Training courses

MAN PrimeServ Academy

Saint-Nazaire - France
MAN PrimeServ Academy network

Training is a key to success. In our academies both customer personnel and our own staff receive up to date training and transfer of knowledge that only an OEM* can provide.

In addition, the MAN PrimeServ network promotes a constant and direct transfer of knowledge among customers, suppliers and our research and development teams. This helps us to continuously increase our market orientation and our customers’ satisfaction. The PrimeServ Academy is part of the aftersales business unit (MAN PrimeServ) of MAN Energy Solutions.

Our vision
Through training by our PrimeServ Academies, we sustain your competitive advantage by ensuring maximum capacity and availability of your plant and machinery. Our aim is to consistently meet and exceed your expectations with innovative solutions tailored to your needs.

Our offer
Global presence, optimized processes, technical competence and service orientation. With our global network of training centers and courses, we provide outstanding knowledge transfer among customers, suppliers and our research and development teams.

Our promise
MAN PrimeServ Academy’s training service is a valuable investment for your business. It improves the skills, productivity and safety of your employees, and enhances the performance of your engines and turbomachinery by making them run longer, more efficiently and more reliably.

* Original Equipment Manufacturer

www.primeserv.man-es.com/academies
Main points you need to know about the specialties of our academy:

- OEM product academy for S.E.M.T. Pielstick engines
- Power Generation courses for plant operation & maintenance
- Pielstick & MAN 48/60 and 51/60 training engines
- Use of a GenSet simulator as a training aid
- Training in French and in English
- All courses can be customized

We look forward to seeing you in Saint-Nazaire!

S.E.M.T. Pielstick is a product brand of MAN Energy Solutions

MAN PrimeServ is the service brand of MAN Energy Solutions

MAN PrimeServ Academy
Saint-Nazaire, France

Academy
Saint-Nazaire

MAN PrimeServ Courses

overview

Power generation
A unique know how

Engine & systems
Four-stroke

Diesel engine technology
Discovery

Pielstick engine
Standard operation

Pielstick engine
Advanced operation

Pielstick engine
Standard maintenance

Pielstick engine
Advanced maintenance

Pielstick engine
Advanced repair and reconditioning

MAN & Pielstick engines
Fluids quality

Automation
Control systems fundamental

Automation
Pielstick & Woodward speed governor fundamental

48/60 engine
Standard maintenance

48/60 & 51/60 engine
Advanced maintenance

TCA turbocharger
Standard maintenance

How to find the Saint-Nazaire academy

How to register?

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Learning goals
Upon completion of this course the participants will be in position to describe the main components, the main features and operation principles of an industrial four-stroke diesel engine.

Target groups
All public

Prerequisites
None

Duration
2 days

Course Level
Familiarization

Applies to equipment
All four stroke MAN engines.

Course content
- Main components: location, description
- Role of these main components
- Operational principle of a four-stroke engine
- Engines classification
- Specificities: turbocharger, injection, speed regulation, circuits, fluids quality

Reference
C00000147
Learning goals
Upon completion of this course the participants will be in position to operate an engine and a turbocharger.

Target groups
Operators, navigators, watch chiefs, chief engineers, and superintendents.

Prerequisites
Basic knowledge of four-stroke internal combustion engines, hydraulics and electricity.

Duration
3 days

Course Level
Standard

Applies to equipment
All four stroke MAN engines.

Course content
- Engine design and data
- Operation and maintenance manuals
- Systems on the engine
- Engine and turbocharger operation
- Introduction to engine speed control and governor system
- Monitoring parameters and alarms
- Troubleshooting (initiation)

Reference
C00001039

Learning goals
Upon completion of this course the participants will be in position to operate the engine and the turbocharger safely and trigger necessary maintenance operations to optimize engine and turbocharger performances.

Target groups
Operators, navigators, watch chiefs, chief engineers, and superintendents.

Prerequisites
Basic knowledge of four-stroke internal combustion engines, hydraulics and electricity. Carried out the training course “Pielstick Engine Standard Operation” or justify 5 years of operation practice in the field on industrial engines.

Duration
5 days

Course Level
Advanced

Applies to equipment
All four stroke MAN engines.

