

# AIR COMPRESSORS

## THEORY, DESIGN, OPERATIONS & MAINTENANCE

25~26 JUNE 2008, SHAH VILLAGE HOTEL, PETALING JAYA

Accredited:

**12 CPD POINTS**

BOARD OF ENGINEERS  
MALAYSIA

### OBJECTIVE

Compressed air is used widely throughout industry and is often considered the "fourth utility" (after electricity, water and gas) at many facilities. Almost every industrial plant, from a small machine shop to an immense pulp and paper mill have some type of compressed air system. In many cases, the compressed air system is so vital that the facility cannot operate without it. A properly managed compressed air system can save energy, reduce maintenance, decrease downtime, increase production throughput, and improve product quality.

The course is designed for participants who have little or no knowledge of air compressors. This course is also designed to introduce the participants to the various compressor terminologies frequently used, the various types of compressors used, the various parts and to some basic design. The overall objective is to give the participants a functional knowledge of basic compressor theory.

At the end of the programme, participants will be able to understand:

- the design, construction, operations and maintenance aspects of the various types of air compressors used;
- the various costs involved in compressed air ; and
- the safety and environmental issues associated with air compressors.

### The FACILITATOR

**ENGR. N. JAYASEELAN** MIEM, MIET, MASME

BEng(Hons) Mech Eng (UMalaya), HND(Mech) Leeds Poly, UK



**ENGR. N. JAYASEELAN** obtained his Higher National Diploma in Mechanical Engineering from Leeds Polytechnic (UK) and subsequently a Bachelor Degree (Honours) in the same discipline from the University of Malaya.

He was one of the recipients of a scholarship awarded by the Association of Overseas Technical Scholarships (AOTS) from the Ministry of Economy, Trade & Industry of Japan to attend a course on pumps which was organized by the Ebara-Hatakeyama Memorial Fund in collaboration with the Assoc. of Consulting Engineers M'sia.

He has about 25 years of working experience in various industries, which includes building maintenance, foundry, water and sewerage industries, etc. He has vast theoretical and practical knowledge on pump design, selection, installation, operation, maintenance and trouble-shooting.

### The PROGRAMME DAY 1

08.30 Registration

#### 09.00 SESSION 1 - INTRODUCTION

- Basic Laws
- Types of Compressors,
- Thermodynamics and Electricity

10.00 Refreshment

#### 10.30 SESSION 2 - COMPRESSORS AND AUXILIARY EQUIPMENT

- Displacement and Dynamic Compressors
- Other Types of Compressors
- Treatment of Compressed Air
- Control and Regulating Systems

#### 11.30 SESSION 3 - DIMENSIONING AND INSTALLATION

- Calculation of Air and Pressure Requirements
- Centralized and Decentralized Installations
- Cooling Systems and Energy Recovery

1.00 Lunch

#### 2.00 SESSION 4 - DIMENSIONING AND INSTALLATION (cont'd)

3.00 Refreshment

#### 3.30 SESSION 5 - THE COMPRESSOR ROOM

- Air Network Structure
- Sound Attenuation
- Foundation and Ventilation Requirements
- Standards, Laws and Provisions

4.30 Adjourned

### DAY 2

#### 09.00 SESSION 6 - ECONOMICAL CONSIDERATIONS

- Costs of Compressed Air Production
- Opportunities for Saving
- Energy Recovery
- Maintenance Planning
- Life Cycle Costing (LCC)

10.00 Refreshment

#### 10.30 SESSION 7 - EXAMPLES OF CALCULATIONS

- Input Data Requirements
- Component Selection
- Intermittent Output
- Water Borne Energy Recovery
- Pressure Drop in Piping
- Dimensioning of the Air Dryer
- Receiver Tank
- Control
- Condensation and Cooling Water Requirement Calculations
- Energy Balance and Ambient Conditions

1.00 Lunch

#### 2.00 SESSION 8 - CURRENT STANDARDS AND NORMS

- Machine Safety
- Environmental Considerations
- Standardization
- Specifications
- Measurements
- Symbols etc

3.00 Refreshment

#### 3.30 SESSION 9 - QUESTION & ANSWER

4.00 Certificate of Attendance Presentation / End of Workshop

### WHO SHOULD ATTEND

- Facilities Engineers • Design Engineers
- Maintenance Engineers • Academicians
- Production & Manufacturing Technicians and
- Any one who would like to widen their knowledge on the theory of air compressors.

### THE FEE

**RM 1,800.00** Per Participant  
For group participants of (3), the Overall Discount is **RM 300.00**

"I/We would like to attend the 2-Day Short Course in "AIR COMPRESSORS - THEORY, DESIGN, OPERATIONS AND MAINTENANCE" dated 25 -26 June, 2008 at Shah Village Hotel, Petaling Jaya, Selangor Darul Ehsan

Enclosed herewith a Crossed Cheque/ Bank Draft/ Money Order/ Postal Order/ Government Purchase Order No. \_\_\_\_\_ for the sum of RM \_\_\_\_\_ issued in favour of "PLANT AND MACHINERY ENGINEERING CONSULTANTS"

Name: .....

MyCard No: .....

Name: .....

MyCard No: .....

Name: .....

MyCard No: .....

Organisation/ University/ Institution :

Address: .....

Tel: ..... Fax: .....

Email: .....

Contact Person: .....

**FAX: 03 - 7960 9312**

Organised by:

**PLANT & MACHINERY ENGINEERING CONSULTANTS**  
(001716807-K)



E1-11, Tiara Duta  
Persiaran Putra  
Taman Putra Sulaiman  
68000 Ampang,  
Selangor Darul Ehsan

Tel/Fax: 603 -4270 7709 (Admin.)  
Fax : 603 -7960 9312 (Training)  
Email: [training@plantmac.com](mailto:training@plantmac.com)  
[plantmac@gmail.com](mailto:plantmac@gmail.com)

Further Enquiries/Registration  
En. Ahmad Norzaimy : 013-272 1252