OPERATING INSTRUCTIONS

HANCHETT

KNIFE GRINDER

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906 North State St.

Big Rapids, MI 49307

NOT RECOMMENDED

1 - DO NOT CEMENT OR GROUT THIS MACHINE INTO FLOOR OR SOLID FOUNDATION.

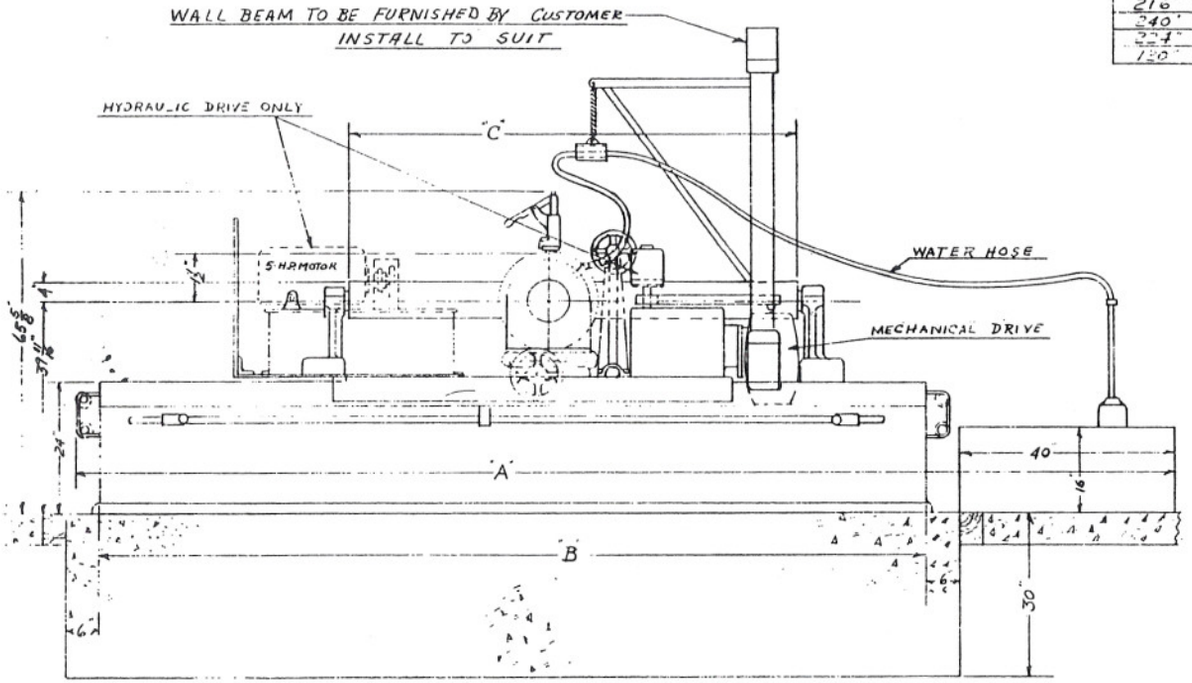
2 - DO NOT BOLT MACHINE TO FLOOR OR SOLID FOUNDATION.

WE RECOMMEND

THE USE OF HANCHETT LEVELING BLOCKS TO ASSURE POSITIVE AND CORRECT MACHINE ALIGNMENT AT ALL TIMES.