Course content
- Starting, stopping, operation
- Operating parameters
- Particular operating conditions
- Engine survey during operation
- Safety components and thresholds
- Checking and optimization of engine performances
- Lube oil analysis
- Troubleshooting

Special note
This advanced course provides deep knowledge on operating and tuning the engine in order to gain more benefits regarding the performance.

Reference
C00001058
Learning goals
Upon completion of this course the participants will be in position to operate maintenance activities needed up to 6000 hrs or 4 years*.

Target groups
Managers, technicians and personnel in charge of the mechanical maintenance.

Prerequisites
A basic knowledge of mechanic and hydraulic.

Duration
5 days

Course Level
Standard

Applies to equipment
PA4, PA6, PC2, PC4

Course content
- Description of the engine design
- Handling manuals
- Tightening - hydraulic release by elongation
- Maintenance of the cylinder head.
- Maintenance of the injection system
- Crankshaft deflection measurement
- Maintenance of the coupling
- Maintenance of camshaft, timing gears
- Maintenance of the air distributor

Special note
Courses per “Engine Family” are delivered separately.

Reference
PA4 C00000445
PA6 C00000809
PC2-5 - PC2-6 C00000837

*Variable frequency according to the engine and application.

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Learning goals
Upon completion of this course the participants will be in position to operate maintenance activities needed up to 12000 hrs or 24000 hrs*.

Target groups
Managers, technicians and personnel in charge of the mechanical maintenance of a Pielstick engine.

Prerequisites
Basic knowledge in mechanic and hydraulic.
Carried out the training course “Pielstick Engine Standard Maintenance” or justify 5 years of maintenance practice in the field on industrial engines.

Course content
- Exploitation of the technical documentation
- Maintenance of the cylinder head
- Maintenance of the cylinder
- Maintenance of the injection system
- Quality & maintenance recommendations of the engine fluids (knowledge)
- Operating parameters (knowledge)
- Maintenance of the crankshaft
- Maintenance of a main bearing
- Maintenance of camshaft, timing gears
- Inspection of the crankshaft damper

Special note
Courses by “Engine Family” are delivered separately. PA4 - 5 days
PA6 and PC2 - 10 days

Reference
PA4 C00000445
PA6 C00000809
PC2-5 - PC2-6 C00000837

*Variable frequency according to the engine and application.
Pielstick engine

Advanced repair and reconditioning

Prerequisites
Knowing in mechanics, metrology, machining and hydraulics.

Duration
5 days

Course Level
Advanced

Applies to equipment
PA4, PA6, PC2.5, PC2.8, PC4.2

Course content
- Applying correct tightening procedures
- Dye penetration test
- Repair and reconditioning: injector nozzle
  - Calibration, spraying, and seal-tightness on test bed
- Cylinder head:
  - Check of seal-tightness of valve seats
  - Check and grinding of valves
- Injection pump:
  - Check of seal-tightness of valve seats
  - Check and grinding of valves
  - Replacement of valve seats
- Piston:
  - Check of piston
  - Check of the piston rings
- Liner:
  - Lapping of the cylinder head gasket plate
  - Check of the liner
  - Honing of the liner
- Preservation of parts:
  - Storing, cleaning and fitting elastomer seals

Reference
C00001007

Learning goals
Upon completion of this course the participants will be in position to check parts (fitted or dismantled), to recondition / repair them according to the maintenance manual and the rules of the art.

Target groups
Mechanics, supervisors, superintendents & workshop / team managers in charge of engine parts reconditioning / repair.

Prerequisites
Know how in mechanics, metrology, machining and hydraulics.

Duration
5 days

Course Level
Advanced

Applies to equipment
PA4, PA6, PC2.5, PC2.8, PC4.2

Course content
- Applying correct tightening procedures
- Dye penetration test
- Injector nozzle:
  - Calibration, spraying, and seal-tightness on test bed
- Cylinder head:
  - Check of seal-tightness of valve seats
  - Check and grinding of valves
- Injection pump:
  - Check of seal-tightness of valve seats
  - Check and grinding of valves
  - Replacement of valve seats
- Piston:
  - Check of piston
  - Check of the piston rings
- Liner:
  - Lapping of the cylinder head gasket plate
  - Check of the liner
  - Honing of the liner
- Preservation of parts:
  - Storing, cleaning and fitting elastomer seals

Reference
C00001007
Automation

Control system fundamental

Learning goals
Upon completion of this course the participants will be in position to monitor the good functioning of the engines control system and to carry out basic troubleshooting.

