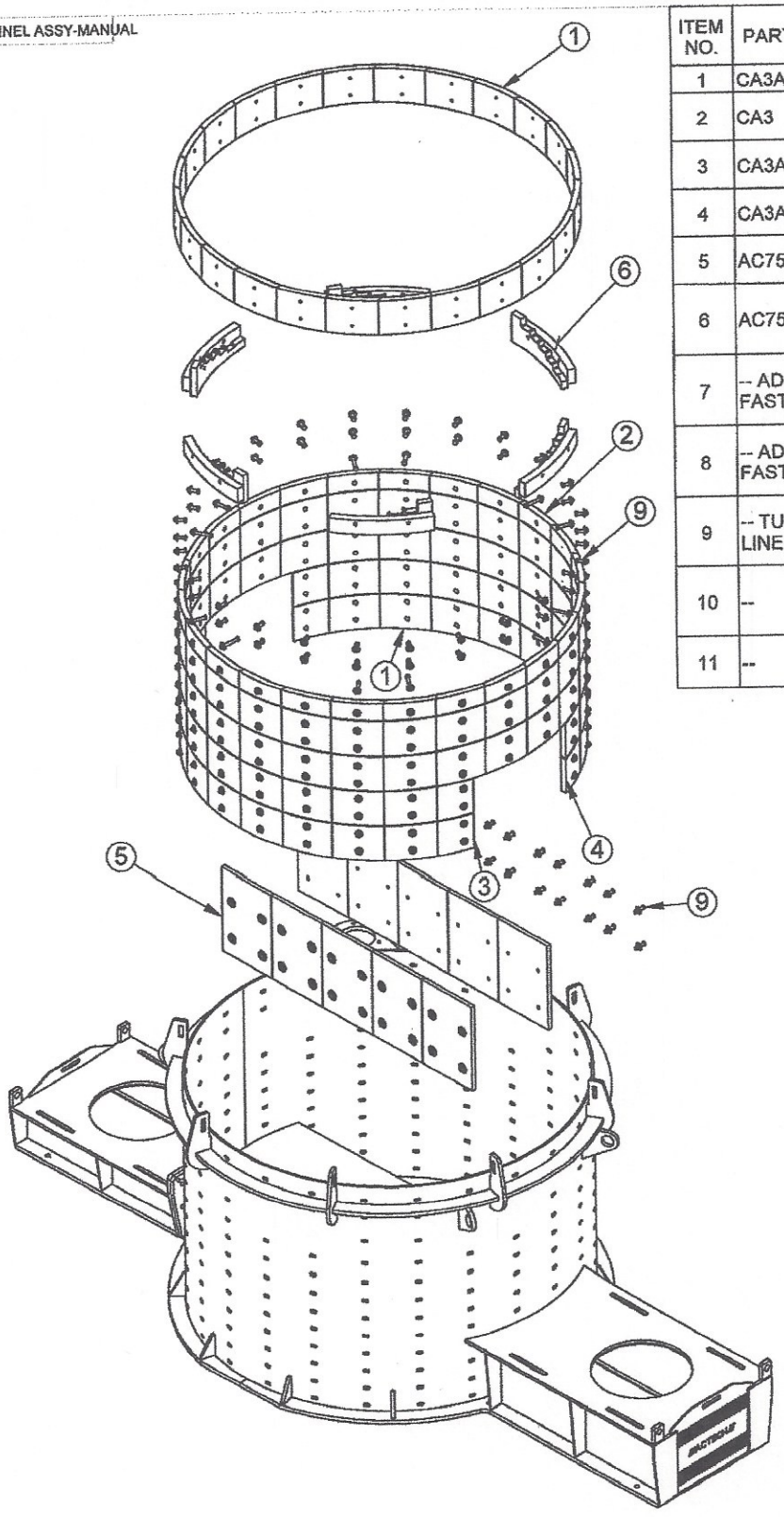
ACTECH V 750 - HEARTLAND

ACTECH

UB-TUNNEL ASSY-MANUAL



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CA3A	TUB LINER	104
2	CA3	TUB LINER (SMALL)	24
3	CA3ASL	TUB LINER (SHORT)	4
4	CA3ASR	TUB LINER (SHORT)	4
5	AC750TNL	TUNNEL LINER	10
6	AC750V-02-08	RING ADJUSTMENT BLOCK	6
7	-- ADJ BLOCK FASTENER	5/8-18 NF 3 1/2" L CAPSCREW G5	6
8	-- ADJ BLOCK FASTENER	5/8-18 NF 5" L CAPSCREW G5	6
9	-- TUB/TUNNEL LINER FASTER	5/8-18 NF 2 1/2" L CAPSCREW G5	288
10	--	5/8-18 NF CRIMPT LOCK NUT (STOVER)	300
11	--	5/8 USS HARD FLAT WASHER	300

