



MAIRODI MANDIRI SEJAHTERA

TRAINING, CONSULTING & ENGINEERING SERVICES

Alamat: Gedung Dapenpos Lt.2, Jl. PH.H. Mustofa No.35 , Bandung, Indonesia, 40124
Telp/Fax: +62-22- 721 5416 / 721 5668 Homepage: www.mairodi-training.com

Training Syllabus:

COMPRESSOR OPERATION, MAINTENANCE & TROUBLESHOOTING

INTRODUCTION:

Production continuity is a keyword in any process of production activities, in which power system play important role to keep all of the operation.

Compressor is known for its capability to store energy in the form of air pressure. In industrial application, compressors are completed with auxiliaries to control the air flow, pressure, and actuators. Compressors will become advantage if it's operated and maintained properly. Compressors principles and their system performance however should be understood by operator and any person who get involved with them to increase performance of the operation, maintenance, safety, etc.

TRAINING OUTCOME:

In this training, compressors will be discussed from its principle, application, components and its maintenance. Moreover, their control system to improve performance and safety will also be introduced. After completion of this training participant will understand about the basic principle, application and control system that will help them for improving safety and problem solving on operation and maintenance activities.

TRAINING MATERIAL OUTLINE:

1. FUNDAMENTALS:

- a. Explain the theory of air/gas compression.
- b. Describe how altitude and moisture affects the compression of air.
- c. Describe the principles of operation of positive displacement and dynamic compressors.
- d. Define air compression terminology such as absolute and gauge pressures, compressor
- e. Displacement and compressor capacity, free air, volumetric efficiency, single and double acting, single and multistage.
- f. Given relative data, perform basic calculations to solve for compressor displacement and compressor volumetric efficiency.

2. RECIPROCATING COMPRESSORS:

- a. State and describe the different types of single and multi-stage reciprocating compressors, state the function of the various compressor parts, including valves.
- b. Describe the methods employed to cool air or gas during compression.
- c. List and describe the different types of prime movers used for compressors.

3. ROTARY COMPRESSORS:



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Describe the principles of operation, their application, volume and pressure capabilities, methods of regulation, advantages and disadvantages of the following types of (positive displacement) rotary compressors:

- a. sliding vane
- b. the lobe type
- c. roots type
- d. screw
- e. liquid-sealed

4. CENTRIFUGAL AND AXIAL COMPRESSORS:

- a. Describe the design and operation of the volute and diffuser type centrifugal compressors.
- b. Describe the design and operation of the single-stage double-flow and the four-stage centrifugal compressors.
- c. Describe the design and operation of an axial flow compressor.
- d. State the causes and remedies of compressor surging.

5. COMPRESSOR SYSTEM AUXILIARIES:

- a. Describe the design and operation of intercoolers and aftercoolers; state their location within the system, describe the maintenance requirements of these components.
- b. State the need for air receivers, their preferred location, and the inspection and maintenance requirements as per Code.
- c. Describe the use of air filters, list and provide a description of the different types commonly used.

6. OPERATION, CONTROL AND MAINTENANCE:

- a. Explain the following methods employed to control compressor output:
 - Start/stop, dual control
 - Variable-speed
 - Suction line valve
 - Suction or discharge valve
 - Adjustable stroke
 - Variable clearance volume
- b. List and describe the operation of the various types of controllers and safety devices used in a compressed air system. Describe how these devices can be tested while system is in operation.
- c. Describe the internal and external methods of compressor lubrication.
- d. State the various operational checks done by an operator on both the compressor(s) and the compressed air/gas system to ensure safe and efficient operation.
- e. State the preventive maintenance requirements of compressors, auxiliaries, piping and receivers.
- f. State the probable causes of compressed air/gas compressor, receiver or pipeline explosions.



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7. ACT, REGULATIONS AND CODES:

The candidate is expected to be able to locate information relating to the staffing, operation, maintenance, inspection, and testing of the compressor plant and its equipments.

8. SAFETY:

The candidate is expected to be able to fully explain the dangers associated with the operation of a compressor plant and all its components, and state the precautions to be taken to minimize or prevent such dangers.

WHO SHOULD ATTEND THIS TRAINING?:

The training can be important for all personnel involved with the design, installation, maintenance, operation and servicing of compressor and their basic systems.

INSTRUCTOR : Dr.Ir. Paryana Puspaputra, M.Eng., and Team

VENUE : Yogyakarta (Ibis Styles Hotel/ Ibis Malioboro Hotel/ Jambuluwuk Hotel/ Cavinton Hotel/ Grand Zuri Hotel, dll)

TRAINING DURATION : 4 days

TRAINING TIME :

Januari 2024	Februari 2024	Maret 2024	April 2024
2 - 5 Januari 2024	5 - 8 Februari 2024	4 - 7 Maret 2024	1 - 4 April 2024
8 - 11 Januari 2024	12 - 15 Februari 2024	12 - 15 Maret 2024	22 - 25 April 2024
15 - 18 Januari 2024	19 - 22 Februari 2024	18 - 21 Maret 2024	29 April – 2 Mei 2024
22 - 25 Januari 2024	26 - 29 Februari 2024	25 - 28 Maret 2024	
29 Jan – 1 Feb 2024			
Mei 2024	Juni 2024	Juli 2024	Agustus 2024
6 - 9 Mei 2024	3 - 6 Juni 2024	1 - 4 Juli 2024	5 - 8 Agustus 2024
13 - 16 Mei 2024	10 - 13 Juni 2024	8 - 11 Juli 2024	12 - 15 Agustus 2024
20 - 23 Mei 2024	19 - 22 Juni 2024	15 - 18 Juli 2024	19 - 22 Agustus 2024
27 - 30 Mei 2024	24 - 27 Juni 2024	22 - 25 Juli 2024	26 - 29 Agustus 2024
		29 Juli – 1 Agustus 2024	
September 2024	Oktober 2024	November 2024	Desember 2024
2 - 5 September 2024	1 - 4 Oktober 2024	4 - 7 November 2024	2 - 5 Desember 2024
9 - 12 September 2024	7 - 10 Oktober 2024	11 - 14 November 2024	9 - 12 Desember 2024
16 - 19 September 2024	14 - 17 Oktober 2024	18 - 21 November 2024	16 - 19 Desember 2024
23 - 26 September 2024	21 - 24 Oktober 2024	25 - 28 November 2024	
	28 - 31 Oktober 2024		



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INVESTMENT PRICE/PERSON :

1. Rp. 8.500.000/person (full fare) or
2. Rp. 8.250.000/person (early bird, payment 1 week before training) or
3. Rp. 7.950.000/person (if there are 3 persons or more from the same company)

FACILITIES FOR PARTICIPANTS:

1. Training Module
2. Flash Disk contains training material
3. Certificate
4. Stationeries: NoteBook and Ballpoint
5. T-Shirt
6. Backpack
7. Training Photo
8. Training room with Full AC facilities and multimedia
9. Lunch and twice coffeebreak every day of training
10. Qualified Instructor