JFA

ADJUSTABLE SUPPORT FOR TERRACES

LEVELLING
The height-adjustable support can easily adapt to variations in substrate level. The rise also allows for ventilation under the joists.

DOUBLE REGULATION
Can be adjusted both from below, with a SW 10 wrench, or from above, using a flat-tip screwdriver. Fast, convenient, versatile system.

SUPPORT
The TPE plastic support base reduces the noise produced by footsteps. The ball-joint can adapt to uneven surfaces.

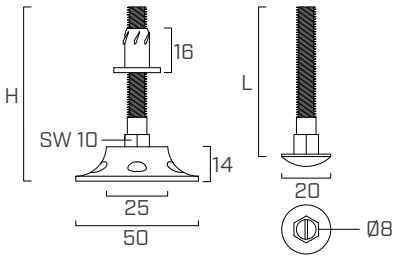
CHARACTERISTICS

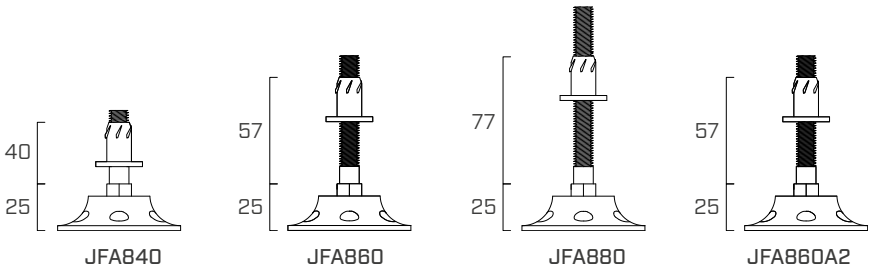
FOCUS	can be adjusted from above and below
HEIGHT	4,0 | 6,0 | 8,0 mm
DIMENSIONS	Ø8 mm
USE	raising and levelling of the structure

MATERIAL
Carbon steel with zinc plated and austenitic stainless steel A2 | AISI304.

FIELDS OF USE
Raising and levelling of the substructure. Outdoor use. Suitable for service classes 1-2-3.

GEOMETRY





TECHNICAL DATA

CODE			JFA840	JFA860	JFA880	JFA860A2
Material			carbon steel	carbon steel	carbon steel	A2 | AISI304
Screw Ø x L		[mm]	8 x 40	8 x 60	8 x 80	8 x 40
Assembly height	R	[mm]	25 ≤ R ≤ 40	25 ≤ R ≤ 57	25 ≤ R ≤ 77	25 ≤ R ≤ 57
Angle			+/- 5°	+/- 5°	+/- 5°	+/- 5°
Pre-drill for bush		[mm]	Ø10	Ø10	Ø10	Ø10
Adjustment nut			SW 10	SW 10	SW 10	SW 10
Total height	H	[mm]	51	71	91	71
Admissible capacity	F_{adm}	kN	0,8	0,8	0,8	0,8

CODES AND DIMENSIONS

JFA

CODE	material	screw Ø x L [mm]	pcs
JFA840	carbon steel	8 x 40	100
JFA860	carbon steel	8 x 60	100
JFA880	carbon steel	8 x 80	100

JFA A2 | AISI304

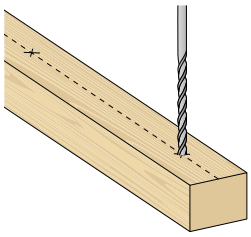
A2 AISI 304

CODE	material	screw Ø x L [mm]	pcs
JFA860A2	stainless steel	8 x 60	100

STAINLESS STEEL

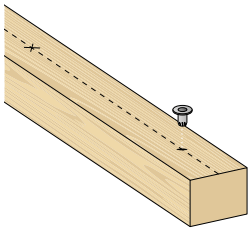
Available also in A2 | AISI304 stainless steel to for particularly aggressive environments.

JFA INSTALLATION WITH ADJUSTMENT FROM BELOW



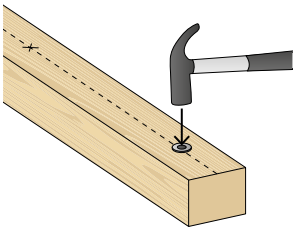
01

Trace the joist midline, indicating the position of the holes and then pre-drill a 10 mm diameter hole.



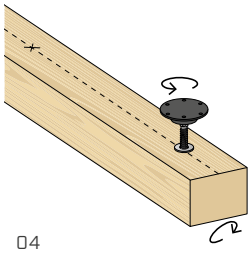
02

The depth of the pre-drill depends on the assembly height R and must be at least 16 mm (bushing size).