ACTECH
ADVANCED CRUSHER TECHNOLOGIES, INC
10517 NE 50th AVE
VANCOUVER, WASHINGTON 98686 USA

PROJECT
TITLE 2
DETAIL

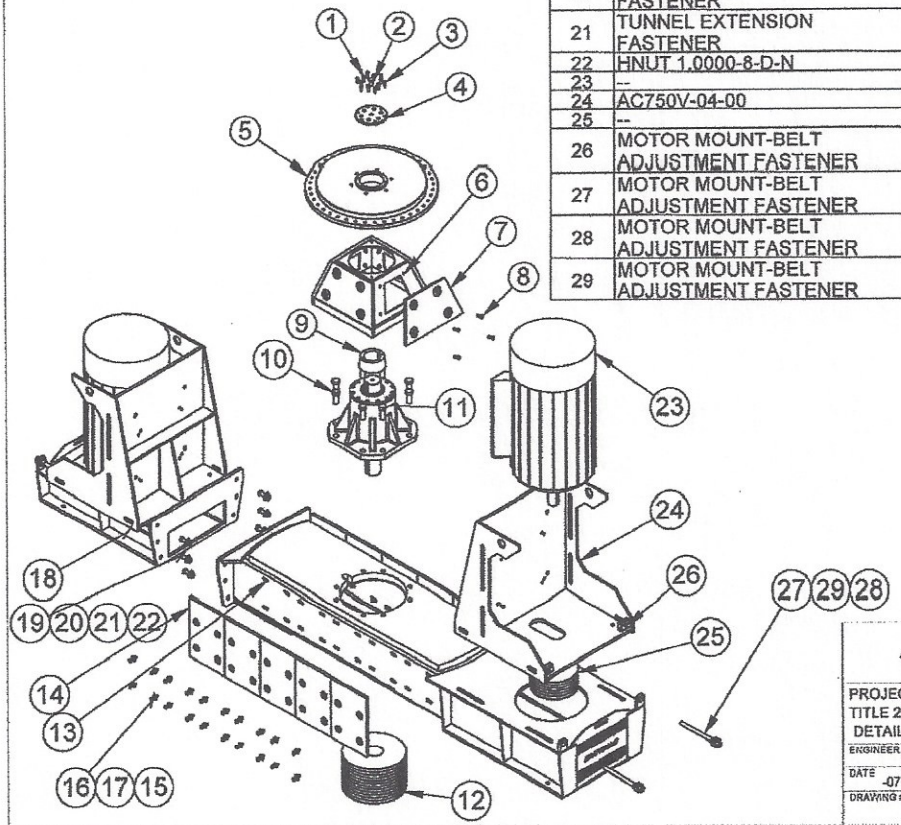
ENGINEER GABRIEL GRASSER
DATE 8-2-07 | SCALE 1:35 | DRAWN BY: GAG
DRAWING # TUB-TUNNEL ASSY-MANUAL | REV. 0

LOCATION: G:\ENGINEERING\SOLID WORKS\AC750V Crusher\AC750V-00 VSI ASSEMBLY\ TUB-TUNNEL ASSY-MANUAL

DATE PRINTED: Saturday, August 04, 2007

ASE FRAME ASSY-MANUAL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	TAPER BUSHING-FLY WHEEL CAP FASTENER	3/4-10 NC 1 1/2" L SOCKET HEAD CAPSCREW G5	6
2	PEDISTAL SHAFT-FLY WHEEL CAP FASTENER	1-8 NC 2" L CAPSCREW G5	1
3	FLY WHEEL-FLY WHEEL CAP FASTENER	5/8-11 NC 1 1/2" L SOCKET HEAD CAPSCREW G5	6
4	V750P-11	FLY WHEEL CAP	1
5	V750P-10	FLY WHEEL	1
6	AC750V-09-00	PEDISTAL SHROUD	1
7	9003	SHROUD LINER	4
8	SHROUD LINER FASTENER	5/8-11 NC 2" L CAPSCREW G5	16
9	V750P-06	FLY WHEEL TAPER BUSHING	1
10	PEDISTAL-TUNNEL FASTENER	1 1/2-6 NC 4" L CAPSCREW G5	8
11	V750P	750 PEDISTAL	1
12	--	PEDISTAL SHEAVE	1
13	AC750V-03-01	DRIVE TUNNEL	1
14	AC750TNL	TUNNEL LINER	10
15	TUNNEL LINER FASTENER	5/8-18 CRIMPED LOCK NUT (STOVER)	40
16	TUNNEL LINER FASTENER	5/8-18 NF 1 2 1/2" L CAPSCREW G5	40
17	TUNNEL LINER FASTENER	5/8 USS HARD FLAT WASHER	40
18	AC750V-03-03	DRIVE TUNNEL EXTENSION	1
19	TUNNEL EXTENSION FASTENER	1-8 NC 3 1/4" L CAPSCREW G5	6
20	TUNNEL EXTENSION FASTENER	1" USS HARD FLAT WASHER	12
21	TUNNEL EXTENSION FASTENER	1" SPLIT LOCK WASHER	6
22	HNUT 1.0000-8-D-N	1-8 NC HEX NUT	6
23	--	MOTOR	2
24	AC750V-04-00	MOTOR MOUNT	4
25	--	MOTOR SHEAVE	2
26	MOTOR MOUNT-BELT ADJUSTMENT FASTENER	1 1/4-7 HEAVY SQUARE NUT	4
27	MOTOR MOUNT-BELT ADJUSTMENT FASTENER	1 1/4-7 NC 18" L ALL THREAD	4
28	MOTOR MOUNT-BELT ADJUSTMENT FASTENER	1 1/4-7 NC HEX NUT	8
29	MOTOR MOUNT-BELT ADJUSTMENT FASTENER	1 1/4 USS HARD FLAT WASHER	8



