



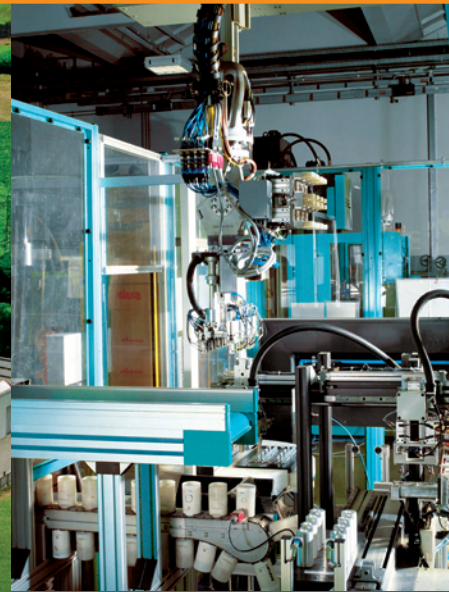
elesa

Our products are conceived considering the perfect function and the best ergonomics.

Additionally we try to create products unique in design, recognizable as ELESa originals the world over.

Many times we have been able to achieve this aim.

The logo for ELESa, featuring the word "elesa" in a bold, lowercase, sans-serif font. The letters are orange, and a small registered trademark symbol (®) is located at the top right of the letter "a".



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ISO 9001 and ISO 14001 certifications

ELESA Quality System is certified ISO 9001 by BSI (British Standards Institution) since 1993. In 2007 ELESA received from BSI ISO 14001 certification as well: the respect and care for the Environment become highly important along the full production chain.



Unione Costruttori Italiani Macchine Automatiche per il Confezionamento e l'Imballaggio
Italian Packaging Machinery Manufacturers Association



ISO 9001
Cert. No. FM 23747



ISO 14001
Cert. No. EMS 518430

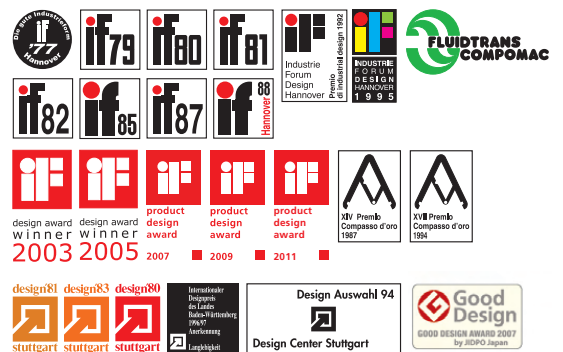




- 150 PATENTS AND REGISTERED DESIGNS
- 31 INDUSTRIAL DESIGN AWARDS
- WORLDWIDE DISTRIBUTION
- FULL STOCK AVAILABILITY
- CUSTOMIZED SOLUTIONS
- TECHNICAL COMPETENCE AT THE CUSTOMER'S SERVICE

ELESA, a reality cast into the future since 1941

A natural appreciation of quality design and ergonomic research, a business culture firmly focused on product quality, the recognition of its brands as guarantees of quality and reliability, the continuous attention to clients' needs and a fast and careful service have made ELESA a company cast into the future.



"Made in Italy by ELESA"

ELESA has been awarded several times by the most important International Juries for industrial design, contributing for years to the development of the design culture and to the achievements of Italian Design.



Worldwide sales network

Branch offices in the most important countries worldwide and a close collaboration with the most qualified global distributors ensure a prompt and efficient service in more than 50 industrialized countries.

Elesa international distribution network gives its customers full access to all assistance services, as well as technical support by the headquarters in Monza.



Elesa France S.A.



Elesa (UK) Ltd.



Elesa USA Corporation



Elesa Scandinavia AB

Distribution

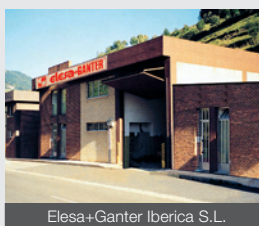
- EUROPE - Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Macedonia, The Netherlands, Norway, Poland, Portugal, Rumania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey.
- ASIA - China, India, Indonesia, Israel, Japan, Singapore, South-Korea, Taiwan, Thailand
- AFRICA - South Africa
- OCEANIA - Australia, New Zeland
- AMERICA - Argentina, Brazil, Canada, Mexico, USA.

Branch offices

- Elesa France S.A.,
- Elesa (UK) Ltd.,
- Elesa USA Corporation,
- Elesa Scandinavia AB (Sweden),
- Elesa+Ganter Austria GmbH,
- Elesa-Ganter Iberica S.L. (Spain),
- Elesa+Ganter Polska Sp. zo.o. (Poland),
- Elesa+Ganter CZ s.r.o. (Czech Republic),
- Elesa+Ganter China Ltd.,
- Elesa and Ganter India PVT LTD.



Elesa+Ganter Austria GmbH



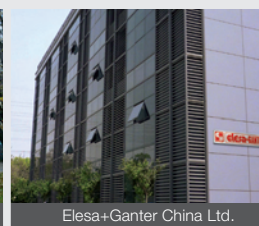
Elesa+Ganter Iberica S.L.



Elesa+Ganter Polska Sp. zo. o.



Elesa+Ganter CZ s.r.o.



Elesa+Ganter China Ltd.



Elesa and Ganter India PVT LTD.



ELESA+GANTER is the name of the commercial joint-venture between the two world leaders in the design and manufacture of standard machine elements: ELESA S.p.A (Italy) and Otto Ganter GmbH & Co. KG (Germany). Today this trademark is registered and known in more than 35 countries and represented by the branch offices and a network of qualified distributors.

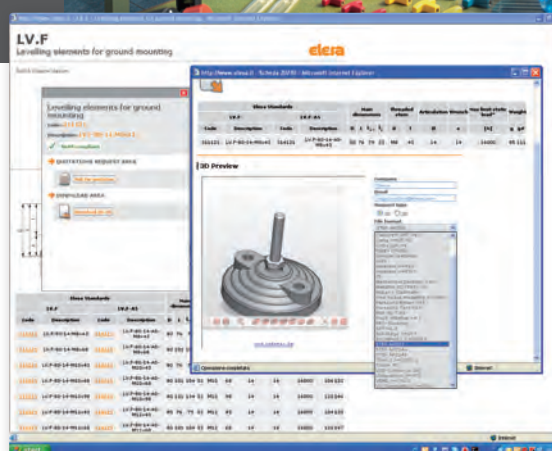


ELESA has been co-operating for 40 years with the company Otto Ganter GmbH & Co. KG (Germany) to create market synergies, to develop new products which are in line with the market needs and to offer the widest range of standard machine elements.



Working for the designer

The R&D department is in charge of the new products design, the improvement of the existing ones and the study of customized solutions. In laboratory, new materials are continuously tested by using the most technologically advanced equipment and measuring instruments, with the aim of extending the use of technopolymers to more and more performing applications of the standard machine elements. Furthermore, ELESa laboratory is always at the customer's disposal for testing the suitability of the products under the most severe conditions of use.



The website www.elesa.com offers:

- a quick product selection,
- CAD 2D and 3D drawings download in all formats,
- the possibility to create the customer's own list of preferred products for always finding the selected products,
- to subscribe to ELESa NEWSLETTER to be periodically informed about the latest news of ELESa world (new products, exhibitions, technical information),
- the customer area for direct customers: stock availability, state of orders, data sending, etc.



ELESa has always been attentive to the designer's needs and now issues a catalogue on DVD with CAD 2D and 3D drawings of all its products.



High performing items

Investing in research and development means to foresee market requirements and find new solutions to satisfy the needs of every sector, develop new materials, new shapes and functional characteristics to create technologically advanced products.

INOX

The high corrosion resistance of stainless steel makes it one of the most demanded materials in many industrial sectors. ELESa offers a wide range of products made out of AISI 303, AISI 304 and AISI 316 stainless steel and products made out of plastic with stainless steel inserts: handwheels, knobs, handles, positioning and control elements, accessories for hydraulic systems and levelling elements, which guarantee the best performance in sectors requiring, by law, the use of corrosion resistant materials.

SOFT

Lobe shaped or fluted grip knobs together with two-volume or knurled handles represent the "SOFT" LINE. Commonly known as "soft-touch", these new elements have been developed by ELESa R&D department for use on machinery and equipment requiring frequent tightening, or for applications subject to severe stress. The major characteristics of "SOFT" products are to ensure a safer and more stable ergonomic grip and to improve the comfort of the operator's hand thanks to their soft coating which allows the absorption of vibrations even under unfavourable environmental conditions such as humidity, aridity, heat, cold and grease.

CLEAN LINE

Industrial handles, lobe and knurled knobs in RAL 9002 white colour with a smooth surface to make cleaning operations easier. AISI 303 stainless steel metal inserts in compliance with the most rigorous sanitary laws. Compact shape and lack of cavities to avoid any deposit of dirt, dust and machining residues. These are the major functional characteristics of ELESa CLEAN LINE in addition to a modern design and a high performance.

AE-V0

Elements made out of self-extinguish special technopolymer certified "V0" according to UL-94 V (Underwriters Laboratories) for use in public environments where flame-proof materials are required.



Designed for:

- Food processing
- Chemical
- Pharmaceutical
- In compliance with the most rigorous hygienic laws

Designed for:

- Disability aids
- High-precision instruments
- Fitness machines
- Gardening and unfavourable climatic conditions

Designed for:

- Medical and hospital equipment
- Operating rooms
- Hospital fittings

Designed for:

- Urban and public fittings
- Equipment for the lighting sector



ESD

The special conductive technopolymer (ESD-C Electrostatic Discharge Conductive) prevents the accumulation of electrostatic charge between bodies with different electric potential. Hence, the new line of antistatic elements is suitable for applications in ESD PROTECTED AREAS (EPA) where all the components which are susceptible to electrostatic discharges must be handled with the minimum risk of damage. The ESD-C indelibly printed trademark on the surface of every single element identifies the specific conductive feature according to EN 100015/1 and IEC 61340-5-1.

SANITIZED ELEMENTS

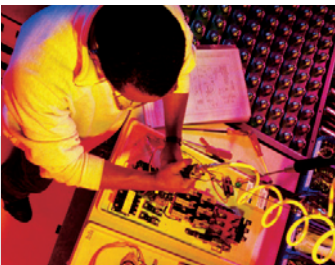
The products of the ELESA SAN LINE prevent the deposit of any undesired organism such as microbes, bacteria, mildew and fungi which are the major causes of unpleasant odours, discoloration, degradation and the formation of biofilm on surfaces and avoid their reproduction. Moreover, the inorganic antimicrobial additive guarantees the absolute unalterability of the antimicrobial feature for a long time and even after several cleaning cycles at high temperatures with soap and solvents. A special technopolymer including antimicrobial additives, the result of a mixture of silver ions on an inorganic ceramic base, chemically free, without any antibiotic drug or pesticide which may be released on the operator's hands.

CHROMIUM

Elements made out of technopolymer with chrome surface. Resistant to sea water, detergents, acetone, ethyl alcohol, formic acid, chlorine solutions.

ATEX

The new ATEX accessories for hydraulic systems comply with Health and Safety Requirements according to 94/9/EC ATEX European Directive (explosive atmospheres) for equipments in Group II, category 2GD.



Designed for:

- Assembly lines for electrical components
- ESD-Protected Areas (EPA)

Designed for:

- Medical and hospital equipment
- Disability aids
- Machines for the food processing and pharmaceutical industry
- Equipment for catering services
- Urban and public fittings

Designed for:

- Equipment for outdoor environments subject to unfavourable weather conditions
- Machines and tools subject to frequent cycles of total cleaning for hygienic reasons

Designed for:

- Equipment and machines for use in environments subject to explosion risk

The ERGOSTYLE® range

Conceived for a broad spectrum of applications, typical of new market segments, Ergostyle® elements are destined to hospital and medical equipment, scientific instruments, laboratory fittings, office furniture, leisure and sporting equipment, and, generally, whenever aesthetics and user-friendliness are key requirements for the product success on the market.





 FIVE DOTS:

 THE TRADEMARK

 CHARACTERIZING

 THE WHOLE

 ERGOSTYLE RANGE

Ergonomic Design

We believe that good design should start with a thorough understanding of the product functions, which in our case means taking into account the full sets of movements involved in each operation of opening and closing, clamping, adjusting, setting or moving and evaluating for each of them the interplay between man and machine taking place when the control device is being used.

Since their first apparition the Ergostyle® products have been awarded by the most important international Juries for the best industrial design.





Customized solutions

In addition to the widest range of standard machine elements available on the market, ELESA offers customized technical solutions in order to meet the customer's specific needs. Production flexibility, technical know-how, R&S constant activity and customer care allow to give quick answers and competitive solutions.



Product customization

logo, writings, tampoprinted graphic elements, laser-engraved or embossed.

Special colours

The most part of the products can be manufactured in different colours.

Special materials and forms

special technopolymers and metals, metallic inserts, special dimensions and threadings.

Surface treatments

zinc-platings, nickel-platings, chrome-platings, anodizations, epoxy resin coatings.

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► **1.000 pages**
to examine carefully
all the technical and application
details of every products.

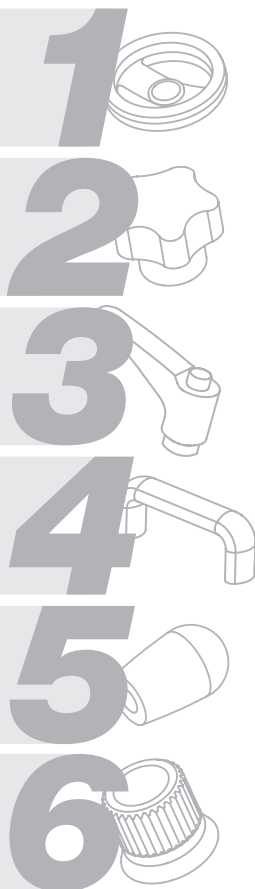
► **More than 2.000 new
product codes**
to meet all your requirements.

► **15.000 codes**
among which you'll surely find
the one you are looking for.

To know more about the ELESA
product range visit our
www.elesa.com or www.elesa.co.uk
Ask now for the new Catalogue 151



ELESA presents from the General Catalogue a selection of standard plastic and metal elements for industrial machines and equipment for all manoeuvring, clamping and control operations. Original design, unmistakable style and a thorough ergonomic research are the main features for these products that over the past 35 years have been awarded by the most prestigious international juries for industrial design.



1. OPERATING ELEMENTS

Handwheels and crank handles in plastic and metal with standard diameters which vary from 80 mm used when a limited drive torque is required, to 375 mm for operations under more severe use conditions.

2. CLAMPING KNOBS

Handwheels and knobs available in different shapes, dimensions and materials for a wide series of applications when a clamping action is required.

3. CLAMPING LEVERS

Adjustable handles and lever handles in different executions and materials: plastic lever coupled to plastic clamping element; plastic lever coupled to metal clamping element or metal lever coupled to metal clamping element.

4. LIFT & PULL HANDLES

A wide choice of bridge handles, flush pull handles or tubular handles in plastic or metal to meet all requirements for a grip that is always comfortable and safe.

5. FIXED & REVOLVING HANDLES

Fixed, revolving and fold-away handles for use on either operating handwheels or metal rods for easy and effective operations and to ensure a safe and ergonomic grip. Available in plastic or metal.

6. CONTROL ELEMENTS

Handwheels and knobs in plastic and metal with plain surface, index or graduated scale for control operations.



