

## RTwin ANALYSIS I (BASIC)

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### Topics Covered:

- Area Explorer - It's Functions & Options
- Using the Help System
- Creating a New Engine
- Using the Engine Wizard
- Creating a New Compressor
- Using the Compressor Wizard
- Adding Additional Test points
- Adjusting the Route for Efficiency
- Copying & Creating an Identical Unit
- Using the Analysis Palette

**Duration:** 5 days (32 hrs.)  
**Prerequisite:** Windows knowledge  
**Requirements:** Computer, Current version of RTwin

## RTwin ANALYSIS II (ADVANCED)

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### Topics Covered:

- Explanations & Applications of Alternative
- Test points to Enhance Machinery Condition Analysis
- Setting up Auxiliary Equipment (pumps, motors, turbo chargers, & bearings) using the new RTwin rotating software.
- Fuel Metering Setup & Usage
- Economic Analysis
- Editing Volumetric Efficiencies, Chan32nel Resonance, & Marker Correction Angles to Increase Data Accuracy
- Utilizing Multiple Database & Import/Export Features
- Database Customization for Better Analysis (routes, layout configuration, printing options, & settings)
- Copying reports & Graphics to Other Windows Applications for Report Customization
- 32-bit 9240 Features & Applications
- Rod Motion Analysis
- Getting the Most Out of the Trend Feature
- Troubleshooting Software & Hardware Errors

**Duration:** 4 days (24 hrs.)  
**Prerequisite:** Windows, RTwin Level I  
**Requirements:** Computer (rental available), Current version of RTwin

## HIGH SPEED ENGINE/COMPRESSOR ANALYSIS

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### Topics Covered:

- Engine Analysis
- Inspection
- Phased Vibration Analysis
- Spectrum Data
- Primary Ignition Analysis
- Secondary Ignition Systems
- Emission Control Device System
- Troubleshooting & Case Scenarios
- Compressor Analysis
- Inspection
- Phased Vibration Analysis
- Spectrum Analysis
- Pressure Data Analysis
- Temperature Data
- Compressor Reports
- Troubleshooting & Case Scenarios

**Duration:** 5 days (32 hrs.)  
**Prerequisite:** Windows, RTwin – Level I  
**Requirements:** Computer (rental available), Current version of RTwin

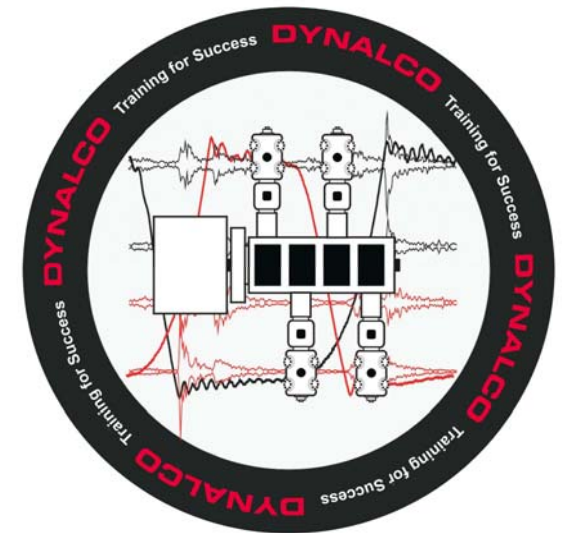
**Every course, except RTwin II, begins at 1pm on Monday and ends at noon on Friday.**

**RTwin II begins at 1pm on Tuesday and ends at noon on Friday.**

On-site training is also available.  
For more information, please contact your Account Representative.

# DYNALCO

## 2010 TRAINING COURSE GUIDE



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## ENGINE I (BASIC)

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### Topics Covered:

- Introduction & Group Discussion
- Review Latest Software Setup Information
- Engine Fundamentals, Basic Theory & Calculations
- Concepts of Engine Designs-2-stroke vs. 4-stroke Events
- Pressure Performance & Profile Analysis
- Pattern Interpretation – PV vs. PT Curves
- Ignition Components – Primary & Secondary Systems
- Mechanical Faults, Identifying Rings & Liner Conditions, Wrist Pins, & Valve Train Assembly
- Case Studies, Group Discussions, & Review

**Duration:** 5 days (32 hrs.)

**Prerequisite:** Basic Mechanical Knowledge, Windows knowledge

**Requirements:** Computer (rental available), Current version of RTwin

## ENGINE II (ADVANCED)

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### Topics Covered:

- Introduction & Group Discussion Concerning Analysis Programs
- Technical Information Exchange Involving the Latest Software & Hardware Equipment
- In-depth Engine Theory & Events of 4-cycle vs. 2-cycle Systems
- Analysis Objective & Combustion Theory Interpretations
- In-depth Performance Theory & Balancing Power Cylinders
- In-depth Mechanical Condition Patterns & Analytical Data Interpretations
- In-depth Interpretation of Ignition System & Analytical Procedures
- Improvement Procedures for the Analysis Process Using Advanced Analysis Tools
- Group Discussion & Review of Alternative Predictive Programs Utilized in Analysis Programs
- Case Studies

**Duration:** 5 days (32 hrs.)

**Prerequisite:** Basic Engine Analysis OR Extensive Engine Analysis Experience, Windows knowledge

**Requirements:** Computer (rental available), Current version of RTwin

## COMPRESSOR I (BASIC)

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### Topics Covered:

- Introduction & Group Discussion
- Review Latest Software Setup Information
- Compressor Fundamentals, Group Discussion & Terms
- Compressor Theory – Double Acting Systems (HE & CE)
- Pressure Volume Curve Interpretations
- Basic Calculations – Capacity, Horsepower
- Log P / Log V Finding Valve & Ring Leaks
- Discuss Data Quality, Data Systems, and Report Interpretations
- Compressor Case Studies & Review

**Duration:** 5 days (32 hrs.)

**Prerequisite:** Basic Mechanical Knowledge, Windows knowledge

**Requirements:** Computer (rental available), Current version of RTwin

## COMPRESSOR II (ADVANCED)

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### Topics Covered:

- Introduction & Group Discussion Concerning Analysis Programs
- Technical Information Exchange Involving the Latest Software & Hardware Equipment
- Analysis Procedures & Theory of Compressors
- Performance Calculations, Mechanical Efficiencies, and Reports
- In-depth Compressor Valve Analysis – Unloader Components
- Compressor System Losses & Rod Load Evaluations
- In-depth Analytical procedures – Log P/Log V Curves, Vibration Pattern Interpretation
- Trend Capabilities & Introduction to Economic Theory
- Group Discussion & Review of Alternative Predictive Programs Utilized in Analysis Programs
- Case Studies

**Duration:** 5 days (32 hrs.)

**Prerequisite:** Basic Compressor Analysis OR Extensive Compressor Analysis Experience, Windows knowledge

**Requirements:** Computer (rental available), Current version of RTwin

## DIESEL ENGINE

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### Topics Covered:

- Introduction to Diesel Analysis with RECIP-TRAP®
- Data Collection Procedures & Software Review
- Fuel Injection Diagnostic Techniques
- Normal PT & VT Patterns, Maximum Rise Rate, and Combustion Theory
- Engine Fundamentals, 2-stroke vs. 4-stroke engines
- Engine Cylinder Balance
- Power Ring & Valve Leakage Detection
- Port and Bridge Problems, Liner Scoring
- Valve Train Conditions
- Wrist Pin Knock & Mechanical Piston Slap
- Engine Balancing & performance Reference
- Diesel Case Studies & Review

**Duration:** 5 days (32 hrs.)

**Prerequisite:** Windows, RTwin – Level I

**Requirements:** Computer (rental available), Current version of RTwin

## SPECTRUM/PULSATION ANALYSIS

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### Topics Covered:

- Vibration & Spectrum Analysis for RECIP-TRAP and Auxiliary Equipment using the new RTwin rotating package.
- Introduction to Spectrum Analysis
- Frequency
- Shaft Harmonics
- The CODA Decision-Making Process
- Anomaly Definition & Detection
- Case Studies
- Rolling Element Bearings
- Mechanical Natural Frequencies (MNF's)
- Modes & Measurements
- Analysis & Gears
- Sample Setups
- Ratios, Notes, Variables, and Routes
- Using RT9240 for Rotating Analysis
- Pulsation Analysis
- Pulsation Measurement & Analysis
- Case Studies
- Vibration, Pulsation Data

**Duration:** 5 days (32 hrs.)

**Prerequisite:** Windows, RTwin – Level I

**Requirements:** Computer (rental available), Current version of RTwin