Welcome to Nord Engineering!

Get ready for a journey where technology, innovation and sustainability create solutions that look to the future.

From the individual mechanical components to the aesthetic and design parts, it is in this space that the Nord Engineering container range begins to take shape.

Surface, basement, semi-basement containers: every single component is refined and optimised to ensure the highest quality standard for the product.

Because what may look like a simple container from the outside, actually holds infinite technology.

The first stop on the tour is the automated bending department.
This is where the individual pieces of sheet metal arrive, which have already been cut in the hall opposite using state-of-the-art punching systems and laser technology. For its operation, laser cutting technology requires nitrogen, which is produced in-house. A choice that looks at sustainability as it allows us, on the one hand, to produce only the indispensable material for processing, avoiding waste and, on the other, to reduce the continuous transport of heavy vehicles for refilling.

The decision to concentrate cutting and further processing in a single production area gives Nord Engineering a greater guarantee of efficiency,
and radically reduces transport emissions.

All Nord Engineering containers are made of steel, now considered one of the most sustainable materials in the world because it is 100% recyclable countless times.

But there's more. In fact, this is where technology meets sustainability.

You only have to take a look around to see that the entire hall is equipped with high-tech robotic equipment!

Industrial automation and solutions implemented over the years have reduced the energy currently required for the production of Nord Engineering containers by 30%.

Energy is generated partly in a green way, through solar panels that entirely cover this shed.

Nord Engineering has also recently completely replaced the traditional lighting with LED lights, which further reduces energy consumption.

Station 1 - Small parts bending cell

In this first bending cabin, the internal components of the containers are processed.

The now processed component is part of the mechanical system that allows the bottom of the container to be opened and thus emptied correctly.

The whole process is automated.
The two robots operate synchronously according to a precise bending programme, which is selected by the operator via a console.

The part being processed is prepared inside special boxes, which are then placed in the processing cell.

The first robot picks up the part and places it on the exchange table.
Using a camera, the system recognises the contours and orientation.

This is a crucial step because it ensures that the part is always positioned correctly.

The second robot, equipped with a gripper, handles the bending process, which is carried out with centesimal precision.

Once finished, it will deposit the piece on the belt, or inside a box.

The component is now ready to be sent for assembly
or for further processing, such as welding.

Station 2 - Panelling and calendering station

We are now standing in front of the bending cell used to process the City Next and New City containers.
This installation has also been designed with sustainability in mind.

In fact, the cell is made up of three different pieces of equipment, each in charge of a specific processing step: a panelling machine, a calender and an anthropomorphic robotic arm.

A set-up that allows multiple work steps to be completed in a single cycle,
reducing consumption and production time.

The integration of the robotic arm was crucial to the functioning of this cell.

The sheet metal is picked up by the robot and processed by the panelling machine.
The bent part is moved by the robotic arm under the calender for the rolling phase.
Finally, it is deposited and made available for further processing.

This is the technology that allows City Next to have the distinctive smooth shapes we are fami-

liar with, as well as a design that is pleasing to the eye.

Right now, we are observing the bending of one of the components of the New City container inlet.

This is a piece of the sliding door, i.e. the door that rotates upwards and allows the user to deposit waste.

Station 3 - Large parts bending cell

The next stop on our journey is to discover the bending process for medium and large New City components.

In particular, the processing we are looking at concerns the walls of the container.

As in the rest of the department, automation here is completely pre-programmed.

The robot picks up the part from the gripping station. Using a camera, it identifies the edges of the part and orients it so that it reaches the machine correctly.

The operator monitors the workstation: they carry out an initial quality control to check the conformity of the part, prepare the unloads and start production.
They will only intervene manually when the batch is finished, and the cycle will stop automatically.

If you look around you will notice numerous yellow totems, strategically placed in the various departments. These devices enable a "SMART" order and production management system. Through this technology, operators can acquire production orders, production deposits, consult technical drawings, 3D files and images useful for assembly and final assembly workers.

All of this is absolutely digital... Saving over 90% of printed paper!

Station 4 – Bending and calendering station

In this cabin, the process of machining some of the aesthetic parts mounted around the New City's delivery door takes place.
In addition to bending, this part also requires a calendering stage, and therefore a longer production cycle.

In order to optimise time, the cell has been equipped with two anthropomorphic robots: one in charge of the actual bending, the other helping with this task.

The two robots work complementary to each other.
The first robot places the part on an exchange table, where it will be picked up by the second

robot for bending. Once finished, the part will be retrieved by the first robot and put on pallets. The cycle can now begin again!

