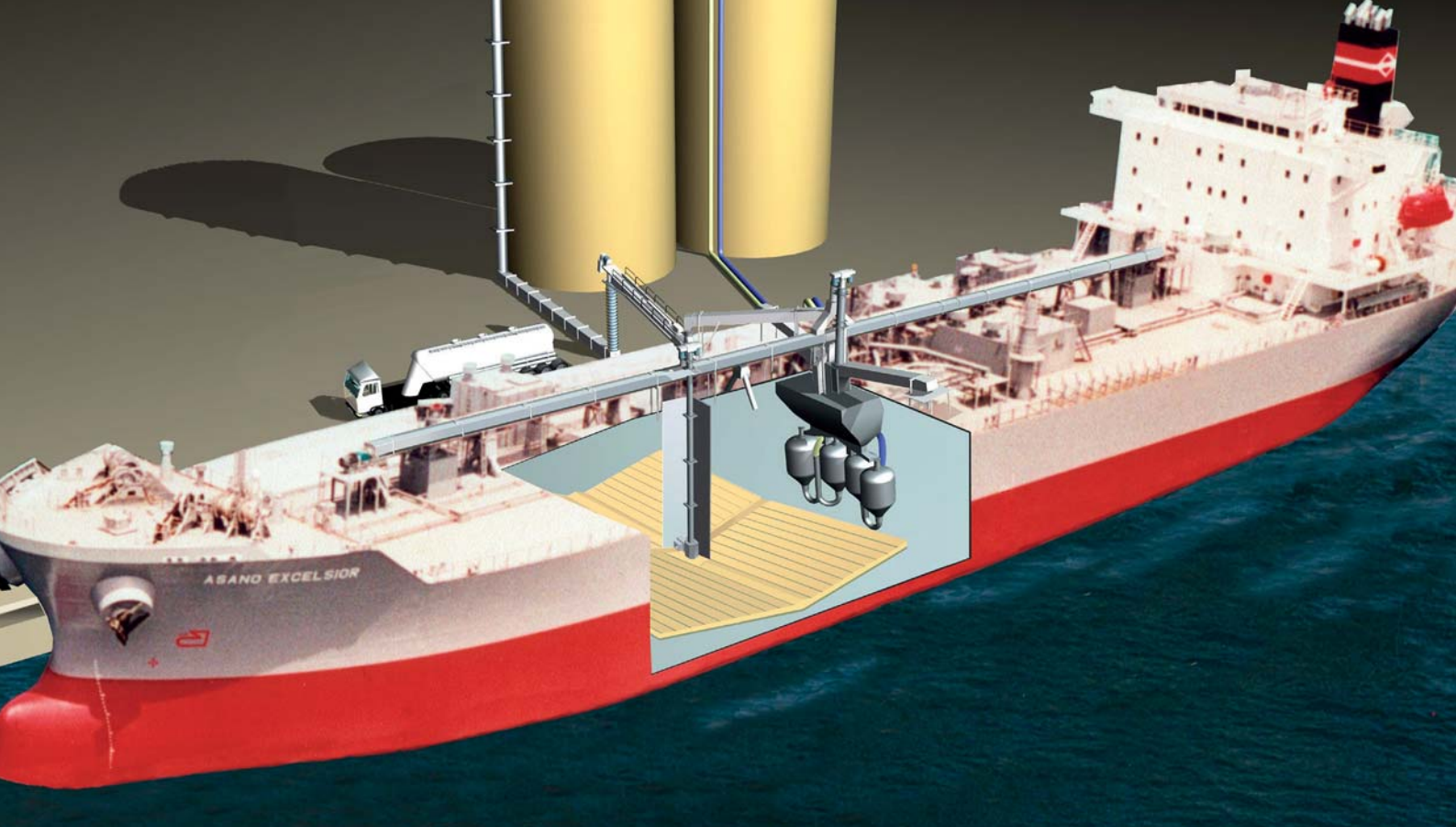


Horizontal and vertical screw conveyors for cement carriers



MACGREGOR

Designed to perform with the sea



MacGregor screw conveyors can handle dry bulk materials under tough conditions

For more than half a century our well proven MacGregor screw conveyors have been key elements in dry bulk material handling systems on ships and ashore all over the world. Numerous installations have integrated our dependable and cost-efficient conveyors into their loading and unloading systems.

MacGregor screw conveyors are used both for mechanical loading and unloading of cement carriers and for the transfer of cargo between ships and shore based facilities. Screw conveyors are designed to handle fluidisable powdery cargoes such as cement, fly ash and limestone powder under tough conditions. They are completely enclosed for dust-free operation.

