

OWNERS MANUAL

8

MIKRO-ATOMIZER

- INSTALLATION
- MAINTENANCE
- OPERATION
- LUBRICATION
- PARTS LISTS



MikroPul

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FOREWORD

The #8 Mikro Atomizer has successfully proven itself to be the finest unit of precision grinding equipment in the field of particle reduction. The ease of operation, technological advancements in the classification technique and robust design has made it the standard of the industry. Besides a performance guaranty, we offer service and consultation by our factory trained engineers relating to maintenance and application to insure maximum operating efficiency. We suggest you become familiar with the contents of this pamphlet prior to installation and operation.

WHEN ORDERING REPLACEMENT PARTS
PLEASE SUPPLY THE FOLLOWING INFORMATION:

Model #8 Mikro Atomizer

Serial No. _____

DESIGN DATA

Main Drive	75 to 100 HP
Rotor Speed.....	3450 RPM Max.
Maximum Clearance Between Separator Blades and Dispersion Ring018 or .030
Approximate Airflow Required.....	3600 to 4800 CFM
Approximate Static Pressure.....	1.0" w.c. Neg.
Power Requirements.....	230/460 volts AC 3PH, 60HZ
Weight (Approximately)	9,000 lbs.

INSTALLATION

1. Concrete floor should be level, or the steel pier supports should be level and square.
2. The concrete floor should be reinforced and not less than 6" thick.
3. See arrangement drawing for lay out and bolt pattern.
4. Provision for make up air must be considered.
5. Grout in place without stressing the structural frame.
6. Ground the frame.
7. Sufficient space for upper grinding chamber swing should be allowed for.
8. Provision should be made for overhead rail with one (1) ton hoist capability.
9. Inspect mill interior prior to start up.
10. Install an ammeter to monitor drive motor current consumption.
11. Install a manometer to monitor static pressure at discharge of mill.
12. Lubricate the pillow blocks and feed screw assembly prior to start up.
(see "Lubrication" section of this manual).

SAFETY RECOMMENDATIONS FOR # 8 MIKRO ATOMIZER

IMPORTANT: Prior to operating this equipment, read this list of safety recommendations through in its entirety, along with the Operating Instructions.

1. Be sure mill is properly grounded electrically; i.e., the ground wire from motor(s) to receptacles with proper grounds, along with static grounding (when a potential problem).
2. Avoid the use of extension cords. If necessary, use an extension cord of sufficient ampere and not of excessive length (applicable only for portable mills).
3. When opening the mill grinding chamber or when working on the mill drive, be certain the power supply to the mill is off and locked out.
4. Replace belts or flexible couplings at first sign of wear, slippage or fraying.
5. When operating the mill, all guards should be in place for protection against injury from moving parts.
6. If a motor is overloaded and the starter heaters and/or circuit breaker(s) are tripped, never install higher rated heaters or circuit breakers as a correction. The cause of overload must be investigated and corrected before attempting to restart the motor.
7. If the material being pulverized is toxic, proper inhalation masks should be worn and no smoking rules should be observed.
8. If an explosive environment exists around the mill, all electrical motors and controls must be explosion-proof and maintenance to the equipment should be performed with non-sparking tools.
9. To eliminate the chance of sparking occurring within the mill, all metallic scrap (tramp) must be positively separated from the feed material before it enters the grinding chamber of the mill. This can be accomplished by the use of scalping screens, magnetic separators, etc.
10. While working around the mill, safety glasses should be worn as eye protection.
11. Due to the extreme levels of noise that exist around the grinding equipment while in operation, proper ear protection should be worn by equipment operators, maintenance personnel, and anyone within the vicinity of the equipment. OSHA makes some specific guidelines to follow in this respect.
12. Should abnormal levels of vibration or noise develop, immediately shut off the equipment, investigate, and correct.
13. A preventative maintenance program should be developed so that the equipment is regularly lubricated and to aid in early discovery of equipment malfunctions.

Safety Recommendations (Cont.)

14. Keep hands and clothing clear of feed hopper opening, air inlets and all moving parts.
15. After working on internal components of a mill (i.e., parts replacement, adjustment, or

maintenance) the rotor shaft assembly should be rotated by hand to assure freedom of rotation. The motor should then be "bumped" on and off once as a further check to verify that clearances are proper. If a mechanical contacting sound is detected, the mill will have to be readjusted to proper clearances (contact MikroPul for this information).

INITIAL START-UP PROCEDURE

Preliminary Checks

1. Verify proper clearance between separator blades and dispersion rings. (.018" or .030")
2. Verify clearance between both exhaust fans and housing, .020" minimum.
3. Close mill.
4. Manually rotate rotor shaft for 360° to verify that clearance is maintained in upper grinding chamber. Any drag noted will require re-adjustment. (see maintenance section for detailed procedure).
5. Start rotor. Note idle load.
6. Start exhaust fan.
7. Start feed at lowest RPM.
8. Increase feed screw RPM to a point of non-surfing load indicated by the ammeter on the main drive motor, without exceeding maximum load rating of the motor.

NOTE: Once feed screw rate has been established, unit may be fed from day to day at same rate.

SHUT DOWN SEQUENCE

1. Stop feed motor.
2. Permit the mill to operate without feed for a period of three (3) to six (6) minutes so that the grinding chamber may clear itself.
3. Shut down the fan.
4. Shut down the rotor.

MIKRO ATOMIZER

PRINCIPLE OF OPERATION

The exhaust fans mounted on both ends of the rotor shaft, depending upon their diameters and rotational speed, produce a movement of air between 3,200 CFM to 4,600 CFM. The air enters the mill primarily through annular inlets which surround the grinding chamber for 360° on both sides and secondarily through the feed inlet. Internal design of the grinding chamber and equal adjustment of components within the mill will promote a separation of the airflows and provide an equal and balanced dual passage of air through the left and right separator blade

assemblies. Airflow continues through the central port in the dispersion rings and flows into the exhaust fan housing where it is discharged through the duct by the positive displacement of air induced by the exhaust fan rotation. Once these circulatory paths are stabilized the dual passage of air through the left and right sides of the mill will maintain an equilibrium providing two separate areas for classification to take place.

