



Security Engineered Machinery Co., Inc

OPERATIONAL & MAINTENANCE MANUAL

SEM Model 800-1000 Series Paper Shredders



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UNLOADING/UNPACKING

Your new SEM shredder has been secured to a pallet for shipping. Please inspect equipment immediately for shipping damage.

- Using a lift truck with a minimum capacity of 1500 pounds, remove the machine from the carrier and transport to operation site. Remove pallet and discard responsibly. The feed tables and discharge hoop are located in a box on top of the shredder pallet.
- All light duty machines are equipped with casters for ease of handling.
- Remove all guards and inspect interior of machine for shipping damage. Check oil level in reducer (see fig. 3, page 21). Add oil if necessary. See lubrication section on page 13.
- After inspection, reinstall all guards including feed table and discharge hoop. A bag must be installed in the hoop before starting to shred.
- If an optional discharge conveyor was ordered with your machine, then you must install it before beginning to shred. Be sure belt is tracking properly after installation (see page 14).

NOTE: This unit is shipped without a wall outlet plug. This is to simplify the installation procedure – allowing the unit to be hardwired into a junction box or to be fitted with the appropriate plug type.

NOTE: This unit is available in three different voltage options (460 V, 220 V, and 208 V). All units are 3 phase, and require 60 Hz. **Please confirm power requirements prior to ordering.**

ATTACHED OUTPUT CONVEYOR (OPTIONAL) INSTALLATION

- With the assistance of an overhead crane, a 2nd person, a fork lift, or any means available, rig a sling (just off center of conveyor so that flanged side is lower.) Lift conveyor assembly into place using the (6) bolts supplied at rear of machine. Attach conveyor and tighten bolts.

NOTE: Be sure that side frames of conveyor are aligned with side frames of shredder.

- Install conveyor belt around drive pulley (under cutter head) and pull belt together. A second person may be necessary to bring both ends together. When both ends are put together, take extra care to ensure that staples are centered with belt. The edges of the belt should be aligned, if NOT, move belt ends over one staple and re-check alignment. When aligned properly, put connecting pin (supplied) through staple lacing. Clip off any excess pin which may be hanging out.
- Snug up take-up adjustment one half turn each side until approximately 2-inches of sag is present. Test run belt and track belt by tightening the side that rubs until centered.

ELECTRICAL INSTALLATION

All electrical installation and service must be accomplished by a qualified electrician. Follow all national and local electrical codes and ordinances.

“WARNING”

LOCK POWER IN OFF POSITION

All internal wiring has been factory installed and tested prior to shipping. Electrical installation consists of providing adequate machine power only.

Check building service to ensure correct voltage is available and that current requirements can be met.

Install receptacle (provided) to properly protect building circuit. Select appropriate wire size and current protection to accommodate current requirements as shown on nameplate. Plug in power cable.

Clear all personnel from machine area. Ensure machine is clean and no tools, rags, or debris have been left on conveyor belt or near cutters or drive mechanism.

Turn building service drop power on. Check voltage at installed receptacle.

Ensure area is clear. Turn key switch on. Jog reverse. Check for proper motor rotation. If rotation is wrong, unplug power cable. Check that power is off with voltage meter at panel. Remove any two power wires from the motor starter, reverse and reconnect.

Clear area, turn on power and recheck rotation.

Electrical installation is complete. Lock out your building disconnect.

Replace all guards.

SAFETY WARNINGS

1. Read and understand instruction manual and be aware of all warning stickers.
2. Make sure that ALL guards and access panels are in place at all times, **EXCEPT** when the power is locked off for maintenance work or cleaning.
3. **ALWAYS** know where emergency stop buttons are located.
4. **ALWAYS** know, or have quick access to, emergency phone numbers.
5. **ALWAYS** ensure that all maintenance and operating personnel read and understand this manual, including those personnel working second or third shift.
6. **ALWAYS** have a standard break-in time for a new operator A minimum of two hours suggested.
7. **ALWAYS** wear safety glasses when operating shredder.
8. **ALWAYS** "lock out" power at disconnect when shredder is not in use, when servicing shredder, or when performing routine shredder maintenance including cleaning.
9. **NEVER** operate this or any other machine while under the influence of drugs, alcohol or medications.
10. **NEVER** wear loose fitting clothing, ties, or jewelry while in the vicinity of this shredder.
11. **NEVER** allow long hair to be worn in the vicinity of the machine without use of a protective hair net.

12. **NEVER** place any part of your body in or on any part of this machine while in operation.
13. **NEVER** allow tools, rags, lunch pails, or debris to be placed on the input conveyor or on top of the machine.
14. **NEVER** change machine direction without first allowing machine to come to a complete stop.
15. **NEVER** allow other personnel within ten feet of this machine while in operation.
16. **NEVER** remove guards, perform maintenance or clear jam-up debris without first locking out power disconnect.
17. **NEVER** allow horseplay around machine.
18. **NEVER** remove paper from cutter heads while power is on.
19. **NEVER** attempt to remove paper from input conveyor after paper has begun to move toward cutter head.
20. **NEVER** hold forward button in the depressed position.

START-UP PROCEDURE

Pre-start-up procedure (see fig. 1, page 19)

- Familiarize yourself with all controls and button locations.
- Ensure that all guards and covers are in place.
- Ensure the area is clean.
- Check input conveyor for debris, discarded tools, etc.

Start-up

Plug power cable into installed receptacle. Turn key switch on. Depress momentarily the Forward pushbutton. Cutters will begin to rotate, conveyor will begin to run forward and crusher blades will rotate.

For machines equipped with optional automatic cutter lube system, depress Lube pushbutton momentarily and allow machine to run for approximately four minutes without feeding material to be shredded. This allows time for cutter lubrication to be accomplished without soaking the material to be shredded unnecessarily.

To stop machine at any time depress the red Stop pushbutton. For emergency situations the Stop pushbutton may be depressed at any time. For normal stop situations, wait for input conveyor to empty itself and the output chute (or optional output conveyor) to discharge all shredded material before depressing Stop button.

Begin feeding material to be shredded. It is recommended that during the familiarizing period the operator should proceed with small amounts of paper. After several hours experience the operator may wish to increase the amount of material being fed. The operator will soon be able to judge the efficiency of the operation and feed material accordingly. It is nearly inevitable that during this learning process the machine will jam. A jam condition will automatically turn off the machine just as if the operator had depressed the Stop button. This is normal.

CLEARING A PAPER JAM

Should a jam occur, the machine will turn itself off. Ensure that all personnel are clear of both the input conveyor and the cutter head.

Momentarily depress the yellow Reverse pushbutton. This will cause both the conveyor and the cutters to run backwards for as long as the Reverse pushbutton remains depressed.

Release the Reverse pushbutton. The machine will come to a stop. After the machine has completely stopped, remove some of the offending material.

Re-start machine in the forward direction to resume operation.

NOTE:

This machine has been engineered to allow paper to be fed with paper clips, staples, fasteners, credit cards, aluminum offset plates, and similar materials without harm to the machine.

SHUT-DOWN PROCEDURE

Allow input conveyor and output chute (or optional output conveyor) to clear all material before shut down.

Depress red Stop pushbutton. Remove power cable from receptacle.

Clean any remaining debris from the machine and from the immediate area.

Remove top guard and inspect cutters for damage.

Clear any shredded paper from cutter area. Pull tray from lower front of machine and empty.

MAINTENANCE

Cleaning

ALWAYS lock off power before cleaning, lubricating, maintaining, removal of any guard, and after shredding operation is complete.

