5. THE DRILLING PROCESS

The operations involved in drilling a well can be best illustrated by considering the sequence of events involved in drilling the well shown in Figure 4. The dimensions (depths and diameters) used in this example are typical of those found in the North Sea but could be different in other parts of the world. For simplicity the process of drilling a land well will be considered below. The process of drilling a subsea well will be considered in a later chapter.
Figure 6  Jack-up rig

Figure 7  Semi-submersible rig

Figure 8  Drillship

Figure 9  Fixed platform (Steel Jacket)
Figure 5  Completion schematic
Hoisting System

(a) Free body diagram of traveling block  (b) Free body diagram of crown block
Figure 7 Duplex pump

Triplex pump
Rotary System

Tubing makeup and breakout
Drill String

Kelly

Drill Pipe

Bottom Hole Assembly
Collars, Reamers, Stabilisers

Bit

Pin

Tong area

Box counterbore
Make and break shoulder

Box

Tong area

Hardfacing (optional)

Tapered elevator shoulder

L.D. of Connection

PIN

Shoulder to Shoulder Connection Forms the Seal

BOX

Cross Section