

# Bucket Elevator



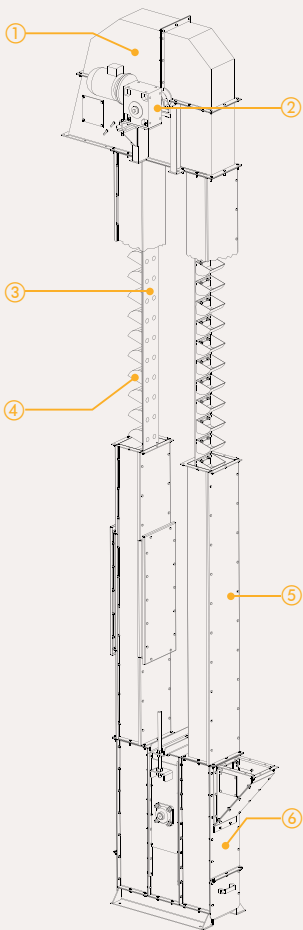
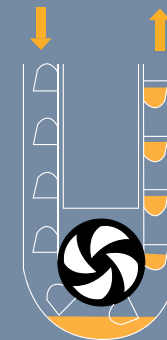
**Capacity:** up to 174 m<sup>3</sup>/h.  
**Elevation:** 3 to 45 meters  
**Objective:** to ensure the vertical conveying of solid bulk materials

## FOR HEAVY VERTICAL HANDLING OR HIGH FLOW RATES

Bucket elevators are widely used in many sectors such as the fertilizer industry, cement plants, agriculture and quarries.

## TECHNICAL SPECIFICATIONS

- Case:** galvanized or stainless steel
- Roller diameter:** 250 to 610 mm.
- Buckets:** plastic, mild steel, 304L/316L stainless steel
- Belt alignment sensors**
- Inspection hatches on head and foot section**
- Rotation controller**
- Integrated security device:** anti-return system



- Head**
  - Self-centring, steel or stainless steel, dual-cone drum covered with rubber or squirrel-cage
  - Offset flange bearing
  - Belt offset sensor
  - Anti-wear protection
  - Connection to dust collector
  - Deflector
  - Optional maintenance hatch
- Motorization**
  - A standard chain or direct coupling with pendulous mounting
- Belt**
  - Rubber belt
  - Clamping jaw link
  - Very long elongation
  - Reinforced belt suitable for various materials
  - Class of resistance
  - Possible options: food grade belt, resistance to temperature, resistance to oil
- Buckets**
  - HPDE manufacturing
  - Mild steel/stainless steel or antistatic nylon manufacturing available
  - Bucket capacity from 0,1 to 8,6 liters
- Sheaths**
  - Manufactured in standard lengths of 2 m. bolted with spacer tool
  - Space between the sheaths from 0.5 to 2 meters.
  - Integration of explosion proof panels
- Loading base**
  - Access hatch for cleaning
  - Belt tensioning system by screw with integrated sealing
  - Mild steel or stainless steel manufacturing
  - Abrasion protection
  - Connection to dust collector possible
  - Self centering standard return drum in squirrel cage
  - Rotation sensor
  - Clogging detector



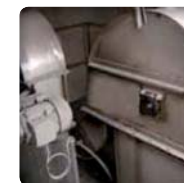
Quick assembly



Explosion vent



Safety of operation



Head, foot and sheaths bolted: easy installation and maintenance operations

## Advantages

## APPLICATIONS

Buckets elevators are designed for the transportation of inert fine materials, such as calcium carbonate, lime, limestone, dried sludge or sand. These dry materials with particle size less than 5 mm. are abrasive and fluid and do not tend to condense.

They have angles of repose between 20° and 44° and their specific weight varies, mostly between 0.4 and 1.8 kg/dm<sup>3</sup>. Buckets elevators are manufactured to operate at low speeds and are made up of modular standard components. They are mainly used in storage warehouses, in dry materials construction production plants and asphalt or in the preparation and production of ceramics, in chemical and petrochemical industry.