HANCHETT MODEL AK GRINDER

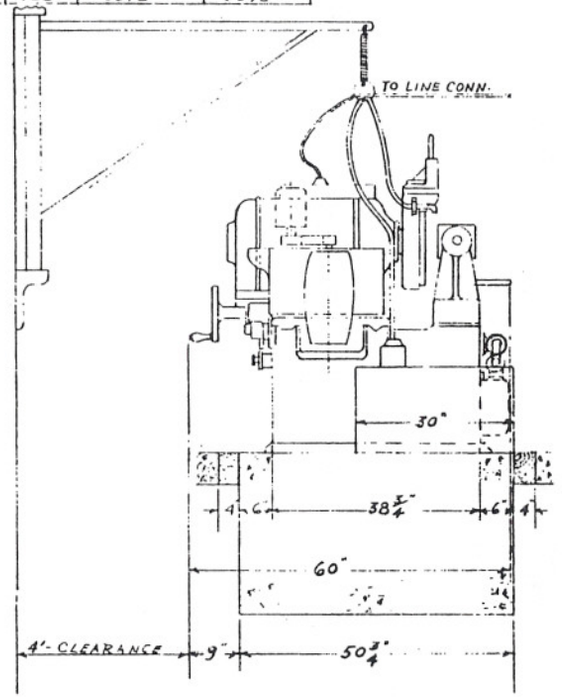
MACH LENGTH	"A"	"B"	"C"	4" WAY BELT LENGTH	5" WAY BELT LENGTH
84"	243½"	195"	85¾"	30 FEET	30 FEET
100"	259½"	209"	102"	31½ "	31½ "
112"	271½"	221"	114"	32½ "	32½ "
130"	283½"	239"	132"	36½ "	36½ "
150"	309½"	259"	152"	40½ "	40½ "
160"	319½"	269"	162"	42 "	42 "
170"	329½"	279"	172"	44 "	44 "
182"	341½"	291"	184"	46 "	46 "
192"	351½"	301"	194"	47½ "	47½ "
196"	355½"	305	198"	48 "	48 "
212"	371½	321	214"	51 "	51 "
234"	393½"	343"	236"	54 "	54 "
260"	419½"	369"	262"	59 "	59 "
276"	435½"	385	278"	61 "	61 "
296"	455½"	405"	298"	65 "	65 "
204"	363	312¼"	205	50½ "	50½ "
216"	375½"	435"	218½"	51½ "	51½ "
240"	398¾"	348¼"	242"	55 "	55 "
224"	382"	331½"	225½"	52 "	52 "
120"	279½"	229"	122"	33½ "	35½ "



HANCHETT AK HYD & MECH. KNIFE GRINDER

APPROX. FLOOR PLAN DIMENSIONS

FOR RACK LENGTH ADD 24" TO CAP.



HANCHETT MANUFACTURING COMPANY

World's largest Manufacturer of Knife Grinding and Saw Sharpening Machinery.

BIG RAPIDS, MICHIGAN

WEST COAST: 5727 S.W. Macadam Avenue
PORTLAND 1, OREGON

GENERAL

The Hanchett Model AK Mammoth Traveling Wheel Knife Grinder has been in wide use for over 35 years. Our engineers have kept abreast of modern requirements, so that the present NEW MODEL is a great improvement over the original machines. The large number of these grinders purchased over the years has led to their use in a great variety of operations and has resulted in important developments in the main features of their construction. The latest models are rigidly constructed to insure long life under heavy duty operating conditions. The grinding wheel spindle has preloaded ball bearings or tapered roller bearings, dependent upon size and capacity of machine, with the spindle shafts ground to precision tolerances. Many other features are incorporated in the machines to definitely insure the finest quality of work, with ACCURACY, plus maximum high production.

INSTALLATION (Lighting)

One of the first considerations in installing a knife grinder is the placing or location of the machine. Special consideration should be given to illumination (lighting), either natural or artificial. It should be placed sufficiently far from walls and other obstructions to allow easy access to all parts of the machine for correct operation and cleaning.

FOUNDATION

The foundation is of prime importance as the results obtained will be dependent on the type of foundation employed. The machine must be mounted on a solid foundation and preferably located on the ground floor of a building. However, if the building construction is sufficiently heavy and solid it is permissible to locate the grinder on higher floors. This, however, is only suggested if it is definitely determined that ground floor location is not available.

