

Fig. 4 Characteristic curve of mono block pump at 0.5 m suction lift

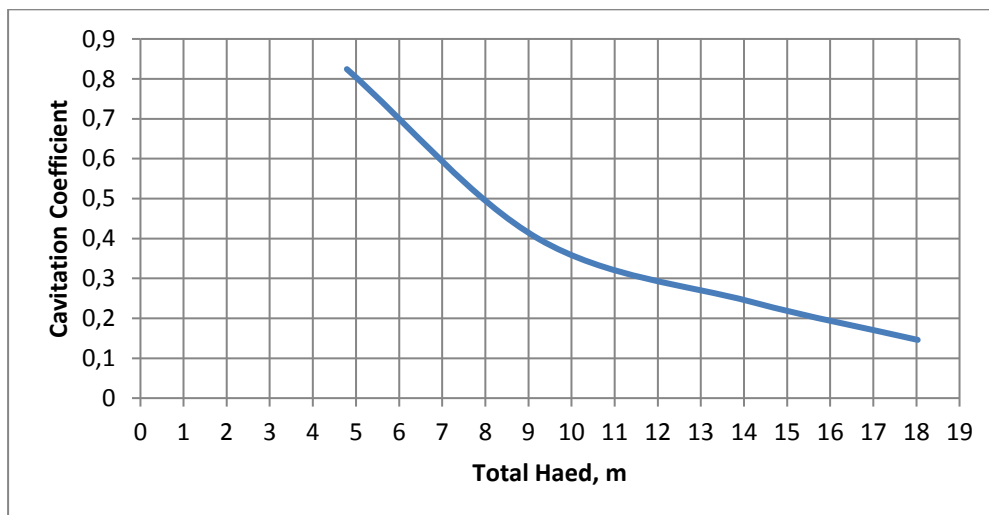


Fig.5 Plot of cavitation coefficient versus total head at 0.5 m suction lift

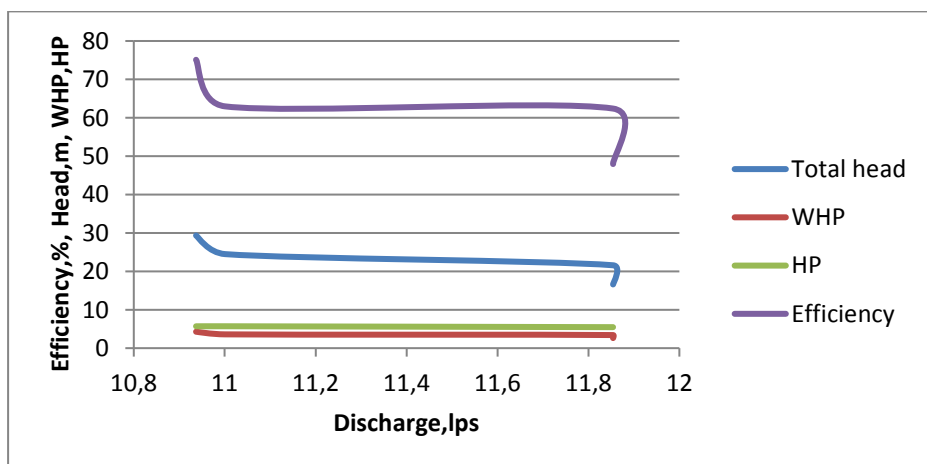


Fig.6 Characteristic curve of mono block pump at 0.7 m suction lift

It was observed from Fig.7 that for less than 17 m total head cavitation coefficient found more than 0.3 when suction lift was 0.7 m. So, more than 17 m total heads may create cavitation in pump. Fig.8 determined that total head was found maximum 21.37 m and minimum 11.37 m and Efficiencies were found 46.68 % to

26.08 %. Fig.9 shows that for less than 12.5 m total head cavitation coefficient found more than 0.3 when suction lift was 1.6 m. So, more than 12.5 m total heads may create cavitation in pump. And In Fig.10 total head found maximum 23.68 m and minimum 11.78 m and Efficiencies were found 41.30 % to 33.77 %.