## TECHNICAL DETAILS



Elevator head



Elevator foot



Squirrel cage design Prevents belt wear and patinating

# Bucket Elevator

## Dimensions

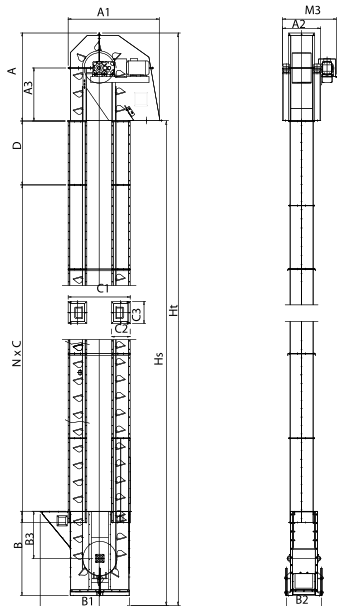


### ▶ OPERATING MODE

The material is introduced through a hopper fitted in the foot of the elevator. The material is continuously removed by the buckets. They have a suitable shape and are fixed equidistantly on a rotating band. The buckets are emptied through a discharge mouth by means of centrifugal force and by a deflector included in the head of the elevator. The belt rotation speeds vary between 1,7 and 3,1m./sec. depending on the abrasiveness of the treated material. The elevators are designed in steel or stainless steel. Anti-wear protections on the inlet and outlet can also be provided.

### ▶ BUCKET ELEVATORS - EG

TYPE	EG08	EG09	EG11	EG20	EG21	EG29	EG30	EG32	EG39	EG40	EG41	EG42
m <sup>3</sup> /h.	4	8	13	19	27	38	52	68	87	114	135	174
Rollers Ø (mm.)	250	250	320	400	400	400	400	500	500	500	610	610
Sheath section	145*145	145*145	186*166	236*200	236*200	300*250	300*250	340*280	430*340	430*340	525*340	525*340
A	742	862	950	1.172	1.172	1.276	1.276	1.497	1.728	1.728	1.835	1.835
A1	822	822	1.028	1.224	1.224	1.422	1.422	1.632	1.896	1.896	1.980	1.980
A2	335	335	390	440	440	620	620	700	810	810	962	962
A3	460	460	580	700	700	740	740	900	1.020	1.020	1.095	1.095
M3	530	530	640	713	713	890	890	1.030	1.140	1.140	1.370	1.370
B	753	753	923	1.104	1.104	1.320	1.320	1.437	1.670	1.670	1.806	1.806
B1	812	812	941	1.135	1.135	1.372	1.372	1.504	1.746	1.746	1.885	1.885
B2	310	310	384	432	432	490	490	586	700	700	782	782
B3	400	400	450	550	550	720	720	750	790	790	1.000	1.000
C	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000
C1	548	548	674	822	822	922	922	1.074	1.196	1.196	1.300	1.300
C2*C3	209*209	209*209	230*250	264*300	264*300	336*386	336*386	364*424	426*516	426*516	426*611	426*611
D	500-1.500	500-1.500	500-1.500	500-1.500	500-1.500	500-1.500	500-1.500	500-1.500	500-1.500	500-1.500	500-1.500	500-1.500
N	May vary depending on the height											



### ▶ OPTIONS ET ACCESSORIES

- ATEX II3D T4 certifications
- 304/316 stainless steel manufacturing
- Suitable for high temperatures (50-120°C)
- Rotation sensors
- Anti-patinating sensors
- Certified explosion proof panels
- Inspection hatch on top of elevator
- Connection to dedusting unit
- Anti-wear protection on inlet and outlet
- Buckets and belts of different materials and characteristics
- Self-supporting structure to support the elevator and allow access to maintenance

## INSTALLATION EXAMPLE: MANUFACTURING OF DeNO<sub>x</sub> SOLUTIONS

**Customer:** DeNO<sub>x</sub> solution supplier for thermal power plant in order to reduce emission of nitrogen oxide.

**Implementation:** Caribbean

**Objective:** to design a skid for preparation of liquid urea from bulk urea to be delivered in tanktainer.

#### PALAMATIC PROCESS Equipment:

- Urea is delivered in bulk and is then repackaged in big bags and dosed into the dissolving tank
- Feeding and dosing are ensured by a bucket elevator combined with a weighing hopper
- Demineralized water is pumped, filtered and heated by an aerothermal group with heat exchanger
- The endothermic reaction is controlled and regulated by a heating group. The DeNO<sub>x</sub> solution passes through a filter to ensure the safety of the downstream equipment
- Business transactions are carried out by calibrated and controlled flowmeters

**Results obtained:** daily delivery of tanktainers allows the thermal power plant to inject liquid urea to reduce nitrogen oxide emissions.

