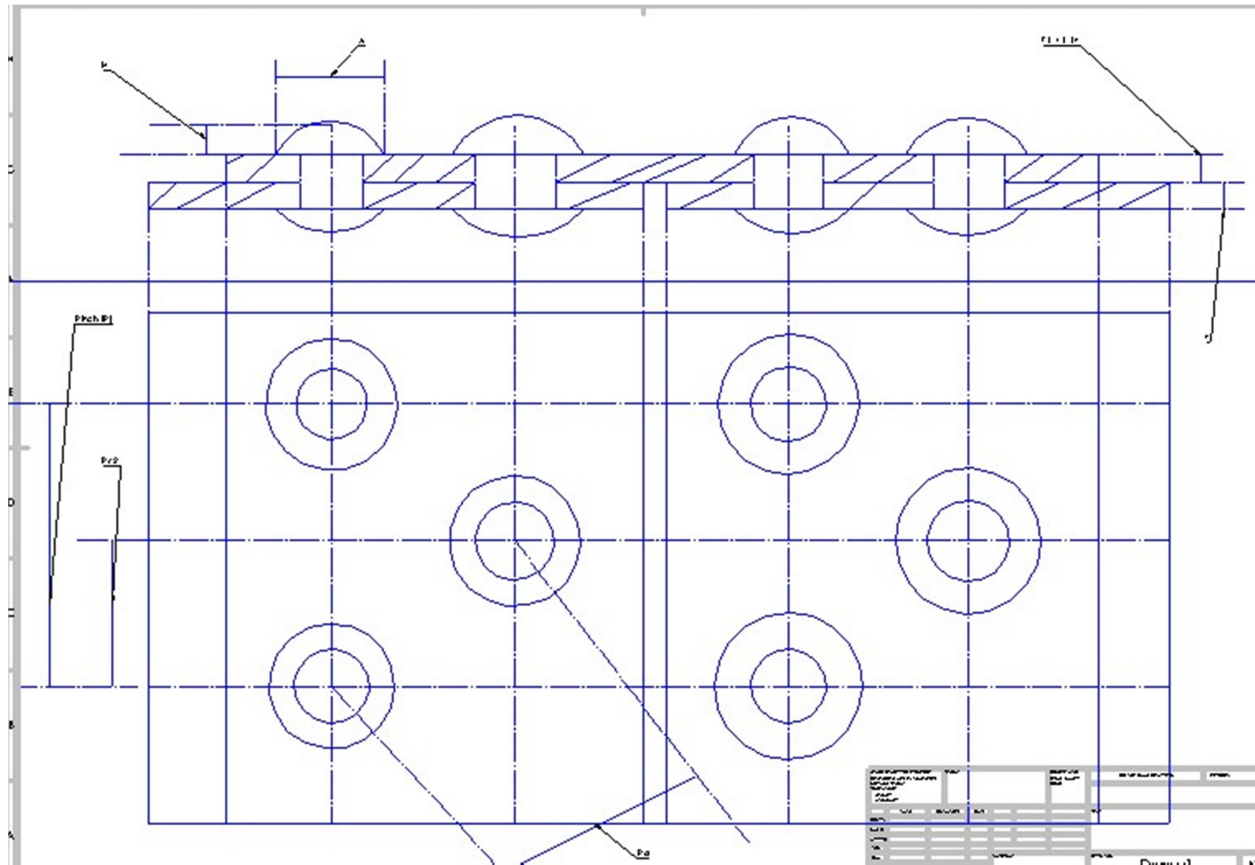


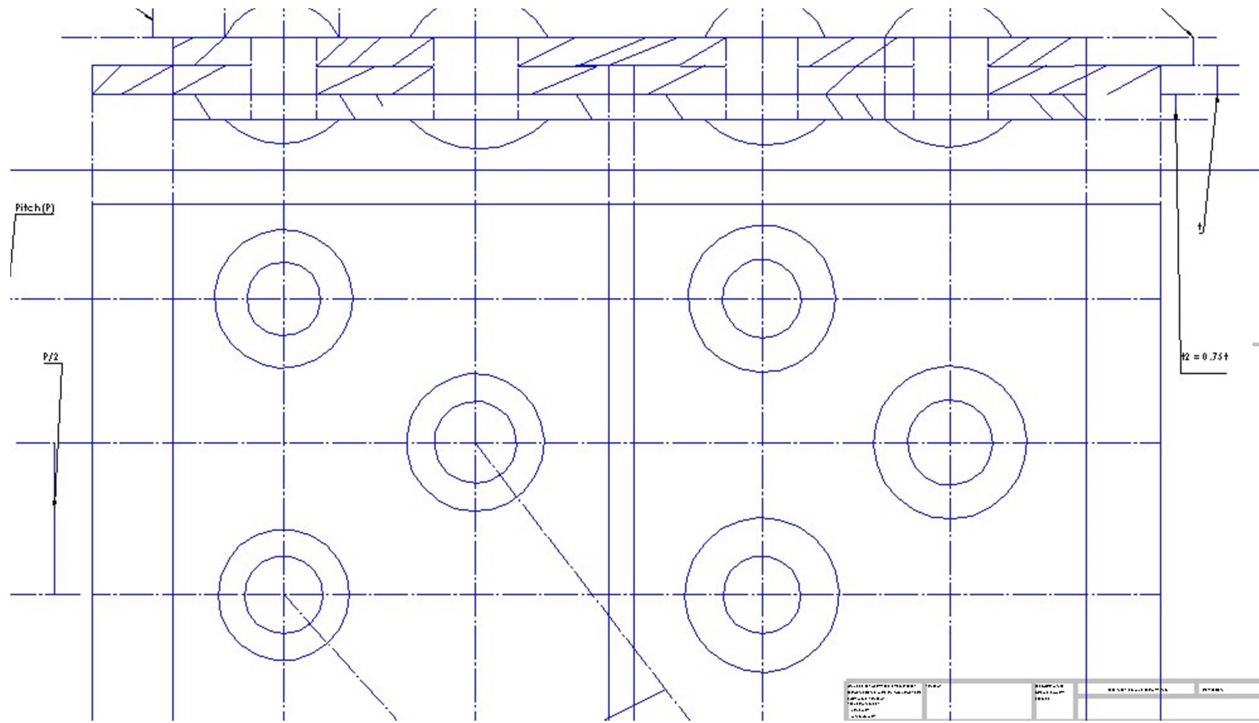
Q.5. 4 Draw sectional view of a single strap double riveted zig-zag butt joint plate thickness $t = 20$ mm.

Sol.



Q.6 Draw sectional view of a double strap double riveted zig-zag butt joint plate thickness $t = 20$ mm.

Sol.



Shaft coupling