ACTECH
ADVANCED CRUSHER TECHNOLOGIES, INC
10517 NE 60th AVE
VANCOUVER, WASHINGTON 98686 USA

PROJECT
TITLE 2
DETAIL

ENGINEER GABRIEL GRASSER

DATE	SCALE	DRAWN BY:
-07	1:50	GAG

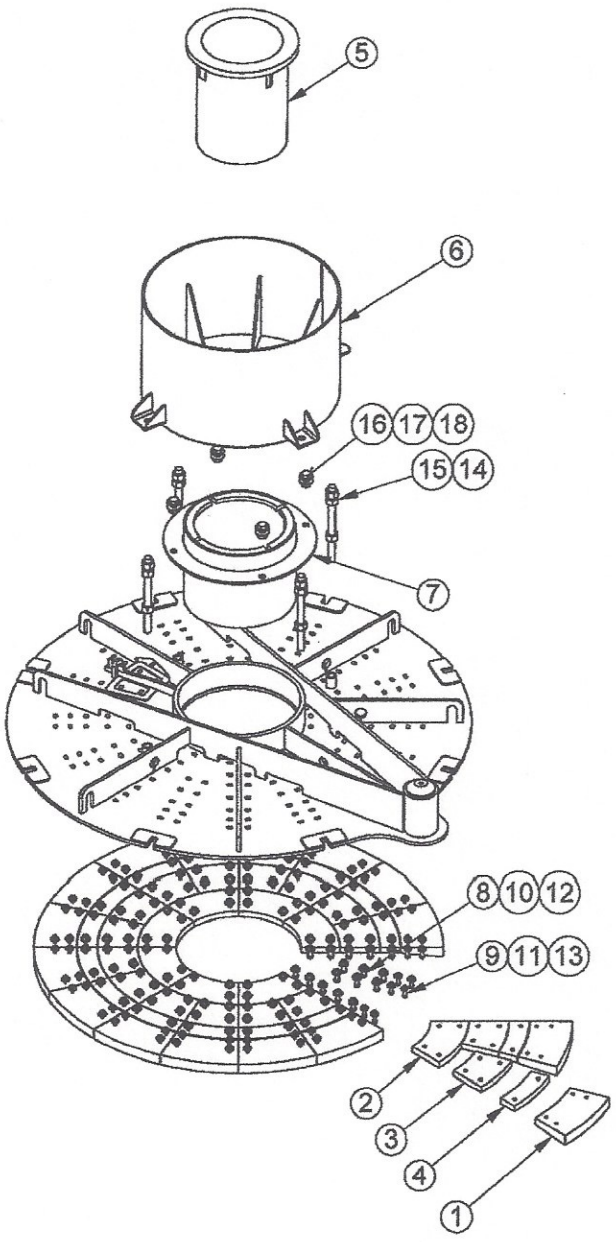
DRAWING # BASE FRAME ASSY-MANUAL REV. 0

LOCATION: G:\ENGINEERING\SOLID WORKS\AC750V Crusher\AC750V-00 VSI ASSEMBLY\ BASE FRAME ASSY-MANUAL

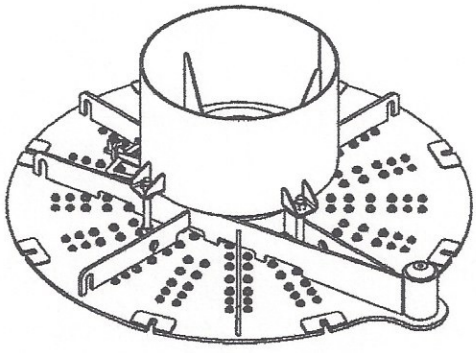
DATE PRINTED: Monday, August 13, 2007

ACTECH

ID-FEED HOPPER-MANUAL



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	CA18	LID LINER	16
2	5502	LID LINER	8
3	5503	LID LINER	16
4	5504	LID LINER	16
5	CA11	FEED TUBE	1
6	AC750V-05	FEED HOPPER	1
7	AC750V-05	HOPPER SLEEVE	1
8	-- INNER LID LINER FASTENER	3/4-16 NF 2 1/2" L CAPSCREW G5	128
9	-- OUTER LID LINER FASTENER	5/8-18 NF 2 1/2" L CAPSCREW G5	64
10	--	3/4-16 NF CRIMPED LOCK NUT (STOVER)	128
11	--	5/8-18 NF CRIMPED LOCK NUT (STOVER)	64
12	--	3/4 USS HARD FLAT WASHER	128
13	--	5/8 USS HARD FLAT WASHER	64
14	-- FEED TUBE ADJ	1 1/2-6 NC 24" L ALL THREAD	4
15	-- FEED TUBE ADJ	1 1/2-6 HEAVY HEX NUT	12
16	-- HOPPER SLEEVE FASTENER	1 1/4-7 NC 2 1/2" L CAPSCREW G5	4
17	--	1 1/4 USS FLAT WASHER	8
18	--	1 1/4-7 NC HEX NUT	4



ACTECH
ADVANCED CRUSHER TECHNOLOGIES, INC
10517 NE 50th AVE
VANCOUVER, WASHINGTON 98686 USA

PROJECT
TITLE 2
DETAIL

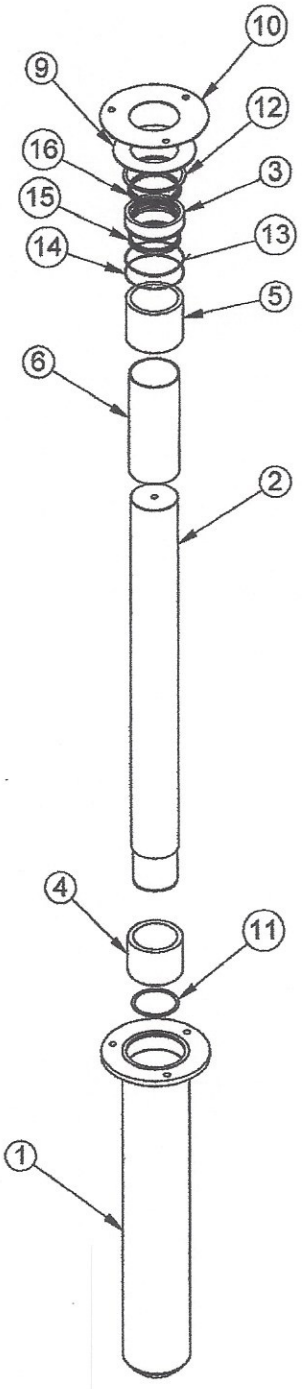
ENGINEER: GABRIEL GRASSER
DATE: -07 | SCALE: 1:35 | DRAWN BY: GAG
DRAWING #: LID-FEED HOPPER-MANUAL | REV.: 0

