

Ausbildung - Training - Formation - Formación - 培训 - 교육



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Understanding and solving cable twist

Cable twist phenomenon

CT1

Duration : 2 days

Objectives

Learn the cable adjustment principles applicable to all types of aerial lifts.
Learn application of the state-of-the-art in cable twist.

Public

Foremen, maintenance staff, maintenance mechanics, aerial lift and surface lift operators.

Required level

Anyone likely to perform cable adjustment operations on aerial lifts.

Content

Theory

- Aerial lift cable technology.
- Installing cable technology.
- Cable twisting.
- Basic adjustment rules.
 - ◆ Terminal bullwheels.
 - ◆ Adjustment of ligne equipment.
- Aerial lift cable maintenance.
- Cable monitoring and inspection.

Positive aspects

- ❖ Training methods based on a real-life situation on your own aerial lifts.
- ❖ An exchange of experience with other Ski Resorts staff.

Practice

- Showing twisting.
- Adjusting cable orientation and angle :
 - ◆ On return bullwheels
 - ◆ On support structures
 - ◆ On compression structures
- Identifying causes of wear and damage.

Specific case study. Support/compression : track compensation, angles, jig backs, etc.

Prices

Please contact your Customer Manager

Trainer

Cable engineer – Fitter – Supervisor on site.

Dates and place

To be defined. On fix or detachable aerial lift.

Worker Safety equipment

Each trainee must wear his individual protection equipment and outdoors clothing.

Splicing

Splicing technical procedures

CT2

Duration : 3 days

Objectives

Learn how to splice a cable in compliance with applicable regulations.

Learn how to draw up documents to ensure traceability of operations.

Public

Technicians, fitters and maintenance technicians.

Required level

Anyone likely to perform splicing on an aerial lift cable.

Content

Theory

- Aerial rope-way technology
 - ♦ characteristics, components, utilisation.
- Splicing procedures.
 - ♦ Marriage methods
 - ♦ Methods of laying in strands
 - ♦ Tucking methods
- Regulatory data : dimensions, routine inspections, dismantling and repair criteria.
- Unspooling cable.
- Cable tensioning.
 - ♦ Return bullwheel.
 - ♦ Ligne equipment.

Practice

- Cable tensioning.
- Trainees work in group of 2 or 3 to work splices :
 - ♦ Alternate marriage,
 - ♦ Methods of laying in strands,
 - ♦ Tucks (cross-over or parallel tucks).
- Perfect technique on different work phases.
- Dimensional check of splice.

Positive aspects

- ❖ A progressive training to assimilate the methods and prepare trainee to be operational on field.
- ❖ An exchange of experience on the different Ski Resorts' practices and manufacturers' solutions.

Prices

Please contact your Customer Manager.

Trainer

Cable engineer – splice engineer.

Dates and place

To be defined.

On site or at Poma headquarter.

Information

During this course our trainer will teach you one method : **Marriage method** or **Tucking method**. Please make your choice at your registration.

Shortening a cable

Shortening methods and techniques

CT3

Duration : 3 days

Objectives

Learn how to shorten a cable on a surface lift.

Learn how to draw up documents to ensure traceability of operations performed on cable.

Public

Anyone who is familiar with splice work and wishes to shorten or replace cable strands.

Required level

You must have attended the CT2 module or have some experience in splicing.

Content

Theory

- A reminder of splicing phases :
 - ◆ marriage,
 - ◆ laying in strands,
 - ◆ types of tucks.
- Shortening phases :
 - ◆ Determine length to be cut,
 - ◆ Rigging and forming the loop,
 - ◆ identifying, unwinding and rewinding the strands,
 - ◆ Tucking method.

Replacing a strand.

Practice

- Regular inspections.
- Working a splice.
- Shortening a splice :
 - ◆ The loop position,
 - ◆ How to determine strand lay,
 - ◆ Feeding strands through loop,
 - ◆ Inserting strands on cable,
 - ◆ Knotting..
- Replacing a strand.

Dimensional control.

