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The ERA Guide for Theft Prevention

The Best and Basic Practices to Prevent Equipment Theft

With the following list of practices the ERA provides effective ways to prevent theft of your equipment.

Equipment theft is a huge problem in all European countries estimated to cost the rental industry, the construction and the agricultural industries approximately €1.5 billion per annum across Europe - and this problem is growing

- For the equipment rental industry alone, ERA estimates the value of stolen equipment to exceed €500 million per annum.
- This figure includes around 30,000 units of heavy equipment with an average value of €10 000 per unit.
- The rate of recovery of stolen equipment varies from 5% to 20%, depending on the country, and this compares with a rate of recovery of 50% to 60% for other vehicles like cars.

The ERA recommends that you follow the practices and advice listed within this document to protect your equipment in the best possible way.

The above estimated theft figures only reflect or account for the cost or value of stolen equipment & machinery. It does NOT include any of the expensive or hidden costs to replace equipment or machinery, any delays experienced with replacement machinery being delivered or sourced, any downtime, possible penalties, job losses or even contract failures. The overall total cost of theft to a company or organisation could well double or triple the cost that is estimated above.



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The Best and Basic Practices to Prevent Equipment Theft

A. ORGANISATION:

1. Sensitize, educate and instruct your employees and co-workers and check often if your internal procedures are effective (also promote an internal course to educate people on anti-theft measures).
2. Sensitize, educate and instruct your client and their employees (promote anti-theft culture through information and documents).
3. Check the trustworthiness of your business partner (think of 'illegal appropriation!').
4. Check the trustworthiness of the transportation company you are using.
5. Keep the documents of your equipment safe.
6. If you perceive something suspicious, inform the police and the construction management.
7. Act fast in the event of a theft: Contact the police and bring a charge against the (unknown) thief/thieves; inform your insurer; have your equipment documents ready.
8. Write down a detailed description of your equipment (classification, serial number, etc.) and complete it with high-quality pictures.
9. Join and work together with associations (like the ERA and or National Rental Associations) involved in plant theft fighting.

B. LOCATION:

10. Provide safe containers.
11. Safeguard the construction and company site with guard service and/or video surveillance systems.
12. Keep your equipment keys in a safe place and develop internal delivery procedures for all equipment keys and security devices.
13. Link smaller equipment together.

C. PLANT EQUIPMENT:

14. Mark and register your equipment with an approved system or scheme.
15. When buying new equipment, take a close look at the identifiers and anti-theft devices and record all details, numbers and locations of these identifiers.
16. Make use of mechanical anti-theft devices (wheel clamp, gear shift lock, etc).
17. Make use of electro-mechanical or electronic anti-theft devices.

Your machines are your assets – keeping them safe will save you money!





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Appendix

Appendix I

Examples of Best Practice in Parking and Securing Equipment

Appendix II

The ISO 10261 Standard - Information about the international standard on unique machine numbering and identification

Appendix III

Education and Training of Employees and Customers

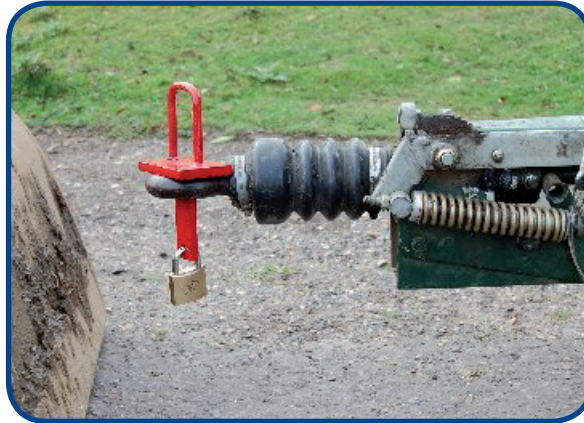
Appendix IV

Plant Equipment - A General Guide for Anti Theft Systems and Registration Systems