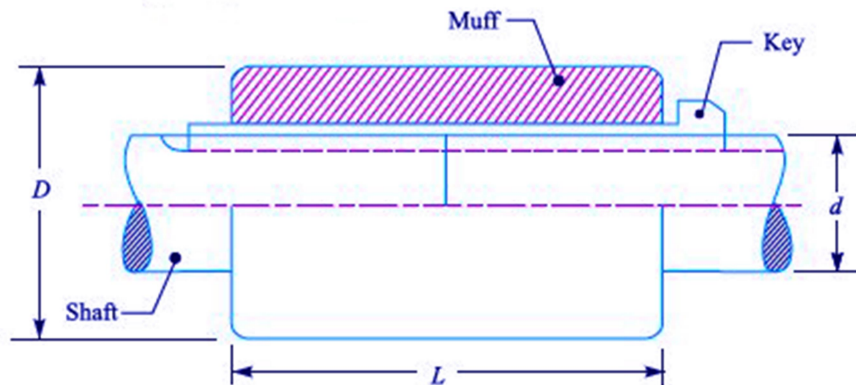
- (1) Rigid coupling
- (2) Flexible coupling
- (3) Loss or dis – engaging coupling
- (4) Non –aligned coupling

Rigid coupling – rigid shaft coupling are used for connecting shaft having collinear axes. These are further sub –classified in to muff or sleeve coupling and flange coupling.