Positive aspects

- ❖ A progressive training to assimilate the methods and prepare trainee to be operational on field.
- ❖ An exchange of experience on the different Ski Resorts' practices and manufacturers' solutions

Prices

Please contact your Customer Manager.

Trainer

Cable & splicing engineers.

Dates and place

To be defined
On site or at Poma headquarter.

Infos

For pedagogical reasons, cable works will be carried out on samples.

Technology & surface lift adjustments

To improve surface lift availability

SL1

Duration : 3 days

Objectives

Learn how to ensure preventive and corrective maintenance as well as basic adjustments on a surface lift.

Learn the regulatory requirements inherent in surface lifts.

Content

Theory

- Characteristics of a surface lift.
- Cable twist : reminder.
- Basic principles of cable adjustment :
 - ◆ Return terminal,
 - ◆ Line equipment,
 - ◆ Drive terminal,
 - ◆ Guides,
 - ◆ Slide rack,
 - ◆ Automatic departure.

Practice

On Site

- Inspections and pre-adjustments of surface lift :
 - ◆ Return terminal,
 - ◆ Line equipment,
 - ◆ Drive terminal,
- Validation of surface lift adjustments during operation.
- Checking cable for twist.

In the workshop

- Pre-adjustments on an adjustable support/compression.

Worker safety equipment

Each trainee must wear his individual protection equipment and outdoors clothing.

Public

Maintenance staff, technicians and surface lift operators in charge of maintenance.

Required level

You must be familiar with surface lift techniques and have attended the CT1 module "Understanding and solving cable twist" or have some experience in cable work.

Positive aspects

- ❖ A progressive training to assimilate the methods and prepare trainee to be operational on field
- ❖ An exchange of experience on the different Ski Resorts' practices and manufacturers' solutions.

Prices

Please contact your Customer Manager.

Trainer

Surface lifts engineer.

Dates and place

To be defined.
On site.

Advanced surface lift adjustments

To improve surface lift reliability

SL2

Duration : 3 days

Objectives

Improve knowledge for advanced surface lift adjustments.
Solve recurring adjustment problems.

Public

Confirmed maintenance mechanics, maintenance supervisors, technicians and foremen.

Required level

You must have attended the SL1 module "Technology & surface lift adjustments" or have some experience in surface lift maintenance.

Content

Theory

- An analysis of problems met by the trainees.
- A reminder of :
 - ◆ Return terminal
 - ◆ Line equipment
 - ◆ Drive terminal
 - ◆ Adjusting guides
 - ◆ Derail switches
 - ◆ Adjusting slide rack and automatic departure
- Angle towers.

Practice

- Adjustable support/compression pre-sets (in workshop).
- Fault analysis on installations.
- Corrective actions to be carried out.
- Pre-adjustments on surface lifts.
- Carry out checks on surface lifts.

Positive aspects

- ❖ A concrete enforcement of the basic knowledge.
- ❖ Contributors having all the necessary skills on surface lift improvements.

Prices

Please contact your Customer Manager.

Trainer

Surface lifts engineer.

Dates and place

To be defined
On site.

Worker safety equipment

Each trainee must wear his individual protection equipment and outdoors clothing.

Information

This training can be adapted to your surface lifts specificities.

Adjusting a detachable lift

Performance-Satellit-Multix

AL3

Duration : 3 days

Objectives

Learn how to adjust a coupling/uncoupling mechanism and the related systems (PTO, tyre beam etc ...)

Be familiar with the tools, methods and get the best practice to organize technical monitoring of detachable lifts.

Public

Technical supervisors, maintenance agents, fitters and adjusters. Anyone likely to perform work on detachable grip.

Required level

This module is more specifically intended to people with basic knowledge in mechanics and who are familiar with the operation of a detachable grip.

Content

Theory

- Characteristics and developments of aerial lift with detachable grips.
- The detachable grip : description, operation, technological capabilities, maintenance, inspection.
- Coupling/uncoupling mechanisms: lateral rails, main rails, cable dimensions, tyre beams, PTO's.
- Terminal safeties: description, operation, adjustment.
- Other systems.

