

RWE	I022-001 - Work equipment	Instruction
		2023-28030

Work equipment

Scope RWE Generation NL
Department Safety GES-NL
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Document information

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Changes compared to previous version				
<ul style="list-style-type: none"> Added general requirements and obligations work equipment Reference to annual colour inspection work equipment 				
Purpose instruction				
Ensuring safe condition and use of work equipment, identifying suitable and permitted work equipment within RWE Generation NL				
Target				
All relevant persons in charge of work preparation and the use, maintenance, inspection and testing of work equipment.				
Related documents				
Type of document	Title			Code
Process	Work permits			P001
Process	GEN-PRO-3330			P022
Instruction	Annual colour inspection work equipment			WI ALG 002
Instruction	Work in confined spaces			I001-001
Instruction	TRA			I002-001
Instruction	Operation of electrical installations			I012-001
Instruction	Working at height and on the waterfront			I111-001
Instruction	Personal protective equipment			I103-000

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Terminology and abbreviations

Term or abbreviation	Description
AHS	Hierarchy of control
BAT	Best Available Technology
CE	CE marking (Conformité Européenne)
EN	European Standard
LMRA	Last Minute Risk Analysis
PPE	Personal protective equipment
NEN	Dutch Standard
RI&E	Risk Identification & Evaluation
TRA	Task Risk Analysis

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Introduction

Work equipment means all the tools, aids, devices, machines and installations we use when carrying out work.

If used, serious injury can occur which is often caused by:

- the work equipment is not safe;
- appropriate work equipment is not used for the task;
- the user has insufficient knowledge of or experience in using the work equipment;
- work equipment is not properly maintained and/or inspected

To ensure that work equipment can be used safely, a number of conditions must be met and a number of measures are necessary:

- work equipment must have an intrinsically safe design and bear a CE mark (requirements for manufacturers);
- the work equipment must be subjected to an initial inspection before use;
- operating instructions and regulations should be drawn up;
- a risk assessment should be carried out for the intended use;
- periodic inspections should take place;
- (Preventive) maintenance should be carried out;
- Users must be instructed and trained in the handling and use of work equipment

In order to carry out various activities, suitable work equipment approved by RWE must be used, such as the technical requirements for a grinder.

To prevent injury and damage, one should always look for the safest work method, or the technically safest available work equipment (Best Available Technology, BAT, or state-of-the-art). Whereby the points below are important:

- The work equipment must be suitable for its intended use;
- Only to be used by employees who have received sufficient training, instruction and instruction;
- Be provided with sound safety measures such as, for example, shielding, markings and warnings.
- Before each use, a visual inspection for defects takes place and whether the work equipment has a valid mark of inspection and/or inspection.

Work equipment must never be used in a manner not described in the operating instructions and must never be modified or altered in any way.

Legislation requires every piece of work equipment to be included in an RI&E in order to identify and mitigate residual risks. This may mean that additional PPE may be required for the use of specific work equipment. The requirements for PPE are described in I103-000 Personal protective equipment.

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Furthermore, the following applies:

- When working outside the PPE zones for which a work permit is required, standard PPE must also be worn;
- Mandatory use of additional/ supplementary PPE in accordance with the established work permit, TRA LMRA, work instructions or operating instructions;
- Mandatory use of additional/ supplementary PPE where indicated by signs or signage;
- Mandatory use of additional or supplementary PPE if (changed) circumstances warrant it.

Of course, the idea always applies here that the client and performer first try everything possible to eliminate or shield the hazards and risks, and that prescribing additional PPE is the last step in the occupational hygiene strategy.

Risks

The main risks when working with work equipment are exposure to:

- entrapment
- electrocution
- contact with cold/hot objects and parts (burns)
- shooting or falling objects (eye injuries)
- noise and vibrations
- toppling of structures
- radiation
- cut
- falling of tools from height

Life-saving rules:



I work with a valid work permit



I comply with the electrical safety rules



I establish and respect barriers and exclusion zones; I stay out of the line of fire



I comply with the rules for fire and explosion prevention

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Roles and responsibilities

Responsible managers

- Are responsible that sufficient resources are available
- May appoint suitable and properly trained staff to support themselves
- Responsible for establishing and maintaining an inventory list of suitable work equipment
- Responsible that employees have received sufficient and adequate training and instructions

Managers:

- Are responsible for explaining this instruction to employees
- Are responsible for providing appropriate work equipment
- Are responsible for ensuring that all prescribed safety measures are in place
- Address their employees on the condition and safe use of work equipment

Staff:

- Employees are obliged to use the prescribed work equipment
- Employees are obliged to check work equipment for faults/defects before use
- Employees are obliged to have work equipment maintained in a timely manner
- Employees speak to each other about correct use and condition of work equipment.

