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**BAUER COMPRESSORS, INC.**

**1328 AZALEA GARDEN ROAD  
NORFOLK, VIRGINIA 23502  
TELEPHONE: (757) 855-6006  
FAX: (757) 852-2401**

**TRAINING COURSE OUTLINE  
BASIC OPERATION MAINTIENENCE AND TROUBLESHOOTING**

- I. WECLOME AND INTRODUCTION
- II. BASIC SYSTEM FUNDAMENTALS
  - a. THEORY AND RELATIONSHIPS
  - b. UNDERSTANDING THE STAGES OF COMPRESSION
    - i. COMPONENT IDENTIFICATION
- III. LUBRICATION SYSTEM
  - a. LUBRICATION FUNDAMENTALS
  - b. OIL FLOW
  - c. OIL PUMPS
  - d. OIL REGULATORS
- IV. CONDENSATE DRAIN AND PURIFICATION SYSTEM
  - a. SEPERATORS
  - b. AUTO CONDENSATE DRAIN SYSTEM
  - c. PURIFICATION SYSTEM
  - d. CARTRIDGE CHANGE OUT
  - e. PURIFICATION WITH SECURUS SYSTEM
- V. ELECTRICAL CONTROLS
  - a. PROGRAMMABLE LOGIC CONTROLLERS
  - b. CO MONITORS
- VI. PREVENTATIVE AND ROUTINE MAINTENANCE PROCEDURES  
TROUBLESHOOTING PROCEDURES
- VII. HANDS ON DEMONSTRATIONS (ACD VALVE REBUILD, CARTRIDGE CHANGE  
[OPTIONAL], ETC.)
- VIII. COURSE COMPLETION
  - a. COURSE CRITQUE



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**TRAINING COURSE  
OUTLINE  
ADVANCED TECHNICAL COURSE**

- I. WELCOME AND INTRODUCTION
- II. INTERNAL COMPONENT IDENTIFICATION, MEASUREMENT, AND INSPECTION
  - a. VALVES
  - b. PISTONS
  - c. CYLINDERS
  - d. CRANKSHAFTS
- III. LUBRICATION SYSTEM
  - a. LUBRICATION FUNDAMENTALS
  - b. OIL FLOW
  - c. OIL PUMPS
  - d. OIL REGULATORS
- IV. CONDENSATE DRAIN AND PURIFICATION SYSTEM
  - a. SEPARATORS
  - b. AUTO CONDENSATE DRAIN SYSTEM
  - c. PURIFICATION SYSTEM
  - d. CARTRIDGE CHANGE OUT
  - e. PURIFICATION WITH SECURUS/ SECURUS II SYSTEM
- V. ELECTRICAL CONTROLS
  - a. PROGRAMMABLE LOGIC CONTROLLERS
  - b. PRINTED CIRCUIT BOARDS
  - c. CO MONITORS
  - d. NEW SEIMENS PRODUCTS(PLC, MAPLE DISPLAY, TD400 DISPLAY)
- VI. PREVENTATIVE AND ROUTINE MAINTENANCE PROCEDURES  
TROUBLESHOOTING PROCEDURES
- VII. HANDS ON DEMONSTRATIONS
  - a. COMPLETE TEARDOWN AND REBUILD OF VARIOUS COMPRESSOR BLOCKS
  - b. ACD VALVE REBUILD
  - c. OIL REGULATOR REBUILD
  - d. REPROGRAM PLC'S
  - e. ADJUST PRESSURE SWITCH
- VIII. COURSE COMPLETION
  - a. COURSE CRITQUE



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# Syllabus

## **BASIC COURSE**

- 1. Basic System Fundamentals**
- 2. Theory and Relationships**
- 3. Stages of Compression and Air Flow**
- 4. Compressor/Component Identification**
  - a. Valves**
  - b. Pistons**
  - c. Piston rings**
  - d. Crankshafts**
  - e. Floating pistons**
  - f. Connecting rods**
- 5. Lubrication systems**
- 6. Cooling**
- 7. Separators & Automatic Condensate Drain Systems**
- 8. Purification Systems**
  - a. Securus**
  - b. Filter Life**
- 9. Basic Electric Controls**
  - a. Switches**
  - b. Transformers**
  - c. PLC's**
  - d. Sensors**
  - e. Human Interface Devices**
  - f. CO Monitor**

## **ADVANCED COURSE**

- 1. Torque Values**
- 2. Torque Sequence**
- 3. Valve Maintenance**
- 4. Piston Ring Replacement**
- 5. Cylinder Maintenance**
- 6. Crankshaft Inspection**
- 7. Hands On Demonstration**
  - a. Complete Teardown & Rebuild of Various Compressor Blocks**
- 8. Condensate Valve Maintenance**
- 9. Pressure Maintaining Valve Setting**
- 10. PLC (programmable logic controller)**
- 11. HMI (human interface) Navigation**
  - a. EEPROM**



