INTELLIGENT DEVICES FOR HANDLING

INDEVA
INTELLIGENT DEVICES FOR HANDLING
A worldwide network at your service

A reliable Company with a long history

The ant is a tireless and intelligent worker. It is able to lift and carry with ease loads much larger than itself. This simple analogy represents Scaglia Indeva’s mission to design and produce industrial manipulators that are compact yet strong, simple yet intelligent, and offer improved performance whilst reducing the risk of injury and improving workforce wellbeing.

A world-leading manufacturing company in the field of material handling and intra-logistics.

Since 1838 this family-owned company has been at the forefront of manufacturing and is now an important industrial group with diverse business interests worldwide. Since 1970 Scaglia Indeva has been at the leading edge of design and manufacture of innovative, ergonomically designed industrial manipulators that are used by major global manufacturers in varied applications throughout the world.

World-wide, Scaglia Indeva works with many blue-chip manufacturers across most sectors, including the leading automotive companies, where innovative and reliable material handling solutions are required. Our headquarters are in Val Brembilla - Italy. Our key locations offer a central sales and support operation, which provides excellent engineering services and supply of spare parts.
References

ABB
AIRBUS
AKZO FIBERS
APRILIA
ARCELOR MITTAL
AUDI
B.P. CHEMICALS
BANK OF ENGLAND
BANQUE DE FRANCE
BARILLA
BEKAERT
BENTLER
BENTLEY
BMW
BORG WARNER
BOSCH
BREMBO
BRIDGESTONE FIRESTONE
BRITISH AMERICAN TOBACCO
CATERPILLAR
CHRYSLER
CIBA GEIGY
CITROËN
COCA COLA
COMAU
CONTINENTAL
CPM-DÜRR GROUP
DAIKIN

DAIMLER
DENSO
DUCATI
DUNLOP
ELECTROLUX
ENICHEM
FAURECIA
FCA
FERRARI
FERRERO
FIAT
FINMECCANICA
FORD
FRESENIUS
GE AUTOMATION
GE AVIATION

GENERAL ELECTRIC
GENERAL MOTORS
GLAXO
GOODYEAR
ITALTEL
IVECO
JAGUAR LAND ROVER
JOHN DEERE
JOHNSON & JOHNSON
JSB
KELLOGGS
KIMBERLY CLARK
KRAFT GENERAL FOODS
KLKA
LAMBORGHINI
LEAR
LEONARDO HELICOPTERS
MAGNA WERKZEUGTECHNIK
MAHLE
MAN ROLAND DRUCKMASCHINEN
MERCEDES BENZ
MICHELIN
MOET & CHANDON
NESTLE'
NISSAN
OPEL
PEPSICO
PERFETTI

PEUGEOT
PHILIP MORRIS
PIAGGIO
PIRELLI
PPG
PROCTER & GAMBLE
PSA
RENAULT
REYNOLDS TOBACCO
ROLLS-ROYCE
SAAB
SAINT GOBAIN
SCANIA
SCHNEIDER ELECTRIC
SIEMENS
STILL
TENARIS
THYSSEN
TOYOTA
UNIFI
UNIROYAL
VALEO
VOLKSWAGEN
VOLVO
WHIRLPOOL
ZF
The Liftronic® Series, known as INDEVA® is a new generation of advanced industrial manipulators featuring electronic control. They represent the evolution from traditional manipulators and are part of the innovative product group of load handling devices known as Intelligent Assist Devices.

This series is equipped with an advanced electronic control system which overcomes the control limitations of pneumatic manipulators. They provide truly ergonomic and effortless handling.

The INDEVA® Liftronic® series offers numerous important and unique advantages over a traditional pneumatic manipulator, especially the auto-weight sense and auto balancing features:

- **Higher productivity:** using an INDEVA®, output can be maintained throughout a full shift giving increased productivity and operator wellbeing.