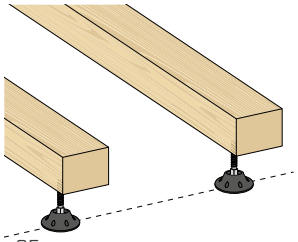
03

Use a hammer to insert the bushing.



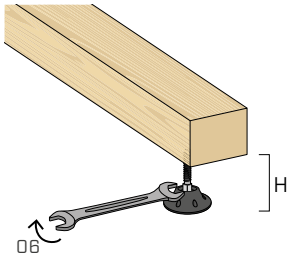
04

Screw the support into the bushing and turn the joist.



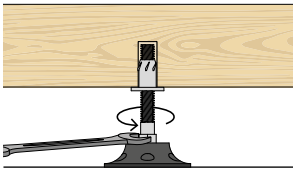
05

Place the joist on the substrate, parallel to the one previously laid.

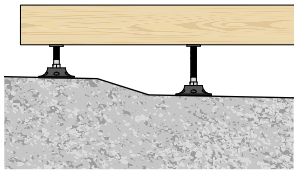


06

Adjust the height of the support from the bottom using a 10 mm SW wrench.

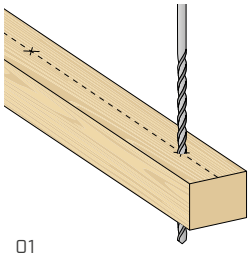


Detail of adjustment from below.



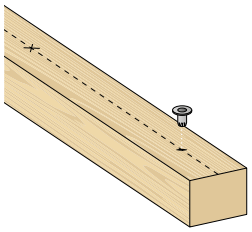
Follow the course of the ground by acting independently on the individual supports.

JFA INSTALLATION WITH ADJUSTMENT FROM ABOVE



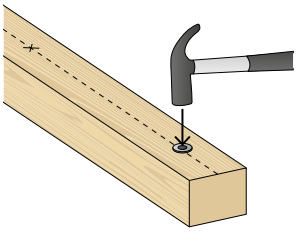
01

Trace the joist midline, indicating the position of the holes and then pre-drill a 10 mm diameter through hole.



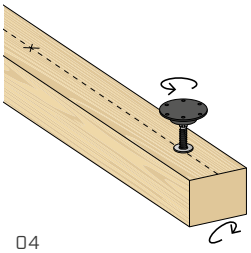
02

We recommend a maximum of 60 cm between supports, to be checked according to depending on the load.



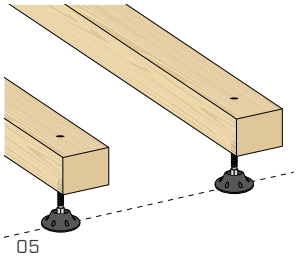
03

Use a hammer to insert the bushing.



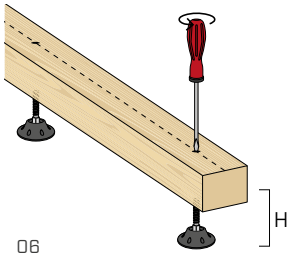
04

Screw the support into the bushing and turn the joist.



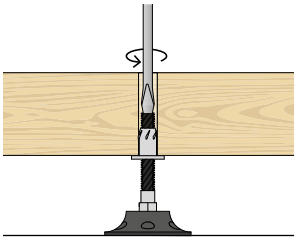
05

Place the joist on the substrate, parallel to the one previously laid.

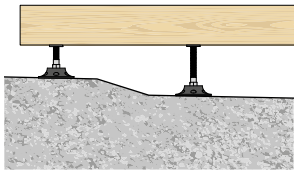


06

Adjust the height of the support from above using a flat screwdriver.

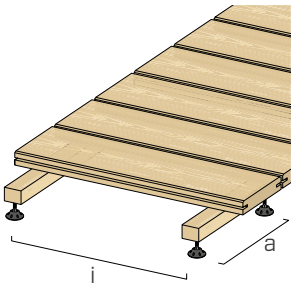


Detail of adjustment from above.



Follow the course of the ground by acting independently on the individual supports.

CALCULATION EXAMPLE



The number of supports per m² is to be assessed according to the load magnitude and the joist spacing.