When material is introduced into the feed inlet, it

PRINCIPLE OF OPERATION (cont)

is partially dispersed by the incoming air and drawn into the grinding chamber. Here the material is fragmented and reduced in size by repeated impact imparted to the particle by the hammers, forcing the particle to take on a tangential direction into the multiple deflector liner. The multiple deflector liner is designed to reverse the direction of the particle almost 180°, creating

a head-on condition for additional impact with the face of the hammers. When the particle is reduced in size sufficiently to allow the normal circulatory airflows within the mill to act upon it, the particle is directed in front of the separator blades. Here it is either accepted and passed out of the mill or rejected and returned to the grinding chamber for further reduction.

REGULATION OF THE PARTICLE SIZE

The Mikor Atomizer has four (4) standard internal setups which provide the range and latitude for the grinding specification. These normal setups are identified as:

1. The course grinding set up
2. The medium grinding set up
3. The fine grinding set up
4. The pigment grinding set up

Prior to purchase, the Pulverizing Machinery Laboratory will test the material and determine which of the above set-ups will be most suitable for the material and the grinding specification. This selection determines the horsepower necessary to meet the requirement for output capacity, the particle size range the Mikro Atomizer will produce, the exhaust fan design and diameter to control the airflow, the clearance between the dispersion rings and the separator blades to limit oversized particles, the number and axial length of the separator blades to control the particle size distribution and air velocity, and

the rotor shaft RPM which will also control the particle size distribution and CFM.

In each of the setups, the coarseness of the grinding specification can be increased by one or more of the following means:

- a) using larger diameter fans on the rotor shaft
- b) using separator blades of shorter axial length
- c) increasing separator blade clearance equally on both the left and right sides.
- d) reducing the thickness of the annular inlets to allow more airflow into the mill by reduced obstructions
- e) reducing the rotor shaft speed
- f) reducing the width of the blades
- g) reducing the number of blades
- h) reducing the number of hammers
- i) using smooth liners

Conversely, to increase the fineness of the grind, the opposite of any of the preceding approaches can be taken.

RELATIVE SIZES OF GRINDS COMPARATIVE TO SETUP — # 8 M-A

ROTOR RPM	FAN DIAMETER	SEP. HUB	24-BLADE SETUP	SEPARATOR BLADES SIZE	DISP. RING	RELATIVE PART. SIZE
3450	22 1/2" L 1435	37295	05107	3-1/8" x 1 1/2" LH	37537	1.00
	22 1/2" R 1436		05108	3-1/8" x 1 1/2" RH	37538	
3450	25" L 1493	37295	05107	3-1/8" x 1 1/2" LH	37537	1.06
	25" R 1494		05108	3-1/8" x 1 1/2" RH	37538	
3450	22 1/2" L 1435	37295	05109	2-1/4" x 1 1/2" LH	37539	1.17
	22 1/2" R 1436		05111	2-1/4" x 1 1/2" RH	37540	
3450	25" L 1493	37295	05109	2-1/4" x 1 1/2" LH	37539	1.24
	25" R 1494		05111	2-1/4" x 1 1/2" RH	37540	
3000	25" L 1493	37295	05107	3-1/8" x 1 1/2" LH	37537	1.24
	25" R 1494		05108	3-1/8" x 1 1/2" RH	37538	
3000	28" L 1491	37295	05107	3-1/8" x 1 1/2" LH	37537	1.35
	28" R 1492		05108	3-1/8" x 1 1/2" RH	37538	
3000	25" L 1493	37295	05109	2-1/4" x 1 1/2" LH	37539	1.46
	25" R 1494		05111	2-1/4" x 1 1/2" RH	37540	

RELATIVE SIZES OF GRINDS COMPARATIVE TO SETUP — # 8 M-A (Cont.)