Practice

- Terminal mechanism: dimensional checks, adjustment of coupling and uncoupling, adjustment of rails, adjustment of cable position, adjustment of PTO's.
- Terminal safety : inspection and adjustment.
- Cable twist : checking in terminal bull wheels.
- Adjustment of contour and cadencing gearing.
- Special tool utilisation.

Maintenance : European regulations and manufacturer's instructions.

Positive aspects

- ❖ A progressive training to assimilate the methods and prepare trainee to be operational on field.
- ❖ An exchange of experience on the different Ski Resorts' practices and manufacturers' solutions.

Prices

Please contact your Customer Manager

Trainer

Aerial lifts engineer. Technician.

Dates and place

To be defined.
On site on detachable lifts.

Infos

Please don't forget to specify on the registration form your aerial lift references so we can come up to your expectation in the best way => choose between : S, S Plus, Performance, Competition, Omega, Satellit or Multix.

Advanced detachable adjustments

AL4

Update and complete knowledge

Duration : 2 days

Objectives

Update and complete knowledge of advanced maintenance and adjustment operations.

Switch from corrective to preventive maintenance in order to improve the availability and reliability of aerial lifts.

Public

Maintenance supervisors, Maintenance skills, fitters and adjusters, experienced maintenance agents.

Required level

You must have attended the AL1 module "Adjusting a detachable lift".

Content

Theory

- Technical characteristics of detachable grip aerial lifts and its development.
- Rudiments of detachables:
 - ♦ Grips, tracks, safety, cadencing ...
- Hydraulic system :
 - ♦ Hydraulic tensioning, braking devices.

Upgrading of existing lifts.

Positive aspects

- ❖ A concrete enforcement of the basic knowledge.
- ❖ Contributors have the necessary skills on detachable lifts.

Practice

- Inspection and adjustment of terminals : compression ramp, cable position, safety line, tyre beams, deflection sheaves, contour gearing, PTO's.
- Related systems :
 - ♦ Aerial lift brake systems,
 - ♦ Bullwheel assembly : associated bending and torsional stress,
 - ♦ Intermittent or continuous hydraulic tensioning.
- Specific case study

Prices

Please contact your Customer Manager.

Trainer

Engineer. Technician.

Dates and place

To be defined.

On site and on detachable lifts.

Information

To come up to your expectations in the best way and to face the various diversity of equipment in working order, please note on the registration form the type of your equipment.

S, T grips overhaul qualifications

Learn how to perform detachable grips maintenance

AT1

Duration : 4 days TA-TB detachable grip

5 days S detachable grip

Objectives

Learn how to perform maintenance, adjustment and monitoring of detachable grips.

Ensure traceability of safety-critical and safety-related parts, in compliance with regulations.

Public

Maintenance Supervisor, Maintenance and Quality technicians. Anyone likely to perform grip overhaul operations.

Required level

You must have basic knowledge in technology and mechanics and be capable of using metrology tools (slide rule, gauges, etc).

Content

Theory

- Overhaul context : regulations, contractual aspect.
- Characteristics of detachable grips.
- Mandatory routine inspections.
- Study of Quality documents :
 - ◆ Technical procedures (PTK : Poma Standards)
 - ◆ Operating procedures
- Operation set-up and times.

Positive aspects

- ❖ A test will be issued at the end of the training through a knowledge questionnaire
- ❖ An evaluation table will be given to each participant and to the supervisor

Practice

- A five-year inspection of some of your grips or training grips at the Poma workshop.
 - ◆ Phase 1 : dimension measurements prior to dismantling.
 - ◆ Phase 2 : complete dismantling of the grip, cleaning and NDT.
 - ◆ Phase 3: preparation, reassembling, adjustments and measurement of all dimensions.
- Filling out of quality documents.

Prices

Please contact your Customer Manager.

Trainer

Detachable grip Engineer. Technician

Dates and place

To be defined.

Poma shop Grenoble – Fontaine.

Infos

Please specify on the order the kind of grip for which you want to receive the agreement: 2S, 3S, 4S, 6S, T, TA, TB, 2xTB and 4xTB (DMC). This training involves the signature of a specific contract between Poma and the customer. Please contact your Customer Manager.