Sleeve or muff coupling –



SLEEVE COUPLING / MUFF COUPLING



$$D = 2d ; L = 3d ; \text{key} = w = t =$$

Clamp Coupling

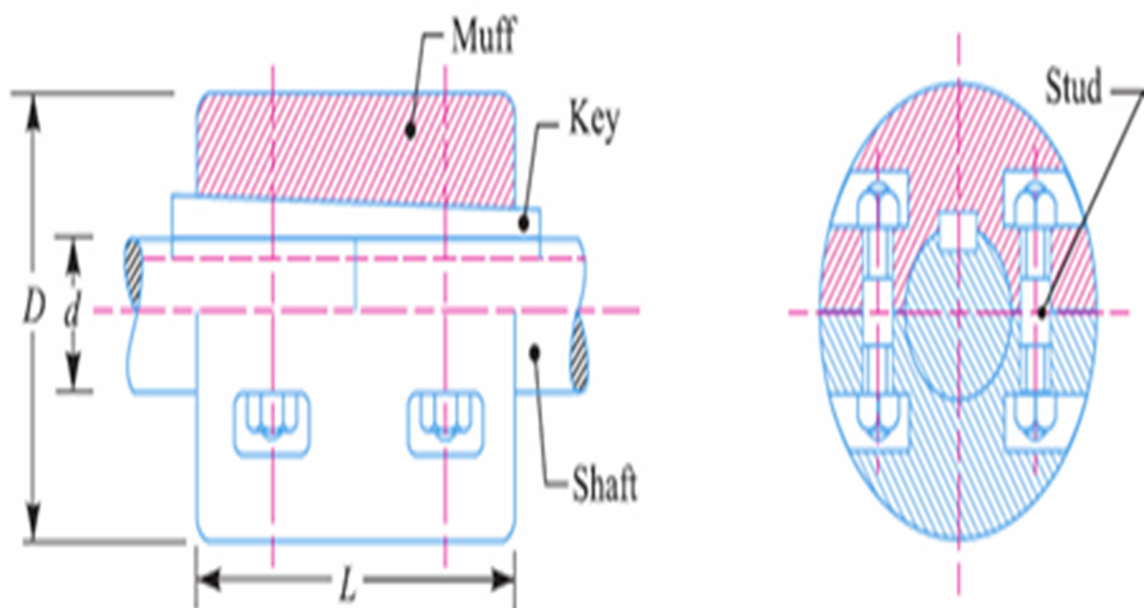
16.4.1 Introduction

Clamp coupling is also known as split-muff coupling or compression coupling. In this coupling, sleeve or muff is made in two halves, which are split along the plane passing through the axes of the shafts. These two halves are clamped together with the help of bolts, which are placed in recesses made in the sleeve halves. Dynamic balancing of clamp coupling is difficult making it unsuitable for high speed applications.

It is also unsuitable for shock loads. Assembly and dismantling is easier for this coupling. Figure 16.2 shows Clamp Coupling assembly.

A small clearance is provided between the two halves of the sleeve along the parting line and the force due to clamping of bolts creates frictional force between the surface of the shafts and inner surface of sleeve halves. Torque is transmitted by means of this frictional force and through the key, from the input shaft to the sleeve and from sleeve to the output shaft. It is not possible to find out the exact percentage of torque transmitted by friction and by the key. Therefore, for designing the bolts it is assumed that whole of the torque is transmitted by friction and while designing the key, it is assumed that whole of the torque is transmitted by it.

Design is similar to the design of muff coupling and an additional calculation is required for designing the bolts.



$$D = 2.75 d ; L = 3.25 d ; \text{key} = w = t$$

Flanged coupling - in a flanged coupling, flanges are either fitted or provided at the end of shafts. The flanges are fastened together by means of a number of bolts and nuts.

