

## ABSTRACT

THE DESIGN AND MANUFACTURE OF A PROGRESSIVE DIE FOR  
PRODUCING 1/2" AND 3/4" PIPE CLAMPS.

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This thesis gives an indepth analysis on the many factors that must be considered in the design and manufacturing stages of a tool that is to be used to produce 1/2" and 3/4" Pipe Clamps.

Factors affecting the product design of the 1/2" and 3/4" pipe clamps are analysed with changes made to its design to suit:

- a. Tool design and cost.
- b. Availability of raw materials.
- c. Production times.

Detailed Product Drawings of the clamps are done.

The equipment needed to produce the pipe clamps are specified. Other sheet metal products are indentified as potential viable products. These products will maximise available production time on the equipment.

In the design of any progressive die, specific procedures and details must be adhered to, to ensure the proper functioning of the die. These procedures and details are stipulated with respect to the design of the progressive die for the 1/2" and 3/4" pipe clamps.

The manufacturing process of the progressive die for the clamps require an expert knowledge of the machines and machining processes available. Turning, milling, grinding, heat treatment and CNC wire EDM are the processes looked at.

The manufacture of the progressive die require the skills of trained tool makers. The stages of manufacture of the components of the die is stated with the procedures for assembly of these components being the final stage. Manufacturing costs for the design and manufacture of the progressive die are tabulated with emphasis on the economics of metal removal and material utilization.

Finally, observations and conclusions are made.