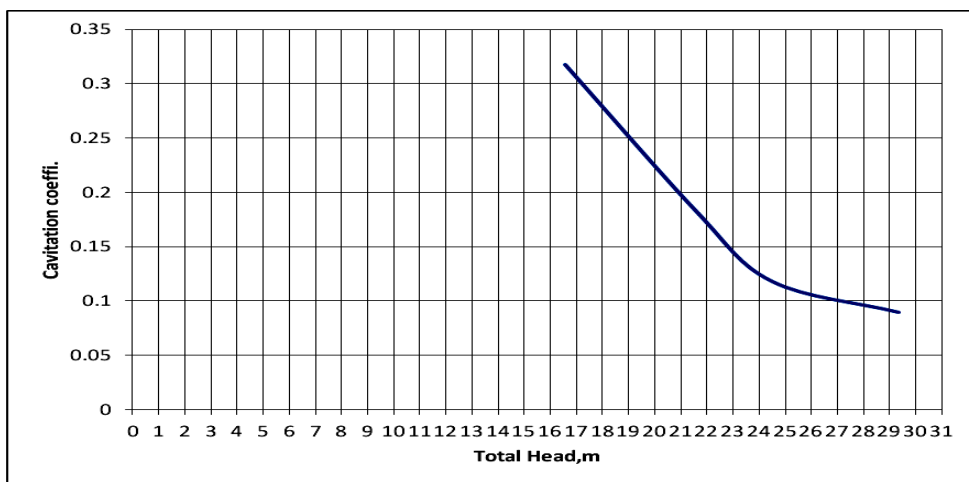


Fig.7 Plot of cavitation coefficient versus total head at 0.7 m suction lift

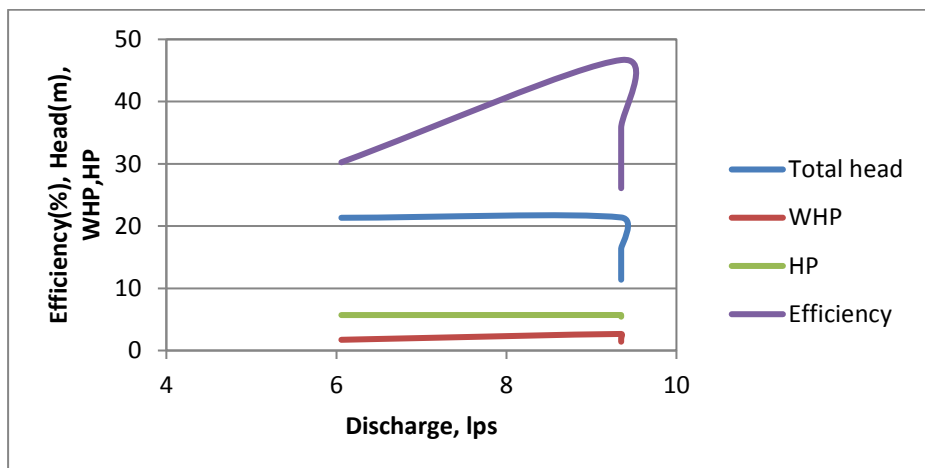


Fig.8 Characteristic curve of mono block pump at 1.6 m suction lift



Fig.9 Plot of cavitation coefficient versus total head at 1.6 m suction lift

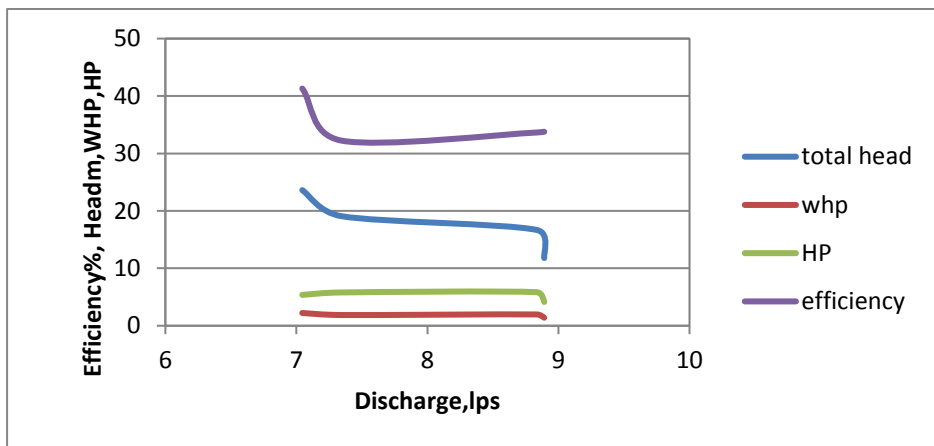


Fig. 10 Characteristic curve of mono block pump at 2.5 m suction lift

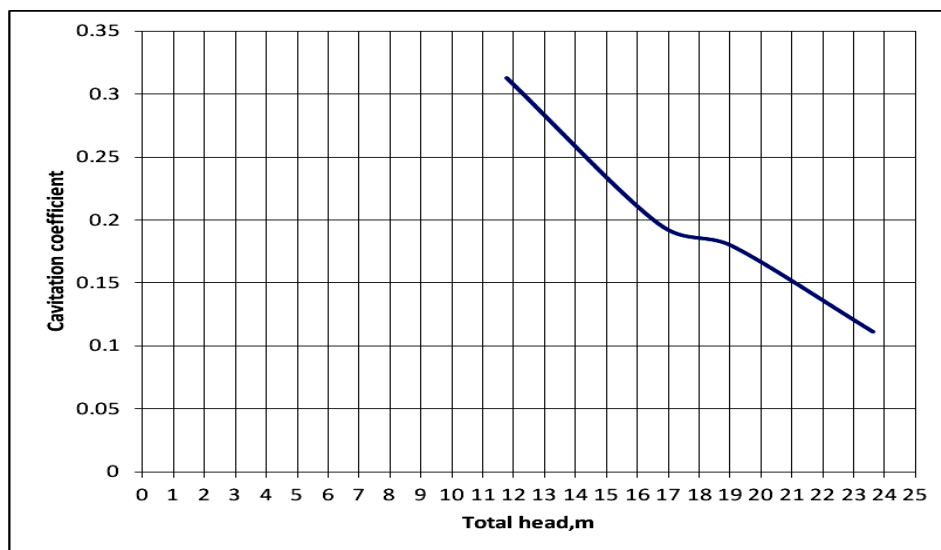


Fig.11 Plot of cavitation coefficient versus total head at 2.5 m suction lift

In Fig.11 less than 12.25 m total head cavitation coefficient found more than 0.3 when suction lift was 2.5 m. so, more than 12.25 m total heads may create cavitation in pump. From the characteristic curves Fig. 4,6,8 and 10 static lift conditions maximum efficiency was recorded for 0.7 m static lift and at 29.34 m head 75.01 % under same static lift minimum efficiency was found 47.94 % at 1.6 m head

4. Conclusions

Under the experiment it was found that the submersible pump efficiency varied according to increase in pressure while velocity head decrease at a certain point and over total head the efficiency drop drastically. So, the suggested Pressure for Submersible Pump is 20m. Also in mono block pump under different operating pressure heads at 0.5 m, 0.7 m, 1.6 m and 2.5 m suction lift. The suggested suction lifts for maximum efficiency at 0.7m. And the Water Horse Power and Pump efficiency was found increased according to pressure.

References

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