



INSTRUCTION MANUAL
FOR ASSEMBLY, USE AND MAINTENANCE



INFINITY-DOUBLE INFINITY

sicurpal.it

EDITION 2 - REVISION 0

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Translation of original instructions.

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1. REFERENCE STANDARDS

This manual has been drawn up in compliance with the following legal requirements and standards:

1. Legislative Decree No. 81 dated 9 April 2008 and subsequent modifications and additions



2. Certification standards:

- **UNI EN 795:2012*** valid for max. 1 (one) operator
- **CEN/TS 16415:2013*** valid for max. 2 (two) operators
- **UNI 11578:2015*** valid within Italy only, for max. 2 (two) operators

*See Chapter 5

3. Reference standards:

- **UNI EN 365:1993**
- **UNI EN 363:2008**
- **UNI 11560:2014**
- **UNI 11158:2015**
- **Leg.Dec. 475/1992**

	Always read the manual carefully before using the system.
	This manual must always be available for consultation.

2. INTRODUCTION

This "Instruction manual for assembly, use and maintenance" refers to **SICURPAL INFINITY** and **DOUBLE INFINITY** devices made of stainless steel. The anchorage devices **INFINITY** comply with the requirements of standards **UNI EN 795: 2012, CEN/TS 16415:2013, UNI 11578:2015 Type A** and are designed and approved to be used simultaneously by a maximum of 1 (one) operator. The anchorage devices **DOUBLE INFINITY** comply with the requirements of standards **UNI EN 795:2012, CEN/TS 16415:2013, UNI 11578:2015 Type A** and are designed and approved to be used simultaneously by a maximum of 2 (two) operators. The anchorage devices **Type A SICURPAL INFINITY** and **DOUBLE INFINITY** are capable of withstanding a maximum strain of 30 kN.

2.1. WARRANTY

The warranty period for **SICURPAL INFINITY** and **DOUBLE INFINITY** anchorage devices is maximum 10 years from the date of installation. The WARRANTY relates to the **INFINITY** and **DOUBLE INFINITY** devices as a whole and their individual components, and covers in particular:

- Faults in manufacture
- Faults in materials
- Faults in welding

EXCEPTIONS

The warranty does not cover damage resulting from use in a manner not foreseen by this manual.

LIMITATIONS

In all cases the warranty is restricted to replacement of the elements or equipment acknowledged to be faulty after assessment by the **SICURPAL** technical department.

All faulty components must be returned to **SICURPAL**, who will assess their characteristics and, if the faults are confirmed, will replace them with conform material.

The warranty only applies to the returned elements, and does not cover the expense incurred for removal and reinstallation of the equipment in the system in which it is fitted.

The warranty also lapses if the material has been fitted and used in a manner not in compliance with the assembly and technical instructions issued by **SICURPAL**.

Any tampering with, or unauthorised replacement of, anchorage device components, use of unsuitable accessories, elements or components and/or improper use of the system will cause the warranty to lapse.

Failure to carry out periodic inspections will render the product guarantee void.

IMPROPER USE refers to use of the device:

- As a support to fix the television aerial;
- As a hook to move objects and/or materials;
- Any other use that is not typical of an anchorage for a fall arrest system.

2.2. PACKING AND TRANSPORT

During storage in the warehouse the fall arrest systems must be suitably protected.

SICURPAL ensures that they are carefully packed prior to transport and assured against:

- Unforeseen stress
- Excessive heat or damp
- Contact with sharp edges
- Contact with corrosive substances or other substances that might damage the devices.



For better protection of the environment, **SICURPAL** has decided to reduce packaging to a minimum. For this reason several products may be sent within the same packaging.

2.3. NOTES ON DELIVERY

On receipt of the material, check that:

- The packages received are undamaged and properly wrapped;
- The goods supplied correspond with the order specifications;
- The delivery note is present;
- The product Declaration of Conformity is present;
- The product manual is present.
- If there is any damage, enter a reservation when signing the shipping document, and notify both the courier and the **SICURPAL** Logistics department within 48 hours of delivery. Detailed photographs are required to support the notification. In the absence of these **SICURPAL** will not respond for any damage.
- In the case of faulty **SICURPAL** devices, contact the **SICURPAL** Logistics manager (Telephone number **SICURPAL** 059-81.81.79, e-mail: qualità@sicurpal.it).



