**REMOTE CONTROLLED SCREW JACK**

**ABSTRACT:**

The remote controlled screw jack is a modified form of conventional

screw jack that helps to lift the load using motor as a source of energy

and gear box to control the lift of the jack. In this project we aim for the

following:

Arrange & modify the conventional cylindrical lifting jack by putting

extra ring in the center to grip the v belt assembly.

Controlling the jack remotely

To arrange & modify the 12V big D.C. Motor by adding ‘v belt’

pulley at the output shaft.

To construct an angle iron based structure to hold the entire

assembly.

To design & construct a 5Amp dc power supply to run the project

assembly.

**INTRODUCTION:**

An

electrically

operated

screw-type

jack

comprising

a

support

base, a housing, a jack body, a lifting ram which is contained in

the jack body, a servo motor which is contained in the housing,

reduction gears for transmitting the driving power of the servo

motor

to

the

lifting

ram,

a

safety

device

prevent

the

motor

and

the

power

transmitting

mechanism

from

an

abrupt



failure

due

to

overloading

,

and

a

square

head

pin

for

conventional

hand

operation

of

the

jack

when

the

jack

is

overloaded. The safety device consists of a clutch disk, a clutch

spring and a sleeve. The reduction gears consist of first sun and

planet

gears,

second

sun

and

planet

gears

and

a

sun

gear

cylinder.

The remote is used for control the jack from distance.in case of heavy

object the jack can be operated remotely.no need to control manually,

this project reduces the accident.

**WORKING PRINCIPAL**

A screw jack or a Jackscrew is operated by turning a lead screw. The

height of the jack is adjusted by turning the lead screw. This can be

done either manually or by integrating an electric motor with it. This

integration is our project.

The components of the jack are:

-support base.

-jack body mounted on support base

-housing mounted on jack body, having a flange formed at a middle

portion.

-servo motor having a driving gear mounted to a lower end .The servo

motor is contained in the housing.

-lifting ram vertically mounted on the support base.

-driven gear and a driven pinion mounted on the support base.

The pinions are engaged into each other.

-Reduction

gears

having

first

sun

and

planet

gears

including

first planet gears and a center gear, second sun and planet gears

including

second

planetary

gears

and

a

driving

pinion,

a

sun

gear cylinder housing.

-safety device mounted under the reduction gears, which has a clutch

disk on which there are fitting recesses.

-clutch spring resiliently supporting the clutch disk in engagement with

-sleeve mounted detachably to the flange of the housing by bolts.

the lower end of sun gear cylinder.

Pistons may be required for transmission from motor to main shaft.

**APPLICATIONS:**

The jack can be operated remotely

Can be used by physically handicap persons to lift car or other things

Can be used in workshop or by personal use

**ADVANTAGES:**

No need of human effort

Jack can controlled both remotely as well as manually

Heavy things can lift easily

**DISADVANTAGES:**

Power is needed

**BLOCK DIAGRAM:**

Jack

Power

Supply

Micro

Controller

Manual Controller

And

Remote sensor

Controller

Motor

Power

Supply

REMOTE

