

**OPERATING INSTRUCTIONS  
RDN MODEL 440 FOUR BELT PULLER  
WITH AC FLUX VECTOR**

**"CAUTION"  
"DO NOT OPERATE MACHINE WITH GUARD REMOVED"**

**UNCRATE AND INSPECT**

This machine has been carefully crated to assure safe arrival to your plant. It is important that you immediately inspect the equipment upon arrival at your plant and report any possible damage incurred in transit to the trucker.

It is suggested that you uncrate the equipment as soon as possible so that any concealed damage may be discovered. Compare the packing list with items received and in turn cross check the items with your purchase order and report any discrepancies to RDN MFG. CO., INC. at the address or phone number listed above.

**START-UP PREPARATIONS**

The Belt Puller is positioned downstream of the extrusion line cooling equipment. The machine should be carefully aligned with other extrusion equipment in the line and adjusted to the proper extrudate center line height with the threaded jack screws.

The machine is equipped with a UL Listed power cord and twist lock power plug. The machine should be connected to the plant power supply through a disconnect switch fused in accordance with the National Electrical Code and any applicable state and local codes. Also, make sure the power is grounded through the power cable to the plant electrical ground.

Make sure that the equipment is properly wired for the voltage, phase and cycles supplied at your plant. Should there be any questions regarding the electrical connection, do not hesitate to contact us.

The air supply to the Belt Puller should be 1/2" diameter. The supply pressure should be 60-80 psi. A pressure regulator, an oiler and a filter are provided for the air supply. The pressure regulator should be set for a maximum of 60 psi. The air oiler is filled with SAE no. 10, non-detergent oil. The oiler is adjusted to provide about 1 drop of oil for every 6 close/open cycles of the belt take-up assemblies.

## OPERATION

The machine can be operated in three different modes:

1. Two Belt Puller using the vertical belts
2. Two Belt Puller using the horizontal belts or
3. Four Belt Puller

The bottom vertical belt and operator side horizontal belt assemblies are manually positioned with a hand crank. The top belt and rear horizontal belt assemblies are pneumatically actuated. Regulators with gauges are provided on the operator panel to adjust the closing force. The pressure should be adjusted to provide enough gripping force to move the extrudate without slipping, but not deform it.

There are adjustable air flow regulators in the lines of the belt closing air cylinders. These are adjusted to insure that the take-up assembly closes evenly from end to end.

The machine is equipped with an AC Flux vector variable speed control and motor. The major drive train components from the motor to the belt drive sheave are:

1. A four speed manual shift transmission with ratios of 4:1, 3.14:1, 2:1, and 1:1.
2. Double 40 roller chain with spring loaded tension idler.
3. A drive shaft with universal joints on each end for each belt take-up assembly.
4. A fixed speed reducer on each belt take-up assembly.

The puller speed is adjusted by selecting the proper transmission ratio and then adjusting the ten turn speed reference potentiometer to the desired line speed.

**CAUTION - The transmission should be shifted only when the machine is stopped!**

The traction belts are 2 inch wide poly "V" design with 40/50 durometer solid neoprene gripping surface (standard). Each take-up assembly also includes a poly "V" drive sheave, a poly "V" idler sheave with threaded belt tension adjusting screws and poly "V" rollers to provide back-up for the facing surfaces of the belts.

## MAINTENANCE AND LUBRICATION

Before any maintenance to machine, stop operation by pushing the stop button, and unplugging the machine from main power.

This machine was designed for continuous operation with a minimum amount of maintenance. Keep the machine cleaned and lubricated, and it will remain in good working condition.

**Note:** AC vector and AC Servo motors are designed to run hot. It is not uncommon for the motor temperature to reach 180-200f, depending upon ambient temp.

Facilities should be made to remove water from the extrudate before it reaches the puller. Water will corrode the machine and reduce its useful life. Also, water on the belts will reduce traction.

The drive sheaves and rollers are Poly "V" groove, which eliminates all tracking problems. If dirt or a piece of plastic should stick to one of the pulleys, it could cause a variation in the extrusion. Stop the machine and clean off pulley with knife or scraper.

To obtain good traction, the belts should be kept taut. If adjusting of belts is required, this may easily be accomplished by taking up on the bearing block positioning screw, located at the entrance end on each side of the belt frame assembly.

If a belt needs to be changed, it may be accomplished by:

1. Loosening bearing block positioning screws and slacking off belt.
2. Remove the support plate at each end of the take-up assembly on the side opposite the gear reducer.
3. Remove the old belt and put on the new one.
4. Replace the support plates.
5. Adjust the bearing block positioning screws to tighten the belt and adjust tracking.

## LUBRICATION

- Roller Chain Idler Sprocket Bearings - Grease with No. 2 Lithium base ball bearing grease each week.
- Roller Chain - Place a few drops of oil on each of the roller chains each week.
- Transmission Drive Shaft Outboard Bearing - Grease with No. 2 Lithium base ball bearing grease each week.
- PTO Drive Shaft Bearings - (2 each shaft on end of machine) - grease with No. 2 Lithium base ball bearing grease each week.

- PTO Drive Shaft Universals - (2 each PTO) - Grease with No. 2 Lithium base ball bearing grease each week.
- Gear Box on Belt Take-up Assembly - The gear boxes have grease fittings. Grease with No. 2 Lithium base ball bearing grease each week.
- Belt Take-up Drive End Shaft Bearing - Grease with No. 2 Lithium base ball bearing grease each week.
- Vertical Support Shafts for Belt Take-up Assemblies - Manual - Maintain light coat of oil on threaded rod. Pneumatic - Maintain light coat of oil on shafts.
- Connecting Lever Arm Pneumatic Cylinder to Belt Take-up Assembly Grease fitting - grease with No. 2 Lithium base ball bearing grease each week. Casters - Grease with No.2 Lithium base ball bearing grease every 6 months.

The pneumatic system filter regulator should be inspected weekly. Drain any liquid from the bowl before it reaches the baffle. When dirt appears in the glass bowl, clean it as explained in the Compressed Air Filter instructions included as a separate part of this manual. Also, keep the oiler filled with SAE no. 10, non-detergent oil.