

# Xstage

S1, S8 and S10 series

User manual



**Original instructions** 

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# Change history

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1	Mar. 2019	First issue.



## 1 Introduction

This manual is intended for users of the Xstage product.

## 1.1 About this product

Xstage decks are modular units with different types of top surfaces, depending on use or needs, to be used as platforms or stages for small to mid-sized live events and performances.

This manual assumes that you have been trained or work under the control of a skilled person who has been trained in safety and assembly.

The Xstage product offers two main deck series variants:

- Deck with standard legs S8 and S10.
- Deck with scissor leas S1.

## 1.2 Related information

For more information on the product, see <u>www.xstage-systems.com</u>.

#### 1.3 About this manual

Before working with Xstage products, read this manual carefully and pay attention to the information provided. Use this manual to familiarise yourself with the products, their proper use and safety regulations.

## 1.3.1 Safety conventions



Indicates a hazardous situation, which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.



Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.



Indicates information considered important but not hazard-related.



## 1.4 Terminology

## 1.4.1 Xstage decks with standard legs (S8 and S10)



Figure 1: Example of an Xstage S10 assembly

1	Deck	6	Adjustable stairs
2	Leg	7	Connector for 4 legs
3	Guard rail	8	Connector for 2 legs
4	Handrail	9	Handrail/guard rail adapter
5	Handrail connector	10	Connector

## 1.4.2 Xstage deck with scissor legs (S1)



Figure 2: Xstage S1

## 1.5 Standards

- DIN EN 1991-1-1, Eurocode 1: Actions on structures Part 1-1: general actions Densities, self-weight, imposed loads for buildings.
- DIN EN 1993, Eurocode 3: Design of steel structures.
- DIN EN 1999, Eurocode 9: Design of aluminium structures.



- DIN 15921 Entertainment technology Aluminium platforms and frames Safety requirements and testing.
- DIN EN 13814 Fairground and amusement park machinery and structures.



Do not mix structural data from different standards without knowing their respective safety principle.

## 2 Safety

Read these safety texts carefully before working with the product.

Make sure manuals are available at all times for all users and employees.

It is the sole responsibility of the owner or provider to check with the local authorities if the legislation used by MILOS is acceptable in the country of use.



Do not use damaged or malfunctioning parts.



Do not mix structural data from different standards without knowing their respective safety principle.

## 2.1 Electrical safety

## 2.1.1 Electrical potential bonding



ELECTRICAL HAZARD

Xstage deck systems could develop dangerous touch voltages if an electrical fault is incorporated into a common potential equalisation system. This applies to all elements made of electroconductive material that have equipment placed on or attached to them, or across wire and cable runs that, if damaged, could make electrical contact with metal parts. The connections can be made with clips, pipe clamps, screw joints or special single-pole locking connectors

It is extremely important to ground the Xstage decks because the audience and installers very often come into direct contact with the stage when the suspended fixtures are electrically charged.

## 2.2 Personal protection equipment

For health and safety reasons, people assembling, disassembling, transporting or maintaining Xstage products should wear adequate Personal Protection Equipment such as, but not limited to, gloves, sound protection, hard hats and safety shoes.

Follow your local noise level regulations when assembling and disassembling Xstage elements.

Follow your local regulations of maximum allowed weight per person when carrying or moving Xstage elements.

Artists, performers or anyone who has to be on the stage or within 50 cm (19.6 in) of the stage deck, should be instructed and informed about the correct usage and possible dangers before use.



If an accident or malfunction occurs, the stage should be marked, taken out of service and inspected by a qualified person in order to establish its structural integrity for reuse. You should identify the stage accordingly and keep records of the identification numbers and photos.

Examples of accidents, incidents or malfunctions are:

- Dropping Xstage on the floor from a height
- The deck has been assembled with less than the regular number of legs
- Xstage was subjected to shock loads.



PERSONAL INJURY HAZARD

Always wear hard hats, safety shoes, sound protection and protective gloves when moving, assembling, disassembling or transporting product elements.

