


# Rotary Sweep Unloaders



# Descriptif général

The Rotary Sweep Unload  **DENIS** are designed for unloading flat bottom silos containing products with various densities, such as bran, sawdust, cork, polystyrene... with a low density or products such as flours, oilcakes... with a higher density which don't flow naturally by gravity and have a tendency for "bridging". These machines are suitable for all kinds of silos (steel, polyester, concrete...) and are commonly used in round silos not exceeding 12 m in height (8 m for type 180).

They offer the following advantages:

**Reliability and performance :** obviates "bridging" and compaction of products (first in, first out), allows more storage in a given place (eliminates hopping), discharges the product in the center of the silo, secures a regular output, offers an easy access to mechanical components, even when the silo is full, guarantees a successful operation for several decades

**Adaptable and robust + Option** to regulate the speed, adjustable length of sweep flight (made in our own workshops from high quality wear resistant steel), adjustment to suit various products, quality manufacture, low maintenance

**High quality construction and meticulous finishing touches:** scouring treatment and phosphate cleaning of each piece, before a paint finish with 180°C oven baked shellac

Optional: non-toxic white shellac

**Security:** suitable for use in **Explosive Atmosphere** and **Conform** to the **European Norms**.

## Working principles

An automatic feed tapered flight sweeps, from a central axis, the bottom of the silo and brings the product towards a central opening. The product is then handled by a vertical flight (pushing paddles for type 180), which ejects it downward to the central outlet. The sweep action as well as the rotation of the flight are driven by two motors located under the floor.

### Performances

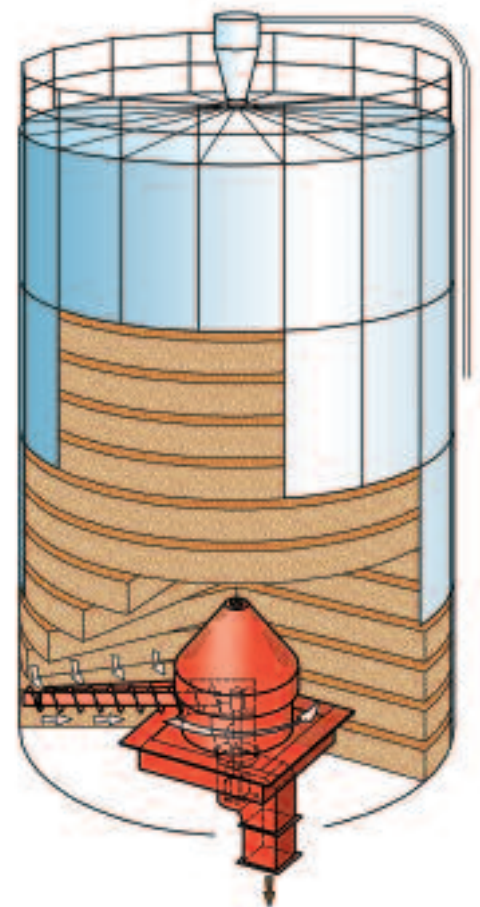
Type	ECR 180	ECR 240	ECR 270	ECR 300
Average output (m³/h) *	1 to 10 m³/h	2 to 44 m³/h	40 to 80 m³/h	15 to 100 m³/h
Tapered flight diameter *	Ø 130 mm	Ø 190 mm	Ø 270 mm	Ø 270 mm
Diameter of the silo *	2 to 5 m	3 to 8,20 m	3 to 7 m	6 to 12,45 m
Height of the silo	6 m	12 m	12 m	12 m
Motor power (kW) *	1,5 to 4 kW	1,5 to 9 kW	7,5 to 15 kW	4 to 30 kW

\* The output is dependent upon the nature of products to be extracted. Variation of outputs can be obtained with a frequency inverter (optional).

