

Forma 5

TECHNICAL FEATURES

3.60



SWIVEL CHAIR | MESH BACKREST

For anti-electrostatic solutions, please ask us the conditions.



DIMENSIONS

MESH BACKREST

Height *1	103,5 - 115 cm
Seat height *2	42 - 54 cm
Width (with arms *3)	68,5 cm
Depth	65 cm
Fabric meters	1,3 m
Weight *4	19,4 kg / 19,5 kg

* These minimum and maximum dimensions depend on the chosen configuration. Please ask for concrete values in case you need them.

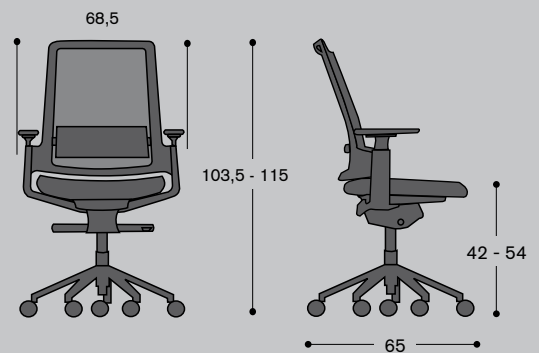
*1 The height of the headrest is measured by placing this in its lowest position.

*2 3.60 chair mounted two pistons with the same development and different finish. Measured according to EN 1335.

*3 The chair width corresponds to the outer dimension between arms, positioning these in the position that maximizes the useful seating space.

*4 The weight corresponds: breathable 3D mesh or upholstered over 3D mesh.

Forma 5



Dimensions in centimeters

SWIVEL CHAIR | MESH BACKREST WITH HEADREST



DIMENSIONS

MESH BACKREST WITH HEADREST

Height *1	122 - 134 cm
Seat height *2	42 - 54 cm
Width (with arms *3)	68,5 cm
Depth	65 cm
Fabric meters	1,3 m
Weight *4	19,9 kg / 20 kg

* These minimum and maximum dimensions depend on the chosen configuration. Please ask for concrete values in case you need them.

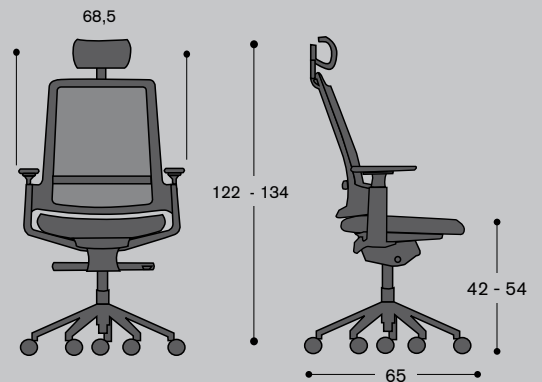
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Forma 5

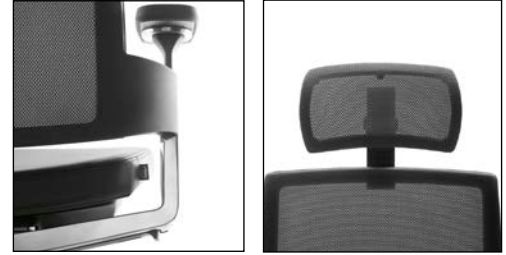


Dimensions in centimeters

ELEMENT DESCRIPTION

BACKREST

Rectangular backrest with rounded edges and vertex. Structure made of polyamide with 30% of fiberglass. Upholstered with breathable 3D mesh (mesh option) or upholstered over 3D black mesh (option upholstered mesh). The chair may optionally incorporate an upholstered headrest that matches with the finished of the backrest fabric. The headrest is adjustable in height (60 mm adjustment with 7 positions) and inclination (angle 125°, 5 positions that increase or decrease 25° each). The headrest comprises a support mast made of polyamide and, when upholstered, a plate of polypropylene incorporating a polyurethane foam of 70 kg/m³ density and upholstered in the same color as the front of the backrest.