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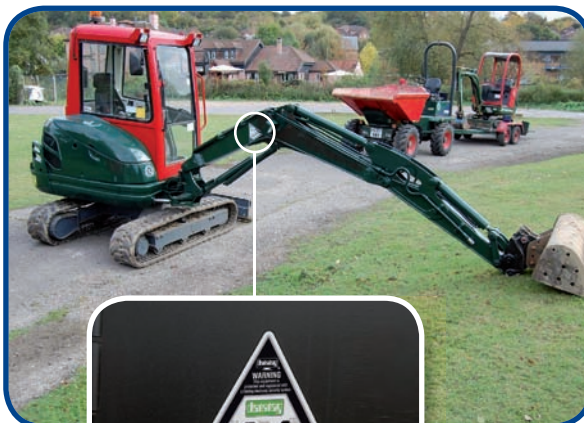
Appendix 1: Examples of Best Practice in Parking and Securing Equipment



Trailer locks and tow hitch locks preventing removal or protecting the tow hitch with the machine bucket also helps prevent theft.



When leaving equipment overnight on sites secure compressors under boom arms of mini excavators then use immobilisers or hydraulic locks to prevent removal.



If leaving mini excavators remove from trailer, slew cab and extend boom arms. Use immobilisers and/or hydraulic locks. This makes the machine impossible to remove or lift away. Note the presence of an approved registration scheme (i.e. The CESAR Scheme) and corporate colours. Criminals dislike stealing this type of equipment due to expense of repainting equipment.





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Secure equipment together, preventing either being lifted or dragged away. Use immobilisers and/or hydraulic locks with chain and padlocks.



To make it difficult for criminals to break in to your portable store, we suggest parking a machine in this manner. This will not only make it difficult to break into the store but will stop the store from being lifted.



For attachments and buckets weld plant numbers and company logos/details to aid identification.



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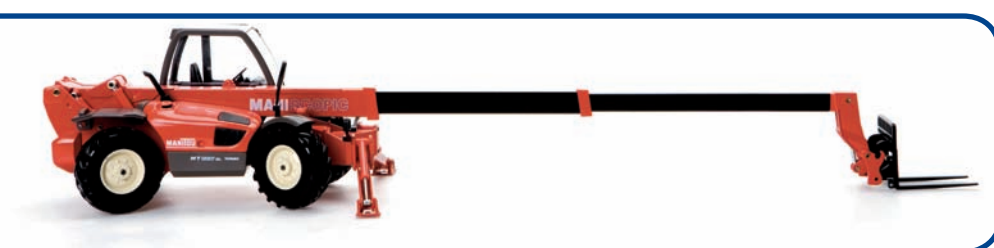
Secure trailers and equipment to each other or to road furniture. Lift all chains from ground to prevent easy attacks and purchase for cutters/bolt croppers. Invest in good quality approved chains and padlocks.



Make the thieves life harder. Equipment removed from trailer and boom arms extended and immobilisers and/or hydraulic locks set preventing ease of theft.



Boom arms and legs extended and immobilisers and/or hydraulic locks set. This telehandler now becomes nearly impossible to remove quickly by theft.





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And how not to do it!



This machine will be stolen in a number of seconds... not locked and no hitch lock installed. An expensive mistake.



This may seem obvious, but it can be a familiar sight on construction sites. You would not leave your keys in the ignition of your car or commercial vehicle - so please make sure that you remove the keys out of the ignition switch as soon as possible and when not in use.



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Appendix 2: The ISO 10261 Standard

ISO 10261 is the International Standard which specifies the requirements, content, structure and location of a unique product identification numbering system for all earth-moving construction machinery and agricultural machinery. When purchasing machinery, the ERA advises members that it is best practise to make sure that the machinery or equipment purchased is marked, stamped and or identifiable to this ISO 10261 standard.

