

Capacity Control Mechanism

■Capacity control mechanism

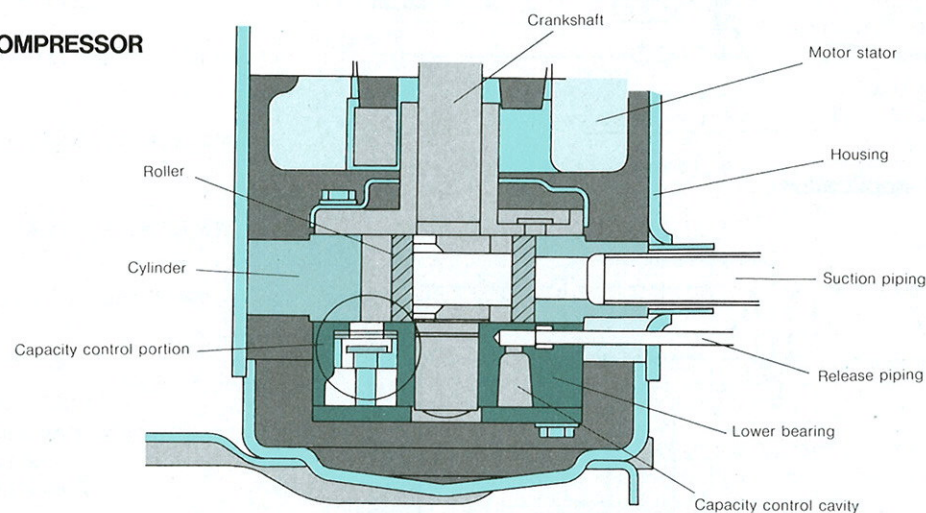
A relief valve located inside the compressor opens and closes according to pressure differences, thus effecting capacity control.

■Construction

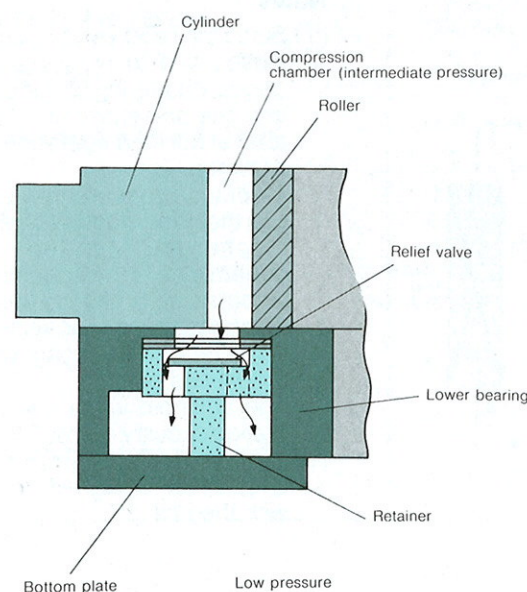
A relief valve which moves freely according to pressure differences is located in the lower bearing, held in place by a retainer. The lower bearing relief port is connected to the compression chamber, so when the relief valve opens the refrigerant gas being compressed is gradually by-passed to the low pressure side. When there is no need for capacity control, the compressor will operate at 100% capacity since the high side pressure will be applied to the relief valve, keeping it fully closed.

Fig. 4 General construction

ROTARY COMPRESSOR



CAPACITY CONTROL OPERATION (Partial Load)



FULL CAPACITY OPERATION (Full Load)

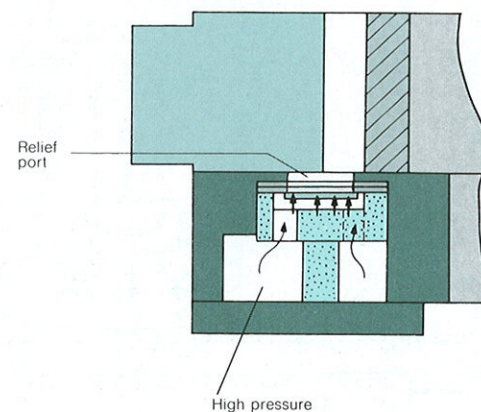
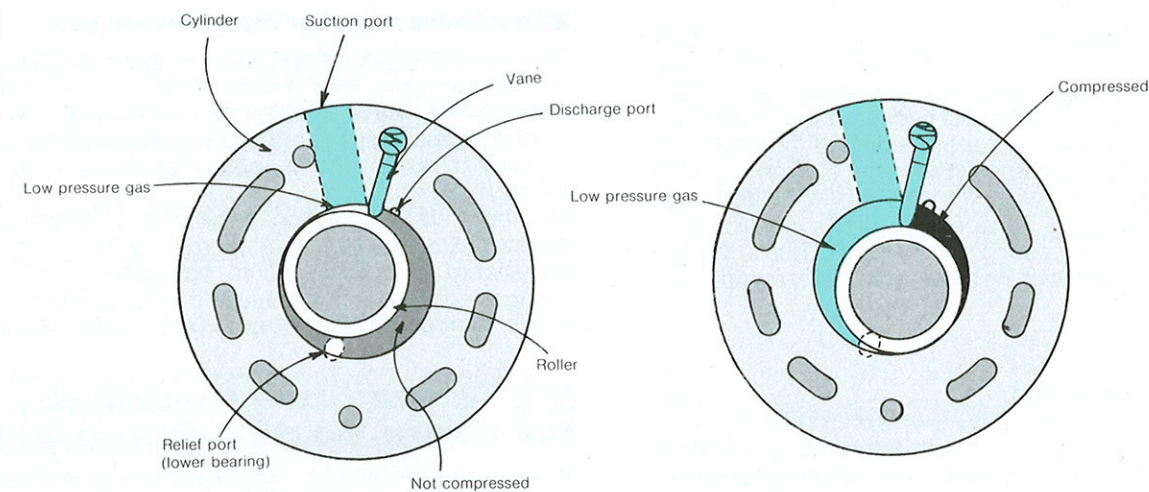