This manual must be **handed over** to the **installer, user** or **maintenance technician** of the anchorage system who, before carrying out installation, using or performing maintenance on the system, must read all the relevant instructions carefully and procure the materials and Personal Protection Equipment (P.P.E.) required to work in safety (see the Technical Roofing Plan).

This document must form part of the Technical Construction File, together with design of the fall prevention system (**Encl. XVI Leg. Dec. 81/08**).

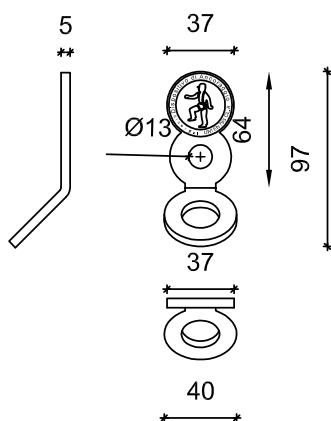
3. DESCRIPTION AND FIXING OF ANCHORAGE DEVICES

The products in the **SICURPAL INFINITY** and **DOUBLE INFINITY** ranges are individual anchorage devices.

3.1 DESCRIPTION OF THE ANCHORAGE DEVICES

The **INFINITY** and **DOUBLE INFINITY** devices are suitable for fixing to the structure using bars according to the instructions of the engineer. Please refer to Chapter 3.2 for the choice of fixing device. These devices must be used in combination with Category III P.P.E. that do not develop a reaction force of over 6 kN.

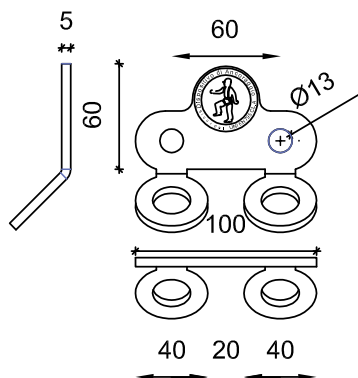
INFINITY - Cod. 001160



- Manufactured in AISI 304 INOX steel
- Integrated sign

Figure 3.1 – Infinity

DOUBLE INFINITY – Cod. 001161



- Manufactured in AISI 304 INOX steel
- Integrated sign

Figure 3.2 – Double Infinity

3.2. FIXING THE ANCHORAGE DEVICES

Installation of the **INFINITY** and **DOUBLE INFINITY** anchorage devices must be carried out by trained staff, capable of assembling and if necessary dismantling (UNI 11560:2014) according to the indications provided in the Calculation Report drawn up by an authorised technician and containing all the detailed characteristics for the selected fastening (for example the fastening type, bar/screw dimensions, anchoring depth, distance from edges, etc.).

The following are some of the possible application methods, which are subject to verification by an authorised technician.

DEVICES	MATERIAL	FIXING METHOD			
		Bar/bars* ≤M12	Two-component Resin	Welded	Counterplate
INFINITY	WOOD	✓	✓		✓
	STEEL	✓		✓	✓
	REINFORCED CONCRETE	✓	✓		✓
DOUBLE INFINITY	WOOD	✓	✓		✓
	STEEL	✓		✓	✓
	REINFORCED CONCRETE	✓	✓		✓

*The manufacturer recommends that the designer assess the use of vibration damping and self-locking systems (e.g. extra-large washers, self-locking nuts, split washers etc.) when fixing.

On the customer's request, the manufacturer can provide the assistance of a technician for the installation methods to be used for **SICURPAL** devices.

This manual is to be considered as an essential indication of how to install the anchorage system properly.

In spite of this, **SICURPAL** offers courses for designers, fitters and testers in order to improve their understanding of these instructions and pass on their know-how to ensure proper installation and reduce to a minimum possible on-site errors.

4. USE OF FALL PREVENTION SYSTEMS

The **SICURPAL INFINITY** and **DOUBLE INFINITY** devices suitable for use by operators, comply with the minimum requirements of standards **UNI EN 363:2008**, **UNI 11560:2014** and **UNI 11158:2015** and with the provisions of Leg. Dec. 81/08 and subsequent modifications and additions, art. 115.

They are suitable for use in the following types of personal protection system:

- ✓ Retention systems;
- ✓ On-site positioning systems;
- ✓ Fall arrest systems;
- ✓ Cable access systems;
- ✓ Rescue systems.

A personal fall protection system consists of an assembly of components designed to protect the worker from falling from a height, including a body harness and a connection system, which can be fastened to the anchorage system.