Elements with stainless steel inserts or entirely made out of stainless steel



Elements in white colour with stainless steel inserts



Elements with soft-touch thermoplastic elastomer coating



Elements in technopolymer for use at high temperatures



Elements in self-extinguishing technopolymer certified UL-94 V0



Elements in antimicrobial technopolymer



Elements in chrome-plated technopolymer



Elements in conductive technopolymer

OPERATING ELEMENTS

<p>VRTP.</p> 	<p>Spoked handwheels with or without handle Technopolymer, black colour, matte finish. Black-oxide steel boss, H7 reamed hole with boss-cap plate in anodised aluminium or in technopolymer in Ergostyle colours. Standard executions: without handle, with revolving handle, with fold-away handle. Diameters: 80 - 100 - 125 - 160 - 200 - 250 - 300 - 375 mm</p>	<p>GN 321</p> 	<p>Solid handwheels with or without handle Cast aluminium, fine sandblasted matte surface, turned and mirror-polished rim. H7 reamed hole. Standard executions: without handle, with revolving handle in technopolymer, black colour, matte finish. Diameters: 80 - 100 - 125 - 140 - 160 - 200 - 250 mm</p>
<p>GN 322</p> 	<p>Spoked handwheels with or without handle Cast aluminium, fine sandblasted matte surface, turned and mirror-polished rim. H7 reamed hole. Standard executions: without handle, with revolving handle or fold-away handle (GN 322.3) in technopolymer, black colour, matte finish. Diameters: 125 - 140 - 160 - 200 - 250 mm</p>	<p>EMW.</p> 	<p>Monospoke handwheels with revolving or fold-away handle Technopolymer, black colour, matte finish. Black-oxide steel boss, H7 reamed hole and boss cap in technopolymer in Ergostyle colours, glossy finish. Standard executions: with revolving handle or fold-away handle. Diameter: 350 mm</p>
<p>VR.FP</p> 	<p>Spoked handwheels with or without handle Duroplast, black colour, matte finish. Black-oxide steel hub, uncovered front end, not drilled or with pre-drilled blind hole. Standard executions: without handle, with revolving handle, with fold-away handle. Diameters: 100 - 125 - 140 - 160 - 180 - 200 - 250 - 300 - 375 mm</p>	<p>EYK.</p> 	<p>Steering three-arm handwheel with revolving handles Technopolymer, black colour, matte finish. Black-oxide steel boss, H7 reamed hole and boss cap in technopolymer in Ergostyle colours, glossy finish. Revolving handles in technopolymer, black colour, matte finish. Diameters: 275 - 400 mm</p>
<p>GN 949</p> 	<p>Spoked handwheels with or without handle Cast stainless steel, turned rim, sandblasted matte surface. H8 reamed hole. Standard executions: without handle, with revolving handle in Duroplast, black colour, glossy finish. Diameters: 100 - 125 - 140 - 160 mm.</p>	<p>ETK.</p> 	<p>Steering three-arm handwheel with revolving handles Technopolymer, black colour, matte finish. Black-oxide steel boss, H7 reamed hole with boss cap in technopolymer in Ergostyle colours, glossy finish. Revolving handles in technopolymer, black colour, matte finish. Diameter: 400 mm</p>
<p>DIN 950</p> 	<p>Spoked handwheels with or without handle Cast iron, turned and polished rim. H7 reamed hole. Also available with keyway. Standard executions: without handle or with revolving handle in zinc-plated steel. Diameters: 80 - 100 - 125 - 140 - 160 - 200 - 250 mm</p>	<p>MT.</p> 	<p>Crank handles with revolving or fold-away handle Technopolymer, black colour, matte finish. Black-oxide steel boss, H9 square pass-through hole; black-oxide steel hub with H9 blind hole or H7 reamed pass-through hole. Standard executions: with revolving handle or fold-away handle. Dimensions: 50 - 64 - 80 - 100 - 130 - 160 - 210 mm</p>
<p>GN 227.2</p> 	<p>Pressed steel spoked handwheels AISI 304 pressed stainless steel, sandblasted matte finish. Welded hub with H9 reamed pass-through hole or H11 square pass-through hole. Standard executions: without handle or with revolving handle in Duroplast, black colour, glossy finish. Diameters: 160 - 200 - 250 mm</p>	<p>GN 471</p> 	<p>Crank handles with revolving grip Cast aluminium or die-cast zinc alloy (GN 471.1), epoxy resin coating, RAL 9005 black colour, matte finish. H7 reamed pass-through hole or H11 square pass-through hole. Revolving handle in technopolymer, black colour, matte finish. Dimensions: 64 - 80 - 100 - 125 - 160 mm</p>
<p>VDS.</p> 	<p>Solid handwheels with or without handle Technopolymer, black colour, matte finish. Black-oxide steel boss, H7 reamed hole. Light-grey technopolymer boss cap, matte finish, also available in Ergostyle colours. Standard executions: without handle, with revolving handle, with fold-away handle, with safety fold-away handle. Diameters: 80 - 100 - 125 - 150 - 175 - 200 - 250 - 300 mm</p>	<p>GN 472.3</p> 	<p>Crank handles with fold-away handle Cast aluminium, epoxy resin coating, RAL 9005 black colour, matte finish. H7 reamed hole or H11 square pass-through hole. Fold-away handle in technopolymer, black colour, matte finish. Dimensions: 80 - 100 - 125 mm</p>
<p>VDT.</p> 	<p>Solid handwheels with or without handle Technopolymer, black colour, matte finish. Black-oxide steel boss, H7 reamed hole. Standard executions: without handle, with revolving handle, with fold-away handle. Diameters: 100 - 125 - 160 - 200 mm</p>	<p>GN 369</p> 	<p>Crank handles with revolving handles Sandblasted and nickel-plated steel with arm welded to the hub. Hub, H9 hole with end grooving. Hub cap in technopolymer, black colour. Duroplast handle, black colour, glossy finish. Dimensions: 63 - 80 - 100 - 125 mm</p>
<p>VD.FP</p> 	<p>Solid handwheels with or without handle Duroplast, black colour, glossy finish. Black-oxide or stainless steel hub, uncovered front end, not drilled or with H7 reamed hole. Also available with safety coupling (safety bushing GN 000.5 as accessory). Standard executions: without handle, with revolving handle. Diameters: 50 - 63 - 80 - 100 - 125 - 140 - 150 - 175 - 200 - 225 - 250 - 300 - 350 mm</p>	<p>DIN 469</p> 	<p>Crank handles with fixed or revolving handle Cast iron with epoxy resin coating, black colour, matte finish. H7 reamed pass-through hole or H11 square pass-through hole. Dimensions: 80 - 100 - 125 - 160 - 200 - 250 mm</p>

2

CLAMPING KNOBS

<p>VB.639</p> 	<p>Three-arm knobs Technopolymer, black colour, matte finish or Duroplast with glossy finish (VB.239) for special applications. Black-oxide steel boss with plain blind hole; brass or AISI 303 stainless steel boss with threaded blind hole or threaded pass-through hole; zinc-plated steel threaded stud. Black-oxide steel hub, uncovered front end, with pre-drilled blind hole (VB.239). Diameters: 63 - 80 - 100 - 130 - 140 mm</p> 	<p>GN 5335</p> 	<p>Lobe knobs AISI 303 stainless steel, sandblasted matte finish. Hub with H7 reamed blind or threaded hole. Diameters: 40 - 50 - 60 mm</p> 
<p>VCT.</p> 	<p>Lobe knobs Technopolymer, black colour, matte finish. Black-oxide steel boss with plain blind hole; brass boss with threaded blind hole or threaded pass-through hole; zinc-plated steel threaded glossy stud. Centre cap available in six different colours. Also available in self-extinguishing technopolymer certified UL-94 V0 (VCT.AE-V0). Diameters: 25 - 32 - 40 - 50 - 63 - 74 - 95 mm</p>	<p>ELK.</p> 	<p>Lobe knobs Technopolymer, grey-black colour, matte finish. Black-oxide steel boss with H9 reamed blind hole or H7 reamed pass-through hole; brass boss with threaded blind hole; threaded zinc-plated steel stud. Boss cap in technopolymer in Ergostyle colours, ultrasonically welded to the body of the hub. Diameters: 45 - 56 - 70 mm</p> 
<p>VCT.SOFT</p> 	<p>Lobe knobs Technopolymer coated with "soft-touch" elastomer chemically bonded, black colour, matte finish. Brass boss with threaded blind hole or zinc-plated steel threaded stud. Centre cap in technopolymer available in six different colours. Diameters: 43 - 53 - 66 - 77 mm</p> 	<p>VL.640 FP</p> 	<p>Lobe knobs Technopolymer or Duroplast (VL.140 FP), black colour, glossy finish. Black-oxide steel hub, uncovered front end, not drilled, with H7 reamed pass-through hole or H6 threaded pass-through hole. Diameters: 50 - 60 - 70 - 80 - 100 - 130 mm</p>
<p>VCTS-Z</p> 	<p>Adjustable lobe knobs with push action Technopolymer, black colour, matte finish. Black oxide steel or AISI 303 stainless steel clamping knobs with toothed element for coupling to zinc alloy insert moulded in the knob. Available with threaded hole or threaded pin. Diameters: 40 - 50 mm</p> 	<p>VTRM-SST</p> 	<p>Lock knobs AISI 303 stainless steel, sandblasted matte finish. Threaded reamed blind hole. Diameters: 32 - 40 - 50 - 60 mm</p> 
<p>VC.692-SST-p-P</p>  <p>VC.692</p>	<p>Lobe knobs Technopolymer, black colour, matte finish. Brass or AISI 303 stainless steel boss, threaded blind hole; zinc-plated steel or AISI 303 stainless steel threaded stud with or without chamfered end with acetal resin bolt (VC.692-SST-p-P). The chamfered end with acetal resin bolt avoids damaging the surface of contact even in case of strong clamping. Diameters: 25 - 32 - 40 - 50 - 60 mm</p> 	<p>VTR.</p> 	<p>Lock knobs Technopolymer, black or orange colour, glossy finish. Brass boss with square hole, threaded blind hole or threaded pass-through hole; threaded zinc-plated steel stud. Diameters: 32 - 40 - 50 - 60 mm</p>
<p>VC.692 CLEAN</p>  <p>VC.692 CR</p>	<p>Lobe knobs Chrome-plated technopolymer with glossy finish resistant to wear, scrapes and shocks or technopolymer white colour similar to RAL 9002, matte finish (VC.692 CLEAN). Brass or AISI 303 stainless steel boss, threaded blind hole. Diameters: 32 - 40 - 50 - 60 mm</p>  	<p>MCT.</p> 	<p>Fluted grip knobs Technopolymer, black colour, matte finish with orange or black closing cap with glossy finish and central matte surface. Assembly: pass-through hexagonal-head screws or standard lock nuts (not supplied) to put in place inside the knob by pressing. Diameters: 35 - 50 - 70 mm</p>
<p>VLS.</p> 	<p>Security lobe knobs Technopolymer, black colour, matte finish. Brass boss with threaded blind hole or threaded AISI 303 stainless steel stud. Security key in technopolymer, red colour, with stainless steel anti-intrusion profile. Available in fold-away or ball key version. Diameters: 42 - 55 mm</p> 	<p>VCRT.</p> 	<p>Lobe knobs Technopolymer, black colour, matte finish. Square pass-through hole with brass reinforcement. Brass boss, threaded pass-through hole. Diameters: 40 - 50 - 63 - 74 - 95 mm</p>
<p>VC.192</p> 	<p>Lobe knobs Duroplast, black colour, glossy finish. Black-oxide steel boss; brass or AISI 303 stainless steel boss with plain or threaded blind hole; zinc-plated or AISI 303 stainless steel threaded stud. Diameters: 25 - 32 - 40 - 50 - 60 - 70 - 85 - 100 mm</p> 	<p>EWN.SST-p-P</p>  <p>EWN.</p>	<p>Wing nuts Technopolymer, grey-black colour, matte finish. Brass or AISI 303 stainless steel boss, threaded blind hole or threaded pass-through hole; zinc-plated steel or AISI 303 stainless steel threaded stud with or without chamfered end with acetal resin bolt (EWN.SST-p-P). Boss cap in technopolymer in Ergostyle colours. Diameters: 47 - 55 - 70 mm</p>  
<p>VCM.</p> 	<p>Lobe knobs Deburred and mirror-polished cast aluminium or AISI 304 stainless steel, sandblasted matte finish. Hub with H7 reamed blind or threaded hole; steel threaded pin. AISI 304 stainless steel. Diameters: 40 - 50 - 60 - 70 mm</p> 	<p>ESN.</p> 	<p>Single wing nuts Technopolymer, grey-black colour, matte finish. Brass boss, threaded pass-through hole. Boss cap in technopolymer in Ergostyle colours. Dimensions: 55 - 70 mm</p> 

3

CLAMPING LEVERS

<p>CT.476</p> 	<p>Wing knobs Technopolymer, black colour, matte finish. Brass boss with threaded pass-through hole or threaded blind hole; zinc-plated steel or AISI 303 stainless steel threaded stud. Diameters: 20 - 26 - 32 - 40 - 48 - 56 mm</p> 	<p>ERX</p> 	<p>Adjustable handles Technopolymer lever, grey-black colour, matte finish. Push button in Ergostyle colours with glossy finish. ERX.CR chrome-plated technopolymer with black push button. Technopolymer element with brass or AISI 303 stainless steel boss, threaded blind hole; zinc-plated or AISI 303 stainless steel threaded stud. Dimensions: 30 - 44 - 63 - 78 - 95 - 108 mm</p> 
<p>BT.</p> 	<p>Fluted grip knobs Technopolymer, black colour, matte finish or special conductive technopolymer that prevents accumulation of electrostatic charge (BT-ESD). Brass or AISI 303 stainless steel boss with threaded pass-through hole or threaded blind hole; zinc-plated steel or AISI 303 stainless steel threaded stud. Diameters: 16 - 20 - 25 - 32 - 40 - 50 mm</p> 	<p>ERX.AV</p> 	<p>Adjustable handles for quick assembly Technopolymer lever, grey-black colour, matte finish with special adjustable push button for quick screwing during assembly by means of electric or pneumatic screwdrivers with controlled tightening torque system. Clamping element in technopolymer with brass boss and threaded blind hole; zinc-plated steel threaded stud. Dimensions: 78 mm</p> 
<p>B.193</p> 	<p>Knurled grip knobs Duroplast, black colour, glossy finish. Brass boss with threaded pass-through hole or threaded blind hole. Zinc-plated steel or AISI 303 stainless steel threaded stud. Diameters: 15 - 18 - 22 - 25 - 30 - 35 - 40 - 50 mm</p> 	<p>ERS.</p> 	<p>Safety adjustable handles with push action Technopolymer lever, grey-black colour, matte finish, with "PUSH" tampprinted in red colour on the lever. Clamping element in technopolymer with brass or black-oxide steel boss with threaded blind hole; black-oxide threaded stud. In case of accidental shocks, the lever turns freely without affecting the clamping action. Dimensions: 44 - 63 mm</p> 
<p>B.259</p> 	<p>Knurled grip knobs Duroplast, black colour or white colour similar to RAL 9002 (B.259 CLEAN), glossy finish. Brass or AISI 303 stainless steel boss with threaded blind hole or zinc-plated steel threaded stud. Diameters: 20 - 25 - 30 mm</p> 	<p>MRX.</p> 	<p>Adjustable handles Lever in technopolymer, black colour, matte finish. Clamping element in technopolymer with brass or AISI 303 stainless steel boss and threaded blind hole; zinc-plated or AISI 303 stainless steel threaded stud. Dimensions: 42 - 63 - 80 - 100 mm</p> 
<p>DIN 464</p> 	<p>Knurled grip knobs with threaded pin Black-oxide turned steel or AISI 303 stainless steel, sandblasted matte finish. Threaded pin. Diameters: 16 - 20 - 24 - 30 - 36 mm</p> 	<p>MRT.</p> 	<p>Adjustable handles Lever in technopolymer, black colour, matte finish. Clamping element in technopolymer with brass or AISI 303 stainless steel boss and threaded blind hole; zinc-plated or AISI 303 stainless steel threaded stud. Push button in technopolymer, grey-black colour, glossy finish. The flat open design of the handle avoids any deposit of unhygienic residues and dirt. Dimensions: 43 - 65 - 80 mm</p> 
<p>DIN 467</p> 	<p>Knurled grip knobs Black-oxide turned steel or AISI 303 stainless steel, sandblasted matte finish. Threaded pass-through hole. Diameters: 12 - 16 - 20 - 24 - 30 - 36 - 40 mm</p> 	<p>MR.</p> 	<p>Adjustable handles Lever in technopolymer, black, orange, grey colour, matte finish. Clamping element in technopolymer with black-oxide or brass boss with plain or threaded blind hole; zinc-plated steel threaded stud. Dimensions: 42 - 63 - 80 - 100 mm</p>
<p>GN 6336.3</p> 	<p>Quick-tightening lobe knobs Technopolymer, black colour, matte finish. Zinc-plated steel hub, oblique pass-through hole, partially threaded. Suitable when quick tightening is required with only a slight clamping force. Diameters: 40 - 50 - 63 mm</p> 	<p>ERZ.</p> 	<p>Adjustable handles Lever in technopolymer, grey-black colour, matte finish with zinc alloy insert for coupling to the clamping element. Clamping element in black-oxide steel or AISI 303 stainless steel, threaded hole or threaded pin. Dimensions: 44 - 63 - 78 - 95 mm</p> 
<p>MBT.</p> 	<p>Diamond cut knurled knobs Technopolymer, black colour, matte finish. Brass boss with plain or threaded blind hole; threaded zinc-plated steel stud. Diameters: 30 - 40 - 50 - 60 - 70 mm</p>	<p>ERM.</p> 	<p>Adjustable handles Zinc alloy die-cast lever, epoxy resin coating, orange, red, grey, black colour, matte finish. Clamping element in black-oxide steel or AISI 303 stainless steel, threaded hole or threaded pin. Dimensions: 44 - 63 - 78 - 95 mm</p> 
<p>MBT.SOFT</p> 	<p>Fluted grip knobs Technopolymer coated with "soft-touch" elastomer chemically bonded, black colour, matte finish. Brass boss with threaded blind hole or zinc-plated steel threaded stud. Diameters: 45 - 55 mm</p> 	<p>GN 300</p> 	<p>Adjustable handles Zinc alloy die-cast lever, epoxy resin coating, black, orange, grey colour, matte finish. Clamping element in black-oxide steel or AISI 303 stainless steel (GN 300.1), threaded hole or threaded pin. GN 300.4 series with device for high tightening clamping force. Dimensions: 30 - 45 - 63 - 78 - 92 - 108 mm</p> 