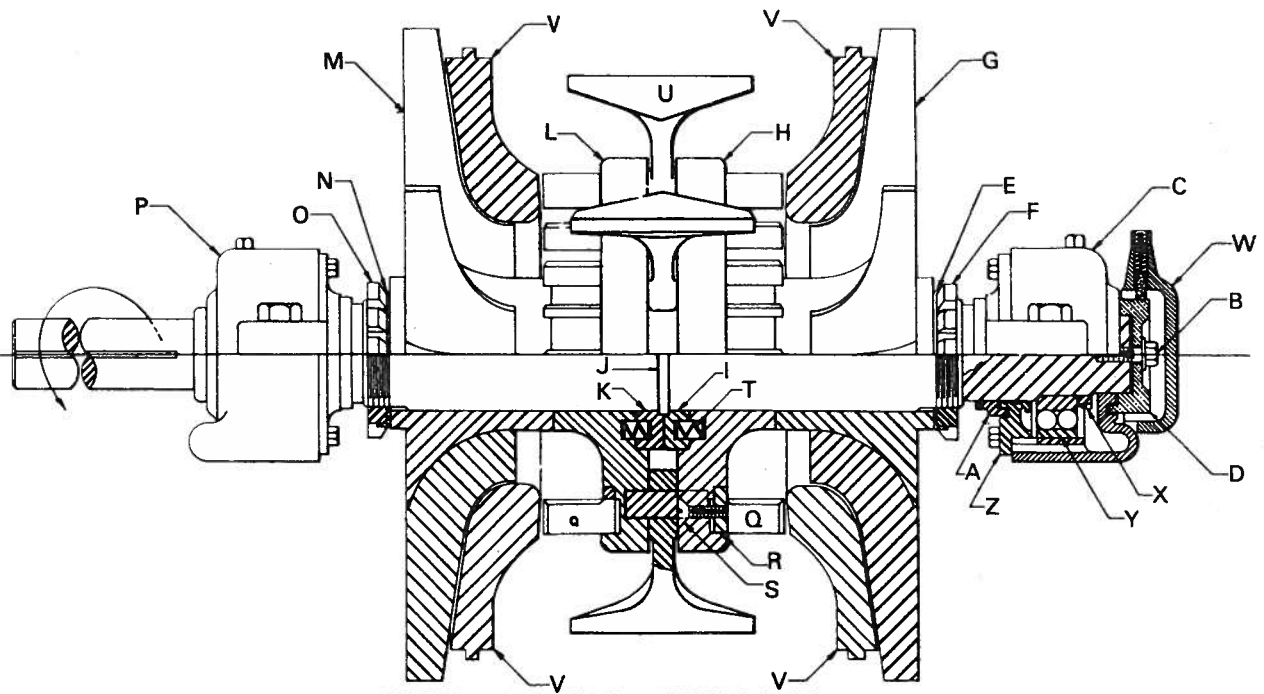
ROTOR RPM	FAN DIA.	SEP. HUB	24-BLADE SETUP	SEPARATOR BLADES SIZE	DISP. RING	RELATIVE PART. SIZE	
3000	28" L	1491	37295	05109	2-1/4" x 1 1/2" LH	37539	1.59
	28" R	1492		05111	2-1/4" x 1 1/2" RH	37540	
3450	22 1/2" L	1435	37309	05112	1-1/8" x 1 1/2" LH	37539	1.66
	22 1/2" R	1436		05110	1-1/8" x 1 1/2" RH	37540	
3450	25" L	1493	37309	05112	1-1/8" x 1 1/2" LH	37539	1.74
	25" R	1494		05110	1-1/8" x 1 1/2" RH	37540	
2500	28" L	1491	37295	05109	2-1/4" x 1 1/2" LH	37539	1.86
	28" R	1492		05111	2-1/4" x 1 1/2" RH	37540	
3000	25" L	1493	37309	05112	1-1/8" x 1 1/2" LH	37539	2.10
	25" R	1494		05110	1-1/8" x 1 1/2" RH	37540	
3000	28" L	1491	37309	05112	1-1/8" x 1 1/2" LH	37539	2.26
	28" R	1492		05110	1-1/8" x 1 1/2" RH	37540	
2500	28" L	1491	37309	05112	1-1/8" x 1 1/2" LH	37539	2.61
	28" R	1492		05110	1-1/8" x 1 1/2" RH	37540	

INDIVIDUAL BLADE

1-1/8" x 1 1/2" LH	0596
1-1/8" x 1 1/2" RH	0589
2-1/4" x 1 1/2" LH	0587
2-1/4" x 1 1/2" RH	0590
3-1/8" x 1 1/2" LH	0567
3-1/8" x 1 1/2" RH	0568

DISASSEMBLY

1. Remove the duct work.
2. Insure the keyway on the rotor shaft is at top dead center position.
3. Remove the bolts on the grinding chamber and swing bolts on both sides of the exhaust fan housing.
4. Raise the cover to the fully open position.
5. Loosen drive belts or disconnect the coupling.
6. Remove the two (2) bolts on each pillow block.
7. Install sling with two (2) point suspension between the pillow blocks and the exhaust fan housing.
8. Carefully lift the rotor assembly clear of the housing.



GENERAL ASSEMBLY OF #8 MIKRO-ATOMIZER ROTOR

DISASSEMBLY (cont.)

9. Remove the static collector housing "W" containing the brush from opposite drive side.
10. Remove the bolt "B" from the end of the shaft, along with the flinger.
11. Remove the four (4) bolts from the pillow block end cover "Z" and slip the pillow block "C" off the shaft by pulling on the pillow block ears.
12. The exposed bearing "Y" can now be removed by disengaging the tab lock-washer and locknut "X", and then use a puller to remove the bearing.
13. Remove the loose end cover "Z" and inner flinger "A" by loosening the set screw(s).
14. Disengage the tab lockwasher "E" and remove the adjusting locknut "F".
15. In turn, pull off the fan "G", rotor/separator hub "H", the six springs "T", the spring retaining collar "I" and remove the hammers "U".
16. If it is desired to remove the drive side pillow block, the same procedure should be followed after removal of the sheave or coupling.
17. Disengage the tab lockwasher "N" and back off the adjusting locknut "O" about $\frac{1}{4}$ ".
18. Push the fan "M", rotor/separator hub "L" and spring retaining collar "K" to the left a sufficient distance to permit the removal of the split thrust ring "J".
19. In turn, pull off the spring retaining collar "K", the remaining six springs "T", the rotor/separator hub "L", and the fan "M".

HAMMER REPLACEMENT

When replacing hammers it is only necessary to remove the opposite drive side pillow block and bearing assembly and to shift the fan "G" and hub "H" to the right about 2". The remainder of the rotor assembly need not be disturbed. New hammers should be installed so that the flat faces of the hammers lead in a clockwise direction when viewed from the pulley (drive) end of the shaft.

It should be noted that new sets of hammers are furnished as six (6) pairs with each pair stamped on the back of the cross bar with an identical number. These pairs of hammers are identical in

weight and must be installed diametrically opposite one another. This is most important to insure proper balance.

When the rotor is reassembled and bolted in place in the main housing, the specified clearance (.018" or .030") between the separator blades "Q" and the dispersion rings "V" must be readjusted using the feeler guage supplied with the machine. Adjustment is accomplished by turning the locknuts "F" and "O" with a suitable spanner wrench and then resecuring the locknuts with the proper tabs on the lockwasher "E" and "N".

SEPARATOR BLADE REPLACEMENT

To replace separator blades, remove the counter-sunk screws "S" that hold the separator blade retaining disc "R" to the rotor/separator hub "H" or "L". The retaining disc can then be removed and the separator blades can be slid out of their slots. When replacing the blades, those stamped "R" are for the right-hand separator assembly (referenced by standing facing the mill from the feed screw side) and those stamped "L" are for the left-hand separator assembly.