Safety experts

Safety Experts will provide advice and assistance as necessary to facilitate compliance with this document, laws and regulations, codes of practice, guidelines, standards and industrial/commercial best practice (best practice). Safety Experts will provide such advice to the extent of their competence and seek specialist advice where necessary. In case of ambiguities regarding the use of special or different work equipment, Safety can advise.

As a responsible client, RWE Generation actively encourages the correct and consistent use of proper work equipment.

Purchase, maintenance and inspection of work equipment

Purchasing and providing

Contractors are basically responsible themselves for the procurement, provision and testing/inspection of work equipment to their own employees. Unless other arrangements have been made in writing with RWE.

RWE employees can collect work equipment from the warehouse where the work equipment is issued by name. This applies to locations where an issue counter is present.

It is not allowed to order individually from other suppliers.

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New types of work equipment that have not been purchased before may only be purchased after approval from the department manager and approval from the Safety department. For this, see also process GEN-PRO-3330 (P022) in BIC cloud.

Cleaning/maintenance of work equipment

According to operating instructions, possibly by specialised firms or sufficiently demonstrably instructed employees.

Proof of maintenance/inspection/calibration according to process GEN-PRO-3330. Work equipment must show visually when the next inspection/inspection/calibration is due.

Replacement

Replacement is always done in consultation with the materials manager. This is often an employee of the logistics department.

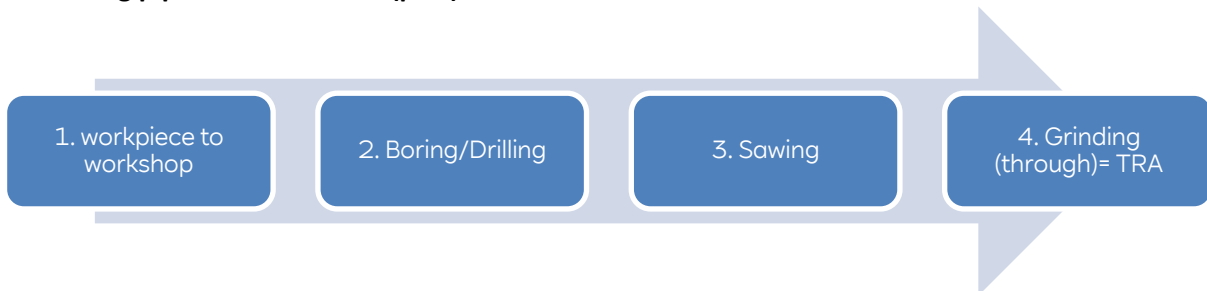


Before using the work equipment, the user should himself check that the work equipment is safe to use and complies with the applicable (re)testing/inspection requirements.

Choice of processing method and drive

Below are three expiry schedules that one should go through when making the appropriate choice of which work equipment to use with which drive. No 1 is the safest and efforts should be made to achieve this (AHS, Hierarchy of control).

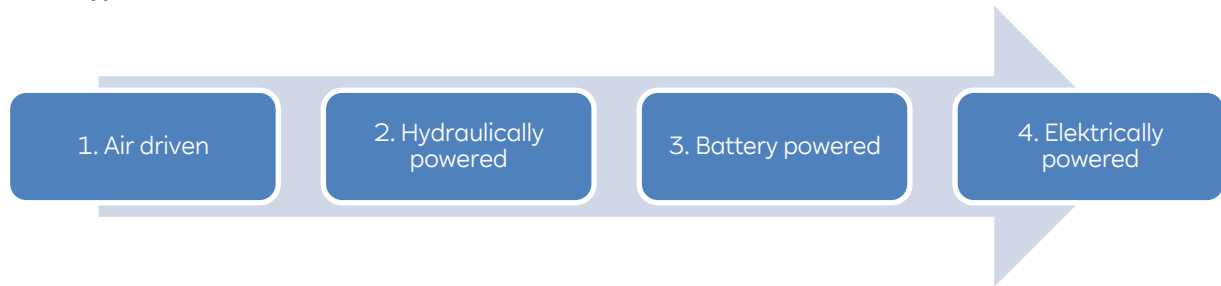
Machining pipe or construction (part):



1. If possible, realise a temporary/mobile workshop at/in the vicinity of the work site. Also, moving to the (temporary/mobile) workplace should not cause additional danger and risk
2. Drilling with sufficient space and large enough workplace
3. Sawing using pipe saw and/or reciprocating saw
4. Grinding (through) only if it is made demonstrably clear that there is no other option. Note additional measures. In some cases high risk work and therefore TRA mandatory.