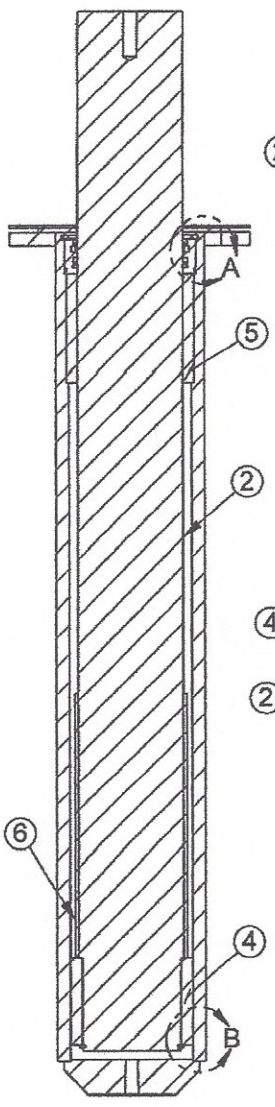
LOCATION: G:\ENGINEERING\SOLID WORKS\AC750V Crusher\AC750V-00 VSI ASSEMBLY\ LID-FEED HOPPER-MANUAL

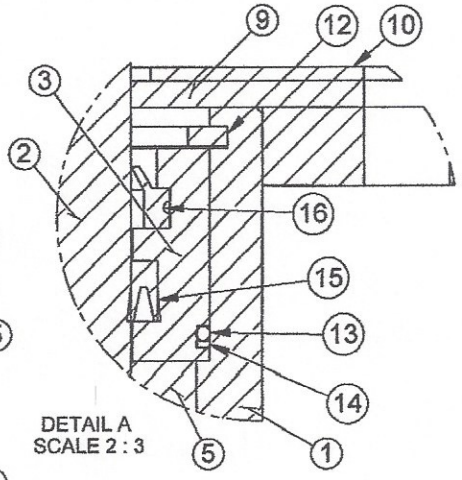
DATE PRINTED: Monday, August 06, 2007

LID LIFTER ASSY-MANUAL

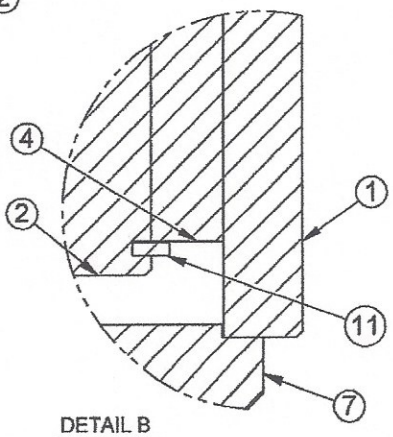
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	AC750V-10-01	CYLINDER BARREL	1
2	AC750V-10-02	CYLINDER SHAFT	1
3	AC750V-10-03	CYLINDER GLAND	1
4	AC750V-10-04	BOTTOM SHAFT BRONZE BUSHING	1
5	AC750V-10-05	TOP SHAFT BRONZE BUSHING	1
6	AC750V-10-06	CYLINDER STROKE LIMITER	1
7	AC750V-10-07	CYLINDER BUTT PLATE W/ HYD PORT	1
8	AC750V-10-08	MOUNTING RING	1
9	AC750V-10-09	LIFTER FELT SEAL	1
10	AC750V-10-10	MOUNTING RING SEAL CAP	1
11	SPIROLOX RSN-550		1
12	SPIROLOX RRT-750		1
13	O-RING 2-263		1
14	BACK RING		1
15	U CUP 25006000-562		1
16	D-06000		1







DETAIL A
SCALE 2 : 3



DETAIL B
SCALE 2 : 3

ACTECH
ADVANCED CRUSHER TECHNOLOGIES, INC
10517 NE 50th AVE
VANCOUVER, WASHINGTON 98686 USA

PROJECT
TITLE 2
DETAIL

ENGINEER GABRIEL GRASSER

DATE 8-2-07 | SCALE 1:20 | DRAWN BY: GAG

DRAWING # LID LIFTER ASSY-MANUAL | REV. 0

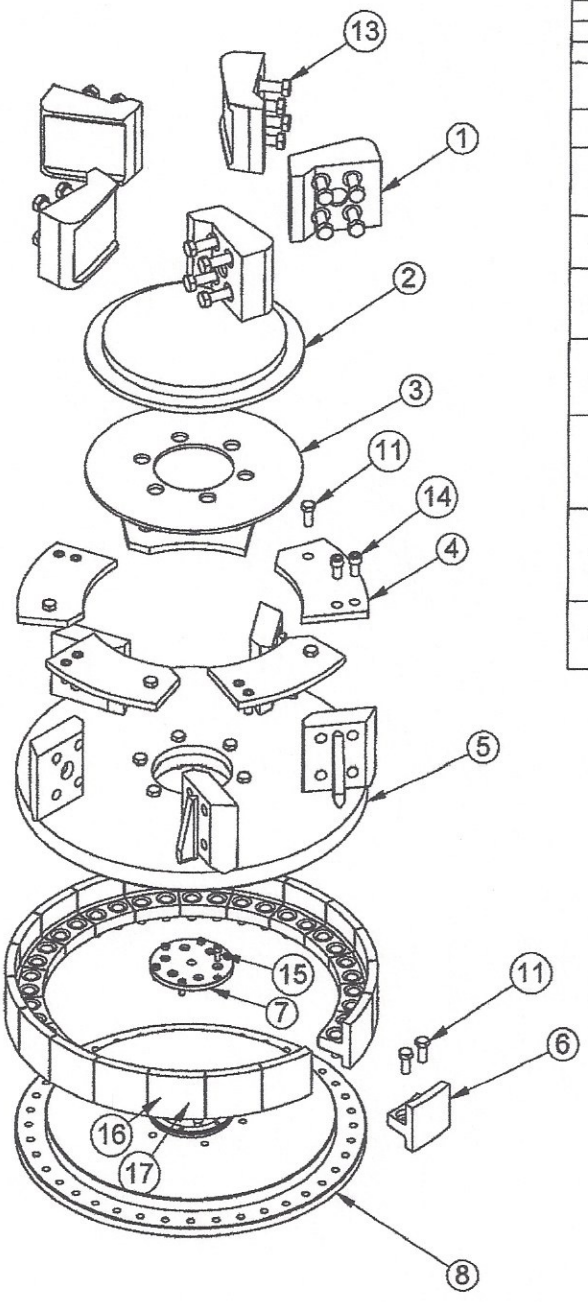
LOCATION: G:\ENGINEERING\SOLID WORKS\AC750V Crusher\AC750V-00 VSI ASSEMBLY\ LID LIFTER ASSY-MANUAL