4

LIFT & PULL HANDLES

<p>GN 302</p> 	<p>Adjustable handles Zinc alloy die-cast lever, epoxy resin coating, black, orange, grey colour, matte finish. Black-oxide steel clamping element, threaded hole or threaded pin. Dimensions: 45 - 63 - 78 mm</p> 	<p>M.843</p> 	<p>Handles Technopolymer in six different colours or in white colour similar to RAL 9002 (M.843 CLEAN) with glossy finish for application on medical and hospital equipment and on food processing machines. M.243 in black Duroplast with glossy finish. Brass or AISI 303 stainless steel boss with threaded holes. Assembly centre distance: 86 - 117 - 179 - 300 mm</p> 
<p>GN 125</p> 	<p>Adjustable handles Black-oxide steel lever with straight or slightly inclined arm. Black-oxide steel clamping element, threaded hole or threaded pin. Duroplast handle, black colour, glossy finish. Dimensions: 100 - 120 - 130 - 145 mm</p> 	<p>M.643</p> 	<p>Handles Technopolymer, black colour, matte finish. M.643 HT in technopolymer with high thermic resistance (max 200° C). Brass boss with threaded blind hole for back mounting or pass-through holes for cylindrical-head screws with hexagon socket (front mounting) (M.643FM). Assembly centre distance: 86 - 117 - 120 - 132 - 150 - 179 - 300 mm</p> 
<p>GN 212.4</p> 	<p>Adjustable handles Black-oxide turned steel lever. Black-oxide steel clamping element, threaded hole or threaded pin. Duroplast handle, black colour, glossy finish. Dimensions: 87 - 102 - 116 - 132 - 148 mm</p> 	<p>GN 565</p> 	<p>Handles Aluminium with natural, anodised finish or with epoxy resin coating, black colour, matte finish. GN 565.5 in AISI 304 stainless steel with sandblasted matte finish. Back mounting with threaded blind holes or front mounting with pass-through holes for cylindrical-head screws with hexagon socket (GN 565.1). Assembly centre distances: 100 - 112 - 116 - 128 - 132 - 160 - 164 - 192 - 196 - 300 - 400 mm</p> 
<p>GN 6337.3</p> 	<p>Adjustable handles with push action Black-oxide turned steel lever. Black-oxide steel clamping element, threaded hole or threaded pin. Duroplast handle, black colour, glossy finish. Dimensions: 70 - 87 - 109 mm</p> 	<p>EBP.</p> 	<p>Bridge handles Technopolymer with boss cap in Ergostyle colours, matte finish. EBP.SAN in antimicrobial technopolymer. EBP.FLX in technopolymer added with elastomer for mounting on curved surfaces. Pass-through holes for cylindrical-head screws with hexagon socket or brass bosses with threaded blind holes. Assembly centre distance: 93 - 117 - 132 - 150 - 179 mm</p> 
<p>ERF.</p> 	<p>Lever handles Lever in technopolymer, grey-black colour, matte finish. Brass boss with threaded blind hole or zinc-plated steel threaded stud; cylindrical blind hole, brass reinforcement with transversal semi-machined hole for pinning to shaft; square blind hole, transversal setscrew. Dimensions: 44 - 63 - 78 - 95 mm</p> 	<p>EBR-SW</p> 	<p>Handle with integrated microswitch Technopolymer, grey-black colour, matte finish. Microswitch with push button with NO and NC contact. One red LED and one green LED indicate the microswitch status. Pass-through holes for cylindrical-head screws with hexagon socket. Suitable for mounting on machine doors or protections. Assembly centre distance: 132 mm</p> 
<p>DIN 99</p> 	<p>Clamping lever Black-oxide turned steel or AISI 303 stainless steel with sandblasted matte finish. Plain or threaded pass-pass-through hole. Dimensions: 50 - 63 - 80 - 100 - 125 - 160 mm</p> 	<p>M.443</p> 	<p>Handles Technopolymer, black, orange, grey, red colour, matte finish. M.443 AE-V0 in self-extinguish technopolymer certified UL-94 V0 M.443-ESD in conductive technopolymer. Pass-through holes for cylindrical-head screws with hexagon socket, or pass-through holes for countersunk head screws, or pass-through holes for hexagonal-head screws or nuts. Assembly centre distances: 94 - 117 - 120÷122 - 132 - 149÷152 - 150 - 179 - 235 mm</p> 
<p>GN 99.7</p> 	<p>Clamping nuts with double lever Sandblasted steel, matte finish. GN 99.8: AISI 303 stainless steel with sandblasted matte finish. Threaded pass-through hole. Dimensions: 60 - 80 - 100 - 125 - 160 mm</p> 	<p>M.543</p> 	<p>Handles Technopolymer, black or orange colour, matte finish. Brass boss, threaded blind hole. Assembly centre distance: 94 - 105 - 117 - 132 mm</p>
<p>LAC</p> 	<p>Cam levers Lever body and technopolymer connection and retention element between the lever and the cam sliding base. Cam sliding base in SUPER-Technopolymer, black colour. Rotating pin with zinc-plated or AISI 303 stainless steel threaded hole or zinc-plated threaded stud. LAC.R adjustable cam lever with adjustable ring-nut in SUPER-technopolymer - Elesa patent - for quick and secure clamping. Dimensions: 63 - 79 mm</p>  	<p>GN 565.3</p> 	<p>Handles Natural aluminium or with epoxy resin coating, black colour, matte finish. Back mounting with threaded blind holes or front mounting with pass-through holes for countersunk head screws. Assembly centre distance: 120 mm</p> 
<p>GN 927</p> 	<p>Cam levers Zinc alloy die-cast lever, epoxy resin coating, black colour, matte finish. Rotating pin and clamping element with zinc-plated steel threaded hole or screw. Zinc-plated steel bushing with contact insert in technopolymer or fully made of technopolymer. Dimensions: 63 - 82 mm</p> 	<p>M.479</p> 	<p>Bridge handle Technopolymer, black colour, glossy finish. Screw covers in technopolymer in the six standard colours, matte finish. Pass-through holes for cylindrical-head screws with hexagon socket (front mounting) or brass bosses with threaded blind holes (back mounting). Assembly centre distance: 132 mm</p>

<p>M.943</p> 	<p>Handles Technopolymer, black colour, matte finish. Brass boss with threaded blind holes or blind holes for self-tapping screws. Suitable for applications on a 19" rack and instruments in general. Assembly centre distance: 88 - 120 mm</p>	<p>GN 426</p> 	<p>Cabinet handles Aluminium bar or tube with epoxy resin coating, black colour, matte finish. GN 426.1 with double curve or GN 426.5 in AISI 304 stainless steel. Threaded blind holes (Ø 20 mm) on the bar or aluminium or AISI 303 stainless steel tapped bosses on the tube with Ø ≥ 28 mm. Assembly centre distance: 200 - 300 - 400 mm</p> <p></p>
<p>MMT.</p> 	<p>Handles Round section steel bar with fine ground, matte chrome-plated surface. Heat insulation element in technopolymer, black colour, matte finish. Threaded blind holes with steel base bosses, chromed matte surface. The MMT handle is particularly suited for application on surfaces subjected to high temperatures. Assembly centre distance: 120 - 180 mm</p>	<p>ETH.</p> 	<p>Tubular handles Aluminium tube with epoxy resin coating, metallflake graphite colour, matte finish; technopolymer handle shanks, grey-black colour, matte finish; screw covers in technopolymer in Ergostyle colours with glossy finish. Pass-through holes for cylindrical-head screws with hexagon socket, or pass-through holes for hexagon-head screws or standard lock nuts. Assembly centre distance: 300 - 500 - 700 - 1,000 mm</p> <p></p>
<p>GN 425</p> 	<p>Handles Round section chrome-plated, black-oxide or AISI 303 stainless steel bar. GN 425.3 in AISI 304 stainless steel with sandblasted matte finish and welded mounting. GN 425.6 in aluminium with anodised finish or with epoxy resin coating, black colour, matte finish. Threaded blind holes. Assembly centre distance: 88 - 100 - 120 - 125 - 160 - 180 - 200 - 235 mm</p> <p></p>	<p>M.1043</p> 	<p>Tubular handles Aluminium tube with epoxy resin coating, metallflake graphite colour, matte finish, anodised aluminium or AISI 304 stainless steel. Technopolymer handle shanks, black colour, matte finish and anti-rotation tube end plugs in NBR synthetic rubber. Pass-through holes for cylindrical-head screws with hexagon socket. Assembly centre distance: 300 - 350 - 400 - 500 - 600 - 700 mm</p> <p></p>
<p>GN 565.4</p> 	<p>Handles Round cross section aluminium bar with natural, anodised finish or with epoxy resin coating, black colour, matte finish. Threaded blind holes for back mounting or pass-through holes for cylindrical-head screws with hexagon socket for front mounting. Assembly centre distance: 64 - 96 - 128 - 160 - 192 mm</p> <p></p>	<p>M.1066</p> 	<p>Tubular handles Aluminium tube with epoxy resin coating, metallflake graphite colour, matte finish; technopolymer handle shanks, graphite colour, matte finish. M.1066-CLEAN in white colour similar to RAL 9002. Back mounting with special zinc-plated steel screws and threaded blind holes. Front mounting with cylindrical-head screws with hexagon socket, black-oxide nuts and washers. Assembly centre distance: 200 - 250 - 300 - 400 - 500 - 600 mm</p> <p></p>
<p>ESP.</p> 	<p>Guard safety handles Technopolymer, grey-black colour, matte finish. Covers in technopolymer in Ergostyle colours, glossy finish. Pass-through holes for cylindrical-head screws with hexagon socket, or pass-through holes for hexagon-head screws or pass-through holes for countersunk head screws, or standard lock nuts. Complete closure of the handle represents a safety feature for the operator's fingers when operating with doors. Assembly centre distance: 94 mm</p> <p></p>	<p>GN 333.1</p> 	<p>Tubular handles Anodised aluminium tube or with epoxy resin coating, black colour, matte finish. Side plugs in light grey technopolymer. Zinc alloy die-cast handle shanks with epoxy resin coating. GN 333.5 in AISI 304 stainless steel with fine ground matte finish. Threaded blind mounting holes. Assembly centre distance: 200 - 300 - 400 - 500 mm</p> <p></p>
<p>GN 430</p> 	<p>Handles Anodised aluminium profile or with epoxy resin coating, black colour, matte finish. Ends in technopolymer, black colour, matte finish. Mounted with M6 screws. Particularly suited for applications on revolving doors, sliding doors or drawers. Assembly centre distance: 66 - 86 - 106 - 156 - 206 - 256 - 356 - 456 mm</p> <p></p>	<p>GN 333</p> 	<p>Inclined tubular handles Anodised aluminium tube or with epoxy resin coating, black colour, matte finish. Die-cast zinc alloy handle shanks, epoxy resin coating. End caps in light grey technopolymer. Threaded blind mounting holes. Assembly centre distance: 200 - 300 - 500 mm</p> <p></p>
<p>EPR.</p> 	<p>Flush pull handles Technopolymer, grey-black colour, matte finish. Covers in Ergostyle colours, glossy finish. Pass-through holes for self-tapping screws in AISI 304 stainless steel. EPR.PF with snap-in assembly in technopolymer, grey-black colour or white colour similar to RAL 9002 (EPR-PF-CLEAN) or in technopolymer, certified self-extinguish UL-94 V0, grey-black colour (EPR-PF-AE-V0). Dimensions: 90 - 120 mm</p> <p> </p>	<p>GN 334</p> 	<p>Tubular oval-cross-section handles Anodised aluminium tube or with epoxy resin coating, black colour, matte finish. Zinc alloy die-cast handle shanks with epoxy resin coating. End caps in light grey technopolymer. Threaded blind mounting holes. Assembly centre distance: 200 - 300 - 400 - 500 mm</p> <p></p>
<p>ERB.</p> 	<p>Bi-directional flush pull handles Technopolymer, grey-black colour or white colour similar to RAL 9002, matte finish for application on medical and hospital equipment and food processing machines (ERB-CLEAN). Mounted with 4 zinc-plated steel self-tapping screws. Dimensions: 130 mm</p> <p> </p>	<p>GM.A</p> 	<p>Bent tubular handles Fine ground AISI 304 stainless steel tube. Aluminium handle shanks with epoxy resin coating, black colour, matte finish. End caps in fine ground AISI 304 stainless steel. Threaded blind mounting holes. Assembly centre distance: 500 - 600 mm</p> <p></p>
<p>GN 425.4</p> 	<p>Folding handle with recessed tray Chrome-plated steel handle; die-cast zinc alloy tray with epoxy resin coating, black colour, matte finish. Mounted with pass-through holes for countersunk head screws. Dimensions: 170 mm</p> <p></p>	<p>GN 665</p> 	<p>Handles Aluminium bar with oval section and epoxy resin coating, black colour, matte finish. Zinc alloy die-cast handle shanks, grey colour. Supplied with zinc-plated steel screws and washers. Assembly centre distance: 350 - 450 mm</p> <p></p>

5

FIXED & REVOLVING HANDLES

L.652



Handles

Technopolymer, black, orange, red colour, matte finish or natural aluminium or aluminium with epoxy resin coating, black colour, matte finish (L.652M).
Brass boss with plain or threaded blind hole or threaded stud in zinc-plated steel.
Dimensions: 40 - 55 - 67 - 80 - 94 mm

I.168 SOFT



Knurled handle

Technopolymer coated with "soft-touch" thermoplastic elastomer, black colour, matte finish.
Brass boss, plain blind hole.
Dimensions: 60 mm

SOFT

L.652-S



Safety adjustable handles with push action

Technopolymer, black colour, matte finish. Clamping element in technopolymer, brass boss with threaded blind hole or threaded zinc-plated steel threaded stud. In case of accidental shocks, the handle turns freely without affecting the clamping action. L.652-X adjustable handles with "pull" action, suitable when the complete rotation of the handle cannot take place owing to lack of space.
Dimensions: 67 - 80 mm

I.137



Handles

Duroplast, black colour, glossy finish.
Threaded blind hole.
Dimensions: 70 - 80 mm

EKK.



Knobs

Technopolymer in Ergostyle colours, matte finish.
Brass boss with threaded blind hole or zinc-plated steel threaded stud.
Diameters: 16 - 18 - 21 - 25 - 31 mm

ERGOSTYLE

EGH.SOFT



Handles

Technopolymer coated with "soft-touch" thermoplastic elastomer, black colour, matte finish.
Plan blind hole, press-fit assembly by means of the elastic coupling.
Dimensions: 85 mm

ERGOSTYLE SOFT

EBK.SOFT



Fixed handles

Technopolymer, black colour, matte finish, coated with "soft-touch" thermoplastic elastomer chemically bonded. Brass boss with threaded blind hole or zinc-plated steel threaded stud.
Also available with technopolymer centre cap in in Ergostyle colours or with transparent technopolymer magnifying lens and labels with marks and symbols.
Diameter: 43 - 50 mm

ERGOSTYLE SOFT

I.280



Handles

Duroplast, black colour, glossy finish. I.580 N in technopolymer, black colour, matte finish. I.680 SOFT in technopolymer with "soft-touch" thermoplastic coating, black colour, matte finish, improves the grip even in the presence of oils, greases and sweat from the hand. Threaded blind hole; zinc-plated steel threaded stud; blind hole for press-fit assembly by means of the elastic coupling.
Dimensions: 28 - 40 - 50 - 65 - 80 - 90 - 102 - 115 mm

I.580 N

SOFT

EBS+X



Revolving handles

Two-volume revolving handles, Technopolymer, black colour, matte finish. Zinc-plated glossy shank, hexagon socket at threaded end. EBS+X SOFT Technopolymer coated with "soft-touch" elastomer: improves the grip even in the presence of oils, greases and sweat from the hand.
Diameter: 45 - 48 mm

ERGOSTYLE SOFT

BL.368



Lever arms

BL.366 BL.368 matte chrome-plated steel arm.
BL.666 BL.668 zinc-plated steel arm.
Handles in Duroplast or technopolymer, black colour, glossy finish.
Dimensions: from 57 to 203 mm

BL.666

IEL.N SOFT



Two-volume fixed handles

Technopolymer, black colour, matte finish, coated with "soft-touch" thermoplastic elastomer chemically bonded.
Plan blind hole, press-fit assembly by means of the elastic coupling.
Also available with transparent technopolymer magnifying lens and labels with marks and symbols (IEL.N-H SOFT).
Dimensions: 47 - 65 mm

SOFT

I.301+x



Revolving handles

Duroplast, black colour, glossy finish or technopolymer, black colour, matte finish (I.601+x).
Zinc-plated steel or 303 stainless steel shank, hexagon socket at threaded end.
Dimensions: 28 - 40 - 50 - 65 - 80 - 90 - 102 - 116 mm

INOX
Stainless Steel

SH.N



Spherical knobs with magnifying lens

Duroplast, black colour, glossy finish with transparent technopolymer magnifying lens for the application of labels with marks and symbols.
Self-locking boss in technopolymer, plain blind hole, press-fit mounting with elastic coupling.
Diameters: 35 - 40 - 45 mm

I.621+x



Two-volume revolving handles

Technopolymer, black colour, matte finish.
Zinc-plated steel shank, hexagon socket at threaded end.
Dimensions: 45 - 60 - 65 - 80 - 90 mm

I.622



Handles

Technopolymer in six different colours, glossy finish. I.622-CLEAN in white colour similar to RAL 9002 for application on medical and hospital equipment and on food processing machines.
I.222 in Duroplast, black colour, glossy finish. Plain or threaded blind hole or technopolymer self-locking boss with plain blind hole, press-fit assembly by means of the elastic coupling.
Dimensions: 25 - 32 - 42 - 55 - 68 - 87 mm

CLEAN

GN 798



Two-volume revolving handles

Turned and mirror-polished aluminium.
Zinc-plated steel shank, hexagon socket at threaded end.
Dimensions: 42 - 56 - 59 - 74 - 84 mm

GANTER

PLX.