## 2.3 Limitations of use

Xstage decks S1, S8 and S10 can be used to carry loads up to 750 kg/m<sup>2</sup> (17797 lb/ft<sup>2</sup>) in standard environmental conditions and temperatures.

The maximum allowable load is determined by the type of legs, materials used, and the deck's height. The horizontal load for S1 is 10% of the maximum vertical load. For S8 and S10, the horizontal load is 5% of the maximum vertical load.

The maximum load and maximum point load, as well as the required load of railings, depend on standard DIN 15921 (S8, S10) or EN 13814 (S1), and whether the system has restricted use or general public access.

## 2.3.1 Railing load capacity - restricted use

For restricted use, including use as a working platform (non-public access), a railing with a minimum horizontal load capacity of 30 kg/m (20.1 lb/ft) is sufficient.

## 2.3.2 Railing load capacity - general public access

For general public access, a railing with a minimum horizontal load capacity of 100 kg/m (67.1 lb/ft) in the direction from the stage, and 50 kg/m (33.5 lb/ft) in the direction to the stage, is required.

## 3 Transport, handling and storage

Handle Xstage products with care. Do not drop them and do not drag them around. Prevent damage from sharp edges such as the forks of a forklift.

Dedicated dollies can be a highly effective means for transportation and storage, while providing Xstage decks with some extra protection.

Make sure Xstage decks cannot move and shake during transport. The abrasive motion of moving or shaking can lead to severe damage.



PERSONAL INJURY HAZARD

Vertical transportation or storage of Xstage decks can be hazardous for reasons of falling.





PERSONAL INJURY HAZARD

Always wear hard hats, safety shoes, sound protection and protective gloves when moving, assembling, disassembling or transporting product elements.

## 4 Identification

Xstage products can be recognized by identification stickers which are attached to all products.



Figure 3: Example of an Xstage S10 identification sticker



Make sure only Xstage original components are used. For more information, contact your distributor or the manufacturer.

## 5 Technical specifications

Series of deck	S1	S8	S10
Load capacity	750 kg/m² (153.60 lbs/ft²)	750 kg/m² (153.60 lbs/ft²)	750 kg/m² (153.60 lbs/ft²)
Use	Indoor/Outdoor	Indoor/Outdoor	Indoor/Outdoor
Deck dimension (basic deck)	2000 x 1000 mm (78.74 x 39.37 in)	2000 x 1000 mm (78.74 x 39.37 in)	2000 x 1000 mm (78.74 x 39.37 in)
Weight (basic deck) 66 kg (139 lbs)		38 kg (84 lbs)	33 kg (72.75 lbs)
Profile height	85 mm (3.35 in)	95 mm (3,74 in)	90 mm (3.54 in)
Type of legs	Scissors	Round	Round/Square
Deck material	Plywood	Plywood Acrylic glass Honeycomb	Plywood
Deck surface	Flat/Antislip	Flat/Antislip Hexa Grip	
Deck thickness	22 mm (0.87 in)	15 mm (0.59 in)	12 mm (0.47 in)
Maximum height	1000 mm (39.37 in)	1500 mm (59.06 in)	1500 mm (59.06 in)



## 5.1 Load capacity

## 5.1.1 Load capacity for S1 series

The load chart considers a horizontal load of 10% of the listed vertical load.

Platform height	Load capacity	
40-100 cm	750 kg/m²	

## 5.1.2 Load capacity for S8 series

The load chart considers a horizontal load of 5% of the listed vertical load.

	Type of leg			
Platform height	Ø48 x 3 mm EN AW 6082 T6	Ø48,3 x 3,2 mm S235	Ø48,3 x 5,6 mm S235	Ø48,3 x 3,0 mm S700
50 cm	750 kg/m²	750 kg/m²	750 kg/m²	750 kg/m²
70 cm	750 kg/m²	750 kg/m²	750 kg/m²	750 kg/m²
100 cm	750 kg/m²	650 kg/m²	750 kg/m²	750 kg/m²
150 cm	600 kg/m²	600 kg/m²	750 kg/m²	750 kg/m²

## 5.1.3 Load capacity for S10 series

The load chart considers a horizontal load of 5% of the listed vertical load.

