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# GARRARD

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## MODEL 301.

The unit went out of production in 1965 and by modern standards is deemed obsolete. Spare parts, literature etc., have long since been exhausted except for common parts to the 401 or those which can be adapted.

The intermediate wheel is identical and the support bracket for the wheel, including top and bottom bearings, can be used with the addition of a packing washer we supply. If the turntable spindle housing is the later oil lubricated type then again the 401 spindle assembly may be used. If grease lubricated ie., has a brass grease nipple on the side of the housing then the 401 type cannot be used unless part of the unit plate is cut away. No other parts are available and due to lack of piece parts we cannot undertake repair if requested.

2.65  
27  
2.92  
3.29

If Rumble is experienced first check that the motor runs quietly when light finger pressure is applied to the side of the motor pulley in several positions around it, especially at the crucial point where the intermediate wheel makes contact and also diametrically opposite at 180°. A long, thin screwdriver held on the top and sides of the motor while doing so will act as an elementary stethoscope when the ear is placed on the handle. The intermediate wheel must be held away from the pulley or its spring disconnected during this test. Do not apply too much finger pressure for this will only displace the motor bearings and result in noisy running. Provided there is no obvious rattle indicating worn bearings then the following may be beneficial.

Remove the unit from its mounting and turn it onto its right hand edge with the motor uppermost. With an oil-can having a thin spout, or failing this a small screwdriver on which oil can run down, insert the spout of the oil-can or screwdriver blade through the uppermost hole adjacent the square cap over the bottom bearing of the motor. This part can be seen in the centre of the bottom cover of the motor on the right-hand diagram showing the underside of the unit opposite page 10 of the Instruction Manual. Place a few spots of sewing machine oil onto the lower end of the rotor spindle and if necessary have an assistant grip the motor pulley to work the rotor spindle to and fro so that suction will draw oil into the bearing. In any event oil will run into the bearing when the unit is replaced in the horizontal position. Likewise insert the spout of the oil-can through one of the holes of the eddy current brake disc to release a few spots of oil in the top bearing area.

Next, remove the top plate with bearing for the intermediate wheel and lift the wheel out. Clean the bearing in the top plate and also the lower bearing in the support bracket and put a spot a spot of thicker oil on each bearing. A matchstick is ideal for

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for cleaning the bearings. Before replacing the wheel clean and polish the spigot bearings on the wheel and also give the periphery of the wheel a vigorous cleaning with a lint-free cloth dampened with methylated spirit to remove all trace of glaze and foreign matter which may be adhering to it until a dull, matt finish is obtained. If there are any visible cracks in the rubber at the periphery then a replacement wheel is required.

If the unit is one of the early models fitted with a grease lubricated turntable spindle, take off the turntable and for convenience remove the complete spindle assembly by undoing the 3 nuts on the screws securing it to the unit plate. Remove the cap from the grease nipple and take the nipple out. Remove the 2 screws securing the thrust plate to the bottom of the assembly and push the spindle down to remove the thrust pad assembly, noting the order for re-assembly. Take out the spindle and remove all trace of grease from inside the housing, the thrust pad assembly, the spindle and the grease nipple using a cleaning spirit such as petrol. Making sure the parts are clean and dust free, re-assemble, lubricating the thrust pad adequately before doing so and temporarily leaving out the grease nipple. Check that the spindle rotates smoothly by drawing a finger across the tapered section. Assemble to the unit then fill the housing with oil to the level of the grease nipple hole then replace the nipple and cap. Place a spot or two of oil on the top bearing working the spindle up and down to ensure penetration. Repeat the operation until satisfied it is well lubricated. Note that oiling the top bearing will be necessary fairly frequently, say on a monthly basis. A slightly thicker oil such as multi-grade motor oil should be used on this and other moving parts except for the motor.

If the unit has the oil lubricated spindle assembly which is suspect, then a thorough cleaning before re-oiling will be beneficial. Ensure the bottom bearing is adequately lubricated by first running oil into the screw capped hole, immediately to the right of the spindle top, to prevent an air lock. Lifting and lowering the spindle while doing so will enable the housing to be filled more quickly. Oil the top bearing as in the previous paragraph and saturate the felt pad around the spindle.

Having completed lubrication carefully clean the driving surfaces of the motor pulley speed steps, the inside of the turntable rim and again the periphery of the intermediate wheel as before, in case it has been accidentally contaminated with oil during lubrication. This is to ensure that drive slip does not occur.

Next, with the fine speed control turned fully + and the intermediate wheel held away from the motor pulley spin the pulley with the fingers and note how long it takes for it to become stationary. If it runs free for only a turn or two, reconnect the power supply and with the motor switched on give the side of the motor body a sharp rap with the handle of a fairly large screw-driver to shock the bearings into perfect alignment. If tested again by spinning it should run much longer before becoming stationary.

This procedure will considerably improve the Rumble performance of the unit but if still troublesome one other cure may be tried. If Hum Pickup is experienced it is also a means of reducing it.

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When the 301 was originally designed the motor had to be powerful enough to drive the turntable with pickup tracking weights in the region of 10 grammes. With modern tracking weights of  $\frac{1}{8}$  to 3gr. the motor does not need to develop so much power. Therefore, we recommend a standard lamp holder be wired in series with the power supply to the motor and then by experiment find the highest wattage lamp that will allow the motor to drive the turntable correctly maintaining true speed under normal working conditions. The higher the wattage lamp used the lower will be the voltage across the motor and therefore the lower the power developed. Consequently there will be considerably less vibration to cause Rumble.

In the case of Hum Pickup the flux density is reduced and thus the magnetic field and in conjunction with making and fitting a Mu-metal shield over the motor switch, which may require earthing, the induced hum will be considerably reduced if not eliminated.

If the turntable speed is fast we may be able to supply a pulley of smaller diameter to at least bring true speed within the scope of the fine speed control, although our range of pulleys is now much depleted. However, we do require further information and for this we suggest the following procedure. Switch the unit 'On' and allow it to run for half an hour or so, that the motor is at working temperature and set the fine speed control to its central position. Place a marker on the turntable and count the number of revolutions obtained in the course of one minute, using a stop watch or the seconds hand of a watch, on all speeds used. Send this information to us together with the diameters of the motor pulley speed steps if you have access to a micrometer. Alternatively return the motor pulley.