1 | OPERATING ELEMENTS  
Spoked handwheels, solid handwheels, arm handwheels, crank handles

2 | CLAMPING KNOBS  
Lobe knobs, grip knobs

3 | CLAMPING LEVERS  
Adjustable handles, lever handles

4 | LIFT & PULL HANDLES  
Bridge handles, flush pull handles, tubular handles

5 | FIXED & REVOLVING HANDLES  
Fixed handles, revolving handles, fold-away handles

6 | CONTROL ELEMENTS  
Control knobs, control levers

7 | POSITION INDICATORS  
Gravity indicators, positive drive indicators, direct drive indicators, handwheels with indicator

8 | INDEXING AND POSITIONING ELEMENTS  
Indexing plungers, lock pins, spring plungers

9 | MACHINE ELEMENTS  
Grub-screws, thrust pads, ring, washers, cam locking levers, vibration-damping elements, transfer units, magnets, bull’s eye levels

10 | LEVELLING ELEMENTS AND SUPPORTS  
Levelling elements, bearing end caps, connecting clamps, supports and guides

11 | HINGES AND CONNECTIONS  
Plastic hinges, metal hinges, connecting angles

12 | LATCHES  
Latches with knob, latches with key, hook clamps, toggle clamps

13 | ACCESSORIES FOR HYDRAULIC SYSTEMS  
Plugs, breather caps, level indicators, flow indicators

14 | CASTORS AND WHEELS  
Injected polyurethane wheels, technopolymer wheels, rubber wheels

15 | CONNECTING CLAMPS  
Connecting clamps for tubes, tubes and accessories, linear actuators and clamp connectors

RH | HANDLES FOR SPECIAL APPLICATIONS  
Handles for instruments and equipment, handles for machines and protections, stainless steel handles, “CLEAN” handles for medical and food processing equipment

Browse the full range on elesa.com
Established in 1941, ELESA is the international reference for standard components destined for the mechanical, machinery and industrial equipment sectors.

An excellent combination of technology and design has given rise to a diverse production thanks to the constant commitment to follow developments in engineering plastics and metal technology. A corporate culture strongly committed to product quality combined with an innate sensitivity for design and ergonomic research led to the creation of products unique and recognisable worldwide as ELESA products.

- 180 PATENTS AND REGISTERED DESIGNS
- 38 INDUSTRIAL DESIGN AWARDS
- WORLDWIDE DISTRIBUTION
- 40,000 PRODUCT CODES AVAILABLE ON STOCK
- CUSTOMISED SOLUTIONS
- TECHNICAL COMPETENCE AT THE CUSTOMERS’ SERVICE

ELESA
Technology and Design
Design and production activities are concentrated at the headquarters in Monza. An area of over 70,000 square meters - 26,000 covered - tens of millions of pieces are produced every year by utilising the latest automated production technologies. In the Logistics Centre over 40,000 product codes are ready to be shipped worldwide.

Quality - Environment - Safety

- Quality Management System certified according to ISO 9001 by British Standards Institution (BSI) since 1993.
- Environmental Management System certified according to ISO 14001 since 2007.
- Occupational Health and Safety Management System certified according to BS OHSAS 18001 since 2012.
- Authorised Economic Operator Full certified by the European Custom Agency since 2014: recognition of full reliability of customs procedures.

ELESA is associated with:
- Italian Association of Machine Tool Manufacturers
- Italian Packaging Machinery Manufacturers Association
- Unione Costruttori Italiani Macchine Automatiche per il Confezionamento e l’Imballaggio
- ITALIAN INSTITUTE OF UNIFICATION
ELESA guarantees the reliability of its products, designed and manufactured in Italy at the headquarters in Monza. Authentically “Made in Italy” which has become popular around the world and particularly appreciated by the most qualified machine manufacturers.

ELESA products are sold in more than 60 countries worldwide through 11 subsidiaries and qualified distributors in the major industrialised countries, ensuring an efficient and timely service. The international distribution network provides all customer services in addition to professional technical advice.
ELESA+GANTER is the commercial joint venture between two world leaders in the production of standard industrial components. A brand in over 35 countries with subsidiaries and qualified distributors.

Elesa has been cooperating for over 45 years with Otto Ganter GmbH & Co. KG (Germany) – a qualified manufacturer of standard elements according to its own GN standards or DIN German standards, which identify the corresponding products – to offer the widest range of components for machinery and industrial equipment.
ELESA
The utmost competence

Research & Development
ELESA continues to invest in R&D and in particular in the innovation of its production technologies with the aim of creating new products or to further improve performance and reliability of existing ones.

Testing laboratory
An internal testing laboratory with the most advanced equipment and measuring instruments, studies the evolution of new technopolymers in order to extend their use in more high performing applications in the field of industrial components. All standard products in the ELESA range are subjected to mechanical, physical, chemical and durability testing in order to provide correct and reliable technical data. The ELESA laboratory is at the disposal of customers for carrying out tests that simulate specific or particularly heavy conditions of use.
In addition to the widest range of standard machine elements available on the market, ELESA offers customised technical solutions in order to meet the customer's specific needs. Production flexibility, technical know-how, R&D constant activity and customer care allow for quick answers and competitive solutions.

**Product customisation**
Logos and text by tampoprinting, laser-engraving and moulding.

**Special colours**
Non standard colour options.

**Special materials and shapes**
Special technopolymers, stainless steel and metals; special shapes, dimensions and metal inserts.

**Surface treatments**
Black-oxide coating, zinc-plating, nickel plating, chrome-plating, anodising, epoxy-resin coating.

**Machining service**
Bosses with hole and keyway in compliance with DIN Standards.
The Catalogue - AM
Always attentive to the designers’ needs, ELESA offers for the American market a catalogue with Inch and Metric size products also available on DVD and on elesa.com.
Each product sheet features full technical descriptions, data, drawings and dimension tables allowing the designer to easily identify the correct product code and description when ordering.

www.elesa.com
From your desktop, tablet or smartphone ELESA’s website is always updated, fast and easy to navigate. The MyELESA area allows website users to download 2D and 3D CAD drawings, create and manage favourites and add to Cart products for quotation requests.
3D animations and videos
For deeper information on the technical characteristics of products and their applications.

ELESA Newsletter
Stay up to date with the latest ELESA news. Keep updated about new products, exhibitions or interesting technical details. Sign up on elesa.com!

Customer care
To answer all technical questions or to provide commercial information, an internal sales staff is constantly in contact with sales engineers in the field.

Road-show
To optimise customers’ time, ELESA bring its product range directly to customers’ premises. An easy and time-saving way to present the latest new products. ELESA sales engineers are available to customise technical sessions to highlight specific product features.
Since the 50’s, ELESA has been actively involved in the cultural revision of machine tool aesthetics, that was taking shape around that time, by innovating the design of accessories and components for the mechanical industry, machinery and industrial equipment. An ongoing commitment to which ELESA has always been loyal over the decades, as proven by the 38 industrial design awards from the most prestigious juries, received in the last 30 years.

“We design our products to offer perfect functionality and the best ergonomics, whilst keeping in mind the creation of unique designs recognisable the world over as ELESA products, many times we have achieved our goal.”

The years in which ELESA products have received Industrial Design awards:

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Every single detail be it aesthetic or functional is essential and can significantly improve the perception of a product.

ELESA design helps to enhance the value and quality of your products.
Ergonomics and Design
the service of functionality and security

Ergostyle® elements were initially conceived for a series of new market segment applications including hospital and medical equipment, sports and leisure equipment, scientific instrumentation and office furniture. Nowadays Ergostyle elements are also applied in more traditional industrial sectors whose machines and equipment have undergone a profound aesthetic and design renovation over the last few decades. Elements with soft and elegant shapes with inserts in 6 Ergostyle® colours allow the components to be better integrated on machinery from an aesthetical point of view. In addition, the coloured inserts can be used to differentiate machinery functions, contributing to enhance their value.

FIVE POINTS:
a discreet trademark that distinguishes all ERGOSTYLE® products

The 6 ERGOSTYLE® colours
When the advantages of engineering plastics combine favourably with metal

“SUPER-Technopolymers” - new technopolymers with high mechanical and thermal performance - represent the latest evolution of engineering polymer materials for the industrial sector. The most technologically advanced industries, such as automotive, aviation and electronics, have long understood the benefits of using these new generation engineering plastics. The possibility to replace metal, commonly called “metal replacement”, in more numerous applications, is now possible with the use of high performance engineering plastics.

In order to have technopolymer products in applications which have been so far a prerogative of the metal products, the design phase needs to be performed with great expertise by optimising shapes and thickness, to benefit from all the typical characteristics of polymeric materials.

ELESA has developed several components made of SUPER-technopolymer able to guarantee the following advantages:

- high mechanical performance
- corrosion resistance
- lightness
- non magnetic
- low coefficient of friction
- maintenance free
- thermal insulation
- coloured material throughout
High Performing Items: standard components made of engineering plastics with innovative features and stainless steel to meet needs of specific industries.

**ELESA**

High performing items

**CORROSION RESISTANCE**
Components made of technopolymer with AISI 303, 304 or 316 stainless steel inserts or entirely in stainless steel. Excellent corrosion resistance for applications in sectors where provisions of law make it mandatory to use corrosion resistant materials.
- food processing, pharmaceutical and chemical

**WHITE COLOUR WITH DIRT-PROOF SURFACES**
Smooth surface in white colour RAL 9002 for easy cleaning and AISI 303 or 304 stainless steel inserts. Compact shape and lack of cavities avoid any deposit of dirt, dust or machining residues.
- medical and hospital equipment

**SAFE, COMFORTABLE AND NON-SLIP GRIP**
The soft-touch surface in thermoplastic elastomer (TPE) provides a secure, comfortable grip even under unfavourable conditions of use, such as in the presence of moisture and grease and improves the comfort for the operator’s hand, allowing absorption of any vibrations during operation.
- fitness, rehab and disability aids and equipment
- high precision instruments
- equipment subject to unfavourable climatic conditions

**CHROME-PLATED TECHNOPOLYMER**
Technopolymer components with chrome-plated surface resistant to acetone, sea water, formic acid, ethyl alcohol, detergents and chlorine solutions.
- equipment for outdoor environments subject to unfavourable climatic conditions
- machines and tools subject to frequent cleaning cycles
SANITATION AGAINST BACTERIAL INFECTIONS

The special technopolymer containing antimicrobial additives (mixture of silver ions on an inorganic ceramic base without chemicals, antibiotics or pesticides) prevents the deposit of any unhealthy organisms such as microbes, bacteria, mildew and fungi, preventing their reproduction.

- medical, hospital, rehab and disability aids and equipment
- machines for the food-processing and pharmaceutical industry
- urban and public fittings

SELF-EXTINGUISHING TECHNOPOLYMER

Special technopolymer certified "V0" in accordance with UL-94 V (Underwriters Laboratories) for use in public environments where flame-proof material is required.

- urban and public fittings
- entertainment equipment

CONDUCTIVE TECHNOPOLYMER

The special technopolymer prevents the accumulation of electrostatic charge between bodies with different electric potential. The ESD-C label (Electrostatic Discharge-Conductive), indelibly printed on the surface of the elements, identifies the specific conductive feature according to the standards EN 100015/1 and IEC 61340-5-1.

- assembly lines for electronic components
- "ESD-Protected" area

COMPLIANT WITH ATEX EUROPEAN DIRECTIVE

Components complying with health and safety requirements according to 94/9/EC ATEX European directive (explosive atmospheres) for equipment in Group II, category 2GD.

- equipment and machines for use in environments subject to explosion risk
A quick glimpse into the Elesa product range

ELESA
Quick Catalogue

The Quick Catalogue presents a significant, albeit narrow selection of the ELESA product range to quickly become familiar with the range of plastic and metal standard components in Inch and Metric sizes entirely published on elesa.com: where you can find technical data sheets, dimensional drawings and full size tables in Inch and Metric units, always updated. Available also in the paper Catalogue 077. Ask now for your free of charge copy.

elesa.com
Elesa catalogue always updated. Free download of 2D and 3D CAD drawings.

077 Catalogue
Always on the desk.

ASK NOW FOR A FREE COPY!
Ergonomic design, wide range of materials, diameters from 80 mm to 375 mm for all maneuvering operations on machinery and equipment.