Fig. 5

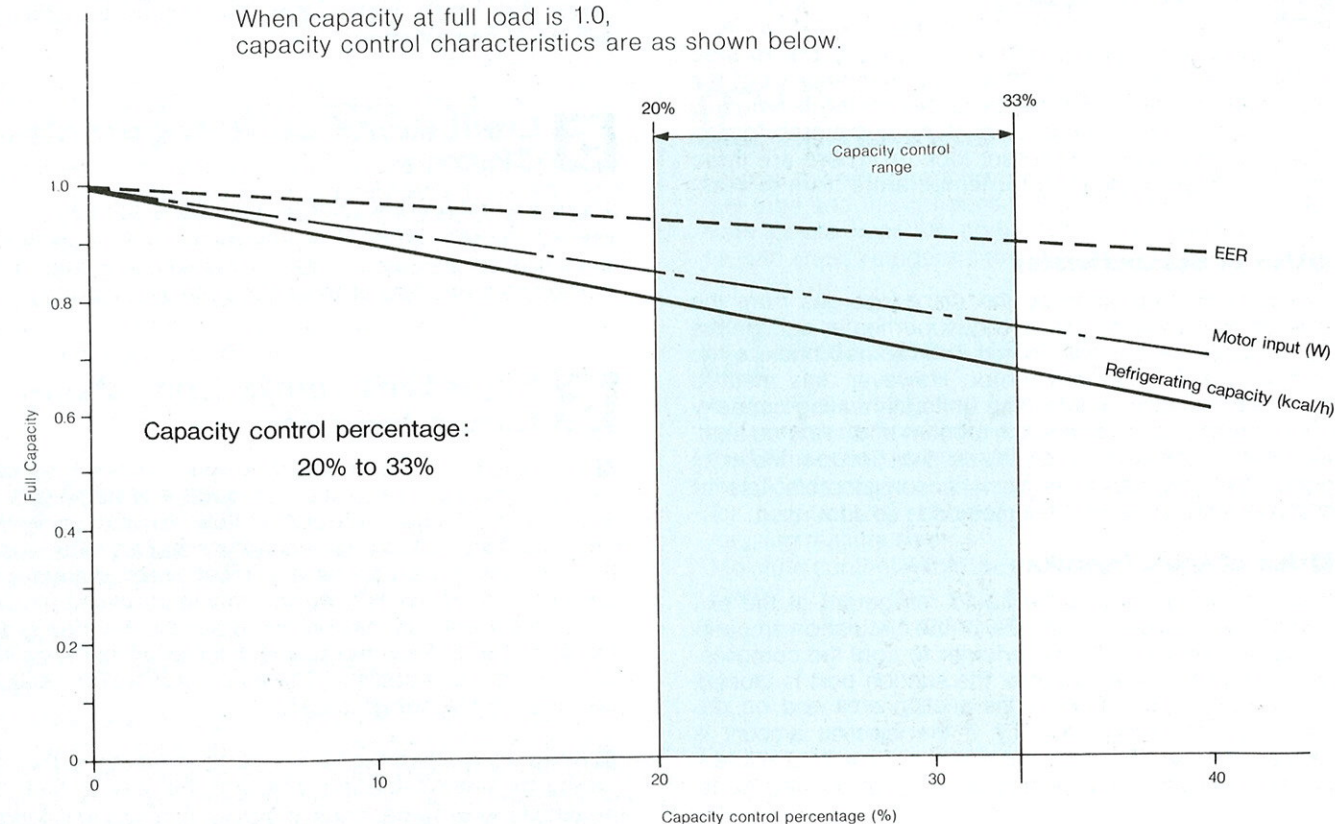


■Feature

There is little EER decrease at time of capacity control. (see Fig. 6)

Fig. 6 Capacity control percentage and performance

When capacity at full load is 1.0, capacity control characteristics are as shown below.



■Applications

1. Improvement of pull-down performance in cooling or heating operations.
2. Energy-saving operation (capacity control) at time of decreased heat load.

Fig. 2 and Fig. 3 show application examples for a refrigerant circuit.