Precision Motion
Product Range Outline

electro-mechanical & pneumatic positioning & transfer solutions for automation
A comprehensive range of cam-operated rotary and linear transfer mechanisms providing a unique combination of micron precise positioning, smooth motion, exceptional reliability and low cost.

Since 1953, Colombo Filippetti have developed an enviable worldwide reputation for their innovative high quality product lines and collaborative approach to developing customer relationships.

Provided that you need only a dedicated motion profile, which is very often the case, cam mechanisms out-perform all other methods on the market (including servo-motors), providing a unique combination of:-

- Positive micron-precise positional accuracy
- Smooth jerk-free accel/decel using the best motion law
- Perfect repeatability
- Self-locking position
- High speed cycling
- Reliability
- Simplicity
- Minimal maintenance requirement
- Low cost

“"If you’ve got a fixed-stroke motion requirement, Colombo Filippetti will have a solution!”

The Colombo Filippetti Range

Despite claims that electronic solutions are the panacea for all motion control and positioning applications, the fact remains that to ensure optimum results, knowledgeable Design Engineers will always specify a mechanical solution when the motion profile/stroke is fixed.
Custom Cams

With more than 50 years experience in cam design and production, Colombo Filippetti are able to offer their customers the best possible support for the development of bespoke cam solutions.

An extensive state-of-the-art manufacturing capacity enables the manufacture of all cam types, including plate, cylindrical (barrel), globoidal and conical with the track profiles (whether they be outline or slotted, single or complementary) milled or ground after heat treatment, with surface finish up to 0.2 Ra.

Rotary Indexing Tables

Two series of rotary indexing tables have been developed, in order to perfectly meet the different demands of particular industrial applications and environments. The medium-duty RIGIDIAL range is a compact series of aluminium housed tables, perfectly suited for most common indexing table applications, whilst the heavy-duty IR range features a robust cast-iron monoblock housing and is better suited for larger dial-plates or when the environment is particularly demanding (special sealing systems are available to provide a hermetic seal and prevent ingress of foreign bodies e.g. in a machine-tool environment, with presence of swarf and cutting fluid). Whichever range is selected, you are assured of an impressive static loading capability thanks to a high specification crossed-roller bearing support for the indexing plate, useful for when press-loading is required. Number of stations available as standard ranges from 2 to 32.

Indexing & Oscillating Drives

Colombo Filippetti can boast an extensive and unparalleled range of indexing and oscillating drive solutions to meet the needs of any industrial positioning or transfer application. The market-leading CF3 range of parallel shaft mechanisms ranges from centre distance of 40mm (25Nm) right up to 315mm ( 6,600Nm) with station number varying between 1 and 8 as standard. The orthogonal CF4 range is available with station number varying between 1 and 24 as standard.

Pick & Place

Pick and place mechanisms are available with both rotary and linear (goal-post) motion configurations. Commonly used for loading/un-loading indexing tables or conveyors, the mechanisms have a huge variety of lift/rotate/traverse motion profiles and can either by independently motorised, or machine-driven to ensure perfect synchronicity.
Kamo Seiko manufacture a range of truly unique and ingenious miniature indexing mechanisms (both electro-mechanical & pneumatic), as well as speed reducers and rotary stages for servo-motors, all based upon the patented concept of using precision engineered balls as a zero-backlash transmission medium to provide a unique combination of low noise, compact size and high torque.
Miniature Indexing Mechanisms

**PIS & PDB Miniature Cam Indexing Drives**
Number of stations: 4, 5, 6, 8, 10, 12 and 16.
Index period: 90 to 330° deg.
Modified sine motion profile.
Locked position with zero-backlash.
Centre distance: 16, 25, 32 and 40 mm.
Dynamic output torque: 1.6 to 39 Nm.
Shaft input or motorised versions are available.
Shaft or flange output.

**MININDEX Hybrid Cam/Pneumatic Indexing Cylinders**
**MINITABLE Hybrid Cam/Pneumatic Indexing Tables**
Number of stations: 2, 3, 4, 5, 6, 8, 10 and 12.
Micro-minidex version offers 20 to 1200 stations.
Locked position with zero-backlash.
Cylinder diameter (MININDEX): 37, 50, 70 and 100 mm.
Output flange diameter (MINITABLE): 72, 105, 125 and 190 mm.
Dynamic output torque: 0.4 to 300 Nm.