**VRTP**
- Spoked handwheels
- Technopolymer
- Black-oxide steel boss, H7 reamed hole with anodised aluminium or technopolymer boss cap plate, in Ergostyle colours.
- Diameters: 80 - 100 - 125 - 160 - 200 - 250 - 300 - 375 mm

**VRTP-P-SST**
- Spoked handwheels with solid section
- Technopolymer
- AISI 304 stainless steel boss, with AISI 304 stainless steel boss cap plate. Technopolymer and plate adhesive certified in compliance with FDA (U.S. Food and Drug Administration).
- Diameters: 80 - 100 - 125 - 160 - 200 mm

**GN 322 - GN 322.3**
- Spoked handwheels
- Cast aluminium
- H7 reamed hole.
- Diameters: 125 - 140 - 160 - 200 - 250 mm

**GN 924 - GN 924.3 - GN 924.7**
- Spoked handwheels
- Cast aluminium
- H7 reamed hole.
- Diameters: 125 - 140 - 160 - 200 mm

**GN 949**
- Spoked handwheels
- Cast stainless steel
- Turned rim. H8 reamed hole.
- Diameters: 100 - 125 - 140 - 160 - 200 mm

**VR.FP**
- Spoked handwheels
- Duroplast, not drilled hub
- Black-oxide steel hub, uncovered front end.
- Diameters: 100 - 125 - 140 - 160 - 180 - 200 - 250 - 300 - 375 mm

**GN 950.6 - DIN 950**
- Spoked handwheels
- AISI 316L stainless steel or cast iron
- H9 or H7 reamed hole.
- Also available with keyway.
- Diameters: 80 - 100 - 125 - 140 - 160 - 200 - 250 mm

**GN 227.2**
- Spoked handwheels
- AISI 304 pressed stainless steel
- Welded hub with H9 reamed pass-through hole or H11 square pass-through hole.
- Diameters: 160 - 200 - 250 - 315 - 400 mm

**ETW.375**
- Spoked handwheels
- Technopolymer
- Black-oxide steel boss, H7 reamed hole with technopolymer boss cap in Ergostyle colours.
- Diameter: 375 mm
**EMW.**
Monospoke handwheels
Technopolymer

Black-oxide steel boss, H7 reamed hole with technopolymer boss cap in Ergostyle colours.
Diameter: 350 mm

**VDS.**
Solid handwheels
Technopolymer

Black-oxide or stainless steel boss, H7 reamed hole.
Light-grey technopolymer boss cap, also available in Ergostyle colours.
Diameters: 80 - 100 - 125 - 150 - 175 - 200 - 250 - 300 mm

**GN 321**
Solid handwheels
Cast aluminium

H7 reamed hole.
Diameters: 80 - 100 - 125 - 140 - 160 - 200 - 250 mm

**GN 472.3**
Crank handles
Cast aluminium

H7 reamed hole or H11 square pass-through hole.
Dimensions: 80 - 100 - 125 mm

**EYK.**
Three-arm handwheels
Technopolymer

Black-oxide steel boss, H7 reamed hole with technopolymer boss cap in Ergostyle colours.
Diameters: 275 - 400 mm

**VDN.FP**
Solid handwheels
Duroplast

Black-oxide or stainless steel hub, uncovered front end, not drilled or with H7 reamed hole.
Diameters: 50 - 63 - 80 - 100 - 125 - 140 - 150 - 175 - 200 - 225 - 250 - 300 mm

**GN 923 - GN 923.3 - GN 923.7**
Solid handwheels
Cast aluminium

H7 reamed hole.
Diameters: 80 - 100 - 125 - 140 - 160 - 200 mm

**MT.**
Crank handles
Technopolymer

Black-oxide steel boss, H9 square pass-through hole; black-oxide steel hub with H9 blind hole or H7 reamed pass-through hole.
Dimensions: 50 - 64 - 80 - 100 - 130 - 160 - 210 mm

**EKH.**
Crank handles
Technopolymer

Technopolymer hub cap in Ergostyle colours.
Black-oxide steel hub, H7 reamed hole.
Dimensions: 100 - 125 mm

**DIN 468 - DIN 469**
Crank handles
Cast iron

H7 reamed hole or H11 square pass-through hole.
Dimensions: 80 - 100 - 125 - 160 - 200 - 250 mm

**ETK.**
Three-arm handwheels
Technopolymer

Black-oxide steel boss, H7 reamed hole with technopolymer boss cap in Ergostyle colours.
Diameter: 400 mm

**VT.**
Solid handwheels
Technopolymer

Black-oxide steel boss, H7 reamed hole.
Diameters: 100 - 125 - 160 - 200 mm
Ergonomics, design and quality of materials to offer a more secure grip and maximum comfort for all manual clamping. Colours help to identify and differentiate various functions.

**VB.639**
Three-arm knobs
Technopolymer
- Black-oxide steel boss with plain blind hole; brass or AISI 303 stainless steel boss with threaded blind or pass-through hole; zinc-plated steel threaded stud.
  - Diameters: 45 - 63 - 80 - 100 - 130 - 140 mm

**VCT.**
Lobe knobs
Technopolymer
- Black-oxide steel boss with plain blind hole; brass boss with threaded blind or pass-through hole; zinc-plated steel threaded stud. Cap available in six colours. Also available in self-extinguish technopolymer certified UL-94 V0 (VCT.AE-V0).
  - Diameters: 25 - 32 - 40 - 50 - 63 - 74 - 95 mm

**VCT-LP**
Lobe knobs with retaining chain, technopolymer
- Brass boss with threaded pass-through hole; threaded zinc-plated steel stud.
  - Diameters: 25 - 32 - 40 - 50 - 63 mm

**VCT.SOF**
Lobe knobs
Soft-touch technopolymer
- Brass boss with threaded blind hole or zinc-plated steel threaded stud. Cap available in six colours.
  - Diameters: 43 - 53 - 66 - 77 mm

**VCTS-Z**
Safety lobe knobs
Technopolymer, push action
- 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 stud.
  - Diameters: 40 - 50 mm

**VTT**
Knobs with solid section
Technopolymer, easy cleaning
- Black or white colour similar to RAL 9002 (VTT-CLEAN). Brass or AISI 304 stainless steel boss with threaded blind hole, zinc-plated steel or AISI 304 stainless steel threaded stud.
  - Diameters: 25 - 32 - 40 - 50 mm

**VMT-SST**
Lobe knobs with solid section
AISI 303 or AISI 316L stainless steel, easy cleaning
- Hub with H7 reamed blind or threaded hole, threaded pin.
  - Diameters: 40 - 50 - 60 mm

**VC.192**
Lobe knobs
Duroplast, easy cleaning
- Black-oxide steel, AISI 303 stainless steel or brass 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

**VCM. - VCM-SST**
Lobe knobs
Aluminium or AISI 304 or AISI 316L stainless steel
- Hub with H7 reamed blind hole, threaded hole or pin.
  - Diameters: 40 - 50 - 60 - 70 mm

**GN 5335 - GN 5335.4**
Lobe knobs
AISI 303 or AISI 316L stainless steel, easy cleaning
- Hub with H7 reamed blind or threaded hole, threaded pin.
  - Diameters: 40 - 50 - 60 mm
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<thead>
<tr>
<th><strong>ELK.</strong></th>
<th><strong>Knobs with rear lobes</strong></th>
<th><strong>Technopolymer</strong></th>
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<td></td>
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<td>Black-oxide steel boss with H9 reamed blind or H7 reamed pass-through hole; brass boss with threaded blind hole; zinc-plated steel threaded stud. Cap in Ergostyle colours, ultrasonically welded to the hub body. Diameters: 45 - 56 - 70 mm</td>
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<td><strong>ELK.</strong></td>
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<th><strong>VTR.</strong></th>
<th><strong>Knobs</strong></th>
<th><strong>Technopolymer</strong></th>
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<tr>
<td></td>
<td></td>
<td>Brass boss, square, threaded blind or pass-through hole; zinc-plated steel threaded stud. Diameters: 32 - 40 - 50 - 60 mm</td>
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<td><strong>VTR.</strong></td>
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<th><strong>VTRM-SST</strong></th>
<th><strong>Knobs</strong></th>
<th><strong>Stainless steel, easy cleaning</strong></th>
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<tr>
<td></td>
<td></td>
<td>Threaded blind hole. Diameters: 32 - 40 - 50 - 60 mm</td>
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<td><strong>VTRM-SST</strong></td>
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<th><strong>MDA.</strong></th>
<th><strong>Fluted grip knobs</strong></th>
<th><strong>Technopolymer, assembly with screws</strong></th>
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<td>Grey closing cap. Assembly by means of pass-through hexagonal-head screws or standard lock nuts (not supplied) to be press-fitted inside the knob. Diameters: 30 - 40 - 50 mm</td>
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<td><strong>MDA.</strong></td>
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<th><strong>EWN.</strong></th>
<th><strong>Wing nuts</strong></th>
<th><strong>Technopolymer</strong></th>
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<td></td>
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<td>Brass or AISI 303 stainless steel boss, threaded blind or pass-through hole; zinc-plated steel or AISI 303 stainless steel threaded stud with or without chamfered end with acetal resin or brass bolt (EWN-SST-S-P). Cap in Ergostyle colours. Diameters: 47 - 55 - 63 - 70 mm</td>
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<td><strong>EWN.</strong></td>
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<th><strong>EWNM-SST</strong></th>
<th><strong>Wing nuts</strong></th>
<th><strong>AISI 304 stainless steel</strong></th>
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<td>Threaded blind or pass-through hole, threaded pin. Diameters: 40 - 48 - 55 mm</td>
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<td><strong>EWNM-SST</strong></td>
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<th><strong>ESN.</strong></th>
<th><strong>Single wing nuts</strong></th>
<th><strong>Technopolymer</strong></th>
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<td>Brass boss, threaded pass-through hole. Cap in Ergostyle colours. Dimensions: 55 - 70 mm</td>
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<td><strong>ESN.</strong></td>
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<th><strong>CT.476</strong></th>
<th><strong>Wing knobs</strong></th>
<th><strong>Technopolymer</strong></th>
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<td></td>
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<td>Brass boss with threaded pass-through or blind hole; zinc-plated steel or AISI 303 stainless steel threaded stud. Diameters: 20 - 25 - 30 - 40 - 48 - 56 mm</td>
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<th><strong>GN 433 - GN 434</strong></th>
<th><strong>Wing knobs</strong></th>
<th><strong>AISI CF-8 stainless steel</strong></th>
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<tr>
<td></td>
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<td>Hub with threaded pin or blind hole. Diameters: 26 - 34 mm</td>
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<td><strong>GN 433 - GN 434</strong></td>
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<th><strong>B.193</strong></th>
<th><strong>Knurled grip knobs</strong></th>
<th><strong>Duroplast</strong></th>
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<td></td>
<td></td>
<td>Brass or AISI 303 stainless steel boss with threaded pass-through or blind hole. Diameters: 15 - 18 - 22 - 25 - 30 - 35 - 40 - 50 mm</td>
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<thead>
<tr>
<th><strong>BM.193-SST</strong></th>
<th><strong>Knurled grip knobs</strong></th>
<th><strong>AISI 304 stainless steel</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Hub with threaded blind hole or pin. Diameters: 20 - 24 - 28 mm</td>
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<td><strong>BM.193-SST</strong></td>
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<thead>
<tr>
<th><strong>DIN 464</strong></th>
<th><strong>Knurled grip knobs</strong></th>
<th><strong>Steel or stainless steel</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Threaded pin. Diameters: 12 - 16 - 20 - 24 - 30 - 36 mm</td>
</tr>
<tr>
<td><strong>DIN 464</strong></td>
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<table>
<thead>
<tr>
<th><strong>MBT.</strong></th>
<th><strong>Diamond cut knurled knobs</strong></th>
<th><strong>Technopolymer</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Brass boss with plain or threaded blind hole; zinc-plated steel threaded stud. Cap in six colours. Diameters: 30 - 40 - 50 - 60 - 70 mm</td>
</tr>
<tr>
<td><strong>MBT.</strong></td>
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<tr>
<th><strong>MBT.SOFT</strong></th>
<th><strong>Fluted grip knobs</strong></th>
<th><strong>Soft-touch technopolymer</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Brass boss with threaded blind hole or zinc-plated steel threaded stud. Diameters: 45 - 55 mm</td>
</tr>
</tbody>
</table>
Adjustable handles and levers in a wide range of materials for repetitive clamping operations where the lever turning angle is limited due to lack of space. Available with push buttons and levers in different colours to identify and differentiate the various functions.

**ERX.**
**Adjustable handles**
Technopolymer

Push button in Ergostyle colours with glossy finish. 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

**ERS.**
**Safety adjustable handles**
Push action, technopolymer

Technopolymer clamping element with black-oxide or brass boss with plain or 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

**MRX.**
**Adjustable handles**
Technopolymer

Technopolymer clamping element 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

**MR.**
**Adjustable handles**
Technopolymer

Technopolymer clamping element with black-oxide or brass boss with plain or threaded blind hole; zinc-plated steel threaded stud. Dimensions: 42 - 63 - 80 - 100 mm

**ERW.**
**Adjustable handles**
Flat lever, technopolymer

Zinc alloy or stainless steel clamping element, threaded hole or threaded pin. Dimensions: 30 - 45 - 63 - 78 - 92 - 108 mm

**ERZ.**
**Adjustable handles**
Technopolymer, steel clamping element

Zinc alloy insert for coupling to the clamping element. Black-oxide steel or AISI 303 stainless steel clamping element, threaded hole or threaded pin. Dimensions: 44 - 63 - 78 - 95 mm

**ER.**
**Adjustable handles**
Technopolymer

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

**ER-CR.**
**Adjustable handles**
Technopolymer chrome-plated

Technopolymer element with brass boss and threaded blind hole. Dimensions: 44 - 63 - 78 - 95 mm

**ERX-CR.**
**Adjustable handles**
Quick assembly, technopolymer

Technopolymer element with brass boss and threaded blind hole; zinc-plated or AISI 303 stainless steel threaded stud. Dimensions: 42 - 63 - 80 - 100 mm

**ERX-AV.**
**Adjustable handles**
Quick assembly, technopolymer

Adjustable push button for quick screwing during assembly by means of screwdrivers. Clamping element in technopolymer with brass boss and threaded blind hole; zinc-plated steel threaded stud. Dimension: 78 mm

**ERM.**
**Adjustable handles**
Zinc alloy, steel clamping element

Orange, red, grey or black colour. Black-oxide steel or AISI 303 stainless steel clamping element, threaded hole or threaded pin. Dimensions: 44 - 63 - 78 - 95 mm

**ERW.**
**Adjustable handles**
Flat lever, technopolymer

Zinc alloy or stainless steel clamping element, threaded hole or threaded pin. Dimensions: 30 - 45 - 63 - 78 mm

**GN 300 - GN 300.1 - GN 300.5.**
**Adjustable handles**
Zinc alloy or stainless steel

Zinc alloy or stainless steel lever. Black-oxide steel or AISI 303 stainless steel clamping element, threaded hole or threaded pin. Dimensions: 30 - 45 - 63 - 78 - 92 - 108 mm

**GN 302.**
**Adjustable handles**
Zinc alloy, steel clamping element

Black-oxide steel clamping element, threaded hole or threaded pin. Dimensions: 30 - 45 - 63 - 78 mm
GN 300.4
Adjustable handles
with torque amplifier, zinc alloy and steel
Black-oxide steel clamping element, threaded hole or threaded pin. Dimensions: 63 - 78 - 92 - 108 mm

GN 6237.3
Adjustable handles
Push action, steel
Black-oxide steel clamping element, threaded hole or threaded pin. Dimensions: 70 - 87 - 109 mm

