# Product dimensioning 

## Dimensioning - Swivel chairs

## 1. Standard references

Measurements should be carried out in accordance with EN standards.

### 1.1. For swivel chairs:

EN 1335-1:2000 / AC:2002 - Office furniture

- Office operative chair - Part 1: Dimensions -
dimension meaning


## All dimensions are given in millimeters.

The given dimensions may vary depending on the selected product configuration (applies to optional components, e.g. type of upholstery, castors / glides, gas lift)

## Definitions:

- " A " point - the point at which the chair axis of rotation intersects the seat loaded with a 64 kg heavy dummy,
- median plane (PLANE 1) - vertical plane passing through the " $A$ " point and dividing the chair into two symmetrical parts,
- transverse plane (PLANE 2) - vertical plane perpendicular to the median plane, passing through the " $A$ " point,
- "S" point - the most forward point of backrest lying in the median plane.



## Dimensioning - Swivel chairs

## M - Headrest width

(not included in standard)
Headrest width is the maximum distance
between side edges of headrest length.

## N - Headrest height

(not included in standard)
Headrest height is the vertical distance between the upper and lower edges of headrest length.

## J - Base diameter

(not included in standard)
Base diameter measured from the extreme outer points of five-star base.


## K - Base width

(not included in standard)
For bases other than five-star bases, the dimension is given at the extreme points of the base. As shown in the picture below.

## L - Overall depth

(not included in standard)
Measured at the extreme points of chair in the side view. In case the extreme points of chair are the chair base, dimension should be given by setting the base and castors as shown in the figure below.
For products with adjustable seat depth, measurement is performed at the minimum and maximum seat extension.



## Z - Armrest height

(according to " p " standard)
Armrest height is the vertical height between the top edge of the armrest and the " A " point. For armrests of non-horizontal shape, with rounded ends or non-rigid material, the armrest height is the distance between the horizontal plane, situated 20 mm below the highest point of the armrest, and the " A " point.
In case of a product with height adjustable armrests the measurement is given at the minimum and maximum position of armrest.

## Y-Armrest length

(according to " n " standard)
Armrest length is the distance between the vertical lines passing through its front and rear edges. For armrests of non-horizontal shape, with rounded ends or non-rigid material, the distance is to be measured 20 mm below the usable area of the armrest.

In case of a product with adjustable armrest pad position, the measurement is given at the minimum and maximum extension of the pad.

## X - Armrest width

(according to " o " standard)
Armrest width is the distance between the vertical lines passing through the inner and outer edges of the pad / handrail in front view. If the shape of the armrest makes it impossible to measure the width, the measurement should be performed 20 mm below the top edge.

## W - Internal width between armrests

(according to " $r$ " standard)
Internal width is the distance between vertical lines passing through the inner edges of the armrests, measured in the transverse plane. If internal width can be adjustable, the measurement should be performed at both extreme positions of the adjustable armrest components.

## V - External width between armrests

(not included in standard)
Distance measured between vertical lines passing through the outer points of the armrests in the front view.
If there is a possibility of adjustment, the measurement should be performed at both extreme positions of the adjustable armrests.