- **Better ergonomics:** a fingertip-sensitive handle allows for the lifting or lowering of heavy loads by simply touching the handle with a finger. Very little human effort is required during any part of the lift, place and lower process.

- **Higher precision:** with considerably more speed and precision than a traditional pneumatic manipulator, an INDEVA® allows for unsurpassed precision, where the operator will intuitively work at the pace best suited to the task. The operator has exceptional control with the lightest of touch needed.

- **User friendly:** the auto weight sensing and auto balancing functions operate in real time, so no need to preset the load or to keep buttons depressed. The Float Mode option allows the operator to control movement directly from the load.

- **Safety:** state-of-the-art safety features prevent movement unless an operator is present and in control. Should a power failure occur, the motor is held with a mechanical lock and the load cannot be released until power is restored, or the full weight of the load is supported.

- **Wireless connectivity for industry 4.0:** an INDEVA® can exchange data with the Customer IT System through the Company Network and allows visualisation of manipulator activity by means of interface software.

- **Remote trouble shooting:** an INDEVA® can be connected via Wi-Fi to App Indeva, so that machine data can be transferred to a remote tablet or smartphone in real time. This can assist fault diagnosis, so significantly reducing call-out charges and operator downtime.

- **Environment friendly:** low carbon footprint thanks to efficient and low energy consumption.

In applications which require speed of handling, smooth movement and precise load placement, the INDEVA-Liftronic® Series provide a perfect solution.

A recent case study by the Engineering Faculty of the Brescia University and published by the International Journal of Industrial Ergonomics, together with a comparison study carried out by the University of Milan proved how the use of an INDEVA® satisfies current industry demand for increased productivity combined with improved ergonomics and safety.
Air and electrical connections are via a swivel on top of the tool head. This prevents the lift rope, power cable and air pipe becoming tangled if the process has continuous rotation in the same direction.

Comprehensive auto-diagnostic software with clearly displayed error messages. It allows fingertip control providing immediate response to the operator’s intention for up-down movements.

An INDEVA® moves at the pace best suited to the operator and application. This allows natural movement at all times, especially where precise placement is required. It is also possible to limit the lift and lower speed via the control panel.

The system allows very slow and controlled movements, so that a load can be precisely placed with no impact, so reducing the risk of damage.

User friendly and intuitive interface for the visualisation and setting of various operational parameters.

Electronic control allows for additional safety functions that cannot be incorporated in pneumatic manipulators.

Designed to accept controls for your own gripping tools.

The maximum permitted lift can be preset to prevent system overload.

This control mode allows the operator to manipulate the load without direct contact with the controls.
Electronic control
The Liftronic® Series Intelligent Devices for Handling, known as INDEVA®, represent true evolution of traditional industrial manipulators.

State-of-the-art standardised components, combined with cutting-edge technology, hardware and optimised software provide a high degree of safety and reliability.

Pneumatic control
PN series manipulators are traditional industrial manipulators featuring pneumatic control and drive.

All manipulators in the PN Series can be designed in accordance with ATEX regulations as per EU Directives 2014/34 regarding applications in controlled environments with danger of explosion, classified classes 1 and 2 (Gas) (only for PN Flex) and 21 and 22 – Dust (for all PN series models).
Rope

Rigid arm

**Liftronic® Easy**
- Capacity up to 320kg.
- Suitable for rapid and repetitive work cycles with simple gripping tools.

**Liftronic® Pro**
- Capacity up to 320kg.
- Suitable for complex work cycles with bespoke gripping systems.

**Liftronic® Air**
- Capacity up to 310kg for standard models and 450 kg for special applications.
- Suitable for handling offset loads with speed and precision.

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### LOAD PLACEMENT

**Lower**: a comparative study showed that the CO\(_2\) output and total running cost of an INDEVA\(^\circ\) is around only 12.5% that of a pneumatic manipulator.