Using the horizontal screw conveyor and a fully-automatic regulated distribution arrangement, cement is loaded evenly into a ship's holds, both longitudinally and transversely. This enables a safe and efficient loading operation and at the same time simplifies ballasting arrangements. The vertical screw

conveyor is used for elevating the cement above deck level. This ensures a high-capacity discharge operation and significantly reduces energy consumption.

For mechanical unloading to silos or for transfer directly to road tankers, the vessel can be fitted with a MacGregor slewable and luffable screw-type discharge boom. The boom is connected to the shore facilities by flexible bellows and can achieve a discharge rate of up to 1,500 m³/h.

Dust-free material handling

MacGregor self-loading and self-unloading systems for cement carriers are designed with unique

screw technology incorporating a totally-enclosed conveying line for environmentally-friendly operation. This ensures a dust-free process with minimal environmental impact on the surroundings as well as for the crew onboard the vessel and the stevedores ashore.

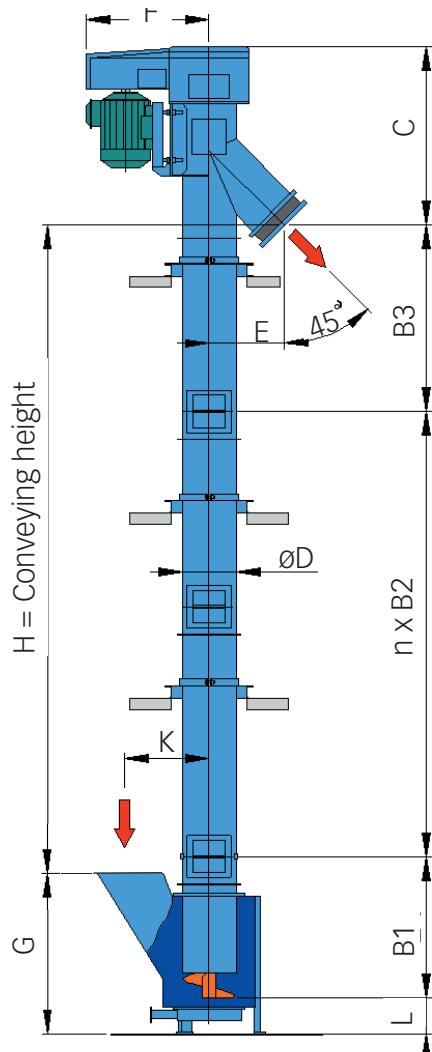
Low power consumption

Screw-conveyor technology ensures the lowest possible power consumption, saving money and cutting emissions as a result of reduced power generation requirements.

Vertical screw conveyors (VSC)

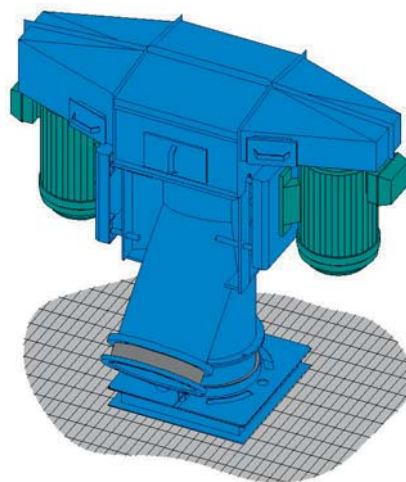
Type VSC 200-700

Single motor drive



Type VSC 300-700

Twin motor drive



Special features for vertical screw conveyors

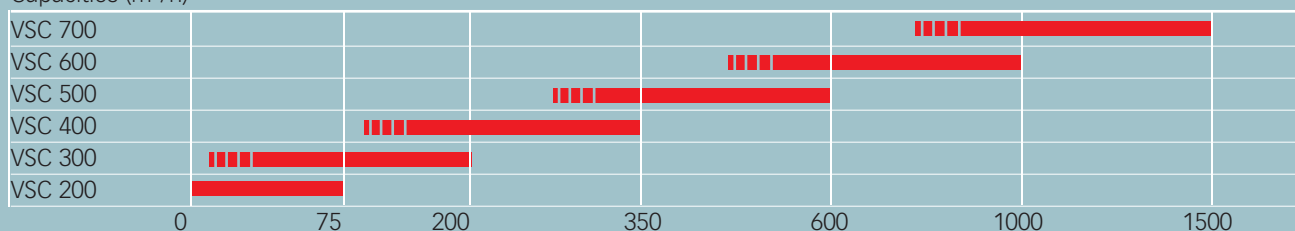
- specially developed long-life intermediate bearings
- loading box with aeration pad at its base
- variable operating angle
- single or twin motor drive
- v-belt transmission
- speed guard included
- flexible connection at outlet