Plain spherical knobs

Duroplast, black colour, glossy finish.
Threaded blind hole; brass boss with threaded blind hole; slightly cone-shaped plain blind hole, press-fit assembly by means of the elastic coupling.
Diameter: 16 - 20 - 25 - 30 - 32 - 35 - 40 - 45 - 50 mm

IRS.820



Fold-away handles and safety fold-away handles

Duroplast, black colour, glossy finish (IR.407) or technopolymer, black colour, matte finish (IRS.820).
Black-oxide steel stud; sintered and oxidised steel flat base for embedded mounting (IR.407). Black-oxide or AISI 303 stainless steel stud, glass-fibre reinforced technopolymer flat base for embedded mounting (IRS.820).
Dimensions: 56 - 65 - 80 - 90 mm

IR.407

INOX
Stainless Steel

CONTROL ELEMENTS

<p>I.ZP.</p> 	<p>Knurled control knobs Technopolymer, black colour, matte finish, with plain base, triangular index or precision graduation, laser-engraved. Anodised aluminium self-adhesive front plate. Plain blind hole, assembly by means of a supplied stainless steel transversal grub screw. Diameters: 27 - 32 - 35 - 40 mm</p>	<p>GN 736.1</p> 	<p>Control handwheels Knurled anodised aluminium profile, black colour; technopolymer cap, light grey colour. H8 reamed hole with and without keyway. Available without handle or with revolving handle in technopolymer, black colour, glossy finish. Diameters: 52 - 62 mm</p>
<p>GN 727</p> 	<p>Control knobs with adjustable spindle Chrome-plated steel base, matte finish; knurled aluminium profile knob, anodised, black colour; steel spindle; technopolymer cap, light grey colour. Holes for assembly screws parallel to the spindle axis. Numbering with 10 or 15 marks on the chrome-plated base and 50 marks on the knob. Diameters: 27 - 34 mm</p>	<p>MBT+I</p> 	<p>Diamond cut knurled knobs with revolving handle Technopolymer knob and revolving handle, black colour, matte finish. Brass boss, plain blind hole, assembly by means of a transversal grub screw. Diameters: 40 - 50 - 60 - 70 - 85 - 100 mm</p>
<p>I.ZN.380</p> 	<p>Knurled control knobs Technopolymer, black colour, glossy finish; boss cap in technopolymer, light grey colour; matte anodised aluminium flange, triangular black index or precision graduation, black colour, laser-engraved. Black-oxide steel boss, H7 reamed hole. Assembly by means of keyway or transversal elastic pin or grub screw. Diameters: 32 - 37 - 42 - 48 - 52 - 58 - 63 - 80 mm</p>	<p>EGK.SOFT</p> 	<p>Grip knobs Technopolymer coated with "soft-touch" thermoplastic elastomer, grey-black colour, matte finish. Technopolymer closing cap in the Ergostyle colours, matte finish. Black-oxide steel boss, H7 reamed hole. Assembly by means of a keyway or a transversal pin in the semi-machined hole or a set screw. Diameters: 50 - 63 mm</p> <p style="text-align: right;"></p>
<p>GN 723.4</p> 	<p>Knurled control knobs Knurled anodised aluminium in natural colour, with plain flange, triangular index or precision graduation, laser-engraved. H8 reamed hole. Assembly by means of a stainless steel transversal grub screw with hexagon socket, stainless steel. GN 723.3 flanges are available to optimize use of GN 723.4 knurled knobs. Diameters: 27 - 34 - 42 mm</p>	<p>GN 729</p> 	<p>Control knobs Anodised aluminium, black colour, white laser-engraved line index. H8 reamed hole. Assembly by means of a stainless steel transversal grub screw with hexagon socket, stainless steel. The two special flat faces allow a safe and comfortable grip. Diameters: 34 - 42 mm</p>
<p>GN 726</p> 	<p>Knurled control knobs Knurled anodised aluminium profile, black colour; technopolymer cap, light-grey colour, plain surface or with black index. H8 reamed hole. Assembly by means of a stainless steel transversal grub screw with hexagon socket, stainless steel. Diameters: 22 - 27 - 34 - 42 mm</p>	<p>VC.192+F</p> 	<p>Lobe knobs with flange and pointer Duroplast, black colour, glossy finish; technopolymer flange with pointer with white indicator line. Brass boss or black-oxide steel, plain blind hole. Assembly by means of transversal grub screws. Diameters: 32 - 40 - 50 - 60 - 70 mm</p>
<p>GN 726.1</p> 	<p>Knurled control knobs Knurled anodised aluminium profile, black colour, with plain surface, triangular index (white perimeter) or with white precision graduation; technopolymer cap, light -grey colour. H8 reamed hole. Assembly by means of a stainless steel transversal grub screw, with hexagon socket, stainless steel. Diameters: 22 - 27 - 34 - 42 mm</p>	<p>LBR.</p> 	<p>Control levers Technopolymer lever body in black colour, glossy finish; matte chromed-plated steel lever arm with Duroplast cylindrical handle, black colour, glossy finish; self-adhesive front plate in matte anodised aluminium. Plain hole with flat face or black-oxide steel boss, H7 reamed hole. Dimensions: 81 - 108 - 127 - 170 mm</p>
<p>GN 726.2</p> 	<p>Knurled control knobs with graduated flange Knurled anodised aluminium profile, black colour; technopolymer cap, light-grey colour; technopolymer flange with plain surface, triangular index or precision graduation, laser-engraved. H8 reamed hole. Assembly by means of a transversal grub screw, stainless steel. Diameters: 22 - 27 - 34 - 42 mm</p>	<p>GN 215</p> 	<p>Indexing levers Base with rim without notch or notched rim (30 teeth) and black-oxide steel lever arm with Duroplast handle. Technopolymer cap with anodised aluminium self-adhesive plate. Black-oxide steel bushing, H7 reamed hole and keyway. Assembly to machine body by means of two cylindrical-head screws. Diameters: 54 - 60 mm</p>
<p>GN 700</p> 	<p>Locking and continuous control indexing mechanisms Knurled anodised knob and ring, black colour, matte finish; black-oxide steel base; ground and hardened steel internal locking mechanism. Steel boss, H7 reamed hole and keyway; assembly to the spindle by means of keyway or transversal pin. Used to control machine spindles for clockwise and anti-clockwise rotation and to keep the spindle in a given position. Diameter: 66 mm</p>	<p>ELC.</p> 	<p>Control levers Technopolymer, grey-black colour, matte finish. Technopolymer boss cap in the Ergostyle colours. Matte finish. Black-oxide steel boss, H7 reamed hole. Dimensions: 67 - 85 - 110 - 140 mm</p> <p style="text-align: right;"></p>
<p>GN 200</p> 	<p>Indexing mechanisms with stop and positioning device Black-oxide steel or AISI 303 stainless steel base with or without zinc-plated steel lever arm in and Duroplast handle. Boss, H7 reamed hole and keyway; assembly to the spindle by means of keyway or transversal pin. The internal mechanism allows small rotational movements (6° or multiples) and the resulting movement and positioning of machine parts. Diameters: 44 - 52 mm</p>	<p>ELCR.</p> 	<p>Control lever Technopolymer, grey-black colour, matte finish. Technopolymer boss cap in the Ergostyle colours. Matte finish. Black-oxide steel boss, H7 reamed hole. Dimensions: 118 mm</p> <p style="text-align: right;"></p>



ELESA-CLAYTON rotary controls are used to set and regulate a wide range of machine functions. Generally, these elements are used to regulate flows, capacities, strokes, setting of speed variators, etc. Every device consists of a handwheel/knob to manoeuvre the control spindle, thus changing the position of the machine element; a position indicator, that provides the position of the machine element.



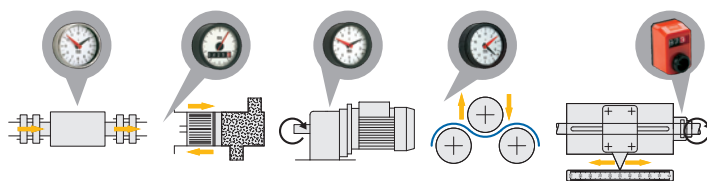
ELESA-CLAYTON position indicators can be classified according to the type of reading or movement.

TYPE OF READING

- Analogue:** the reading is displayed by two rotating pointers over a graduated dial.
- Digital-analogue:** the reading is directly displayed by a roller counter and by a rotating pointer over a graduated dial.
- Digital:** the reading is directly displayed by a roller counter.
- LCD Digital:** the reading is directly displayed by a digital electronic display.

Analogue indicators are normally provided with a graduated dial and two pointers that indicate the number of turns and part of turn made by the control spindle starting from an initial position zero.

The indicators with digital-analogue, digital and LCD digital reading are provided with a roller counter or a display that indicates the linear displacement of the machine element connected to the control spindle from the initial position zero.



TYPE OF FUNCTIONING








- Gravity movement:** it is used when the handwheel spindle is either horizontal or max 60° inclined. The rotation of the handwheel with the indicator makes the pointers move while the dial, appropriately counterbalanced, is kept still by the gravity force.
- Positive drive movement:** it is used on control spindles in any position. The rotation of the handwheel with the indicator makes the pointers move while the dial is kept still by an anchor pin fitted to the machine.
- Direct drive movement:** it is used on control spindles in any position, the indicator is directly assembled onto the control spindle and is kept in position by means of a referring back pin.

Handwheels - knobs for indicators

Indicators are usually supplied separately from the relevant handwheels/knobs, except for built-in models, whose indicator is built-into the knob during the manufacturing process. The following are some examples of handwheels and knobs designed for combined use with the indicators. For the complete range and choice of indicators/handwheels, refer to the General Catalogue that provides additional technical details.



Elements with stainless steel inserts or entirely made out of stainless steel

POSITION INDICATORS	FEATURES	STANDARD RATIOS
ANALOGUE READING		
<p>Gravity movement GA01 - GA02 - GA05</p>  <p>Positive drive movement PA01 - PA02 - PA05</p>	<p>Zinc-plated steel case; AISI 303 stainless steel bezel; glass window; matte anodised natural aluminium dial; clockwise or anti-clockwise graduation, black colour.</p>	<p>Standard ratios with clockwise or anti-clockwise rotation: GA01 Ø = 50 mm: 12/1 - 20/1; GA02 Ø = 68 mm: 6/1 - 10/1 - 12/1 - 20/1 - 24/1 - 30/1 - 36/1; GA05 Ø = 113 mm: 12/1 - 20/1 - 24/1 - 30/1 - 36/1 - 60/1 - 100/1 Other ratios available on request.</p> <p>Standard ratios with clockwise or anti-clockwise rotation: PA01 Ø = 50 mm: 12/1 - 20/1; PA02 Ø = 68 mm: 6/1 - 10/1 - 12/1 - 20/1 - 24/1 - 30/1 - 36/1; PA05 Ø = 113 mm: 10/1 - 12/1 - 30/1 - 36/1 - 60/1 - 100/1 Other ratios available on request.</p>
<p>Gravity movement GA11 - GA12</p>  <p>Positive drive movement PA11 - PA12</p>	<p>Technopolymer case and bezel, black colour, matte finish. Transparent technopolymer window ultrasonically welded to the case, completely sealed with IP 67 protection class, according to IEC 529 table (only for GA11 and GA12 indicators); matte anodised aluminium dial; clockwise or anti-clockwise graduation, black colour.</p>	<p>Standard ratios with clockwise or anti-clockwise rotation: GA11 Ø = 50 mm: 10/1 - 12/1 - 20/1 - 24/1 - 30/1 - 40/1 GA12 Ø = 68 mm: 6/1 - 10/1 - 12/1 - 20/1 - 24/1 - 30/1 - 36/1 Other ratios available on request.</p> <p>Standard ratios with clockwise or anti-clockwise rotation: PA11 Ø = 50 mm: 10/1 - 12/1 - 20/1 - 30/1 PA12 Ø = 68 mm: 10/1 - 12/1 - 20/1 - 30/1 Other ratios available on request.</p>
<p>Gravity movement MBT-GA</p> <p>Knobs with built-in indicator</p> 	<p>Technopolymer diamond cut knurled knob and bezel, black colour, matte finish; transparent technopolymer window ultrasonically welded to the case, completely sealed with IP 67 protection class, according to IEC 529 table; matte anodised aluminium dial; clockwise or anti-clockwise graduation black colour. Black-oxide steel boss, H7 reamed blind hole.</p>	<p>Standard ratios with clockwise or anti-clockwise rotation: MBT.50-GA11 Ø = 51 mm: 10/1 - 12/1 - 20/1 - 24/1 - 30/1 - 40/1 MBT.70-GA12 Ø = 70 mm: 6/1 - 10/1 - 12/1 - 20/1 - 24/1 - 30/1 - 36/1 Other ratios available on request.</p>
ANALOGUE-DIGITAL READING		
<p>Gravity movement GW12</p>  <p>Positive drive movement PW12</p>	<p>Technopolymer case and bezel, black colour, matte finish; transparent technopolymer window ultrasonically welded to the case, completely sealed with IP 67 protection class, according to IEC 529 table (only GW12 indicator); anodised aluminium dial, matte finish; clockwise or anti-clockwise graduation, black colour. Five-digits roller counter (four black rolls and one red roll).</p>	<p>Standard readings after one turn of the indicator with clockwise or anti-clockwise rotation: GW12 Ø = 68 mm: 0000.2 - 0000.5 - 0001.0 - 0002.0 - 0002.5 - 0004.0 - 0005.0 Other ratios available on request.</p> <p>Standard readings after one turn of the indicator with clockwise or anti-clockwise rotation: PW12 Ø = 68 mm: 0000.2 - 0000.5 - 0001.0 - 0002.0 - 0002.5 - 0003.0 - 0004.0 - 0005.0 Other ratios available on request.</p>
<p>Gravity movement MBT-GW</p> <p>Knobs with built-in indicator</p> 	<p>Technopolymer diamond cut knurled knob and bezel, black colour, matte finish; transparent technopolymer window ultrasonically welded to the case, completely sealed with IP 67 protection class, according to IEC 529 table; matte anodised aluminium dial; clockwise or anti-clockwise graduation, black colour. Black-oxide steel boss, H7 reamed blind hole.</p>	<p>Standard readings after one turn of the indicator with clockwise or anti-clockwise rotation: MBT-GW12 Ø = 68 mm: 0000.2 - 0000.5 - 0001.0 - 0002.0 - 0002.5 - 0003.0 - 0004.0 - 0005.0 Other ratios available on request.</p>
DIGITAL READING		
<p>Direct drive movement DD50 - DD51 - DD52R</p> 	<p>Technopolymer case and base ultrasonically welded; transparent technopolymer window with magnifying effect to allow perfect reading in 4 different positions; 3, 4 or 5 digit roller counter with 1 or 2 decimals on the red roller; polyurethane rear gasket. Black-oxide steel bushing fitted to the shaft with a grub screw. Orange or grey colour with glossy finish.</p> <p>DD50 = case width 24 mm - bushing Ø 10H7 DD51 = case width 33 mm - bushing Ø 14H7 DD52R = case width 48 mm - bushing Ø 20H7</p>	<p>Standard readings after one turn of the indicator with clockwise or anti-clockwise rotation: DD50: 01.0 - 02.0 - 04.0 - 05.0 - 10.0. DD51: 00.50 - 01.00 - 001.0 - 001.2(5) - 001.5 - 002.0 - 002.5 - 003.0 - 004.0 - 005.0 - 006.0 - 008.0 - 010.0. DD52R = 000.50 - 001.00 - 0001.0 - 0002.0 - 0002.5 - 0003.0 - 0004.0 - 0005.0 - 0006.0 - 0010.0 Other ratios available on request.</p>
LCD DIGITAL READING		
<p>Direct drive movement DE51</p> <p>Direct drive absolute optical electronic position indicators</p> 	<p>Technopolymer case and base, black colour, glossy finish, completely sealed with IP 65 protection class, according to IEC 529 table. Black-oxide steel bushing, H7 reamed hole. Reading by means of backlit LCD display showing values in metric system (mm) or inches, target position and current position indication.</p>	<p>Value display in mm or inches. The visualization can be set and modified by software at the installation of the machine.</p>



These standard elements have been designed for applications on machines and equipment for locking and positioning operations. The materials used and the subsequent machining operations, including surface finish, are thoroughly controlled to offer a product that fully complies with its design objectives and is compatible with customer specifications. The line includes a series of stainless steel elements to be used in environments which, as a result of various factors (hygiene, climate or legal requirements), must use corrosion-resistant materials.



8. INDEXING AND POSITIONING ELEMENTS

Indexing plungers in black-oxide steel, stainless steel or SUPER-technopolymer, locking pins, spring plungers in various metals suitable for locking or click positioning of machine components or equipment.

9. MACHINE ELEMENTS

Screws, thrust pads, set collars and washers; cam locking levers; joints, damping elements; ball transfer units; magnets for locking machine components.

INDEXING AND POSITIONING ELEMENTS

PMT. 100



SUPER technopolymer indexing plungers in with or without rest position

SUPER-technopolymer threaded body and locking nut; black-oxide hardened steel or AISI 303 stainless steel plunger. Technopolymer knob, black colour, matte finish.

Plunger Ø: 5 - 6 - 8 - 10 mm



GN 608



Indexing plungers with flange

Zinc-plated die-cast zinc alloy basic flange with two mounting holes; black-oxide steel plunger with hardened end. Technopolymer knob, black colour, matte finish. Also available with rest position (GN 608.1). Suitable for mounting on thin sheets thanks to their very small dimensions.

Plunger Ø: 6 - 8 mm



GN 617



Indexing plungers

Black-oxide steel or AISI 303 stainless steel threaded body and locking nut ; black-oxide steel plunger with hardened or nickel-plated AISI 303 stainless steel end. Technopolymer knob, black colour, matte finish or AISI 303 stainless steel. Standard executions: with or without knob and locking nut.

Plunger Ø: 5 - 6 - 8 - 10 mm



GN 817.3



Indexing plungers with flange

Black-oxide steel basic flange in with two mounting holes; ground black-oxide steel plunger with hardened end. Technopolymer knob, black colour, matte finish. Also available with rest position (GN 817.3-C). Suitable for highly precise positioning.