	Type of leg				
Platform height	Ø48 x 3 mm EN AW 6082 T6	Ø48,3 x 3,2 mm S235	Ø48,3 x 5,6 mm S235	RHS 50 × 50 × 3 mm EN AW 6082 T6	
50 cm	750 kg/m²	750 kg/m²	750 kg/m²	750 kg/m²	
75 cm	750 kg/m²	750 kg/m²	750 kg/m²	750 kg/m²	
100 cm	750 kg/m²	750 kg/m²	750 kg/m²	750 kg/m²	
125 cm	530 kg/m²	700 kg/m²	750 kg/m²	750 kg/m²	
150 cm	350 kg/m²	610 kg/m²	750 kg/m²	750 kg/m²	

## 6 Approved accessories

For a complete overview of the approved accessories, see our brochures or <u>www.xstage-</u>systems.com.



You should never allow accessories to damage other Xstage elements.

## 7 Assembling Xstage

A competent person or sufficiently instructed personnel under the supervision of a competent person, should always assemble Xstage products.

Before assembly, use, and disassembly, the competent person is responsible for, but not limited to:

- Carrying out all of the instructions as described in this manual.
- Instructing the people doing the assembly and ensuring that all components are attached correctly.



You are strongly advised to show people carrying out the assembly how to physically assemble the decks together, how to attach legs, handrails, stairs and other accessories, and which tools to use.

## 7.1 Required tools

- Allen key set
- Mallet
- Spirit or laser level

## 7.2 Assembling using standard legs

To assemble Xstage using standard legs (not scissor legs):

- 1. Turn the deck unit underside up.
- 2. Place the required leg type in each of the leg pockets on the underside of the deck frame.

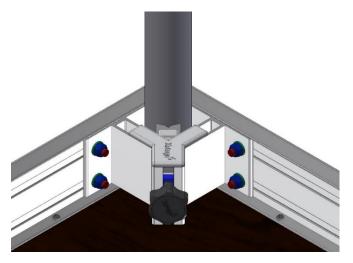


Figure 4: Example of an Xstage S10 leg pocket

- 3. Tighten the knob until the leg is secured in the leg pocket.
- 4. Repeat this action for all legs.
- 5. Turn the deck over, and put it in the upright position.
- 6. Connect each deck unit together using the connector or low profile connector. Position the low profile connector, as shown in Figure 6: Low profile connector, in the middle of the longer side of the deck. Do not forget to fix leg to leg clamps if the deck is part of a larger assembly.

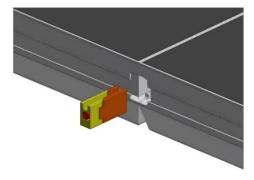


Figure 5: Connector



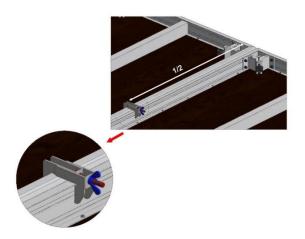


Figure 6: Low profile connector

7. Slide the handrail/guard rail adapter onto the Xstage main profile channel, and attach the handrail, guard rail or stairs securely as required.



Figure 7: Example of an Xstage S10 handrail/guard rail adapter

- 8. Check that all legs, railings and stairs are properly secured.
- 9. Repeat this process as often as necessary until you reach the final stage size and shape. For a complete overview of approved legs, connectors, railings and stairs, see our brochures or <a href="https://www.xstage-systems.com">www.xstage-systems.com</a>.



FALLING HAZARD

Make sure that all legs are properly secured, as well as all railings and stairs.

## 7.3 Assembling using scissor legs

To assemble Xstage S1:

- 1. Place the deck on the floor with the deck top facing upwards.
- 2. Push the handles located on the underside of the frame. Pushing the handles releases the safety lock so that you can adjust the height of the deck. The deck has multiple height positions.