Dimensions (mm)

	B1	B2 (max)	B3 (max)	C	øD	E	F	G	K	L
VSC 700	1600	4800	3850	1900	711	925	1600	1800	1000	325
VSC 600	1600	4800	3850	1800	610	825	1550	1600	900	325
VSC 500	1350	4800	3850	1600	508	700	1400	1600	800	325
VSC 400	1100	4200	3500	1400	406	600	1300	1250	650	300
VSC 300	900	3500	2900	1100	324	470	1000	975	500	275
VSC 200	650	3000	2700	800	244,5	370	800	800	400	225

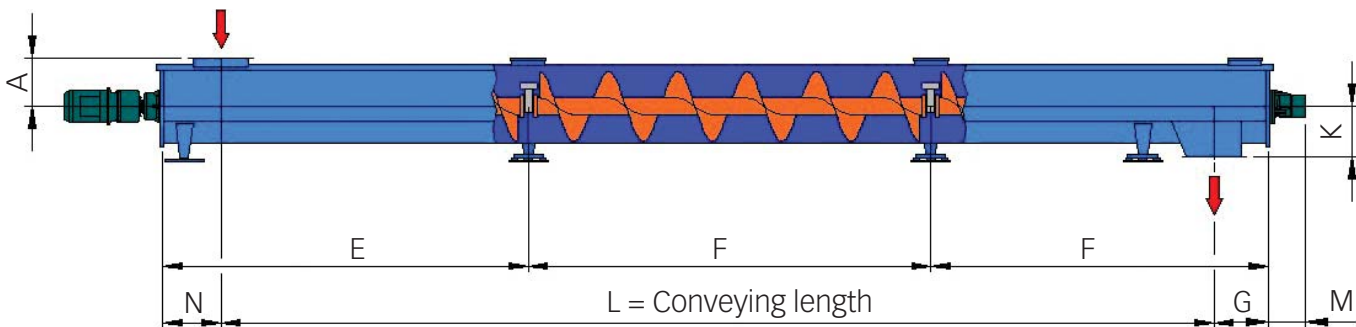
We reserve the right to make changes.

Capacities (m³/h)

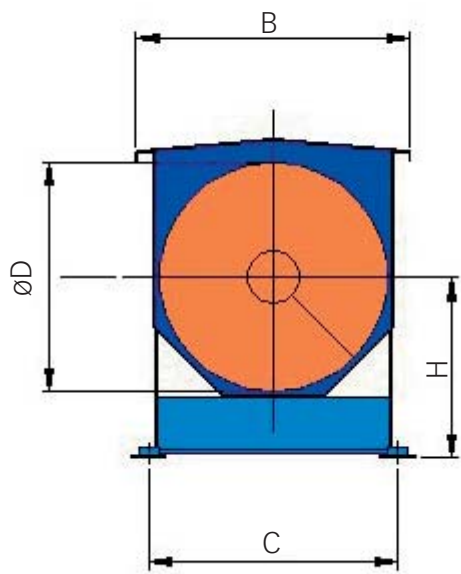


Capacities in m³/h based on vertical conveying of cement.

Horizontal screw conveyors (HSC)



Type HSC 400-1000



Special features for horizontal screw conveyors

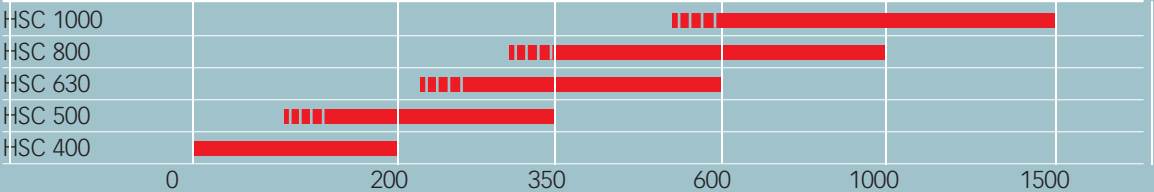
- reversible conveying direction
- one or more inlets
- one or more outlets
- the drive unit can be located either at the loading or the unloading end
- inclined conveying possible
- speed guard included

Dimensions (mm)

	A	B	C	øD	E (max)	F (max)	G	H	K	M	N
HSC 1000	650	1200	1070	1000	4500	5500	630	800	630	300	1000
HSC 800	550	950	870	800	4500	5500	500	630	500	300	800
HSC 630	450	780	700	630	4500	5500	400	500	400	300	630
HSC 500	375	650	570	500	4500	5500	315	400	315	300	500
HSC 400	325	550	455	400	3500	4500	250	315	250	300	400

We reserve the right to make changes.