GN 125
Adjustable handles
Steel
Black-oxide steel lever with straight or slightly inclined arm. Black-oxide steel clamping element, threaded hole or threaded pin. Dimensions: 100 - 120 - 130 - 145 mm

GN 212.4
Adjustable handles
Steel
Black-oxide steel clamping element, threaded hole or threaded pin. Dimensions: 87 - 102 - 116 - 132 - 148 mm

ERFW.
Flat lever handles
Technopolymer
Brass boss with threaded blind hole, cylindrical blind hole and brass reinforcement with transversal semi-machined hole for pinning to shaft. Dimensions: 44 - 63 - 78 mm

ERF.
Lever handles
Technopolymer
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 set screw. Dimensions: 44 - 63 - 78 - 95 mm

MF.
Lever handles
Technopolymer
Brass boss, threaded blind hole or zinc-plated steel threaded stud, cylindrical or square blind hole and brass reinforcement with transversal semi-machined hole for pinning to shaft. Dimensions: 42 - 63 - 80 - 100 mm

M. 180
Lever handles
Duroplast
Black-oxide steel boss with cylindrical blind hole. Brass boss with cylindrical blind, threaded blind or square hole with transversal semi-machined hole for pinning to shaft. Dimensions: 79 - 99 - 118 mm

DIN 6337
Lever handles
Steel
Cylindrical or threaded pass-through hole. Dimensions: 60 - 78 - 95 - 119 - 152 mm

DIN 99
Lever handles
Steel or stainless steel
Plain or threaded pass-through hole. Dimensions: 50 - 63 - 80 - 100 - 125 - 160 mm

GN 99.7 - GN 99.8
Clamping nuts
with double lever
Steel or stainless steel
Threaded pass-through hole. Dimensions: 50 - 60 - 80 - 100 - 120 mm

GN 150 - GN 150.5
Split hubs
Steel or stainless steel
Cylindrical head screws with black-oxide steel or AISI 304 stainless steel hexagon socket. Dimensions: 24 - 28 - 32 mm

LAC.
Cam clamping levers
Technopolymer
SUPER-technopolymer cam sliding base. Rotating pin with zinc-plated or AISI 303 stainless steel threaded hole; zinc-plated or AISI 303 stainless steel threaded stud. LAC. R cam lever with adjustable knurled ring nut. Dimensions: 63 - 79 mm

GN 927
Cam clamping levers
Zinc-alloy
Rotating pin and clamping element with zinc-plated steel threaded hole or stud. Zinc-plated steel bushing with contact insert in technopolymer or fully in technopolymer. Dimensions: 63 - 82 - 101 mm

GN 927.5
Cam clamping levers
Stainless steel
Rotating pin and clamping element with AISI 303 stainless steel threaded hole or stud. AISI 303 stainless steel bushing with technopolymer contact insert. Dimensions: 63 - 82 - 101 mm
Lift & Pull handles

Wide range of shapes, types and materials. The ergonomic design provides a comfortable and secure grip for the operator’s hand.

M.843 Bridge handles
Technopolymer
Six different colours or white colour similar to RAL 9002 (M.843 CLEAN) with glossy finish for application on medical and hospital equipment and on food processing machines. Brass or AISI 303 stainless steel bosses with threaded holes. Assembly centre distance: 86 - 117 - 179 - 300 mm

M.643 Bridge handles
Technopolymer
Brass bosses with threaded blind holes for back mounting or pass-through holes for cylindrical-head screws with hexagon socket (front mounting) (M.643-HT). M.643 HT in technopolymer with high thermic resistance (max 200° C). Assembly centre distance: 86 - 94 - 117 - 120 - 132 - 150 - 179 - 235 - 300 mm

GN 565 Handles
Aluminium or stainless steel
Oval cross section, aluminium with natural, anodised finish or with epoxy resin coating, black colour. AISI 304 stainless steel (GN 565.5). Back mounting with threaded blind holes or front mounting with pass-through holes for cylindrical-head screws. Assembly centre distances: 100 - 112 - 117 - 120 - 128 - 132 - 160 - 164 - 179 - 192 - 196 - 300 - 350 - 400 - 500 mm

EBR-SW Handle with microswitch
Technopolymer
Microswitch with push button with NO and NC change-over 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

M.543 Bridge handles
Technopolymer
Available in black or orange colour. Brass bosses, threaded blind holes or threaded studs. Assembly centre distance: 94 - 105 - 117 - 132 - 179 mm

GN 425 Handles
Steel, stainless steel, aluminium
Round section in chrome-plated, black-oxide, AISI 303 stainless steel or aluminium with anodised finish or with epoxy resin coating. Threaded blind holes. AISI 304 stainless steel GN 425.3, welded mounting. Assembly centre distance: 88 - 100 - 120 - 125 - 160 - 180 - 200 - 235 - 250 - 300 mm

GN 565.2 - GN 565.7 Inclined handles
Aluminium or stainless steel
Aluminium with natural, anodised finish or with epoxy resin coating, AISI 304 stainless steel GN 565.7. Back mounting with threaded blind holes or front mounting with pass-through holes for cylindrical-head screws with hexagon socket. Assembly centre distances: 112 - 128 - 160 mm

M.943 Bridge handles
Technopolymer
Brass bosses 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: 132 mm
**MFH - GN 224**

**Finger handles**

Technopolymer

Available in steel (GN 224.1) or stainless steel (GN 224.5). Blind holes for fitting by means of no. 2 self-tapping screws or threaded holes. Assembly centre distances: 30 - 40 mm

**PR-PF**

**Flush pull handles**

for snap-in assembly, technopolymer

Compact shape. The internal profile of the cavity offers a safe, comfortable and ergonomic grip. PR-PF-AE-V0 in technopolymer certified self-extinguishing UL-94 V0. Dimensions: 92 - 137 mm

**ETH.**

**Tubular handles**

Technopolymer and aluminium

Aluminium tube with epoxy resin coating, metalflake graphite colour or natural aluminium; technopolymer handle shanks; technopolymer screw covers in Ergostyle colours. Pass-through holes for cylindrical-head screws with hexagon socket, hexagonal-head screws or lock nuts. Assembly centre distance: 300 - 500 - 700 -1000 mm

**GN 425.8**

**Folding handle with recessed tray**

Steel or stainless steel

ASIS 303 stainless steel pin, ASIS 302 stainless steel springs. Mounting with countersunk screws. Dimensions: 135 - 141 mm

**GN 430 - GN 430.1**

**Guard safety handles**

Aluminium

Mounting with M6 screws. Particularly suitable for applications on revolving and sliding doors or drawers. Available with label holder. Assembly centre distance: 66 - 86 - 106 - 156 - 206 - 256 - 356 - 456 mm

**M. 1043**

**Tubular handles**

Technopolymer, aluminium, stainless steel

Aluminium tube with epoxy resin coating, metalflake graphite colour, anodised aluminium or ASIS 304 stainless steel. Technopolymer handle shanks and anti-rotation tube end plugs. Pass-through holes for cylindrical-head screws with hexagon socket. Assembly centre distance: 200 - 300 - 350 - 400 - 500 - 600 - 700 mm

**M. 1053**

**Offset tubular handles**

Technopolymer and aluminium

Aluminium tube with epoxy resin coating, metalflake graphite colour, anodised aluminium, natural colour. Technopolymer handle shanks. Pass-through holes for cylindrical-head screws, hexagonal-head screws or nuts. M. 1053-P tubular handles with movable handle shanks. Assembly centre distance: 300 - 350 - 400 - 500 - 600 - 700 mm

**M. 1066**

**Tubular handles**

Technopolymer, aluminium, stainless steel

Aluminium tube with epoxy resin coating, metalflake graphite colour, anodised or ASIS 304 stainless steel; technopolymer handle shanks. Back mounting with zinc steel screws and threaded holes. Front mounting with cylindrical-head screws, black-oxide nuts and washers. Assembly centre distance: 200 - 250 - 300 - 500 - 600 mm

**GN 333.1**

**Tubular handles**

Zinc alloy and aluminium

Aluminium tube, anodised, natural or with epoxy resin coating. Technopolymer side plugs. Zinc alloy die-cast handle shanks with epoxy resin coating. ASIS 304 stainless steel GN 333.5. Threaded blind mounting holes. Assembly centre distance: 200 - 300 - 400 - 500 mm

**GN 333.3**

**Tubular handles with movable handle shanks**

Technopolymer and aluminium

Aluminium tube, anodised, natural or with epoxy resin coating Technopolymer side plugs. Zinc alloy die-cast handle shanks with epoxy resin coating. Threaded blind mounting holes. Assembly centre distance: 242 - 392 - 492 - 592 mm
5 Fixed & revolving handles

For use on rods or action levers, on handwheels and crank handles for rotating or maneuvering operations. The special care in the design and ergonomics enables a secure grip and offers maximum comfort to the operator’s hand.

**L.652**

**T-Handles**
Technopolymer

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

**L.652-S**

**Safety T-Handles**
Technopolymer, push action

Technopolymer clamping element, brass boss with threaded blind hole or 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. Dimensions: 67 - 80 mm

**EKK.**

**Knurled grip knobs**
Technopolymer

Available in Ergostyle colours. Brass boss, threaded blind hole or zinc-plated steel threaded stud. Dimensions: 16 - 18 - 21 - 25 - 31 mm

**GN 676.5**

**Knobs**
Stainless steel

Plain or knurled rim, threaded blind hole. Diameters: 21 - 25 - 31 mm

**I.150**

**Mushroom knobs**
Duroplast

Threaded blind hole. Diameters: 25 - 32 mm

**GN 75.5**

**Knobs**
Stainless steel

Threaded blind hole or threaded pin. Diameters: 16 - 20 - 25 - 32 - 36 mm

**EBK.SOFT**

**Mushroom lobe handles**
Soft-touch technopolymer

Brass boss with threaded blind hole or zinc-plated steel threaded stud. Also available with technopolymer centre cap in Ergostyle colours or with transparent technopolymer magnifying lens and labels with marks and symbols. Diameters: 43 - 50 mm

**EBS+x**

**Revolving handle**
Technopolymer

Zinc-plated steel 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. Diameters: 45 - 48 mm

**IEL.N SOFT**

**Mushroom handles**
Soft-touch technopolymer

Plain 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). Dimension: 47 - 65 mm

**SH.N**

**Spherical knobs**
Duroplast

Transparent technopolymer magnifying lens for the application of labels with marks and symbols. Technopolymer self-locking boss, plain blind hole, press-fit assembly by means of the elastic coupling. Diameters: 35 - 40 - 45 mm

**I.622**

**Tapered handles**
Technopolymer

Six different colours. I.622-CLEAN in white colour similar to RAL 9002. I.222 in Duroplast, black colour. 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

**PLX.**

**Spherical knobs**
Duroplast

Threaded blind hole; brass boss with threaded blind hole; slightly cone-shaped plain blind hole; press-fit assembly by means of the elastic coupling. Diameters: 12 - 16 - 20 - 25 - 30 - 32 - 35 - 40 - 45 - 50 mm
PLM
Spherical knobs
Steel or stainless steel
Plain or threaded blind hole.
Diameters: 16 - 20 - 25 - 32 - 40 - 50 mm

1.680 SOFT
Cylindrical handles
Soft-touch technopolymer
These handles improve the grip even in the presence of oils, greases and sweat from the hand.
Threaded blind hole.
Dimensions: 65 - 80 - 90 mm

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

1.601+x
Revolving handles
Technopolymer
Zinc-plated steel or 303 stainless steel shank, hexagon socket at threaded end.
Dimensions: 40 - 50 - 65 - 80 - 90 mm

1.621+x
Revolving handles
Technopolymer
Zinc-plated steel or 303 stainless steel shank, hexagon socket at threaded end.
Dimensions: 35 - 45 - 60 - 65 - 73 - 80 - 90 - 101 mm

1.644
Revolving handle
Technopolymer with antimicrobial protection
Zinc-plated steel shank, hexagon socket at threaded end.
This handle prevents any deposit of bacteria, mildew and fungi, offering a sanitised effect on the surface.
Dimension: 90 mm

EGH.SOFT
Cylindrical lobe handle
Soft-touch technopolymer
Plain blind hole, press-fit assembly by means of the elastic coupling.
Dimension: 85 mm

1.280
Cylindrical handles
Duroplast
Threaded blind hole; zinc-plated steel threaded stud.
1.580 in technopolymer; blind hole for press-fit assembly by means of the elastic coupling.

1.780
Cylindrical handles
Technopolymer
Black or red colour.
Threaded blind hole.
Dimensions: 65 - 80 - 90 mm

IF - IFF
Cylindrical handles
with protection, technopolymer
Brass boss with threaded blind hole or zinc-plated steel threaded stud.
Dimension: 112 mm

DIN 39
Shaped handles
Steel or AISI 316L stainless steel
Threaded pin.
Dimensions: 16 - 20 - 25 - 32 - 36 mm

1.301+x
Revolving handles
Duroplast
Zinc-plated steel or 303 stainless steel shank, hexagon socket at threaded end.

1.731+x
Revolving handles
Technopolymer
Zinc-plated steel shank, hexagon socket at threaded end.
Dimensions: 20 - 23 mm

GN.820
Two volume safety fold-away handles
Technopolymer
Black-oxide or AISI 303 stainless steel shank, technopolymer base.
The special return mechanism “Fold-O-matic” automatically folds the handle into the retracted position.
Dimensions: 56 - 65 - 80 - 90 mm

GN, DIN, PLM
## Control elements

For use on precision instruments or to perform adjustment operations. Available with or without flange, with indexes or graduations.

### IZP
**Knurled control knobs**
- Technopolymer
  - Plain base, triangular index or precision graduation, laser-engraved. Anodised aluminium self-adhesive front plate. Plain blind hole, assembly by means of a stainless steel transversal grub screw.
  - Diameters: 27 - 32 - 35 - 40 mm

### IZN.380
**Knurled control knobs**
- Technopolymer
  - Technopolymer boss cap, matte anodised aluminium flange, triangular 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.