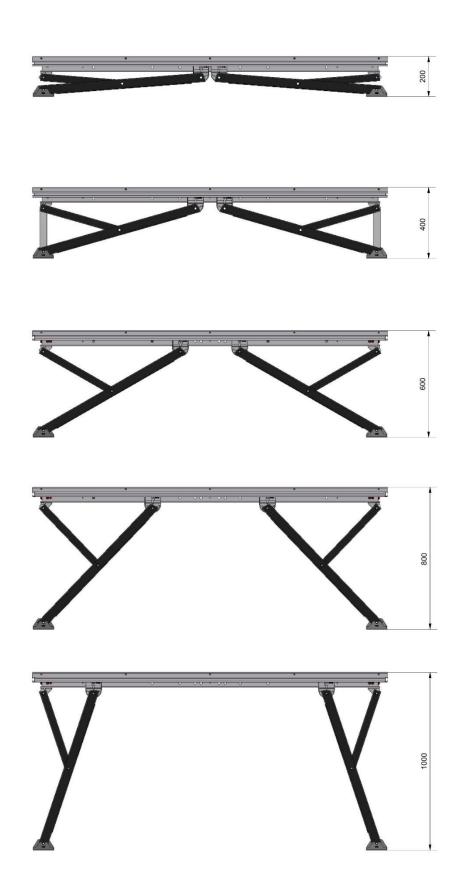


Figure 8: Xstage S1 height positions (height 200mm is only transport position)



- 3. Establish the final height of the deck, and release the handles. If required height is 400mm, apply support brace as on picture above.
- 4. Connect each deck unit together using the relevant connector. Position the connector in the middle of the longer side of the deck.
- 5. Slide the handrail/guard rail adapter onto the Xstage main profile channel, and attach the handrail, guard rail or stairs securely as required.
- 6. Check that the railings and stairs are properly secured.
- 7. Repeat this process as often as necessary until you reach the final stage size and shape.

For a complete overview of approved connectors, clamps, railings and stairs, see our brochures or <a href="https://www.xstage-systems.com">www.xstage-systems.com</a>.

## 8 Maintenance

It is very important to take care of your Xstage product to extend its life span.

Keep all Xstage products free from all types of dirt, paint and oil. Use warm water and soap to clean parts and avoid the use of of high-pressure cleaners, abrasive cleaning materials and fluids. Repairs should be done only by the manufacturer, or by designated third parties, after communication and confirmation by the manufacturer.



Do not repair Xstage yourself.

## 9 Inspection

## 9.1 Inspection levels

#### 9.1.1 Regular inspection

A competent person shall visually perform regular inspections prior to each use. You do not have to keep records. The regular inspection includes a visual inspection for signs of external damage and wear. If any damage is detected during the visual inspection, a qualified person shall carry out a detailed inspection based on the criteria described in Chapter 10.

#### 9.1.2 Periodic inspections

A qualified person shall perform periodic visual inspections on behalf of the user in accordance with Chapter 10, and a record of the inspections shall be maintained.

## 9.2 Inspection frequency

#### 9.2.1 Initial inspection

When first acquired, whether new or used, inspect the Xstage decks as instructed in Chapter 10. Keep a record of the inspections and identification numbers.

## 9.2.2 Inspections after accident, incident or malfunction

If the Xstage decks were subjected to any accidents, inspect the decks as instructed in Chapter 10.

Examples of accidents, incidents or malfunctions are:

- Dropping Xstage on the floor from a height
- The deck has been assembled with less than the regular number of legs
- Xstage was subjected to shock loads.



## 9.2.3 Xstage deck in regular and non-regular service

Perform regular inspections prior to every use, or, when not in use for a period of one month or more, and periodic inspections at least once a year.

## 9.2.4 Permanent installations

Carry out periodic inspections on all Xstage decks permanently installed in a stationary configuration. A qualified person shall determine the frequency of inspections based on the prevalent conditions.