Capacities (m³/h)



Capacities in m³/h based on horizontal conveying of cement.

MacGregor screw conveyors

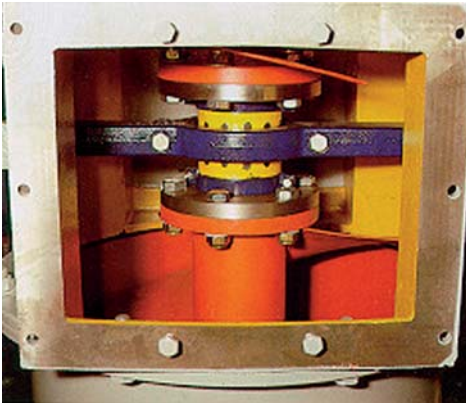
MacGregor horizontal and vertical screw conveyors operate with the helical screw flight driving and throwing bulk material forward by rotational force with capacities of up to 1,500 m³/h. Their rigid, heavy-duty construction reduces wear and enables easy maintenance, which is only required at infrequent intervals. A modular design ensures swift and easy installation in new and existing bulk conveying systems.

Intermediate bearing

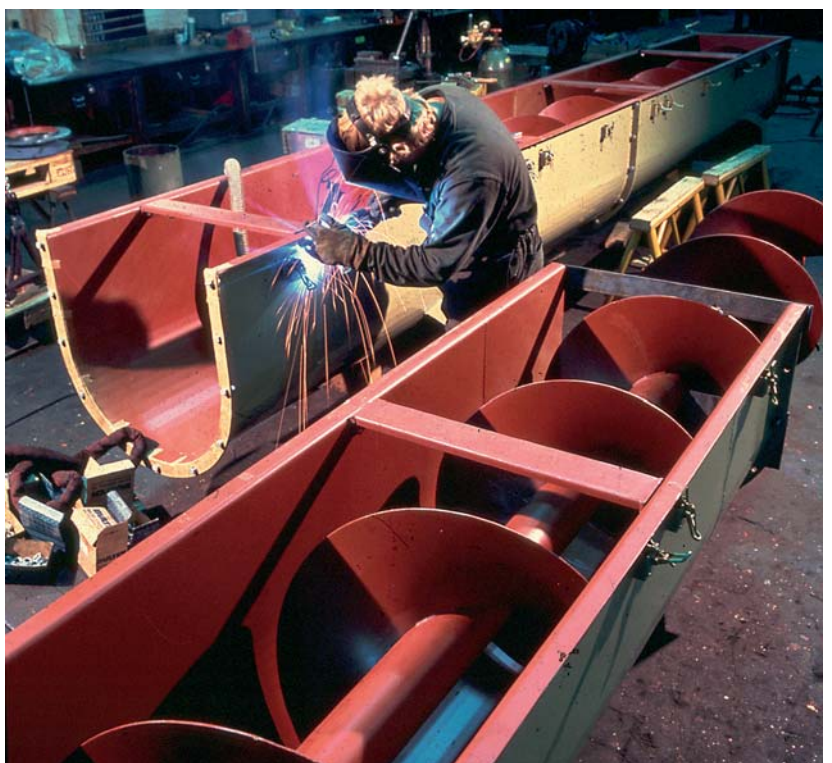
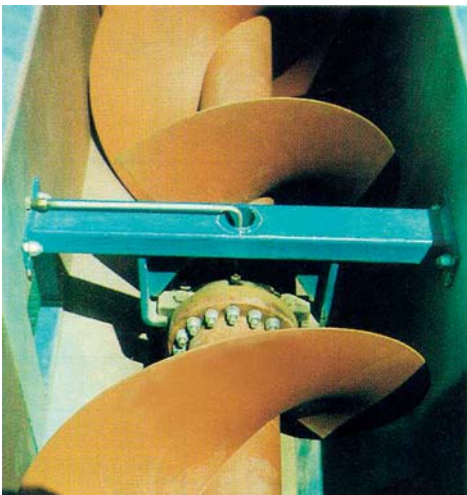
The heart of a MacGregor screw conveyor is its easily replaceable intermediate bearing, which has been specially developed to resist wear. To ensure a long service life for the intermediate bearing, all screw conveyors are equipped with a grease lubricating system that uses a minimal amount of grease. The system is designed with scrap traps to collect any foreign objects in the cement, which avoids any damage to the screw conveyors.