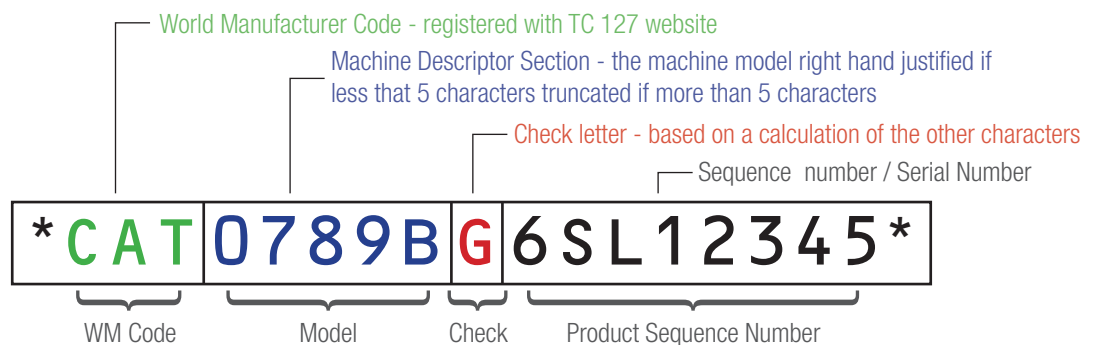
These unique numbers are very important and you will need to keep records of these numbers to inform the Police or Law Enforcement Agencies if your machine or equipment is stolen.

These unique machine numbers, the machine make, model and description plus your company or organisation contact details can also be recorded with an approved registration scheme and database.

Revision to ISO 10261

The PIN is assigned to a machine for identification purposes composed of four parts totaling 17 characters.

New 17 Character PIN - "3518" PIN Format



The font should be Posident or similar (OCR-B) to avoid possibility to alter characters.

Each machine shall bear the following minimal information, in a legible and indelible condition:

- Name and address of the manufacturer
- Mandatory marking
- Designation of series or type
- The serial number e.g. PIN according to ISO 10261:2002
- Year of manufacturing
- Net engine power, expressed in kilowatts (kW), according to ISO 14396:2003
- The operating mass, expressed in kilograms, according to ISO 6016:1998





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Appendix 3: Education and Training of Employees and Customers

The following advice may help you to establish an 'anti-theft culture' within your company and show your anti-theft attitude to all of your stakeholders. Your employees have to be fully aware of the importance of a proactive anti-theft behaviour and they need to know that there will be serious consequences if they do not comply by the rules that your company have laid down.

Your employees are only one part of the equation. The actual users of your equipment – your clients – need to know about the risks and dangers of equipment theft and how to fight it. They need to know that it is a financial loss to them when the equipment is stolen. Without the right equipment they can not complete the job on time.

Where plant is to be rented out, sensible and practical rental procedures for authentication of customers are in force and audited at regular intervals in accordance with specific guidance provided by and available from most National Rental Associations.

Equipment theft is a very real problem causing considerable harm and generating considerable criminal profits. Most equipment theft is caused by organised criminal activity. Fraud and cloning of equipment are also avenues for criminal activity.

Work together to promote security by educating the users, employers and employees on their personal responsibility regarding security of equipment and where it is stored.





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A. Company Education and Training

- Provide a list of theft prevention measures for your employees – especially for new employees. (i.e. Physical, Electronic and Human).
- Provide anti-theft training for your employees:
 - *Considering the significance cost of equipment theft to the company.*
 - *The training should be conducted on an annual basis.*
 - *There has to be a strong focus on how to behave and what to do to prevent theft.*
 - *Carry out due diligence checks on your customers.*
 - *On completion of the training there should be a short examination to ensure the participants understand the content of the training; a certificate should be handed out only to those who have passed the test.*
- An experienced employee should act as the company contact person on anti-theft issues. This person should also conduct the anti-theft training within the company.
- The ERA or National Rental Association guidance documents should be readily available within your company.
- The ‘ERA or National Rental Association Guide for Theft Prevention’ should be displayed on the company’s notice board.
- Develop an effective plan for the event of equipment theft.
- Clear identification of the rental company by use of company livery.
- Keep accurate records of equipment identification numbers and other identifying features.
- Invite local police representatives to talk about the problems of equipment theft and to find ways of co-operation.
- Equipment theft is an ongoing problem; therefore, continuous education and training is a must within the company.





