Flexible
Entire families of parts can be fed with the same system without mechanical retooling

Efficient
Superior and constant performances, no failures, even with burrs and dimensional variations

Convenient
A suitable answer to the current manufacturing needs, with frequent product changeovers and reduced volumes

Contacts: info@flexibowl.com - tel.: +39 0575 398611 - fax: +39 0575 398620
FlexiBowl®: A Flexible Part Feeding System

FlexiBowl® is an innovative device to feed bulk components. It can be easily integrated with any robot and vision system. It benefits of simple and reliable construction, and low noisy.

FlexiBowl®: An Efficient and Reliable Solution

FlexiBowl® is highly versatile and suitable for feeding a wide variety of parts, regardless of:

- Geometry (cylindrical, complex 3D shape)
- Surface (smooth, sticky, tangled, etc.)
- Material (delicate, fragile, rubber and silicone)
- Weight and Dimensions (metal moulded and sheared parts)

Several comparison studies have proven FlexiBowl® to be suitable for feeding parts in a more uniform, continuous and efficient way. Parts can also be fed in continuous movement, i.e. circular tracking, to provide higher productivity.

FlexiBowl®: The Ideal Solution For The Current Manufacturing Needs

Integrators who manufacture assembly automation and OEM’s who need equipment to manufacture assemblies are faced with a very large challenge of how to get the parts into the assembly machines, minimize workcell requirements, and keep costs down. Whether there is a need to increase productivity, reduce costs or add product variants, flexible part feeding systems are well suited to improve applications with complex parts and to sustain frequent part changes.
How it works

FlexiBowl® includes a rotating disk that is directly actuated by a servomotor, and an impulse generator underneath the surface. The servomotor can move the disk in both directions. An intelligent drive unit and optional backlight are directly installed inside the system.

The working principle is very simple and straightforward: parts that are released by the hopper and fall on the surface, are separated through the combined actuation of servomotor and impulse generator. The lying position is changed and allows the vision to locate parts and drive the robot for pick up with the proper orientation.

The set of instructions allows to change acceleration and deceleration parameters, impulse frequency according to part geometry and to achieve an optimal result.

The communication with robot controller and vision system is done by sending simple commands through the available communications ports: ethernet, ethercat, digital i/o signals.

FlexiBowl®: Available Models and Main Options

FlexiBowl® is currently available with different bowl sizes: 350, 500, 650, 800 inner diameter.

The rotating disk is made of standard conveyor belt material and can be easily found and replaced everywhere. The change of the surface takes few minutes. The disk can be directly supplied in different colours and materials (silicon, textured surfaces, etc.). According to the parts that need to be fed, our technical office can provide useful indications to select the proper disk material. An optional internal backlight is available (red, white, infrared led).

To provide the necessary running capacity we offer a range of hoppers with standard 5, 10, 20 litre capacity. Bigger capacity (40 -80 litre) or elevating trays, can be supplied upon request.
**TECHNICAL SPECIFICATIONS**

**FLEXIBOWL DIMENSIONS**

- **Hopper**
  - Base: Dimensions
  - A: 50°
  - D: 58°

- **Connections**
  - N° | Description
  - --- | ---
  - 1 | Outputs
  - 2 | Inputs
  - 3 | Encoder latch
  - 4 | 24Vdc Power supply
  - 5 | Ethernet connection
  - 6 | Status LED
  - 7 | Ethernet - IO switch
  - 8 | Backlight LED
  - 9 | Air pressure regulator
  - 10 | Air supply
  - 11 | Blow
  - 12 | Main switch
  - 13 | 220V power supply

- **HOPPER**
  - Dimensions:
    - A: 50°
    - D: 58°

- **Technical Specifications**:
  - **Weight**:
    - FB 350: 35 kg
    - FB 500: 40 kg
    - FB 650: 50 kg
    - FB 800: 60 kg
  - **Power supply**: 220 V - 24Vdc
  - **Pneumatic Connections**: 1
  - **Ethernet (UDP protocol)**: 1
  - **Ethercat**: 1
  - **Digital Inputs**: 6
  - **Digital Outputs**: 5
  - **Encoder latch**: 1
  - **Power Consumption 220V**: 6A
  - **Power Consumption 24 Vdc**: 3A
  - **Air Pressure**: 6 bar (non lubricated)
  - **Ambient Temperature**: 5 - 40 °C
  - **Humidity**: 5 - 90% (non condensing)

**PRODUCED AND DISTRIBUTED BY:**

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