

TOWER CRANES

**TECHNICAL TRAINING
AND TECHNICAL TOOLS
FOR THE CUSTOMER**



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TOWER CRANES TECHNICAL TRAINING

Terex Tower Cranes regularly organises technical training and refresher courses for its dealers, aimed at training qualified personnel for the erection/disassembly, the maintenance and the troubleshooting of their tower cranes fleet.

The courses are held for small groups or individuals either in person, hands-on, and online on dedicated online platforms and cover specific topics in every detail in order to impart the deepest product knowledge to the technician to take back to the job site.

The topics covered in the courses are varied, either offered by Terex Tower Cranes or specifically requested by the dealer. Trainings are interactive and tailored on each specific attendant with different levels of depth or with specific topics of interest to the customer.

Training is offered on the full Terex Tower Cranes product range: Self Erecting, Flat Top, Luffing Jib, Hydraulic Luffing Jib, Hammerhead, Derrick.

MISSION

Providing customers with excellent technical training that reduces the time it takes to work on, service and maintain Terex equipment and ensures a safe approach to individual site activities.



VISION

To be the best point of reference for technical training on tower cranes by providing training solutions tailored to the needs of the customer.

TRAINING CENTER

The Training Center is located at the Terex Tower Cranes headquarters in Fontanafredda (Italy), on a dedicated area:

- an indoor training area for classroom courses
- 300 m² of covered areas with crane simulators for the practical application of the theoretical lectures
- an outdoor area for practical training regarding self-erecting cranes erection/dismantling.



THE TRAINING OFFER

The courses are held in person, hands-on, and online on dedicated online platforms.



In Classroom

Independent Training Modules
These training modules are developed for the students that need to learn about a specific knowledge. Independent modules requires less hours of classroom than courses based on levels.

Customized Training
The Customized Training is tailored onto the Customer requests and needs.



On Site

Hands-on Training Modules
The Hands-on Training helps the Customer or Distributor technicians, to instantly learn and familiarize with a new Terex Cranes product.

A team of skilled Service Technicians, provide a simplified but effective support during the first installation, with a particular focus on Commissioning, Set-up and Maintenance of your Crane.



On Line

Web-based Training (GoToTraining platform)
The web-based modules consists in 2 hours of direct live - not recorded - Training on specific contents accurately selected and agreed with the customer. The attendants have full interaction with the trainer. The web-based training optimizes the learning minimizing the costs (no travel and lodging costs). These modules are named training pills: less things to learn during a session then it's easy to remember.

Level Training Modules
The Level Training Modules are developed for students that need a wide and deep knowledge about Terex Tower Cranes. The approach is to increase the difficulty level of each module similarly to the traditional school approach.

Certifications

The Terex certification is in accordance with the Training activity (contents and method), it is based on three types:

- certification of attendance
- certification of attendance with profit (theoretical examination at the end of the course)
- certification of competence or qualification (theoretical and a practical examination)

Location

The Terex Tower Cranes Training Center is located in Fontanafredda (Italy).
The Training Center offers the best solution for learning of Terex Tower Cranes technology: it is equipped with crane simulators, crane's parts and dedicate classroom; it is a comfortable and interactive place where to improve your crane knowledge.
The Familiarization Training is based on practical activity with the crane (no classroom session).