3D mesh backrest

TRIMENSION LUMBAR SUPPORT

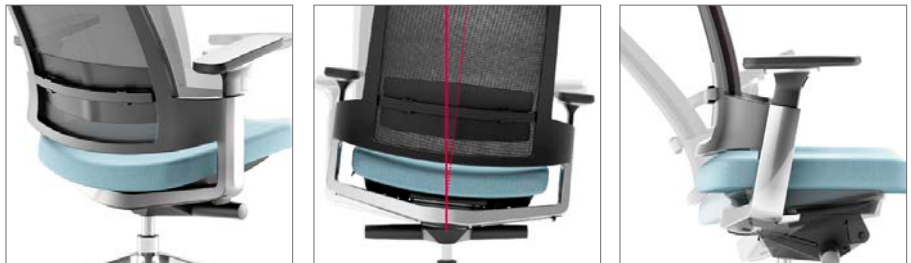
The 2D lumbar strip improves substantially the standard lumbar strip because it controls two types of parameters of regulation: height and depth. This depth is presented as a new system allowing adaptation for the lumbar adjustment to a wide range of user. The user feels full support in the lumbar area and dividing pressure generated by the sitting posture and improving circulation in the back. This mechanism has a simple use: through a strip located in the rear of the backrest, between rails made in seat frames, this adjustment moves vertically to find the correct point according to the user it feels. To adjust the depth, the two pieces in the central rail move horizontally generating this way a greater push towards the inside of the strip. This depth adjustment is in depth, it can differentiate the depth of from left to right.



Trimension Lumbar Support

SEAT

Injected polyamide seat shell with 30% fiberglass, textured in the outer side. Inner polypropylene tray serves as support for the injected foam 65 kg/m³ and which slides over the structural seatshell, thereby regulating the seat depth tray. This foam is then upholstered with 3D mesh or any of the fabrics of the Forma 5 upholstery samples.



Seat

ARMS

4D arms with injected aluminium structure and polyuretano armpads. Easy adjustment of height, depth, width and turn.



BASE

The finishes of the piston matches the base. The chair will have black piston when the base is black polyamide. The piston will be chromed when the base is in polished aluminium.



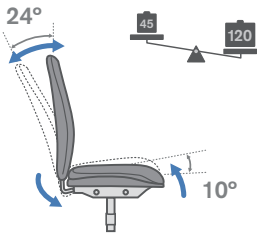
Polyamide 5-spoke conical base, external diameter 68 cm



Star base in polished aluminium 69 cm diameter. 5 trapezoidal branches with rounded corners.

THE 3.60 MOVEMENT

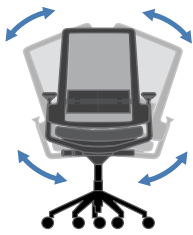
The trimensional movement of the chair, the 3.60 Synchro Motion, results from the combination of two movements:



SYNCHRO MOTION SYSTEM

System adapted to provide a floating support for the seat. Motion mechanism gives the seat the following possibilities of regulation and characteristics:

- 24° backrest leaning and 10° on the seat. Backrest leaning and seat rotation according to a 2,4:1 fixed ratio.
- Backrest tension to suit the user's weight. Easy adjustment with only two turns.
- The resistance of the knob is constant, regardless of reduce or increase the tension. Infinite tension positions of the backrest for an optimal adjustment to users between 45 and 120 kg. Forward rotation axis that prevents for pressure on the user's legs.
- 5 blocking positions of the backrest with anti-return protection.
- Height adjustment by actuator to the left of the seat.



SIDE TO SIDE MOVEMENT

The lateral movement benefits to the user cause of the "floating" seat position, allowing to move the center of axis gravity to adopt complex positions without losing support surface, nor the seat nor the backrest, while maintaining a high comfort. The mechanism that governs the movement includes buffer elements that ensure controlled operation at all times. The effect got is comfortable chair, inviting the user to the dynamism and providing support in a greater range of positions. Also it includes block for the "side to side" movement.

