

APPLICATION CASE STUDY



DOC.NO. : AMTCS-3

CONDUCTED AT M/s. ALEMBIC CHEMICAL WORKS COMPANY LTD., BARODA.

APPLICATION : **BULK DRUG FERMENTATION**

INDUSTRY : **PHARMACEUTICAL**

OLD SYSTEM : **SLIPRING INDUCTION MOTOR WITH ROTOR RESISTANCE CONTROL**

NEW SYSTEM : **SAME MOTOR CONVERTED INTO SQUIRREL CAGE INDUCTION MOTOR BY SHORTING ROTOR RESISTANCE & AXPERT VARIABLE SPEED DRIVE OF 400 HP**

PROCESS DESCRIPTION :

THE 300KW MOTOR DRIVES THE IMPELLER OF A FERMENTOR. THE ENTIRE PROCESS OF FERMENTATION IS CARRIED OUT IN DIFFERENT STAGES EACH OF WHICH REQUIRES A DIFFERENT SPEED.

THE TOTAL PROCESS TIME IS TYPICALLY 240 HOURS (10 DAYS).

<input type="checkbox"/> NET POWER SAVING	:	40KW / Hr.
<input type="checkbox"/> MOTOR RUNNING TIME	:	7920 Hrs / Year
<input type="checkbox"/> UNIT SAVING PER YEAR	:	316800 Kwh
<input type="checkbox"/> ENERGY SAVING PER MONTH	:	US \$ 2809.5

ADVANTAGES OF NEW SYSTEMS :

1. MAINTENANCE FREE OPERATIONS SINCE ROTOR RESISTANCE IS ELIMINATED.
2. SMOOTH, EASY & STEPLESS SPEED CONTROL.
3. REDUCED STARTING CURRENT.
4. FIBER OPTIC INTERFACE OF INVERTER CONTROL FOR NOISE REDUCTION.
5. ENERGY SAVINGS DUE TO ELIMINATION OF ROTOR LOSSES.
6. OPTIMAL UTILISATION OF MOTOR CAPACITY.
7. ELIMINATION OF ROTOR RESISTANCE ELIMINATES AMBIENT TEMPERATURE RISE OF MOTOR.
8. VARIOUS PARAMETER MONITORING.

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