ABSTRACT

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ANALYSIS OF RATIO, TORQUE, AND PERFORMANCE TEST ON AKS GG45 CABLE PAPER MACHINE

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In the process of working in the electrical industry, sometimes there are many failures, damage, or residual use of installation on copper cables. By piling up unused cables it will become a pile of garbage. Cable stripping machine is a tool used for the separation between the conductors and insulators on unused cables. In this cable stripper machine there is a transmission system, namely; pulleys, gears and chains. The initial drive motor will rotate the pulley transmission which is continued to the gear transmission and then to the transmission so that all of it is interconnected and produces the desired rotation. This writing aims to determine the ratio value, torque value and performance test on the AKS GG45 cable stripper machine. The electric motor used has a rotation of 1420 rpm. In this cable stripping machine, the value of the pulley rotation ratio I_1 = 9: 2.99, I_2 = 9: 4, and I_3 = 9: 3.88. For gear rotation ratio values such as VR_1 = 9: 8.4, VR_2 = 1:1, and VR_3 = 9: 9.64. For the value of the sprocket and chain turns ratio VR = 1:1. Because the cable stripper has two output turns, the total ratio is two, the first ratio is I_{total1} = 9:1.33 and the second total ratio is I_{total2} = 9:1.29. And in the calculation of torque, the electric motor has a torque of 10.91 Nm, the reduced drive with 210 RPM has a torque of 73.75 Nm and 202.8 RPM has a torque of 76.37 Nm. In the performance test, stripping of the cable with a length of 150 cm is carried out, the peeled copper cable has various sizes ranging from 1.5 mm2 to 10 mm, the size of 1.5 mm2 has a stripping time of 2.50 seconds with a copper weight of 20 grams, the size of 10 mm2 has a stripping time of 2.96 seconds with a copper weight of 137 grams.

Bibliography (2010 s/d 2022)