

the pressure. Set the pressure to approximately 180 P.S.I., lock the adjusting screw in position and replace the pressure relief valve top cap (NOTE: Adjust the pressure with the main control handle in "OFF" position).

CAUTION

Be sure the grinding wheel clears the work and that the magnetic chuck is energized before starting the machine. Before operating the machine hydraulically, the table handwheel must be disengaged. To disengage the table handwheel, pull out the knob of the plunger located on the left side of the carriage. The table handwheel will automatically disengage.

The starter switch is located on the right hand side of the grinder base. The switch has three positions, "AUTO", "OFF", and "MANUAL". To start spindle and hydraulic pump motors, place switch in "AUTO" position.

To set the table in longitudinal motion, set the directional control handle in the center or neutral position. Turn the main control handle on the "ON" position.

Erratic action of the table in its initial operation or after prolonged idleness is due to air in the hydraulic system. The air will work out and action improve after a short run-in period. To set the table into crossfeed motion simply lift the directional control handle to move the table in or move it down to move the table out. Adjustment of the amount of crossfeed movement is made by the crossfeed control knob (located on the front center of the valve block). Rotation in a counterclockwise manner will increase crossfeed approximately .016 per revolution of the knob.

For initial operation of the table in a longitudinal movement, the stop dogs should be set approximately six inches apart. The stop dogs are located in a guard on the front face of the table and control the length of the longitudinal stroke. The stop dogs may be adjusted by means of a 1/8" hex wrench to suit the length of work stroke desired. The dogs must be set so that the pilot head (the two-pronged member located on the back of the valve body) is located between them. The stop dog to the right must strike the outer arm of the pilot head and the stop dog to the left must strike the inner arm.

WHEEL DRESS

Position the main control handle in wheel dress position. Use the Directional Control Handle to move the table "IN" or

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"OUT" as described in crossfeed motion - but now the speed of wheel dress is governed by the Wheel Dress Speed Control (located on the right hand end of the valve block). This is a needle type valve which will allow no movement or a rather rapid movement - as you desire. Turn counterclockwise to increase the speed, clockwise to slow the speed.

MANUAL OPERATION

Place the main Control Handle in the "Off" position and turn the starter switch to "MANUAL". Manual operation of the longitudinal table feed is easier if the longitudinal cylinder rod is disengaged from the table. To disengage the cylinder rod, raise the retainer knob that protrudes from the table and move the table to the right allowing the retainer knob to drop after the cylinder rod is clear of the adapter housing. Cylinder rod disengagement is recommended only when prolonged manual operation is anticipated.

TABLE CUSHION ADJUSTMENT

Two needle valve adjustments have been provided on the left end of the valve block to cushion the longitudinal and crossfeed table reversals. To adjust, remove screw and turn the set screw in to increase or out to decrease the cushion.

This adjustment has been made at the factory and any re-adjustment should only be made after the rigid mounting of the machine has been checked.

SPINDLE

The spindle is designed for very close tolerance, smooth finish grinding; supported at each end by oversize, pre-loaded, radial thrust super-precision bearings. The bearings are permanently lubricated and completely shielded from contamination by labyrinth seals at both ends of the housing. The spindle is motivated by a special 1 H.P. motor connected by a special direct drive coupling. Sturdily built into it, over a long period of time.

NOTE: It is recommended that the spindle be sent to the factory as an assembly when repair is deemed necessary. Inspection and repair is facilitated when the spindle is received by us in this manner.

TABLE

The table is made with one "V" way and one flat way, ground and hand scraped riding on hardened and precision ground tool steel inserts on the table carriage for greater precision and longer wear. The table working surface has been ground and checked on the machine itself to insure flatness and squareness to the spindle. The table ways are grooved to permit proper distribution of lubricating oil. Table ways should be cleaned weekly.

TABLE CARRIAGE

The table carriage travels on two flat precision lapped and hand scraped ways, mounted on the main grinder base -- the table carriage is guided and held in perfect alignment by a hard chromed rectangular shaped key mounted on the underside of the carriage. This rectangular shaped key moves between a stationary gib on its left side and a set of tapered adjusting gibs on its right side. The gibs have been properly adjusted at the factory, but should the need arise for readjustment, they can be adjusted by means of the screw mounted on the base and located just right of the rectangular key.

CROSS FEED TABLE CARRIAGE LOCK

This machine is equipped with a device for locking the table carriage in position when face grinding. The cross feed table lock thumb screw is located to the right of the cross feed handwheel on the front of the base. Tightening this thumb screw locks the adjusting gibs up against the cross feed table key, preventing transverse movement.

IMPORTANT: This lock must be released when operating the machine under normal conditions.

TABLE FEED HANDWHEEL

The table feed handwheel is the larger handwheel on the left front of the machine. One complete revolution of this handwheel moves the table approximately 3-1/2 inches. Moving the handwheel transmits motion through the table feed rack pinion to the table rack which is fastened to the underside of this table. This handwheel must be disengaged before using hydraulic table feed.

CROSSFEED HANDWHEEL

The crossfeed handwheel is located in the center on the front of the machine. It is graduated to one-one thousandths (.001). One complete turn of the handwheel will move the crossfeed table carriage one-hundred thousandths (.100). This handwheel can be used when main control handle is in "OFF" position. When the main control handle is in "ON" position, this handwheel is automatically disengaged.

ELEVATING HANDWHEEL

The elevating handwheel located at the top of the column on the right side is used to raise or lower the spindle. It is graduated