When the rotor is reassembled and bolted in place in the main housing, the specified clearance (.018 or .030") between the separator blades "Q" and the dispersion rings "V" must be readjusted using the feeler gauge supplied with the machine. Adjustment is accomplished by turning the locknuts "F" and "O" with a suitable spanner wrench and then resecuring the locknuts with the proper tabs on the lockwashers "E" and "N". The dispersion rings "V" are bolted in the grinding chamber and

are not an integral part of the rotor assembly.

CAUTION: When reassembling the rotor, be positive that the compression springs "T" and "K" are properly in place. Also, when adjusting for the separator blade clearance, it is wise to

start with the rotor/separator hubs "H" and "L" spread further apart than necessary and then increase the clearances by tightening of the locknuts. This will assure proper contact between the locknuts and the fan hubs, as well as between the fan hubs and the rotor/separator hubs.

LUBRICATION

The pillow block (rotor) bearings are provided with spring-cover oil cups attached to the bottom of each pillow block housing (standard equipment). The oil level should be 1/8" from the top of the oil cup when the machine is not running. When the mill is running, the level in the cup will be lowered as part of the oil is carried into the bearing housing. Oil should not be added while the mill is running to raise the oil back to its original level. This results in an excessive amount of oil in the bearing with consequent overheating and leakage around the shaft. We recommend using SAE #30 wt. cylinder oil for these bearings. At reduced speeds and cooler grinding temperatures, SAE #20 wt. cylinder oil is recommended. The levels of oil in the cups should be checked on a daily basis to be sure the oil is at proper level. It is also best to

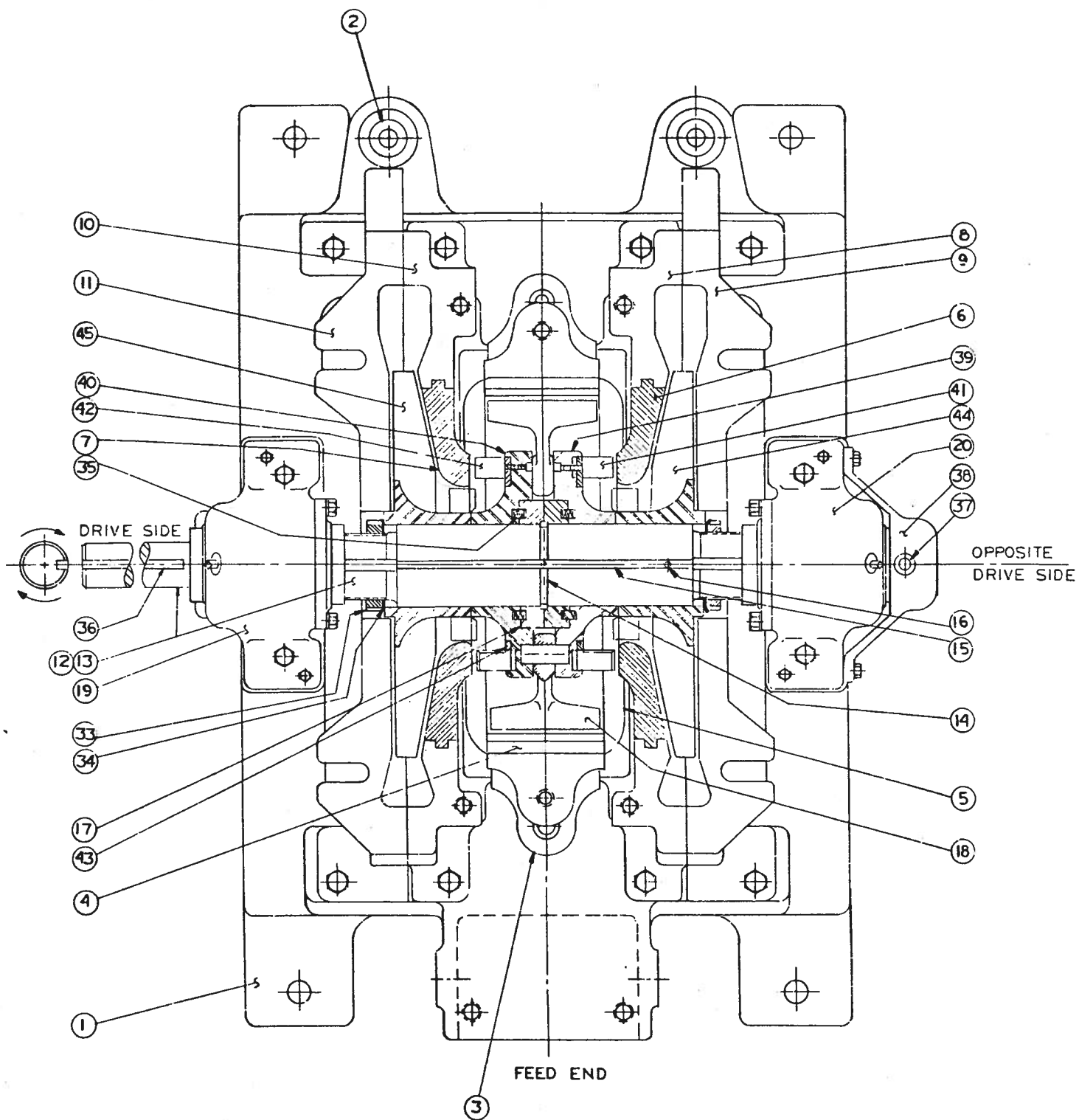
flush the pillow blocks out once a month by draining the used oil and pouring clean oil in thru the top plug hole and letting it run out thru the bottom plug hole.