IN CLASSROOM

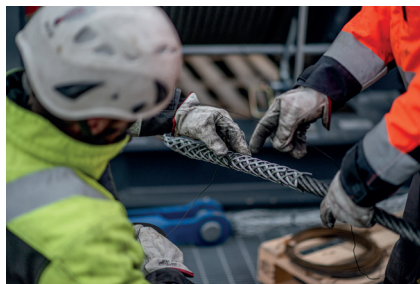
INDEPENDENT TRAINING MODULES

COURSE	DURATION	TARGET AUDIENCE	DIFFICULTY LEVEL Range 1 - 5
ASSEMBLY, COMMISSIONING AND MAINTENANCE (GENERAL)			
CTT, CTL, SK commissioning	8 hours	For crane erectors and electricians. Experience: 1 year.	3
Crane maintenance (general)	8 hours	For crane erectors, electricians, operators. Experience: 1 year.	2
Brakes setting (general)	8 hours	For crane erectors, mechanics, electricians. Experience: 1 year.	3
ADVANCED SETTING, TUNING AND TROUBLESHOOTING			
PLC and Drives Logic	16 hours	For electricians only. Experience: 2 years.	5
Crane trouble shooting (general)	8 hours	For electricians only (PLC and Drives Logic module is mandatory prerequisite). Experience: 2 years.	5
I.C.S. description (general)	16 hours	For crane erectors and electricians. Experience: 1 year.	3
ASSEMBLY, COMMISSIONING AND MAINTENANCE (ADVANCED AND SPECIFIC)			
External and internal climbing	16/24 hours	For crane erectors. Experience: 3 years.	5
CBR/CSE (general)	8/16/24 hours	For crane erectors, electricians and operators. Experience: 2 years for CBR / 3 years for CSE.	3
CDK 100	8/16 hours	For crane erectors and electricians. Experience: 1 year.	3

ASSEMBLY, COMMISSIONING AND MAINTENANCE (GENERAL)

CTT, CTL, SK
commissioning

⌚ 8 hours



TARGET AUDIENCE

For crane erectors and electricians.
Experience / skills: 1 year.
Difficulty (*on a range 1-5*): 3

CONTENTS

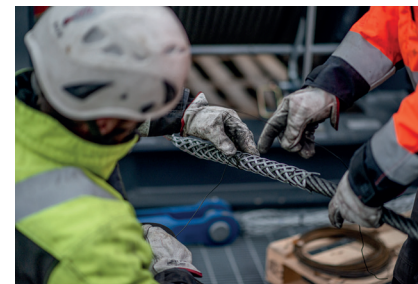
The course gives all the information and procedures for a crane commissioning, both electromechanical (limit switches) and electronic (I.C.S. - Integrate Control System setup).

- CTT, CTL and SK crane's general characteristics and features review.
- Safety procedures.
- PLC and Drives functions.
- I.C.S. components description and interaction with the PLC.
- Commissioning procedures: limit switches setting, load limit setting, moment limits setting.
- CTT I.C.S. panel, quick description and setup.
- CTL I.C.S. panel, quick description and setup.
- SK I.C.S. panel, quick description and setup.
- Hands on: practical exercises with the simulator (Terex Fontanafredda) or with a crane.

ASSEMBLY, COMMISSIONING AND MAINTENANCE (GENERAL)

Crane maintenance
(general)

⌚ 8 hours



PREREQUISITES

For crane erectors, electricians, operators.
Experience / skills: 1 year.
Difficulty (*on a range 1-5*): 2

COURSE DESCRIPTION

The course gives a general information and procedures for a crane maintenance as following:

- Crane's general characteristics and features review.
- The crane working cycle.
- Safety procedures.
- Routine maintenance description:
 - inspection of the structure and components (mechanical and electrical).
 - repair, replacements, lubrication of the parts.
- Routine maintenance schedule:
 - daily, weekly, monthly etc.
- Special maintenance description: basic overview of replacements and NDT.

ASSEMBLY, COMMISSIONING AND MAINTENANCE (GENERAL)

Brakes setting
(general)

8 hours



PREREQUISITES

For crane erectors, mechanics and electricians.
Experience / skills: 1 year.
Difficulty (on a range 1-5): 3

COURSE DESCRIPTION

The course gives the information and procedures for replacing and setting the working and emergency brakes:

- AFC hoist winches particularities (electrical and mechanical).
- Hoist brakes settings and winches maintenance.
- LFC luffing units particularities (electrical and mechanical).
- Luffing brakes settings and maintenance.
- SSR slewing units particularities (electrical and mechanical).
- Slewing brakes settings and maintenance.
- SCC slewing units particularities (electrical and mechanical).
- Slewing brakes settings and maintenance.
- SVF slewing units particularities (electrical and mechanical).
- Slewing brakes settings and maintenance.
- DVF trolley winches particularities (electrical and mechanical).
- Trolley brake settings and winches maintenance.