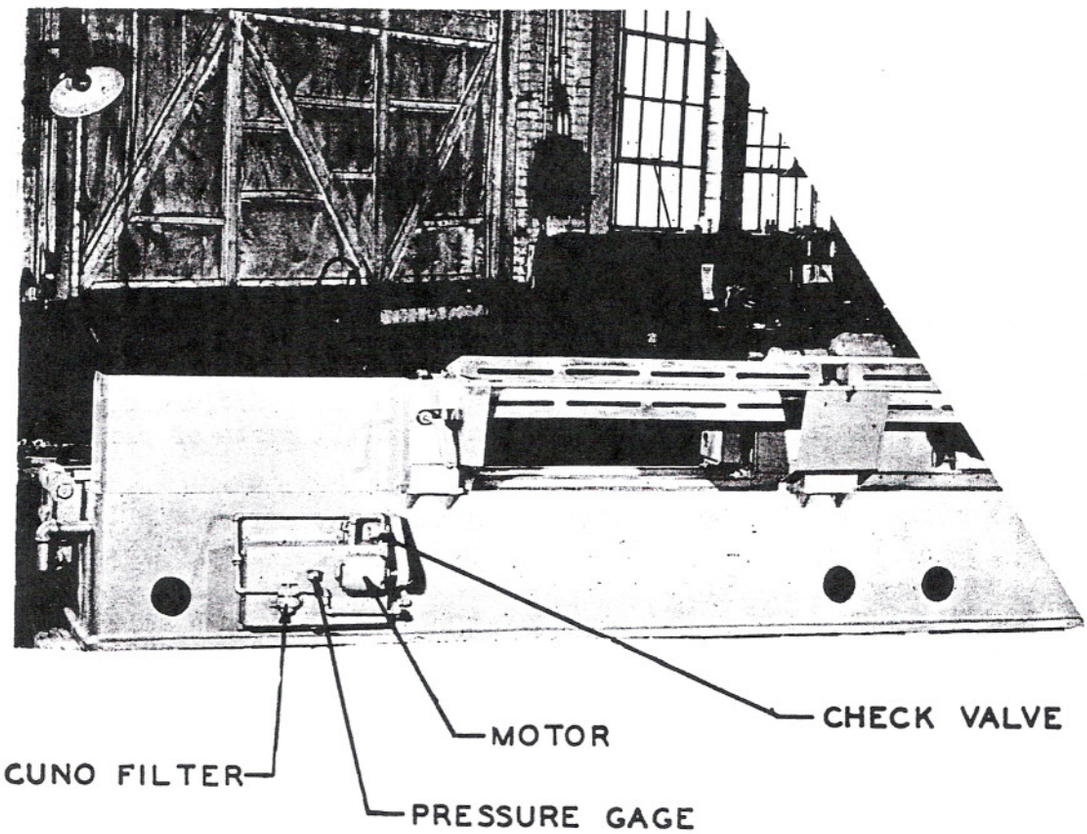
WARNING:

Any vibration or settling in the foundation will definitely be reflected in the machine and will result in inaccurate grinding. If conditions of vibration are bad, the best procedure is to mount the grinder on an isolated foundation of its own. Concrete is suggested, at least 30" deep and of sufficient dimension to handle the machine. This foundation should be isolated from the floor by at least 2" on all sides. This space then should be filled with a vibration dampening material, such as tar or asphalt. (See foundation plan.)

MACHINE LEVELING

The machine must be carefully leveled and preferably not bolted to the floor. Leveling is done by means of steel shims to insure a permanent setup of the machine, or the machine may be mounted on special Hanchett Adjustable Leveling Blocks, which are available at slight extra cost. We do not recommend or advise grouting the machine in concrete. In ordinary cases where the foundation is subject to movement or settling, it will be necessary to relevel the machine from time to time, and again the machine must not be grouted. Leveling must be done accurately for if the machine is out of level it may cause a slight twist in the base of the machine, which would show in grinding inaccuracies, resulting also in loss in production with poor quality work.

REAR VIEW M.D. MOUNTING OF FORCE FEED WAY LUBRICATION PUMP AND OIL FILTER



LUBRICATING INSTRUCTIONS

Ways	Vactra #2	Turn filter disc daily. Drain water accumulation from tank once each week.
Transmission	Vactra BB	Maintain oil level on gauge.
Hydraulic System	DTE Light	Maintain oil level on gauge.
Spindle	B. R. B. #3 Grease	Check every 90 days. Keep chamber half full.
Oil Lubricated Spindles	Superla Spindle Oil A	Maintain oil level on gauge.

All oils and greases recommended are Socony Vacuum products.

