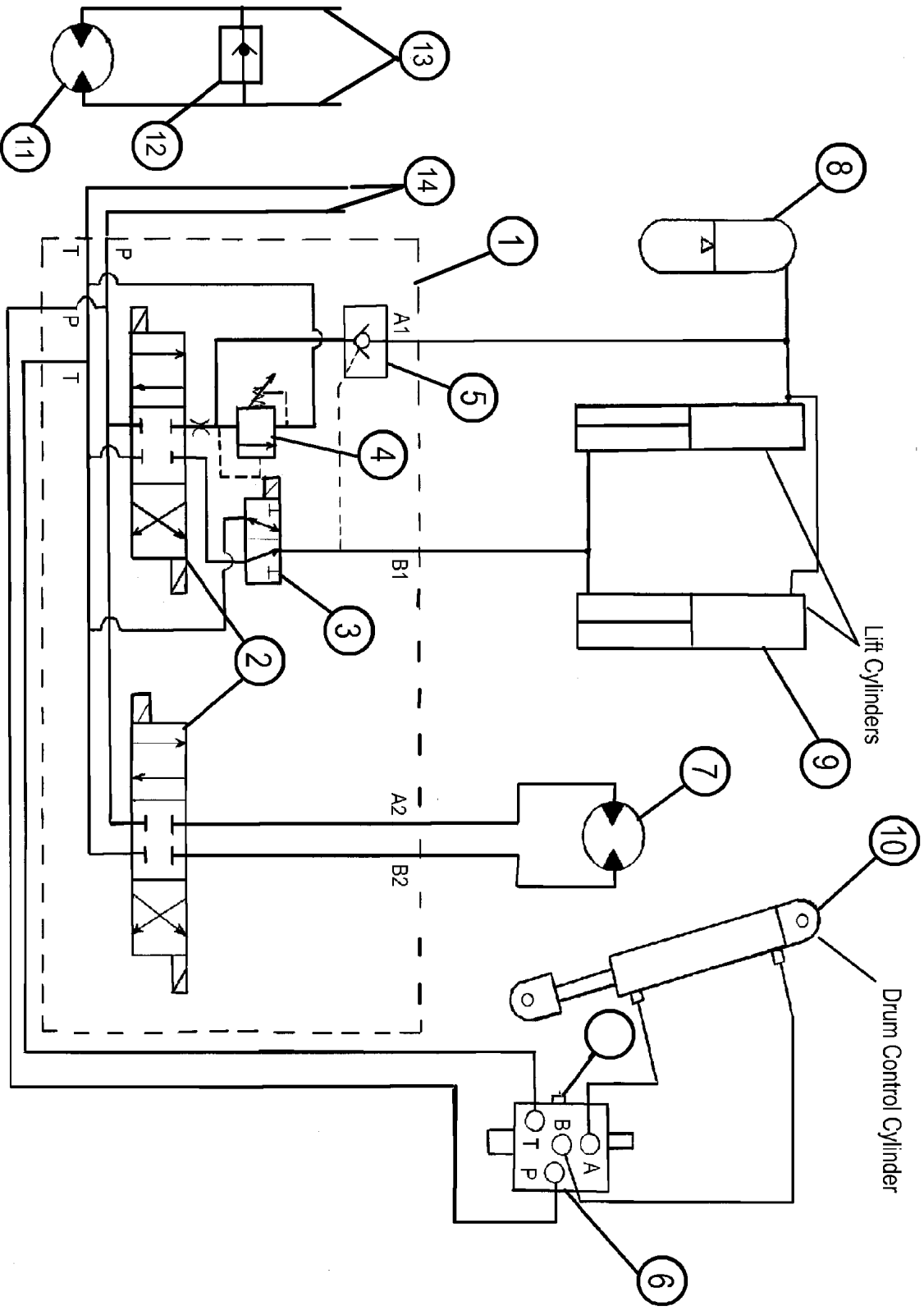




CARLSON PAVING CROSSSLIDE

CROSSLIDE PARTS CARLSON PAVING CP 1220

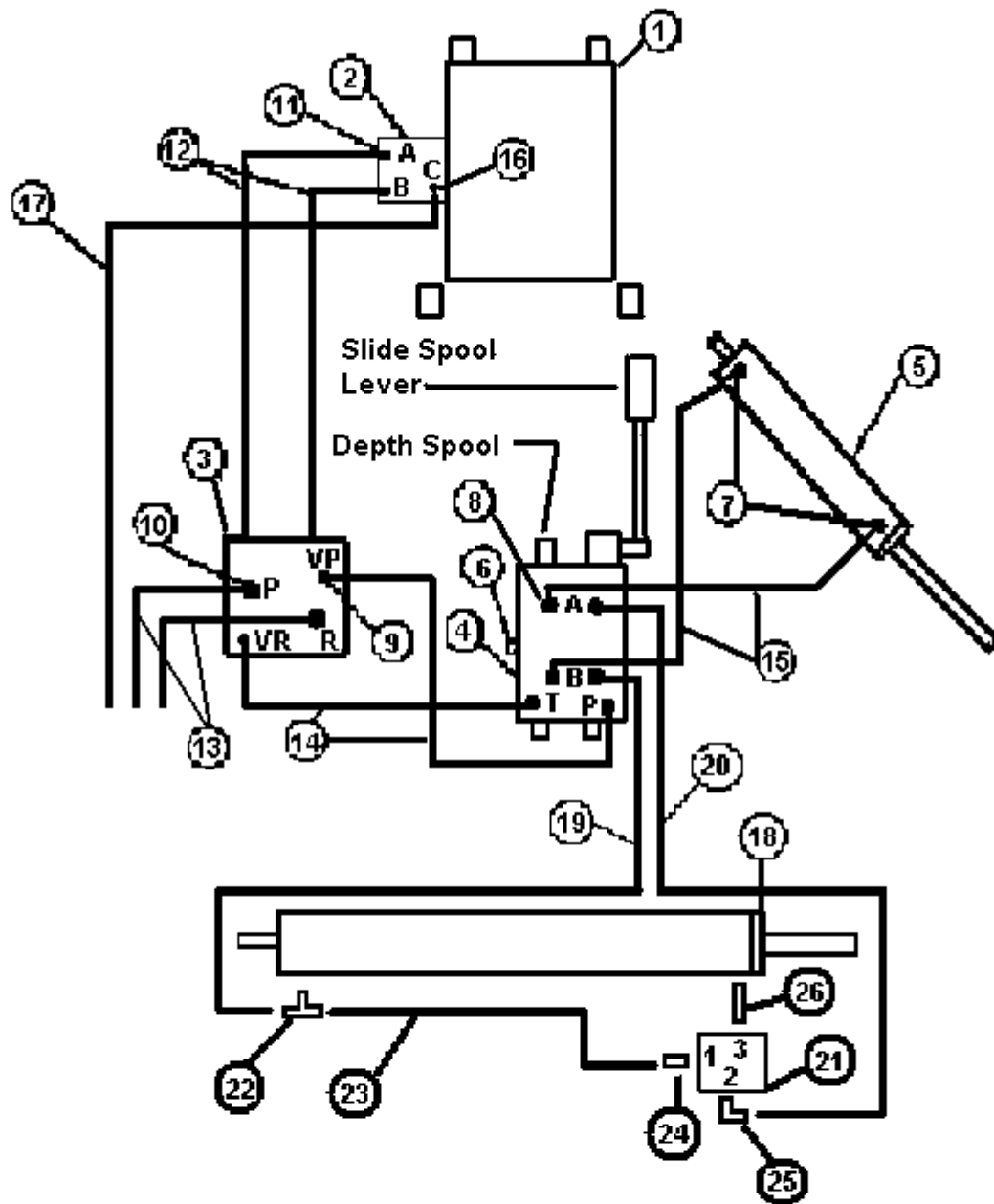
ITEM	PART#	DESCRIPTION	QTY
1	56655	Frame Assy Welded	1
2	56657	Slide Plate Assy	1
3	56441	Slide Rod	2
4	56448	Slide Screw Acme	1
5	56442	Nut Assy Acme	1
6	56449	Motor	1
7	56437	Bearing Hub	1
8	56658	Bearing Spherical	1
9	56439	Trust Washer	1
10	56165A	Rod Clamp Half	4
10	56165	Rod Clamp Half	4
11	56440	Motor To Screw Adapter	1
12	50A-1032	Capscrew 5/8-11 x 3 1/2	8
13	30C-10	Nylok Nut 5/8-11	8
14	50A-0818	Capscrew 1/2-13 x 2 1/4	2
15	30C-08	Nylok Nut 1/2-13	2
16	50A-0624	Capscrew 3/8-18 x 3	2
17	14C-06	Washer 3/8 SAE	2
18	30C-06	Nylok Nut 3/8-16	2
19	50A-0420	Capscrew 1/4-20 x 2 1/2	1
20	30C-04	Nylok Nut 1/4-20	1
21	56599	Lower Pivot Pin	2
22	56600	Lower Cylinder Pin	4
23	56451	Crosslide Mounting Bracket	2
24	55183	Lift Cylinder	2
25	56601	Upper Cylinder Pin	2
26	14C-16	Washer 1"	4
27	13A-0640	Cotter Pin	6
28	14C-24	Washer 1 1/2"	2