Daily cleaning: (After each 8 hours of operation)

- Remove top guard
- Remove paper buildup from cutters and combers (compressed air (maximum 40 PSI) or vacuum may be used)
- Visually inspect cutters for damage
- Replace all guards
- Remove side guard
- Remove paper buildup from crusher area and belt pulley area
- Replace all guards
- Empty tray (lower front of cabinet)

Weekly cleaning: (After each 40 hours of operation)

- Repeat all daily cleaning steps
- Remove side guards and end guards
- Remove paper buildup from base
- Wipe entire machine clean being careful to observe any evidence of oil leaks. Should leakage be observed, request the attention of the appropriate maintenance personnel
- Check for loose hardware on the reducer collars, the crusher paddles, etc
- Remove all tools, rags, solvents from machine
- Replace all guards

LUBRICATION

ALWAYS lock off power before cleaning, lubricating, maintaining, removal of any guard, and after shredding operation is complete.

Daily lubrication: (After 8 hours of operation).

- Machines equipped with auto cutter lube, depress Cutter Lube button momentarily while machine is running and allow machine to run empty for approximately 4 minutes.
- Check oil level in auto cutter lube reservoir. (Level can be seen through a slot in guard just below the fill tube.)
- Machines not equipped with auto cutter lube follow the steps listed below.
- Remove top guards
- Apply light machine oil to cutters.
- Replace all guards.

Weekly lubrication: (After each 40 hours of operation).

- Repeat steps from daily lubrication.
- Remove guards
- Apply oil to drive chains (see fig. 2, page 20) Use chain and cable lubricant.
- Replace all guards.
- Fill auto cutter lube reservoir with SAE 20W Non-Detergent oil. (For machines equipped with auto cutter lube only).

Monthly lubrication: (After each 173 hours of operation).

- Repeat steps from weekly lubrication.
- Remove guards
- Check reducer oil level by loosening the top jam nut and adjusting nut on torque rod enough to pivot the reducer to the horizontal position (see fig. 3, page 21). Remove level plug. Oil will run out if filled to

proper level. The proper level is to bottom of plug. DO NOT OVERFILL.

- Lubricate spur gears.
- Apply lubricant directly to teeth of both spur gears liberally. (Use heavy duty open gear lube.)
- Replace all guards.

Annual lubrication: (After 2080 hours of operation).

- Repeat steps from monthly lubrication.
- Drain oil from reducer by removing plug "D" (see fig. 3, page 21).
- Clean magnetic drain plug.
- If excessive metal filings are detected on the magnetic drain plug, flush reducer with cleaning solvent (kerosene).
- Replace drain plug and refill to proper level using a high grade petroleum base, rust and oxidation inhibited gear oil SAE 40W. (AMOCO Industrial Oil No. 150 or equivalent.)

CAUTION:

Too much oil will cause over heating, and too little oil will result in gear failure. Check oil level monthly. Also, under extreme operating conditions, such as rapid rise or fall of temperatures, dust, dirt, chemical particles, chemical fumes, or oil temperatures above 200 degrees F., the oil should be changed every one to three months depending on the severity of conditions.

CONVEYOR BELT ADJUSTMENT

Alignment and Tensioning

- Read all safety warnings (see page 8) before proceeding.
- Lock power off.
- Remove both end guards and side guards from input conveyor
- Replace end guards

- All rollers and pulleys must be set square with the frame before making any belt tracking adjustments. All guards should be in place (**except** conveyor side guards) before proceeding.
- Mark the initial position. Make all adjustments in small increments.
 - By design, the conveyor belt should have 1/16" or less clearance to side frames. This assists in preventing paper from getting under the belt but some side rubbing may be expected. This is normal.
- Loosen jam nuts, each side of machine (see fig. 4, page 22).
- Turn jam nuts half turn each side, repeating until belt is at proper tension
- Ensure all personnel are clear and that no tools are on machine or input conveyor
- Turn power on
- Run machine in Forward
- Stop machine and turn power off
- Adjust alignment by tightening take-up bolt on side of conveyor where belt is rubbing side frame. Tighten only one quarter turn at a time
- Tighten jam nuts
- Replace all guards
- Turn power on
- Run machine forward for five minutes. If further alignment is required, repeat the above steps

NOTE:

Belt may run slightly off center. When machine is run in reverse, the belt may run slightly off center to the opposite side. This is normal. The belt may stretch during the first few days of operation. This will affect alignment since the belt alignment relies in part on proper tensioning for effective tracking

DRIVE BELT ADJUSTMENT

- Lock power off
- Remove guard, drive side
- Check sheave alignment by placing a straight edge or a stretched string across the sheave faces so that it touches all four points of contact. Misalignment of more than one half of one degree ($1/8''$ in $12''$) may adversely affect belt life, cause belt rollover, and/or cause internal belt damage
- Ideal tension is the lowest tension at which the belt will not slip under peak load conditions
- Check tension frequently during the first 48 hours of run-in operation.
- Over tensioning shortens belt and bearing life
- Keep belts free of foreign material which may cause slippage
- Make V-drive inspection on a periodic basis. Tension only when slipping. Never apply belt dressing as this will damage the belt and cause early failure
- Adjust tensioning by measuring the distance between sheaves center to center. At the midpoint between centers, apply a force (perpendicular to the span) large enough to deflect the belt $1/64''$ for each inch of span length. For example, the deflection of a 100 inch span would be $100/64$ or $1-9/16$ inches. Compare this measured force to the accompanying chart. If the force is between "normal" and $1-1/2$ times "normal", the drive tension would be satisfactory. A force below the "normal" value indicates an under-tensioned drive. If the force is more than $1-1/2$ times "normal", the drive is tighter than it needs to be

Model No.	Deflection	Normal	New Belt
800-1000/15	$3/8''$	18.0 lbs.	27.0 lbs.
800-1000/10	$3/8''$	17.6 lbs.	26.4 lbs.

(See Fig. 7, page 25)

- To adjust belts, loosen the jam nuts (both top and bottom) and the lower lock nut on the reducer torque arm
- Turn the upper lock nut until proper tension is achieved
- Re-tighten lower lock nut and both jam nuts
- Replace all guards

NOTE:

Purchase of Dodge V-belt tester, Model #109082 is recommended.

CHAIN SAG

Chain drives have fixed centers and are not equipped with either take-ups or adjusting features. (Chain sag is permissible within the limits shown on fig. 6, page 24).

Chain sag distances may be measured by placing a straight edge across the two sprockets being checked.

- Lock power off.
- Remove access guard
- Check chain sag according to figure 5, page 23
- Loosen two bolts on idler sprocket, and slide toward the chain only enough to take up sag
- Replace chain if stretched beyond the limits shown in figure 5
- Retighten bolts on take-ups
- Replace all guards

TORQUE LIMITER

Torque limiters are used to drive the crusher mechanism and the input belt conveyor and act as a safety device to protect against inadvertent overloads. They are factory preset and should not require field adjustments.

To ensure proper operation, the friction discs must be kept clean and free of oil and moisture.

Before presuming torque limiter requires adjustment, check for paper buildup and other conditions, such as bearing failures and proper belt alignment.

