**Need statement**:Wire winded coils are used in motors, solenoids ,inductors and many other electrical equipments. Today ,coil windings are no more preferred by labors. Industrial machines are much efficient and fast in doing this job. An industry which manufactures such machines is interested in making ready small scale demo machine.

Automatic Winding Machine

|  |  |  |
| --- | --- | --- |
| **Questions**  1.Which kind of material you want to wind?  2.How many turns you want to include in one roll?  3.Whats the budget of your machine?  4.How much time it consumes to wind one roll?  5.Whats the thickness of the ribbon?  6.After reaching maximum roll diameter ribbon should cut off.  7.Does it reduce the labour requirement?  8.Machine should consume less space  9.It should stop after 30 tuns  10.Wire should not get tangled  11.Machine should not make much noise  12.Machine should work for continuously without getting much heated.  13.Detecting material which we are winding. | **Answers**  Silk thread  30 each  4000/-  3 minutes  3.5mm  possible  yes  yes  Yes  Yes  Yes  Yes  Yes | **Category**  Objective  Constrains  Constraints  Constraints  Constraints  Function  Objective  Objective  constraints  Function  Objective  Function  Function |

* 1. **Identifying Client’s Objectives.**

**1.The material should be Satin ribbon.**

**2.It should reduce the labour requirement.**

**3.Machine should not make much noise.**

**4.Machine should consume less space.**

**Problem definition 1.1**

The aim of our project is to build an Automatic Winding machine. A winding machine is a winder which is used for wrapping string, twine, cord, thread, yarn, rope, wire, ribbon, tape, etc on a spool or a reel. In our winding machine, the material that we want to wind is silk thread. The machine should reduce the labor requirement. The Machine should not make much noise and it should consume less space.

**1.2 Establish Functions**

**1.After reaching maximum roll diameter it should cut off.**

**2.Wire should not get tangled.**

**3..Machine should work continuously without getting heated.**

**4.It should detect the material which we are winding.**

**Problem definition 1.2**

The aim of our project is to build an Automatic Winding machine. A winding machine is a winder which is used for wrapping string, twine, cord, thread, yarn, rope, wire, ribbon, tape, etc. on a spool or a reel. In our winding machine, the material that we want to wind is satin ribbon. The machine should reduce the labor requirement. The Machine should not make much noise and it should consume less space. After reaching the maximum roll diameter the thread/ribbon should cut off. The wire should not get tangled. The machine should work continuously without getting heated.

**1.3 Identifying constraints**

**1.One roll should include 30 turns.**

**2.Budget of machine is 4000/-**

**3.It should consume 3 minutes to wind one roll.**

**4.Thickness of ribbon is 3.5mm.**

**5.Machine should stop after one roll.**

**Problem definition 1.3**

The aim of our project is to build an Automatic Winding machine. A winding machine is a winder which is used for wrapping string, twine, cord, thread, yarn, rope, wire, ribbon, tape, etc on a spool or a reel. In our winding machine, the material that we want to wind is satin ribbon. The machine should reduce the labor requirement. The Machine should not make much noise and it should consume less space. The Machine should be portable. After reaching the maximum roll diameter the thread/ribbon should cut off. The wire should not get tangled. The machine should work continuously without getting heated. The roll required for the machine will generally include 30 turns. The budget of our machine is Rs 4000/-. To wind one roll, the machine should consume 3 minutes. The thickness of the ribbon should be 3.5mm. The machine should stop after completion of 30 turns of the motor.