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**TRAINING COURSE OUTLINE  
BASIC OPERATION MAINTIENENCE AND TROUBLESHOOTING OF  
COMPRESSED NATURAL GAS UNITS (CNG)**

- I. WELCOME AND INTRODUCTION
- II. BASIC SYSTEM FUNDAMENTALS
  - a. THEORY AND RELATIONSHIPS
  - b. UNDERSTANDING THE STAGES OF COMPRESSION
    - i. COMPONENT IDENTIFICATION
    - ii. INLET BUFFER TANKS
    - iii. VAPOR RECOVERY SYSTEMS
- III. LUBRICATION SYSTEM
  - a. LUBRICATION FUNDAMENTALS
  - b. OIL FLOW
  - c. OIL PUMPS
  - d. OIL REGULATORS
- IV. CONDENSATE DRAIN AND PURIFICATION SYSTEM
  - a. SEPERATORS
  - b. AUTO CONDENSATE DRAIN SYSTEM
  - c. PURIFICATION SYSTEM
  - d. CARTRIDGE CHANGE OUT
  - e. PURIFICATION WITH SECURUS SYSTEM
- V. ELECTRICAL CONTROLS
  - a. PROGRAMMABLE LOGIC CONTROLLERS
  - b. CO MONITORS
- VI. PREVENTATIVE AND ROUTINE MAINTENANCE PROCEDURES  
TROUBLESHOOTING PROCEDURES
- VII. HANDS ON DEMONSTRATIONS (ACD VALVE REBUILD, CARTRIDGE CHANGE  
[OPTIONAL], ETC.)
- VIII. COURSE COMPLETION
  - a. COURSE CRITQUE



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**TRAINING COURSE SNG  
OUTLINE**

- I. WELCOME AND INTRODUCTION
- II. BASIC SYSTEM FUNDAMENTALS
  - a. THEORY AND RELATIONSHIPS
  - b. UNDERSTANDING THE STAGES OF COMPRESSION
    - i. COMPONENT IDENTIFICATION
      - 1. LOW PRESSURE SIDE
      - 2. HIGH PRESSURE SIDE
- III. INTERNAL COMPONENT IDENTIFICATION
  - a. VALVES
  - b. PISTONS
  - c. CYLINDERS
- IV. LUBRICATION SYSTEM
  - a. LUBRICATION FUNDAMENTALS
  - b. OIL FLOW
  - c. OIL PUMPS
  - d. OIL REGULATORS
- V. CONDENSATE DRAIN AND PURIFICATION SYSTEM
  - a. SEPERATORS
  - b. AUTO CONDENSATE DRAIN SYSTEM
  - c. PURIFICATION SYSTEM
  - d. CARTRIDGE CHANGE OUT
  - e. PURIFICATION WITH SECURUS/ SECURUS II SYSTEM
- VI. ELECTRICAL CONTROLS
  - a. PROGRAMMABLE LOGIC CONTROLLERS
- VII. PREVENTATIVE AND ROUTINE MAINTENANCE PROCEDURES  
TROUBLESHOOTING PROCEDURES
- VIII. PROPER OPERATION
- IX. HANDS ON DEMONSTRATIONS (TEARDOWN AND REBUILD OF VARIOUS  
COMPRESSOR BLOCKS)
- X. COURSE COMPLETION
  - a. COURSE CRITIQUE



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## **Plan de Estudios**

### **CURSO BÁSICO**

1. **Fundamentos básicos del sistema**
2. **Teoría**
3. **Etapas de compresión y flujo de aire**
4. **Identificación de compresor/componente**
  - a. **Válvulas**
  - b. **Pistones**
  - c. **Anillos de pistón**
  - d. **Cigüeñales**
  - e. **Pistones Flotante**
  - f. **Bielas**
5. **Sistemas de lubricación**
6. **Enfriamiento**
7. **Sistemas de drenaje de condensado automático y separadores**
8. **Sistemas de purificación**
  - a. **Securus**
  - b. **Vida de los Filtros**
9. **Controles eléctricos básicos**
  - a. **Interruptores**
  - b. **Transformadores**
  - c. **PLC's**
  - d. **Sensores**
  - e. **Dispositivos de interfaz humana**
  - f. **Monitor de CO**

### **CURSO AVANZADO**

1. **Valores de par**
2. **Secuencia de torsión**
3. **Mantenimiento de válvulas**
4. **Reemplazo de pistón y anillos**
5. **Mantenimiento del cilindro**
6. **Comprobación del cigüeñal**
7. **Demostraciones prácticas**
  - a. **Completar el desmontaje y la reconstrucción de varios bloques de compresor**
8. **Mantenimiento de válvulas de condensado**
9. **Ajuste de la válvula mantenedora de presión**
10. **PLC (controlador lógico programable)**
11. **Navegación de HMI (interfaz humana)**
  - a. **EEPROM**