

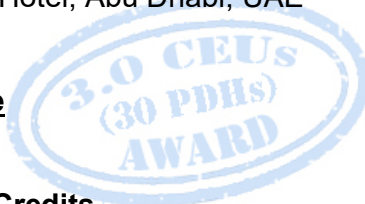
**COURSE OVERVIEW ME0379**  
**Mechanical Couplings**

**Course Title**  
 Mechanical Couplings

**Course Date/Venue**  
 Session 1: February 23-27, 2025/Boardroom 1,  
 Elite Byblos Hotel Al Barsha, Sheikh  
 Zayed Road, Dubai, UAE  
 Session 2: August 25-29, 2025/Fujairah  
 Meeting Room, Grand Millennium Al  
 Wahda Hotel, Abu Dhabi, UAE



**Course Reference**  
 ME0379



**Course Duration/Credits**  
 Five days/3.0 CEUs/30 PDHs

**Course Description**



***This hands-on, highly-interactive course includes real-life case studies where participants will be engaged in a series of interactive small groups and class workshops.***



This course is designed to provide participants with a detailed and up-to-date overview of voith coupling overhaul. It covers the principles of ower transmission and the types of coupling, constant fill and variable; the couplings and lift transportation appliances; the draining of fluids and proper disassembly procedures; and the correct measurement in examining the components including tightening torques and fusible plugs.



During this interactive course, participants will learn how to perform bearing measurement and installation, gears installation and operating fluids selection; prepare the assembly check report and the input and output hubs; install and design tolerances, commission report, maintenance plan and devices; troubleshoot spare parts and identify turbo coupling including the latest technology (Vorecon).

### Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply systematic techniques on voith coupling overhauling
- Discuss the principles of power transmission and identify the types of coupling, constant fill and variable
- Remove couplings and lift transportation appliances
- Clean couplings by draining the fluids and apply proper disassembly procedures
- Perform correct measurement in examining the components as well as tightening torques and fusible plugs
- Employ bearing measurement and installation, gears installation and operating fluids selection
- Prepare assembly check report and mount the input and output hubs
- Install and align tolerances, commission report, illustrate maintenance plan and monitor devices
- Troubleshoot and discuss the spare parts information turbo coupling covering the latest technology (Vorecon)

### Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

### Who Should Attend

This course covers systematic techniques and methodologies of coupling for mechanical, hydraulics & hydraunics, plant, machinery, maintenance and materials engineers, design engineers, superintendents, supervisors, senior design draftsmen, draftsmen and other technical staff who are involved in the overhauling, maintenance, operation, inspection and troubleshooting of couplings.

### Course Fee

**US\$ 5,500** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

### Accommodation


Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

**Course Certificate(s)**

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.


**Certificate Accreditations**

Certificates are accredited by the following international accreditation organizations: -

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British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology’s courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant’s involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant’s CEU and PDH Transcript of Records upon request.



**Course Instructor(s)**

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



**Mr. Mohamed Refaat, MSc, BSc**, is a **Senior Mechanical & Maintenance Engineer** with almost **30 years** of extensive experience in **Rotating Equipment and Machinery** including **Pumps, Compressors, Turbines, Motors, Turbo-expanders, Gears**, etc. His wide experience also covers **Centrifugal Compressor & Steam Turbine, Centrifugal Pump, Pump Technology, Gas Turbine Technology, Heat Exchanger, Turbines & Motors, Variable Speed Drives, Seals, Control Valves, Advanced Valve Technology, Dry Seal, Fired Heaters, Air Coolers, Crude Desalter, Process Vessels & Valves, Industrial Equipment & Rotating Machinery, Mechanical Engineering, Mechanical Equipment & Turbomachinery, Piping, Pipelines, Valves, Lubrication Technology, Vibration Analysis, Power System Hydraulics, Security Detection Systems & Operation, Process Plant Equipment, Troubleshooting Process Operations, Maintenance Management Best Practices, Rotating Equipment Reliability Optimization, Practical Machinery Vibration, Vibration Techniques, Effective Reliability Maintenance, Excellence in Maintenance & Reliability Management, Preventive & Predictive Maintenance, Machinery Failure Analysis (RCFA), Reliability Optimization & Continuous Improvement, Maintenance Planning, Scheduling & Work Control, Maintenance Management Strategy, Mechanical & Rotating Equipment Troubleshooting, Preventive Maintenance, Predictive Maintenance, Reliability Centered Maintenance (RCM), Condition Based Monitoring (CBM), FMEA and Troubleshooting of machinery and rotating equipment including turbines, bearings, compressors, pumps etc.** He is currently the **Mechanical Maintenance Section Head** of the **Arab Petroleum Pipelines Company** where he is in charge of planning, scheduling & managing the execution of preventive & corrective mechanical maintenance activities for all equipment. He is responsible for executing the scheduled inspections & major overhauls for gas turbines, valves & pumps, carrying out off-line vibration monitoring plans, troubleshooting, fault diagnosing & investigating failures of machinery.