DATE PRINTED: Monday, August 06, 2007

ACTECH

B

TABLE ASSY-MANUAL



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1012 IMPELLOR	IMPELLOR	5
2	CA7	CENTER DISK	1
3	AC750V-07-03	CENTER DISK SPACER	1
4	AC44-5TL	TABLE LINER	5
5	AC750V-07-01	44-5 TABLE	1
6	44X	EDGE LINER	20
7	V750P-11	FLY WHEEL CAP	1
8	V750P-10	44" FLY WHEEL	1
11	EDGE LINER & TABLE LINER FASTENER	1-8 NC 2 1/2" L CAPSCREW G5	45
12	TABLE-FLYWHEEL FASTENER	1-8 NC 4" L CAPSCREW G8	6
13	IMPELLOR FASTENER	1 1/4-7 NC 4 1/2" L CAPSCREW G5	20
14	TABLE LINER STUD	1-8 NC 2" L STUD W/ 1" SHOULDER G5	10
15	FLY WHEEL CAP-FLY WHEEL FASTENER	5/8-11 NC 1 1/2" L SOCKET HEAD CAPSCREW G5	6
16	FLY WHEEL CAP-PEDISTAL TAPER BUSHING FASTENER	3/4-10 1 1/2" L SOCKET HEAD CAPSCREW G5	6
17	FLY WHEEL CAP-PEDISTAL SHAFT FASTENER	1-8 NC 2" L CAPSCREW G8	1

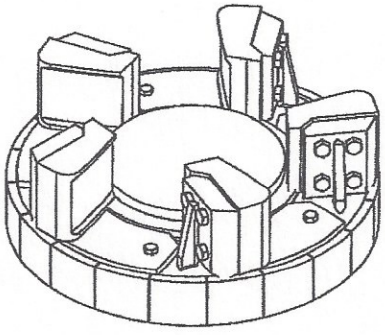
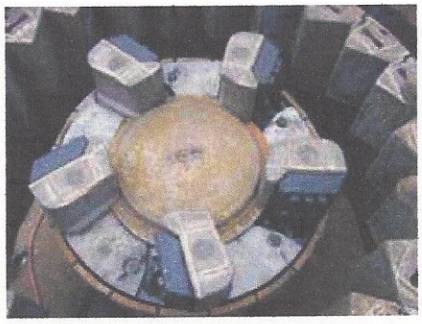
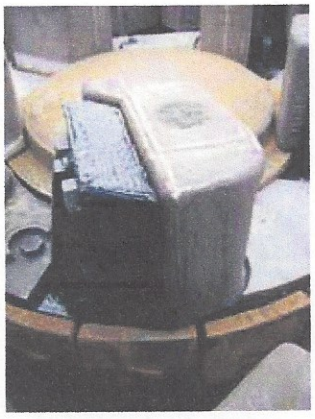


TABLE WEAR PARTS



1. The center feed disc as well as the table liners are held in place by the impellers.

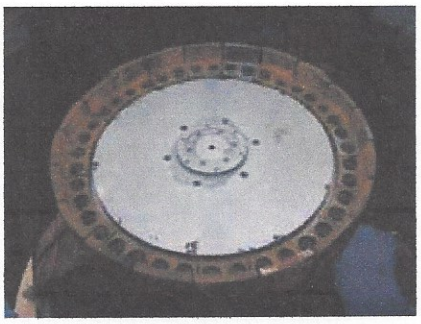


2. When installing impellers makes sure that the impeller fits flat against the impeller bracket, before installing the impleller bolts. Bolt should be able to turn in by hand. If not the impeller may have a problem.

3. Impeller bolts should be torqued to the specified amount (see impeller torque specs.). Only grade 5 bolts should be used for impeller bolts. Do not use lock washers on impeller bolts. Impeller bolts should be checked 4 hours after initial start up of operation for loosening then every 8 hours for the first 24 hours of operation and then periodically, especially in low abrasion and large feed applications.

4. All table wear parts are shipped in balanced sets each part s weighed and marked to the tenth of a pound these sets must be within 4) tenths of a pound to balance. If not you will experience excessive vibration. When changing wear parts **ALWAYS WEAR EYE PROTECTION!**
For table configurations that have an even number of impellers, such as 4 or 6 the wear parts can be balanced in pairs as long as they are replaced as opposites.

5. The table edge liners are attached to the flywheel and can only be accessed by removing the table. When replacing table edge liners make sure that the edge liners are pushed all the way out before tightening them. Use only grade 5 bolts. Use never seize sparingly on the threads and torque them to the specified amount (see torque specs). Edge liners can be replaced in pairs opposite of each other.



IMPELLER TABLE REMOVAL

1. Lock out crusher drive motors for safety.

2. Open crusher lid and swing out of the way.

3. Remove all wear parts on top of impeller table. Always wear eye protection when handling wear parts. They are made of a very hard brittle material that will chip off when hit with a hammer or banged together and can cause eye injury and penetrate your skin. When possible always use a soft mullet when banging on wear parts, if a soft mullet is not available avoid hitting the edges of wear parts with a metal hammer. Hitting them flat will reduce chances of chipping wear parts.

4. Once wear parts are removed the table hold down bolts are exposed. Remove these 6 bolts and then the table can be lifted out of the crusher.