Should adjustment be required, the following procedure is recommended

- Tighten hex nut to a "finger tight" position (see fig. 6, page 24)
- An additional half turn will closely approximate the factory setting
- An additional 1-2/3 turns will result in the maximum torque setting
- Should sprocket replacement be necessary, sprocket should be ground flat and parallel with a surface finish of 65 to 125 micro-inches
- With new sprocket installed, provide a five minute run-in period at minimum torque before final adjustment

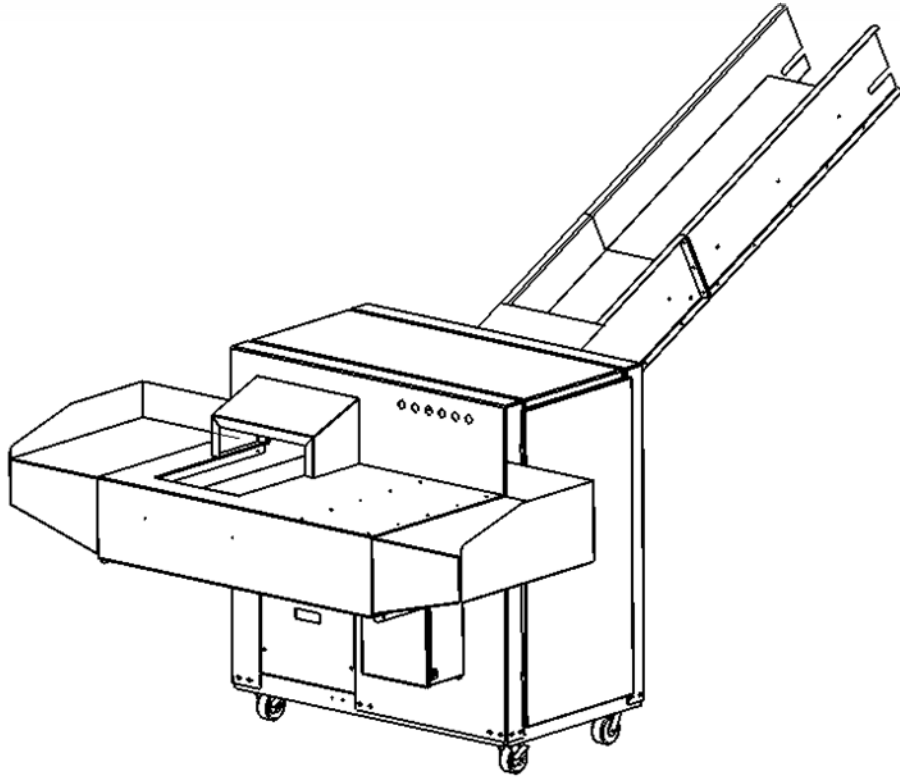


Figure 1

SHREDDER OPERATION

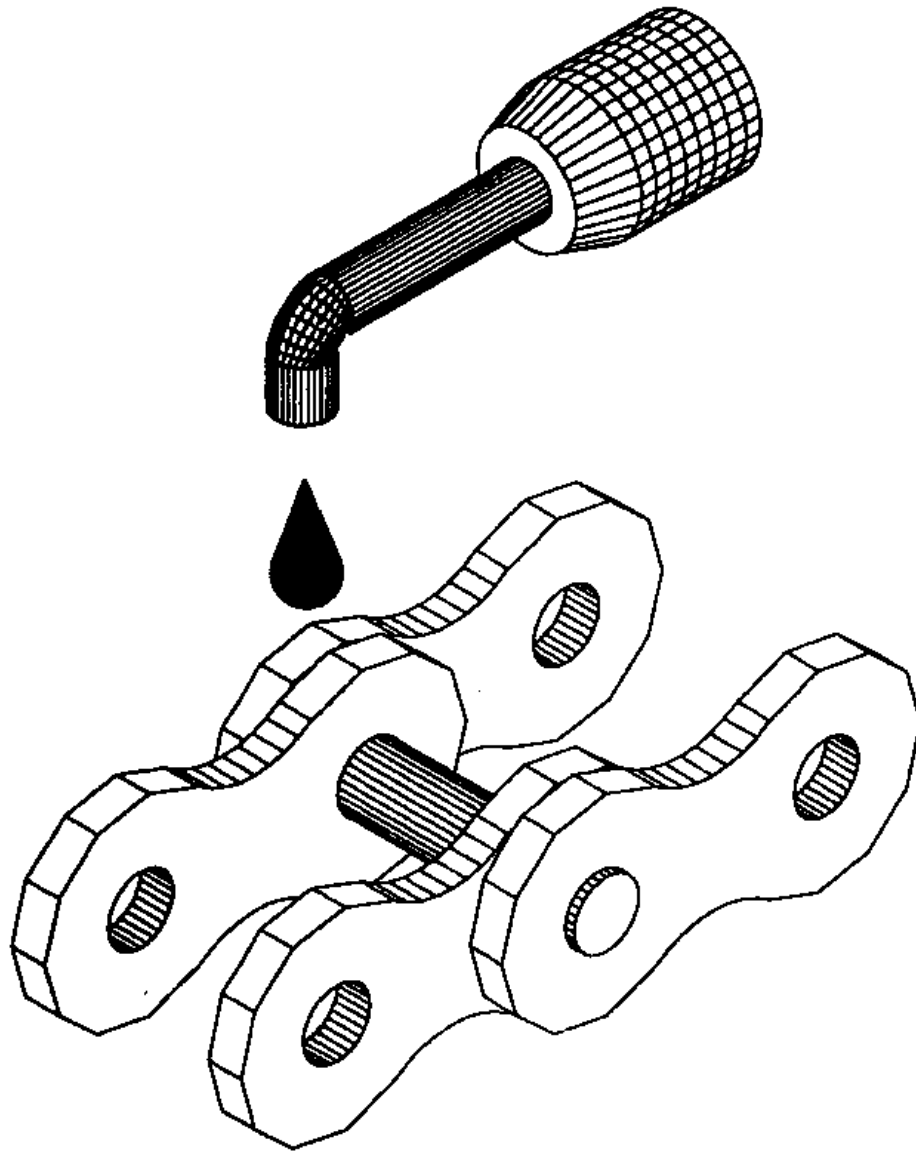


Figure 2

CHAIN LUBRICATION

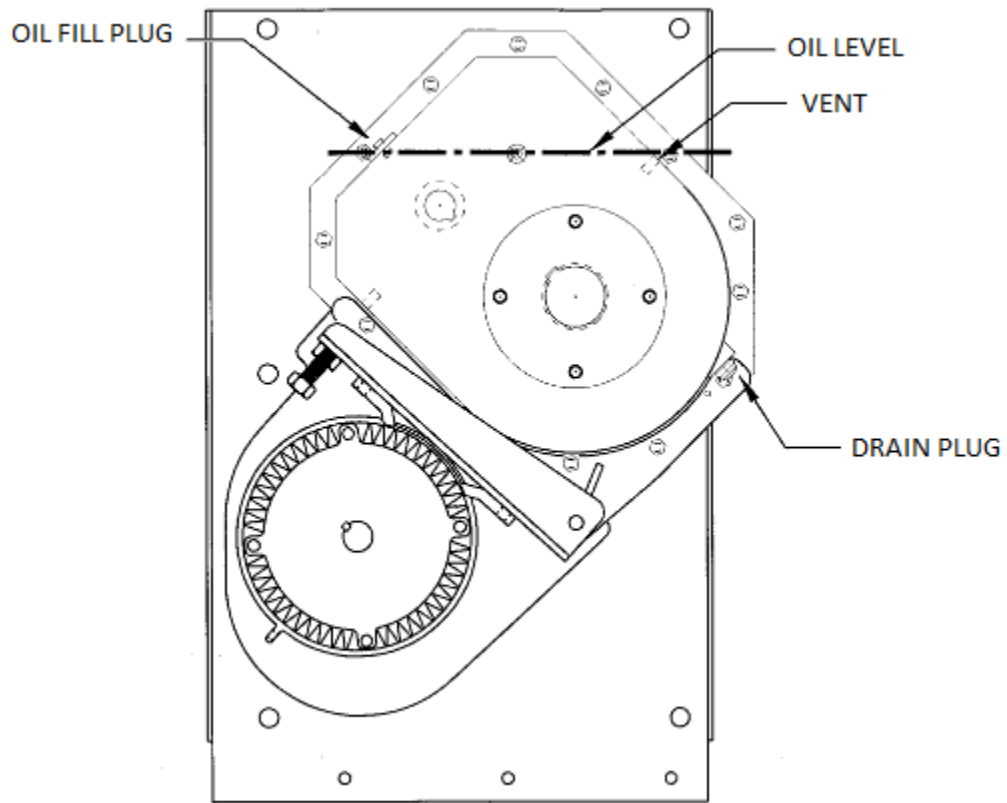


Figure 3

REDUCER LUBRICATION PN: TA5215H40

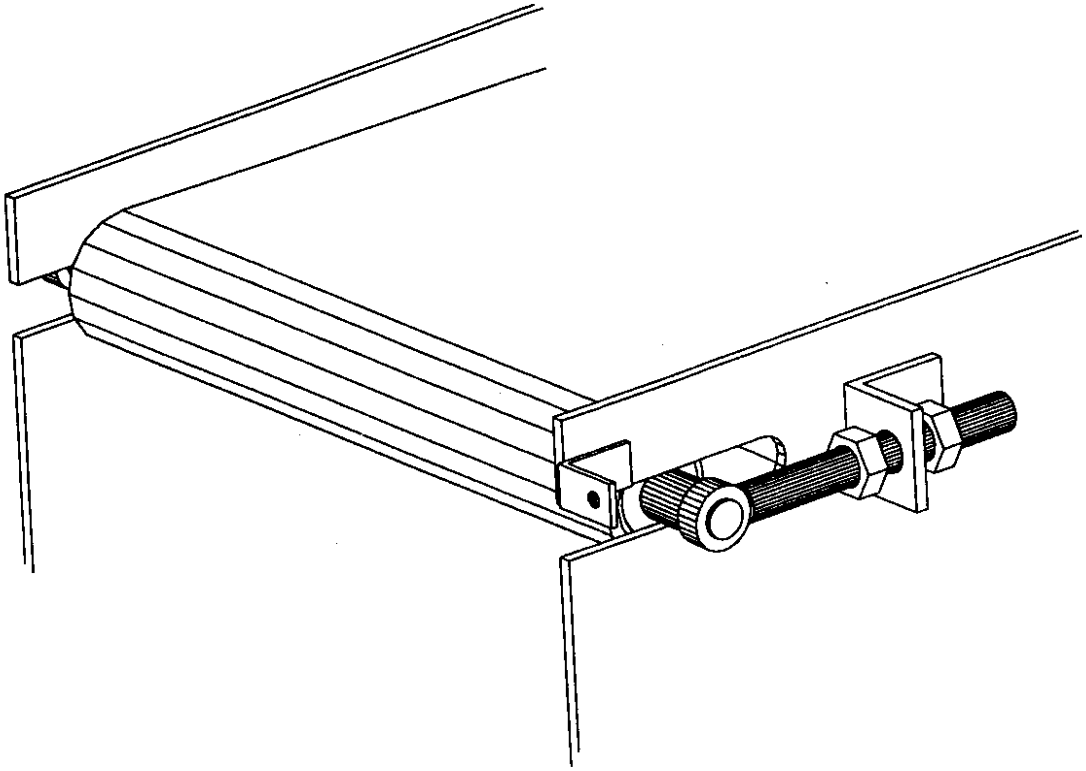


Figure 4

CONVEYOR BELT TAKE UP

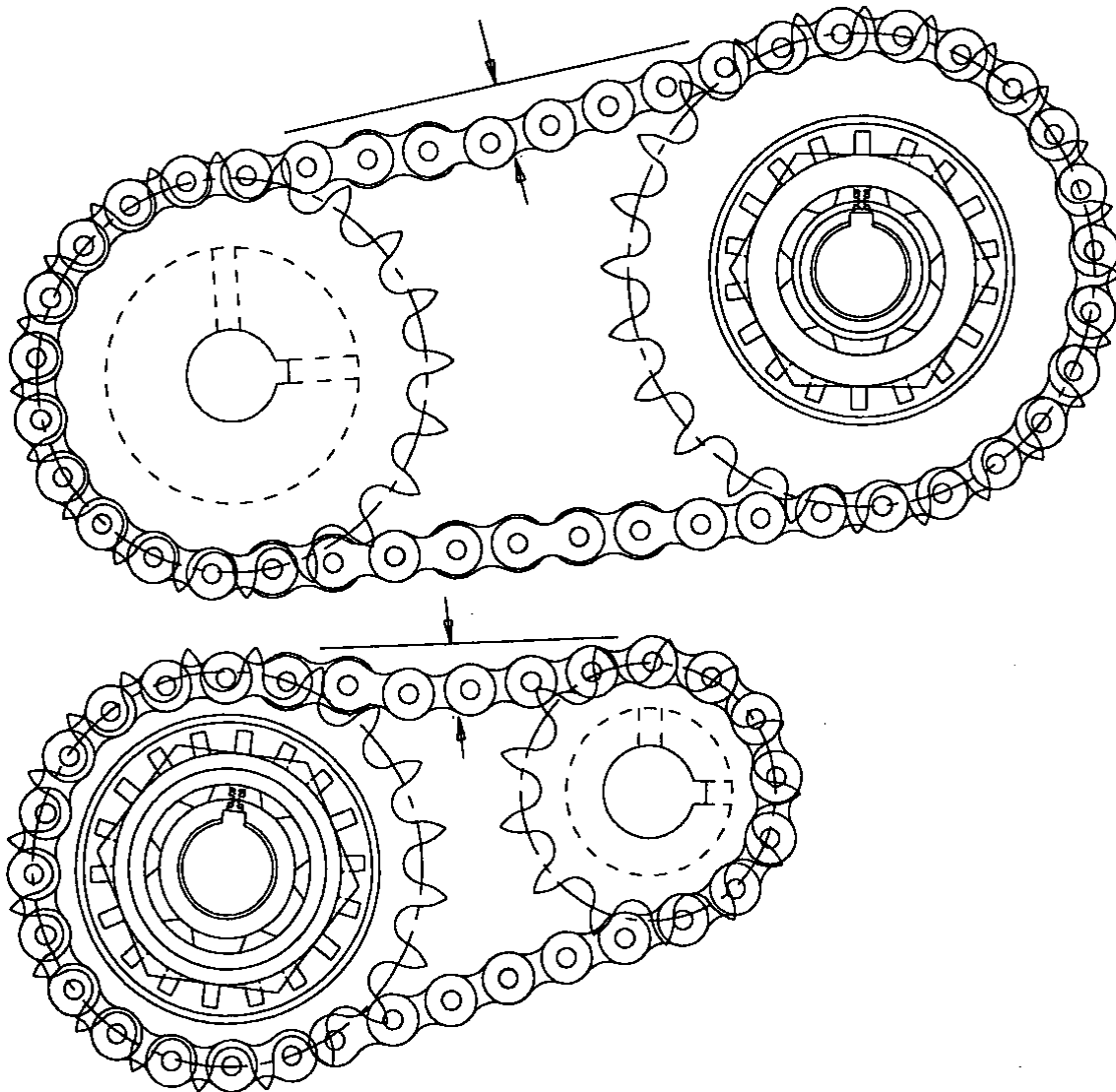


Figure 5

CHAIN SAG

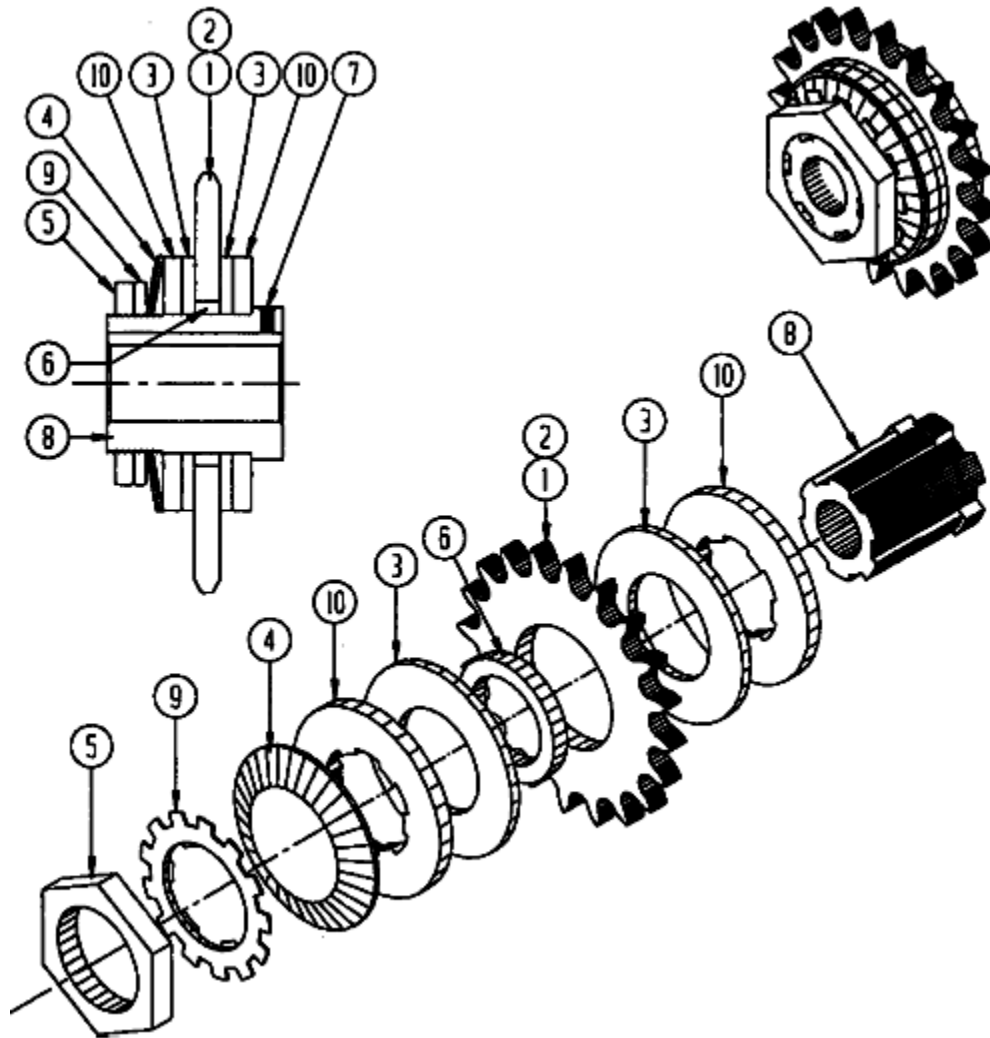


Figure 6

TORQUE LIMITER CLUTCH

Key	Req'd	Part No.	Description