Plunger Ø: 8 - 10 mm



GN 617.1



Indexing plungers with rest position

Black-oxide steel or AISI 303 stainless steel threaded body and locking nut; black -oxide steel plunger with hardened or nickel-plated AISI 303 stainless steel end. Technopolymer knob, black colour, matte finish or AISI 303 stainless steel. Standard executions: with or without locking nut.

Plunger Ø: 5 - 6 - 8 - 10 mm



GN 417



Indexing plungers

Die-cast zinc alloy body, epoxy resin coating, black colour, matte finish; AISI 303 stainless steel plunger. Stainless steel lifting ring. GN 417-C with rest position and technopolymer operating knob, black colour, matte finish.

Plunger Ø: 4 - 5 - 6 - 8 mm



GN 717



Indexing plungers

Zinc-plated steel or AISI 303 stainless steel threaded body; AISI 303 stainless steel plunger; zinc-plated steel or stainless steel locking nut. Technopolymer knob, black colour, matte finish or stainless steel lifting ring. Standard executions: with knob or lifting ring, with or without locking nut.

Plunger Ø: 4 - 5 - 6 - 8 mm



GN 607.2



Indexing plungers

Zinc-plated steel threaded body and centre bush; nickel-plated AISI 303 stainless steel plunger. Technopolymer knob, black colour, matte finish. Also available with rest position (GN 607.3). Suitable for mounting on thin section sheets or profiles.

Plunger Ø: 6 - 8 mm



GN 717-C



Indexing plungers with rest position

Zinc-plated steel or AISI 303 stainless steel threaded body; AISI 303 stainless steel plunger; zinc-plated steel or stainless steel locking nut. Technopolymer knob, black colour, matte finish. Standard executions: with or without locking nut.

Plunger Ø: 4 - 5 - 6 - 8 mm



GN 816



Indexing plungers with safety rest position

Zinc-plated steel threaded body and locking nut; AISI 303 stainless steel protruding plunger in rest position. GN 816.1 with plunger in rest position. Technopolymer knob and sleeve, black colour, matte finish. Standard executions: with knob or sleeve, with or without locking nut.

Plunger Ø: 6 - 8 mm



GN 613



Indexing plungers

Black-oxide steel or AISI 303 stainless steel threaded body; black-oxide steel plunger with hardened or nickel-plated AISI 303 stainless steel end; black-oxide steel or stainless steel locking nut. Technopolymer knob, black colour, matte finish or AISI 303 stainless steel. Standard executions: with or without knob and locking nut.

Plunger Ø: 5 - 6 - 8 - 10 mm



GN 7336.8



Indexing plungers with clamping knob for safety function

Zinc-plated steel threaded body and locking nut; nitrided and black-oxide steel plunger. Technopolymer knob, black colour and light grey colour closing cover, matte finish. When it is necessary to simultaneously position, lock and make secure elements whose position needs to be changed.

Plunger Ø: 6 - 8 mm



GN 607



Indexing plungers

Black-oxide steel or AISI 303 stainless steel threaded body; black-oxide steel plunger with hardened or nickel-plated AISI 303 stainless steel end; black-oxide steel or stainless steel locking nut. Technopolymer knob, black colour, matte finish. Standard executions: with or without locking nut.

Plunger Ø: 6 - 8 mm



GN 612



Lever indexing plungers with rest position

Black-oxide steel or AISI 303 stainless steel threaded body; plunger in turned and nitrided steel or turned and nickel-plated AISI 303 stainless steel. Black-oxide steel or stainless steel lever with or without technopolymer cover. Black-oxide steel or stainless steel locking nut. Standard executions: with or without locking nut.

Plunger Ø: 6 - 8 mm



GN 607.1



Indexing plungers with rest position

Black-oxide steel or AISI 303 stainless steel threaded body in; black oxide steel plunger with hardened or nickel-plated AISI 303 stainless steel end; black-oxide or stainless steel locking nut. Technopolymer knob, black colour, matte finish. Standard executions: with or without locking nut.

Plunger Ø: 6 - 8 mm



GN 612.3



Lever indexing plungers with rest position

Black-oxide steel threaded body, welded quality; nitrided steel plunger. Black-oxide steel lever with technopolymer cover, black colour, matte finish. Standard executions: with or without lever coat. Suitable for welding the positioning element.

Plunger Ø: 6 - 8 - 10 - 12 mm



GN 822



Mini indexing plungers

Zinc-plated steel or AISI 303 stainless steel threaded body; AISI 303 stainless steel plunger. Technopolymer knob, black colour, matte finish. Standard executions: with or without rest position with 30° rotation of the knob. Suitable for mounting on thin sheets thanks to their very small dimensions.

Plunger Ø: 4 - 5 - 6 - 7 mm



GN 712



Lever indexing plungers with rest position

Zinc-plated steel threaded body and locking nut; AISI 303 stainless steel plunger in complete rest position. GN 712.1 with protruding plunger in rest position. Technopolymer lever, black colour, matte finish. Standard executions: with or without rest position, with or without locking nut.



GN 113.6

Ball lock pins

AISI 630 stainless steel pin and push button; stainless steel balls and spring; technopolymer knob, red and black colour with holes for retaining ring.
By pressing the push button the two balls are freed and the pin can be pulled out or inserted.
Plunger Ø: 5 - 6 - 8 - 10 - 12 - 16 mm


GN 6311.1

Thrust pads with retaining ring

Black-oxide steel with or without technopolymer support.
Retaining ring: steel spring wire. Used to transmit clamping forces by means of black-oxide steel grub screws type DIN 6332, hexagon socket head and hardened nose. The grub screw/thrust pad coupling is created by means of the retaining ring.
Diameters: 16 - 20 - 25 - 32 mm


GN 114.2

Pawled lock pins

Zinc-plated steel pin; AISI 304 stainless steel pawls; AISI 301 stainless steel spring; technopolymer knob, black colour, matte finish with holes for retaining ring; technopolymer push button, red colour, glossy finish.
By pressing the push button the two balls are freed and the pin can be pulled out or inserted.
Plunger Ø: 8 - 10 - 12 mm


GN 632.1

Grub screws with spherical end

Black-oxide steel or AISI 303 stainless steel (GN 632.5), hexagon socket head. Used to make various locking systems.
Levers, knobs or handles can be fitted to the threaded end by means of pins.
Threadings: M6 - M8 - M10 - M12


GN 513

Threaded spring elements

Zinc-plated steel threaded body in; black-oxide and case-hardened steel end. Spring with normal or heavy end-force.
Standard executions: with female thread, semispherical, with plunger and prismatic.
Threadings: M12x1.5 - M16x1.5 - M20x1.5


GN 631

Technopolymer thrust pads

Technopolymer, black colour, matte finish.
Used to transmit clamping forces by means of grub screws GN 632.1 or GN 632.5.
They can be adapted on irregular or non-parallel surfaces and allow locking without transmitting the rotation to the surface to be locked and without scratching the same.
Diameters: 15 - 18 - 21 - 25 - 32 - 40 mm


GN 615

Threaded ball spring plungers

Black-oxide steel or AISI 303 stainless steel threaded body, screwdriver slotted head.
Hardened steel or hardened stainless steel ball. Hardened steel or hardened stainless steel spring, with normal or heavy end-force.
Threadings: M3 - M4 - M5 - M6 - M8 - M10 - M12 - M16 - M20 - M24


GN 346

Thrust pads with ball joint and threaded hole

Zinc-plated steel.
Used to transmit clamping forces.
They can be adapted on irregular or non-parallel surfaces and allow locking without transmitting the rotation to the surface to be locked.
Diameters: 16 - 20 - 24 - 30 mm


GN 615.2

Threaded ball spring plungers

Technopolymer threaded body in, screwdriver slotted head.
Hardened stainless steel or technopolymer ball.
Stainless steel spring.
Threadings: M6 - M8 - M10


GN 918

Cam locking levers

Black-oxide steel or AISI 303 stainless steel (GN 918.5-NI) lever with Duroplast ball knob. Nitrided and black-oxide steel or hardened and nickel-plated steel screw, hexagon socket head.
Case-hardened and black-oxide steel or nickel-plated AISI 303 stainless steel (GN 918.5) cam, eccentric with locking action along the entire profile, helical with "pull" or "push" locking action.
Cam diameter: 50 mm


GN 614.2

Double ended smooth ball spring plungers

Brass body with central knurling.
Hardened stainless steel balls.
Stainless steel spring.
Diameters: 2.5 - 3 - 4 - 5 - 7 - 8 mm


BJT

Rod ends

Technopolymer body with threaded hole and threaded pin, self-lubricating technopolymer rod spherical cap.
Suitable for rotary, oscillating and linear movements even in particularly aggressive environments and when water and humidity, fine dusts, dirt, fabrics and machining residues are present.
Threadings: M6 - M8 - M10 - M10X1.25 - M12 - M12x1.25 - M14

GN 614

Smooth ball spring plungers

Body in technopolymer or stainless steel (GN 614-NI).
Hardened stainless steel or technopolymer ball.
Stainless steel spring.
Diameters: 3 - 4 - 5 - 6 - 8 - 10 - 12 mm


FJT

Forks

Technopolymer body with threaded hole, clip pin or seeger ring.
Particularly suitable for articulation various operations, for example, of pneumatic cylinders, even when water or humidity are present.
Threadings: M6 - M8 - M10 - M10X1.25 - M12 - M12x1.25 - M14

GN 815

Threaded plungers with screwdriver slotted head

Black-oxide steel or AISI 303 stainless steel body, screwdriver slotted head.
Hardened steel or hardened stainless steel ball.
Steel or stainless steel spring.
Threadings: M4 - M5 - M6 - M8 - M10 - M12


DIN 444

Eye screws

Black-oxide and turned steel or AISI 303 stainless steel with sandblasted matte finish.
Mainly used for coupling up moulds, connections, equipment, etc.
Threadings: M6 - M8 - M10 - M12 - M16 - M20


GN 715

Side thrust spring pins

Passivated aluminium body, with or without NBR synthetic rubber gasket; zinc-plated hardened steel oscillating pin; steel spring with low, medium or high spring end-force.
Practical and versatile elements for positioning and mounting items to be processed.
Plunger Ø: 3 - 5 - 6 - 8 - 10


DIN 6319

Concave and convex washers

Case-hardened steel or hardened and tempered steel or AISI 303 stainless steel.
Suitable for locking mechanical parts on non-parallel.
External diameters: 12 - 17 - 21 - 24 - 28 - 30 - 36 - 44 - 56 - 68 - 78 - 92 mm



GN 707.2



Semi-split set collars, Clamping assembly

Sintered black-oxide steel or sintered AISI 316L stainless steel; phosphatised black-oxide steel or AISI 304 stainless steel grub screws, cylindrical head with hexagon socket. Used not only as end stops, but also for fixing other components, such as end limit switches. Internal diameters: from 6 to 40 mm



RETAINING MAGNETS

Retaining magnets are simple solutions for any problem of long-lasting fixing. Their function is based on the properties of magnetism.

The use of magnets and their applications vary from sector to sector. They are, for example, generally used for protections, automation, control systems, electromedical equipment, etc.

Elesa retaining magnets range is made out of various materials:

- Ferrite - HF
- Aluminium nickel cobalt (AlNiCo) - AN
- Samarium cobalt (SmCo) - SC
- Neodymium iron boron (NdFeB) - ND

Each class of material offers a different performance in terms of adhesive force, maximum working temperature, corrosion resistance, machinability and demagnetisation capability. For the complete table of all technical features of materials, refer to Elesa Catalogue 151.

GN 350.3



Levelling washers

Zinc-plated steel or AISI 303 stainless steel. Levelling washers GN 350.3 are principally suitable for locking mechanical parts on non-parallel surfaces. The coupling of the spherical surfaces of the two washers allows a very high load resistance. Diameters: 25 - 32 - 45 - 58 - 70 - 80 mm



GN 184



Washers for countersunk head screws

Black-oxide and turned steel or AISI 303 stainless steel with sandblasted matte finish (GN 184.5). Washers GN 184 are generally used on shafts to fit handwheels with an axial keyway. Diameters: 16 - 20 - 22 - 25 - 28 - 32 - 36 - 40 - 45 - 52 mm

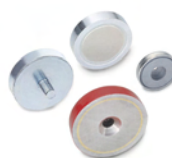


GN 187.4



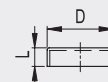
Toothed clamping elements

Sintered nitrided black-oxide steel or sintered steel. The toothed elements GN 187.4 are used to secure coupled parts at a given angle. Designed to be combined with cases GN 187.1 and push spring GN 187.2. Diameters: 22 - 27 - 32 - 40 mm



Flat retaining magnets

Zinc-plated steel, red lacquered steel or stainless steel housing, with pass-through hole, threaded stud or insert. Magnet in ferrite, samarium cobalt (SmCo), neodymium iron boron (NdFeB), aluminium nickel cobalt (AlNiCo). Flat magnets are shielded magnetic systems with high performances and moderate overall dimensions. $\varnothing D = 6 \div 125$ $L = 4,5 \div 26$



Sizes are given in mm.

GN 6333



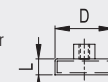
Quick clamping hexagon nuts

Zinc-plated steel, class 10 (tensile strength 1,000 N/mm²). The hexagon nuts GN 6333 allow clamping and quick release of a threaded element with a few screwing/unscrewing rotations. The threading is made by pressing the two symmetrical semi-nuts connected with an elastic ring that lock into the hexagonal outer body. Threadings: M16 - M20 - M24



Flat retaining magnets with no-slip coating

Zinc-plated steel disk, thermoplastic elastomer no-slip coating with pass-through hole, threaded stud or insert. Magnets in neodymium iron boron (NdFeB). The elastomer surface increases the friction coefficient when lateral retaining forces are present, giving a better adherence. Indicated for use on sensitive surfaces. $\varnothing D = 12 \div 8$ $L = 6 \div 8,5$



GN 506



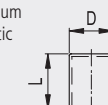
Dowels for T-slots with guide and no-slip device

Zinc-plated steel body with stainless steel ball and spring. The ball and spring device located inside the dowel allows it to slide on aluminium profiles, preventing accidental vertical sliding. Dimensions of guide for sockets: 5 - 8 mm



Cylindric retaining magnets

Natural steel, zinc-plated steel or red lacquered housing, with or without plain or threaded stud. Magnet in aluminium nickel cobalt (AlNiCo), neodymium iron boron (NdFeB), samarium cobalt (SmCo). Cylindrical magnets are shielded magnetic systems with high performances and moderate overall dimensions. $\varnothing D = 4 \div 63$ $L = 10 \div 65$



GN 509



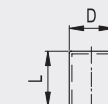
Ball transfer units

Zinc-plated drawn sheet steel; zinc-plated steel retaining components; zinc-plated or stainless steel balls; felt seal retaining ring. Ball transfer units GN 509 are particularly suitable on conveyor tracks. They make both linear and rotary movements easier, even with heavy loads. Diameters: 24 - 36 - 45 mm



Cylindric retaining magnets with sandwich configuration

Sandwich poles, brass containment body. Magnet in neodymium iron boron (NdFeB), or in samarium cobalt (SmCo). This type of magnetic system conveys its maximum long-lasting magnetic power, even for the smallest processing items. $\varnothing D = 6 \div 32$ $L = 20 \div 40$



VIBRATION-DAMPING ELEMENTS

ELESA vibration-damping elements have been designed to damp vibrations, shocks or noises produced by moving bodies or unbalanced vibrating masses of operating machines. Vibrations can cause machine malfunctioning and reduction of machine lifespan, besides damaging health and generating noise.

DVA.



Zinc-plated steel or AISI 304 stainless steel base with threaded studs or bosses with threaded blind hole in various combinations. Natural NR rubber vibration-damping body in hardness 55±5 Shore A, black colour. Diameters: 8 - 10 - 20 - 25 - 30 - 40 - 50 - 60 - 70 - 75 - 100 mm



U-magnets with pass-through hole

Unshielded magnet in aluminium nickel cobalt (AlNiCo), cast product, red lacquered. U-shaped magnets are unshielded, cast magnetic systems with high performances and moderate overall dimensions. The attracting surface is divided into two parts. $\varnothing D = 13 \div 32$ $L = 10 \div 25$ $B = 22 \div 79$ $L = 22 \div 79$

Cylindric retaining magnets with pass-through hole

Unshielded magnet in aluminium nickel cobalt (AlNiCo), cast product, red lacquered. Cylindrical retaining magnets are unshielded, cast magnetic systems with high performance and moderate overall dimensions. The adhesive surface is divided into two parts. $\varnothing D = 13 \div 32$ $L = 10 \div 25$ $B = 22 \div 79$ $L = 22 \div 79$



Levelling elements, connecting clamps, Flexible Automation Components, hinges, latches and clamping elements are complementary to the traditional range of ELESА standard machine elements. Thanks to the high-quality materials especially designed for industrial applications, which require maximum product reliability for durable installations, and to the modern plastic moulding techniques, ELESА technical components are extremely strong. Owing to the traditional design care, these elements can be inserted very elegantly in the machine line or equipment, thus enhancing quality and value.

10



11



12



14



10. LEVELLING AND SUPPORTING ELEMENTS

Levelling feet with hundreds of different combinations of plastic or zinc-plated steel or stainless steel bases with zinc-plated steel or stainless steel stems. The concentric steps of the plastic bases allow a smooth surface finish, easily cleanable. The line of ELESА connecting clamps, in plastic or metal, offers an effective solution for production of the various structures of photocell devices, thanks to the wide range of model types and pre-drilled holes for both cylindrical and square tubes.

The range of Flexible Automation Components intended for automation lines allows the implementation of various solutions both for line support and for the creation of side brackets.

