

KEENE ENGINEERING COMPANY

20201 Bahama Street, Chatsworth, California 91311 U.S.A.

Tel. (818)-993-0411 Fax. (818)-993-0447

e-mail: mark@keeneeng.com Web site www.keeneeng.com

ROCK CRUSHER OPERATING INSTRUCTIONS

Models RC-46 & RC-46T

INTRODUCTION:

The new RC46 Rock Crusher is a three stage crushing machine that can reduce a rock as large as 4 x 6 inches into powder in moments. The first stage is a jaw crusher, that initially crushes the rock to a size of approximately 1/4 of an inch. The second stage is a roller mill that automatically crushes the pre-crushed material from the jaw crusher and grinds it into a fine powder. The third stage is the roller scraper that further reduces the grind into a finer powder.

CAPACITY:

Although this machine is rated at one ton per hour, such capacity should not be expected in all types of material, due to varying weight (specific gravity) and hardness of rock. The capacity in some cases may be reduced as low as 4 or 5 hundred pounds per hour, with extremely hard rock. Proper and preventative maintenance is essential to maintain optimum capacity. Please read your instructions carefully and consult factory if problems exist.

1. ENGINE

The RC-46 is powered by and industrial 11 H/P Honda Engine with a gear reduction drive. The optimum speed that the crusher should be operated is three quarters speed. You can regulate the speed by operating the manual lever to the fast position. Do not attempt to feed material into the crusher jaws until the engine is warm and operating at proper speed. Once a full tank is near empty, allow the engine to cool before refueling. Do not allow the engine to run out fuel while operating. A sudden stop while in operation may cause the jaws to seize. Always use this machine in a well ventilated area.

2. AIR CLEANER

The air cleaner requires additional care in a dusty environment. Remove the outer element and clean it after eight hours of operation. Refer to the engine manual for additional maintenance instructions.

3. DRIVE BELTS

It is important that the drive belts are kept tight and frequently checked for proper tension. Loose belts can cause the crusher to lose momentum and seize during operation, causing loss of valuable production time. BEFORE CHECKING OR MAKING TENSION ADJUSTMENTS, ENGINE MUST BE TURNED OFF. The belt tension can easily be checked by depressing the center section of the belt with your finger. If the belt tension can easily be depressed more than one inch (25mm), it should be tightened. The belt tension may be adjusted by loosening the engine mounting bolts and sliding the engine away from the crusher unit and then retightening bolts.

4. BEARINGS

All eight bearings need to be greased once every eight hours of operation. Bearings are considered properly lubricated when grease is observed starting to "ooze" from the bearing case. We recommend (Molub-Alloy 777") grease, as it has been developed for dusty conditions.

5. BOLTS

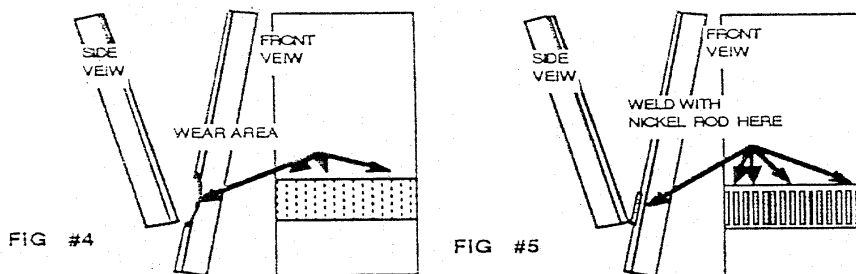
During the first two hours of operation, all bolts and allen screws must be checked frequently for tightness. A loose bolt can cause equipment failure, due to excessive vibration and it is advisable to check all bolts and allen screws before each operation.

6. CRUSHING JAWS

a. If the jaws seize as a result of a rock jam, stop the engine immediately, fold back the hopper, remove the flywheel shroud and rotate the flywheel backwards until the pressure on the jammed rock is released. Then remove the rock if necessary. In the event the engine will not pull start, the rollers may need cleaning. (Refer to instructions 7d.).

b. When wear is noticed at the bottom of the crushing jaw, the jaws should be hard faced by welding the worn area, or rotate the jaw plate 180 degrees. This is easily accomplished by unbolting the jaw plate from the crusher and rotating the worn portion of the plate up and the unworn portion in the down position. It may be necessary to have an ARC WELDER at your disposal in order to weld hard faced material with hard face material onto the worn portion of the jaw surfaces to maintain proper thickness. If this procedure is not followed, the plate will become concave at bottom portion and will render the jaws inoperative. This jaw plates of the rock crusher is considered "consumable" and not covered by warranty. (SEE FIG 4 &5).

c. If pivot plate wear exists, a large gap in the bottom of the crushing jaw will result, allowing too large of particles to fall into the rollers. The gap at the bottom of the jaw should never exceed one half of an inch (12 mm) when fully opened. If the gap exceeds one half of an inch (12 mm), the Pivot Bar should be replaced. Oversized pivot bars are available to compensate for worn sockets. Larger Pivot Bars are available upon request.