Grips overhaul qualification

Omega T or LPA grips

AT3

Duration : 2 days

Objectives

Learn how to carry out maintenance and monitoring of Omega T grips or LPA grips. Be familiar with the operating procedures and process sheets.

Public

Maintenance supervisor, Maintenance and Quality technicians anyone likely to perform grips overhaul operations.

Required level

You must have basic knowledge in technology and mechanics and be capable of using metrology tools (slide rule, gauges, etc).

Content

Theory

- Detachable grip development.
- A grip introduction to the functioning and the technical characteristics.
- Mandatory routine inspections : on a daily, monthly and yearly basis.
- Inspections schedule.
- Quality procedures, process sheets, overhaul sheets.
- Quality regulations: European quality certification ISO 9001, traceability of vital safety parts, CE marking.

Practice

- Inspection of aerial grips :
 - ◆ Partial or complete dismantling of the grip.
 - ◆ Visual, dimensional or NDT of the grip.
 - ◆ Grip component control, cleaning, lubricating, reassembling and stop clearance inspections in compliance with Poma standard.
 - ◆ Spare parts replacement.
 - ◆ Once reassembled, control of the grip force capacity.
 - ◆ Technical follow up and traçability.

Positive aspects

- ❖ A test will be issued at the end of the training through a knowledge questionnaire
- ❖ An evaluation table will be given to each participant and to the supervisor

Prices

Please contact your Customer Manager.

Trainer

Detachable grips Engineer. Workshop technician

Dates and place

To be defined.

Infos

This training involves the signature of a specific contract between Poma and your company. Please contact your Customer Manager.

AT6

Monitoring of structures To carry out a visual inspection

Duration : 1 day and a half

Objectives

Learn how to identify the parameters that affect structural fatigue on cable-way systems.

Learn how to carry out a visual inspection and learn to identify damage or faults.

Public

Aerial lift operating and maintenance staff, technicians.

Required level

You must be familiar with the basic operating principles of aerial lifts.

Content

Theory

- Definition of structures and stresses : drive station, tower, return station.
- Loads : basic principles, static and dynamic loads.
- Manufacturing technologies: welding, machined components, cast components.
- Basic concepts of metallurgical flaws.
- Non-destructive tests :
 - ◆ Basic principles of the main processes
 - ◆ Technologies of the equipment used.

Positive aspects

- ❖ A positive enforcement of the basic knowledge
- ❖ An exchange of experience with others participants.

Practice

- Visual inspection of the aerial lift or skilift installation :
 - ◆ Detect sensitive areas,
 - ◆ Visual inspection to detect flaws.
- Dye penetrant test on different types of parts : aluminum alloy, machined or cast steels.
- Magnetic particle test on selected samples in laboratory or on site.

Prices

Please contact your Customer Manager.

Trainer

Engineer. High level inspector (Cofrend 2).

Dates and place

To be defined.

Information This training is not meant to be a certification.

Worker safety equipment Each trainee must wear his individual protection equipment and outdoors clothing.

Hydraulic technology

To know all about industrial hydraulic

HY1

Duration : 3 days

Objectives

Learn the basic concepts of hydraulic open circuit.

Understand how the usual hydraulic components work.

Learn how to read an hydraulic diagram to identify the components of an hydraulic unit.

Public

Anyone dealing with maintenance of ropeways

Required level

You must be familiar with the basic functions of surface and aerial cable lifts

Content

Theory

- Hydraulics : advantages, drawbacks, precautions and limits of use.
- Basic fundamentals : pressure, flowrate, power, travel speed.
- Architecture of an hydraulic circuit. Hydraulic components : tanks ; pumps, valves, flow limiters, distributor valves, filters, etc ...
- Reading diagrams : Symbols, location and function of components.
- Hydraulics oils : filtering and pollution.

Practice

- Position of components in an hydraulic unit during operation.
- Adjusting pressure equipment.
- Hydraulic system maintenance used on aerial lifts.
- Failure simulations and diagnosis on hydraulic unit.

Positive aspects

- ❖ This training provides main knowledge on hydraulic components and circuits.