## X-Line

## 1. Dimensions / Weight



X-LINE SWIVEL CHAIR MESH


X-LINE COUNTER SWIVEL CHAIR MESH


X-LINE SWIVEL CHAIR UPH/P


X-LINE COUNTER SWIVEL CHAIR UPH/P

| $>\xlongequal{\substack{\begin{subarray}{c}{\text { enasuring } \\ \text { standard } \\ \text { op page } \\ 3} }}\end{subarray}}$ | Dimensions (mm) |  |  |  |  |  |  |  |  |  |  |  |  |  | Weight (kg) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Model | A | B | C | D | E | F | G | H | J | K | L | 1 | M | N |  |
| X-LINE SWIVEL CHAIR <br> MESH ER/ERN/ERF-ST <br> GL-STD TS30 (ST56) <br> ESH60/ESHH60 | 415-535 | 435-535 | 480 | 460 | 1055-1255 | 455 | 595 | 650-710 | 735 | - | 670 | - | - | - | $\begin{gathered} \text { ER/ERN-ST: } \\ 14(14,4) \\ \text { ERF-ST: } 14,3 \\ (14,7) \end{gathered}$ |
| X-LINE SWIVEL CHAIR <br> MESH SA3-ST GL-STD <br> TS30 (ST56) ESH60/ESHH60 | 415-535 | 440-540 | 480 | 460 | 1055-1255 | 455 | 595 | 650-710 | 735 | - | 670 | - | - | - | 14,4 (14,8) |
| X-LINE SWIVEL CHAIR <br> UPH/P ER/ERN/ERF-ST <br> GL-STD TS30 (ST56) <br> ESH60/ESHH60 | 415-535 | 435-535 | 480 | 460 | 1045-1245 | 445 | 575 | 635-695 | 735 | - | 670 | - | - | - | $\begin{gathered} \text { ER/ERN-ST: } \\ 15,3(15,7) \\ \text { ERF-ST: } 15,6 \\ (16,0) \end{gathered}$ |
| X-LINE SWIVEL CHAIR <br> UPH/P SA3-ST GL-STD <br> TS30 (ST56) ESH60/ESHH60 | 415-535 | 440-540 | 480 | 460 | 1045-1245 | 445 | 575 | 635-695 | 735 | - | 670 | - | - | - | 15,7 (16,1) |
| X-LINE COUNTER SWIVEL <br> CHAIR MESH ER-ST TS3O <br> (ST56) KSH/KSHH | 560-690 | 435-535 | 480 | 460 | 1200-1400 | 455 | 595 | 650-710 | 735 | - | 670 | - | - | - | 16,2 (16,6) |
| X-LINE COUNTER SWIVEL CHAIR MESH SA3-ST TS30 (ST56) KSH/KSHH | 560-690 | 440-540 | 480 | 460 | 1200-1400 | 455 | 595 | 650-710 | 735 | - | 670 | - | - | - | 16,6 (17,0) |
| X-LINE COUNTER SWIVEL <br> CHAIR MESH ER-ST TS3O <br> (ST56) GB/GBF | 570-700 | 435-535 | 480 | 460 | 1210-1410 | 455 | 595 | 650-710 | 735 | - | 670 | - | - | - | 16,1 (16,5) |
| X-LINE COUNTER SWIVEL CHAIR MESH SA3-ST TS3O (ST56) GB/GBF | 570-700 | 440-540 | 480 | 460 | 1210-1410 | 455 | 595 | 650-710 | 735 | - | 670 | w- | - | - | 16,5 (16,9) |
| X-LINE COUNTER SWIVEL <br> CHAIR UPH/P ER-ST TS30 <br> (ST56) KSH/KSHH | 560-690 | 435-535 | 480 | 460 | 1190-1390 | 445 | 575 | 635-695 | 735 | - | 670 | - | - | - | 17,5 (17,9) |
| X-LINE COUNTER SWIVEL CHAIR UPH/P SA3-ST TS30 (ST56) KSH/KSHH | 560-690 | 440-540 | 480 | 460 | 1190-1390 | 445 | 575 | 635-695 | 735 | - | 670 | - | - | - | 17,9 (18,3) |
| X-LINE COUNTER SWIVEL <br> CHAIR UPH/P ER-ST TS3O <br> (ST56) GB/GBF | 570-700 | 435-535 | 480 | 460 | 1200-1400 | 445 | 575 | 635-695 | 735 | - | 670 | - | - | - | 17,4 (17,8) |
| X-LINE COUNTER SWIVEL CHAIR UPH/P SA3-ST TS30 (ST56) GB/GBF | 570-700 | 440-540 | 480 | 460 | 1200-1400 | 445 | 575 | 635-695 | 735 | - | 670 | - | - | - | 17,8 (18,2) |
| HEADREST HRUA | - | - | - | - | - | - | - | - | - | - | - | 180-255 | 275 | 160 | 0,9 |
| HEADREST HRMA | - | - | - | - | - | - | - | - | - | - | - | 185-245 | 270 | 150 | 0,5 |

A - Seat height
B - Seat depth
C - Seat surface depth
D - Seat width
E - Overall height

F - Backrest width
G - Backrest length
H - Backrest height
J - Base diameter
K - Base width