### GN 727
**Knurled control knobs**
- with adjustable spindle, aluminium
  - Chrome-plated steel base; knurled or perpendicular anodised aluminium profile knob; technopolymer cap. Holes for assembly screws parallel or perpendicular 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

### GN 723.4
**Knurled control knobs**
- Aluminium
  - Anodised aluminium 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. GN 723.3 flanges are available to optimise use of GN 723.4 knurled knobs.
  - Diameters: 27 - 34 - 42 mm

### GN 726 - GN 726.1
**Knurled control knobs**
- Aluminium
  - With or without plain base, triangular index or precision graduation, technopolymer cap, plain surface or with black index. H8 reamed hole. Assembly by means of a stainless steel transversal grub screw with hexagon socket.
  - Diameters: 22 - 27 - 34 - 42 mm

### GN 700
**Locking and continuous control indexing mechanism**
- Aluminium and steel
  - Knurled knob and ring. Black-oxide steel base; ground and hardened steel locking mechanism. Steel boss, H7 reamed hole and keyway, assembly to the spindle by means of keyway or transversal pin. Suitable for adjusting control machine spindles in clockwise and anti-clockwise rotation and to keep the spindle in the preferred position. Diameter: 66 mm

### GN 200
**Indexing mechanism with stop and positioning device**
- Steel or stainless steel
  - With or without zinc-plated steel lever arm 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 positioning of machine parts.
  - Diameters: 44 - 52 mm

### MBT+I
**Diamond cut knurled control knobs**
- with revolving handle, technopolymer
  - Cap available in six different colours. Brass boss, plain blind hole, assembly by means of a transversal grub screw.
  - Diameters: 40 - 50 - 60 - 70 - 85 - 100 mm

### ELC
**Control levers**
- arranged for clicking operation
  - Technopolymer lever body; chromed-plated steel lever arm, Duroplast cylindrical handle; anodised aluminium self-adhesive front plate. Plain hole with flat face or black-oxide steel boss, H7 reamed hole.
  - Diameters: 81 - 108 - 127 - 170 mm

### EGK.SOFT
**Grip knobs**
- arranged for clicking operation
  - Diameters: 50 - 63 mm

### LBR.
**Control levers**
- arranged for clicking operation, technopolymer
  - Technopolymer lever body; chromed-plated steel lever arm, Duroplast cylindrical handle; anodised aluminium self-adhesive front plate. Black-oxide or stainless steel boss, H7 reamed hole.
  - Dimensions: 67 - 85 - 110 - 140 mm
To provide in a numerical measurement the position reached in the regulation of a wide range of variables such as strokes, flows, capacities and for the setting of speed variators, with reading accuracy and reliability.

<table>
<thead>
<tr>
<th>Type of Function</th>
<th>Type of Reading</th>
<th>Example</th>
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</thead>
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<tr>
<td>Gravity movement</td>
<td>Analogue</td>
<td>The reading is displayed by two rotating pointers over a graduated dial.</td>
</tr>
<tr>
<td>Positive drive movement</td>
<td>Digital-analogue</td>
<td>The reading is displayed by a roller counter and a rotating pointer over a graduated dial.</td>
</tr>
<tr>
<td>Direct drive movement</td>
<td>Digital</td>
<td>The reading is displayed by a roller counter.</td>
</tr>
<tr>
<td>LCD Digital</td>
<td>LCD Digital</td>
<td>The reading is displayed by a digital electronic display.</td>
</tr>
</tbody>
</table>

**GA01 - GA02 - GA05**
Position indicators
Gravity drive
Zinc-plated steel case; AISI 303 stainless steel bezel; glass window; anodised natural aluminium dial; clockwise or anti-clockwise graduation. Wide range of available ratios.

**PA01 - PA02 - PA05**
Position indicators
Positive drive

**GW12**
Digital-analogue position indicators
Gravity drive
Technopolymer case and bezel; transparent technopolymer window ultrasonically welded to the case (IP67 for GW or IP65 for PW protection class, according to IEC 529); anodised aluminium dial. Five-digits roller counter. Wide range of available readings.

**PW12**
Digital-analogue position indicators
Positive drive
Technopolymer case and bezel; transparent technopolymer window ultrasonically welded to the case (IP67 for PW) or IP65 for PA protection class, according to IEC 529); anodised aluminium dial. Black-oxide steel boss, H7 reamed blind hole. Wide range of available readings.

**GA11 - GA12**
Position indicators
Gravity drive
Technopolymer case and bezel; transparent technopolymer window ultrasonically welded to the case (IP67 for GA or IP65 for PA protection class, according to IEC 529); anodised aluminium dial; clockwise or anti-clockwise graduation. Wide range of available ratios.

**MBT-GA**
Knobs with integral indicator
Gravity drive
Technopolymer knob and bezel; transparent technopolymer window ultrasonically welded to the case (IP67 for PW) or IP65 for PA protection class, according to IEC 529); anodised aluminium dial; clockwise or anti-clockwise graduation. Black-oxide steel boss, H7 reamed blind hole. Wide range of available ratios.

**MBT-GW**
Knobs with digital-analogue position indicator
Gravity drive
Technopolymer knob and bezel; transparent technopolymer window ultrasonically welded to the case (IP67 for GW) or IP65 for PW protection class, according to IEC 529); anodised aluminium dial. Black-oxide steel boss, H7 reamed blind hole. Wide range of available readings.

**DD50 - DD51 - DD52R**
Digital position indicators
Direct drive
Technopolymer case and base; transparent window; 3, 4 or 5 digit roller counter. Black-oxide or AISI 303 stainless steel boss fitted to the shaft with a grub screw. Orange, grey or anthracite colour. DD50 - boss Ø 10H7, DD51 - boss Ø 14H7, DD52R - boss Ø 20H7. Wide range of available readings.

**DD51-E - DD52R-E**
Electronic position indicators
Direct drive, 5 or 6-digit display, technopolymer
Orange or grey colour. LCD display with values visualization in units of measure (mm, inches or degrees). Absolute or incremental mode, reading orientation. The visualization parameters can be set by the operator. Protection class IP67 according to IEC 529. DD51-E - boss Ø 14H7, DD52R-E - boss Ø 20H7.

**MPI-15**
Magnetic measuring system
Length and angle modes
Multifunction LCD with 5 function keys. Absolute / incremental mode. External battery power supply 1.5 VDC. Material of the magnetic sensor envelope: anodised aluminium.
Indexing and positioning elements

Standard elements to make repetitive operations easier in positioning parts on machinery and equipment. High quality and variety of production materials (black-oxide steel, zinc-plated steel, stainless steel and SUPER-technopolymer). Wide range of shapes, sizes and executions.

**PMT.100 - PMT.101**
Indexing plungers
SUPER-technopolymer body

With or without rest position.
Black-oxide hardened steel or AISI 303 stainless steel plunger.
Technopolymer knob, black or red colour.
Plunger Ø: 5 - 6 - 8 - 10 mm

**GN 617 - GN 617.1**
Indexing plungers
Steel or stainless steel

With or without rest position. Black-oxide steel plunger with hardened or nickel-plated AISI 303 stainless steel end. With or without technopolymer or AISI 303 stainless steel knob. Standard executions: with or without knob and locking nut.
Plunger Ø: 5 - 6 - 8 - 10 mm

**PMT.110**
Indexing plungers
SUPER-technopolymer body

Black-oxide hardened steel or AISI 303 stainless steel plunger.
Technopolymer knob. Standard executions: with or without locking nut.
Plunger Ø: 8 - 10 mm

**GN 514**
Indexing plungers with locking device
Steel

Nitrided steel plunger.
Technopolymer control button (PUSH-PUSH locking device).
Standard executions: with or without locking nut.
Plunger Ø: 6 - 8 mm

**GN 414 - GN 414.1**
Indexing plungers
with safety device, steel or stainless steel

Black-oxide hardened steel or AISI 303 stainless steel plunger.
Technopolymer knob with red push button for the plunger lock/unlock.
Standard executions: with or without locking nut.
Plunger Ø: 6 - 8 - 10 mm

**GN 736.8**
Indexing plungers
with safety clamping knob
Steel

Nitrided and black-oxide steel plunger.
Technopolymer knob and closing cover, grey colour.
These plungers are suitable when it is necessary to position, lock and make secure machine elements simultaneously.
Plunger Ø: 6 - 8 mm

**GN 517 - GN 717-C**
Indexing plungers
Steel or stainless steel

With or without rest position.
AISI 303 stainless steel plunger.
Technopolymer knob or stainless steel ring.
Standard executions: with or without locking nut.
Plunger Ø: 3 - 4 - 5 - 6 - 8 mm

**GN 413**
Indexing plungers
Steel or stainless steel

With or without rest position.
AISI 303 stainless steel plunger.
AISI 301 stainless steel ring.
Standard executions: with or without locking nut.
Plunger Ø: 5 - 6 - 8 - 10 mm

**GN 607 - GN 607.1**
Indexing plungers
Steel or stainless steel

Black-oxide steel plunger with hardened or nickel-plated AISI 303 stainless steel end; black-oxide steel or stainless steel locking nut. Technopolymer knob. Standard executions: with or without locking nut.
Plunger Ø: 6 - 8 mm

**GN 608**
Indexing plungers with flange
Zinc-alloy

Two mounting holes; black-oxide steel plunger with hardened end. Technopolymer knob. Also available with rest position (GN 608.1). Suitable for assembly on thin sheets thanks to their very small dimensions.
Plunger Ø: 6 - 8 mm

**GN 822**
Mini indexing plungers
Steel or stainless steel

With or without rest position.
Technopolymer knob. Suitable for assembly on thin sheets thanks to their very small dimensions.
Plunger Ø: 4 - 5 - 6 - 7 mm

**GN 822.7**
Mini indexing plungers
Stainless steel

With or without rest position.
Technopolymer knob. Suitable for assembly on thin sheets thanks to their very small dimensions.
Plunger Ø: 4 - 5 - 6 - 7 - 8 - 10 mm
GN 817.3  
Indexing plungers  
with flange, steel

Two mounting holes, ground black-oxide steel plunger with hardened end. Technopolymer knob. Also available with rest position (GN 817.3-C). Suitable for highly precise positioning. Plunger Ø: 8 - 10 mm

GN 417  
Indexing plungers  
Zinc-alloy

AISI 303 stainless steel plunger. Stainless steel ring. GN 417-C with rest position and technopolymer knob. Plunger Ø: 4 - 5 - 6 - 8 - 10 mm

GN 214.2 - GN 214.3  
Lock pins  
Steel or stainless steel

AISI 304 stainless steel pawls. AISI 301 stainless steel ring. Technopolymer push button, red colour. By pressing the push button the two paws are freed and the pin can be pulled-out or inserted. Pin Ø: 6 - 8 - 10 - 12 - 16 mm

GN 612  
Lever indexing plungers  
Steel or stainless steel

Rest position. Turned and nitrided steel or turned and nickel-plated AISI 303 stainless steel plunger. 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: 4 - 5 - 6 - 8 - 10 mm

GN 113.6  
Ball chains  
Brass and stainless steel

Mainly used together with the different types of lock pins. The ball chain feature is flexibility.

GN 614  
Ball spring plungers  
Technopolymer or stainless steel

Hardened stainless steel or technopolymer ball. Diameters: 3 - 4 - 5 - 6 - 8 - 10 - 12 mm

GN 615  
Ball spring plungers  
Steel or stainless steel

Hardened steel or hardened stainless steel ball. Threadings: M3 - M4 - M5 - M6 - M8 - M10 - M12 - M16 - M20 - M24

GN 615.2  
Ball spring plungers  
Technopolymer

Hardened stainless steel or technopolymer ball. Threadings: M6 - M8 - M10

GN 615.7  
Threaded ball spring plungers  
with switch, steel

Standard executions with normally closed or open contacts. Threadings: M6 - M8 - M10

GN 614.5  
Ball spring plungers  
Technopolymer or stainless steel

Hardened stainless steel or technopolymer ball. Diameters: 4 - 5 - 6 - 8 - 10 mm

GN 715  
Side thrust spring pins  
Aluminium and steel

Zinc-plated hardened steel oscillating pin. Practical and versatile elements for positioning and mounting items to be processed. Pin Ø: 3 - 5 - 6 - 8 - 10
A wide range of standard elements for applications on industrial equipment and machines. Quality materials and high precision in production offer high reliability.