ADVANCED SETTING, TUNING AND TROUBLESHOOTING

PLC and Drives
Logic

16 hours



PREREQUISITES

For electricians only.
Experience / skills: 2 years.
Difficulty (on a range 1-5): 5

COURSE DESCRIPTION

The course gives an overview of the components and the description of the components working logic.

- Mitsubishi PLC's: parts, working logic and details.
- Interaction between crane circuits and PLC.
- I.C.S. panels description and associated components.
- Vacon Drives (NXP, NXL, V100): parts, working logic and details.
- Vacon Expansion cards (OPT series): working logic and details
- Vacon display and menus description.
- Vacon parameters and error codes.
- Parker Drives (590, 890): parts, working logic and details.
- Shneider Drives (ATV58, ATV71): parts, working logic and details.
- Lenze Drive (Motec 8200): parts, working logic and details.
- PLC ABB introduction: parts, working logic and details.
- I.C.S. ABB introduction: parts, working logic and details.

ADVANCED SETTING, TUNING AND TROUBLESHOOTING

Crane trouble shooting (general)

⌚ 8 hours



PREREQUISITES

For electricians only (*PLC and Drives Logic module* is mandatory prerequisite).
Experience / skills: 2 years.
Difficulty (*on a range 1-5*): 5

COURSE DESCRIPTION

The course gives an idea to approach the trouble shooting on the cranes by using the I.C.S. panel and the Drives keypads.

- Mitsubishi PLC's: parts, working logic and details (quick overview)
- Interaction between crane circuits and PLC (quick overview)
- I.C.S. Mitsubishi panel error codes.
- ABB PLC: parts, working logic and details (quick overview)
- I.C.S. ABB panel error codes.
- Vacon drive error codes description, interaction between codes and wiring diagrams.
- Examples troubleshooting.
- Hands on: practical exercises with the simulator (Terex Fontanafredda) or with a crane.

ADVANCED SETTING, TUNING AND TROUBLESHOOTING

I.C.S. description (general)

⌚ 8 hours



PREREQUISITES

For crane erectors and electricians.
Experience / skills: 1 year.
Difficulty (*on a range 1-5*): 3

COURSE DESCRIPTION

The course gives a complete description of the I.C.S. components and screen pages.

- I.C.S. panels description and associated components (quick overview).
- CTT City VCOJ software (Mitsubishi version).
- CTT medium and large VCOJ software (Mitsubishi version).
- CTL VCBJ software (Mitsubishi version).
- CTT / CTL I.C.S. (ABB version).

ASSEMBLY, COMMISSIONING AND MAINTENANCE
(ADVANCED AND SPECIFIC)

External climbing
and internal

⌚ 16/24 hours*



PREREQUISITES

For crane erectors.
Experience / skills: 3 years.
Difficulty (on a range 1-5): 5

COURSE DESCRIPTION

The course gives a complete description of the external climbing procedure of the Terex tower cranes, with a particular focus on the safety and risks related to the activities.

- External and internal climbing introduction.
- Safety procedures.
- Climbing cage details.
- Towers details.
- Cage installation.
- External climbing procedures.
- Collar types.
- Collar installation.
- Theoretical examination.
- 8 hours of hands-on activity (crane and cage are required).
- (*) 8 hours for hands-on and practical examination (crane and cage are required).

ASSEMBLY, COMMISSIONING AND MAINTENANCE
(ADVANCED AND SPECIFIC)

CBR/CSE
(general)

⌚ 8/16/24 hours*



PREREQUISITES

For crane erectors, electricians and operators.
Experience / skills: 1 year.
Difficulty (on a range 1-5): 2 (CBR) / 3 (CSE)

COURSE DESCRIPTION

The course gives an overview of the CBR or CSE cranes and gives the procedures to install and setup a self-erecting crane on the site; maintenance and basic crane logic description are included in the training module.

