

Transportation Project 5

Project	<u>Exhaust system design for HCV</u>
Scope of Work	<ul style="list-style-type: none"> • Design calculations of exhaust system (Back pressure & noise levels) • Selection of Exhaust brake & Exhaust gas recirculation (EGR) valves • 3D Modeling of exhaust system • Integration of exhaust system in HCV chassis & preparation of layout. • Creation of 2D-manufacturing drawings. • Exhaust volume calculations(80 ltrs)
Inputs	<ul style="list-style-type: none"> • Engine specifications(Engine data sheet-release by engine manufacturer) • Emission requirements(EURO norms) • IGS model of HCV chassis
Challenges	<ul style="list-style-type: none"> • To meet the emission standards of Euro 3 norms • To meet the back pressure level as per the engine manufactures recommendations(7.5Kpa)
Deliverables	<ul style="list-style-type: none"> • 3D Model of Exhaust system • Design calculation sheet(Back pressure=7.5Kpa) • 2D-Manufacturing drawing of individual parts • 2D exhaust layout • Bill of materials(including connectors & clamps)
Platform/ Tools Used	<ul style="list-style-type: none"> • Catia V5
Value Addition to Customer	<ul style="list-style-type: none"> • Design validation. • Exhaust system passed the noise test (80dB) & back pressure test. • Overall manufacturing cost of system has been reduced compared to customer's previous model. • Vibration free mountings • Use of heat shield made the system more safer