The #8 MA feed screws are carried on bronze bushings which are equipped with Zerk fittings for #2 cup grease. The gear box feed drive shaft is supported by three (3) ball bearings. The two (2) outer ones are lubricated by cup grease directly thru Zerk fittings and the center one by the cup grease with which the gear box is packed. Lubrication frequency for the Zerk fittings should be approximately once a week. The grease that is packed in the gear box of the feed screw assembly should be changed every three months.

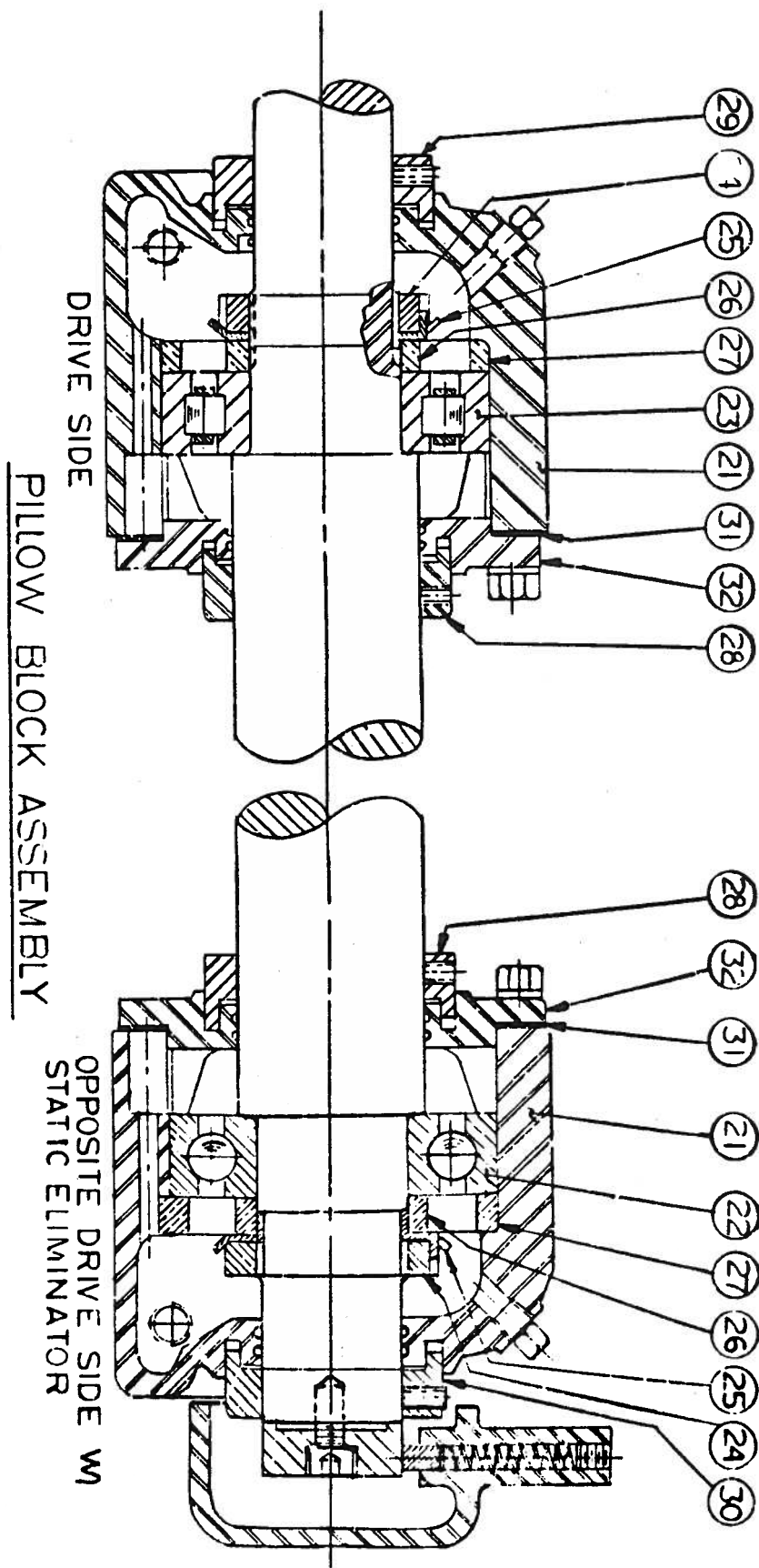
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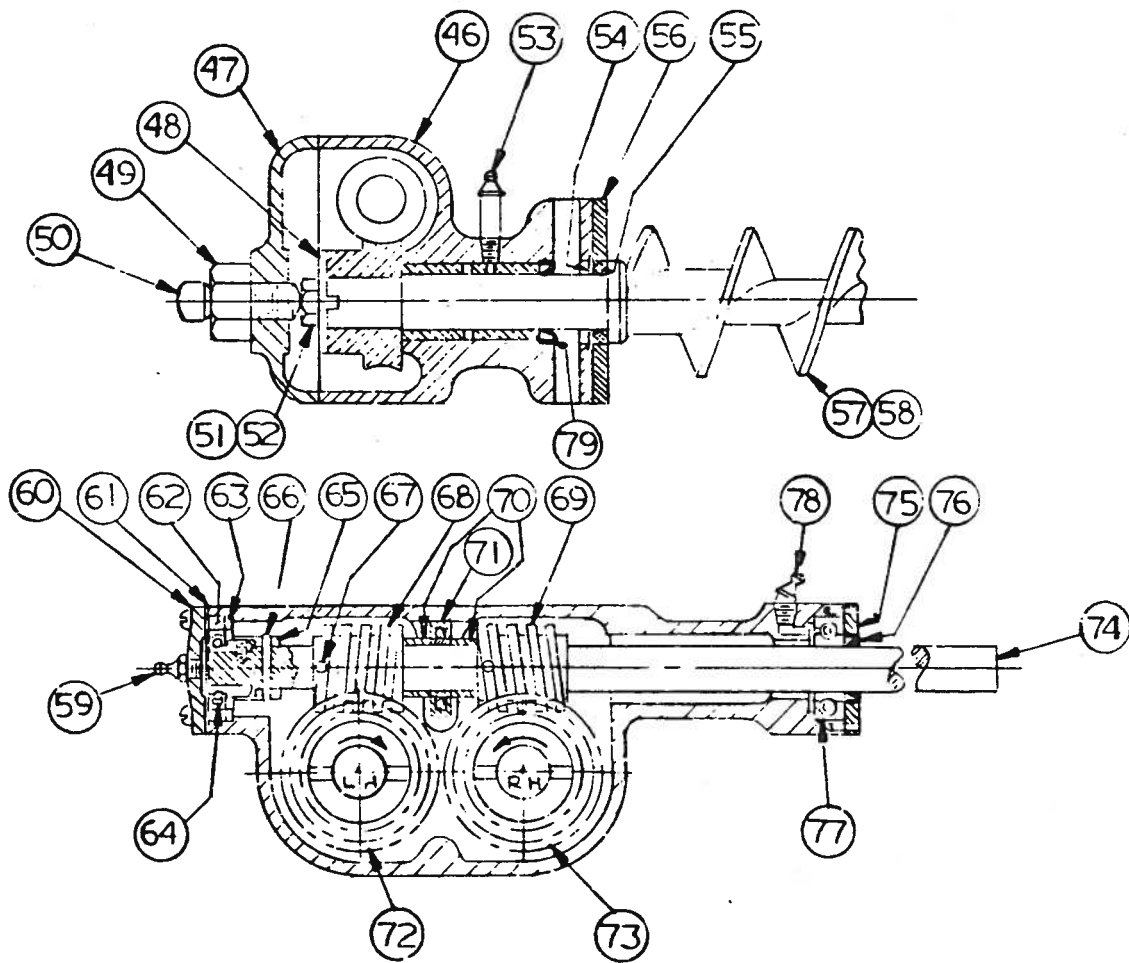
1. Water-cooled shaft and pillow blocks.
2. Bijur lubrication system.
3. Mikro Monitor load controller (automatic feed switch).
4. Seco speed controller for feed.