11. HINGES AND CONNECTIONS

Over 30 different models of plastic or metal hinges in several sizes and shapes, and for various functions. The different type of fitting by means of bushings, studs and pass-through holes satisfy all types of applications.

Thanks to the different rotation angles of the various models, doors or panels can be opened and closed in complete safety.

12. LATCHES

Available with knob or key lock and special or standard levers, the new ELESА series of locking devices is a basic line that covers the most varied types of applications.

Locking devices with toggle mechanism enrich the line of locks designed for mechanical industrial use.

14. CASTORS AND WHEELS

A new line of industrial wheels for manual moving of, equipment, trolleys and machines. Considering the success met by the sector of levelling elements intended for static positioning of machines and equipment, focus has shifted to handling of the same, with the subsequent creation of a new line of wheels principally made out of rubber and polyurethane.



Elements in white colour with stainless steel inserts



Elements with stainless steel inserts or entirely made out of stainless steel



Elements in self-extinguishing technopolymer certified UL-94 V0



Elements in chrome-plated technopolymer



Elements in conductive technopolymer

10

LEVELLING ELEMENTS



LS.A

Levelling elements
 Technopolymer base, black colour, matte finish, with or without NBR rubber no-slip disk.
 Zinc-plated steel or AISI 304 stainless steel and threaded articulated stem with regulation hexagon.
 On request zinc-plated or AISI 304 stainless steel nut.
 Bases Ø: 25 - 32 - 40 - 50 mm
 Stem threadings: M8 - M10 - M12 - M16



GN 349



Reinforcing round end-caps
 Welding black-oxide steel.
 Suitable for reinforcing the machinery structure on which the levelling element has to be applied, in case this structure is very thin and consequently not rigid enough.
 They can be applied also by means of welding.



LV.A

Levelling elements
 Technopolymer base, black colour, matte finish. LV.A-ESD-C conductive technopolymer that prevents accumulation of electrostatic charges.
 With or without no-slip disk. AISI 304 stainless steel threaded articulated stem.
 On request zinc-plated or AISI 304 stainless steel nut.
 Bases Ø: 60 - 70 - 80 - 100 - 125 mm
 Stem threadings: M8 - M10 - M12 - M16 - M20 - M24



LM.

Levelling elements
 Zinc-plated steel or AISI 303 stainless steel bases, zinc-plated or AISI 303 stainless steel ball joint with threaded blind hole or threaded stem. LM.AC with technopolymer antistatic bearing protection, white colour. LM.TR with NBR synthetic rubber no-slip coat.
 Zinc-plated steel or AISI 304 stainless steel nut.
 Bases Ø: 25 - 32 - 40 - 50 - 60 mm
 Threadings: M8 - M10 - M12 - M16 - M20



LV.F

Levelling elements for ground mounting
 Technopolymer base, black colour, matte finish, with or without NBR rubber no-slip disk. Zinc-plated steel or AISI 304 stainless steel and threaded articulated stem with regulation hexagon. On request zinc-plated steel or AISI 304 stainless steel nut. Ground mounting by means of two holes at 180°, supplied covered by breakable plastic diaphragm.
 Bases Ø: 80 - 100 - 125 mm
 Stem threadings: M8 - M10 - M12 - M16 - M20 - M24



LM.SV

Vibration-damping levelling elements
 Zinc-plated steel bases, zinc-plated steel ball joint with threaded hole or threaded stem.
 Damping element in PUR elastomer, glued to the base housing, grey colour.
 Zinc-plated steel nut.
 Bases Ø: 32 - 40 - 50 - 60 mm
 Threadings: M10 - M12 - M16



LV.A-125-ACV

Levelling elements
 Technopolymer base, black colour, matte finish, with or without no-slip disk. Also available with bases for ground mounting by means of two holes at 180° supplied covered by breakable plastic diaphragm LV.F-125-ACV. Zinc-plated steel threaded articulated through stem with regulation hexagon. Stem/bases assembly by means of zinc-plated steel setscrew and washer. On request zinc-plated steel nut.
 Bases Ø: 125 mm Stem threadings: M20 - M24 - M30



LMP.

Levelling elements
 Zinc-plated steel or AISI 304 stainless steel bases.
 Threaded stem, zinc-plated steel or AISI 303 stainless steel set screw. LM.TR with no-slip coating, thermoplastic elastomer bases (TPE).
 Zinc-plated steel or AISI 304 stainless steel nut.
 Bases Ø: 40 - 50 - 60 - 80 mm
 Threadings: M10 - M12 - M16 - M20 - M24



LV.A-125-APS

Levelling elements
 Technopolymer base, black colour, matte finish, with or without no-slip disk. Available with bases for ground mounting by means of two holes at 180° supplied covered by breakable plastic diaphragm.
 Zinc-plated steel threaded through stem in with regulation hexagon, black-oxide steel retaining ring and zinc-plated steel plain washer.
 On request zinc-plated steel nut.
 Bases Ø: 125 mm
 Stem threadings: M20 - M24 - M30



LMR.

Levelling elements
 Zinc-plated steel or AISI 304 stainless steel bases, sandblasted matte finish. No-slip disk in NBR rubber (PERBUNAN), black colour.
 Zinc-plated steel or AISI 303 stainless steel stem supplied firmly embedded in the metal bases. Hexagon socket head at the upper end or by means of the spanner flats at the lower end. Zinc-plated steel or AISI 304 stainless steel nut. Bases Ø: 50 - 60 - 80 - 100 mm
 Threadings: M16 - M20 - M24



LV.A-ELK

Levelling elements
 Technopolymer bases, black colour, matte finish, with or without NBR rubber no-slip disk.
 Zinc-plated steel threaded articulated stem with technopolymer built-in regulation knob (ELK), black-oxide steel washer and retaining screw.
 On request zinc-plated steel nut.
 Bases Ø: 70 - 80 mm
 Stem threading: M16



LMRS.

Levelling elements
 AISI 304 stainless steel bases, sandblasted matte finish.
 No-slip disk in NBR rubber (PERBUNAN), black colour, vulcanised to the bases. AISI 303 stainless steel stem and adjustable sleeve, sandblasted matte finish. Glued stainless steel assembly screw.
 Bases Ø: 60 - 80 - 100 mm
 Threadings: M16 - M20 - M24

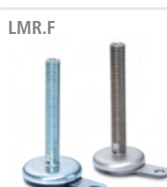


BASES/STEMS/NUTS

Technopolymer bases, black colour, matte finish.
 LV.A-ESD-C in conductive technopolymer, black colour, matte finish. Indicated to prevent accumulation of electrostatic charges.
 Bases can be provided with or without assembled NBR rubber no-slip disk.
 Bases Ø: 25 - 32 - 40 - 50 - 60 - 70 - 80 - 100 - 125 mm

Threaded and articulated spherical stems with regulation hexagon and zinc-plated steel or AISI 304 stainless steel nuts.
 Stem/nut threadings: M8 - M10 - M12 - M16 - M20 - M24

For the table of possible bases/stem combinations, refer to Elessa Catalogue 151.



LMR.F

Levelling elements for ground mounting
 Zinc-plated steel or AISI 304 stainless steel bases and anchoring bracket, sandblasted matte finish. NBR rubber (PERBUNAN), no-slip disk, black colour. Zinc-plated steel or AISI 303 stainless steel threaded stem with hexagon socket and spanner flats at the bases.
 Bases Ø: 50 - 60 - 80 - 100 mm
 Threadings: M10 - M12 - M16 - M20 - M24



NDX.Q NDX.T

Square or round end-caps
 Technopolymer, black colour, matte finish.
 Brass boss, threaded pass-through hole. Also available in the execution for heavy loads with nickel-plated brass boss, threaded pass-through hole (ND.Q).
 Mounting holes: M8 - M10 - M12 - M16 - M20 - M24



LV.A

Vibration-damping levelling elements
 Zinc-plated steel base, levelling plate, threaded stem, nut and washer. NBR rubber vibration-damping disk, black colour.
 Vibration-damping levelling elements have been designed to damp vibrations, shocks and or noises produced by moving bodies or non-balanced vibrating masses of equipment and machine.
 Vibrations can cause:
 - malfunctioning and reduction of the machine lifespan;
 - damage to operator's health;
 - noise.
 Bases Ø: 80 - 120 - 160 - 200 mm
 Threadings: M12 - M16 - M20

CONNECTING CLAMPS

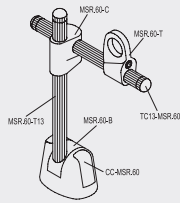
MSR.



Connecting clamps

Base with screw-covers in six colours, technopolymer T-shaped clamp and device clamps, black colour, matte finish. Assemble the bases by means of 2 cylindrical head screws with M6 hexagon socket (not supplied). Aluminium profile connecting tubes, available with standard lengths from 100 to 2000 mm.

Example of MSR composition.



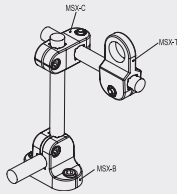
MSX.



Connecting clamps

Base, technopolymer T-shaped clamps and device clamp, black colour, matte finish. Assembly by means of stainless steel M5 screw with cylindrical-head screw with hexagon socket head and nut. The profile of MSX series connecting clamp holes are designed to fit both tubes with round cross section and tubes with square cross section; the latter prevents the elements from rotating.

Example of MSX composition.



MSM.



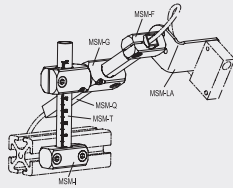
Connecting clamps

Natural aluminium base, matte finish or anodised black colour. AISI 304 stainless steel clamping screws with hexagon socket.

Simple connecting clamps, either T-shaped or rotating natural aluminium matte finish or anodised, black colour. AISI 304 stainless steel clamping screws with hexagon socket.

AISI 304 stainless steel sensor holders, sandblasted, matte finish, with or without cross-shaped hole (MSM-LB).

Example of MSM composition.



For the complete range of MSM connecting clamps, refer to Elesa Catalogue 151.



MSM-T



Connecting tubes

AISI 304 stainless steel
Bar $\varnothing = 8$ and 10 mm
Tube $\varnothing = 12, 16$ and 20 mm

MSM-Q anodised aluminium square tube, natural colour, matte finish, with or without laser engraved precision graduations. Section: 10 - 12 - 16 mm



GN 511

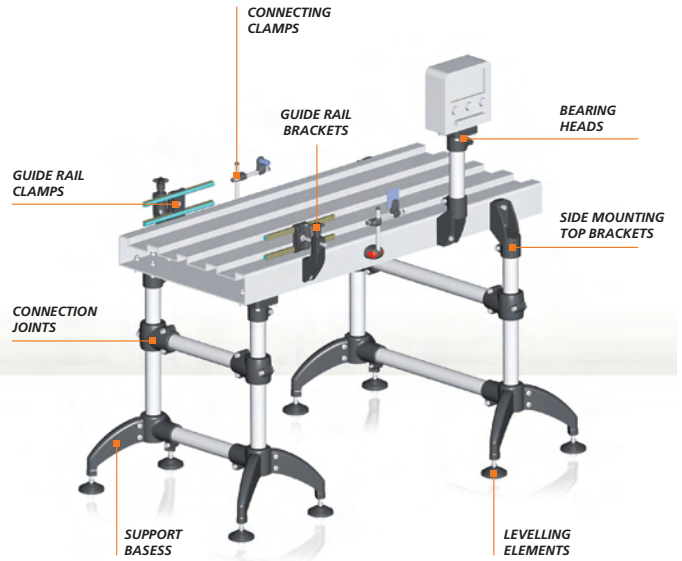


Clamping kit

Zinc alloy die-cast lever, epoxy resin coating, RAL 9006 silver. AISI 303 stainless steel clamping element, threaded pin and distance bushing. Dimensions: 30 - 45 mm

FLEXIBLE AUTOMATION COMPONENTS

Sample composition



BAS3



Support basess with three bearings

Technopolymer, black colour, matte finish. M10 screws, nuts and washers in zinc-plated steel or AISI 304 stainless steel. Assembly on series L.S.A., L.V.A., L.V.F levelling elements. The three bearings of the base are supplied with brass bosses, threaded pass-through hole for the assembly of the stem of the levelling element. Tube housing hole \varnothing : 42 - 48 - 50 - 60 - 45x45 mm



GC.



Connection joints

Technopolymer, black colour, matte finish. M8 cylindrical-head screws with hexagon socket and zinc-plated or AISI 304 stainless steel nuts. Tube housing hole \varnothing : 42 - 48 - 50 - 60 mm



MPG-2



Guide rail clamps

Technopolymer, black colour, matte finish without or without pin in AISI 304 stainless steel. AISI 304 stainless steel pin and clamping nuts. Circular, trapezoidal or rectangular guide housings. Pin \varnothing : 12 - 14 - 16 mm



MPG-5



Guide rail clamps

Technopolymer, black colour, matte finish without or without pin in AISI 304 stainless steel. AISI 304 stainless steel screws and nuts. Round, trapezoidal or rectangular guide housings. Pin \varnothing : 12 - 14 - 16 mm



SPF.



Guide rail brackets clamps for linear positioning

Technopolymer, black colour, matte finish. Nickel-plated AISI 431 stainless steel eye screw and AISI 304 stainless steel washer. Technopolymer clamping knob and nickel-plated brass hexagonal end for clamping by means of a key, threaded hole. Without knob, with AISI 304 stainless steel clamping nut. Guide housing hole \varnothing : 12 - 14 - 16 mm



TTA.



Bearing heads

Technopolymer, black colour, matte finish. M10 screws, nuts and washers in zinc-plated steel or AISI 304 stainless steel. Tube housing hole \varnothing : 48 mm



HINGES AND CONNECTIONS

<p>CFT.</p> 	<p>Hinges with screw-covers Technopolymer hinge and rotation pin, black colour, matte finish. Technopolymer screw-covers, black colour, glossy finish. Assembly by means of pass-through holes for countersunk head screws or cylindrical head screws, nuts or hexagonal head screws. Rotation angle: max 200° (-20° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimensions: 40 - 65 mm</p>	<p>CFV.</p>  <p>Hinges with 4 different detent positions Technopolymer, black colour, matte finish. AISI 303 stainless steel rotation pin. Assembly by means of pass-through holes for countersunk head screws or hexagonal head screws. Rotation angle: max 210° (-90° and +120° being 0° the condition when the interconnected surfaces are on the same plane). About 3 Nm resistant torque. Dimension: 50 mm</p>
<p>CFA.</p> 	<p>Hinges Technopolymer, black colour, matte finish. AISI 303 stainless steel rotation pin. Assembly by means of nickel-plated brass bosses, threaded hole; nickel-plated steel threaded studs; holes and pass-through slotted holes (CFA-SL) for cylindrical head screws. Rotation angle: max 215° (-35° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimensions: 40 - 49 - 65 - 97 mm</p>	<p>CFP.</p>  <p>Hinges with 4 different detent positions Technopolymer, black colour, matte finish. Screw-covers with snap-in assembly. Pass-through holes for countersunk, cylindrical or hexagonal head screws. The detent device (ELESA PATENT) allows four different detent positions of the door: 0°, 80°, 120° and 170°. About 1.1 Nm resistant torque. Rotation angle: max 195° (-15° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimension: 50 mm</p>
<p>CFM.</p>  	<p>Hinges SUPER-technopolymer, black colour, matte finish. CFM-CLEAN white colour similar to RAL 9002. AISI 303 stainless steel rotation pin, nickel-plated steel threaded studs; pass-through holes for countersunk head screws or cylindrical head screws; slotted pass-through holes for cylindrical head screws. Rotation angle: max 270° (-90° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimensions: 30 - 40 - 50 - 60 mm</p> 	<p>CFA-ERS</p>  <p>Hinges with friction brake Technopolymer hinge black colour, matte finish. Black-oxide steel rotation pin. Technopolymer adjustable handle. Assembly by means of pass-through holes. This hinge with friction brake allows to adjust the door open and close desired positions and also the door clamping in any position. Rotation angle: max 215° (-35° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimensions: 49 - 65 - 97 mm</p>
<p>CFS.</p>  	<p>Hinges with built-in safety switch SUPER-technopolymer, black colour, matte finish. AISI 303 stainless steel rotation pin. Axial or rear connector with microswitch on the right or the left. Rotation angle: max 180° (0° and +180° being 0° the condition when the interconnected surfaces are on the same plane). In case of accidental opening of doors, machine protections, or safety doors on machines and production equipment, it automatically breaks off the power supply. Dimensions: 52 mm</p>	<p>CFU.</p>  <p>Hinges with adjustable friction Technopolymer, black colour, matte finish. CFU-CLEAN in white colour similar to RAL 9002. Technopolymer rotation pin. AISI 304 stainless steel adjusting screw and AISI 304 stainless steel boss. Assembly by means of pass-through holes for cylindrical head screws. Rotation angle: max 275° (-95° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimensions: 40 - 60 mm</p> 
<p>CFH.</p> 	<p>Hinges Technopolymer, black colour, matte finish; AISI 303 stainless steel rotation pin. Assembly by means of pass-through holes for cylindrical head screws. Rotation angle: max 275° (-95° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimension: 50 mm</p>	<p>CFE.</p>  <p>Hinges Technopolymer, black colour, matte finish. AISI 303 stainless steel rotation pin. Assembly by means of nickel-plated brass boss, threaded hole or nickel-plated steel threaded studs. Rotation angle: max 200° (-10° and +190° with 0° = coplanar connected surfaces). Dimensions: 30 - 40 - 48 - 66 mm</p>
<p>CMM.</p> 	<p>Hinges Die-cast zinc alloy, black painting, matte finish. CMM-SST AISI 316 stainless steel, natural colour. CMM-BL aluminium, matte finish. CMM-AL anodised aluminium. AISI 303 stainless steel rotation pin. Rotation angle: max 270° (-90° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimensions: 40 - 50 - 60 mm</p> 	<p>CMD.AL</p>  <p>Hinges for thin doors Anodised aluminium, natural colour, matte finish. AISI 303 stainless steel rotation pin. Technopolymer guide bushings for pin. Assembly by means of stainless steel self-tapping screws and semi-rounded head screws. Rotation angle: max 185° (-5° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimension: 45 mm</p>
<p>CMZ.</p> 	<p>Hinges with slotted holes Die-cast zinc alloy, black painted, matte finish. AISI 303 stainless steel rotation pin. Technopolymer guide bushings for pin. Assembly by means of pass-through holes for cylindrical head screws that allow the adjustment during the fitting operations. Rotation angle: max 180° (0° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimension: 55 mm</p>	<p>SQT.</p>  <p>Angles for profile structures Technopolymer, grey colour, matte finish. Two slots for M8 screws; two holes for M8 screws and centring slides; slot and holes for M8 screws. On request, technopolymer covers are available, grey colour. For a very easy assembly on structures made out of aluminium profiles. Dimensions: 40 - 43 mm</p>
<p>CFJ.</p> 	<p>Tamperproof hinges Technopolymer, black colour, matte finish. AISI 303 stainless steel rotation pin that is not accessible from the outside. Assembly by means of nickel-plated brass bosses, threaded hole; nickel-plated steel threaded nuts; pass-through holes for hexagonal head screws. Rotation angle: max 275° (-95° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimension: 50 mm</p>	<p>CFG.</p>  <p>Hinges for profiles Technopolymer, black colour, matte finish with one or two nickel-plated steel rotation pins (CFI). Technopolymer centring inserts for 8 or 10 mm aluminium profiles. Assembly by means of pass-through holes. Rotation angle: CFG. max 280° (-100° e +180°). CFI. max 260°/275° (-95° and +165°/180°) being 0° the condition when the interconnected surfaces are on the same plane. Dimension: 36 mm</p>
<p>CFR.</p>  	<p>Adjustable hinge SUPER-technopolymer, black colour, matte finish; AISI 303 stainless steel rotation pin. Technopolymer adjusting Inserts, black colour. Assembly by means of pass-through holes for M6 countersunk head screws. The adjusting inserts (ELESA PATENT) allow to compensate limited misalignments of doors. Rotation angle: max 270° (-90° and +180° being 0° the condition when the interconnected surfaces are on the same plane). Dimensions: 30 - 40 - 50 - 60 mm</p>	<p>CFO.</p>  <p>Offset lift-off hinge Technopolymer hinge and adjustable pin with octagon slot. Technopolymer covers for pin slot and screw-covers, black colour, glossy finish. Assembly by means of pass-through holes. CFO. offset lift-off hinge (ELESA patent) allows to adjust possible misalignments between the door and the frame. Dimension: 64 mm</p>