**GN 6311.1**
**Thrust pads with elastic ring**
Steel

With or without technopolymer protection. Elastic ring: steel spring wire. These thrust pads are used to transmit clamping forces by means of DIN 6332 grub screws, hexagon socket head. Grub screw/thrust pad coupling by means of a retaining ring.
Diameters: 16 - 20 - 25 - 32 mm

**DIN 444 - DIN 444-NI**
**Eye screws**
Steel or stainless steel

These screws are used mainly for coupling up moulds, connections, equipment, etc.
Threadings: M5 - M6 - M8 - M10 - M12 - M16 - M20

**DIN 508**
**T-Nuts**
Steel or stainless steel

Zinc-plated steel, stainless steel ball and spring. The device provided with a ball and spring, located inside the dowel, allows it to slide in aluminum sections avoiding accidental vertical slipping.
Groove width: 5 - 6 - 8 mm

**GN 918 - GN 918.5**
**Cam locking levers**
Steel

Polyamide handle. Nitrided and black-oxide steel or hardened and nickel-plated steel screw. Eccentric or helical with “pull” or “push” cam, in case-hardened and black-oxide steel or nickel-plated AISI 303 stainless steel (GN 918.5). The system is self-locking at any angular positioning. Cam diameter: 50 mm

**GN 632.1 - GN 632.5**
**Grub screws**
Spherical end, steel

Hexagon socket head. These grub screws can be used to realise different locking systems.
Levers, knobs or handles can be fitted to the threaded end by means of pins.
Threadings: M6 - M8 - M10 - M12

**GN 346**
**Thrust pads**
Ball joint and threaded hole, steel

These thrust pads are 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

**DIN 6319 - DIN 6319-NI**
**Concave and convex washers**
Steel, AISI 303 or AISI 316 stainless steel

These washers are used mainly for locking mechanical parts on non-parallel surfaces.
External diameters: 12 - 17 - 21 - 24 - 28 - 30 - 36 - 44 - 56 - 68 - 78 - 92 mm

**GN 184 - GN 184.5**
**Washers for screws**
Steel or stainless steel

These washers are used on shafts to fit handwheels with an axial keyway.
Diameters: 16 - 20 - 22 - 25 - 28 - 32 - 36 - 40 - 45 - 52 mm

**GN 506**
**T-Nuts**
With guide and no-slip device

Zinc-plated steel, stainless steel ball and spring. The device provided with a ball and spring, located inside the dowel, allows it to slide in aluminum sections avoiding accidental vertical slipping.
Groove width: 5 - 6 - 8 mm

**GN 505.4 - GN 505.5**
**T-Nuts**
Quick-insert, steel or stainless steel

These T-Nuts are suitable for quick insert in aluminium sections. A simple rotation clockwise by 90° assures the anchoring.
Groove width: 8 to 10 mm

**GN 187.4 - GN 187.4-NI**
**Toothed clamping elements**
Steel or AISI 316 LHC stainless steel

The toothed elements are used to secure coupled parts at a given angle. Designed to be combined with GN 187.1 cases and GN 187.2 push spring.
Diameters: 22 - 27 - 32 - 40 mm
ANPS
Dismountable split set collars
Clamping assembly, technopolymer

Phosphated black-oxide steel or AISI 304 stainless steel grub screws; cylindrical head with hexagon socket. These split set collars can be used not only as end stops, but also for fixing other components, such as end limit switches. Internal diameters: from 12 to 40 mm

GN 707.2
Dismountable split set collars
clamping assembly, steel, stainless steel or aluminium

Cylindrical head screws with hexagon socket and AISI 316 stainless steel nuts. Suitable for assembly on idle shafts as end stops, for fixing end limit switches, pulleys, supporting pins or other components. Internal diameters: from 12 to 40 mm

DIN 580
Lifting eyebolts
AISI 304 stainless steel or AISI 316

Theddings: M8 - M10 - M12 - M16 - M20 - M24

DIN 1130
Lifting lock pins
Steel or stainless steel

Stainless steel balls and spring. Diameters: 8 - 10 - 12 - 16 - 20 mm

ELEROLL roller tracks
Technopolymer and polyurethane

They can be used to create sliding benches, suitable for several applications: feeding and discharging benches, in construction machinery, storage and picking systems, packaging machinery. Technopolymer roller elements with high load capacity. Antitrace thermoplastic polyurethane roller elements. Ball elements for the omnidirectional handling.

DIN 172 - DIN 179
Guide bushings
Steel

Diameters: from 2 to 30 mm

DVC.1 - DVC.2 - DVC.3
Vibration-damping elements
Rubber and steel or AISI 304 stainless steel

Threaded studs or bosses with threaded blind hole in different combinations. Natural rubber NR vibration-damping body, hardness 40, 55, 70 ±5 Shore A. Diameters: 10 - 15 - 20 - 25 - 30 - 40 - 50 - 60 - 70 - 75 - 95 mm

BEL-MS
Monodirectional screw-on levels for screw mounting

Brass body with epoxy resin coating, grey or black colour. Execution with top view, top and side view, top and both side view. They are used to control the horizontal positioning of machines, devices, equipment and instruments.

Flat retaining magnets

Housing in zinc-plated steel (RMA, RMB, RMC), lacquered steel (RME), technopolymer (RMT) or stainless steel (RMC). Threaded studs or bosses with threaded blind hole. Natural rubber NR vibration-damping body, hardness 40, 55, 70 ±5 Shore A. Diameters: 8 - 10 - 15 - 20 - 25 - 30 - 40 - 50 - 60 - 70 - 75 - 100 - 125 mm

DVB.6 - DVB.7
Vibration-damping elements
Rubber and steel or AISI 304 stainless steel

Threaded studs or bosses with threaded blind hole. Natural rubber NR vibration-damping body, hardness 40, 55, 70 ±5 Shore A. Diameters: 10 - 15 - 20 - 25 - 30 - 35 - 40 - 50 - 60 - 70 - 75 - 95 mm

BEL-PM
Bull’s eye levels
for mounting in suitable housings

(SmCo) Samarium cobalt, (NdFeB) neodymium-iron-boron magnet, working temperatures from 80°C to 200°C. Dimensions: 4 to 56

Unshielded flat retaining magnets

(SmCo) Samarium cobalt, (NdFeB) neodymium-iron-boron magnet. With smooth reference surface or threaded stud. They are used to control the horizontal positioning of machines, devices, equipment and instruments.

Cylindric retaining magnets

Housing in technopolymer (RMT), stainless steel (RMC) and brass (RMM), with or without smooth or threaded stud. (AlNiCo) Aluminium-nickel-cobalt magnet, shielded with high performances and moderate overall dimensions. Ø D = 4 to 63, L = 10 to 65

BEL-MS
Monodirectional screw-on levels
for screw mounting

Brass body with epoxy resin coating, grey or black colour. Execution with top view, top and side view, top and both side view. They are used to control the horizontal positioning of machines, devices, equipment and instruments.
Levelling elements and supports

Components for assembly on machinery, machine guards and equipment built with profile systems and for the building up of production lines. Shapes, sizes and combinations of different materials allow their application in several industrial sectors.

LX
Levelling elements
Technopolymer base, steel or AISI 304 stainless steel stem

Base with adjusting hexagon or screwdriver slot.
Bases Ø: 25 - 30 - 40 - 50 - 60 mm
Threadings: M6 - M8 - M10 - M12 - M16

LS.A
Levelling elements
Technopolymer base, steel or AISI 304 stainless steel stem

Base with or without NBR rubber no-slip disk.
On request zinc-plated steel or AISI 304 stainless steel nut.
Bases Ø: 25 - 32 - 40 - 50 mm
Threadings: M8 - M10 - M12 - M14 - M16

LVA
Levelling elements
Technopolymer base, steel or AISI 304 stainless steel stem


LV.F
Levelling elements for ground mounting
Technopolymer base, steel or AISI 304 stainless steel stem

Base with or without NBR rubber no-slip disk. Ground mounting by means of two holes at 180° supplied covered by a diaphragm.
Bases Ø: 80 - 100 - 125 mm

SMQ-SST
Stems for levelling elements
AISI 304 stainless steel

Spheric articulated stems with adjusting square.

LV.A
Levelling elements
Stainless steel base and stem

Ball joint with threaded hole or stem. AISI 303 stainless steel stem and adjustable sleeve. Stainless steel assembly screw, glued to the stem base.
Bases Ø: 60 - 80 - 100 mm
Threadings: M16 - M20 - M24

LV.A-ESD-C
Conductive technopolymer that prevents the accumulation of electrostatic charge.

LV.A
Levelling elements
Stainless steel base and stem

Base with or without NBR rubber no-slip disk. Screw with adjusting hexagon, hexagon socket and thread flats, hexagon upper end or adjustable sleeve for the protection.
AISI 304 stainless steel nut. Bases Ø: 40 - 50 - 60 - 80 mm
Threadings: M8 - M10 - M12 - M16 - M20 - M24

LM.V
Levelling elements
Steel or stainless steel base and stem

Ball joint with threaded hole or stem.
LM.AC with technopolymer antistatic bearing protection. LM.TR with NBR rubber no-slip coating. Zinc-plated steel or AISI 304 stainless steel nut.
Bases Ø: 25 - 32 - 40 - 50 - 60 mm

LMRS.
Levelling elements
Stainless steel base and stem

NBR rubber no-slip disk, vulcanised to the base. AISI 303 stainless steel stem and adjustable sleeve.
Bases Ø: 40 - 50 - 60 - 80 mm
Threadings: M8 - M10 - M12 - M16 - M20 - M24

LMR.F
Levelling elements for ground mounting
Steel or stainless steel base and stem

Zinc-plated steel or AISI 304 stainless steel anchoring bracket. NBR rubber no-slip disk. Threaded stem with hexagon socket and spanner flats at the base.
Bases Ø: 50 - 60 - 80 - 100 mm
Threadings: M8 - M10 - M12 - M16 - M20 - M24

LMR.
Levelling elements
Steel or stainless steel base and stem

Ball joint with threaded hole or stem. NBR rubber no-slip disk. Threaded stem with hexagon socket head at the upper end and spanner flats at the lower end. Zinc-plated steel or AISI 304 stainless steel nut.
Bases Ø: 50 - 60 - 80 - 100 - 120 mm
Threadings: M8 - M10 - M12 - M16 - M20 - M24

LMP.
Levelling elements
Steel or stainless steel base and stem

Ball joint with threaded hole or stem. LMP.TR with thermoplastic elastomer (TPE) no-slip coating. LMP.TV with vulcanised rubber (NBR) no-slip coating. Zinc-plated or AISI 304 stainless steel nut.
Bases Ø: 40 - 50 - 60 - 80 mm
Threadings: M8 - M10 - M12 - M16 - M20 - M24

MSX. Connecting clamps
Technopolymer
Fitting by means of a stainless steel M5 cylindrical-head screw with hexagon socket and nut. The profile of the holes is designed to fit both tubes with round and square cross section; the latter prevents the elements from rotating.

MSM-T - MSM-Q Connecting tubes
Round or square

MSM-T: AISI 304 stainless steel. Bar for Ø = 8 and 10 mm. Tube for Ø = 12, 16 and 20 mm. MSM-Q: anodised aluminium square tubes, with or without precision graduations (mm). Sections: 10 - 12 - 16 mm.

MPG-2 - MPG-S Guide rail clamps
Technopolymer and stainless steel
With or without AISI 304 stainless steel pin. AISI 304 stainless steel washers, screws and clamping nuts. Housing for round, trapezoidal or rectangular guides. Pins Ø: 12 - 14 - 16 mm.

STC Square tube connectors
Technopolymer and steel or stainless steel
Black or grey colour. Monodimensional two-way, bidimensional two, three or four-way, tridimensional three, four, five or six-way connector. With or without zinc-plated or stainless steel reinforcement. For structures composed of square profiles.

BAS3 Tripod supports
Technopolymer

Zinc-plated or AISI 304 stainless steel M10 screws, nuts and washers. Assembly on series LS.A, LV.A, LV.F levelling elements. The three bearings of the base are supplied with brass bosses, threaded pass-through hole for the assembly of the stem. Tube housing holes Ø: 42 - 48 - 50 - 60 - 45x45 mm.

SPF Guide rail brackets
for linear positioning, technopolymer

UCF Self-aligning brackets
Square flanged, technopolymer
AISI 304 stainless steel bushings and washers. High quality chrome steel bearing. Technopolymer closed or drilled cover for pass-through shafts. Shaft diameters: 25 - 30 mm.

FLEXIBLE AUTOMATION COMPONENTS
Connecting clamps
Guide rail clamps
Self-aligning brackets
Connection joints
Support bases
Levelling elements
Bearing heads
Guide rail brackets
Side mounting top brackets
A wide range of engineering plastics and metal hinges including technopolymer, SUPER-technopolymer, aluminium and stainless steel available in various types of assembly, rotation angles, load resistance or with integrated safety switch.

### CFT

**Hinges with screw-covers**

Technopolymer rotating pin and screw-covers. Assembly by means of pass-through holes for countersunk head, cylindrical head, hexagonal head screws or nuts. Rotation angle: max 200° (-20° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 40 - 49 - 65 mm

### CFA

**Hinges**

Technopolymer

ASI 303 stainless steel or technopolymer (CFA-S) rotating pin. Assembly by means of nickel-plated brass bosses, threaded hole, nickel-plated steel threaded studs, pass-through holes and slotted holes (CFA-SL) for cylindrical head screws. Rotation angle: max 215° (-35° and +180° being 0° the condition where the two surfaces are on the same plane). Dimensions: 40 - 49 - 65 - 97 mm

### CFL

**Hinges**

Technopolymer

ASI 303 stainless steel rotating pin. Assembly by means of pass-through holes for cylindrical head screws. Rotation angle: max 200° (-20° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimension: 102 mm

### CFM

**Hinges**

SUPER-technopolymer

ASI 303 stainless steel rotating pin. Nickel-plated steel threaded stud, pass-through holes for cylindrical head screws, pass-through slotted holes for cylindrical head screws. Rotation angle: max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 30 - 40 - 50 - 60 mm

### CFSQ

**Hinges with built-in safety switch**

SUPER-technopolymer

Safety switch with one normally closed change-over contact (NC) and one normally open change-over contact (NO). Positive opening in compliance with IEC EN 60947-5-1. Double insulation of the internal circuits. Approved by UL E360222. Dimension: 53 mm

### CFM-W

**Hinges**

SUPER-technopolymer

These hinges can be assembled with CFM-W hinge with safety switch. Technopolymer rotating pin. Assembly by means of pass-through holes for countersunk-head, cylindrical head screws or hexagonal nuts. Rotation angle: max 180° (0° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 70 - 110 mm

### CFM-Y

**Hinges for removable doors**

Technopolymer

ASI 304 stainless steel rotating pin. Mounting with pass-through holes for countersunk head screws. Rotation angle: max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 40 - 50 - 60 mm

### CFM-AL

**Hinges**

Aluminium

AISI 303 stainless steel rotating pin. Mounting with pass-through holes for countersunk head screws. Rotation angle: max 270° (-95° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimension: 50 mm

### CFM-BL

**Hinges**

Die-cast zinc alloy

AISI 303 stainless steel rotating pin. Mounting with pass-through holes for countersunk head screws. Rotation angle: max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 40 - 50 - 60 mm

### CFSW

**Hinges with built-in safety multiple switch**

SUPER-technopolymer

Switch with 4 electric contacts, which can be set in production: normally open (NO) or normally closed (NC). Standard executions 2NO+2NC and 1NO+3NC. Positive opening in compliance with IEC EN 60947-5-1. Double insulation of the internal circuits. Approved by UL E360222, IMQ:CA02.04800. Dimension: 110 mm