MECHANICAL TRANSMISSION

Operation of the traveling head is quite simple. A 1 HP, 1200 RPM FLUID SHAFT ELECTRICAL REVERSING TYPE MOTOR with LIMIT SWITCHES mounted on front apron of the machine and actuated through reversing starter accomplishes this head carriage movement. The reversing motor for transmission is driven via a TIMING BELT located at side of the wheel head and requires no lubrication. The TRANSMISSION HELICAL GEARS are lubricated via a SPLASH SYSTEM. Oil is carried to the bearings and can be seen at all times through the transparent cover (Lucite) plate mounted on side. The OIL GAUGE located near the timing belt should be checked every two weeks to maintain correct oil level. We recommend a MEDIUM GRADE OF OIL. (See chart.) The control panel houses the dash down timer, a device wired into the reversing carriage travel motor circuit.

TIMER

Operates only when the machine is stopped at the LEFT HAND end of the machine where operator is facing the controls (where provision is made for loading and unloading work pieces.) When the "STOP" button is pressed the carriage then is brought to a stationary position without excess coasting.

STARTING (Mechanical Transmission)

When first starting and placing the machine in operation make certain that the carriage travels the way the PUSH BUTTON indicates. If it does not, reverse the wiring of the input line IMMEDIATELY. DO NOT ATTEMPT TO RUN MACHINE BACKWARDS.

1. Start the 1/4 HP way lubricating pump motor.
2. Start transmission.
3. Start head motor.
4. Check way lubrication to insure sufficient oil is being presented to the machine ways.
5. Start coolant pump motor. Be sure that coolant tank is clean so that no dirt or sludge can interfere with the cutting efficiency of the grinding wheel. We recommend Hanchett Red Anchor Coolant Compound.
6. Dress grinding wheel before starting grinding operation.
7. Permit machine to run two or three minutes before starting grinding cycle.
8. Start grinding operations after above has been followed.