FLY WHEEL REMOVAL

1. Once the table is removed the flywheel is exposed. You will see a small round plate in the center of the flywheel approximately 10" in dia. (the flywheel cap) this plate will have two circles of bolts in it and a center bolt.

2. Remove the center bolt and the inner circle of bolts you will see that the plate has 4 threaded hole in it in the inner bolt circle.

3. Place 4 of the removed bolts in these holes and tighten evenly until the flywheel pushes off the tapered shaft bushing.

4. The fly wheel can now be lifted by placing two eye bolts in the table hold down bolt holes and lifting out level.

TABLE MAINTENANCE: ALL TABLES

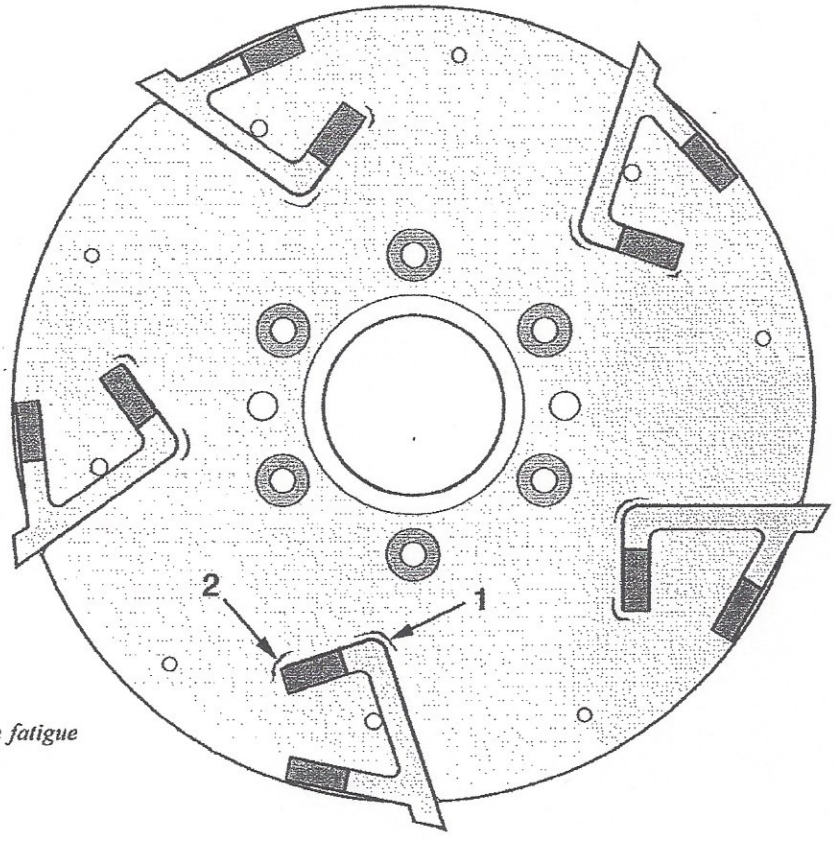
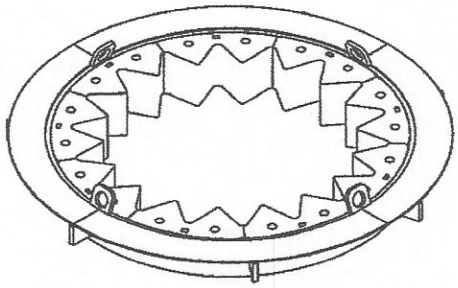


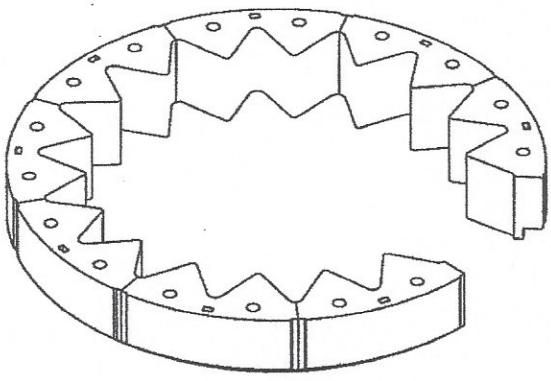
Table fatigue

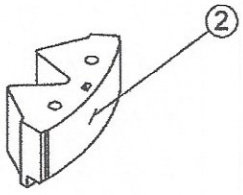
Normal maintenance requires a table inspection be made during regular casting replacement. This inspection is to detect natural table fatigue. If cracks are found, (see detail for locations 1 and 2) Actech must be contacted before further use. Cracking is generally caused by excessive speed, multiple tramp iron crashes or too large of feed for the table rpm. In most cases these can be repaired if done correctly.