It should be remembered that Leg. Dec. 81/08 and subsequent modifications and additions, art. 77 paragraph 5, letter a, indicates the essential nature of training in the use of personal fall protection systems and the relevant Category III P.P.E. (Personal Protection Equipment) (Leg. Dec. 475/1992).

4.1. RETENTION SYSTEMS

A retention system is a personal fall protection system that prevents the worker from reaching areas in which there is a risk of falling from a height (UNI EN 358).

4.2. ON-SITE POSITIONING SYSTEMS

An on-site positioning system is a personal fall protection system that allows the worker to work while restrained/held up, so as to prevent falling from a height.

4.3. FALL ARREST SYSTEMS

A fall arrest system is a personal fall protection system that stops a free fall and restricts the impact on the worker's body during stoppage of the fall.

4.4. CABLE ACCESS SYSTEMS

A cable access system is a personal fall protection system that allows the worker to access the work place held, either in tension or suspended, in such a way that free falls are prevented or stopped.

The **DOUBLE INFINITY** device is set up to provide two anchors in one product: one for the safety lanyard and one for the working lanyard. The product is designed to be fixed to the structure by means of two different anchorages (threaded bars/mechanical cleats) aligned with the anchorage.

4.5. RESCUE SYSTEMS

A rescue system is a personal fall prevention system with which the worker can save himself or others, to prevent free falls.

A rescue system:

- Avoids free falling both of the person being rescued and of the rescuer during the rescue operation;
- Can be used to lift or lower the person being rescued to a safe place.

5. TECHNICAL DATA



		DEVICES	
		INFINITY	DOUBLE INFINITY
Net weight	[Kg]	0.104	0.210
Product height [mm]	[mm]	96.6	117.00
Anchor plate dimensions	[mm]	Φ34x 5	132x43x5
Number of structural anchor bores	n°	1	2
Material used	n°	AISI 304 STAINLESS STEEL	
Number of users per device under UNI EN 795:2012 Type A	max	1	1
Number of users per device under CEN/TS 16415:2013 Type A	max	1	2
Number of users per device under UNI 11578:2015 Type A	max	1	2
Maximum weight of each user	[Kg]	125	
Load F applied to the anchorage in the most unfavourable conditions [1 (one) operator]	[m]	9	9.5
Load F applied to the anchorage in the most unfavourable conditions [2 (two) operators]	[m]	-	13.50

6. EXAMPLES OF MARKING

Each removable component in the system is clearly marked, as shown below:



Figure 6.1

	Manufacturer's name and identification mark
EN 795/12 UNI 11578/15	Certification standards
TYPE A	Type of anchorage device
	N° operators
INFINITY	Name of anchorage device
J 03082	Production batch number
Cod. 001575	Product identification code



In the absence of a mark the device is to be considered non compliant and must be replaced.

7. INSPECTION AND MAINTENANCE SCHEDULE

Standard UNI 11560:2014 envisages four types of inspection. The manufacturer has implemented this standard and applies it as follows:

7.1. INSPECTION ON FITTING

Inspection of the components prior to assembly and inspection of the system after assembly, must be carried out by the fitter in accordance with the instructions provided by **SICURPAL** as the device manufacturer, the anchorage system designer and the structural engineer (UNI 11560:2014).

SICURPAL, as the manufacturer, prescribes the following operations:

- Verification, prior to installation, of the expiry date of chemical anchoring agents, if use of these agents is foreseen;
- After installation, carry out a traction test in an upward direction on both the fixing bars, Pull the device bars until they come out (See **Figure 7.1**).

This test, which does not damage the product, serves to verify that the anchorage and the support structure.



Figure 7.1

7.2. INSPECTION PRIOR TO USE

Before using the **SICURPAL** anchorage devices, the following preliminary visual inspections must be carried out:

- Waterproofing
- Wear
- Rusting/corrosion
- Deformation of components
- Locking of the nuts and bolts on visible devices
- State of any moving parts



If any anomalies are found in the system after performing these checks, it must not be used. It is also necessary to prevent access by other users and to inform the client, who must withdraw the system from service and, if necessary, arrange for it to be restored to normal use, by requesting the intervention of competent persons.

Before accessing the roof area, the user must check the fall clearance in all parts of the roof where there is a risk of falling, so as to eliminate any risk of colliding with the ground or with other obstacles along the path in the event of a fall.