For information and/or pricing on these and any other parts, contact your local MikroPul sales representative or our main office in Summit, New Jersey.



CROSS SECTION OF MIKRO ATOMIZER N°2






FEED SCREW MECHANISM ASSEMBLY

63262

8 MIKRO ATOMIZER

PARTS LIST

Reference Number	MikroPul Part Number	Quantity	Part Description
1	0298	1	Cast Mill Base
*	3160 ^{1/2}	6	Dowell Pins
2	2684	2	Springs
*	09215	1	Upper Grinding Chamber - NI Resist
3	0794	1	Lower Grinding Chamber - NI Resist
LINERS			
	29414	1	MD Liner (Lower, Opp. Feed End) S.S.
	29402	1	MD Liner (Lower, Feed End) S.S.
4	29418	1	MD Liner (Upper, Opp. Feed End) S.S.
	29430	1	MD Liner (Upper, Feed End) S.S.
	29510	1	Feed Entry Liner S.S.
*	-	16	5/16" x 3/4" Flat-Head S.S. Machine Screws
 *	31156	4	Dowel Pins
ANNULAR DEFLECTORS			
5	29194	2	Annular Deflector (No Fins) - NI Resist
5	29195	2	Annular Deflector (Fins) - NI Resist
*	-	16	1/2" x 2-3/4" Lg. S.S. Allen Head Cap Screws
DISPERSION RINGS			
6	37299	1	Dispersion Ring Set (R.H.) - COARSE & MED. SET UPS
6	37310	1	Dispersion Ring Set (R.H.) - FINE SET UP
6	37560	1	Dispersion Ring Set (R.H.) - PIGMENT SET UP
7	37301	1	Dispersion Ring Set (L.H.) - COARSE & MED. SET UPS
7	37311	1	Dispersion Ring Set (L.H.) - FINE SET UP
7	37561	1	Dispersion Ring Set (L.H.) - PIGMENT SET UP
FAN HOUSINGS			
*	28306	1	R.H. Inside Upper Fan Casing - NI Resist
18	28304	1	R.H. Inside Lower Fan Casing - NI Resist
*	28310	1	R.H. Outside Upper Fan Casing - NI-Resist
9	28308	1	R.H. Outside Lower Fan Casing - NI Resist
*	28285	1	L.H. Inside Upper Fan Casing - NI Resist
10	28283	1	L.H. Inside Lower Fan Casing - NI Resist
*	28289	1	L.H. Outside Upper Fan Casing - NI Resist
11	28287	1	L.H. Outside Lower Fan Casing - NI Resist
*	31136 ^{1/4}	16	Dowel Pins
SWING BOLT and HINGE DETAILS			
*	2585	4	Swing Eye Bolts
*	2561	4	Eye Bolt Nuts
*	31148	4	Groove Pins
*	-	4	5/8" Flat Washers
*	1563	1	L.H. Hinge Assembly
*	1564	1	R.H. Hinge Assembly
*	2637	1	Lifting Arm Assembly