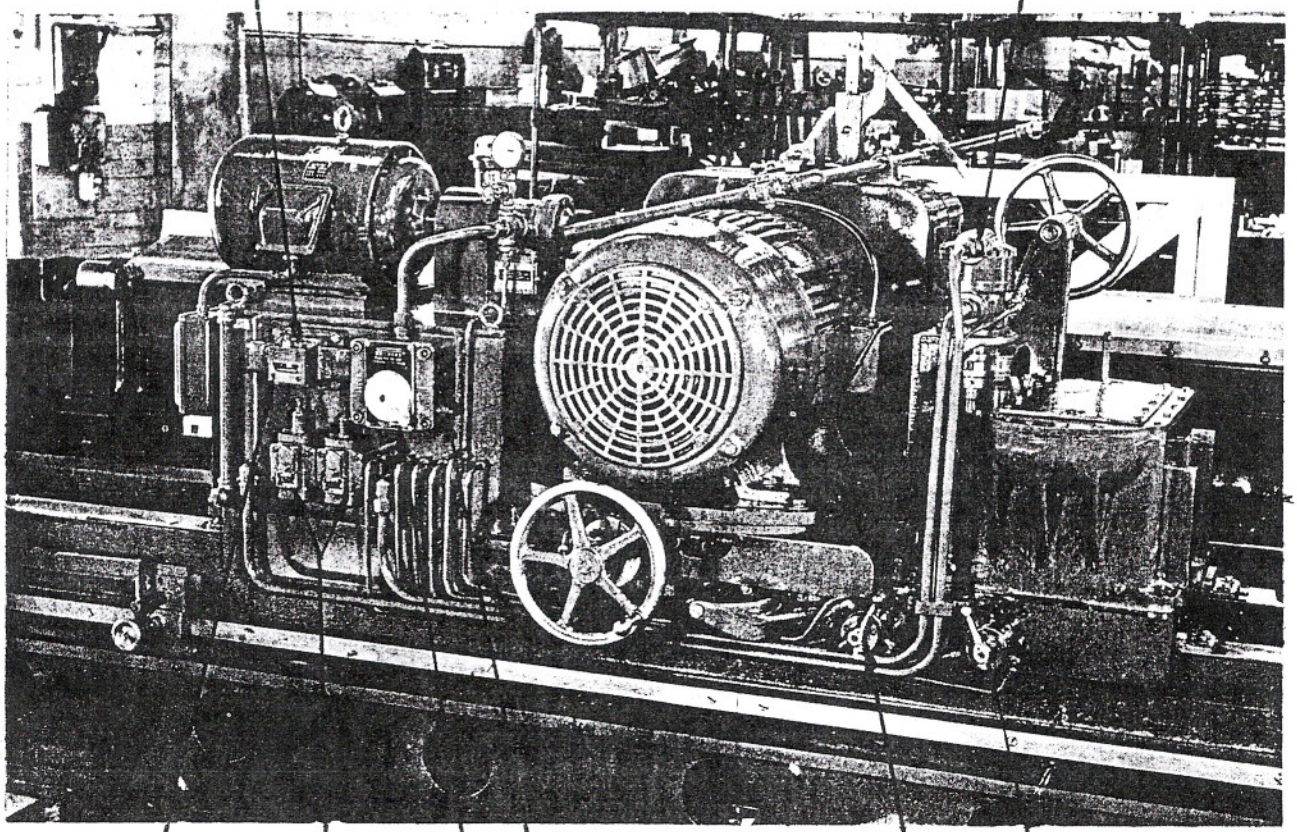
HYDRAULIC TRANSMISSION

The hydraulic traveling head carriage is driven through a fluid motor directly coupled to the helical gear transmission and its REVERSAL is accomplished through the pilot valve control unit which operates the 4-way valve. Its purpose is to provide instantaneous reversal and stopping of the carriage travel, eliminating over-ride or coasting of the carriage when stops and reverses are made. The pilot valves, as well as the 4-way valve, are correctly adjusted at the factory. The complete hydraulic assembly is a compact built-in unit, easily accessible to the operator and mounted on top of the carriage.

STARTING (Hydraulic Transmission)

1. Start 1/4 HP way lubricating pump motor.
2. Start hydraulic pump motor.
3. Start grinding wheel head motor.
4. Check way lubricating to insure sufficient oil is being presented to the machine ways.

MODEL AK TRAVELING WHEEL GRINDER
HYDRAULIC TRANSMISSION ASSEMBLY,
WITH CONTROLS AND BUILT – IN MOTOR
FOR GRINDING WHEEL.



5. Start coolant pump motor. Be sure that coolant tank is clean so that no dirt or sludge can interfere with the cutting efficiency of the grinding wheel. We recommend Hanchett Red Anchor Coolant Compound.
6. Dress grinding wheel before starting grinding operation.
7. Permit machine to run two or three minutes before starting grinding cycle.
8. Start grinding operations after above has been followed.

WAY LUBRICATION (Oil Filter)

The AK machines are equipped with a separate force feed lubricating system for the ways, driven by a 1/4 HP. motor. Before the oil leaves the pump it must pass through a Cuno edge type filter mounted at rear of machine adjacent to the way lubricating pump and motor. This filter is so arranged that by turning the hand wheel at the top of the filter it may be cleaned. It should be cleaned every morning before starting the machine. The filter, and also the oil tank, should be DRAINED at least once a week to remove the abrasive particles and collection of foreign matter which will be found after the usual week's operation. Before running the carriage, check the lubrication system to ascertain if oil is being pumped to the ways. Valves for opening or throttling the amount of oil flow are located in the base directly under the oil holes provided in the ways.

INSTRUCTIONS (Knife Grinding)

Before the knife is placed on the knife bar the operator should be certain that both are clean and free from gum, grit or other matter. The bolts on the clamps should be tightened uniformly until the knife is secure but should not be strained unnecessarily. When the knife is about half ground, slacken all the bolts which hold it, except one, then immediately tighten them and finish grinding. This is done to eliminate strain on the knife and eliminate crooked knives, provided other conditions are correct.

STRAIGHT BEVELS: Most knives require only a straight bevel to the cutting edge and, therefore, the grinding wheel head requires only a slight back clearance so that the front or cutting face of the grinding wheel comes in contact with the knife surface. Any desired bevel can easily be secured by adjusting the revolving knife bar to any desired position. A graduated dial (full 360°) is mounted on the end of the knife bar for this purpose. After correct positioning, the knife bar should be securely locked in position. Hanchett knife bars have all working surfaces ground to close tolerances to insure correct positioning of the knife to the knife bar face for clamping.