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Drive type:



1. Air driven: hose trap mandatory at couplings
2. Hydraulically powered: electrical facilities set up in safe area
3. Battery-powered
4. Elektrically powered
 - a. Safe voltage (120V = or 50V≈)
 - b. Via isolating transformer (230V ≈, 1 device per isolating transformer)
 - c. Non-safe voltage (230V≈ or more without isolating transformer, never allowed in confined spaces)



Note: For requirements on working in confined spaces and power tools, see Instruction I001-001 Working in Confined Spaces

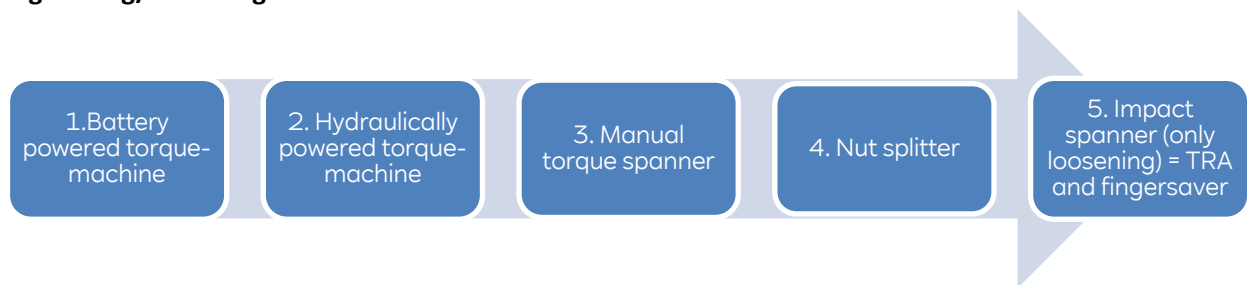


Note: Make sure that the hose catcher sits properly around the hose, has correct diameter and has no to little empty space, slack (see fig. 7, page 8 for correct example)



Note: Requirements for standards related to the operation of electrical installations and electrical work equipment: see Instruction I012-001 Operation of electrical installations.

Tightening/loosening bolt connections:



1. Choice based on tightening torque and specifications (loose and tight)
2. Choice based on tightening torque and specifications (loose and tight)
3. Use up to a maximum of 400 Nm, more = option 1 or 2 (fixed)
4. Release only
5. Impact spanner is not allowed in basic unless it is demonstrated that there is no other option.
TRA and fingersaver are mandatory. (loosening only)

Only examples of permitted work equipment



image 1: Finger-saver

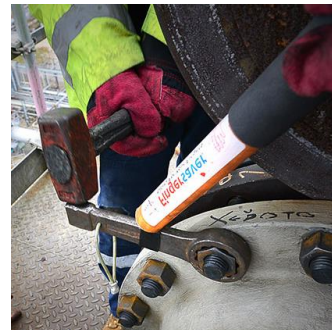


figure 2: example of finger-saver usage



figure 3: stabbing saw



Figure 4: Reciprocating saw



Figure 5: Hydraulic nut splitter



Figure 6: Mechanical nut splitter



Figure 7: Hose catcher



Figure 8: Mechanical flange spreader

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Standard requirements grinder and discs

- CE marking (Requirement)
- Handle (Requirement)
- Protective cover disc (Requirement)
- Braked (Requirement)
- No locking device on controls, so called dead man's switch (Requirement)
- Zero-voltage protection, so called restart protection (Requirement)
- Max diameter disc: 180mm (Advisory)
- Soft start and starting current limitation (Advisory)
- KickBack Stop, so called slip clutch (Advisory)

If work is carried out using a grinder with a disc diameter larger than 180 mm and no other option is demonstrably available, a task-specific RI&E (in-depth RI&E) and a TRA must be drawn up before this work equipment may be used. The user must also be demonstrably instructed in advance and must be familiar with the work equipment. (Additional) PPE must be indicated by name on the work permit.

Choice of disc:

1. Cut-off wheel:

Cut-off wheels are made for cutting metal or stone

2. Trimming disc:

Deburring discs are designed to deburr material. Deburring is the removal of sharp, irregular protrusions, especially in metal.

3. Fibre disc:

Fibre discs have a wide range of uses. They can be used for deburring, but also for fine finishing of materials such as the elimination of welds, the removal of mill scale and the smooth finishing of welds. Always use the right backing pad.

4. Lamellar disc:

Flap discs are versatile, these are suitable for both finishing material and heavier sanding work.

Expiry date (must be visible on the disc)

V[xx]/ [YYYY] where xx = quarter designation/ YYYY = year

01 = first quarter

04 = second quarter

07 = third quarter

10 = fourth quarter

For example: **V04/ 2020** (see image)



Discs can spin around at speeds of up to 80 metres per second (288 km/h)!