Carlson Paving Hydraulic Schematic

CARLSON PAVING HYDRAULIC SYSTEM

<u>ITEM</u>	<u>PART#</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	56584	Valve Assembly	1
2	56504	Valve 4 Way 3 Pos	2
3	56595	Valve 3 Way 2 Pos	1
4	56594	Relief Valve	1
5	54893	Valve PO Check	1
6	56497	Valve Depth Control	1
7	56449	Motor Crossslide	1
8	56535	Accumulator	1
9	55183	Lift Cylinder	2
10	54065	Depth Control Cylinder	1
11	55318	Motor VIS 800	1
11	55319	Motor VIS 991	1
12	55344S	Overrunning Valve	1
13		Hoses To High Flow Circuit Incs Case Drain	3
14		Hoses To Auxiliary Circuit	2
15	57269	Closed Center Plug	1



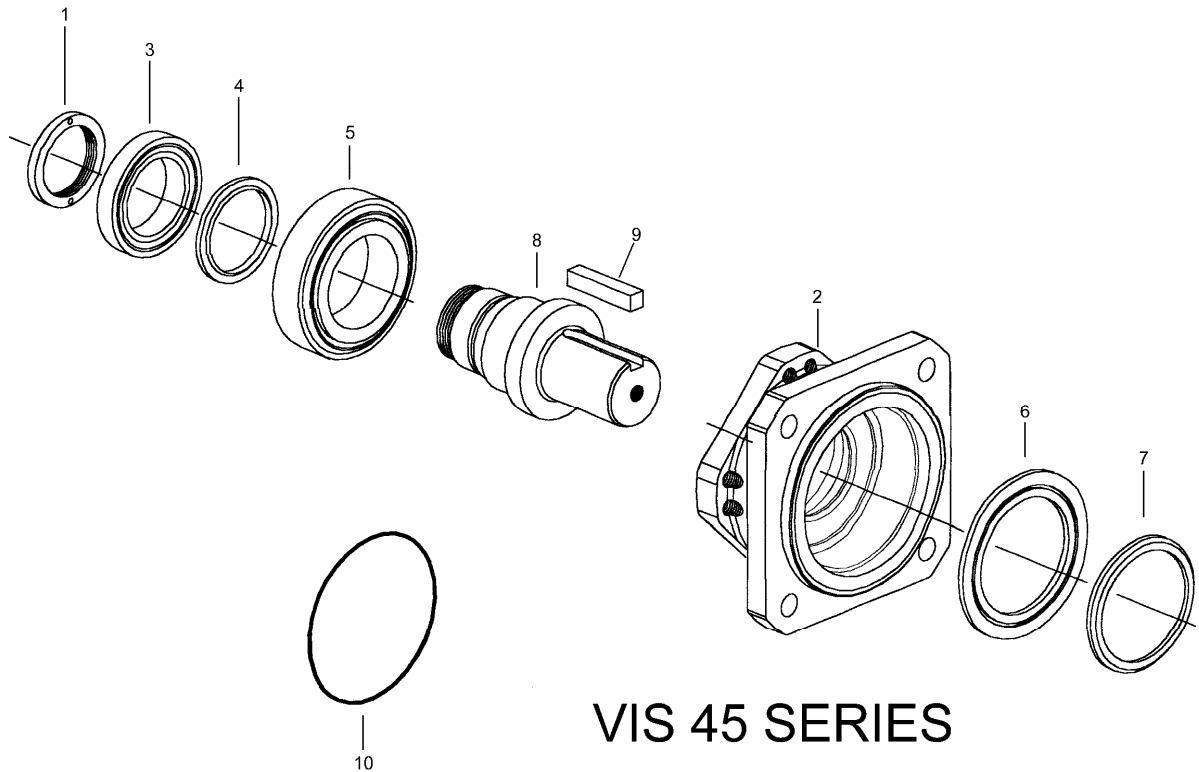
PM 400 HYDRAULIC SYSTEM FOR SKID STEER

HYDRAULIC SYSTEM FOR SKID STEER LOADERS

ITEM	PART#	DESCRIPTION	QTY
1		Planer Assembly	1
2	55318	Motor VIS 800	1
2	55319	Motor VIS 991	1
3	55140P	Sun Valve 4GPM Orifice	1
4	56497	Depth Control Valve Assy	1
5	54065	Depth Control Cylinder	1
6	111HH-10	Plug SAE T2 & P2	2
7	110R-0604	Adapter 90deg JIC/SAE	2
8	111E-0608	Adapter Str JIC/SAE	4
9	111E-0604	Adapter Str JIC/SAE	2
10	111E-1212	Adapter Str JIC/SAE	4
11	111E-1216	Adapter Str JIC/SAE	2
12	56659	Hose Valve To Valve	2
13	See Spec	Hose Motor host kit	1
14	56660	Hose Valve to Cylinder	2
15	111E-0606	Adapter Case Drain Str JIC/SAE	1
16	112B-0606	Adapter Case Drain 90deg JIC/JIC	1
17	See Spec	Case Drain Host Kit	1
18	56745	Slide Cylinder	1
19		Hose Base End	1
20		Hose Rod End	1