## 9.3 Records

The owner shall keep records of initial and periodic inspections for each Xstage deck, which should be signed and dated by the person carrying out the inspections.

## 10 Discard criteria

If any part of an Xstage deck shows any of the following damages, the Xstage deck is unfit for further use and must be discarded.

Part	Failure symptoms			
Top deck	– Damage which penetrates through the water-resistant layer.			
	- Tripping hazards with an elevation more than 2 mm.			
	- Occurrence of splinters.			
General for all	- Break			
extrusions	- Crack			
	Holes appearing after the Xstage deck was brought into use.			
Main profile	- Lasting deformation of the profile of more than 2 mm, measured over			
	its entire length.			
	- Scratches, indentations or signs of attrition on the surface of the main			
	extrusions that reduce the wall thickness by more than 25%.			
	- Corrosion causing loss of material.			
Leg pocket	– Deformation causing a deviation of the 90° angle between the leg			
	and the deck by more than ±1°.			
	<ul> <li>Any missing components of the locking mechanism.</li> </ul>			
	<ul> <li>Loose screws between a leg pocket and main profile.</li> </ul>			
	- Corrosion causing loss of material.			
Leg	– Lasting deformation of the tube of more than Length / 300,			
	measured over its entire length.			
	- Scratches, indentations or signs of attrition on the surface of the tube			
	that reduce the wall thickness by more than 25% or the cross-			
	sectional area by more than 10%.			
	– Lasting ovalisation of the round tube by more than 5% of the			
	respective diameter.			
,	- Corrosion causing loss of material.			
Handrail/guard	– Lasting deformation of the tube of more than Length / 300,			
rail/stairs	measured over its entire length.			
	- Scratches, indentations or signs of attrition on the surface of the tube			
	that reduce the wall thickness by more than 25% or the cross-			
	sectional area by more than 10%.			
	– Lasting ovalisation of the round tube by more than 5% of the			
	respective diameter.			
	- Corrosion causing loss of material.			
Connectors and	- Lasting ovalisation of the round tube by more than 5% of the			
adapters	respective diameter.			
	- Deformations that affect simple assembly or require increased force.			
	- Corrosion causing loss of material.			



# NOTICE

If in doubt when assessing individual damages, contact the manufacturer.



PERSONAL INJURY HAZARD

Self-adjustment or damage of any Xstage product can negatively influence its maximum load capacity and may cause the collapse of the platform or stage.

## 11 Warranty

For a period of 24 months, we undertake to repair, free of charge, any damage attributable to faulty materials or workmanship, provided that the product is forwarded, freight paid, to our factory or one of the Xstage contract service organisations.

The warranty period begins on the day of delivery, proven by a purchase receipt like an invoice, delivery note or their copies.

The warranty only is applicable for new products.

The warranty does not cover damage due to transport damage, negligent handling, overload or parts subject to normal wear and tear. Nor damages that originate from a case of misuse because of non-observance of the instructions in this manual.

The fitting of replacement parts not supplied by us, or modifications of our design by third parties, also invalidates the warranty.

Warranty repairs do not renew nor extend the warranty period.



## 12 Certificates

## 12.1 S1 certificate





## 12.2 S8 certificate





## 12.3 S10 certificate



# ZERTIFIKAT CERTIFICATE

Hiermit wird bescheinigt, dass die Firma / This certifies that the company

MILOS s.r.o. Špindlerova 286 41301 Roudnice nad Labem Tschechische Republik

berechtigt ist, das unten genannte Produkt mit dem abgebildeten Zeichen zu kennzeichnen is authorized to provide the product mentioned below with the mark as illustrated

Fertigungsstätte Manufacturing plant Siehe Anlage 2 See Annex 2

Beschreibung des Produktes (Details s. Anlage 1) Description of product (Details see Annex 1) Bühnenpodest Xstage S10 Stage platform Xstage S10



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Bitte beachten Sie auch die umseitigen Hinweise Please also pay attention to the information stated overleaf

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