**Higher**: a comparative study showed that the CO\(_2\) output and total running cost of a pneumatic manipulator is around 8 times that of an INDEVA\(^\circ\).

### CARBON FOOTPRINT & TOTAL COST OF OPERATION

Some resistance is felt as air enters and leaves the cylinders so restricting natural speed of movement.

Light and compact structure allows great visibility and ease of maneuverability.

System requires heavier and bulkier structure so reducing visibility and maneuverability.

### MANEUVERABILITY

Comprehensive auto - diagnostic software and remote trouble shooting with App-Indeva or INDEVA\(^\circ\) Gateway.

Check and diagnosis by expert technician attending site. Remote trouble shooting is not available.

Restricted options to identify faults at the machine.

### DIAGNOSTIC & REMOTE TROUBLE SHOOTING

Simple and efficient: by means of display.

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### MAN / MACHINE INTERFACE

**Liftronic® Easy**
- Capacity up to 320kg.
- Suitable for rapid and repetitive work cycles with simple gripping tools.

**Liftronic® Pro**
- Capacity up to 320kg.
- Suitable for complex work cycles with bespoke gripping systems.

**Liftronic® Air**
- Capacity up to 310kg for standard models and 450 kg for special applications.
- Suitable for handling offset loads with speed and precision.

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### PN Flex

- Capacity up to 160kg.

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### PN Ergo

- Capacity up to 310kg for standard models and 450 kg for special applications.
- Suitable for handling offset loads.

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### PN Compatto

- Capacity up to 100kg.
- Suitable for handling offset loads in a small work area.

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### PN Zip

- Capacity up to 80kg.
- Very compact structure suitable when a short vertical stroke is required.
Liftronic® Easy is an INDEVA® - Intelligent Device for Handling. Suitable for rapid and repetitive work cycles with simple gripping tools.

**Main features**

- Auto-weight sense and auto-balancing
- Can be integrated with App-Indeva and INDEVA® Gateway
- Unparalleled safety
- Ergonomic design
- Simple gripping devices
- Compact and light
- Fast, responsive and precise
- Low carbon footprint

**INDEVA® Gripping tools**

**TECHNICAL DATA**

- **Max. gross capacity:** from 80 to 320kg (weight of lifting tool included)
- **Power supply:** 110/230 V-AC - 50/60 Hz
- **Power consumption:** max 700 VA
- **Enclosure protection:** 54 IP
- **Vertical stroke:** up to 2.80m
INDEVA® Modulo
Make your own gripping tool

INDEVA® Modulo is a standard component range for assembling a gripping tool which is to be attached to a Liftronic® Easy tool head. It is easy for customers to design the tool to best suit their needs and then purchase the necessary parts. These standardised modules have been proven over many years and are a key part of our continuous improvement and development program.

I-Connect
Standard I.O. Interface module: you can easily implement safety functions for your own custom gripping tool.

Gripping Modules
These chucks can be fitted with jaws according to your specific requirements.

Accessories
Air and electric connections via a continuous swivel joint at the toolhead to keep cables from tangling.

Machine/Operator Interfaces
Remote controls
Remote touch sensitive handle available in different lengths
Simple remote handle frame

Remote control handles complete with centre of gravity adjustment
Liftronic Pro is an INDEVA®- Intelligent Device for Handling. It is used for complex applications with bespoke gripping systems.

Main features
- Auto-weight sense and auto-balancing
- Can be integrated with App-Indeva and INDEVA® Gateway
- Unparalleled safety
- Ergonomic design
- Bespoke gripping devices
- Compact and light
- Fast, responsive and precise
- Low carbon footprint

**INDEVA® Gripping tools**

**TECHNICAL DATA**
- **Max. gross capacity:** from 80 to 320kg (weight of lifting tool included)
- **Power supply:** 110/230 V-AC - 50/60 Hz
- **Power consumption:** max 700 VA
- **Vertical stroke:** up to 2.80m
Industry 4.0 ready

**App-Indeva**

is a virtual INDEVA® service engineer always at your site providing machine data capture and analysis, diagnostic and real-time trouble shooting whenever it is needed.