### CMM-SST

**Hinges**

AISI 316 stainless steel

ASI 316 stainless steel rotating pin. Rotation angle: max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). CMM die-cast zinc alloy. CMM-BL aluminium. Dimensions: 30 - 40 - 50 - 60 mm

### CMMY

**Hinges for removable doors**

Die-cast zinc alloy

ASI 303 stainless steel rotating pin. Mounting with pass-through holes for countersunk head screws. Rotation angle: max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 40 - 50 - 60 mm
CFJ. Tamperproof hinges
Technopolymer

ASI 303 stainless steel rotating pin, totally moulded in the hinge body. Assembly by means of nickel-plated brass bosses, threaded hole; nickel-plated steel threaded studs; pass-through holes for hexagonal head screws. Rotation angle: max. 275° (-95° and +180° being 0° the condition where the two surfaces are on the same plane). Dimension: 50 mm

CFU. Hinges with adjustable friction
Technopolymer

Technopolymer rotating pin. AISI 304 stainless steel screw and AISI 303 stainless steel adjusting boss. Assembly by means of pass-through holes for cylindrical head screws. Rotation angle: max. 185° (-5° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Resistant torque max: 1.4 - 4 Nm. CFU-CLEAN in white similar to RAL 9002. Dimensions: 40 - 60 mm

CMF. In line lift-off hinge
Technopolymer

Technopolymer adjustable pin with octagonal slot. Technopolymer covers for pin slot and screw-covers. Assembly by means of pass-through holes. Offset lift-off hinges have been designed to adjust possible misalignments between the door and the frame. Dimension: 64 mm

CMN Hinges for removable doors
Die-cast zinc alloy

Black or grey colour. Assembly by means of threaded holes. Dimension: 63 mm

CMQ. Angles for profile structures
Aluminium

Natural colour or black or grey epoxy resin coating. Technopolymer closing cap. Assembly by means of zinc-plated steel screws, nuts and washers. Dimensions: 30 - 40 - 45 mm

CFF. Hinges for thin doors
Technopolymer

ASI 303 stainless steel rotating pin. Assembly by means of pass-through holes for countersunk head or hexagonal head screws. The detent device allows four different detent positions of the door: 0°, 90°, 180° and 270°. Resistant torque of about 1.1 Nm. Rotation angle: max 195° (+15° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 40 - 50 - 60 mm

CMUF Hinges with adjustable friction
Zinc-alloy

Technopolymer conical friction elements, zinc-plated steel screw and nut. Mounting with pass-through holes for countersunk head screws. Rotation angle: max. 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Resistant torque of about 3 Nm. Dimension: 65 mm

CFO. Offset lift-off hinge
Technopolymer

Technopolymer hinge body and adjustable pin with octagonal slot. Assembly by means of nickel-plated brass bosses, threaded hole; nickel-plated steel threaded studs. In line lift-off hinges have been designed to adjust possible misalignments between the door and the frame. Dimension: 64 mm

CFO. In line lift-off hinge
Technopolymer

Technopolymer hinge body and adjustable pin with octagonal slot. Assembly by means of nickel-plated brass bosses, threaded hole; nickel-plated steel threaded studs; pass-through holes for cylindrical head screws. Rotation angle: max 280° (-100° and +180° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 30 - 40 - 48 - 66 mm

CFF. Hinges for thin doors
Technopolymer

ASI 303 stainless steel rotating pin. Assembly by means of nickel-plated brass bosses, threaded hole or nickel-plated steel threaded studs; pass-through holes for cylindrical head screws. Rotation angle: max 205° (-15° and +190° being 0° the condition where the two interconnected surfaces are on the same plane). Dimensions: 30 - 40 - 48 - 66 mm

CFA. Offset lift-off hinge
Technopolymer

Technopolymer adjustable pin with octagonal slot. Technopolymer covers for pin slot and screw-covers. Assembly by means of pass-through holes. Offset lift-off hinges have been designed to adjust possible misalignments between the door and the frame. Dimension: 64 mm

CFO. Offset lift-off hinge
Technopolymer

Technopolymer hinge body and adjustable pin with octagonal slot. Assembly by means of nickel-plated brass bosses, threaded hole; nickel-plated steel threaded studs. In line lift-off hinges have been designed to adjust possible misalignments between the door and the frame. Dimension: 64 mm

CFA. Offset lift-off hinge
Technopolymer

Technopolymer adjustable pin with octagonal slot. Technopolymer covers for pin slot and screw-covers. Assembly by means of pass-through holes. Offset lift-off hinges have been designed to adjust possible misalignments between the door and the frame. Dimension: 64 mm

CFA. Offset lift-off hinge
Technopolymer

Technopolymer adjustable pin with octagonal slot. Technopolymer covers for pin slot and screw-covers. Assembly by means of pass-through holes. Offset lift-off hinges have been designed to adjust possible misalignments between the door and the frame. Dimension: 64 mm

CFA. Offset lift-off hinge
Technopolymer

Technopolymer adjustable pin with octagonal slot. Technopolymer covers for pin slot and screw-covers. Assembly by means of pass-through holes. Offset lift-off hinges have been designed to adjust possible misalignments between the door and the frame. Dimension: 64 mm

CFA. Offset lift-off hinge
Technopolymer

Technopolymer adjustable pin with octagonal slot. Technopolymer covers for pin slot and screw-covers. Assembly by means of pass-through holes. Offset lift-off hinges have been designed to adjust possible misalignments between the door and the frame. Dimension: 64 mm

CGF. Hinges for profiles
Technopolymer

One or two (CF) nickel-plated rotating pins. Technopolymer centring inserts for aluminium profiles from 6 to 12 mm. Assembly by means of pass-through holes. Rotation angle: max 280° (-100° and +180°). CF: max 260°/275° (-95° and +150°/180°) being 0° the condition where the two interconnected surfaces are on the same plane. Dimension: 36 mm

CGF. Hinges for profiles
Technopolymer

One or two (CF) nickel-plated rotating pins. Technopolymer centring inserts for aluminium profiles from 6 to 12 mm. Assembly by means of pass-through holes. Rotation angle: max 280° (-100° and +180°). CF: max 260°/275° (-95° and +150°/180°) being 0° the condition where the two interconnected surfaces are on the same plane. Dimension: 36 mm

CFF. Hinges for thin doors
Technopolymer

ASI 303 stainless steel rotating pin. Assembly by means of pass-through holes for countersunk head or hexagonal head screws. The detent device allows four different detent positions of the door: -90°, 0°, 70° and 115°. Rotation angle: max 210° (-90° and +120° being 0° the condition where the two surfaces are on the same plane. Resistant torque of about 3 Nm. Dimension: 65 mm

CCF. Hinges for thin doors
Technopolymer

ASI 303 stainless steel rotating pin. Assembly by means of pass-through holes for cylindrical head screws. Rotation angle: max. 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane. Dimension: 50 mm
Different types of latches in plastic or metal with knob or key to lock electrical panels or machine doors. Hook clamps, push-pull or latch-type toggle clamps in zinc-plated or stainless steel designed for industrial uses complete the range.

**CM. - CMT.AE-V0**
Lever latches
fold-away or key-type knob

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

**BOCK**
Cam latches with key
Steel or stainless steel cam

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

**MDA-LS**
Lever latches
Technopolymer knob


**ELCK**
Lever latches
Operation by means of technopolymer lever

Zinc alloy stator and rotor, brass nut, zinc-plated steel lever, positioning washer and spring washer. Two nickel-plated brass keys removable in two positions (locked or unlocked position). Standard executions: lock with one combination, opening on the right or left side or both sides. Dimensions: 67 - 85 mm

**VCTK. - VCMK.**
Cam latches
Steel or technopolymer knob

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

**VCML**
Lever latches
Stainless steel knob

Stainless steel stator, closing lever, screw, washer and nut. Rotation 90° right. IP 65 protection class. Knob diameter: 50 mm

**VC.308 - VC.309**
Lever latches
Technopolymer knob with lock

Zinc-plated or stainless steel plain stud; zinc-plated or stainless steel latch spring to compensate door thickness. Standard executions: opening to the right side or left side. Knob diameter: 50 - 60 - 70 mm

**CSM.**
Lever latches
Steel handle with lock

Zinc alloy stator, rotor and nut; stainless steel front plate; zinc-plated steel closing lever; two nickel-plated brass keys, removable in two positions at 180°. IP 65 protection class. Standard executions: lock with different combinations or one combination; different combinations and master-key or without lock. Knob diameter: 40 mm

**CSMT-A**
Lever latches
Technopolymer handle with lock and anti-rotation device

Technopolymer stator and nut, zinc alloy rotor; stainless steel front plate; 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: 80 mm

**CS.**
Lever latches
with lock, zinc alloy

Zinc alloy stator and rotor, brass nut, zinc-plated steel lever, positioning washer and spring washer. Two nickel-plated brass keys removable in two positions at 180°. Standard executions: lock with different combinations or one combination. Dimensions: from 13 to 30 mm
<table>
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<th><strong>CQ.</strong> - CQT.FM-AE-V0</th>
<th>Lever latches with recessed key</th>
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<td><strong>CQT.FM</strong></td>
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<td><strong>GN 315</strong></td>
<td>Snap locks technopolymer and zinc alloy</td>
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<td><strong>CLT.</strong></td>
<td>Latches for cabinets with handle for rod controls, technopolymer</td>
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<td>Snap door lock technopolymer</td>
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<tr>
<td><strong>CAR.</strong></td>
<td>Rod controls Steel</td>
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<td><strong>EBR-CH</strong></td>
<td>Handle with safety locking device technopolymer</td>
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<td><strong>PR-CH</strong></td>
<td>Flush pull handles with lever latch technopolymer</td>
</tr>
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<td><strong>CSMH</strong></td>
<td>Latches with push handle technopolymer and zinc alloy</td>
</tr>
<tr>
<td><strong>GN 702</strong></td>
<td>Stop locks with 4 indexing positions (90°) Zinc alloy</td>
</tr>
<tr>
<td><strong>TLA.</strong></td>
<td>Hook clamps Steel or stainless steel</td>
</tr>
<tr>
<td><strong>TLE.</strong></td>
<td>Adjustable hook clamps Steel or stainless steel</td>
</tr>
<tr>
<td><strong>TLF.</strong></td>
<td>Hook clamps Steel or stainless steel</td>
</tr>
</tbody>
</table>

**CQ.** - nickle-plated zinc alloy stator and rotor, brass or zinc alloy nut, technopolymer shaped closing lever and screw. CQ ST: stainless steel stator and rotor; two-wing or triangular groove for key. CQT.FM-AE-V0; stainless steel self-tapping screw. Rotation 90°. Dimensions: 16 - 18 - 20 - 24 - 28 - 30 mm


Technopolymer unlocking button, light-grey colour, steel adjusting spacer, black colour, zinc alloy threaded body, zinc-plated steel locking nut. Adjusting distance: from 18 to 28 mm

**BMS** - technopolymer with push handle LBR-CH. When the lever is locked, the maximum load at breakage of the door lock is = 2500 N.

**CAR.** - Handle in black or grey colour. Standard executions: lock with different combinations or for technopolymer key with serrated key.

**PR-CH** - Two nickel-plated brass or technopolymer keys. Standard executions: lock with key removable in two positions, rotation by 90°, placed on the right or on the left. Lock with one combination, different combinations or different combinations and master-key or electrical panel lock type with triangular, square or two-wing groove. Zinc-plated or stainless steel closing lever UPR. Dimension: 117 mm

**CSMH** - Handle in black or grey colour. Standard executions: lock with different combinations or one combination. Two nickel-plated brass keys removable in two positions at 90°. Assembly by means of 4 zinc-plated steel screws co-moulded into the base. The overturning of the handle in its seat moves the spindle axially with the lever in the direction of the swing-door until the locking position. Dimension: 128 mm, adjusting distance: from 13 to 75 mm

**GN 115.10** - Handle in black or grey colour. Standard executions: triangular, square 7x7 or two-wing groove for key, positioned to the right or to the left. Assembly by means of 5 zinc-plated steel screws. GN 115 zinc-plated steel closing lever. Dimension: 128 mm, adjusting distance: from 13 to 75 mm

**TLA.** - zinc-plated or AISI 304 stainless steel basic hook clamp. TLE.Z: zinc-plated steel hook clamp with padlock hole. Special executions on request: catch brackets in different shapes and finishes. Dimension: 52 mm

**TLE.** - zinc-plated or AISI 304 stainless steel basic hook clamp. TLF: hook clamp with security stop and red technopolymer push button. Special executions on request: catch brackets in different shapes and finishes. Dimensions: 138 to 150 mm
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Material</th>
<th>Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLM.</td>
<td>Adjustable hook clamps</td>
<td>Steel or stainless steel</td>
<td>TLM: basic hook clamp. TLM: hook clamp with padlock hole. Special executions on request: catch brackets in different shapes and finishes. Dimension: 88 mm</td>
</tr>
<tr>
<td>TLL.</td>
<td>Adjustable hook clamp</td>
<td>Steel</td>
<td>Special executions on request: AISI 304 stainless steel hook clamps. Dimension: 125.5 mm</td>
</tr>
<tr>
<td>TLY.</td>
<td>Hook clamps</td>
<td>Steel</td>
<td>Welding mounting. Special executions on request: AISI 304 stainless steel hook clamps. Dimension: 81 mm</td>
</tr>
<tr>
<td>MVA.</td>
<td>Vertical toggle clamps</td>
<td>Steel or stainless steel</td>
<td>Ground and hardened steel support bushings; red polyurethane handle. MVA-SST: stainless steel. Dimensions: 67 - 85 - 110.5 - 129 - 164 - 223 mm</td>
</tr>
<tr>
<td>MVB.L</td>
<td>Vertical toggle clamps, long life series</td>
<td>Steel or stainless steel</td>
<td>Hardened, black-oxide and ground steel rotating pins and support bushings; zinc-plated steel adjusting screw and nut; red polyurethane handle. With opening clamping lever and two folded washers or solid clamping lever. Dimensions: 86 - 91 - 129.5 - 161 - 203 mm</td>
</tr>
<tr>
<td>MGA.L</td>
<td>Toggle-joint mechanisms</td>
<td>Steel</td>
<td>Hardened, black-oxide and ground steel rotating pins and support bushings; zinc-plated steel adjusting screw and nut. Dimensions: 57.5 - 58.5 - 115 mm</td>
</tr>
<tr>
<td>MOAS.</td>
<td>Horizontal toggle clamps</td>
<td>Steel or stainless steel</td>
<td>With opening clamping lever and two folded washers or solid clamping lever and retainer for welding. Ground and hardened steel support bushings; red polyurethane handle. Dimensions: 118 - 172 - 196 - 270 - 305 - 306.5 mm</td>
</tr>
<tr>
<td>MFC.</td>
<td>Push-pull clamps</td>
<td>Steel</td>
<td>Zinc-plated steel rivets and push lever; brass or pressed steel base; red polyurethane handle. Dimensions: 86 - 116 - 122 - 164.5 - 182 - 238 - 316 mm</td>
</tr>
<tr>
<td>MTC.</td>
<td>Latch clamps</td>
<td>Steel or stainless steel</td>
<td>Zinc-plated steel rivets; pulling hook; oscillating pin and nuts. Dim. MTC-SST: stainless steel. Dimensions: 98 - 152 - 220 mm</td>
</tr>
<tr>
<td>MTP.</td>
<td>Latch clamps, heavy-duty series</td>
<td>Steel or stainless steel</td>
<td>Hardened and ground steel shank; zinc-plated steel pulling hook; oscillating pin and nuts. MTP-SST: stainless steel. Dimensions: 220 - 273 mm</td>
</tr>
<tr>
<td>PVC.</td>
<td>Pneumatic clamps</td>
<td>Steel or stainless steel</td>
<td>Zinc-plated rivets and pins; black-oxide steel cylinder support screws; hardened steel cylinder support bushings; rotating pin and seeger ring. Dimensions: from 163 to 362 mm</td>
</tr>
</tbody>
</table>
Components to meet various applications on hydraulic systems. Different production materials to resist to: different liquids and oils; low or high temperatures and for use in environments subject to risk of explosion (ATEX line).