JAW PLATE WEAR SURFACES

7. ROLLERS

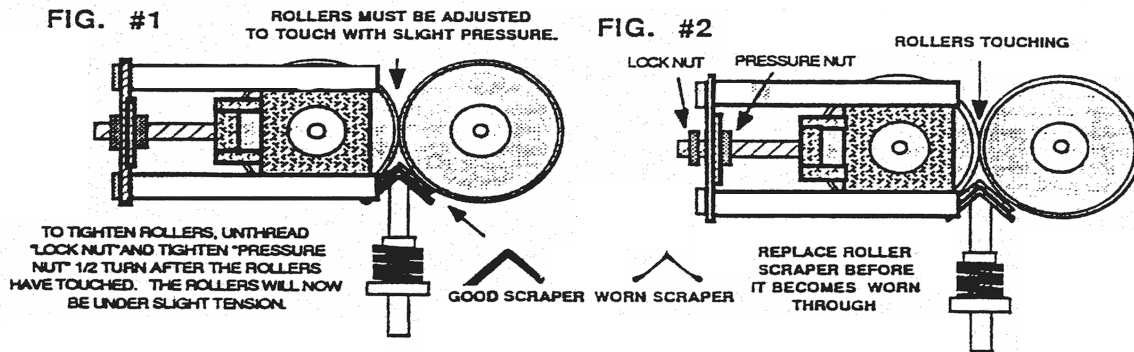
a. If rollers are not turning properly, check the free spinning roller to ensure that it is adjusted properly.

b. It is recommend that the rollers touch lightly. Adjust pressure nuts on side of rollers evenly. (SEE FIG 1 & 2)

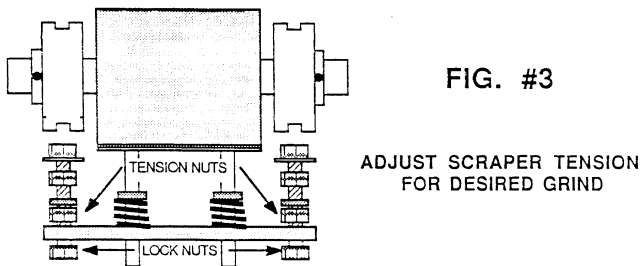
c. If the rollers are too far apart due to wear, or adjustment the free spinning roller will lose friction contact and consequently load with rocks.

d. If the rollers become overloaded with rocks, stop the machine immediately to avoid unnecessary roller damage. Remove the roller shroud and remove rocks. It may be necessary to remove the belts in order to reverse the pulley to open the jaw plates to dislodge rocks. After all rock particles are cleared, replace the roller shroud and continue normal operation.

e. The rollers have been engineered to wear evenly in almost any condition. Care must be taken to avoid uneven roller wear. The machine must be placed on level ground, as an unlevel surface may cause the rollers to wear unevenly. Due to the unpredictable wear that rollers are subject to, they are also considered as a consumable item and not covered under the replacement clause in our Warranty. When they are severely worn, they must be replaced and not attempted to hard face or repair. The rollers will last much longer if the Roller Scraper is not used. The Roller Scraper should only be used if a finer grind is required.



JAW PLATE WEAR SURFACES



8. ROLLER SCRAPERS The Roller scrapers should only be when needed. The Roller scrapper with reduce the life of the rollers.

a. The roller scraper is designed to give you "Super Fine Grinds" never before achieved with an ordinary roller crusher. It is accomplished by a chaffing principal, provided by the roller touching an angle iron that is spring loaded. The fine powder is again processed by the chaffing edge. The life expentancy of the scraper could vary from one to twenty tons, depending on the rock hardness and scraper pressure. Be sure to check the wear plate every ton of rock processed and replace it when it is only half worn. It is therefore suggested, that several extra wear plates be on hand for continuous performance.

b. The roller scraper may be used only when the free spinning roller is touching the drive roller. During the operation, if the free spinning roller stops turning, because you have ceased to feed the machine for a moment, be sure to tighten the pressure to the drive roller, otherwise jamming of the roller may occur.

c. Sometimes when full spring compression is used, the roller scraper will emit, a loud shrieking noise when stopping or starting. "Do not be alarmed", this is normal.

d. If coarser grinds are desired, simply disengage the roller scraper and space the rollers according to the size of grind required.

SAFETY INSTRUCTIONS

ALWAYS WEAR SAFETY GOGGLES AND A HARD HAT, BEFORE, DURING AND AFTER ALL CRUSHING OPERATIONS.

NEVER OPERATE THE CRUSHER WITHOUT SAFETY SHROUDS! ALWAYS REPLACE SAFETY SHROUDS AFTER ANY REPAIRS OR ADJUSTMENTS.