L - Overall depth
I - Headrest height (above the backrest)
M - Headrest width
N - Headrest height

| $\Rightarrow \xlongequal[\mathrm{x}]{\uparrow \begin{array}{c} \text { Measuring } \\ \text { standard } \\ \text { an page } \\ 3 \end{array}}$ | Dimensions (mm) |  |  |  |  | Weight (kg) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Armrests | Z | Y | X | w | V |  |
| R46-B/B/BPU | 170-270 | 215 | 90 | 430-520 | 610-700 | 2,6 |
| R37-BL/B/B | 180-280 | 235 | 100 | 380-530 | 580-730 | 3,1 |
| R37-POL/B/B | 180-280 | 235 | 100 | 380-530 | 580-730 | 3,4 |

Z - Armrest height
Y - Armrest length

X - Armrest width
W - Internal width between armrests

## 2. Materials / Versions

### 2.1. Base

2.1.1. Office swivel chairs and counter swivel chairs
Bases:

- $\varnothing 735 \mathrm{~mm}$ five-star black polyamide (TS30),
- $\varnothing 735 \mathrm{~mm}$ five-star aluminium powder-coated in black colour (ST56-BL),
- $\emptyset 735 \mathrm{~mm}$ five-star polished aluminium (ST56-POL).
Foot rest (for counter swivel chairs as standard)
-     - $\emptyset 500 \mathrm{~mm}$ diameter, made of chromium plated steel tube $\varnothing 16 \times 1.5 \mathrm{~mm}$, five-star element made of aluminium powder-coated in black colour, height adjustable with a knob.


### 2.2. Castors / Glides

### 2.2.1. Office swivel chairs

$\varnothing 60 \mathrm{~mm}$ black plastic self-braking castors for soft floors (ESH60) as standard, or hard floors (ESHH60) as an option.

### 2.2.2. Counter swivel chairs

Castors:

- $\emptyset 50 \mathrm{~mm}$ load-brake castors for soft floors (KSH) as standard or for hard floors (KSHH) - as an option.

Glides:

- black glides made of plastic for soft floors (GB) or hard floors (GBF), both as an option.


### 2.3. Mechanisms

SA3-ST synchronous mechanism - functions:

- free-floating - synchronous backrest and seat tilt,
- maximum backrest tilt angle $20^{\circ}$,
- maximum sit tilt angle $6.5^{\circ}$,
- backrest multi-lock in 4 positions,
- automatic backrest tilt force adjustment to user's weight with the possibility of additional adjustment with a knob under seat,
- seat depth adjustment 100 mm , possible seat multi-lock in 11 positions,
- Anti-Shock - a feature that controls chair backrest to avoid hitting user's back after releasing the lock,
- smooth height adjustment of chair with pneumatic gas lift.
ER-ST advanced synchronous mechanism -
functions:
- free-floating - synchronous backrest and seat tilt,
- backrest tilt angle of $23^{\circ}$ synchronised with the seat tilt angle of $10^{\circ}$
- backrest multi-lock in 5 positions,
- backrest tilt force adjustment in 7 positions with a knob placed on the right side of the seat,
- seat depth adjustment 100 mm , possible seat multi-lock in 11 positions,
- negative seat inclination of $2^{\circ}$, synchronously tilting with the backrest at $5^{\circ}$, which guarantees optimal support for the user's back at each tilted position of the chair - as an option (ERN-ST),
- negative seat inclination of $5^{\circ}$, independent of backrest movement: lock at $-5^{\circ}$ or freefloating in range of $-5^{\circ}-0^{\circ}-$ as an option (ERF ST),
- Anti-Shock - a feature that controls chair backrest to avoid hitting user's back after releasing the lock,
- smooth height adjustment of chair with pneumatic gas lift.


### 2.4. Seat, backrest, headrest

## Seat

Upholstered seat - structure and cover made of polypropylene (PP), covered with injected foam, thickness 59 mm and density $55-60 \mathrm{~kg} / \mathrm{m}^{3}$.
Pocket springs placed inside injected foam as an option (SE-SP).
Finishes not available: Rivet, Valencia, Remix 3, Fine leather SD, Fine leather LE, Nappa leather. Upholstered seat with side drops - structure and cover made of polypropylene (PP), covered with injected foam, thickness 59 mm and density $55-60 \mathrm{~kg} / \mathrm{m}^{3}$. Side drops are upholstered in the same fabric type as seat or in Runner 3D fabric as an option (SE-SD).