12 LATCHES

CMT.AE-V0 CM.



Latches with fold-away knob

CMT.AE-V0: rotor, stator, fold-away knob, closing lever and nut in black technopolymer certified self-extinguish UL-94 V0; SBR rubber packing ring; zinc-plated self-tapping screw. IP 65 protection class. CM. and CML: nickel-plated zinc alloy rotor, stator and knob; brass nut; zinc-plated steel spring washer; zinc-plated steel closing lever and screw. Rotation: 90°
Dimensions: 18 - 20 - 24 - 32 mm



CLT.



Latches with handle for rod controls

Black technopolymer handle and base, matte finish; handle shank in zinc alloy with superficial chromate treatment and NBR rubber O-ring; silicon and NBR rubber packing rings; zinc-plated steel screws. Standard executions: lock with different combinations, one combination or for technopolymer key with zamac insert with two wings, European style stator, execution with IP 65 protection class. Dimension: 160 mm

VCK.



Cam latches with knob

Duroplast knob, black colour, glossy finish, VCK: plain zinc-plated steel stud; helical latch cam in sintered and vaporised steel; black-oxide steel spring dowel pin; zinc-plated steel latch spring to compensate door thickness. Stainless steel VCK-SST.
Standard executions: opening to the right or to the left side. Knob: 50 - 60 - 70 mm



CAR.



Rod controls

Zinc-plated rod guides, zinc alloy with superficial chromate treatment toothed wheel. Body in nickel-plated zinc alloy or technopolymer Length: 347 mm

VC.308 VC.309



Latch-type knobs with lock

Black technopolymer knob, matte finish; zamac stator and rotor; brass locking nut; zinc-plated steel spring washer, positioning washer and closing lever; two nickel-plated brass keys, removable in two positions at 180° (locked or unlocked position).
Standard executions: opening to the right or to the left side; lock with different combinations, one combination; a different combination and master-key or without lock. Knob: 40 mm

CQT.AE-V0 CQ.



Latches with recessed key

CQT.AE-V0 in self-extinguish technopolymer certified UL-94 V0, self-tapping zinc-plated steel screw. CQ: nickel-plated zinc alloy stator and rotor; brass nut, zinc-plated steel shaped closing lever and screw. CQ-SST in stainless steel. Two-wing groove or triangular groove for key in technopolymer. Rotation: 90°
Dimensions: 16 - 18 - 20 - 24 - 28 - 60 - 32 mm



CSMT-A



Latch-type handles with lock and anti-rotation device

Technopolymer handle and stator, chrome-plated zinc alloy rotor; stainless steel front plate; technopolymer nut; zinc-plated steel closing lever; two nickel-plated brass keys, removable in two positions at 180°. IP 65 protection class. Rotation: 90° right.
Standard executions: lock with different combinations or one combination. Handle dimension: 50 mm

CQT-FM.



Latches with recessed key for quick assembling

CQT.FM-AE-V0: black technopolymer. CQT.FM-CR: chrome-plated technopolymer body. Silicon packing ring, stainless steel washer and self-tapping screw. Technopolymer key. Rotation 90°
IP 65 protection class. Dimensions: 18 - 20 - 22 - 25 - 30 mm



CSM



Latch-type handles with lock

Handle and stator in glossy, chrome-plated zinc alloy; chrome-plated zinc alloy rotor; stainless steel front plate; technopolymer nut; zinc-plated steel closing lever; two nickel-plated brass keys, removable in two positions at 180°. IP 65 protection class. Rotation: 90° right.
Standard executions: lock with different combinations or one combination. Handle dimension: 50 mm

GN 315



Snap locks with adjusting spacer

Technopolymer lock and retaining pawl, black colour, matte finish; technopolymer unlocking button, light-grey colour; steel adjusting spacer, black colour; zinc-alloy threaded body; zinc-plated steel locking nut. Adjustment range: from 18 to 28 mm



VCTK. VCMK.



Cam latches with knob

VCTK: technopolymer knob, black colour; chrome-plated zinc alloy stator and rotor; zinc-plated steel latch cam, screws and spring washers; zinc-plated steel nut; aluminium distance element. VCMK: stainless steel knob, stator and rotor, latch cam, screw and spring washer, nut and distance element. Knob diameter: 50 mm



EBR.



Handle for door with safety locking device

Technopolymer, grey-black colour, matte finish with security anti-intrusion profiled slot. AISI 304 stainless steel locking bar with technopolymer push button. Pass-through holes for cylindrical-head screws with hexagon socket. Assembly centre distance: 132 mm



BOCK.



Cam latches with recessed key

BOCK. nickel-plated steel shank; nickel-plated brass guide bush and locking nut; latch cam in sintered and vaporised steel; glossy zinc-plated steel spring; BOCK-SST. stainless steel shank, guide bush and locking nut, latch cam and spring. Technopolymer key. Standard executions: opening to the right or to the left side. Lengths: 46 - 54 - 64 mm



CKE.



Locking bolts

Technopolymer, black colour, matte finish with security anti-intrusion profiled slot. AISI 304 stainless steel locking bar with technopolymer push button. Dimension: 53.5 mm



CS-RPR.



Reprogrammable lock latches

Lock with opposing blades with double track key with internal profile. Chrome-plated zinc alloy stator and rotor and stainless steel front plate; brass nut; zinc-plated steel closing lever and screws. Rotation 180° with key removable in two positions. Accessories: kit of keys containing the programming key and use keys. Dimensions: 20 - 25 - 30 mm

TLT.



Adjustable hook clamps

Zinc-plated steel or AISI 304 stainless steel lever body and catch bracket. Special executions on request: hook clamps with padlock holes or safety spring. Dimension: 60÷70 mm



CX.



Latches with safety lock

Lock with opposing blades with double track key with internal profile. Chrome-plated zinc alloy stator and rotor and stainless steel front plate; brass nut; zinc-plated steel closing lever and screws. Rotation 180°
IP 65 protection class
Dimensions: 22.5 - 27.5 mm

TLV.



Hook clamps

Zinc-plated steel or AISI 304 stainless steel lever body and catch bracket. Special executions on request: catch bracket in different shapes and finishes. Lever dimension: 40 mm



14

CASTORS AND WHEELS

<p>TLF.</p>	<p>Adjustable hook clamps Lever body and catch bracket in zinc-plated steel, nickel-plated steel or AISI 304 stainless steel. TLFS: hook clamp with security stop. Special executions on request: hook clamps in unplated steel. Catch brackets in different shapes and finishes. Dimensions: 138-150 mm</p>	<p>The wheel consists of the following components: tread, covering, wheel central body, bore and rolling actions. Depending on the construction methods and materials forming the covering, the Elessa range presents three families of wheels: rubber wheels (RE.G1, RE.E2, RE.E3, RE.C7), polyurethane wheels (RE.FF, RE.F5), monolithic wheels (RE.F8). Wheels can also be supplied with three different types of brackets, which act as connecting elements between the wheel and the equipment. The three types of brackets available in zinc-plated or stainless steel are fixed bracket, swivel bracket or swivel bracket with brake with different assembly ways to the equipment.</p>
<p>MTC.</p>	<p>Latch clamps C10 zinc-plated steel; zinc-plated steel rivets, pulling hook, oscillating pin and nuts. MTC-SST: stainless steel. Polyurethane handle in red colour. Dimensions: 98 - 152 - 220 mm</p> 	<p>Fixed bracket Swivel bracket Swivel bracket with brake Types of connection to the equipment</p>
<p>MVA.</p>	<p>Vertical toggle clamps with folded base C10 zinc-plated steel; zinc-plated steel rivets. MVA-SST: stainless steel. Polyurethane handle in red colour. Dimensions: 67 - 85 - 110.5 - 129 - 162 - 223 mm</p> 	<p>The choice of wheel is based on the analysis of the actual usage conditions: nature and condition of the ground, environment, type and dimensions of the load, speed and traction force, manoeuvrability. For further technical details, see Elessa Catalogue 151.</p>
<p>MVB.L</p>	<p>Vertical toggle clamps with straight base Long life series C10 zinc-plated steel; C40 zinc-plated steel lever; rotation pins and support bushing in hardened and ground black-oxide steel; zinc-plated steel adjusting screw and nut; polyurethane handle in red colour. Dimensions: 91 - 129.5 mm</p> 	<p>RE.FF Injected polyurethane wheels Injected polyurethane covering. Technopolymer wheel centre body. Axle set: calibrated precision tube for free rotation of the bore. Bore directly made into the wheel centre body. Wheel only, wheel with fixed or swivel plate bracket in electrolytically zinc-plated steel or stainless steel with or without front-actuated brake. Wheel Ø: 80 - 100 - 125 - 150 mm</p>
<p>MGA.L</p>	<p>Toggle-joint mechanisms Weldable black-oxide steel; rotation pin and support bushing in hardened and ground black-oxide steel; zinc-plated steel adjusting screw and nut. Dimensions: 57.5 - 58.5 - 115 mm</p> 	<p>RE.F5 Mould-on polyurethane wheels Mould-on polyurethane covering. Die-cast aluminium wheel centre body. Bore and axle: processed calibrated tube processed to obtain an even surface where roller bearings and spacers are inserted. Wheel only, wheel with fixed or swivel bracket plate in electrolytically zinc-plated steel with or without front-actuated brake. Wheel Ø: 80 - 100 - 125 - 150 - 200 mm</p>
<p>MFC.</p>	<p>Push-pull clamps C10 zinc-plated steel; zinc-plated steel rivets and push lever; brass or pressed steel base, black colour; polyurethane handle in red colour. Dimensions: 86 - 116 - 122 - 164.5 - 182 - 238 - 316 mm</p>	<p>RE.F8 Monolithic wheels Technopolymer wheel centre body. Axle set: calibrated precision tube for free rotation of the bore. Bore directly made into the wheel centre body. Wheel only, wheel with fixed or swivel bracket plate in zinc-plated steel or stainless steel with or without front-actuated brake. Wheel Ø: 65 - 80 - 100 - 125 - 150 - 200 mm</p>
<p>MTP.</p>	<p>Latch clamps. Heavy-duty series Weldable coated steel, black colour; hardened and ground steel pin; zinc-plated steel pulling hook, oscillating pin and nuts. MTP-SST: stainless steel. Dimensions: 220 - 273 mm</p> 	<p>RE.G1 Thermoplastic rubber wheels Thermoplastic rubber covering. Technopolymer wheel centre body. Axle set: calibrated zinc-plated steel precision tube for free rotation of the bore. Bore directly made into the wheel centre body. Wheel only, wheel with fixed or swivel plate bracket in electrolytically zinc-plated steel with or without front-actuated brake. Wheel Ø: 80 - 100 - 125 - 150 mm</p>
<p>MTL.</p>	<p>Latch clamps with safety device. Heavy-duty series Weldable black-oxide steel; hardened and ground steel pins; polyurethane handle in red colour. Dimension: 318 mm</p>	<p>RE.E2 Vulcanised rubber wheels NBR vulcanised rubber covering. Technopolymer wheel centre body. Axle set: calibrated zinc-plated steel precision tube for free rotation of the bore. Bore directly made into the wheel centre body. Wheel only, wheel with fixed or swivel bracket plate in electrolytically zinc-plated steel with or without front-actuated brake. Wheel Ø: 80 - 100 - 125 - 150 mm</p>
<p>PVC.</p>	<p>Pneumatic clamps with toggle-joint support C10 Zinc-plated steel; zinc-plated steel rivets and pins; black-oxide steel hexagon-socket head screws with countersink for cylinder support; cylinder support bushings in hardened steel; hardened steel rotation pin and seeger ring. Dimensions: from 163 to 362 mm</p>	<p>RE.C7 Vulcanised rubber wheels for the general public Grey anti-trace vulcanised rubber covering. Technopolymer wheel centre body. Axle set: calibrated zinc-plated steel precision tube for free rotation of the bore. Bore directly made into the wheel centre body. Wheel only, wheel with fixed or swivel bracket plate in electrolytically zinc-plated steel with or without front-actuated brake. Wheel Ø: 80 - 100 - 125 - 150 mm</p>



Hydraulic systems require reliable components and of the best quality. Caps, valves and indicators made out of low quality materials or by obsolete technologies may compromise the correct functioning of the system and cause damage.

Hydraulic systems often operate in particularly unfavourable conditions or in explosive atmospheres. High or low temperatures, humidity and contact with different chemical substances, that may affect their performance, are some of the most common conditions of use.

Hydraulic accessories range proposes several solutions that meet the most common market requirements, always in the respect of the traditional quality and reliability of ELESA products.

13



13. ACCESSORIES FOR HYDRAULIC SYSTEMS

Plugs

A wide range of ATEX certified "fill" or "drain" plugs with several metric and GAS threadings.

Breather caps

From the easiest breather cap SFN. to the sophisticated double-valve pressurised breather cap with vandal-proof device, the ELESA range offers different executions in plastic or metal which satisfy all market requirements.

Oil sights and level indicators

They are available in technopolymer, in aluminium or brass with or without contrast screen or prismatic window, suitable also for use at high temperatures.

Column level indicators

ELESA offers a wide range of level indicators made out of different materials which can also withstand contact with alcohol and hot water, and with solutions containing glycol.

Executions with technopolymer or stainless steel screws allow an excellent resistance to corrosion. Some series are also available with electrical devices to control temperature and fluid level.



Elements with stainless steel insert or entirely made out of stainless steel



Element compliant with Health and Safety Requirements intended by European Directive ATEX 94/9/EC (explosive atmospheres) for equipments Group II devices, category 2GD.