1	1	103468	Sprocket – Input Conveyor 20 Teeth
2	1	103469	Sprocket – Crusher Shaft 24 Teeth
3	2	103515	Fiber Disc
4	1	103517	Spring Washer
5	1	GL 303642	Adjusting Nut
6	1	103514	Bushing
7	1	101307	Set Screw
8	1	GL 325112	Steel Hub
9	1	GL 100812	Lock Washer
10	2	GL 303445	Pressure Plate
11	--	103508	Complete Torque Limiter – Less Sprocket

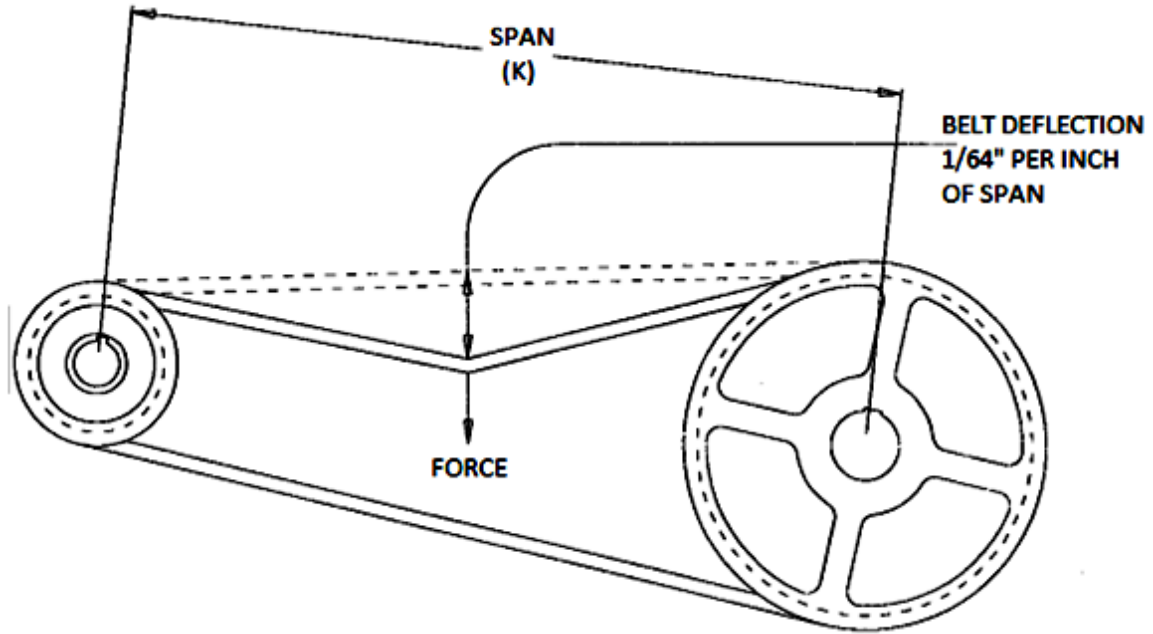


Figure 7

DRIVE BELT ADJUSTMENT

Troubleshooting

“WARNING”

LOCK OUT POWER before performing any cleaning, oiling, maintenance, or trouble shooting.