- CBR and CSE fleet overview.
- Safety procedures.
- Components and parts description.
- Crane installation.
- Crane commissioning.
- Crane maintenance.
- Crane logic description (basic) for CBR.
- Crane logic description (advanced) for CSE.
- (*) 8 hours for practical activity (crane is required).
- (*) 8 hours for theoretical activity for CBR.
- (*) 16 hours for theoretical activity for CSE.

ASSEMBLY, COMMISSIONING AND MAINTENANCE (ADVANCED AND SPECIFIC)

CDK 100

⌚ 8/16 hours*



PREREQUISITES

For crane erectors and electricians.
Experience / skills: 1 year.
Difficulty (*on a range 1-5*): 3

COURSE DESCRIPTION

The course gives the procedures to install and setup a CDK 100 on the site; maintenance and basic crane logic description are included in the training module.

- CDK 100 overview.
- Safety procedures.
- Components and parts description.
- CDK 100 installation.
- CDK 100 commissioning.
- CDK 100 logic description (basic).
- CDK 100 maintenance.
- (*) 8 hours for practical activity (CDK 100 is required).

HANDS-ON TRAINING MODULE

Crane Commissioning (general)

⌚ 8 hours

Custom Training

⌚ Based on content

COMMISSIONING DESCRIPTION

Commissioning is intended as an activity that technically starts after erection is completed and rope path is done as prescribed in the manual; in this case Commissioning can include:

- Setting of the crane (limit switches setting and load tests)
- Fine Tuning & Familiarization with the product (customized set up of the crane according to crane driver's requests and site's feature components and parts description)

CUSTOM TRAINING

Isn't that enough? Contact us at FON.training@terex.com for any training custom request.

WEB-BASED TRAINING AND LEVEL TRAINING MODULES

Each training is built on 3 levels of technical detail:

Level 1
BASIC

For mechanics and electricians

The course gives all the information and procedures for a crane assembly and commissioning, including the basic functionality and settings of the I.C.S. (Integrated Control System) cabin panel.

The course gives also all the information related to the crane maintenance (inspections, greasing and brakes setting) and a simple guideline on wiring diagrams.

Level 2
ADVANCED

For electricians

The course gives all the information related to the wiring diagrams, the PLC and the drives: hardware description and unit basic logic (slewing, hoisting, luffing and trolley).

The course gives also the full description of the I.C.S. including the crane diagnostic and fault codes. Troubleshooting guidelines.

Level 3
EXPERT

For electricians and electrical engineers

The course gives the advanced description of the digital components of the crane (PLC, drives and sensors) including the parameters for a crane units tuning (slewing, hoisting, luffing and trolley).

The course gives also an additional and advanced activity of crane troubleshooting.


TECHNICAL TOOLS FOR THE CUSTOMER

Terex Customers are provided with two important tools to quickly assess and solve any problematics on cranes and to order the right spare parts for their model. Both tools are dedicated to registered users only.



T-SOLVE

T-SOLVE WEB PAGE
FIND YOUR ERROR CODE



The web page is easily reachable from PC or mobile phone, the ideal tool to give you instant help when you're on the job site.

By entering the error code displayed on the crane, it provides the meaning of the code and tips on how to solve the problem.

TECHNICAL TOOLS FOR THE CUSTOMER

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SALES CENTRAL

SALES CENTRAL
ORDER ONLINE YOUR SPARE PARTS



Sales Central web page is the tool dedicated to online ordering of spare parts. The User can see the list of purchased cranes, and for each the list of dedicated spare parts.

For every spare part he can know its availability and price. He places the order online and is kept updated on the status of his order. Support service engineers with easy consulting of electrical schematics.