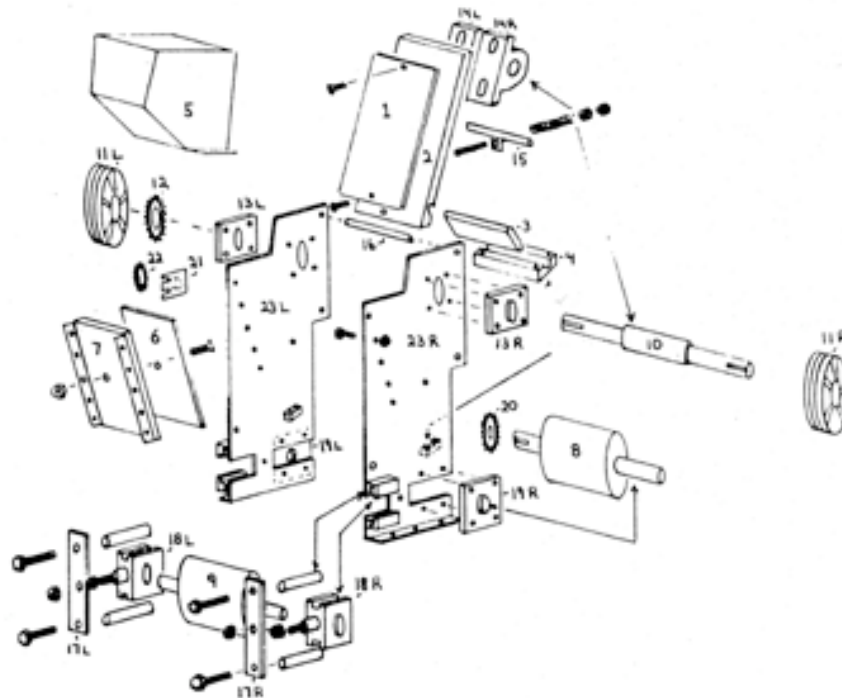
NEVER PLACE HANDS INTO THE JAW AND ROLLER AREA WHILE THE UNIT IS RUNNING.

NEVER STAND DIRECTLY IN BACK OF THE CRUSHER WHILE FEEDING. ALWAYS STAND TO THE SIDE AS PARTICLES MAY FLY OUT AND CAUSE INJURY.

NEVER TILT THE SAFETY SHROUD OR HOPPER BACK WHILE THE CRUSHER IS RUNNING!

NEVER LOOK DIRECTLY INTO THE CRUSHING JAWS OR ROLLERS WHILE THE CRUSHER IS RUNNING. ALWAYS WEAR SAFETY GOGGLES AND A HARD HAT WHILE OPERATING A CRUSHER. ALWAYS WEAR AN "OSHA" APPROVED DUST MASK FOR THE POTENTIAL PRESENCE OF "CRYSTALLINE SILICA QUARTZ", TO PREVENT "SYLICOSIS", OR OTHER HARMFULL ELEMENTS THAT MAY CONTRIBUTE TO CRONIC LUNG DISEASES CAUSED BY INHALLATION OF DUST.

Keene Engineering Incorporated



ASSEMBLY DIAGRAM FOR ROCK CRUSHER

ITEM	PART NUMBER	DESCRIPTION	PRICE	QUANTITY
1	RC-1	Crushing Jaw Wear Plate		1
2	RC-2	Crushing Jaw		1
3	RC-3	Pivot Bar		1
4	RC-4	Pivot Socket		1
5	RC-5	Hopper		1
6	RC-6	Stationary Wear Plate		1
7	RC-7	Stationary Jaw		1
8	RC-8	Drive Roller		1
9	RC-9	Free Spinning Roller		1
10	RC-10	Eccentric Shaft		1
11-L	RC-11L	Drive Pulley Left		1
11-R	RC-11R	Drive Pulley Right		1
12	RC-12	Eccentric Sprocket		1
13-L	RC-13L	Shaft Bearing Left		1
13-R	RC-13R	Shaft Bearing Right		1
14-L	RC-14L	Eccentric Bearing Left		1
14-R	RC-14R	Eccentric Bearing Right		1
15	RC-15	Spring Tension Assembly		1
16	RC-16	Spacers		5
17-L	RC-17L	Take Up Bearing Assembly Left		1
17-R	RC-17R	Take Up Bearing Assembly Right		1
18-L	RC-18L	Take Up Bearing Left		1
18-R	RC-18R	Take Up Bearing Right		1
19-L	RC-19L	Drive Roller Bearing Left		1
19-R	RC-19R	Drive Roller Bearing Right		1
20	RC-20	Drive Roller Sprocket		1
21	RC-21	Chain Tensioner		1
22	RC-22	Chain Tensioner Sprocket		1
23-L	RC-23L	Side Casing Left		1
23-R	RC-23R	Side Casing Right		1
24-L	RC-24L *	Drive Pulley Shroud Left		1
24-R	RC-24R *	Drive Pulley Shroud Right		1

* Not Illustrated