Target groups
Electrical engineers, automation engineers and marine or power plants engineers.

Prerequisites
Basic electrical and automation systems knowledge.

Duration
5 days

Course Level
Standard

Applies to equipment
PA4, PA6, PC2

Course content
- Engine Controller™
- SVEM AFSEM
- PCOT
- PMS (Pielstick Modular System)
- LEEC software
- Operation and troubleshooting

Reference
C00000848

Automation

Pielstick & Woodward engine speed governor fundamental

Learning goals
Upon completion of this course the participants will be in position to monitor the good functioning of the speed governor and to carry out basic troubleshooting.

Target groups
Electrical engineers, automation engineers and marine and power plants engineers.

Prerequisites
Knowledge of four-stroke internal combustion engines and the use of electronic measuring devices.

Duration
2 days

Course Level
Standard

Applies to equipment
PA4, PA6, PC2, PC4

Course content
- Sensors on the engine
- Introduction to engine control and safety system
- Speed governing basics
- Introduction to mechanical governor and actuator
- Introduction to electronic speed governing system
- Basic troubleshooting
- Handling user manuals

Reference
C00000836

Automation

Emergency genset safety

Learning goals
Upon completion of this course the participants will be in position to monitor the good functioning of the automation safety devices on an emergency genset and to carry out basic troubleshooting.

Target groups
Electrical engineers, automation engineers, supervisors and managers in charge of activities on emergency genset.

Prerequisites
Basic electrical knowledge.

Duration
3 days

Course Level
Standard

Applies to equipment
PA4, PA6, PC2

Course content
- Mechanical aspect of the speed governing
- Speed and over speed setting
- Electro hydraulic actuator
- Electronic speed governor
- SVEM – AFSEM
- Practical exercises on a simulator
- Droop and isochronous application

Reference
C00000505
Learning goals
Upon completion of this course, the participants will be in position to operate maintenance activities needed up to 6000 hrs.

Target groups
Managers, technical engineers and personnel in charge of the mechanical maintenance of the 48/60.

Prerequisites
The participants should have basic knowledge of diesel engines.

Duration
5 days

Course Level
Standard

Applies to equipment
48/60, 48/60B, 48/60CR

Course content
- Engine design and data
- Handling manuals
- Systems on the engine
- Engine and turbocharger operation
- Maintenance tasks up to 6000 hours service
- Hydraulic tensioning equipment
- Introduction to the engine control system

Special note
For french speaking countries only.

Reference
C00000062

Learning goals
Upon completion of this course, the participants will be in position to operate maintenance activities needed at 12000 hrs and over.

Target groups
This training is aimed at ship or power plant managers, engineers and superintendents.

Prerequisites
The participants should have attended a 48/60 or 51/60DF standard maintenance course, or have sufficient experience in operating/maintaining the 48/60 or 51/60DF engine.

Duration
5 days

Course Level
Advanced

Applies to equipment
48/60, 48/60B, 48/60CR, 51/60DF, 51/60G

Course content
- Engine design and supply systems (review)
- Main bearing maintenance
- Cylinder head advanced maintenance
- Replacement of valve guides and valve seat rings
- Re-machining valve seat rings
- Grinding valve cones
- Connecting rod bearing maintenance
- Piston advanced maintenance
- Start air system maintenance
- Cylinder liner honing
- Vibration damper maintenance

Special note
For french speaking countries only.

Reference
C00000427

Learning goals
Upon completion of this course, the participants will be able to name and identify parts from TCA turbochargers.

Course content
- Turbocharger basics
- Turbocharger TCA theory
- TCA turbocharger practice
- TCA PrimeServ customer information

Target groups
This training is aimed at ship or power plant managers, engineers and superintendents.

Prerequisites
The participants should have basic knowledge of engines and mechanics.