To hollow grind knives, the grinding wheel may be swiveled so that the edge of the wheel which is not grinding is from 1 to 2" away from the knife. The general practice is to set the grinding wheel on about a 10° angle (for hollow grinding only.) This adjustment is located on the motor head slide. We recommend that a minimum amount of concavity be carried. This concavity is sufficient for most knives except in very special cases. We further recommend that knives be ground with the cutting edge up. It is not necessary to go into the actual details of knife grinding as this operation is very simple. It requires only care and practice on the part of the operator to secure the desired results.

COOLANT (Grinding Compound)

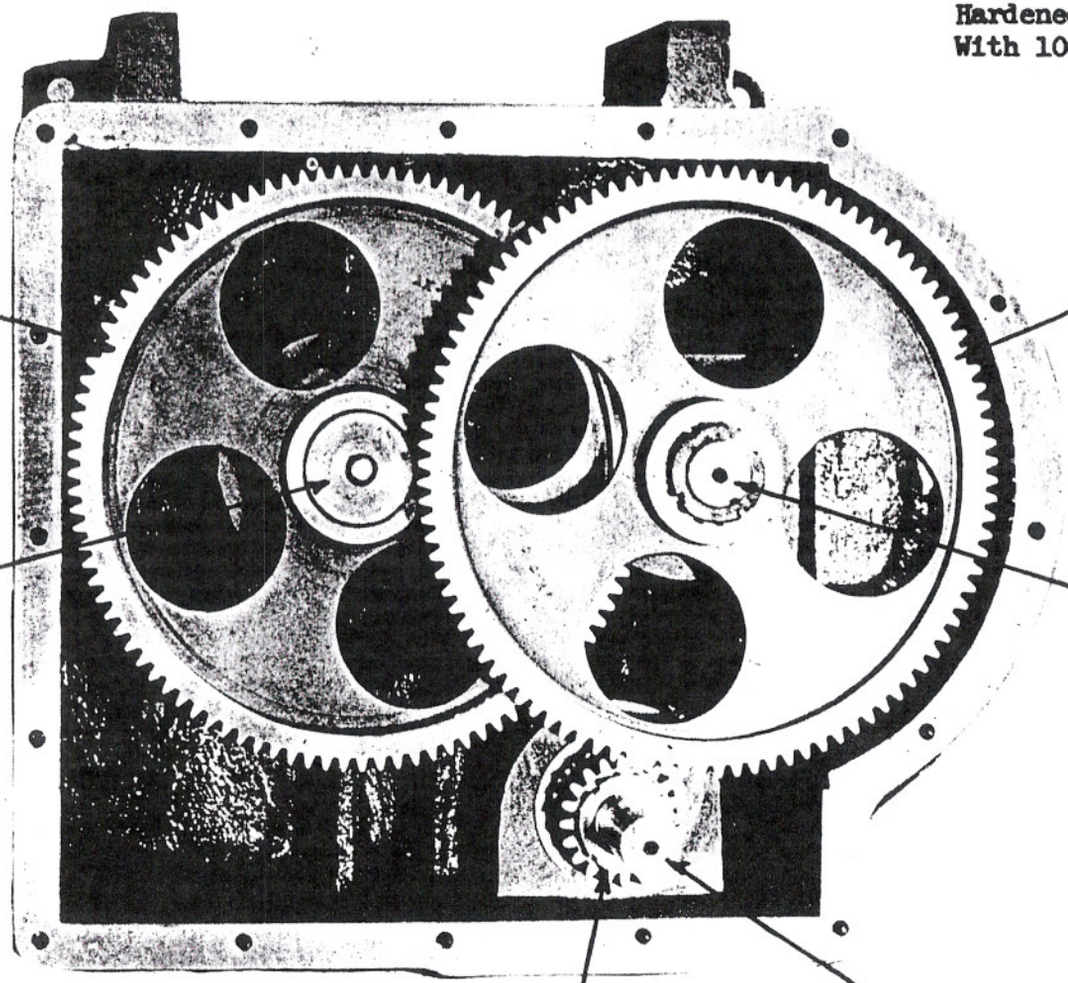
The use of coolant is a very desirable safeguard against heating. Too much coolant can never be placed on the work, as too little coolant is worse than none at all. Over-heating may cause the temper of the knife to be drawn, resulting in soft or extremely brittle areas to be formed on the knife edge. The usual cause of cracking is improper grinding. It may be caused by forcing the wheel on a wet grinding or by employing a wheel that is too hard or of too fine

