



LGV Newsletter

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Your Window On Asia

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“Today, earth-moving and construction equipment plays a vital role in the execution of multi million dollars projects.”

LGV new service

By Lino Geretto – LGV Managing Director

Thanks to a recent successful partnership, LGV is now able to offer another service to local contractors, construction companies, workshops, machinery dealers and HR outsourcing and MP recruitment organizations.

Today, earth-moving and construction equipment plays a vital role in the execution of multi million dollars projects. Their availability and efficiency depend much on the status of proper operation, regular maintenance and prompt action during break down time: non-productive times are dollars lost. It is therefore extremely important to maximize production equipment availability.

Often, rushed repairs and inaccurate maintenance operations are cause of great losses, simply because mechanical intervention is not up-to standards or because contractors are compelled to rely on technicians from overseas with consequent heavy burdens for their projects.

Contractors can now – affordably rely – on our **COURSE for HEAVY EQUIPMENT MECHANICS** for students taking part to Technician Development Program (TDP).

Please see Technician Development Program (TDP) on page 2

TDP courses duration

The complete program is a 12 weeks course (4 Stages) with an emphasis on last generation engines equipped with gases After-treatment system, Hydraulic and Electronic components.

Courses are conducted by seasoned professionals with over 35 years of direct experience in earthmoving and construction equipment repairs, maintenance and mechanic engineering.

Please see The Complete Program Schedule on page 3

The Technician Development Program (TDP)

COURSE for HEAVY EQUIPMENT PROFESSIONAL MECHANICS

By LGV Technical Office

The purpose of these courses is to provide technicians with an adequate preparation to operate alone on faulty equipment or bring them to the various stages (and levels, see below description) of maintenance/repair of construction and earth moving machines such as Caterpillar and others.

*“Machinery and Equipment
non-productive times are
dollars lost.”*

The TDP will:

- Educate mechanics – apprentice and beginner – and bring them to specific higher standards;
- Form technicians from Entry Level Service to Diagnostic technicians (with attendance to the 2nd and 3rd level)
- Increase overall service capabilities
- Ultimately shape professional mechanics who autonomously and efficiently deliver excellent works

Courses for HEAVY EQUIPMENT MECHANICS

Depending on the actual knowledge (Levels) of technicians, i.e.: Student, Beginner, Advanced or Expert, the courses are divided in four stages.

The 4 Stages

Stage 1: The Internal combustion Engine (key manufacturers)

In Stage₁, the level 1 technician will gain good knowledge of the Diesel Engine composition and its operation starting from the NA (Naturally Aspirated) Engine up to the Turbocharged Direct injection Engines.

The level 2 technician will learn the application, operation and function of mechanical actuated and electronic controlled Diesel Engines.

The level 3 technician will acquire the mechanical knowledge of the very last generation of hydraulic actuated and electronically controlled Diesel Engines, such as Komatsu, Liebherr, Caterpillar and others, the system operation of the common Rail Engines and the latest generation of the exhaust gases treatment called: MCE (Module of clean emissions).



A TDP session in Thailand.



Diesel Engine

Cont. "The 4 Stages"

Stage 2: The Power Train

This stage provides the study for the complete Power Train system from the Torque Converter to the Final Drive passing through the Power Shift Transmission, the Transfer Gear, the Differentials and the Axles. A separate chapter for 2nd and 3rd level Technicians is dedicated to Bulldozers Tractors equipped with Differential Steering.

Stage 3: The Hydraulic System

The hydraulic system (including the steering and braking system) is the preponderant issue over the rest of the machine and also of the 2 previous stages. Because of its complexity and difference that exist between the various types of machines, both theoretical and the practical lessons will be provided in this stage. All three levels will learn about electrical and hydraulic diagrams depending on their knowledge.

Stage 4: The Frame, The Implements and the Auxiliary system

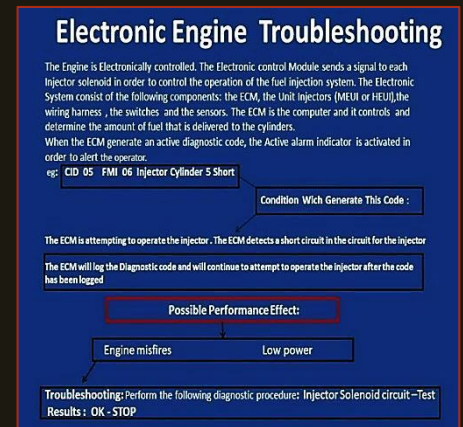
This chapter covers the study of the structure of the main types of machines on tires or chains e. g Wheel Loaders and Track Excavators, the translation system, Implements, System Operator (Cab and Joystick, dashboard and instrument cluster) Safety and maintenance information.

The Complete Program Schedule

The complete program is a 12 weeks course (4 Stages) with an emphasis on last generation engines equipped with gases After-treatment system, Hydraulic and Electronic components.

Level 1 duration is 4 weeks, whereas Level 2 and 3 will require 8 weeks.

The theoretical and practical study typical day schedule consists of 8 hours per day (5 days/week) with a short break before and after lunch. The last hour of the day is usually spent to review the lesson using only the technical terminology in English language and to prepare the lesson of the next day. On the first hour of each week, information is provided concerning Safety and PSD (Personal Safety Devices).



Electronic Engine Troubleshooting process module



"The ultimate result is to maximize machinery uptime and efficiency, reducing operating costs...and all with an in-house Expert Mechanic."

Expected result of training (in detail)

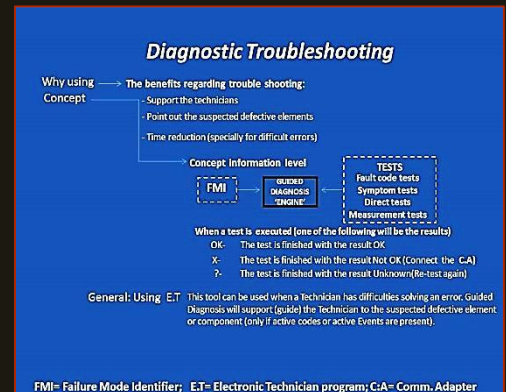
Once technicians have completed one of the levels, i.e. Beginner (Level 1), Advance (Level 2), Expert (Level 3), their knowledge and skills will be validated through an assessment and a certificate of attendance and accomplishment.

Capabilities of Level 1 - BEGINNER

- Follow safe working procedure
- Communicate in English with supervisory personnel
- Use Air and hand Tools skillfully
- Assist competently others in repairing and servicing Earth moving Equipment and Engines like Komatsu , Liebherr , Caterpillar and others
- Read simple hydraulic and wiring schemes and diagrams
- Operate cleaning equipment

Capabilities of Level 2 - ADVANCE

- Follow safe working procedure
- Communicate in English using appropriate technical terminology
- Read and understand moderately complex wiring and hydraulic schemes
- Use the diagnostic tools
- Organize a job with method and in a logic sequence
- Use the Information System, specifications, Service Manuals, understand the correct disassembly and assembly procedure



Diagnostic Troubleshooting process module



On site lesson

Capabilities of Level 3 - EXPERT, the HEAVY EQUIPMENT PROFESSIONAL MECHANIC

- Follow safe working procedure
- Repair and service Caterpillar Machines and Engines without supervision
- Read and understand complex hydraulic and wiring diagrams
- Use and application of all company diagnostic tools
- Use all service Information system, manuals, specifications, parts books, and disassembly and assembly sequences.
- Evaluate problems and repair options
- Work autonomously "on site", out of a service truck and without the normal support of the workshop
- Organize a job following correct method and sequences
- Supervise other technicians as required



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