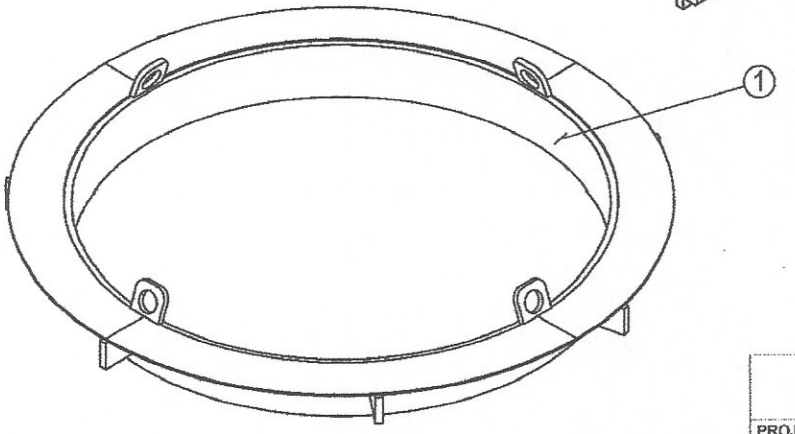
350 ANVIL RING 95VA

ITEM	QTY	DESCRIPTION	PART NUMBER
1	1	MAIN RING	AC350V-9C95VA-00
2	9	ANVILS	C-95 VA









ACTECH
ADVANCED CRUSHER TECHNOLOGIES, INC
10517 NE 50th AVE
VANCOUVER, WASHINGTON 98688 USA

PROJECT
TITLE 2
DETAIL

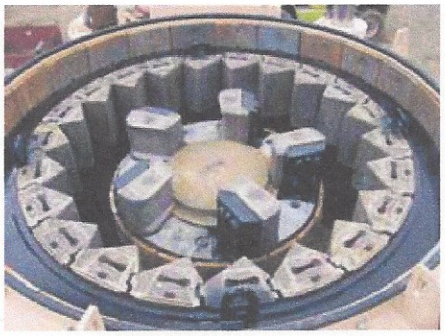
ENGINEER TRAVIS TOWLE
DATE 09-19-07 | SCALE 1:20 | DRAWN BY: TAT
DRAWING # 350 ANVIL RING 95VA | REV. 0

LOCATION: G:\DWGS FOR MANUALS\AC350V CRUSHER MANUAL\350 ANVIL RING 95VA\ 350 ANVIL RING 95VA

DATE PRINTED: Wednesday, September 19, 2007

ANIVL RING ADJUSTMENT AND ANVIL REPLACEMENT

1. The anvil ring height can be adjusted by lifting on the four lifting eyes on the ring and rotating it to a higher or lower step in the ring hanger blocks.



2. The anvil ring adjustment is determined by the wear pattern on the anvil. Ideally the wear pattern should be in the center of the anvil. However in low tonnage or small feed application the wear pattern may be thin and does not utilize the entire anvil. It is best to start with the anvil raised up and then lowering it as needed when the lower area is worn out.

3. The vaulted style anvils sit on a shelf in the bottom of the anvil ring and are held in by there tapered or pie shaped sides. When replacing the anvils a shim is driven in between several of the anvils to tighten them against each other and the outer wall of the anvil ring. They have a chain hook hole in them for handling and loading the anvils into the ring. When changing anvils remove the entire ring and turn it over on the ground, then drive out one anvil and the rest will fall out.

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
Crusher will not start	1. Power supply is not on.	A. Check in-coming power. B. Check fuses on breaker for failure
	2. No power to stop/start button	A. Check control transformer. B. Check pressure shut down for malfunction.
	3. Pressure shut down.	A. Check to see if the pump is operating. If so... B. Check for proper pressure. Minimum 5 psi. C. Check oil filter and change if needed. (Every 200 hours.) D. Make sure oil level is to the proper level in tank. E. Check shut down for proper setting and operation. Setting: 4 to 5 psi
	4. Motor is burnt out.	A. Replace motor/motors
	5. Crusher table will not turn.	A. Check feed tube for obstruction and remove. B. Open lid to see if table is jammed. If so, remove and check for damage. Table should move by hand easily. C. Check for bearing problems.
	6. V-belts are off.	A. Check and replace. (See v-belt section, Gate: Safety and Practical Maintenance Tips for V-belt Drives.

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
Crusher stopping while in operation	1. Refer to manual.	A. Refer to manual.
Material hitting lid while crushing	1. Material is going over the tops of the impellers.	A. Feed tube is too high. Readjust to proper setting.
	2. Feed cone grooved, throwing rock upward.	A. Replace feed cone and center feed.
	3. Feed material entering is off center.	Center feed by: A. Adjusting belt speed. B. Relocating belt or chute. C. Make deflection plate
	4. Feed is too large for model	A. Reduce feed size.
Material hitting main lower tub liner	1. Anvil ring is adjusted too high. Material is going below anvils.	A. Adjust anvil ring so material hits the center of the anvil.
	2. Bottom section of anvil is broken off.	A. Replace and check for tramp metal in system. B. Reduce feed size.
Material hitting upper tub, above anvils	1. Anvil ring is adjusted too low. Material is going over anvils.	A. Adjust anvil ring so material hits the center of the anvil.
	2. Top section of anvil is broken off.	A. Replace anvil and check for tramp metal in system. B. Reduce feed size.
	3. Feed is too large	A. Check for proper feed size and reduce to factory recommendations
	4. Feed tube adjusted too high or worn.	A. Readjust feed tube down. B. Replace or add extension to existing tube.

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
Feed tube adjusting bolts breaking or loosening	1. Bolts not torqued properly	A. Retighten nuts.
	2. Feed tube too low for tonnage passing thru crusher.	A. Raise feed tube.. B. Reduce tons per hour.
	3. Feed material too large for model	A. Reduce feed size. B. Contact factory.
	4. Excessive vibration.	A. Refer to vibration problem section.
	5. Too much feed in tons per hour	A. Reduce tons per hour passing through crusher. B. Contact factory.
To much oversize material discharging from crusher	1. Feed tube adjusted too high.	A. Readjust
	2. Feed tube wear.	A. Readjust or replace.
	3. R.P.M. too slow	A. Check with factory.
	4. Feed material too large.	A. Reduce feed size
	5. Too much material passing through the crusher.	A. Reduce feed tonnage
	6. Wrong impeller table for application.	A. Check with factory.
	7. Material build-up on anvils.	A. Reduce moisture content B. Increase moisture content. C. Add large feed size.
	8. Anvils are worn out.	A. Replace

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
Recirculating load is increasing	1. Screening is inefficient.	A. Contact screen manufacturer. B. Reduce load. C. Add large feed size.
	2. Feed tube adjusted too high.	A. Readjust.
	3. Feed tube worn out.	A. Replace. B. Add extention.
	4. Anvils worn out.	A. Replace. B. Stagger: new and old.
	5. Anvil ring not adjusted properly.	A. Readjust anvil ring so wear is in center of anvil.
	6. Feed size changed.	A. Check crusher prior to VSI for proper sizing.
Material over flow at feed hopper	1. Feed is elongated and too large.	A. Check feed and readjust crusher before VSI
	2. Foreign object in feed tube.	A. Remove.
	3. Feed tonnage too much for power.	A. Reduce tons per hour through-put.