**App-Indeva**, is based on an in-house designed App suitable for Android smartphone or tablet that can be connected via Wi-Fi to the lift assistor, features Real-Time Capability to collect and analyse machine data and deliver the results to the operator, maintenance technician or a remote Indeva Service Centre.

If you are using an INDEVA® manipulator equipped with App-Indeva you will increase your machine availability time through:

- reduced time for diagnosis and trouble shooting by your staff
- reduced time for communication with an INDEVA® service centre
- reduced time for malfunction repair by INDEVA® staff

**INDEVA® Gateway**

allows real-time data exchange with the Customer IT System through the Company Wi-Fi network and allows visualisation of production data by means of an interface software.

Options for all Liftronic® Series units
Liftronic® Pro & Easy
Versions

Articulated Arms

2 JOINT ARMS
Standard arms featuring 2 joint articulation.

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>R1 (m)</th>
<th>2.5</th>
<th>3</th>
<th>3.5</th>
<th>4</th>
<th>4.5</th>
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</thead>
<tbody>
<tr>
<td>L= Light</td>
<td>LC kg</td>
<td>80</td>
<td>60</td>
<td>40</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>R2 (mm)</td>
<td>450</td>
<td>550</td>
<td>650</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>H= Heavy</td>
<td>LC kg</td>
<td>620</td>
<td>760</td>
<td>880</td>
<td>105</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>R2 (mm)</td>
<td>630</td>
<td>760</td>
<td>880</td>
<td>1020</td>
<td>1140</td>
</tr>
<tr>
<td>X= Extra</td>
<td>LC kg</td>
<td>-</td>
<td>320</td>
<td>320</td>
<td>280</td>
<td>220</td>
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<td></td>
<td>R2 (mm)</td>
<td>-</td>
<td>860</td>
<td>1005</td>
<td>1150</td>
<td>1300</td>
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</table>

3 JOINT ARMS
The INDEVA® Orbit Arm3 is a 3 joint arm available on request for both column and overhead versions with capacities up to 145 kg (including tooling). The 3 joint Arm provides increased coverage within the radius of the arm and offers the operator smooth, controllable movement across the full radius with the added benefit of quick sideways movement using the forearm only.

<table>
<thead>
<tr>
<th>STRUCTURE</th>
<th>R1 (m)</th>
<th>2.75</th>
<th>3.25</th>
<th>3.75</th>
<th>4.25</th>
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<td>L= Light</td>
<td>LC kg</td>
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</tr>
<tr>
<td></td>
<td>R2 (mm)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>H= Heavy</td>
<td>LC kg</td>
<td>145</td>
<td>105</td>
<td>80</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>R2 (mm)</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
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<tr>
<td>X= Extra</td>
<td>LC kg</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td></td>
<td>R2 (mm)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Liftruck

Order picker

Fixed to ceiling

Transpallet

Underhung

Liftronic® Series

Linear

Underhung

Fixed to floor/base

Overhead rail

Bridge crane fixed to ceiling

Bridge crane column mounted

Monorail fixed to ceiling
Liftronic® Air
Intelligent Device for Handling

Pneumatic drive - electronic control

The world’s first manipulator with the strength of a traditional pneumatic manipulator and the intelligence of an INDEVA®.

It offers electronically controlled air and load management, delivering precise, energy efficient handling and auto weight sensing, removing the responsibility from the operator to make adjustments for different weights by utilising our touch sensitive handle technology.

It is suitable for handling offset and/or very heavy loads with minimum effort.

Liftronic® Air units can be supplied either column, ceiling or overhead rail mounted.

Compared to traditional pneumatically controlled manipulators, Liftronic® Air offers important advantages which help improve safety, ergonomics, productivity and the Environment.