INCIDENCE OF SUPPORTS ON SURFACE (I):

$$I = q/F_{adm} = \text{pcs of JFA at } m^2$$

q = load [kN/m²]
F_{adm} = admissible JFA capacity [kN]

MAXIMUM DISTANCE BETWEEN SUPPORTS (a):

$$a = \min \begin{cases} a_{max,\ JFA} \\ a_{max,\ batten} \end{cases}$$

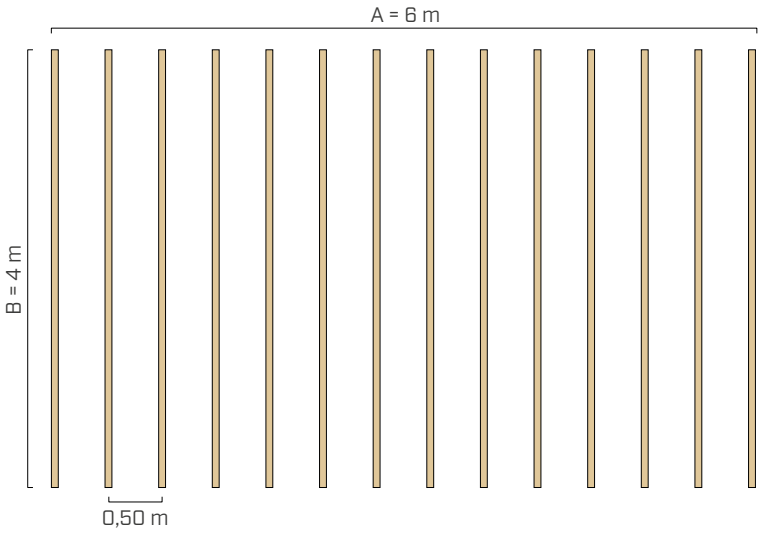
with: $a_{max,\ JFA} = 1/pcs/m^2/i$

$$a_{max,\ batten} = \sqrt[3]{\frac{E \cdot J \cdot 384}{f_{lim} \cdot 5 \cdot q \cdot i}}$$

i = between battens spacing
f_{lim} = instantaneous strain limit between supports
E = material elastic modulus
J = joist section inertia modulus

PRACTICAL EXAMPLE

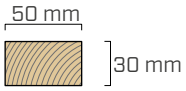
PROJECT DATA



PATIO SURFACE

S = A x B = 6 m x 4 m = 24 m²

JOISTS



b = 50 mm
h = 30 mm
i= 0,50 m

LOADS

Overload Category of use: category A (balconies) (EN 1991-1-1)	**q**	4,00 kN/m²
Admissible JFA support capacity	F_{adm}	0.80 kN

Joist material			C20 (EN 338:2016)
Limit for instantaneous deflection between supports	f_{lim}	**a/400**	-
Material elastic moment	$E_{0,mean}$		9,5 kN/mm²
Moment of joist section inertia	**J**	**(b · h³)/12**	112500 mm⁴
Maximum joist deflection	f_{max}	**(5/384) · (q · i · a⁴)/(E · J)**	-

JFA NUMBER CALCULATION

INCIDENCE

$I = q/F_{adm}$ = pcs of JFA at m²
I = 4,0 kN/m²/0,8 kN = 5,00 pcs/m²

NUMBER OF JFA SUPPORTS

n = I · S · waste coeff. = pcs. of JFA
n = 5,00 pcs/m² · 24 m² · 1,05 = **126 pcs of JFA**
waste coefficient = 1,05

CALCULATION OF MAXIMUM DISTANCE BETWEEN SUPPORTS

JOIST FLEXURAL LIMIT

$f_{lim} = f_{max}$ therefore: $a_{max,\ batten} = \sqrt[3]{\frac{E \cdot J \cdot 384}{400 \cdot 5 \cdot q \cdot i}}$

$$a_{max,\ batten} = \sqrt[3]{\frac{9,5 \cdot 112500 \cdot 384}{400 \cdot 5 \cdot (4,0 \cdot 10^{-6}) \cdot 500}} \cdot 10^{-3} = 0,47 \text{ m}$$

SUPPORT STRENGTH LIMIT

$a_{max,\ JFA} = 1/n/i$
$a_{max,\ JFA}$ = 1/5,00/0,5 = 0,40 m

$$a = \min \begin{cases} a_{max,\ JFA} \\ a_{max,\ batten} \end{cases} = \min \begin{cases} 0,40 \text{ m} \\ 0,47 \text{ m} \end{cases} = 0.40 \text{ m}$$

maximum distance between JFA supports