Duration
2 days

Course Level
Standard

Applies to equipment
TCA

Reference
C00000135
Offering training for our power plant customers has a long tradition with a high reputation. Since entering into turn key projects we have significantly extended our course program relating to “best practices” experience within our field service organization. These training courses are generally on site, job oriented and provide holistic knowledge necessary to operate the power plant safely, efficiently and reliably.

Prior to attending these courses we highly recommend that the delegates possess sound technical knowledge on their specific machines. These courses can be offered as a customized or as a scheduled standard course.

**Power generation**

A unique know how

**Learning goals**
Upon completion of this course the participants will be in position to describe the main maintenance activities (engine, turbocharger, auxiliary) and operation concepts for a diesel power plant.

**Target groups**
All public.
Customer staff who need to work in power plants equipped with MAN engines.

**Prerequisites**
A basic knowledge of mechanics, hydraulics and electricity.

**Duration**
5 days

**Course Level**
Standard

**Applies to equipment**
All MAN engines

**Course content**
Introduction to power plants

“Unit” basic maintenance:
- Engine design
- Technical documentation
- “Unit” maintenance

Turbocharger:
- Maintenance and monitoring during operation

Knowledge of “common” operations:
- Presentation of the processes implemented at the power plant
- Auxiliary equipment

**Reference**
C00001008
Power generation

Advanced operation

Learning goals
Upon completion of this course the participant will be in position to carry out the main operations of a power plant under normal conditions.

Target groups
Operators, watch chiefs, chief engineers, and superintendents in charge of operation and exploitation of a power plant.

Prerequisites
Knowledge in mechanics, daily maintenance tasks, hydraulics and electricity. The participants should have attended the “Engines Standard & Advanced Operation” courses.

Duration
5 days

Course Level
Advanced

Applies to equipment
48/60, PA4, PA6, PC2, PC4

Reference
C00000738

Course content
- Equipment overview
- Study of auxiliary equipment processes implemented in the power plant:
  - Diesel engine
  - Alternator
  - Oil circuit
  - Fuel circuits
  - Water circuits
  - Overheated water circuit
  - Pressurized air circuits
  - Intake and exhaust circuits
  - Effluent treatment circuit
  - Fire control circuit
  - Single-line diagrams and electrical panels
- PID reading: identification of main equipment
- Presentation of the operating rules, parameters and alarms of the different systems and how to react

Power generation

Advanced operation simulator

Learning goals
Upon completion of this course the participants will be in position to carry out the main operating tasks of a power plant on a simulator.

Target groups
Superintendents, engineers and staff in charge of operating the gensets in the power plant or on board the ship.

Prerequisites
Basic knowledge in mechanics, hydraulics and electricity. Prior to this course, the participants should have attended the “Engines Standard & Advanced Operation” and “Power Plant Advanced Operation” courses.

Duration
5 days

Course Level
Advanced

Applies to equipment
PA4, PA6, PC2 PC4, 48/60B

Reference
C00001009

Course content
- Introduction to the simulator
- Operate a power plant
- For each system listed below, a theoretical presentation of the operating modes, representing 20 to 25% of the training, will be followed by practical exercises on a simulator and PID diagrams:
  - Genset
  - Oil circuit
  - Fuel circuits
  - Water circuits
  - Superheated water circuit
  - Pressurized air circuits
  - Intake and exhaust gas circuits
  - Effluent treatment circuit
  - Fire alarm circuits
  - Venting circuit
  - Single-line diagrams and electrical panels.
- Response to failures
- Presentation of main alarms and practical exercises
Power generation

Unit standard maintenance

Learning goals
Upon completion of this course the participants will be in position to carry out the maintenance activities on a power plant unit equipped with MAN engines.

Target groups
Managers, superintendents, technicians and staff in charge of the mechanical maintenance of the power plant.

Prerequisites
Basic knowledge in mechanics, hydraulics and electricity.