The longitudinal movement (synchronized) and the transversal (side to side) result a 360° rotation about the axis of the seat that makes that the back, upper trunk, and lower trunk found no obstacles to a natural movement.

Therefore, the back does not suffer unwanted pressure points, so the ergonomic benefit is obvious. Moreover, this mechanism includes:



SLIDING SEAT which enables regulation of the seat depth and allows it to slide up to 8 cm.



S2S SYSTEM, that allows a natural and smooth movement by a silent way.



Activation of lateral movement in a simple way through an actuator located in the right arm support, easily accessible. Possibility of blocking the rotational movement of the seat, but keeping active the longitudinal synchronized movement.

FLOOR SUPPORT

Three options for floor support:



Double-wheel (standard)



Soft double-wheel



Double-wheel chrome

UPHOLSTERY

Mesh option

- Backrest: breathable 3D mesh with any finished of the fabrics of the Forma 5.
- Seat: breathable 3D mesh, any other fabric or leather.
- Headrest: breathable 3D with the finished of the backrest fabric.

Upholstered mesh option

- Backrest: upholstered over 3D black mesh with any finished of the fabrics of the Forma 5 (groups 1 to 6).
- Seat: the same fabric of the backrest (except 3D mesh).
- Headrest: the same fabric of the seat.

PACKING

The chair goes disassembled in a box. Its assembly system is simple, fast and intuitive.



THE 3.60 CONCEPT

3.60 is a chair conceived from the **study of ergonomics and the kinematics of the human body** and, in particular, 3.60 is conceived for postural development in the work office throughout the day. Thus, positions evolve due to the way now we work. It has been a perennial front position, with a stack of papers aside, to a more dynamic job where user interacts with other tools and devices that make the movement more natural to use.

Keep in mind that the body is not prepared to support the sitting position so long and often they require work routines in which inevitably ends up suffering lumbar kyphosis. 3.60 design has followed these guidelines. In order to provide a benefit to health from a “static comfort” at work, It has sought the dynamism, natural postures and freedom of movement in the human body that ultimately results a healthy and lasting wellness.

THE 3.60 SYSTEM

Within the workplace, but also in the therapeutic environment, in recent years there has been much research on the benefits of using a dynamic surface for seating.



The paradigm of this type of surface is the pilates ball that is characterized by new attributes for the user such as:

- **Improve the physical condition of back and core** with support in the form of unstable equilibrium that produces a slight increase in muscle activity.
- Its spherical shape forces the user to **open legs and keep back up straight** leading to a improvement in the position of the lumbar curve.
- It has no **back support and arms** resulting in an increased load on the buttocks and thighs.



The 3.60 movement shares with this ball the unstable equilibrium produced by the release of side to side dynamic balancing system allowing oscillate freely with an effect of the whole spherical seat, backrest and armrest. It also provides other elements to consider:

- It has a **floor support** through a 5-spoke base, recommended in all studies of office chairs. This support eliminates the risk of falling and provides security and stability to the user.
- The support that provide backrest, lumbar support (height and asymmetric depth) and 4D adjustable arms (height, width, depth and rotation) is a comfortable touch which together with the motion 3.60 system **promotes a wide range of healthy posture.**

THE BENEFITS OF USING 3.60

The use of a chair as 3.60 daily and particularly with the 3.60 Motion mechanism that combines longitudinal and lateral movements **provides high improvements and benefits to health** related to the use of swivel chairs traditionally used in the office.

In particular it is certified (see biomechanical study chair 3.60) that the dynamic balancing system provides improved up to 12.9% on the comfort level of users in relation to the comfort of contact and lumbar spinal deformation in complex positions of sitting.