- (1) Protected flanged coupling
- (2) Unprotected flanged coupling

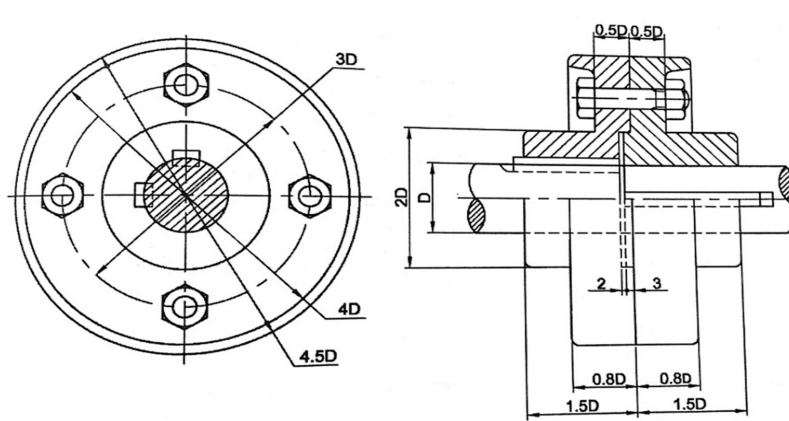
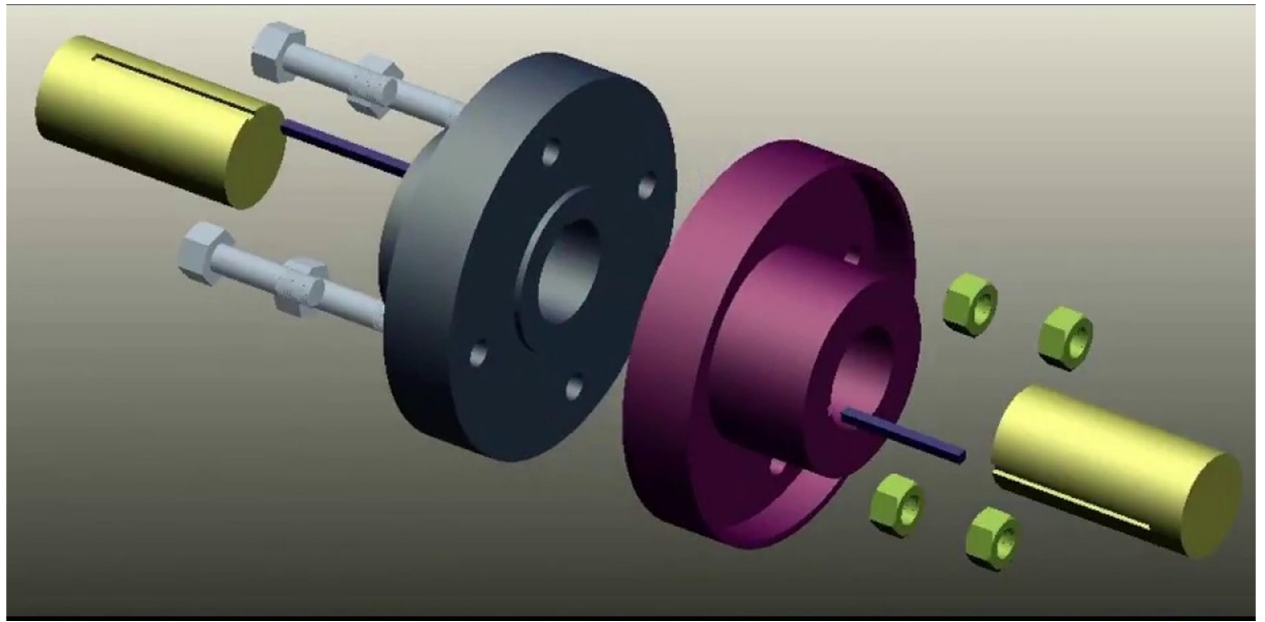


Fig. 8.3 Two Views of Protected Type Flange Coupling