

# APPLICATION CASE STUDY



DOC.NO. : AMTCS-5

**HOST ORGANISATION** : MAHINDRA & MAHINDRA LTD. MUMBAI.

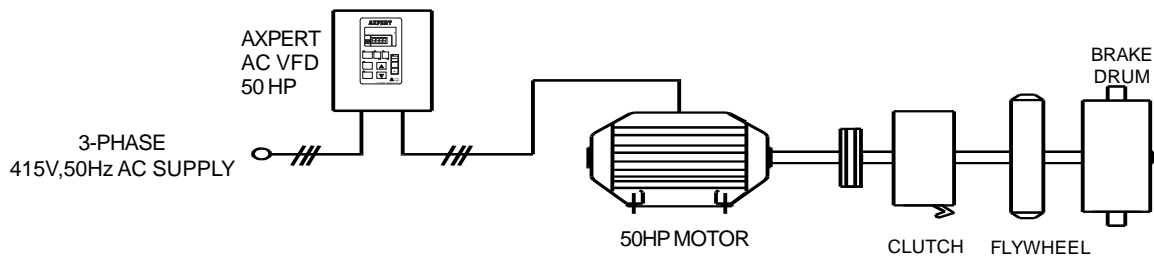
**INDUSTRY** : AUTOMOBILE(TRACTOR DIV)

**APPLICATION** : CLUTCH & BRAKE TEST RIG MACHINE

**PREVIOUS SYSTEM** :  
Dc drive was connected to motor & flywheel for testing of clutch & brake for tractors.flywheel was connected to shaft of motor through clutch operation.

**PROBLEMS OBSERVED** :  
Due to operation of clutch, flywheel was connected to motor shaft, it's similar to slam start condition. Which was causing heavy inrush current from mains,which led to frequent tripping & mechanical breakdown of system.

**BLOCK DIAGRAM** :



**PRESENT SYSTEM** :  
Ac drive is connected to motor & flywheel is connected to motor shaft through clutch & mechanical coupling.

Attachment of flywheel to motor leads current kick from 35 amps to 310 amps as like slam start operation which leads tripping of system.

**SOLUTION FOR SYSTEM** :

'AMTECH' has offered **total solution** to customer for their problem of clutch & brake test rig machine through customised preengineered ac drive package with **catch on fly** facility.

In new system before attachment of flywheel to motor, ac drive is stopped through plc system, so flywheel is running at some speed as per it's own inertia.then ac drive is again restarted. Drive will sense speed of flywheel & accelerate motor smoothly to that speed.due to **catch on fly** facility motor draws only 35 to 40 amps instead of 310 amps.which results in tripless and maintenance free system.

**ECONOMIC ANALYSIS** :

Finally ac drive package results into reduction of high current kick to 35 amp and capital cost investment from US \$ 11904.76

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