IMPROVED HEALTH AND FITNESS



It affects the flexibility and range of lumbar motion and muscle strength, stability, balance and the position of the core.

The side to side movement is unstable, which results in **increased muscle activity of the core** which are increased by the user thanks to the microoscillation in search of balance. Several studies have been shown that the seat on this type of dynamic surfaces influences positively in flexibility and lumbar mobility, stability and abdominal strength, balance and lumbar kyphosis correction.

3.60 helps the physical condition providing the same mechanisms of unstable equilibrium than the pilates balls.

3.60 DESCRIPTION SYSTEM

IMPROVEMENT UP TO 15.4% OF CONTACT COMFORT

The biomechanical study of the 3.60 chair has certified that the dynamic balancing system walks the user through their movements and this always keep perpendicular to body. It improves epithelial pressures and prevents ischemia tingling.

7.8% IMPROVEMENT OF POSTURAL COMFORT OF THE BACK

The seatrest and backrest of the chair accompany the user while seeking balance with the 3.60 Motion 3.60 mechanism. These bearing surfaces are balanced in a new position which improves the user's back and reduce up to 3° degrees the deformation of the lumbar back. This improvement reduces postural lumbar kyphosis.

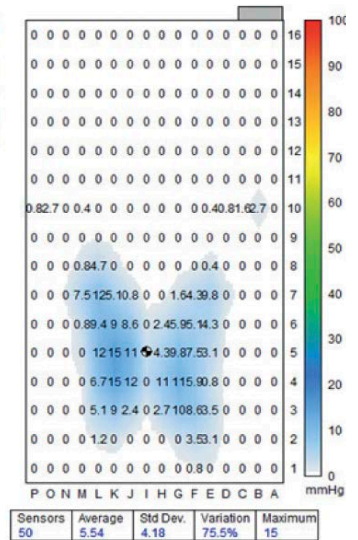
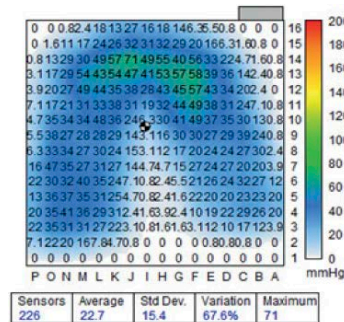


THERMAL COMFORT IMPROVED

When the user changes posture, he evacuates heat / convection ventilation, leading to a decrease in temperature areas in contact with the seat (buttocks, lower extremities and back). Furthermore, the seat reduces perspiration (evacuation of moisture from the skin) to produce a cooling effect that ultimately prevents sweating in these areas, so it improves thermal comfort.

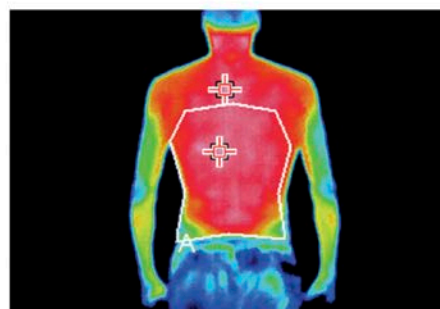
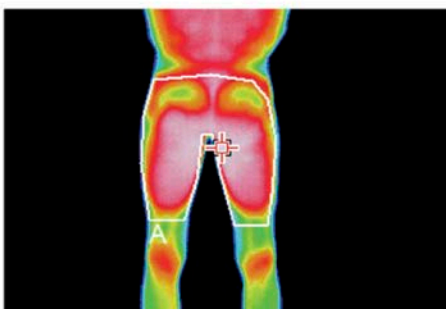
STUDY OF CONTACT COMFORT

	Asiento	Respaldo
P. Med. (mmHg)	22,7	5,5
P. Máx. (mmHg)	71,0	15,0
Desviación Est.	15,4	4,2