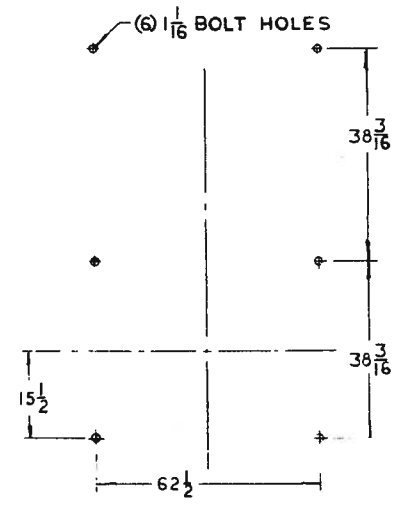
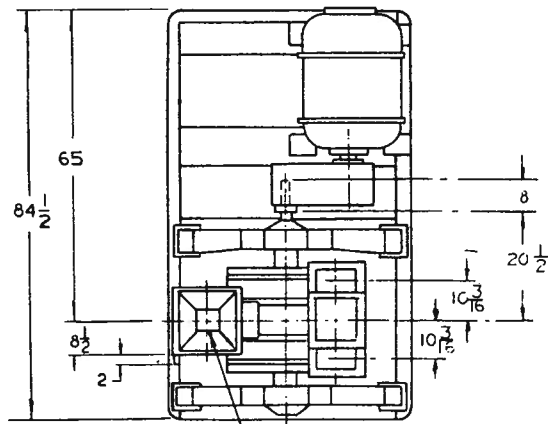
*Not Shown in Illustrations

Reference Number	MikroPul Part Number	Quantity	Part Description
ROTOR ASSEMBLY			
12	36129	1	Rotor Shaft, Key & Dowel Pin Assy. - S.S.
13	36128	1	Rotor Shaft - S.S.
14	37303	1	Split Thrust Ring - S.S.
15	31149	1	Key - S.S.
16	3131	3	Dowel Pins - S.S.
17	37307	2	Spring Retaining Collar - S.S.
18	24172	1	Set of Hammers Tipped with Stellite
19	63199	1	Pillow Block Assy. (Drive Side)
20	63199	1	Pillow Block Assy. (Opp. Drive Side)
21	28296	2	Pillow Block Housing (Drive Side & Opp. Drive Side)
22	03139	1	Roller Bearing (Drive Side)
23	03113	1	Ball Bearing (Opp. Drive Side)
24	25101	2	Locknut
25	25117	2	Lockwasher
26	37796	2	Inner Spacer
27	37798	2	Outer Spacer
28	35117	2	Flinger, Inside (Drive Side & Opp. Drive Side)
29	35119	1	Flinger, Outside (Opp. Drive Side)
30	35115	1	Flinger, Outside (Drive Side)
31	3599	2	Gasket, Vellumoid (Drive Side & Opp. Drive Side)
32	09155	2	End Cover (Drive Side & Opp. Drive Side)
33	25102	2	Locknut
34	25118	2	Lockwasher
35	2638	12	Die Springs
36	31147	1	Key - C.R.S.
37	2683	1	Graphite Brush/Spring
38	0261	1	Static Collector
39	6327	1	R.H. Separator Wheel Assy. w/(24) 1-1/8" Blades (COARSE SET UP)
39	6325	1	R.H. Separator Wheel Assy. w/(24) 2-1/4" Blades (MEDIUM SET UP)
39	6318	1	R.H. Separator Wheel Assy. w/(24) 3-1/8" Blades (FINE SET UP)
39	63172	1	R.H. Separator Wheel Assy. w/(22) 3-1/8" Blades & Wipers (PIGMENT SET UP)
40	6326	1	L.H. Separator Wheel Assy. w/(24) 1-1/8" Blades (COARSE SET UP)
40	6324	1	L.H. Separator Wheel Assy. w/(24) 2-1/4" Blades (MEDIUM SET UP)
40	6317	1	L.H. Separator Wheel Assy. w/(24) 3-1/8" Blades (FINE SET UP)
40	63173	1	L.H. Separator Wheel Assy. w/(22) 3-1/8" Blades & (2) Wipers (PIGMENT SET UP)
41	05110	1	R.H. Separator Wheel Blade Set, 1-1/8" (COARSE SET UP)
41	05111	1	R.H. Separator Wheel Blade Set, 2-1/4" (MEDIUM SET UP)
41	05108	1	R.H. Separator Wheel Blade Set, 3-1/8" (FINE SET UP)
41	05342	1	R.H. Separator Wheel Blade & Wiper Set, 3-1/8" (PIGMENT SET UP)
42	05112	1	L.H. Separator Wheel Blade Set, 1-1/8" (COARSE SET UP)

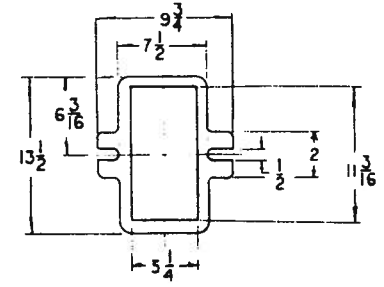
Reference Number	MikroPul Part Number	Quantity	Part Description
ROTOR ASSEMBLY (Cont.)			
42	05109	1	L.H. Separator Wheel Blade Set, 2-1/4" (MEDIUM SET UP)
42	05107	1	L.H. Separator Wheel Blade Set, 3-1/8" (FINE SET UP)
42	05341	1	L.H. Separator Wheel Blade & Wiper Set, 3-1/8" (PIGMENT SET UP)
43	10129	2	Separator Wheel Retainer (R.H. & L.H.)
44	1492	1	R.H. 28" Dia. Exhaust Fan (COARSE SET UP)
44	1494	1	R.H. 25" Dia. Exhaust Fan (MEDIUM SET UP)
44	1436	1	R.H. 22-1/2" Dia. Exhaust Fan (FINE SET UP)
44	14291	1	R.H. 28" Dia. Curved Exhaust Fan (PIGMENT SET UP)
45	1491	1	L.H. 28" Dia. Exhaust Fan (COARSE SET UP)
45	1493	1	L.H. 25" Dia. Exhaust Fan (MEDIUM SET UP)
45	1435	1	L.H. 22-1/2" Dia. Exhaust Fan (FINE SET UP)
45	14292	1	L.H. 28" Dia. Curved Exhaust Fan (PIGMENT SET UP)
EXHAUST MANIFOLD			
*	12366	1	Exhaust Manifold Assy. "Y" Connection
*	31180	4	Groove Pins
*	25143	4	Eye Bolts For Exhaust Manifold
*	35100	2	Exhaust Manifold Lower Flange Gasket
*	35101	1	Exhaust Manifold Upper Flange Gasket
*	12966	1	Vertical Duct, S.S.
FEED MECHANISM ASSEMBLY			
*	0259	1	Feed trough Pedestal
*	28292	1	Feed Trough (for 2-15/16" F.S.)
*	2754	1	Hopper & Base Assy.
46	28198	1	Gear Box w/Bushings
47	0998	1	Gear Box Cover
48	2536	2	Keywasher
49	-	2	Locknut
50	25187	2	Hardened Set Screw
51	2538	1	Hardened Cap Screw - R.H. Thread
52	2539	1	Hardened Cap Screw - L.H. Thread
53	1822	2	Alemite Fitting (Long Shank)
54	2578	4	Packing Retaining Washer
55	3558	2	Graphite Packing
56	3294	1	Split Face Plate
57	16119	1	Feed Screw 2-15/16" Dia. (R.H.), S.S.
58	16120	1	Feed Screw 2-15/16" Dia. (L.H.), S.S.
59	182	1	Alemite Fitting 1/8" Straight
60	0922	1	Bearing Retaining Cover, C.I.
61	35126	1	Gasket 5/32" Thick
62	37202	1	Bronze Adapter, Outer
63	37197	1	Bronze Adapter, Inner
64	0329	1	Bearing
65	3544	1	Bronze Set Screw Retainer
66	31151	1	#2 Taper Pin, 1-1/4" Lg.