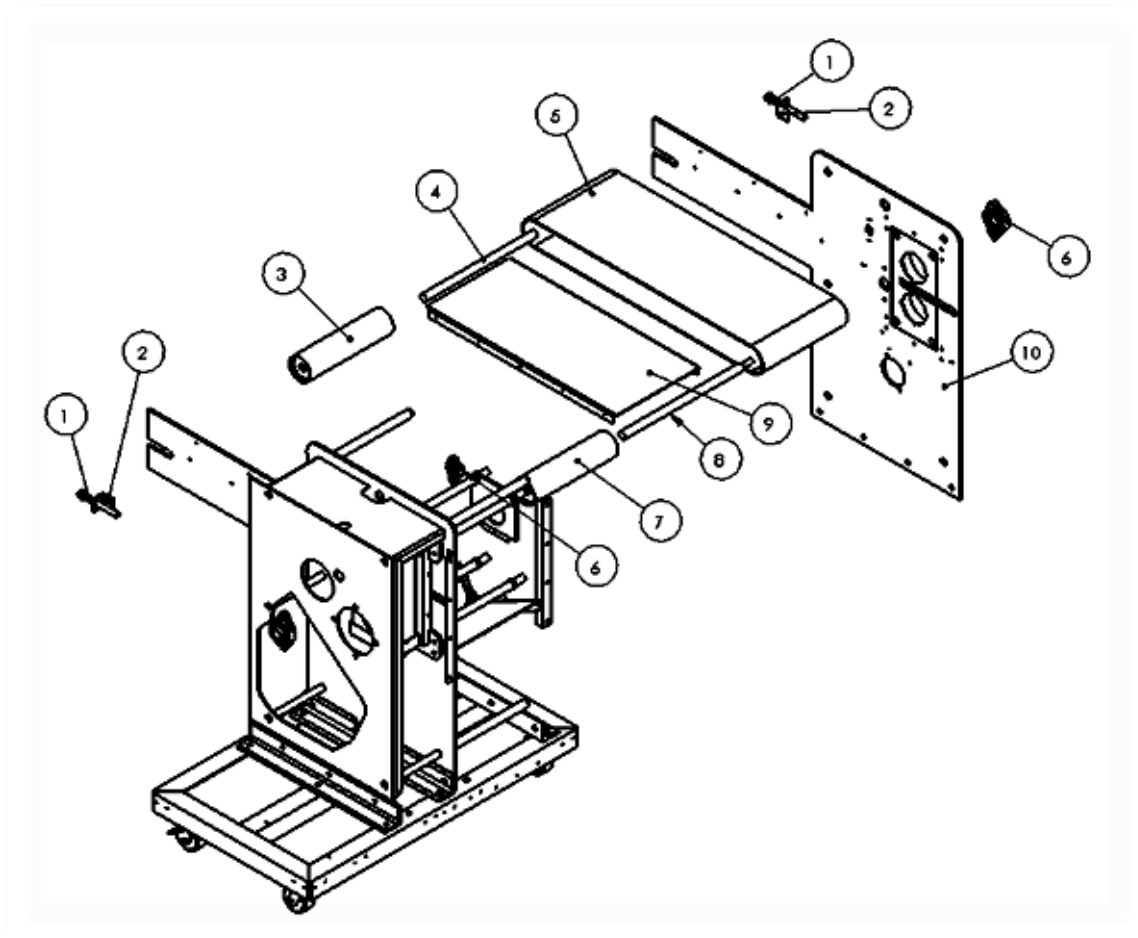
PROBLEM	POSSIBLE CAUSE	SOLUTION
MACHINE WILL NOT SHUT DOWN USING STOP BUTTONS	DEFECTIVE STOP BUTTON	CHECK CONTINUITY (NC) REPLACE IF BAD
	CONTACTS BURNED TOGETHER IN REVERSING CONTACTOR	CHECK EACH LEG OF FORWARD SIDE OF CONTACTOR FOR CONTINUITY. THERE SHOULD BE NO CONTINUITY. IF THERE US, CONSULT FACTORY FOR REPLACEMENT PART.
MACHINE WILL NOT RUN IN FORWARD OR REVERSE	IF POWER LIGHT IS ILLUMINATED, PROCEED TO NO. 7	
	1) NO POWER	CHECK POWER SUPPLY
	2) KEY SWITCH OFF	TURN ON
	3) FUSE BLOWN	REMOVE EACH FUSE AND CHECK FOR CONTINUITY. IF BAD, REPLACE
	4)OVERLOAD TRIPPED IN PANEL	RESET
	5) CONTROL TRANSFORMER FUSE BLOWN	REMOVE EACH FUSE AND CHECK FOR CONTINUITY. IF BAD, REPLACE
	6) STOP BUTTON STUCK "IN"	CHECK BUTTONS
	7) LOOSE WIRE IN PANEL	CHECK TERMINAL STRIP FOR DISCONNECTED OR LOOSE WIRES. RE-CONNECT TIGHTEN TO PROPER LOCATION ON STRIP
8) DEFECTIVE CONTACT BLOCK ON STOP BUTTON	CHECK BLOCK FOR CONTINUITY. IF BAD, REPLACE	
MOTOR HUMS OR BUZZES, BUT WILL NOT TURN IN EITHER FORWARD OR REVERSE	ONE LEG OF THE 3-PHASE POWER IS DEAD ("SINGLE PHASING")	REMOVE EACH FUSE AND CHECK FOR CONTINUITY IN THE POWER SUPPLY DISCONNECT
	CONTACTS BURNED IN CONTACTOR AND NOT MAKING A CONNECTION ON ONE LEG	CONSULT FACTORY FOR REPLACEMENT CONTACTOR
	DEFECTIVE MOTOR	CONSULT FACTORY FOR REPLACEMENT MOTOR

Troubleshooting (continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
OVERLOAD TRIPPING	LOW VOLTAGE	CHECK VOLTAGE
	CURRENT RELAY IS SET TOO HIGH	CONSULT FACTORY
	MOTOR OVERHEATING	CHECK MOTOR COOLING FAN FOR OBJECT OBSTRUCTING AIR FLOW
OVERLOAD TRIPPING (CONTINUED)	DIRTY OR UNLUBRICATED CUTTER HEAD	CLEAN AND LUBE
	DEFECTIVE MOTOR	CONDUCT AMPERAGE TEST. CONSULT FACTORY FOR REPLACEMENT MOTOR
MACHINE WILL NOT RUN IN FORWARD BUT WILL RUN IN REVERSE	DEFECTIVE FORWARD BUTTON	CHECK CONTACT BLOCK FOR CONTINUITY. IF BAD, REPLACE
	DISCONNECTED WIRE ON FORWARD BUTTON	CHECK AND RE-CONNECT
	DISCONNECTED WIRE ON CURRENT RELAY	CHECK AND RE-CONNECT
	CURRENT RELAY STUCK OPEN	CLEAN RELAY. FREE CENTER SPOOL. CHECK CONTINUITY. IF BAD, CONSULT FACTORY FOR REPLACEMENT RELAY.
MACHINE WILL NOT RUN IN REVERSE BUT WILL RUN IN FORWARD	DEFECTIVE REVERSE BUTTON	CHECK FOR CONTINUITY. IF BAD, REPLACE
	DISCONNECT WIRE ON REVERSE BUTTON	CHECK AND RE-CONNECT
	DEFECTIVE COIL IN REVERSE SIDE OF CONTACTOR	CONSULT FACTORY FOR REPLACEMENT COIL

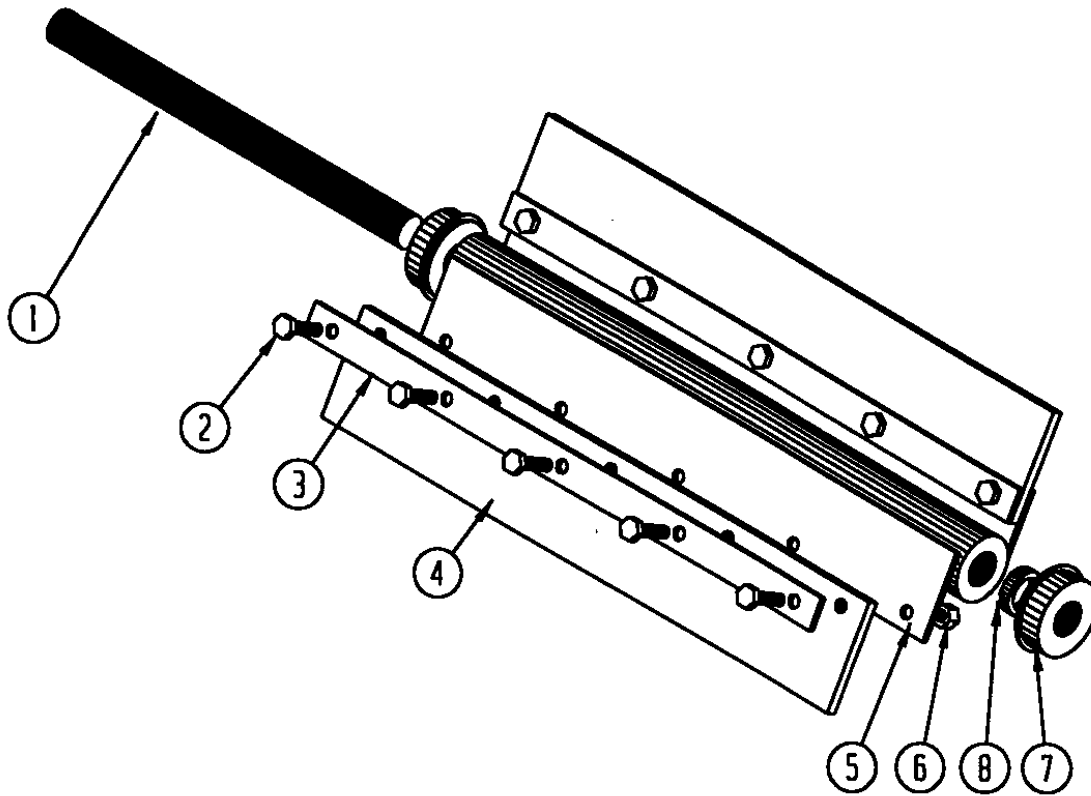
Troubleshooting (continued)