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B. Client Education

- Provide the ERA anti-theft documents to your clients and/or your National Rental Association anti-theft literature.
- This literature contains the key actions to prevent equipment theft such as:
 - *'Clients should complete a risk assessment and take all appropriate measures to reduce their risk'.*
 - *'Always remove keys when equipment is not being operated'.*
(i.e. good key security).
 - *'Remove equipment from site (or lock it into secure storage) when not in use'.*
 - *'Ensure the driver/operator to use the security measures available'.*
 - *'Secure equipment together or to road furniture'.*
 - *'Remove the equipment from trailer's'.*
 - *'Fit physical restraints'.*
 - *'Do not leave the equipment at dubious and unoccupied sites'.*
 - *'Act fast in the event of a theft'.*
- Inform your clients about the economic loss they would face in case of a theft and the negative overall effects on their business: One can not complete a job properly and on time if the necessary equipment has been stolen - the clients of your client will not have a good remembrance of the collaboration with your client.
- Encourage your clients to:
 - *Establish staff incentives and penalties for good security practices.*
 - *Review and change the security arrangements as site circumstances change.*
 - *Use locked containers for the equipment.*
 - *Use on-site or remotely controlled CCTV systems linked to flood lighting.*
 - *Fit cab screens to equipment.*
 - *Use anti ram raid measures (including concrete blocks, high kerbs etc).*
 - *Use anti climb measures.*
 - *Educate and instruct their staff regarding all anti-theft measurements.*

Additional information on practices to prevent equipment theft are available in the other appendixes of The ERA Guide for Theft Prevention guide.





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Appendix 4: Plant Equipment - A General Guide for Anti-Theft Systems and Registration Systems

Introduction

- Anti-theft devices are primarily designed to secure plant against theft but they may also make a contribution to safety by allowing authorised users only to operate a machine and protect from a fraudulent use either by a non qualified/non authorised person or by members of the public. This prevents exposure to public liability claims, injury or even death of persons external to the industry.
- In terms of safety, such devices must not interfere with, or prevent the operation of, standard safety features on equipment.
- In reviewing the different options, attention shall be paid not only to the unit value of each device and/or system but moreover to its proportional value compared to the value of the equipment and whether it is 'Fit for the Purpose' intended. A good 'value for money' exercise is to evaluate how long the security system will resist attack from thieves.
- Generally, rental operators should pay attention or give preference to certified systems.

This document looks at the following currently available categories of anti-theft systems and devices:

- Physical theft prevention systems
- Marking of equipment
- Equipment immobilisation systems
- After-theft recovery systems
- Alarm systems

The last part of the document also briefly examines which technologies may gain widespread market application in the near future.



1. Currently Available Systems and Devices

1.1 Physical Theft Prevention Systems

Such systems, widely known as physical restraints can be used for most types of equipment, but are used more particularly for large tracked and wheeled machines with a weight above 3 tonnes.

Examples of such systems are:

- Mechanical locking systems such as padlocks, trailer locks, hitch locks, chains, removal of batteries & fuses
- Machines painted in corporate colours

Advantages	Disadvantages
<ul style="list-style-type: none"> • Their removal requires physical efforts, time & tools 	<ul style="list-style-type: none"> • They do not arm automatically but are dependent on the initiative of the operator to be fixed and set in place on the machine
	<ul style="list-style-type: none"> • They require training and good practices
	<ul style="list-style-type: none"> • No standard restraint because specific to every brand and type of equipment (it may also be a +)
	<ul style="list-style-type: none"> • Corporate colours may need to be removed at the time of selling the used equipment (additional cost).

1.2 Marking and Registration of Equipment

All types of equipment can be permanently marked and registered. The most commonly used locations for marking are the equipment's main body or cab area, the engine compartment and cover or hood and important or valuable parts and components etc. Marking should ideally be undeletable and be both visible (overt) and invisible (covert) to make it difficult for a thief or criminal to find and remove.