21	52981	Lock Valve	1
22	110Y-0404	Tee SAE/NPT	1
23		Hose Slide Pilot	1
24	111E-0406	Adapter Str JIC/SAE	1
25	111B-0406	Adapter 90 deg JIC/SAE	1
26	111K-0604	Adapter Str SAE/NPT	1

EATON VIS 45 MOTOR FRONT SECTION

ITEM	PART#	DESCRIPTION	QTY
1	55649	Ring Retaining	1
2	55895	Housing Bearing	1
3	55650	Rearing	1
4*	SEE KIT	Seal	1
5	55651	Bearing	1
6	55652	Retainer Front	1
7*	SEE KIT	Seal Protector	1
8	55653	Shaft	1
9	55896	Key .625x.500	1
10*	SEE KIT	O Ring	1
11	55324	Seal Kit Inc'd *	AR



EATON VIS 45 MOTOR

ITEM	PART#	DESCRIPTION	QTY	ITEM	PART#	DESCRIPTION	QTY
1	55770	Cap End	NSS 1	17	55791	Cap Screw 800cc	NSS 9
2*	55771	Seal Square	4	17	55792	Cap Screw 991cc	NSS 8
4*	55772	Backup Ring	1	18	55795	Spring	NSS 2
5*	55773	O Ring	1	19	55796	Piston Shuttle	NSS 1
7	55774	Balance Plate	NSS 1	20	55797	Poppet	NSS 1
7	55775	Balance Plate	NSS 1	21	55798	Sleeve Dashpot	NSS 1
8	55776	Plug/O Ring	NSS 1	22	55799	Plug/ O Ring	NSS 1
9	55777	Shim	NSS AR	23	55800	Plug/ O Ring	NSS 1
10	55778	Spring	NSS 1	27	55801	Ball	NSS 1
11	55779	Poppet	NSS 1	29	55802	Valve Plate	NSS 1
12	55780	Geroler Assy 800cc	NSS 1	30*	55803	O Ring	1
12	55781	Geroler Assy 991cc	NSS 1	31*	55804	Seal	1
13	55784	Ball	2	32*	55805	Backup Ring	1
14	55785	Flange Mounting	NSS 1	33	55654	Seal Kit Mtr Sect Inc *	AR
15*	55786	Seal Face	1	34	56540	Ball	NSS 1
16	55787	Drive Shaft 800cc	NSS 1				
16	55788	Drive Shaft 991cc	NSS 1				

VIS 45 Series