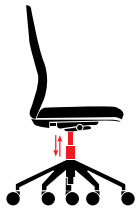
STUDY OF THERMAL COMFORT

Asiento		t (min)	Respaldo	
T ^{med} (°C)	T ^{max} (°C)		T ^{med} (°C)	T ^{max} (°C)
31,2	35,3	20	31,1	32,9
33,1	35,7	40	32,2	33,7
33,8	36,4	60	33,8	35,4
33,8	36,4	Límite	33,8	35,4



ERGONOMICS

TAKING CARE OF OUR BODY DOES NOT ONLY DEPEND ON GOOD NUTRITIONAL HABITS AND SPORT. THERE ARE OTHER FACTORS THAT CAN INFLUENCE HEALTH, LIKE A CORRECT POSITION AT THE WORKSTATION. FOR THIS REASON, TO KEEP THE BODY IN A GOOD SHAPE AND FREE OF PHYSICAL DISORDERS IT IS NECESSARY TO HAVE GOOD FURNITURE AND KNOW HOW TO USE IT CORRECTLY.



CHAIR WITH HEIGHT ADJUSTMENT

Chairs should have an option to lift or lower the seat's height, through a mechanical or a pneumatic system. The position will be the correct one, when the feet rest firmly on the floor and the thighs remain in a horizontal position.

The mechanism should be easily accessible from a seating position.



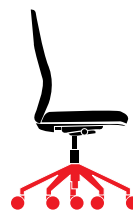
SEAT AND BACKREST LEANING

The chair should include a mechanism to control the seat leaning movement and keep a well-balanced position at work. The synchro system is the most extended one, but there are other versions which are more advanced, like the Atom synchro. This last one is a Forma 5 exclusive and it self-adjusts to the user's weight



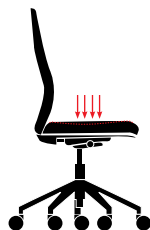
LUMBAR ADJUSTMENT

Many chairs are designed with an adjustable back support. It is desirable that the backrest may be regulated allowing either free movement or to block the mechanism as desired. Many chairs also include a mechanism to adjust the curvature of the back of the chair providing better comfort and lumbar support.



5 BRANCHES BASE

To facilitate a movement with less effort and to provide stability and firmness, the base should have 5 support points for the casters.



SEAT CONSISTENCY

We spend a long time on the seat, so it should provide firmness and adapt to the user's features. Both the high density foam and the injected foam are very resistant, durable and comfortable.



ADJUSTABLE ARMS

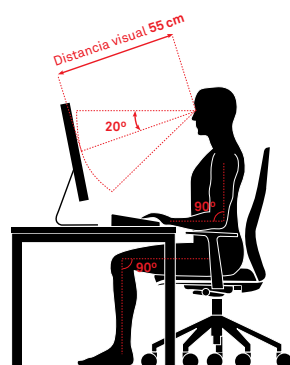
The user can enjoy several versions of the arm; fixed, 1D, 2D, 3D and 4D. If arm rests are utilised they can help relieve pressure on the lower spine.



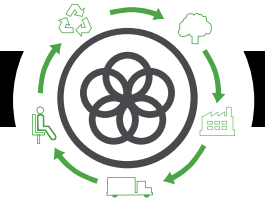
UPHOLSTERY

The upholstery should be chosen depending on aesthetic, location and the environmental conditions under which the chair will be subjected to.

CONSIDERING THE ABOVE MENTIONED FEATURES, HERE ARE SOME COMMENTS ABOUT THE POSITION TO BE ADOPTED WHILE SEATING AT WORK



- 1 The distance between the screen and the eyes should be at least 55 centimeters. The screen should also be located in front of the user and not on one side.
- 2 The upper side of the screen should be located at eye level.
- 3 Thighs should be horizontal. Feet should rest firmly on the floor, having enough space below the desk.
- 4 Breaks should be done often for muscle stretching and moving. Users must change their position every once in a while.
- 5 Eyes should be rested often, so to avoid eyestrain. For example, focusing on different places and distant objects.