**13 Accessories for hydraulic systems**

**TN. - TNR.**
- **Plugs**
  - Technopolymer
  - TN. with NBR rubber packing ring.
  - TNR. with NBR rubber O-Ring.
  - Max. continuous working temp.: 100°C
  - GAS threadings: 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2

**TN-EX**
- **Plugs**
  - Technopolymer
  - NBR rubber packing ring.
  - TN-EX plugs comply with Health and Safety Requirements defined in 94/9/EC ATEX European Directive (explosive atmospheres) for equipments in Group II, category 2GD.
  - GAS threadings: 3/8 - 1/2 - 3/4

**TCD. - TCR.**
- **Oil fill plugs**
  - Technopolymer
  - TCD. with NBR rubber packing ring. TCR+a with phosphatised steel dipstick. TCR. with NBR rubber O-Ring.
  - Max. continuous working temp.: 100°C
  - GAS threadings: 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2

**TSD. - TSR.**
- **Oil drain plugs**
  - Technopolymer
  - Graphic symbol "drain": TSD. with NBR rubber packing ring. TSR. with NBR rubber O-Ring.
  - Max. continuous working temp.: 100°C
  - GAS threadings: 1/8 - 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2

**TMB.**
- **Magnetic plugs**
  - Aluminium
  - Magnetic element with an attractive power to keep metal particles in oil. NBR rubber packing ring.
  - Max. continuous working temp.: 180°C
  - GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2

**GAS**
- **T.440**
  - **Plugs**
  - Technopolymer
  - With or without phosphatised steel flat dipstick.
  - NBR rubber packing ring.
  - Max. continuous working temp.: 100°C
  - GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2

**SFN.**
- **Breather caps**
  - Technopolymer
  - Orange technopolymer cover; black technopolymer threaded connector or zinc-plated steel sheet bayonet. With or without air filter in polyurethane foam mesh "tech-foam": NBR rubber flat packing ring.
  - Max. continuous working temp.: 100°C
  - Diameters: 30 - 40 - 57 - 70 mm
  - GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2

**SFP. - SFP-EX**
- **Breather caps**
  - Technopolymer
  - With splash guard, technopolymer
  - Orange technopolymer cover; black threaded connector.
  - Splash guard with or without "tech-foam": SFP-EX or "tech-foam" (SFP) air filter. NBR rubber packing ring.
  - Max. continuous working temp.: 100°C
  - Diameters: 20 - 26 mm
  - GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2

**SFP+a - SFP+a-EX**
- **Breather caps**
  - Technopolymer
  - With splash guard and flat dipstick, technopolymer
  - Orange technopolymer cover and or sheet bayonet; splash guard with or without air filter. NBR rubber packing ring.
  - Phosphatised steel dipstick.
  - Max. continuous working temp.: 100°C
  - Diameters: 30 - 40 - 57 - 70 mm
  - GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 1 1/2
**TVD.**
Breather caps with vacuum breaker valve
Technopolymer

Red colour with EPDM synthetic rubber membrane gasket, green colot with FKM synthetic rubber membrane gasket. Threaded connector in black colour. EPDM (red cover) or FKM (green cover) flat packing ring. Max. continuous working temp.: 50°C
GAS threading: 1/4/4

**SFV.**
Valve breather caps
Technopolymer

Technopolymer cover, with “valve” symbol and black threaded connector. NBR rubber packing ring. Valve: technopolymer sealing disk with NBR O-Ring and stainless steel spring set at 10 mb or 100 mb. Max. continuous working temp.: 100°C
Metric threadings (pitch 1.5): M16 - M18 - M20 - M22
GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1

**SFW.**
Pressurised breather caps
with double valve, technopolymer

Technopolymer cover, with “valve” symbol. Threaded connector or sheet bayonet. “Tech-foam” ring-shaped air filter. NBR rubber packing ring. Overpressure valve set at around 0.350 bar. Suction valve set at around 0.030 bar. Max. continuous working temp.: 100°C
GAS threadings: 3/4 - 1 1/4 - 2

**SMN. - SMW.**
Pressurised breather caps
simple or with double valve and threaded connector, steel

Chrome-plated steel cover; zinc-plated steel flange; zinc-plated steel threaded connector. NBR rubber 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. “Tech-foam” ring-shaped air filter. GAS threadings: 1/4 - 3/4

**HGFT. - HGFT-EX.**
Oil level indicators
Technopolymer

Transparent technopolymer window. Standard executions with or without matte anodised aluminium star-shaped contrast screen. NBR rubber packing ring. HGFT-EX indicators comply with European Directive ATEX 94/9/EC. Max. continuous working temp.: 100°C at 3 bar pressure. GAS threadings: 3/8 - 1/2 - 3/4 - 1 - 1 1/4 - 2

**GN 743.**
Oil level indicators
Aluminium

Natural glass or ESG safety glass window (GN 743.1). NBR rubber or FKM (GN 743.1) flat packing ring. Max. continuous working temp.: 100°C or 180°C (GN 743.1). Metric threadings (pitch 1.5): M14 - M16 - M20 - M26 - M27 - M33 - M40 - M42
GAS threadings: 3/8 - 1/2 - 3/4 - 1 1/4

**GN 743.6.**
Oil level indicators
Aluminium

EGS safety glass window. FKM packing ring. Comply with European Directive ATEX 94/9/EC. Max. continuous working temp.: 150°C
Metric threadings (pitch 1.5): M16 - M20 - M26 - M27
GAS threadings: 3/8 - 1/2 - 3/4

**GN 743.2.**
Oil level indicators
Brass

Natural glass or ESG safety glass (GN 743.3) window. NBR or FKM (GN 743.3) rubber packing ring. Max. continuous working temp.: 100°C or 180°C (GN 743.3). Metric threadings (pitch 1.5): M16 - M20 - M26 - M27 - M33 - M37 - M38
GAS threadings: 3/8 - 1/2 - 3/4 - 1

**GN 743.6.**
Oil level indicators
Aluminium

EGS safety glass window. FKM packing ring. Comply with European Directive ATEX 94/9/EC. Max. continuous working temp.: 150°C
Metric threadings (pitch 1.5): M16 - M20 - M26 - M27
GAS threadings: 3/8 - 1/2 - 3/4

**GN 744.**
Oil level indicators
with prismatic window, technopolymer

Transparent technopolymer prismatic window. NBR or FKM (HGFT-HT-PR) synthetic rubber packing ring. Max. continuous working temp.: 100°C at 7 bar pressure (HGFT-HT-PR) or 140°C at 7 bar pressure (HGFT-HT-PR). GAS threadings: 1/2 - 3/4 - 1

**HE.**
Oil level indicators
push-fit, polycarbonate

White lacquered aluminium contrast screen with red level line. NBR rubber O-Ring. Max. continuous working temp.: 100°C. These indicators are suitable for assembly on reservoirs with limited pressures. Diameters: 18 - 21 - 28 - 32 - 38 - 43 - 47 mm
GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4

**HRT.**
Oil level indicators
push-fit, technopolymer

Transparent lacquered aluminium contrast screen. HRT-T; with bimetallic thermometer and graduated scale up to 100°C. NBR rubber O-Ring. Max. continuous working temp.: 100°C
Diameters: 28 - 36 - 42 - 64 mm

**HE.**
Oil level indicators
push-fit, polycarbonate

White lacquered aluminium contrast screen with red level line. NBR rubber O-Ring. Max. continuous working temp.: 100°C. These indicators are suitable for assembly on reservoirs with limited pressures. Diameters: 18 - 21 - 28 - 32 - 38 - 43 - 47 mm
GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4

**HFTX.**
Oil level indicators
Technopolymer

Matte anodised aluminium star-shaped contrast screen. NBR rubber packing ring. Max. continuous working temp.: 100°C
GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4
Oil level indicators
with prismatic window, technopolymer

A continuous series of prisms provide a clear and immediate reading of the oil level due to refraction effect.
NBR rubber packing ring.
Max. continuous working temp.: 100°C
GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1 - 1 1/4

Oil circulation sights
Technopolymer

NBR rubber packing ring.
HCFE-EX comply with Health and Safety Requirements defined in 94/9/EC ATEX European Directive (explosive atmospheres) for equipments in Group II, category 2GD.
GAS threadings: 3/8 - 1/2 - 3/4

Visual flow indicators
Technopolymer ends

PYREX glass window; brass tie rods; technopolymer axis and rotor propeller; NBR rubber packing rings; brass bosses with cylindrical gas threading according to UNI ISO 228/1. Max. continuous working temp.: 100°C. Functioning with two-way flow. GAS threadings: 1/4 - 3/8 - 1/2 - 3/4 - 1

Column level indicators
with or without protection frame, technopolymer

Zinc-plated steel screws and nuts. Step-shaped packing rings for the seal on the reservoir walls and NBR rubber O-Ring screw underhead.
White lacquered aluminium contrast screen. With or without thermometer; with or without SUPER-technopolymer protection frame.
Max. continuous working temp.: 90°C
Assembly centre distances: 76 - 127 - 254 mm

Column level indicators
with or without protection frame, technopolymer

HCX., HCX-AR, HCX-PT: zinc-plated steel screws, nuts and washers.
HCX-SST, HCX-BW-SST, HCX-PT-SST: AISI 304 stainless steel nuts and washers.
NBR or FKM synthetic rubber O-Ring. White lacquered aluminium contrast screen.
HCX-AR for use with fluids containing alcohol.
HCX-BW-SST for use with hot water.
Max. continuous working temp.: 80°C or 90°C
Assembly centre distances: 76 - 127 - 254 mm

Column level indicators
with or without transparent protection, technopolymer

HCX-AR, HCX-BW-SST: Stainless steel screws, nuts and washers.
Technopolymer assembly ends. Aluminium support. Transparent polycarbonate tube. HCX-GL with PYREX glass tube, also suitable for use with glycol-based solutions.
With or without transparent polycarbonate front protection. Zinc-plated or stainless steel screws, nuts and washers. NBR rubber or FKM O-Ring.
Max. continuous working temp.: 100°C or 130°C (HCX-GL). Assembly centre distances: 76 - 127 - 176 - 254 - 381 - 508 mm
SLCK kit for the electric control of the fluid level.

Column level indicators
with MIN level electrical sensor, technopolymer

MIN level electrical sensor (HCX-E).
MAX temperature electrical sensor (HCX-ST).
Temperature electrical probe (HCX-STL).
Zinc-plated steel screws, nuts and washers. NBR rubber O-Ring. Technopolymer float with magnetic element to activate the contact.
Technopolymer sensor bracket with a built-in relay. Swivelling two-pin connectors. Available with electrical contact NO or NC.
Max. continuous working temp.: 90°C
Assembly centre distances: 127 - 254 mm

Rapid levels with float
Technopolymer

TPE flat gasket or NBR rubber O-Ring. Connector with or without sensor with side output and reed switch. AISI 304 stainless steel dipstick (HFL-E) or technopolymer dipstick featuring two raised scales (HFLT-E). With or without NBR rubber float.
Assembly by means of zinc-plated steel flange or 1" Gas threaded connector.
Max. continuous working temp.: 80°C
HFL-E and HFLT-E rapid levels show a minimum or maximum default level.
Castors and Wheels

A wide range of castors and wheels, suitable for manual (4 km/h) or mechanical (16 km/h) handling for trucks and equipment. The range includes wheels with fixed or turning plate bracket, with or without brakes; specific series destined for heavy loads; drive wheels and pallet truck rollers.