A calender has been added to the installation - necessary for rounding the sheets.
This solution made it possible to automate the entire process, which would otherwise require manual handling, complex logistics and longer lead times.

Station 5 - Bending cell for one of the New City sides

We are now in the last robotic station of the bending department.

At this location, one of the steel walls of the New City is being processed.

The movements we see, similar to a fascinating choreography, are determined by a previously set bending programme.

The piece of sheet metal is taken from the loading station, lifted, weighed and then placed under the machine.
Here, it is subjected to a cycle involving several folds, all carried out in a predefined order. First on one side, then on the other side.

The stations are equipped with sensors. The robotic arm is thus able to determine whether the part is accurately positioned before starting the processing.

In this way the margin of error is minimised, production delays are avoided and material wastage is reduced.

Station 6 - City Next container welding line

We are now heading over to the area where the container welding processes take place.

This processing has also evolved over the years, becoming almost completely automated.

The technological solutions we are about to discover now make it possible to guarantee quality and continuity in production.

Thanks to welding automation, the most strenuous work is done by the robot,
and the operator can concentrate on technical tasks and quality control.
The installation we are looking at is designed to produce the City Next, an 'advanced' container with a refined design and no visible welds.

The operator picks up the part using a manipulator that sets the weight to zero.
It is the latter that bears the weight of the component, making it easy and precise to position over the welding template.

At this point, the operator can confirm the successful execution of the first step and start the next steps. The process is repeated until the container is assembled and ready for welding.

As we can see, the robotic arm simultaneously serves two parallel workstations, which work in alternating times.

In this way, while welding takes place at one of the stations, the next container can be prepared at the other.

Welding is carried out by an anthropomorphic robot, equipped with a welding torch programmed according to precise parameters.

Quality is guaranteed by a final check by the operator, who determines whether the welded container can move on to the next processing step.

We are now moving on to the next stage, again in the welding department.

It is interesting to note that even the gas mixtures necessary for the operation of the welding systems - manual and robotic - are produced in-house at Nord Engineering. Internal control over the properties of the gas used is essential to achieve the highest levels of quality and safety in the process.

Station 7 - New City inlet welding station

What we see is a rotary table welding machine.
The processed part is a mechanical component that allows the opening of the delivery inlet of the New City container.

The operator mounts all the components of the part onto a welding template which is then brought to the rear of the workstation.

Here, a robot completes the welding of the part, which is then placed in front of the operator for a final quality check.

Before assembly, these components undergo further processing, namely galvanisation.

This is an important treatment because it makes the material more resistant and protects it from deterioration, making it more durable.

Station 8 - Welding robot

It may sound strange, but the mechanism that allows the opening of the delivery inlet is one of the most complex aspects of a container.

Especially when containers are designed to implement electronic recognition systems or mechanical controlled delivery systems.

This is the case with Nord Engineering containers.

All New City containers have two of the pieces we see now in operation.

These are small components that are placed where the handle is hinged, allowing users to place their waste in the container.

Even here, the welding process is automated. The operator's task is to correctly position the part, which will then be welded in a special location by a robot.

Station 9 - Underground welding station

This system is designed for welding the Underground components.
An underground container with an elegant and distinctive look, capable of becoming real urban furniture.

What we are looking at now is the welding process of the container shell, a key element both functionally and aesthetically.

The processing of this component must therefore be very precise.

The installation revolves around a rotary table robot that operates a special welding process known as 'A TIG', which stands for Tungsten Inert Gas.

The welding torch is equipped with a tungsten electrode, which is able to melt the materials and thus join the sheet metal edges.

The final welding result is thus extremely clean and pleasing to the eye.

Station 10 - Last New City welding stage

We have reached the final stage of our journey.
In this final location we have the chance to see the New City take shape.
Modular containers now found all over the world, functional, resistant and uniquely designed.
This welding system is designed to adapt to the volume of the container, which is available in several sizes.

The New City components are brought together and then placed on the welding template. The robot can now start welding, covered by a special hood whose function is to suck in and purify the fumes produced by the process.

After being welded, the component is picked up and positioned for precise quality control or finishing.

The container is now ready to continue with the next steps and to be customised according to the needs of the customer.

This concludes our journey into the bending and welding processes.

Thank you for sharing with us this exciting discovery of the green technology behind Nord Engineering's containers.

Efficient and sustainable solutions, now used by millions of people in more than 20 countries worldwide.