**Selecting the type of rotary sweep unloader depends on the product to be extracted (apparent density, particle size, moisture content...) on silo size and layout. Don't hesitate to consult us.**

### Standards dimensions

Type	ECR 180	ECR 240	ECR 270	ECR 300
Central aperture	□ 0,97 m	□ 0,97 m	□ 0,97 m	□ 1,35 m
Outlet flange	□ 200 mm	□ 250 mm	□ 300 mm	□ 400 mm



**A whole range of rotary sweep unloaders developed to ensure steady extraction at large output rates with all kinds of bulk products of different sizes and densities, such as damp cereals, flours, meals, bran, oilcakes, wood shavings, sawdust, pellets and powders, coal-washed smalls, etc... as well as other materials used in a multitude of industries.**

# Technical characteristics

## A Sweep auger

extracting tapered and serrated flight, thickness 8 mm, mounted on a support beam with bearing and end flight part removable to assist installation

### Options and extras:

- welded serration, left hand flight, carbonitrided flight, smooth flight, depending on products to be extracted
- Beam with cover

## B Rotation unit

ultra rigid machine-welded body including the upper right angle gearbox, the head bearing with ball and socket joint for types 240 to 300, under deflector cone taking the product load, with special seal for the attachment plate

### Options and extras:

- System preventing gravity discharge
- Turret profile inlet

## C Attachment plate

UPN welded frame with removable fixing plate and ball bearing mounted drive ring

## D Sweep action

step by step unit driven by adjustable cam, with safety control

- Drive with reduction gear, chain and pinion from central shaft for type 180
- Drive on the inner teeth of the bearing mounted ring with independent geared motor for types 240 to 300

### Options and extras:

- Double cam, eccentric roller

## E Outlet assembly

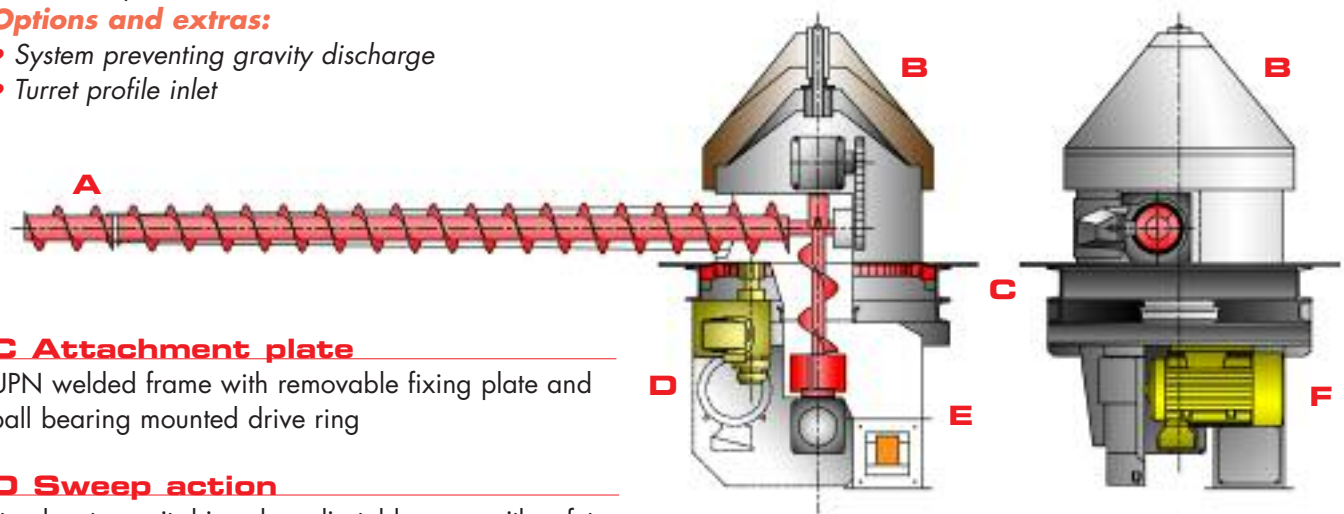
supports motor drive for the rotation of the tapered sweep screw and vertical flight, offset central outlet, with choke sensor

## F Drive unit

with motor and belt drive or geared motor with chain and pinion (depending on type and output) – Specific speed for product and output

### Options and extras:

- motor types depends upon silo area and/or environment
- Motor to be installed with a frequency inverter
- Hydraulic drive unit



## Steelwork

heavy gauge steel sheets, painted with shellac before assembling

### Options and extras:

- Non toxic white shellac on components in contact with the product

The rotary sweep unloader  **DENIS** ensures a consistent extraction. An important point is that the silo must be strong enough to withstand the extra load generated during extraction as well as eventual unexpected "debridging".



