

The costs in operating cyclones have been stated as:

Labour and maintenance	..	30%
Power	20%
Spare parts and magnetite	..	30%
Capital charges	20%
		<u>100%</u>

Variations of the cyclone include:-

1. Dyna-whirlpool process using magnetite to give a density of separation of 1.30 to 2.00,
2. Senidex (or Polish Halder cyclones) in which fines in the feed act as the medium,
3. the Prins which also creates its own medium,
4. Blofif process which uses controlled currents.

PLANT SIZE

Most plants have designed capacities of between 100 and 300 t.p.h. Where larger plants are required they are normally unitised. The 200 t.p.h. unit is fairly usual in coal cleaning practice.

However in considering costs, large plants usually cost less because of savings in the duplication of materials handling equipment. For example two small plants each having 400 t.p.h. capacity would cost more than one plant with a capacity of 800 t.p.h.

Particle size of the feed also influences cost. For example increasing the $-\frac{1}{4}$ " content of the feed from 50% to 75% increases the total basic cost of the plant by 12%. Reducing the $-\frac{1}{2}$ " content to 25% from 50% decreases the cost by 7%.

Capital costs for plants in U.S.A. are given as \$4,000 to \$5,000 per ton per hour while operating costs including amortisation range from 22 cents per ton for an 800 t.p.h. plant to 31 cents per ton for a 400 t.p.h. unit, if labour costs are the same.