<p>TN.</p> 	<p>Plugs Technopolymer, black colour, matte finish. NBR rubber flat packing ring. TNR. with NBR rubber O-ring. Maximum continuous working temperature: 130°C Metric threadings (pitch 1.5): M10 - M12 - M14 - M16 - M18 - M20 - M22 - M25 - M26 - M35 - M40 GAS threadings: 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2</p>	<p>TPC.</p> 	<p>Oil fill plugs for push-fit Black technopolymer, matte finish, with graphic symbol "fill", with or without side breather hole. NBR rubber two O-rings. TPC+a and TPCF+a with flat dipstick in phosphatised steel. Maximum continuous working temperature: 100°C Diameters: 20 - 26 mm</p>
<p>TN-EX</p> 	<p>Plugs Technopolymer, black colour, matte finish. NBR rubber flat packing ring. Plugs in series TN-EX are compliant with Health and Safety Requirements intended by European Directive ATEX 94/9/EC (explosive atmospheres) for equipments Group II, category 2GD. GAS threadings: 3/8 - 1/2 - 3/4</p> 	<p>T.440</p> 	<p>Plugs Technopolymer, black colour, matte finish with or without flat dipstick in phosphatised steel. NBR rubber flat packing ring. Maximum continuous working temperature: 120°C GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2</p>
<p>MH.</p> 	<p>Plates with graphic symbols for oil plugs Matte anodised aluminium. Self-adhesive back for sticking to the plain surface of the plug head. MH.N: plain surface, without symbols; MH.C: with graphic symbol "fill" according to DIN regulations; MH.S: with graphic symbol "drain" according to DIN regulations; Maximum continuous working temperature: 130°C Diameters: 15 - 17 - 20.5 - 25 - 31 mm</p>	<p>SFN.</p> 	<p>Breather caps Orange technopolymer cover; black technopolymer threaded connector or zinc-plated steel sheet bayonet. With or without air filter in "tech-foam". NBR rubber flat packing ring. Maximum continuous working temperature: 120°C with air filter, 100°C with "tech-foam" air filter. Diameters: 30 - 40 - 57 - 70 mm GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2 - 2</p>
<p>TCD.</p> 	<p>Oil fill plugs Black technopolymer, matte finish, with graphic symbol "fill", with or without side breather hole. NBR rubber flat packing ring. TCD+a with flat dipstick in phosphatised steel. Maximum continuous working temperature: 130°C Metric threadings (pitch 1.5): M10 - M12 - M14 - M16 - M18 - M20 - M22 - M25 - M26 - M35 - M40. GAS threadings: 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2</p>	<p>SFC.</p> 	<p>Breather cap with sealing closure Black technopolymer cover and threaded connector, semi-matte finish. NBR rubber O-ring. Air filter in polyurethane foam mesh "tech-foam". The cover of the SFC. breather cap can be positioned in two different ways: breather position or closure position. Maximum continuous working temperature: 80°C GAS threading: 3/8</p>
<p>TSD.</p> 	<p>Oil drain plugs Technopolymer, red colour similar to RAL 3000, matte finish, with graphic symbol "drain". NBR rubber flat packing ring. Maximum continuous working temperature: 130°C Metric threadings (pitch 1.5): M10 - M12 - M14 - M16 - M18 - M20 - M22 - M25 - M26 - M35 - M40 GAS threadings: 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2</p>	<p>SFP. EX</p> 	<p>Breather caps with splash guard Orange technopolymer cover and black technopolymer threaded connector. Splash guard with or without "tech-foam" or "tech-fill" air filter. NBR rubber flat packing ring. Maximum continuous working temperature: 120°C without air filter, 100°C with filter. SFP. EX breather caps are compliant with European Directive ATEX 94/9/EC. Metric threadings (pitch 1.5): M16 - M18 - M20 - M22 GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2 - 2</p> 
<p>TMA.</p> 	<p>Magnetic plugs Aluminium. Permanent magnetic element in special alloy with a high attractive power to keep metal particles in oil. Plate marked "MAGNETIC" and graphic symbol, matte anodised aluminium. NBR rubber flat packing ring. Maximum continuous working temperature: 130°C GAS threadings: 1/4 - 3/8 - 1/2 - 3/4</p>	<p>SFP+a</p> 	<p>Breather caps with splash guard and flat dipstick Technopolymer cover; technopolymer threaded connector or zinc-plated steel sheet bayonet; splash guard with or without air filter. NBR rubber flat packing ring. Flat dipstick in phosphatised steel. Maximum continuous working temperature: 120°C without air filter, 100°C with air filter. Diameters: 30 - 40 - 57 - 70 mm Metric threadings (pitch 1.5): M16 - M18 - M20 - M22 GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2 - 2</p>
<p>TCE.</p> 	<p>Plugs with hexagon socket Technopolymer, black colour, matte finish. GN 749 zinc-plated steel ultrasonically checked. NBR rubber flat packing ring. Maximum continuous working temperature: TCE. 130° C - GN 749 120°C GAS threadings: 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4</p>	<p>TVD.</p> 	<p>Breather caps with vacuum breaker valve Technopolymer, red colour with EPDM rubber membrane gasket, green colour with FKM rubber membrane gasket. Threaded connector in black technopolymer. Flat packing ring in EPDM (red cover) or FKM (green cover). Maximum continuous working temperature: 50°C GAS threading: 1 1/4</p>
<p>GN 741</p> 	<p>Plugs Aluminium, sandblasted matte finish. Flat packing ring in NBR rubber (GN 741) or FKM (GN 742) for use at high temperatures. Maximum continuous working temperature: 120°C (GN 741) or 200°C (GN 742). Metric threadings (pitch 1.5): M16 - M20 - M26 GAS threadings: 3/8 - 1/2 - 3/4 - 1</p> 	<p>SFV.</p> 	<p>Valve breather caps Orange technopolymer cover, with "valve" symbol and black technopolymer threaded connector. NBR rubber flat packing ring. Valve: technopolymer sealing disk with NBR rubber o-ring and stainless steel spring with calibration 10 mb or 100 mb. Maximum continuous working temperature: 120°C GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 Metric threadings (pitch 1.5): 16 - 18 - 20 - 22</p>
<p>GN 441</p> 	<p>Plugs Natural aluminium or with epoxy resin coating, black colour, matte finish. Flat packing ring in NBR rubber (GN 441) or FKM (GN 442) for use at high temperatures. Maximum continuous working temperature: 120°C (GN 441) or 200°C (GN 442). Metric threadings (pitch 1.5): M16 - M20 - M26 GAS threadings: 3/8 - 1/2 - 3/4 - 1</p> 	<p>SFW.</p> 	<p>Double-valve pressurised breather caps Technopolymer, orange cover with "valve" symbol. Black threaded connector or zinc-plated steel sheet bayonet; ring-shaped air filter in "tech-foam". NBR rubber flat packing ring. Overpressure valve set at around 0.350 bar. Suction valve set at around 0.030 bar. Maximum continuous working temperature: 100°C. GAS threadings: 3/4 - 1 1/4</p>

<p>SWF/VP</p> 	<p>Double-valve pressurised breather caps vandal-proof Black technopolymer cover and threaded connector; ring-shaped air filter in "tech-foam". NBR rubber flat packing ring. Overpressure valve set at around 0.350 bar. Suction valve set at around 0.030 bar. Maximum continuous working temperature: 100°C. Metric threadings (pitch 2): M42 GAS threading: 3/4</p>	<p>GN 743.7</p> 	<p>Oil level indicators with conical threading Brass with natural glass window or ESG safety glass. (GN 473.8). Standard executions: with or without technopolymer contrast screen. Maximum continuous working temperature: 100°C or 180°C (GN 743.8). Conical threadings: R3/8 - R1/2 - R3/4 - R1 - R1 1/4</p> 
<p>SMN. SMW.</p> 	<p>Simple breather caps or double-valve breather caps with threaded connector Chrome-plated sheet steel cover; zinc-plated sheet steel flange; zinc-plated steel threaded connector. NBR rubber flat packing ring. SMW, with overpressure valve set at around 0.350 bar and suction valve set at around 0.030 bar. Also available with dipstick. Ring-shaped air filter in "tech-foam". GAS threadings: 1/4 3/4</p>	<p>HGFT.PR</p> 	<p>Oil level indicators with prismatic window Technopolymer, black colour, glossy finish. Transparent technopolymer prismatic window HGFT-HT-PR with prismatic transparent window for high temperatures. Flat packing ring in NBR rubber or FKM (HGFT-HT-PR). Maximum continuous working temperature: 100°C at 3 bar pressure (HGFT.PR) or 140°C at 7 bar pressure (HGFT-HT-PR). GAS threadings: 1/2 - 3/4 - 1</p>
<p>FRF+C</p> 	<p>Flange for threaded cap Flange in black technopolymer or in zinc-plated steel with threaded connector or in zinc-plated steel with bayonet (FRB+C); technopolymer basket, black colour, matte finish. Flat gasket in cork impregnated MGS based rubber. Assembly by means of six zinc-plated steel self-tapping screws. GAS threading: 1 1/4</p>	<p>GN 744</p> 	<p>Oil level indicators with prismatic window Aluminium, glossy finish. Transparent technopolymer prismatic window. NBR rubber flat packing ring. Maximum continuous working temperature: 100°C. Metric threadings (pitch 1.5): M20 - M26 - M27 - M33 GAS threadings: 1/2 - 3/4 - 1</p> 
<p>PLRB+C</p> 	<p>Side mount for bayonet cap Black technopolymer mount with NBR rubber packing ring; flange in zinc-plated steel with bayonet or in black technopolymer with threaded connector (PLRF+C) and flat gasket in cork impregnated MGS based rubber; black technopolymer basket. Threading for series PLRF+C: GAS: 1 1/4</p>	<p>HRT.</p> 	<p>Oil level indicators push-fit Black technopolymer, matte finish; transparent technopolymer window. White lacquered aluminium contrast screen with red level line. HRT/T: with bimetallic thermometer with graduated scale up to 100°C. NBR rubber O-ring. Maximum continuous working temperature: 100°C Suitable for assembly on reservoirs with limited pressure. Diameters: 28 - 36 - 42 - 64 mm</p>
<p>HGFT.</p> 	<p>Oil level indicators Technopolymer, black or red colour, glossy finish; transparent technopolymer window. Standard executions with or without matte anodised aluminium star-shaped contrast screen with red central level point. NBR rubber flat packing ring. Maximum continuous working temperature: 100°C at 3 bar pressure. GAS threadings: 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 2</p>	<p>HE.</p> 	<p>Oil level indicators push-fit Transparent high mechanical resistance polycarbonate. White lacquered aluminium contrast screen with red level line. NBR rubber O-ring. Maximum continuous working temperature: 100°C Suitable for assembly on reservoirs with limited pressure. Diameters: 18 - 21 - 28 - 32 - 38 - 43 - 47 mm</p>
<p>HGFT.EX</p> 	<p>Oil level indicators Technopolymer, black or red colour, glossy finish; transparent technopolymer window. NBR rubber flat packing ring. HGFT.EX level indicators are compliant with European Directive ATEX 94/9/EC. GAS threadings: 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 2</p> 	<p>HFTX.</p> 	<p>Oil level indicators Transparent technopolymer. Matte anodised aluminium star-shaped contrast screen in with red central level point. NBR rubber flat packing ring. Maximum continuous working temperature: 110°C Metric threadings (pitch 1.5): M16 - M20 - M25 - M26 - M27 - M30 - M35 - M40. GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4</p>
<p>GN 743</p> 	<p>Oil level indicators Aluminium, glossy finish. Natural glass window or ESG safety glass window (GN 473.1). With or without technopolymer contrast screen. Flat packing ring in NBR rubber or FKM (GN 743.1). Maximum continuous working temperature: 100°C or 180°C (GN 743.1). Metric threadings (pitch 1.5): M16 - M20 - M26 - M27 - M33 - M40 - M42 GAS threadings: 3/8 - 1/2 - 3/4 - 1 - 1 1/4</p> 	<p>HFTX.PR</p> 	<p>Oil level indicators with prismatic window Transparent technopolymer threaded body with prismatic window. The continuous series of internal prisms provides a clear reading of the oil level as the effect of refraction. NBR rubber flat packing ring. Maximum continuous working temperature: 110°C GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1</p>
<p>GN 743.2</p> 	<p>Oil level indicators Brass with natural glass window or ESG safety glass. (GN 473.3). With or without technopolymer contrast screen. Flat packing ring in NBR rubber or FKM (GN 743.3). Maximum continuous working temperature: 100°C or 180°C (GN 743.3). Metric threadings (pitch 1.5): M16 - M20 - M26 - M27 - M33 GAS threadings: 3/8 - 1/2 - 3/4 - 1</p> 	<p>HCFE. EX</p> 	<p>Oil circulation sights Transparent technopolymer. NBR rubber flat packing ring. HCFE.EX level indicators are compliant with Health and Safety Requirements established by European Directive ATEX 94/9/EC (explosive atmospheres) for equipments Group II, category 2GD. GAS threadings: 3/8 - 1/2 - 3/4</p> 
<p>GN 743.6</p> 	<p>Oil level indicators Aluminium, glossy finish. ESG safety glass window. FKM flat packing ring. GN 743.6 level indicators are compliant with European Directive ATEX 94/9/EC. Maximum continuous working temperature: 150°C Metric threadings (pitch 1.5): M16 - M20 - M26 - M27 GAS threadings: 3/8 - 1/2 - 3/4</p> 	<p>HCFE-C.</p> 	<p>Oil circulation sights Transparent technopolymer. Oil level check delimited by a small red coloured externally tampprinted circle. NBR rubber flat packing ring. Maximum continuous working temperature: 110°C GAS threadings: 1/2 - 3/4 - 1</p>

<p>HCZ.</p> 	<p>Column level indicators Transparent technopolymer. Zinc-plated steel screws and nuts. Step-shaped packing rings for the seal on reservoir walls and NBR rubber O-ring screw underneath. Contrast screen in white lacquered aluminium. With or without thermometer; with or without SUPER-technopolymer protection frame. Maximum continuous working temperature: 90°C (with oil). Assembly centre distance: 76 - 127 mm</p>	<p>HCX/VT</p> 	<p>Column level indicators Transparent technopolymer. SUPER-technopolymer screws. AISI 304 stainless steel packing rings and nuts. NBR rubber o-RING. White lacquered aluminium contrast screen with or without incorporated thermometer. Maximum continuous working temperature: 90°C. Assembly centre distance: 127 - 254 mm</p>
<p>HCK.</p> 	<p>Column level indicators with transparent protection Black technopolymer assembly ends. Aluminium protection. Column level window in transparent polycarbonate tube. HCK-GL with Pyrex tube, also suitable for use with glycol-based solutions. Transparent polycarbonate front protection against accidental shocks. Zinc-plated steel or stainless steel screws, nuts and packing rings. O-ring in NBR rubber or FKM (HCK-GL). Graduated plastic contrast screen. Maximum continuous working temperature: 100°C or 130°C (HCK-GL). Assembly centre distance: 76 - 127 - 254 mm</p>	<p>HCX/E</p> 	<p>Column level indicators with MIN level electrical sensor Transparent technopolymer. Zinc-plated steel screws, nuts and packing rings. NBR rubber O-ring. Expanded black technopolymer float, with a built-in magnetic element to activate the contact. Watertight sensor bracket in technopolymer with a built-in relay. Swivelling two-pin connector with cable gland and contact holder. Available with electrical contact NO or NC. White lacquered aluminium contrast screen. Maximum continuous working temperature: 90°C (with oil). Assembly centre distance: 127 mm</p>
<p>HCL.</p> 	<p>Column level indicators with U-shaped protections Black technopolymer assembly ends. Aluminium protection. Column level window in transparent (PMMA) tube. Zinc-plated steel screws. NBR rubber O-ring. Graduated plastic contrast screen. Maximum continuous working temperature: 70°C. Assembly centre distance: 300 - 400 - 500 mm</p>	<p>HGX/E+STL</p> 	<p>Column level indicators with MIN level electrical sensor and temperature electrical probe Transparent technopolymer. Zinc-plated steel screws, nuts and packing rings. NBR rubber O-ring. Expanded black technopolymer float with a built-in magnetic element to activate the contact. Watertight sensor bracket in technopolymer with a built-in relay. Temperature electrical probe: zinc-plated steel screws. Swivelling two-pin connectors with cable glands and contact holders. Available with electrical contact NO or NC. White lacquered aluminium contrast screen. Maximum continuous working temperature: 90°C (with oil). Assembly centre distance: 127 mm</p>
<p>HCX.</p> 	<p>Column level indicators Transparent technopolymer. HCX/AR for use with fluids containing alcohol. HCX-BW-SST for use with hot water. Zinc-plated steel screws, nuts and packing rings. AISI 303 stainless steel screws, AISI 304 stainless steel nuts and packing rings (HCX-BW-SST / HCX-SST). O-ring in NBR rubber or FKM (HCX-BW-SST - HCX-SST). White lacquered aluminium contrast screen with or without incorporated thermometer (except for HCX-BW-SST). Maximum continuous working temperature: 80°C or 90°C depending on the series. Assembly centre distance: 76 - 127 - 254 mm</p> <p style="text-align: right;">INOX Stainless Steel</p>	<p>HCY-E</p> 	<p>Column level indicators with MIN level electrical sensor Transparent technopolymer. Nickel-plated brass screws. NBR rubber O-ring. Red technopolymer float with a built-in magnetic element to activate the contact. Watertight sensor bracket with a built-in relay. Right side output connector. Available with electrical contact NO or NC. White lacquered aluminium contrast screen. Maximum continuous working temperature: 80°C (with oil). Assembly centre distance: 76 - 127 - 254 mm</p>
<p>HCX+ST</p> 	<p>Column level indicators with MAX temperature electrical sensor Transparent technopolymer. Zinc-plated steel screws, nuts and packing rings. NBR rubber O-ring. Temperature electrical sensor (MAX 80°C). Zinc-plated steel screws with built-in sensor. Swivelling two-pin connector with cable gland and contact holder. Available with electrical contact NO or NC. White lacquered aluminium contrast screen. Maximum continuous working temperature: 90°C (with oil). Assembly centre distance: 127 - 254 mm</p>	<p>HFL-E</p> 	<p>Rapid levels with float Technopolymer, grey colour. Flat gasket in TPE or NBR rubber O-ring. Connector with sensor block fitted with side output and reed switch. AISI 304 stainless steel tubular dipstick. NBR rubber float. Assembly by means of zinc-plated steel flange or threaded coupler 1" Gas. Maximum continuous working temperature: 80°C (with oil). HFL-E rapid levels with float show a minimum or maximum default level, according to the application needs.</p>

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