**RE.FF**
Injected polyurethane wheels
Technopolymer centre body

- RE.FF-N: zinc-plated or AISI 304 stainless steel sheet bracket, fixed or turning plate (also with centre pass-through hole) with or without brake. Wheel Ø: 80 - 100 - 125 - 150 mm

**RE.F5**
Mould-on polyurethane wheels
Aluminium centre body

- Hub with ball bearings. RE.F5-N: zinc-plated steel sheet bracket, fixed or turning plate (also with centre pass-through hole) with or without brake. RE.F5-H: steel sheet bracket for medium-heavy loads, fixed or turning plate, with or without brake. Wheel Ø: 80 - 100 - 125 - 150 - 200 mm

**RE.F4**
Mould-on polyurethane wheels
Cast iron centre body

- Hub with ball bearings. RE.F4-H: steel sheet bracket for medium-heavy loads, fixed or turning plate, with or without brake. Wheel Ø: 100 - 125 - 150 - 200 mm

**RE.F4-WH** – **RE.F4-WEH**
Mould-on polyurethane wheels
Electro-welded steel bracket for heavy loads

- RE.F4-WH: electro-welded steel bracket for heavy loads, fixed or turning plate, with or without brake. RE.F4-WEH: electro-welded steel bracket for extra-heavy loads, fixed or turning plate, with or without brake. Wheel Ø: 125 - 150 - 200 - 250 - 300 mm

**RE.F8**
Technopolymer wheels
Monolithic

- Hub with ball bearings. RE.F8-N: zinc-plated or AISI 304 stainless steel sheet bracket, fixed or turning plate (also with centre pass-through hole) with or without brake. RE.F8-H: steel sheet bracket for medium-heavy loads, fixed or turning plate, with or without brake. Wheel Ø: 65 - 80 - 100 - 125 - 150 - 200 mm

**RE.F8-WH**
Technopolymer wheels
Electro-welded steel bracket for heavy loads

- Hub with ball bearings. RE.F8-WH: electro-welded steel sheet bracket for heavy loads, fixed or turning plate, with or without brake. Wheel Ø: 125 - 150 - 200 mm

**RE.G1**
Thermoplastic rubber wheels
Technopolymer centre body

- RE.G1-N: zinc-plated or AISI 304 stainless steel sheet bracket, fixed or turning plate (also with centre pass-through hole) with or without brake. Wheel Ø: 80 - 100 - 125 - 150 mm

**RE.E2**
Vulcanised rubber wheels
Technopolymer centre body

- RE.E2-N: zinc-plated steel sheet bracket, fixed or turning plate (also with centre pass-through hole) with or without brake. Wheel Ø: 80 - 100 - 125 - 150 - 180 - 200 mm

**RE.E3**
Vulcanised rubber wheels
Steel centre body

- RE.E3-N: zinc-plated steel sheet bracket, fixed or turning plate (also with centre pass-through hole or threaded pin) with or without brake. Wheel Ø: 80 - 100 - 125 - 150 - 200 mm

**RE.G2**
Elastic rubber wheels
Aluminium centre body

- Hub with ball bearings. RE.G2-H: steel sheet bracket for medium-heavy loads, fixed or turning plate, with or without brake. Wheel Ø: 100 - 125 - 160 - 200 mm

**RE.C7**
Wheels for the general public
Vulcanised rubber coating

- Technopolymer centre body. Zinc-plated steel sheet bracket, fixed or turning plate (also with centre pass-through hole or threaded pin) with or without brake. RE.C7-G: twin wheels version. Wheel Ø: 40 - 50 - 60 - 90 mm

**RE.C6**
Wheels for the general public
Injected polyurethane coating

- Technopolymer centre body. Zinc-plated steel sheet bracket, fixed or turning plate (also with centre pass-through hole or threaded pin) with or without brake. RE.C6-G: twin wheels version. Wheel Ø: 40 - 50 - 60 mm
Connectors and fixed or adjustable connection clamps for square and round section tubes for the building-up of light and modular structures. Available in aluminium or stainless steel with natural finish or with epoxy resin coating, black colour.

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Material</th>
<th>Holes Ø</th>
</tr>
</thead>
<tbody>
<tr>
<td>GN 131 - GN 131-NI</td>
<td>Two-way connecting clamps</td>
<td>Aluminium or stainless steel</td>
<td>10 - 12 - 14 - 15 - 16 - 18 mm</td>
</tr>
<tr>
<td>GN 132</td>
<td>Two-way connecting clamps</td>
<td>Aluminium</td>
<td>20 - 25 - 30 - 35 - 40 - 45 - 50 - 55 - 60 mm</td>
</tr>
<tr>
<td>GN 134</td>
<td>Two-way connecting clamps</td>
<td>Stainless steel</td>
<td>20 - 25 - 30 - 35 - 40 - 45 - 50 - 55 - 60 mm</td>
</tr>
<tr>
<td>GN 145 - GN 145-NI</td>
<td>Connecting clamps with mounting base</td>
<td>Aluminium or stainless steel</td>
<td>10 - 12 - 14 - 15 - 16 - 18 - 20 mm</td>
</tr>
<tr>
<td>GN 146</td>
<td>Connecting clamps with mounting base</td>
<td>Aluminium</td>
<td>20 - 25 - 30 - 35 - 40 - 45 - 50 - 55 - 60 mm</td>
</tr>
<tr>
<td>GN 146.1</td>
<td>Connecting clamps with mounting base for linear actuators</td>
<td>Aluminium</td>
<td>40 - 65 mm</td>
</tr>
<tr>
<td>GN 191 - GN 191-NI</td>
<td>T-shaped connecting clamps</td>
<td>Aluminium or stainless steel</td>
<td>10 - 12 - 14 - 15 - 16 - 18 - 20 mm</td>
</tr>
<tr>
<td>GN 192</td>
<td>T-shaped connecting clamps</td>
<td>Aluminium</td>
<td>20 - 25 - 30 - 35 - 40 - 45 - 50 - 55 - 60 mm</td>
</tr>
<tr>
<td>GN 192.2</td>
<td>Two-way connecting clamps for linear actuators</td>
<td>Aluminium</td>
<td>30 - 40 - 50 - 60 mm</td>
</tr>
<tr>
<td>GN 146.1</td>
<td>Connecting clamps with mounting base for linear actuators, aluminium</td>
<td>Epoxy resin coating, black colour</td>
<td>30 - 40 - 50 - 60 mm</td>
</tr>
</tbody>
</table>
Handles for special applications

High standards and performances in terms of quality, design and care to surface finishes allow the application of these handles on equipment and instruments destined for sectors with very specific requirements.

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RH-UG</td>
<td>Tubular handles</td>
<td>Rectangular cross section, technopolymer and aluminium&lt;br&gt;Technopolymer handle shanks and aluminium tube, natural or black colour. Back mounting, zinc-plated steel tapped bosses; front mounting, pass-through holes for stainless steel cylindrical-head screws and zinc-plated self-locking nuts. Suitable for use on a 19&quot; rack. Assembly centre distances: 55 - 88 - 100 - 120 - 180 mm</td>
</tr>
<tr>
<td>RH-A1</td>
<td>Tubular handles</td>
<td>Oval cross section, aluminium&lt;br&gt;Aluminium handle shanks, available inclined or straight; threaded blind holes for M5 screws. Aluminium bar, ground surface. Technopolymer end caps. Suitable for use on a 19&quot; rack and instruments in general. Assembly centre distances: 88 - 100 - 120 - 200 mm</td>
</tr>
<tr>
<td>RH-S1</td>
<td>Handles</td>
<td>Rectangular cross section, aluminium&lt;br&gt;Natural or black colour. Threaded blind holes. A careful machining process ensures the elimination of all sharp edges. Suitable for use on a 19&quot; rack and instruments in general. Assembly centre distances: 25 - 55 - 88 - 120 - 180 mm</td>
</tr>
<tr>
<td>RH-AR</td>
<td>Handles</td>
<td>Rectangular cross section, aluminium&lt;br&gt;Aluminium handle shanks and bar. Threaded blind holes. Assembly centre distances: 300 - 500 mm</td>
</tr>
<tr>
<td>RH-M3</td>
<td>Tubular handles</td>
<td>Technopolymer and aluminium&lt;br&gt;Technopolymer handle shanks. Pass-through holes for zinc-plated steel cylindrical-head screws with hexagon socket, nuts and washers. Aluminium bar, natural or black colour. Assembly centre distances: 200 - 300 - 400 mm</td>
</tr>
<tr>
<td>RH-TL-U3</td>
<td>Tubular handles</td>
<td>Aluminium and stainless steel&lt;br&gt;Extruded aluminium handle shanks. Threaded blind holes. Turned AISI 303 stainless steel side end elements. These handles ensure an ergonomic grip during frequent operations. Assembly centre distances: 300 - 500 - 700 mm</td>
</tr>
<tr>
<td>RH-GM.B</td>
<td>Bent tubular handles</td>
<td>Aluminium and stainless steel&lt;br&gt;Aluminium handle shanks, epoxy resin coating. Threaded blind holes. AISI 304 stainless steel tube, ground surface. Technopolymer end caps. Assembly centre distances: 500 - 600 mm</td>
</tr>
<tr>
<td>RH-HS-30</td>
<td>Modular tubular handles</td>
<td>Aluminium&lt;br&gt;Aluminium die-cast T-shaped connecting shanks, connecting joints and end shanks. Epoxy resin coating. Front mounting, threaded holes for zinc-plated and passivate steel M12x80 screws and washers. Aluminium tube, ground surface. Tube lengths: 200 - 300 - 400 - 500 - 600 - 700 mm Curve angles: 45° - 90°</td>
</tr>
<tr>
<td>RH-BG</td>
<td>Bent handles</td>
<td>Oval cross section, aluminium&lt;br&gt;Aluminium bar, natural or black colour. Threaded blind holes. Assembly centre distances: 400 - 600 - 800 mm</td>
</tr>
<tr>
<td>RH-ER-33</td>
<td>U-shaped and double-curved handles</td>
<td>Stainless steel&lt;br&gt;AISI 304 stainless steel tube, ground surface with a high resistance to strong impacts and scratches. AISI 303 stainless steel tapped bosses for cylindrical-head screws with hexagon socket and washers. Standard executions: double-curved, angular or U-shaped. Assembly centre distances: 300 - 350 - 500 mm</td>
</tr>
<tr>
<td>RH-AK</td>
<td>Handles</td>
<td>Cast aluminium&lt;br&gt;Epoxy resin coating. Front mounting, pass-through holes for cylindrical-head screws with hexagon socket, stainless steel nuts and washers; back mounting, threaded blind holes. Assembly centre distances: 96 - 140 mm</td>
</tr>
<tr>
<td>RH-EG</td>
<td>Shaped handles</td>
<td>Stainless steel microfusion&lt;br&gt;Threaded blind holes. Assembly centre distances: 140 - 180 mm</td>
</tr>
</tbody>
</table>
RH-ST
Handles
Round cross section, steel
Steel bar, chrome-plated surface.
Chrome-plated brass washers.
Threaded blind holes.
Assembly centre distances: 32 - 42 - 55 - 64 - 76 - 88 mm

RH-SS
Handles
Round cross section, steel
Steel bar, ground and chrome-plated surface.
Plastic central grip, Chrome-plated brass end supports.
Threaded blind holes.
Assembly centre distances: 55 - 88 - 100 - 120 - 180 - 200 mm

RH-EF
Handles
Oval flat cross section, AISI 303 stainless steel
Threaded holes for AISI 304 stainless steel screws and washers.
Assembly centre distances: 100 - 120 - 150 - 180 - 250 - 350 mm

RH-OA
Handles
Oval flat cross section, aluminium
Natural or black colour.
Threaded blind holes.
Assembly centre distances: 55 - 88 - 100 - 120 - 200 - 235 - 250 mm

RH-MK
Folding handles
Steel or stainless steel
Round cross section bar in steel with ground surface or AISI 303 stainless steel (RH-EK).
Stop spring in steel or stainless steel (RH-EK) to keep the handle open or folded back.
Zinc-plated or stainless steel (RH-EK) washers and nuts.
Assembly centre distances: 100 - 120 - 180 - 250 mm

RH-EE-01 - RH-EE-02 - RH-EE-03
Flush pull foldaway handle
AISI 304 stainless steel
Return spring from work to rest position.
Pass-through holes for M4 or M5 countersunk-head screws.
This handle is generally used on devices where it is requested to save space.
Dimensions: 75 - 120 - 132 mm

RH-SG
Flush pull handles
Technopolymer and aluminium
Natural or black colour. Technopolymer side covers.
Back mounting by means of two rubber profiles that ensure a firm and safe assembly.
Front mounting by means of pass-through holes for M4 countersunk-head screws and a lower rubber profile.
Suitable for use with plates having a thickness between 1.0 and 2.5 mm.
Dimensions: 100x90 - 118x90 - 167x90 mm

RH-SK
Folding handles with recessed tray
Aluminium
Light grey or black colour. With return spring from work to rest position or click device to stop the handle in both positions.
Pass-through holes for M4 countersunk-head screws.
This handle is shaped inside in order to make a more comfortable grip.
Assembly centre distances: 50 - 79 mm

RH-LG
Handles
Regular profile, aluminium
Natural or black colour.
Threaded blind holes or pass-through holes for M4 countersunk-head screws.
Assembly centre distances: 100 - 120 - 150 - 180 - 250 mm

RH-GZ
Simple or extensible feet
Zinc alloy
Soft PVC no-slip foot. Technopolymer safety locking device, red colour.
Standard executions: simple or extensible foot.
Assembly by means of M4 screws and nuts.

RH-EL
Handles
Regular profile, stainless steel
Threaded blind holes.
Assembly centre distances: 60 - 80 - 100 - 130 mm

RH-FG11
Tubular handles with build-in microswitch
Technopolymer
Microswitch with standard or protruding push-button, with green or red built-in led.
Normally open contact (NO) and normally closed contact (NC). By pressing the button, the operator requires access to the protected area through external logic (PLC).
Assembly centre distance: 160 mm

RH-MA
Handles
Steel and technopolymer with elastomer
Front mounting, holes for M4 or M5 countersunk-head screws.
Suitable to be assembled on instruments, suitcases and similar applications.
Dimensions: 203 - 223 - 238 - 241 - 268 mm

RH-ET-CLEAN
Handles
AISI 303 stainless steel
Threaded blind holes for AISI 304 stainless steel screws and washers.
Standard executions: bridge-shaped or double-curved handle.
Assembly centre distances: 100 - 120 - 140 - 200 mm
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