PROBLEM	POSSIBLE CAUSE	SOLUTION
SHREDDING CAPACITY IS LOW	UNLUBRICATED CUTTER HEAD	CLEAN AND OIL CUTTER HEAD
	LOW VOLTAGE	CHECK VOLTAGE AT POWER SUPPLY
	CURRENT RELAY IS SET TOO LOW	CONSULT FACTORY BEFORE MAKING ANY ADJUSTMENTS
MOTOR RUNS, BUT CUTTERS ARE NOT TURNING	DRIVE BELTS LOOSE	TIGHTEN DRIVE BELTS
	DRIVE BELTS COME OFF	CHECK PULLEY ALIGNMENT
	BROKEN DRIVE BELTS	INSTALL NEW BELTS AND RETIGHTEN. CONSULT FACTORY FOR REPLACEMENT PARTS
INPUT BELT NOT TURNING	INPUT BELT LOOSE	TIGHTEN INPUT BELT
	BROKEN INPUT DRIVE CHAIN	CHECK INPUT CONVEYOR FOR ALIGNMENT, BEARING FAILURE, PAPER BUILD-UP AND SPROCKET ALIGNMENT
	TORQUE LIMITER SLIPPING	SEE TORQUE LIMITER SECTION



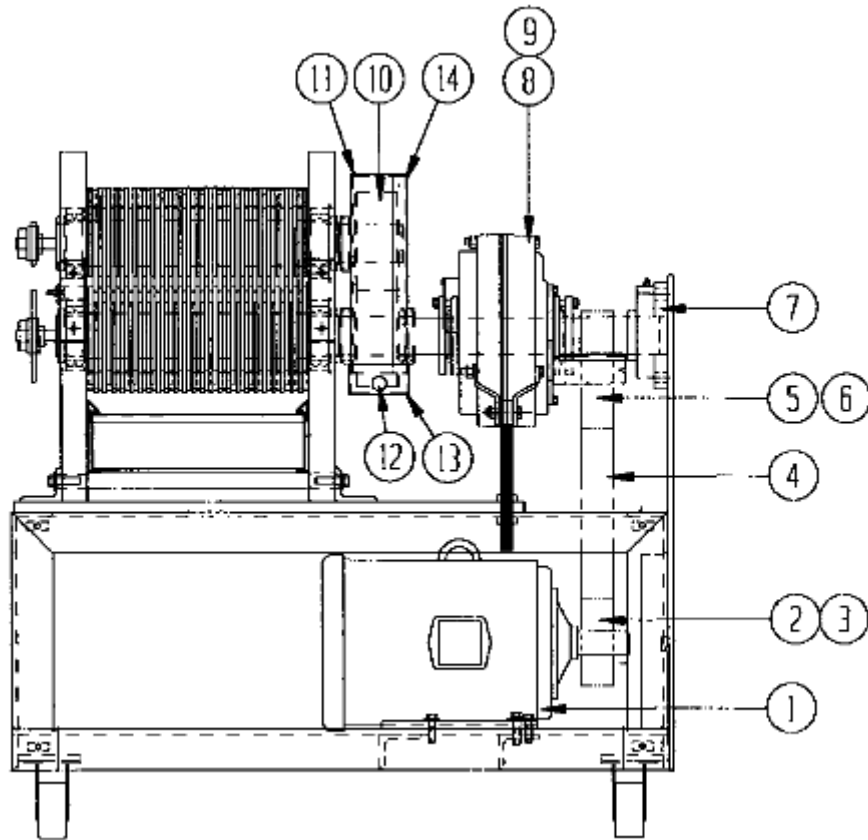
INPUT CONVEYOR

Key	Req'd	Part No.	Description
1	2	33527	Take up rod
2	2	10049	Take up angle
3	1	111882	Tail pulley
4	1		Tail pulley shaft
5	1		In feed belt
6	2	124170	Flange bearing
7	1	111883	Drive pulley
8	1	15885-57	In feed drive shaft
9	1	18641-53	In feed bed
10	1	15885-11	Side plate



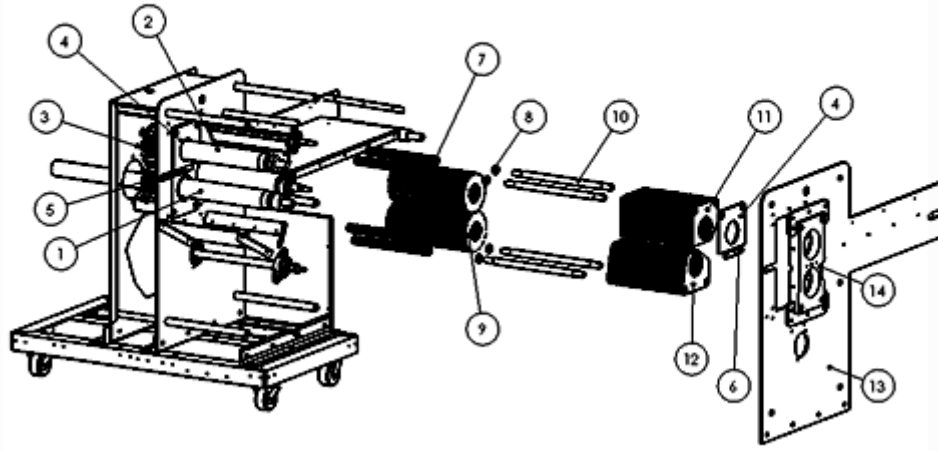
CRUSHER ASSEMBLY

Key	Req'd	Part No.	Description
1	1	15001	Crusher Shaft
2	15	101014	HHCS – 1/4"-20 x 1" L Grade 5
3	3	10039	Retainer
4	3	10038	Paddle
5	1	15003	Paddle Weldment
6	15	101225	Nut – NYLOC – HEX 1/4"-20
7	2	102002	Bearing
8	2	15601	Spacer