## Backrest

Upholstered backrest (UPH/P) - structure made of polypropylene (PP), covered with injected foam, thickness 32-45 mm and density $65 \mathrm{~kg} / \mathrm{m}^{3}$. Backrest cover is made of black polypropylene (PP).
Side drops are upholstered in the same fabric type as backrest or in Runner 3D fabric, as an option (BA-SD).
Height adjustment 60 mm , lockable in 8 positions with a button placed in lower part of backrest.
Mesh backrest (MESH) - frame made of black glass fiber reinforced polyamide (PA + GF), three types of finishes available:

- MC - mesh 3D,
- MV - semi-transparent mesh,
- RN - Runner 3D fabric.

Height adjustment 60 mm , multi-lock in 7 positions with a button placed on backrest connector.
Manual lumbar support - integrated with backrest (available for upholstered backrest with cover UPH/P) - depth adjustment 15 mm with a knob (LSD2).
Manual lumbar support - (available for mesh backrest MESH) - magnetic lumbar support consisting of two elements made of black soft polyurethane (PU) with magnets inside - height and depth adjustment (LUH2).

## Technical description

## Headrest

Adjustable upholstered headrest - (available for upholstered backrest with cover UPH/P) - structure made of glass fiber reinforced polyamide (PA + GF), covered with cut foam, thickness 10 mm and density $35 \mathrm{~kg} / \mathrm{m}^{3}$. Adjustment range of headrest: height 75 mm , headrest pad rotation $70^{\circ}$ (HRUA).
Adjustable mesh headrest - (available for mesh backrest MESH) - structure made of glass fiber reinforced polyamide (PA + GF).
Adjustment range of headrest: height 60 mm , headrest pad rotation $70^{\circ}$ (HRMA).

## 3. Armrests

2-D armrests (R46) - made of glass fiber reinforced polyamide (PA + GF) with black soft polyurethane (PU) pads.
Adjustment range of the armrests: height adjustment 100 mm , side movement of the armrests 90 mm .
4-D armrests (R37) - made of black glass fiber reinforced polyamide ( $\mathrm{PA}+\mathrm{GF}$ ) with black soft polyurethane (PU) pads or black glass fiber reinforced polyamide (PA + GF) and polished aluminium with black soft polyurethane (PU) pads.
Adjustment range of the armrests: height adjustment 100 mm , side movement of the armrests 90 mm , forward/backward movement of the pad 40 mm , pad rotation $360^{\circ}$.

## 4. Packaging

Office swivel chair
Partially assembled, L-shape cardboard
packaging (PACK-L) -1 piece per box, 6 pieces on pallet - as standard.
The cardboard box contains 3 elements:

- seat with assembled mechanism, backrest and armrests,
- base with assembled castors,
- gas lift.

Partially assembled, compact cardboard packaging (dimensions suitable for courier delivery) (PACK-A1) 1 piece per box, 8 pieces on pallet - as an option.
The cardboard box contains 5 elements:

- seat with assembled mechanism and armrests,
- backrest or backrest with assembled headrest (for model with headrest),
- base,
- castors,
- gas lift.

Assembled, cardboard packaging (PACK-ASM) - 1 piece per box, 4 pieces on pallet - as an option.

## Counter swivel chairs

Assembled, cardboard packaging (PACK-ASM) - 1 piece per box, 4 pieces on pallet - as an option.

## 5. Technical regulations, approvals and quality marks for the chairs (for selected product configurations)

- GS Safety Certificate (pending),
- Ergonomics Certificate (pending),
- Blue Angel Certificate (pending).

6. Rules for upholstery matching

Upholstery type is the same for each upholstered element.
Finish type of mesh headrest is the same as mesh backrest finish.

## Side drops:

- side drops of all upholstered elements are of the same upholstery type and colour,
- side drops are of the same upholstery type as particular upholstered element, or in Runner 3D fabric.