Before going onto the roof, make sure that the weather and environmental conditions are not likely to cause a health risk for the fall prevention system user. The user must also check for any dangers of swing fall. Please see the Technical Plan for any special requirements.

7.3. PERIODIC INSPECTION

Periodic inspection of every anchorage system must be carried out by a competent person*.

SICURPAL recommends that it be carried out annually for the devices and at the intervals recommended by the structural engineer as regards the structural anchorage system.

In any case, the interval between two periodic inspections must not be more than 2 years for controls on the anchorage system and 4 years for controls on the support structure and anchoring devices (UNI 11560:2014 see System Instruction Manual).



For further information please contact your local authorised dealer or SICURPAL.

7.4. SPECIAL INSPECTION

After notification of a fault or after a fall, the anchorage system must immediately be put out of use. After this, a special inspection must be carried out by **SICURPAL** or a company authorised by **SICURPAL**, to identify any action that needs to be taken to restore the anchorage system, the anchors and the support structure to their proper performance levels (UNI 11560:2014).

7.5. MAINTENANCE

Maintenance must be carried out, if necessary, following the special inspection. If the maintenance involves replacing components and/or operations on the support structure, if necessary involving an authorised technician, (UNI 11560:2014) the maintenance technician must issue a declaration indicating that the required maintenance has been properly carried out, confirming that the system is suitable for use.

* A competent person is a person who knows current requirements for inspections prior to use, periodic and special inspections, the recommendations and instructions issued by the manufacturer and applicable to the component, sub-system or system in question (UNI EN 365 § 3 "terms and definitions").

8. WARNINGS AND RECOMMENDATIONS



8.1. INSTALLATION



8.2. USE

The devices in the **INFINITY/DOUBLE INFINITY** range must only be installed after a qualified technician has assessed the risks of falling from a height, and verified the suitability of the structures on which the devices are to be installed.

The **SICURPAL** anchorage devices must only be used by persons authorised by the employer (or customer) who have fully read and understood the instructions provided in this manual. They must also be trained, instructed and experienced in the use of Category III P.P.E.

The qualified structural engineer must also indicate the most suitable fixing method according to the type of base material, the size and the mechanical characteristics of the bearing structures onto which the product is to be installed. Installation must take place according to the performance values provided by the manufacturer.

The **SICURPAL** anchorage devices must only be used by persons equipped with P.P.E. that comply with specific technical standards, are subjected to regular maintenance and have not exceeded the manufacturer's expiry date.

During installation of the **SICURPAL** anchorage devices it is strictly forbidden to use components other than the ones supplied, without the manufacturer's authorisation.

The manufacturer is likewise to be considered free from any responsibility for accidents due to improper use of the system and failure to observe the warnings and recommendations contained in this manual. In this case the responsibility will lie with the client and/or employer.

The installer must make sure that the materials and supports to which the anchorage devices are to be fixed are compliant with and suited to the requirements of the Calculation Report.

The choice of P.P.E. to be employed when using the anchorage devices must be made and indicated by the employer (or client) in the working safety plan.

It is absolutely forbidden to create new bores, enlarge existing ones or modify the shape of the device without the prior written authorisation of the manufacturer **SICURPAL**. Doing so will render the warranty and product conformity null and void.

8.3. INSPECTIONS AND MAINTENANCE



<p>If the user connected to the SICURPAL devices suffers a fall, the anchorage system must be put out of use and all its components must be checked by SICURPAL.</p>	<p>If the anchorage devices become bent or damaged, they must be replaced immediately. Replacement of any products must be carried out by SICURPAL or by authorised and qualified technicians.</p>
<p>The INFINITY/DOUBLE INFINITY devices must only be returned to service after they have been finally certified by SICURPAL or a company authorised by SICURPAL.</p>	

	<p>The manufacturer will not be held liable for any accidents deriving from failure to comply with the standards and indications given in this manual.</p>
	<p>As well as verifying the anchorage system, the user must also make sure all the control procedures are carried out for all the system anchoring elements (energy absorbers, lanyards, harnesses, etc.).</p>

In the case of faulty **SICURPAL** devices, contact the **SICURPAL** Logistics Department (Telephone number **SICURPAL** 059-81.81.79, e-mail: qualità@sicurpal.it).

8.4. EARTHING

In areas at risk of lightning, according to standard CEI 81-10, connect the underside of the device fixing plate to an equipotential / earthing circuit using a cable with eyelet terminal of a suitable cross-section to allow for protection from lightning.