Duration
5 days

Course Level
Standard

Applies to equipment
51/60DF, MAN engine environment

Course content
- Reminder of the engine technologies & components
- Engine maintenance
- Unit maintenance (Lube Oil, Fuel Oil, Cooling water compressed air, intake and exhaust systems)
- Turbocharger maintenance
- Special tools and spare parts for different maintenance operations
- Technical documentation

Reference
C00000736

Common advanced maintenance

Learning goals
Upon completion of this course the participants will be in position to carry out the maintenance activities on the main “common” equipment of a power plant equipped with MAN engines of V48/60B or V51/60 types.

Target groups
Managers, superintendents, technicians and staff in charge of the mechanical maintenance of the power plant.

Prerequisites
The participants should have attended the “Power plant Unit standard maintenance” course.

Duration
5 days

Course Level
Standard

Applies to equipment
51/60DF, MAN engine environment

Course content
“Common” circuits maintenance:
- Lube Oil circuit
- Fuel Oil circuits
- Cooling Water circuits
- Superheated water / steam circuit
- Compressed air circuits
- Intake and exhaust circuits
- Effluent treatment circuit
- Fire control circuit
- Ventilation circuit
- Single-line diagrams and electrical panels

Reference
C00000516
How to find the Saint-Nazaire academy

There are many ways to reach our academy in Saint-Nazaire.

By plane
Taxi will transfer you the rest of the way to Saint-Nazaire (68 kilometers, 58 minutes).

By train
Take TGV from Paris (Montparnasse station) to Saint-Nazaire.

By car
Take road N165 in the direction of Vannes, then take road N171 to Saint-Nazaire, after Trignac, take in the direction of Pont de St-Nazaire. Leave the road before the bridge in the direction of Port de St-Nazaire. Follow the direction STX Europe (shipyard).

Taxi
- Radio taxi
  Phone: +33(0)2 40 66 02 62
  Email: radiotaxi44600@orange.fr
- NavAirport
  Phone: +33(0)6 61 67 00 44
  Email: navairport@yahoo.fr

Rent a car
Several rental car offices are located at the front of terminal 1 at Nantes Airport
- Hertz - Gare de St Nazaire
  79 Rue de la ville Halluard, 44600 Saint Nazaire
  Phone: +33(0)2 40 62 10 17

Rent a bike
- City Bike
  55, rue des Halles - 44600 St Nazaire
  Phone: +33(0)2 49 52 42 31
  Email: citybike44@gmail.com

Accommodation
When attending training courses in Saint-Nazaire, we recommend the following hotels. They all are within proximity of the academy.

Holiday Inn Express Saint-Nazaire
2.0 Km to MAN Energy Solutions
1 rue de Floride
44600 Saint Nazaire – France
Phone: +33(0)2 40 19 01 01
Email: resa@hie44600.com
www.hiexpress.com/saintnazaire

Zenitude Hôtel-Résidences
3.0 Km to MAN Energy Solutions
Les Portes de l’Ocean 3*
47 Bd de la Liberation
44800 Saint Nazaire – France
Phone: +33(0)2 40 00 64 88
Email: saint-nazaire@zenitude-groupe.com
www.zenitude-hotel-residences.com

Résidence Kyriad Prestige
4.0 Km to MAN Energy Solutions
11, avenue Barbara
44370 Trignac – France
Phone: +33(0)2 40 91 40 21
Email: kyriadprestigesterreilles@ghphotels.com
www.kyriad-prestige-saint-nazaire.fr

Best Western Hôtel de la Plage ***
16.0 Km to MAN Energy Solutions
37 rue du Commandant Charcot
44600 St Nazaire – France
Phone: +33(0)2 40 91 99 01
Email: reception@hotel-delaplage.fr
www.hotel-delaplage.fr

The daily transport between the hotel and the training facility can be arranged by MAN PrimeServ Academy, Saint-Nazaire. We suggest booking a hotel room from the day prior to the start of training.
How to register?

FILL & SEND the course registration form to primeserv.academy-stn@man-es.com

INTERNET

CONTACT OUR TEAM
+33 2 40 90 65 15
primeserv.academy-stn@man-es.com
All data provided in this document is non-binding. This data serves informational purposes only and is not guaranteed in any way. Depending on the subsequent specific individual projects, the relevant data may be subject to changes and will be assessed and determined individually for each project. This will depend on the particular characteristics of each individual project, especially specific site and operational conditions.

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