Our equipment and instrumentation comply with the current European Safety Standards



suitable for use in **Explosive Atmosphere** and **Conform to the European Norms**

## Accessories

- Connecting ducts, pipes
- Safety: rotation control sensor, Sweep action control sensor

## Options

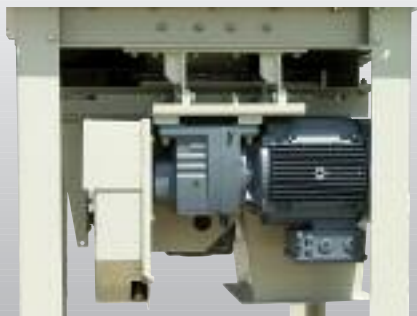
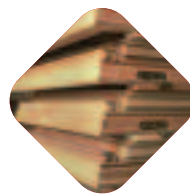
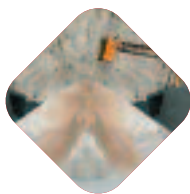
A range of various fittings to suit the many types of activities

### Cereal sector

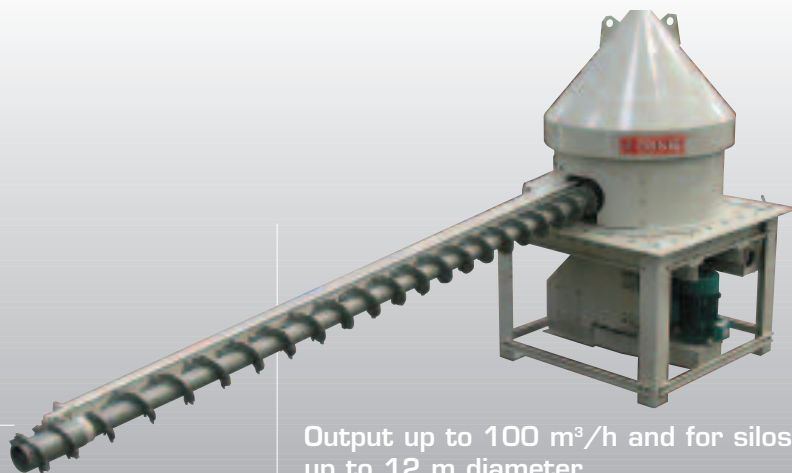
- Agriculture
- Agro-cereals
- Animal feeding plant

### Industrial sector

- Wood industry
- Mills
- Agro-food industries, etc...



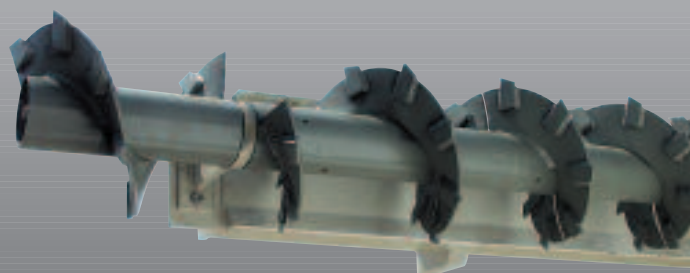
Drive unit with geared motor  
& chain and pinion



Output up to 100 m<sup>3</sup>/h and for silos  
up to 12 m diameter



Easy access to  
drive unit



End flight part removable and bearing



Robust manufacture and reliable conception



Choke sensor  
included in  
standard



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*This characteristics related to this documentation are given as an indication nly and can be modified at any time without notice to improve the product.  
This manufacturer cannot in any way be held responsible for these changes.*