- Do not let discs get wet
- Do not use damaged discs
- Do not consume beyond what is indicated on the disc
- Use the correct grinding angle as indicated on the disc
- Maximum permissible speed visible on the disc
- Fabrication visible on the disc
- Dimensions, hardness and structure visible on the disc

PPE: safety glasses AND face shield, no loose clothing and hair

Safety knives

A safety knife is a knife that returns to a safe state after use, after the cutting operation, or after release, or where the cutting edge is protected against unintentional touching/cutting.

For each work process, the most appropriate knife for the operation should be considered in advance.

Unprotected knives such as breakers and so-called "stanley" knives are NOT allowed.

Choice of safety knife:

1. SAFE HIDDEN BLADE = HIGHEST SAFETY

The blade is not exposed but shielded from people and goods. This gives the highest degree of safety against cutting accidents and against damage to goods.



2. FULLY AUTOMATIC BLADE RETRACTION = VERY HIGH SAFETY

As soon as the blade leaves the cutting material, it automatically retracts itself into the handle.



3. AUTOMATIC BLADE RETRACTION = HIGH SAFETY

Thumbs up for high safety. As soon as you start cutting, release the slider. This way, the blade disappears back into the handle immediately after cutting.



Wire strippers and cable peelers

For stripping wire, you can use what are called wire strippers.



Example of a wire stripper

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Or one can use a so called safety cable knife for round cables. Up to +/- 50mm² these knives are good to use. Above that, one can also use cable knife with guide.



Example of a safety cable knife



Example of a cable knife *with* conductor



Note: When peeling/stripping/cutting cables and cutting in general, cut-resistant gloves of class C4 should be worn. For further information, see I103-000. The use of unprotected knives is not permitted.

Toollanyards

Within RWE Generation NL, it often happens that work has to be carried out at height, which requires the use of work equipment such as that described in this instruction. To prevent these from falling, this must be carefully considered during work preparation in order to mitigate this risk according to the Hierarchy of control.

One of the latest solutions for this is to use so called tool lanyards "tool-lanyards or tool-theters". These are specially designed means of securely attaching a tool to the person or suitable part of the installation to be awakened.

These tool lanyards, as well as bags and buckets, must meet at least the following requirements:

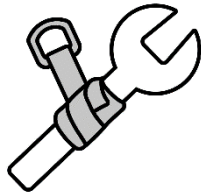
- CE marking
- Suitable for the weight of the work equipment
- If bag or bucket is used as lifting device:
 - Year colour
 - Valid certificate
 - Approved as lifting device by manufacturer

Here are some possible solutions:



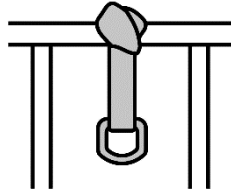
Best practice tool lanyards

The ANSI/ISEA 121-2018 can be seen within the industry as a Best Practice that tool lanyards must comply with. This standard focuses on four classes of preventive solutions actively used by workers to mitigate falling objects: tool lanyards, anchoring attachments, tool lanyards and bags and buckets.



TOOL FITTINGS

Retrofit attachment points installed on tools and equipment, allowing them to be attached



ANCHOR FIXINGS

Retrofit attachment points installed on the plant or the worker itself to provide an anchor point for anchoring



TOOL CORDS

Lanyards connecting tools to an anchor point



Bags & buckets

Bags and buckets for transporting tools and equipment to and from working areas at height

Tool attachments: make sure the tool is attached with the correct means. It is not allowed to modify a tool by, for example, drilling a hole in it;

Anchor attachment: Make sure the tool is attached to the correct anchor point. This is especially applicable for the heavier tools such as, for example, a grinder or Tork spanner. Do not attach these to your wrist or belt but an appropriate part of the rig;

Tool lanyards: The so called tool lanyards. These should be suitable for the tool and its weight. Look carefully at the most suitable system beforehand;

Bags and buckets: To transport tools to and from height, it is best to use specially designed bags and buckets. This allows you to keep both hands free when climbing stairs, for example, and you can safely hoist tools to/from the workplace if necessary. If approved, these bags can also be hoisted to/from the workplace using a crane.



For additional requirements on working at height, see I111-001 "working at height and on the waterfront".

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Ladders and stairs

See I111-001 Working at height and on the waterfront.

Deviations and additions

If work is to be carried out that is not described in this instruction or is not sufficiently controlled to allow the work to be carried out safely, the I002-001 Task Risk Analysis should be followed. Additional requirements may then be imposed before the work can be carried out.