This operation must be carried out by a qualified technician pursuant to Ministerial Decree N° 37 dated 22-1-2008. This operation is not mandatory, and is the responsibility of the client/owner of the building.

	<p>Check that the anchorage device is fixed and properly installed according to these instructions.</p>
	<p>SICURPAL will not be held liable in any way for earthing of the system.</p>

9. MANUFACTURER'S NOTE

The following is the information requested in point 7 of standard UNI EN 795:2012:

A) The **INFINITY Type A** anchorage device can be used by **1 (one) operator** following certification tests according to UNI EN 795:2012.

The **DOUBLE INFINITY Type A** anchorage device can be used by **1 (one) operator** following certification tests under UNI EN 795:2012, max. **2 (two) operators** following certification tests under Technical Specification CEN/TS 16415:2013.

B) The **INFINITY** and **DOUBLE INFINITY** anchorage devices can be used with fall arrest systems, provided the Personal Protection Equipment contains an energy absorber.

C) The maximum load transmittable by the **INFINITY Type A** anchorage device is $f_t = 9.00$ kN in a horizontal direction parallel to the roof and in any direction (valid for **1 (one) operator** hooked to the post – **UNI EN 795:2012**).

The maximum load transmittable by the **DOUBLE INFINITY Type A** anchorage device is $f_t = 9.50$ kN in a horizontal direction parallel to the roof and in any direction (valid for **1 (one) operator** hooked to the post – **UNI EN 795:2012**).

The maximum load transmittable by the **DOUBLE INFINITY Type A** anchorage device is $f_t = 13.50$ kN in a horizontal direction parallel to the roof and in any direction (valid for **2 (two) operators** hooked to the post – **CEN/TS 16415:2013** and **UNI 11578:2015**).

D) The maximum deflection value of the **INFINITY** and **DOUBLE INFINITY** anchorage devices is 0° , while the maximum movement value is 18 mm for **INFINITY** devices and 21 mm for **DOUBLE INFINITY** devices.

E) See Chapter 4.

F) The **INFINITY** and **DOUBLE INFINITY** anchorage devices are made exclusively of metal, so that it is not necessary to provide additional information on the materials from which they are made.

G) Following every inspection it is necessary for the inspector to affix his stamp and signature on the System Register or on the sign located in the vicinity of the roof access points.

H) Not relevant - Type B anchorage devices

I) Not relevant - Type C anchorage devices

J) Not relevant - Type C and D anchorage devices

K) Not relevant - Type E anchorage devices

L) On completing installation, the installer must provide the client with the Declaration of Proper Installation - Appendix A1 UNI EN 795:2012 signed by himself, as proof and warranty of proper and appropriate installation. This will be considered the basic documentation for subsequent periodic examinations. The client is responsible for keeping said documentation so that it can be consulted by maintenance technicians/installers/users. More detailed documentation will be kept by **SICURPAL** and can be

consulted, subject to appointment, by calling +39 059.818179.

According to Appendix A2 - Guide to the documentation to be supplied after installation, the documentation required by the client who decides to carry out installation independently must comprise:

- address and location of the installation;
- name and address of the installing company;
- name of the person responsible for installation;
- product identification (name of the anchorage device manufacturer, type, model/article);
- fixing device (manufacturer, product, allowed traction and transversal forces);
- outline installation plan and information pertinent to the user/client, such as the position of anchorage points.

The outline installation plan should be affixed at the entrance points to the building, so that it is visible or available to all.

The Declaration of Proper Installation provided by the installer in charge must contain the following information relating to the anchorage device:

- It has been installed in compliance with the installation instructions provided by the manufacturer;
- The installation plan, described above, has been followed;
- It has been fixed to the substrate indicated;
- It has been fixed as indicated (number of bolts, proper materials, proper position, proper location);
- It has been commissioned in compliance with the manufacturer's instructions;
- Photographic/documentary information has been provided.

It must be remembered that, when more than one anchorage point has to be photographed for identification, the anchorage devices must be marked with numbers and these numbers must be incorporated in the inspection reports for the anchorage device and in the outline drawing of the installation area.

M) The anchorage device must only be used for fall prevention P.P.E.s and not for lifting equipment. For more detailed information on this question, please see chapter 2.1 "Warranty".

N) The **INFINITY** and **DOUBLE INFINITY** devices are not supplied with fall indicator included.



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