Speed Reducers & Rotary Stages

**BR Series Coaxial-Shaft Speed Reducers**
Reduction ratios of: 10, 15, 18, 20, 30, 40, 50, 100
200, 300, 400, 600, 900, 1600.
Output (peak accel) torque: 9.8 to 176 Nm.
Reducer max. dia.: 50, 66, 86, 100, 125 & 160 mm.
Input: Solid or hollow shaft, NEMA plug-in.
Output: Solid shaft or flange.
Customised mounting flanges can be easily added.

**CBR Series Orthogonal-Shaft Speed Reducers**
Reduction ratios of: 5, 10, 15, 20 & 30.
Output (peak accel) torque: 4.8 to 114 Nm.
Centre distance: 16, 25, 32 & 40 mm.
Input: Hollow shaft and clamp.
Output: Solid shaft.

**JFR Series Coaxial-Shaft Rotary Positioning Stages**
Reduction ratios of: 10.5, 15, 20, 30 & 40.
Output (peak accel) torque: 25.5 to 198.5 Nm.
Output flange dia.: 42.3, 63.5 & 85.5 mm.
Input: Hollow shaft with clamp & mounting flange.
Output: Flange.
‘Plug-in’ compatibility with motors from most manufacturers, including Mitsubishi, Yaskawa, Panasonic & Oriental Motor amongst others.
With their extremely comprehensive and innovative range of pneumatic automation components and accessories, Gimatic are justifiably considered as being one of the world’s premier specialists in their field. An enormous selection of competitively priced pneumatic grippers, linear & rotary actuators, linear guide systems, rotary indexers and sensors, all of which are covered by patent and include special design features to ensure maximum performance from minimum footprint and lowest cost. Reliability and performance for all Gimatic products is of the utmost importance and is guaranteed by a stringent set of quality control procedures.

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Pneumatic Automation Components

**Pneumatic Grippers**
Parallel, radial and angular operation.
2-jaw and 3-jaw derivatives.
Self-centering.
Max. gripping force (per jaw) : 1200N.
Strokes (per jaw) : 1.2-100mm.
7-92deg.
Custom designs for handling sprues and optical discs.

**Air Hands (Expanding Grippers)**
Grip diameters : 8-85mm.
Max. gripping force : 1000N.
Optional through-hole to blow compressed air or provide vacuum, to either cool the part or check for leakage.
Elastic component in either Silicone or (non-marking) EPDM and can be easily removed and replaced when worn.

**Linear Actuators, Slides & Lifters**
High stiffness & deflection resistance.
Strokes : 10-2000mm.
Max. actuation force : 350N.
Max. payload : 30kg.
Min. actuating time : 0.015s.
Typical repeatability : +/-0.02mm.
Variable stroke length.
Easy-fit sensors & shock-absorbers.

**Indexing Tables & Swivelling Units**
Through-hole to pass services.
Indexing tables with 4, 6 or 8 stations.
Clockwise or anti-clockwise rotation.
Swivelling unit with adjustable stroke to max.190deg.
Easy-fit sensors & shock absorbers.

**Linear Guides**
Patented re-circulating bearing support.
Up to 3000mm in length.
Use of multiple carriers, as required.
Fitting kits for standard pneumatic cylinders (ISO or rodless), linear motors and stepper/servo-motors.
Adjustable carrier backlash (to zero) and pre-load.
Easy-fit sensors & shock-absorbers.
Company Background

Since the firm’s inception in 1991, the mission of Precision Motion (COFIL) Ltd. has been clear; to be the best value source for an extensive range of motion control, positioning, handling and transfer solutions, whilst providing an unsurpassed level of advice, service and support.

Originally established as part of the Colombo Filippetti Group (hence the abbreviation ‘COFIL’ in the company name), the core business of Precision Motion (COFIL) Ltd. is the provision of solutions for motion control, positioning, handling and transfer applications, based on cam-operated mechanisms and custom cams. In addition, we have carefully selected other synergous product lines, including miniature indexing mechanisms, zero-backlash gearheads, pneumatic automation, tool-changer systems, base assembly machines and CNC rotary tables in order to develop a comprehensive product portfolio.

Markets & Applications

Our products are incorporated into machines which are used in a diverse range of applications within the automation, assembly, packaging, automotive, aeronautical, pharmaceutical, cosmetics, food & beverage, textiles, welding, robotics and machine-tool sectors amongst others.

“We are always keen to collaborate with our customers in the development of new & innovative applications & welcome special enquiries. The only barriers are the limits of our imagination!”

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