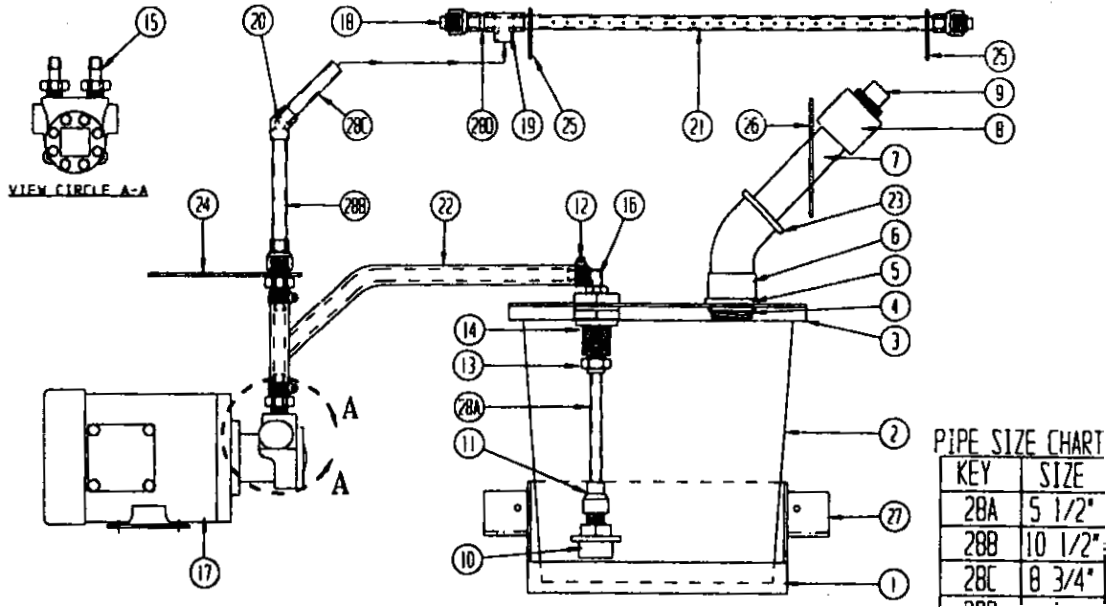
DRIVE ASSEMBLY

Key	Req'd	Part No.	Description
1	1	104185	MOTOR 15 HP (800-1000/10) MOTOR 10 HP (800-1000/15)
2	1	110689	SHEAVE 6.3 OD
3	1	103152	BUSHING 1 5/8"
4	1	110687	BELT
5	1	110690	SHEAVE 8.5 OD
6	1	110686	BUSHING SF 1 5/16"
7	1	110685	OUTBOARD BEARING
8	1	110693	REDUCER
9	1	110692	REDUCER BUSHING
10	2	110016	SPUR GEAR
11	1	30428	BACK OIL COVER
12	1	109057	SIGHT GAUGE
13	1	30462	OIL PAN BOTTOM
14	1	30425	FRONT OIL COVER



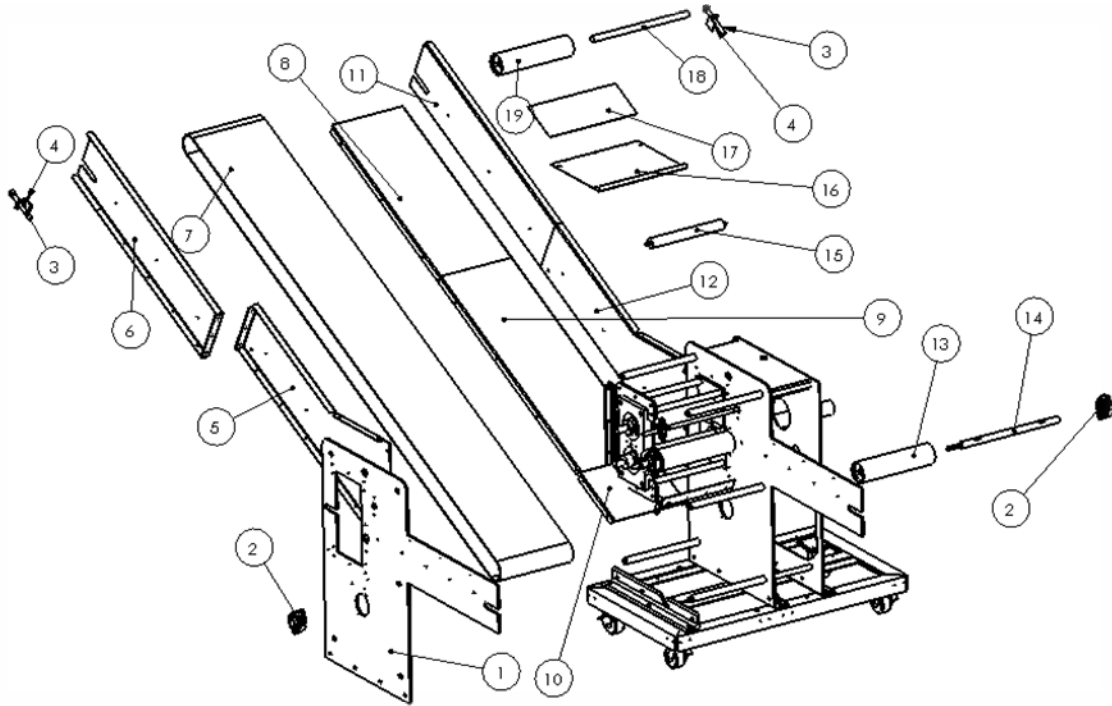
CUTTER ASSEMBLY

Key	Req'd	Part No.	Description
1	1	32130-10	LOWER SHAFT
2	1		UPPER SHAFT
3	2	110016	SPUR GEARS
4	2	22443-30	WELD ON COMBER
5	1	32166	WEAR PLATE FIXED
6	1	32165	WEAR PLATE ADJUSTABLE
7	94	30558	SPACER
8	4	30559	OUTSIDE SPACER
9	49	30492	5/16" CUTTER
10	4	30490	TIE BARS
11	24	18641-52	TOP COMBER
12	23	18641-51	BOTTOM COMBER
13	1	15885-11	SIDE PLATE
14	1	33577	BEARING BLOCK WELDMENT
15	1		CUTTER KEY UPPER
16	1		CUTTER KEY LOWER
17	2	30556	SPUR GEAR KEY



OPTIONAL AUTO LUBE

Key	Req'd	Part No.	Description
1	1	15295	LUBE SHELF
2	1	105045	PAIL
3	1	105046	PAIL LID
4	1	104878	CONDUIT NUT 1-1/2"
5	1	110989	SEAL 1-1/2"
6	1	105050	1-1/2" PVC MALE ADAPTER
7	1	16708	1-1/2" CPVC SCH 40 PIPE (5" LONG)
8	1	105052	1-1/2" PVC FEMALE ADAPTER
9	1	110099	PVC 1-1/2" NPT PIPE PLUG
10	1	105042	SUCTION SCREEN
11	1	105022	CPVC 1/2" FEMALE ADAPTER
12	4	111109	HOSE CLAMP (SIZE 5/8" O.D.)
13	1	105047	1/2" CPVC TO 1/2" NPT (MALE)
14	1	105041	BULK HEAD FITTING
15	2	105040	BARBED FITTING 1/2" I.D. TUBING TO 1/2"
16	2	105055	BARBED FITTING 1/2" I.D. X 1/2" NPT 90°
17	1	105038	LUBE PUMP – 1/4 HP – 48 FR
18	2	105026	1/2" CPVC PIPE PLUG
19	1	105025	1/2" CPVC TEE
20	1	111108	1/2" CPVC 45° STREET ELBOW
21	1	16706	SPRAYER PIPE (1/32 HOLES)
22	3' FT	105039	HOSE – BRAID
23	1	105051	PVC 1-1/2" X 45° STREET ELBOW
24	1	32820	HOSE MOUNTING PLATE
25	2	32821	TOP HOSE MOUNTING PLATE
26	1	32822	PLATE
27	2	32823	BRACKET



OPTIONAL OUTPUT CONVEYOR

Key	Part No.	Description
1	15885-11	SIDE PLATE
2	124276	FLANGE BEARING
3	33527	TAKE UP ROD
4	10049	TAKE UP ANGLE
5	22924-51	ATTACHED OUTPUT CONVEYOR SIDE FRAME UPPER
6	22924-50	ATTACHED OUTPUT CONVEYOR SIDE FRAME LOWER
7		OUTPUT BELT
8	22924-52	ATTACHED OUTPUT CONVEYOR BED UPPER
9	22924-53	ATTACHED OUTPUT CONVEYOR BED LOWER
10	20242-74	ATTACHED OUTPUT CONVEYOR BED UNDER CUTTERS
11	22924-50	ATTACHED OUTPUT CONVEYOR SIDE FRAME LOWER
12	22924-51	ATTACHED OUTPUT CONVEYOR SIDE FRAME UPPER
13	111883	ATTACHED OUTPUT CONVEYOR DRIVE PULLEY
14	20242-56	ATTACHED OUTPUT CONVEYOR PULLEY SHAFT
15	111235-16	ATTACHED OUTPUT CONVEYOR RETURN ROLLER
16	20242-75	ATTACHED OUTPUT CONVEYOR GUARD
17	20242-60	ATTACHED OUTPUT CONVEYOR GUARD
18	111882	TAIL PULLEY