***Not Shown in Illustrations**

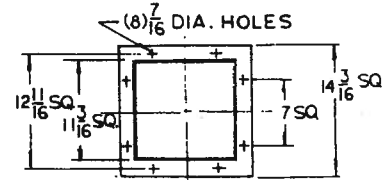
Reference Number	MikroPul Part Number	Quantity	Part Description
FEED MECHANISM ASSEMBLY (cont.)			
67	31197	2	#3 Taper Pin, 1-1/4" Lg.
68	2215	1	L.H. Steel Worm, 5:1 Ratio
68	2213	1	L.H. Steel Worm, 10:1 Ratio
68	2211	1	L.H. Steel Worm, 20:1 Ratio
69	229	1	R.H. Steel Worm, 5:1 Ratio
69	227	1	R.H. Steel Worm, 10:1 Ratio
69	225	1	R.H. Steel Worm, 20:1 Ratio
70	3765	2	Steel Spacer
71	0325	1	Bearing
72	2237	1	L.H. Bronze Worm Gear, 5:1 Ratio
72	2235	1	L.H. Bronze Worm Gear, 10:1 Ratio
72	2233	1	L.H. Bronze Worm Gear, 20:1 Ratio
73	2231	1	R.H. Bronze Worm Gear, 5:1 Ratio
73	2228	1	R.H. Bronze Worm Gear, 10:1 Ratio
73	2224	1	R.H. Bronze Worm Gear, 20:1 Ratio
74	3613	1	Feed Drive Shaft
75	3256	1	Garlock Mounting Plate
76	35143	1	Garlock Klosure
77	0330	1	Bearing
78	181	1	Alemite Fitting 1/8" - 45°
79	35144	2	Garlock Klosure



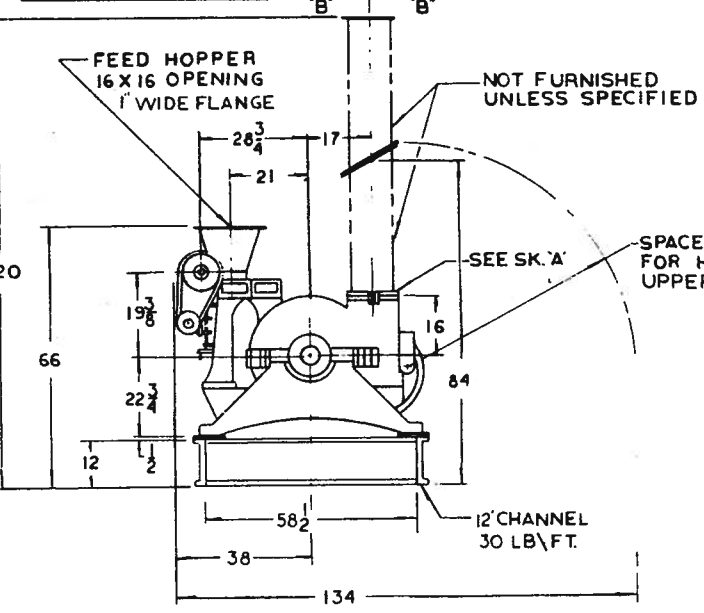
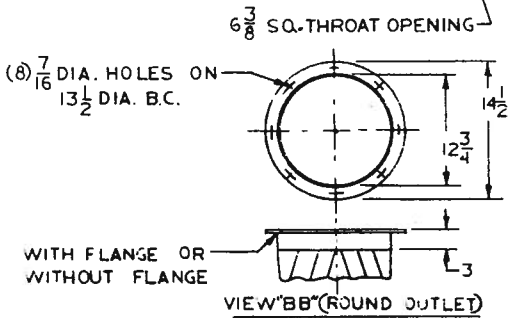
FOUNDATION BOLTS HOLES



- SKETCH 'A' (FLANGE) -



- VIEW 'BB' (SQUARE OUTLET) -



NOTES:
 1-HOPPER CAPACITY 0.6 CU. FT.
 2-UNIT WEIGHT 9,000 LBS.

MikroPul <small>FORMERLY PULVERIZING MACHINERY</small>		<small>DIVISION OF THE SLICK CORPORATION SUMMIT, NEW JERSEY 07901</small>	
ARRANGEMENT OF #8 MIKRO-ATOMIZER			
JANUARY 1971		6363	
<small>THIS PRINT FOR REFERENCE ONLY UNLESS CERTIFIED</small>			