During his career life, Mr. Mohamed was able to modify the gas turbines self cleansing system to improve its maintainability and extend the air filters' lifetime. He was responsible for defining & updating the equipment codes and parameters for replacing the old **CMMS** with **MAXIMO**. He also worked as the Operations Supervisor wherein he was closely involved with the operation of the crude oil internal **pipeline** system between the tankers and tank farm, operation & control of the booster pumps for pumping crude oil for main pipelines and the development & implementation of the plans & procedures for draining the main terminal internal lines for maintenance purposes. He also held the position of Measurement Engineer where he was responsible for the crude oil custody transfer, performing loss control analysis and operating the crude oil automatic sampler & related equipment. Prior to that, he was the Design Engineer responsible for the design phase of the Truck Mixer Manufacturing Project of the Mechanical Design Department.

Mr. Refaat has **Master and Bachelor** degrees in **Mechanical Engineering** and a General Certificate of Education (**GCE**) from the **University of London, UK**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and a member of the Engineering Syndicate of Egypt. He has further delivered numerous training, courses, workshops, seminars and conferences worldwide.



### **Training Methodology**

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

### **Course Program**

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

#### **Day 1**

0730 – 0800	<i>Registration &amp; Coffee</i>
0800 – 0815	<i>Welcome &amp; Introduction</i>
0815 – 0830	<b>PRE-TEST</b>
0830 – 0930	<b><i>Principles of Power Transmission</i></b>
0930 – 0945	<i>Break</i>
0945 – 1100	<b><i>Types of Couplings -Constant Fill &amp; Variable</i></b>
1100 – 1230	<b><i>Removing the Coupling</i></b>
1230 – 1245	<i>Break</i>
1245 - 1420	<b><i>Lifting Transportation Appliances</i></b>
1420 – 1430	<b>Recap</b>
1430	<i>Lunch &amp; End of Day One</i>

#### **Day 2**

0730 – 0900	<b><i>Cleaning the Coupling-Drain the Fluids</i></b>
0900 – 0915	<i>Break</i>
0915 – 1100	<b><i>Disassembly Procedure</i></b>
1100 – 1230	<b><i>Measure-Examine the Components</i></b>
1230 – 1245	<i>Break</i>
1245 – 1420	<b><i>Tightening Torques</i></b>
1420 – 1430	<b>Recap</b>
1430	<i>Lunch &amp; End of Day Two</i>

**Day 3**

0730 – 0930	<b>Fusible Plugs</b>
0930 - 0945	Break
0945 – 1100	<b>Bearings Measurement - Installation</b>
1100 – 1215	<b>Gears Installation</b>
1215 – 1230	Break
1230 - 1420	<b>Operating Fluids Selection</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Three

**Day 4**

0730 – 0930	<b>Assembly Check Report</b>
0930 - 0945	Break
0945 – 1100	<b>Mounting the Input-Output Hubs</b>
1100 – 1215	<b>Installation &amp; Alignment Tolerances</b>
1215 – 1230	Break
1230 - 1420	<b>Commissioning Report</b>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Four

**Day 5**

0730 – 0930	<b>Maintenance Plan</b>
0930 - 0945	Break
0945 – 1100	<b>Monitoring Devices</b> MTS Mechanical Thermal Switch Unit • BTS Non-Contacting Thermal Switch Unit
1100 – 1215	<b>Troubleshooting</b>
1215 – 1230	Break
1230 - 1350	<b>Spare Parts Information Turbo Coupling</b> The Latest Technology (Vorecon)
1350 – 1400	<b>Course Conclusion</b>
1400 - 1415	<b>POST-TEST</b>
1415 - 1430	Presentation of Course Certificates
1430	Lunch & End of Course

**Practical Sessions**

This hands-on, highly-interactive course includes real-life case studies and exercises:-



**Course Coordinator**

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