Prices

Please contact your Customer Manager.

Trainer

Hydraulician, Engineer

Dates and place

To be defined.
On site or at Poma headquarter.

Infos ! The trainee will learn the basic concept of hydraulic open-circuit to be capable to solve the problems on his own equipment.

Maintenance of the hydraulic systems

HY2

Preventive and corrective maintenance

Duration : 3 days

Objectives

Learn how to carry out preventive and corrective maintenance on aerial lifts.

Learn how to diagnose a malfunction. Learn a rational troubleshooting method.

Content

Theory

- The basic principles of hydraulics.
- Purpose and symbols used for hydraulic components.
- Study the manufacturer's hydraulic diagrams :
 - ◆ Tension diagrams,
 - ◆ Brake diagrams.
- Hydraulic fluids : awareness of pollution.
- The basic concept of closed circuits.
- Identification of destructive symptoms.

Practice

- Maintenance of a hydraulic system.
 - ◆ Fluid change : rinse tank and flush circuit and replacement of filter elements.
 - ◆ Refilling : choice of fluid, filtering.
- Dismantling components. Work on circuit.
- Functional improvement : adapting new components, new operating mode.
- Reassembly, start-up and adjustment.

Information

Each trainee must wear his individual protection equipment and outdoors clothing.

Public

Supervisors, maintenance technicians and agents, maintenance mechanics.

Required level

You must have attended the HY1 module "Hydraulic Technology".

You must be familiar with the basic concepts of hydraulics.

Positive aspects

- ❖ Real-life situation improves hydraulic circuit understanding.
- ❖ An exchange of experience on different practices and manufacturers technology.

Prices

Please contact your Customer Manager.

Trainer

Hydraulician, Engineer.

Dates and place

To be defined.

On site or at Poma headquarter.

PLCs architecture : Siemens série 7

Siemens 300F ou 400F PLCs

EL5

Duration : 2 days

Objectives

Learn the aerial lift cabinet principles and functioning.

Learn the architecture of a lift equipped with a Siemens 7 series PLC.

Learn a troubleshooting methodology.

Public

Electricians, technicians and electricity department personnel.

Required level

You must have already attended an electro technical training, and also have a basic understanding of PLC systems.

Content

Theory

- Regulation changes.
- Overall architecture (Fixed grip or detachable grip).
- Software quality plan.
- Interfaces : displays.
- Emergency mode : hydraulic or mechanic.

Practice

- Presentation of equipments : display, PLC, variable speed drive.
- Trouble shooting.
- Electric test procedures.
- Functional analysis.

Positive aspects

- ❖ This training provides main knowledge on PLC's applications
- ❖ Real-life situation improves the PLC architecture understanding.

Prices

Please contact your Customer Manager.

Trainer

Engineer and technician on electricity

Dates and place

To be defined.

On site or at SEMER headquarter.

Infos This content can be adapted to your needs. For new equipment, training can take place at the SEMER office on an aerial lift cabinet.

Direct current (DC) bridge

CC motor Speed variator

EL6**Duration : 2 days**

Objectives

Understand how DCr bridges work and learn how to modify their adjustment parameters.

Learn how to locate the cause of a malfunction and how to fix it.

Public

Advanced electricians and Electricity Department supervisors.

Required level

You must be familiar with the electrical techniques. You must have a basic understanding of DC bridges

Content

Theory

- Speed variators for a DC motor.
- Presentation of types of DC bridges : Télémécanique, ABB, Siemens, SIEI.
- The cinematic chain.
- The regulation system.
- The troubleshooting methodology.
- Maintenance.

Practice

- DC bridge adjustments.
- How parameters affect DC bridge.
- Routine inspection.
- Components dismantling and replacement

Positive aspects

- ❖ Real-life situations help to understand parameters adjustments.
- ❖ Simulated fault improves the trouble shooting methodology.

Prices

Please contact your Customer Manager.

Trainer

Engineer and technician on electricity.

Dates and place

To be defined.

On site or at SEMER headquarter for the latest equipments.

Information This training can be adapted to your equipment specificities.



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