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
Vibration	1. Impellers not the same weight when installed.	A. Check weight of impeller and install sets with all castings weighing within .4 pounds of each other for complete set.
	2. Uneven wear on impellers.	A. Check feed system and make sure the feed is going down the tube dead center. If feed is not centered then feed tube will have uneven wear also.
	3. Uneven wear on feed cone.	A. Replace with new. B. Center feed material in feed tube.
	4. Uneven wear on edge liners or breakage.	A. Replace. B. If breakage, replace and look for large rock or tramp metal in circuit.
	5. Too large of rock or foreign matter stuck between impellers.	A. Stop machine and remove foreign matter. B. Check feed size chart for model size.
	6. Machine not level.	A. Relevel the unit.
	7. V-Belt drive system failure.	A. Remove dirt build up inside diameter of sheaves. B. Tighten V-belts. C. Check for sheave breakage and replace. D. Check to see if balance weight on sheave came off and replace sheave if necessary. E. Make sure all belts are the same length.

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
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TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
Impeller Tables **A. Cracks on table plate or impeller brackets.**	1. R.P.M.too high for feed size. 2. Multiple tramp iron crashes	A. Repair or replace table Reduce r.p.m.. Consult B. factory. Check feed vs. r.p.m. graph for model. C. Reduce feed size. Consult factory.
B. Impeller pins coming out while in operation.	1. Improper pins.	A. Use factory supplied pins only.
	2. Table bracket not perpendicular to table plate.	A. If table is new, contact factory for replacement. B. If old and bent, replace with new factory table.
C. Impeller bolt loosening or breaking.	3. Not using Actech factory parts.	A. Contact factory B. Use only authorized Actech replacement castings and tables.
	1. Bolt are fatigued by reusing bolts too many times	A. Replace bolts use only grade 5 unless otherwise specified by factory
	2. R.P.M. too high for feed size.	A. Reduce r.p.m. B. Reduce feed size. C. Check feed size vs. r.p.m. chart for model size. D. Contact factory.

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
D. Impeller will not fit bracket	1. Foreign matter in fixture hole.	A. Clean area.
	2. Casting too large for hole.	A. Replace with other casting and return problem part
	3. Table liner or feed cone not fitting properly.	A. Clean and replace.
	4. Non-factory parts	A. Contact factory. B. Only use Actech authorized replacement castings.
V-Belt drive problems		REFER TO GATES V-BELT TROUBLE SHOOTING GUIDE IN THIS MANUAL
Casting Breakage **NOTE: 98% of all casting breakage caused by #1 through #6** **Less than 2% caused by casting defects**	1. Feed size too large.	A. Check feed vs. r.p.m. chart for model size.
	2. Tramp metal	A. Install metal dectector or magnet
	3. R.P.M. too fast for feed size.	A. Check feed vs. r.p.m. chart for model size. B. Reduce r.p.m.
	4. Wrong part number for application.	A. Consult factory.
	5. Parts worn too far before replacement.	A. Replace sooner. B. Check casting wear patterns in casting wear diagram section.
	6. Castings not fitting properly.	A. Clean all surfaces before placing new castings in position. B. Use only Actech factory authorized parts.

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
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	6. Castings not fitting properly.	A. Clean all surfaces before placing new castings in position. B. Use only Actech factory authorized parts.

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
A. Oil Related Problems **Oil over-heating over 190 Deg F / 80 Deg C**	1. Oil level low in tank	A. Refill and check for leaks.
	2. Lack of oil flow to bearing.	A. Check oil pressure: 5 to 75 psi required. B. Replace oil filter. C. Replace relief valve. D. Replace oil pump. E. Check input line for flow. F. Check retun line for flow. Minimum flow: 1.5 pints per minute.
	3. Ambiant temperature over 100 F/40 C, vicosity break down.	A. Replace 20 wt. hydraulic oil with 30 wt. hydralic oil. B. Consult factory.
	4. Pedestal assembly not properly assembled.	A. Consult factory.
	5. Wrong bearing retainer in bearing. (If customer replaced.)	A. Contact factory.
B. Oil low in sight gauge		SEE HYDAULIC OIL SYSTEM
C. Oil in v-belt drive	1. Lower seal leaking.	A. Check and replace with factory authorized parts only.
	2. Upper seal leaking.	A. Check and replace with factory authorized parts
	3. Hoses on fittings are leaking.	A. Check and replace with factory authorized parts

TROUBLESHOOTING GUIDE

Trouble Area and Observation	Cause	Remedy
Oil Related Problems		
D. Oil flinging upper end of pedestal	1. Seal failure	A. Replace upper seal with recommended seals noted in this manual.
E. No oil flow to bearings	1. Oil pump not operating.	A. Check electric motor. B. Check motor to pump coupling. C. Replace pump.
	2. Oil pick up pipe not working properly.	A. Drain oil and remove inspection door. B. Check to see if pipe is connected to pump pick up. C. Check for clogged pipe. D. Check for build up of contaminants in bottom of tank and clean.
	3. Pressure relief valve stuck (open).	A. Tap relief valve with hammer. It may relieve itself. B. Replace valve
	4. Obstruction in oil feed line to top bearing.	A. Check flow to top bearing and replace as necessary.
	5. Pump motor not turning properly. Required r.p.m.: 1750 to 1475.	A. Check for low voltage. B. Check for proper HZ.
F. Oil will not return to oil tank	1. Oil will not flow to pedestal.	A. Refer to Hydaulic oil system chapter.
	2. Obstruction in return lines.	A. Replace or clean oil line. B. Clear possible silicon sealant from oil outlet at pedestal bottom cap