Life Cycle Analysis

3.60 Program



RAW MATERIALS		
Raw Material	Kg	%
Steel	4,93 Kg	25,4%
Polyamide	7,35 Kg	37,9%
Aluminium	3,94 Kg	20,4%
Polypropylene	1,13 Kg	5,8 %
Upholstered/ Filling material	2,03 Kg	10,5 %

% Recycled materials= 26%
 % Recyclable materials= 63,3%

Ecodesign

Results reached during the life cycle stages



MATERIALS

Steel
 15%-99% recycled material.

Wood
 70% of the wood material is recycled, has PEFC/FSC and complies within the E1 standard.

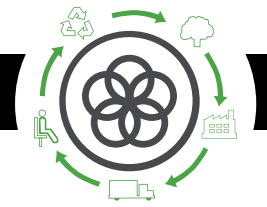
Plastic
 30%-40% recycled material.

Staff material
 Without HCFC and certified by Okotext.

Upholsteries
 Without COV emissions and certified by Okotext.

Paintings
 Podwer painting without COV emissions

Packings
 100% recyclable with inks with no solvents.



PRODUCTION

Raw materials use optimization

Board, upholstery and steel tubes cut.

Renewable energies use

reducing the CO2 emissions. (Photovoltaic pannels)

Energy saving measures

in all production process

COV global emission reduction

of the production processes by 70%.

Podwer painting

ecovery of 93% of the non deposited painting

Glue removal from the upholstery

The facilities have an internal sewage for liquid waste.

Green points

at the factory

100% waste recycling

at production process ans dangerous waste special treatment.



TRANSPORT

Cardboard use opmitization

of the packings

Cardboard and packing materials use reduction

Flat packings and small bulks to optimize the space.

Solid waste compacter

which reduces transport and emissions.

Light volumes and weights

Transport fleet renewal

reducing by 28% the fuel consumption.

Suppliers area reduction

Local market power and less pollution at transport.



USE

Easy maintenance and cleaning

without solvents.

Forma 5 guarantee

The highest quality

for materials to provide a 10 year average life of the product.

Useful life optimization

of the product due to a standarized and modular design.

The boards

with no E1 particle emission.



END LIFE

Easy unpacking

for the recyclability or compound reuse.

Piece standarization

for the use.

Recycled materials used for products (% recyclability):

Wood is 100% recyclable.

Steel is 100% recyclable.

Aluminium is 100% recycable.

Plastics are from 70 to 100% recyclable.

With no air or water pollution

while removing waste.

Returnable, recyclable and reusable packing

Product recyclability 94%

CHAIR MAINTENANCE AND CLEANING GUIDE

LINES FOR A CORRECT CHAIR CLEANING AND MAINTENANCE, CONSIDERING THE DIFFERENT MATERIALS:

FABRICS

- 1 Vacuum often.
- 2 Rub the dirty spot with a wet cloth with PH neutral soap.
Test first on a hidden spot.
- 3 Dry foam for carpets can be alternatively used.

PLASTIC PIECES

Rub the dirty spots with a wet cloth with PH neutral soap.

Do not use abrasive products in any case.

METAL PIECES

- 1 Rub the dirty spots with a wet cloth with PH neutral soap.
- 2 Polished aluminium pieces can have their polish back by covering and rubbing them with a dry cotton cloth.

LEGAL TERMS

CERTIFICATES

Forma 5 certifies that the 3.60 program has passed all tests provided by our intern Quality Department, as well as the Technological Research Center (TECNALIA) with "satisfactory" results:

UNE-EN 1335-1-2001: Office furniture. Task chairs for offices. Part 1: Dimensions. Defining the dimensions.

UNE-EN 1335-2-2009: Office furniture. Task chairs for offices. Part 2: Security requirements.

UNE-EN 1335-3-2009: Office furniture. Task chairs for offices. Part 3: Security testing methods.

Developped by ITO DESIGN