Intermediate bearing on a vertical screw conveyor

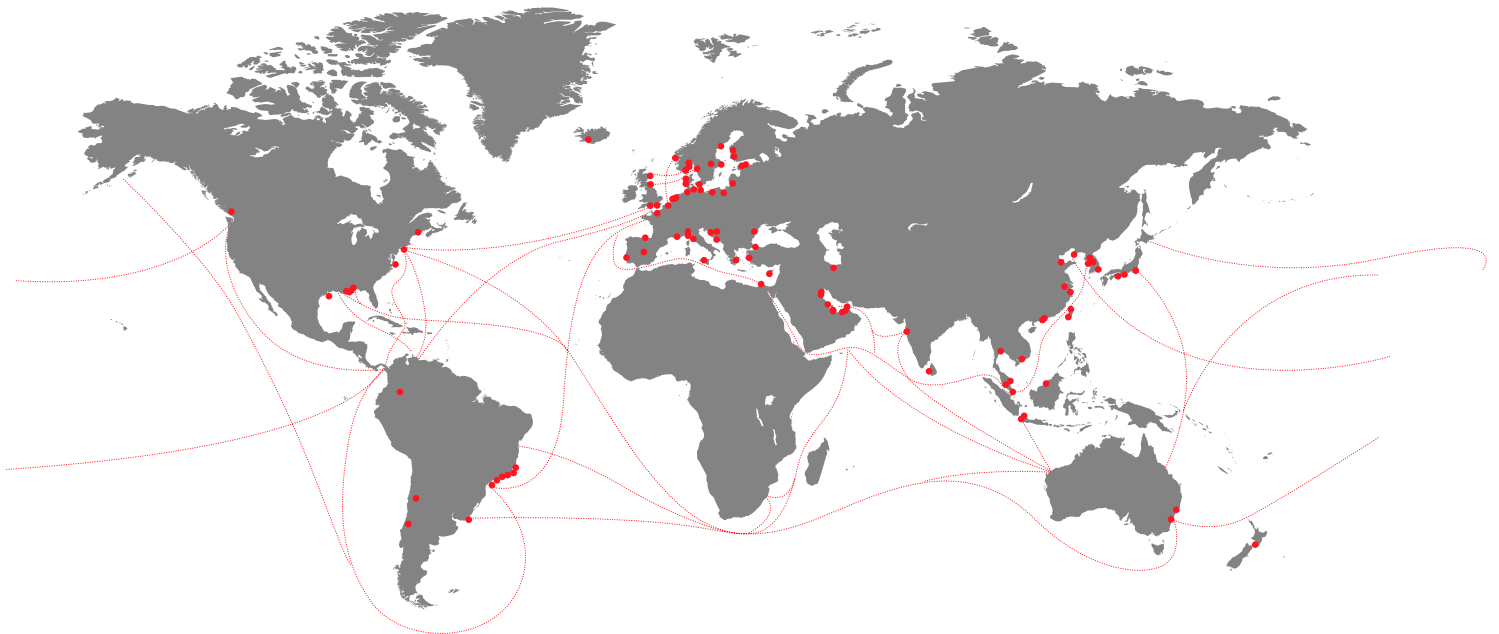


Intermediate bearing on a horizontal screw



Wherever needed, you can rely on our support.
 We serve the following brands globally, and we also serve all others.

- | | | |
|-----------------------|-----------------------------|-------------------------------------|
| • Ankerlökken Marine | • Hydramarine | • MacGregor-Navire |
| • Allset | • Häggglunds | • Navire Cargo Gear |
| • ASCA | • KGW | • Nordströms |
| • Becker | • KYB - ASCA | • Ozean Service & Reparatur |
| • BMH | • KYB - Kayaba Industries / | • Platform Crane Services (PCS) |
| • Conver-OSR | Navire Cargo Gear | • Plimsoll |
| • Grampian Hydraulics | • Luezhoe | • Pusnes |
| • Flintstone | • MacGregor | • Porsgrunn |
| • Greer Marine | • MacGregor-Conver | • Triplex |
| • Hamworthy | • MacGregor-Häggglunds | • Vestnorsk Hydraulikkservice (VNH) |
| • Hatlapa | • MacGregor-Kayaba | |



MacGregor shapes the offshore and marine industries by offering world-leading engineering solutions and services with a strong portfolio of MacGregor, Hatlapa, Porsgrunn, Pusnes and Triplex brands. Shipbuilders, owners and operators are able to optimise the lifetime profitability, safety, reliability and environmental sustainability of their operations by working in close cooperation with MacGregor.

MacGregor solutions and services for handling marine cargoes, vessel operations, offshore loads, crude/LNG transfer and offshore mooring are all *designed to perform with the sea*.

MacGregor is part of Cargotec (Nasdaq Helsinki: CGCBV).

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