HANCHETT GRINDERS
BIG RAPIDS MICHIGAN

TRANSMISSION

MODEL AK TRAVELING WHEEL GRINDER

Hardened Steel Gears Mounted
With 100% Anti-Friction Bearings



a grain for the knife. A hard wheel which does not wear away is an expense rather than an economy as the wheel will load, abrasive grains will become dull, and it will rub and burn rather than giving a proper grinding action. Occasional or frequent dressing of the face of the grinding wheel is necessary because the cutting surface is apt to become loaded and fill up with steel particles during the grinding process. We recommend Hanchett Red Anchor Grinding Wheels and Coolant. When the knife is ground to a true sharp edge, stop grinding and remove the knife. A few strokes over the edge with an oilstone to remove the slight burr will result in maximum sharpness. The AK Knife Grinder is equipped with a separate motor driven wet grinding system. We suggest that a medium volume of water mixed with the amount of coolant recommended by the manufacturer be applied to the work. We strongly recommend our own special coolant developed especially for knife grinding and specified as Hanchett Red Anchor Grinding Compound. Mixture: 40 parts water to 1 part oil.

GRINDING WHEELS

Cylinder Wheels (Nut Inserted) - Size 16" dia. x 4-1/2" high x 1-1/4" rim
20" dia. x 4-1/2" high x 1-1/2" rim
24" dia. x 4-1/2" high x 1-1/2" or 2" rim

Segmental Type
- 16" - Shape HA-16 (8 pcs. per set)
- 20" - Shape HA-20 (10 pcs. per set)
- 24" - Shape HA-24 (12 pcs. per set)

MOTORS: (Grinding Wheel) - 7-1/2 HP. up to 40 HP.

SPEEDS - BUILT-IN TYPE

690 - 720 RPM.
850 - 900 RPM.
1150 - 1200 RPM.

SPEEDS - BELTED MOTOR DRIVE (V-Belts)

900, 1200 or 1800 RPM.

COOLANT TANK:

Special steel tank of large capacity with settling tank and motor driven centrifugal pump.

WHEEL HEAD: (In-Feed)
MECHANICAL TRANSMISSION - 5-1/2"
HYDRAULIC TRANSMISSION - 6-1/2"

Machine has automatic in-feed in increments of .00025 up to .003 per pass. On the hydraulic and mechanical transmission machines there are 'dual controls' (front and back of machine) with hand wheel adjustment for cross feed.

KNIFE BAR: (Mechanical) Standard length x 8" sq., 1/2" bolts for T-slots. Special types available 10" or 12" square. Rotation full 360° worm gear operated with graduated dial.

ELECTRICAL SPECIFICATIONS:
(Standard Equipment)

All motors, starters, push buttons and controls are furnished with 220/440 volt, 3 phase, 60 cycle current. All special current and electrical specifications are furnished at an Extra Charge.

HANCHETT RED ANCHOR GRINDING COOLANT

(THE COOL GREEN COOLANT)

FOR BEST PROTECTION TO THE MACHINE AND THE WORK

FAST STOCK REMOVAL AND FINEST FINISHES

1 GALLON CAN

MAKES 50 TO 70 GALLONS OF COOLANT

NO BURNING
NO RUSTING
NO SEDIMENT PACKING OF SLIDING SURFACES

CLEAN, FAST-CUTTING GRINDING WHEELS

5 GALLON CONTAINER

MAKES 250 TO 350 GALLONS OF COOLANT

BETTER EDGES
BETTER FINISHES
BETTER FLUSHING
LESS HONING ON KNIVES

55 GALLON DRUM . . .

MOST ECONOMICAL

MAKES 2750 TO 3850 GALLONS OF COOLANT

MIX 50-70 TO ONE FOR BEST RESULTS

ODORLESS - NON IRRITATING

RUST INHIBITING - LOWEST BACTERIAL COUNT

BEST PROTECTION FOR LONG LIFE TO
THE GRINDING MACHINE

BETTER FINISHES - BETTER FLUSHING
CLEANER CUTTING WHEELS