Main features

- Efficient use and delivery of air
- Auto-weight sense and auto-balancing
- Unparalleled safety
- Fast, responsive and precise
- Low carbon footprint

<table>
<thead>
<tr>
<th>STANDARD MODELS</th>
<th>LA80</th>
<th>LA160</th>
<th>LA250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross capacity (including lifting tool) kg</td>
<td>80</td>
<td>110*</td>
<td>160</td>
</tr>
<tr>
<td>Vertical stroke mm</td>
<td>1752</td>
<td>1752</td>
<td>1716</td>
</tr>
<tr>
<td>Arm length mm</td>
<td>2700</td>
<td>2700</td>
<td>2700</td>
</tr>
<tr>
<td>Offset handling: max. distance from the lifting tool Z axis mm</td>
<td>300</td>
<td>-</td>
<td>300</td>
</tr>
<tr>
<td>Uncovered area mm</td>
<td>907</td>
<td>907</td>
<td>935</td>
</tr>
<tr>
<td>Rotation around column axis degrees</td>
<td></td>
<td>360°</td>
<td></td>
</tr>
<tr>
<td>Rotation around tool axis degrees</td>
<td></td>
<td>550°</td>
<td></td>
</tr>
<tr>
<td>Air pressure min. bar</td>
<td></td>
<td></td>
<td>6.5</td>
</tr>
<tr>
<td>Power supply V-AC Hz</td>
<td></td>
<td></td>
<td>115/230</td>
</tr>
<tr>
<td>Power consumption max VA</td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>Enclosure protection IP</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*With counterweights and reinforcement for arm.
PN Series are traditional industrial manipulators featuring **full pneumatic operation**.

**It is suitable for handling offset and/or very heavy loads.**

PN units can be supplied either column, ceiling or overhead rail mounted.

### Main features

- **Reliable**
  Continuous product development using standard modules and components for improved safety and efficiency.

- **Safe**
  Equipped with safety devices that maintain the grip on the load, even in the event of a total air loss. It is not possible to release the load when it is fully supported by the machine. When the control handle is released, a full set of brakes lock the machine and prevent further movement.

- **Versatile**
  It can be equipped with a wide range of bespoke tools operated pneumatically by grip or vacuum. Simple mechanical tools can also be used.

<table>
<thead>
<tr>
<th>STANDARD MODELS</th>
<th>PN ERGO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PN80</td>
</tr>
<tr>
<td>Gross capacity (including lifting tool) kg</td>
<td>80</td>
</tr>
<tr>
<td>Vertical stroke mm</td>
<td>1752</td>
</tr>
<tr>
<td>Arm length mm</td>
<td>2700</td>
</tr>
<tr>
<td>Offset handling: max. distance from the lifting tool Z axis mm</td>
<td>300</td>
</tr>
<tr>
<td>Uncovered area mm</td>
<td>907</td>
</tr>
<tr>
<td>Rotation around column axis degrees</td>
<td>continuous</td>
</tr>
<tr>
<td>Rotation around tool axis degrees</td>
<td>standard: 550</td>
</tr>
<tr>
<td>Air pressure min. bar</td>
<td>6.5</td>
</tr>
</tbody>
</table>

*With counterweights and reinforcement for arm.*
Industry fields

- AGRICULTURE
- AEROSPACE
- AUTOMOTIVE
- BATHROOM AND TOILETWARE
- CERAMIC
- CHEMICALS/PHARMACEUTICALS
- ELECTRO-MECHANICAL
- ELECTRONICS
- FOOD/DRINK/TOBACCO
- FOUNDRY
- FURNITURE
- GLASS
- HOUSEHOLD ELECTRIC APPLIANCES
- MECHANICS
- METAL WIRES
- MOTORCYCLES
- PAPER PRODUCTION
- RUBBER/PLASTICS
- TEXTILE
- TYRES