Examples of systems used for the marking of equipment include:

- Identification plates and warning stickers (ideally made from tamper evident material)
- The recording of the equipment's unique serial numbers ideally on an approved database or scheme
- Glass etching, laser etching and the welding or stamping of fleet numbers etc
- Microdots, unique forensic DNA liquid, electronic transponders or microchip technology, invisible pen or paint that fluoresces under UV light (ultra violet) etc

Advantages	Disadvantages
<ul style="list-style-type: none"> • Removal of the markings will require physical effort, cost, time & tools. 	<ul style="list-style-type: none"> • Require standardisation to allow easy identification by all parties: users, police forces.
<ul style="list-style-type: none"> • Often provided as standard or as a low cost option by manufacturers or the equipment dealer network. 	<ul style="list-style-type: none"> • Visible marking can be destroyed and made unreadable.
	<ul style="list-style-type: none"> • Multiple markings (manufacturer's, owner's, VIN/PIN) can make the reading difficult for third parties and thus impede the recovery of stolen equipment.



1.3 Equipment Immobilization Systems

Such systems apply to all mobile equipment. They prevent the theft of secured equipment by immobilisation of the fuel, hydraulic and/or electric system. They can be either electrical or electro-mechanical and may incorporate an after-theft recovery system.

They can include the following features:

- Keypad PIN Code
- Electronic fob
- Transponder key
- SMS Text
- GPS
- Smart Card

Advantages	Disadvantages
<ul style="list-style-type: none">• (usually) automatic arming and provided by most major manufacturers	<ul style="list-style-type: none">• Some require good practices (PIN number must remain confidential)
<ul style="list-style-type: none">• Prevent unauthorised move or use of a machine	
<ul style="list-style-type: none">• Oblige thieves to use sophisticated means for stealing equipment, such as truck cranes	

1.4 After-Theft Recovery Systems

After-theft recovery systems apply mostly to mobile equipment with a weight above 3 tonnes. They assist with the location and recovery of equipment and can play an important role in the management of rental fleets by allowing to monitor the use of equipment at distance or to follow-up on maintenance and repair.

Advantages	Disadvantages
<ul style="list-style-type: none">• May include immobilisation system which can be controlled by SMS text or GPS	<ul style="list-style-type: none">• Purchase and subscription costs
<ul style="list-style-type: none">• Usually provide a 'ring-fencing alarm capability'. If a machine goes outside the area designated to it, a silent alarm is raised at the control centre.	<ul style="list-style-type: none">• Do not always prevent the theft
<ul style="list-style-type: none">• May provide asset management services and be used to record undue utilisation (during rental suspension, weekends...)	<ul style="list-style-type: none">• Require time & attention to follow up
<ul style="list-style-type: none">• May provide technical services (maintenance, diagnostics...)	



1.5 Alarm Systems

Alarm systems are used mostly for mobile equipment with a weight above 3 tonnes.

Advantages	Disadvantages
<ul style="list-style-type: none">• Noise levels can be a significant deterrent	<ul style="list-style-type: none">• Inefficient in unpopulated areas
<ul style="list-style-type: none">• Silent alarms may inform the police or owner of the equipment.	<ul style="list-style-type: none">• Not provided as a standard by manufacturers

2. Future Technologies

2.1 Smart Cards

They may be an alternative to keys. They are usually plastic cards sometimes containing a microchip. Some require a reader (like a credit card or a hotel smart card), others can be read remotely. They can also provide additional security and safety if issued only to authorised and qualified users.

2.2 Biometrics

This emerging technology uses unique human characteristics (iris of eye, finger print, hand shape...) as a form of identification. The reader required is significantly more expensive than a card reader. For instance a fingerprint could replace in the future a key or a keypad with PIN code.

2.3 Security Cameras (CCTV)

Already used in public transport, they could act as a deterrent to thieves on large driven equipment.



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This documents has been drafted by the members of the
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