



SILO UNLOADING SYSTEMS

The Performance in your silo

SPIROGYRE System



HYDRAUGYRE System

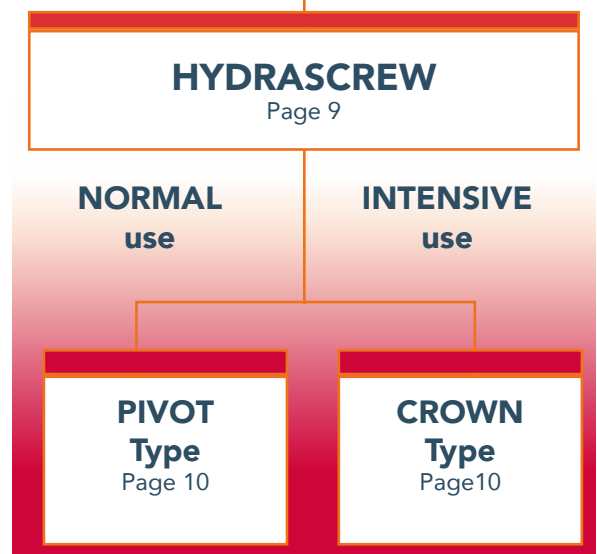
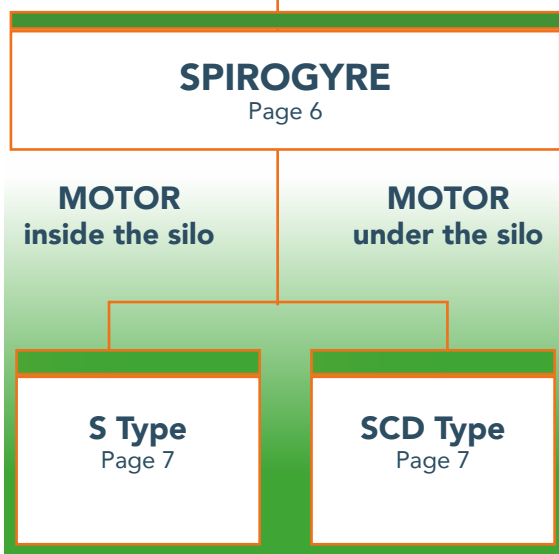


ADVANTAGES
OF MORILLON SYSTEMS
IN FLAT BOTTOM SILO
Page 3

PRODUCTS
Page 4 & 5

FREE FLOWING

DIFFICULT TO FLOW

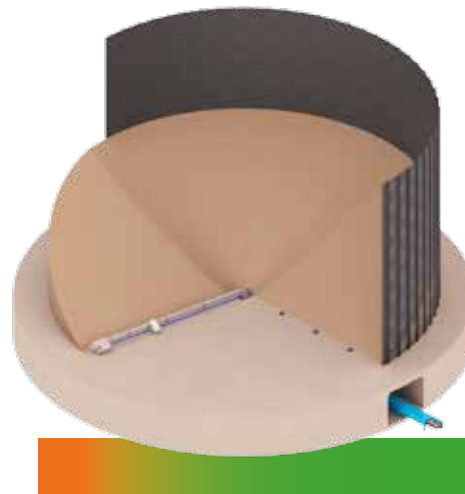


The advantages

of a SPIROGYRE sweep-auger or an HYDRASCREW system
in a flat bottom silo



Flat bottom silo
with HYDRASCREW



Flat bottom silo
with SPIROGYRE sweep auger

Find the video on our website www.morillonsystems.com

- + Allows to store a big volume on a reduced surface
- + Allows an optimal emptying of the silo
- + Allows a controlled discharge
- + Zero entry

Additional advantages with an HYDRASCREW

- + Efficient against the phenomenon of segregation, constant quality of the product throughout the emptying of the silo - Preserved product
- + FIFO flow

Product with a good gravity flow

Examples of products



Wheat



Maize



Rapeseed
Grains



Wood
pellet



Barley



Sorghum



Soybean
Grains



Peas



Paddy Rice



Millet



Sunflower
seeds



Oat

What is the product to be stored in the silo?

Your solution

a **SPIROGYRE** sweep-auger see page 6

Difficult to flow materials

heavy or light, powdery or fibrous, dry or damp

Examples of products



Flax shives



Wet or dry sawdust



Wood chips



Glass wool



Limestone



Coal



Wet or dry sludge



Ice



Ash



Wood pellet



Waste (R.D.F)



Salt



Meals, cakes



Wheat bran

Your solution
an **HYDRASCREW** system see page 9

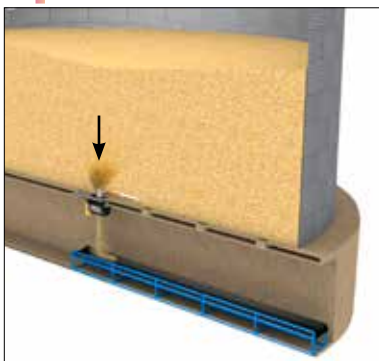
What is the product to be stored in the silo?

The principle of The SPIROGYRE sweep-auger

The SPIROGYRE sweep-auger is designed for flat bottom silos and free-flowing materials (wheat, corn, barley, oil seeds, pellets...) to reclaim the remaining products once the gravity unload has been completed.

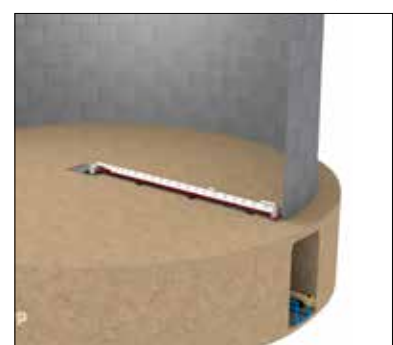
1

Natural gravity flow



2

Starting of the SPIROGYRE sweep-auger



The sweep-auger starts up once the gravity flow has completely finished and ends emptying at a rotation of 360° inside the silo.

Two versions of the SPIROGYRE

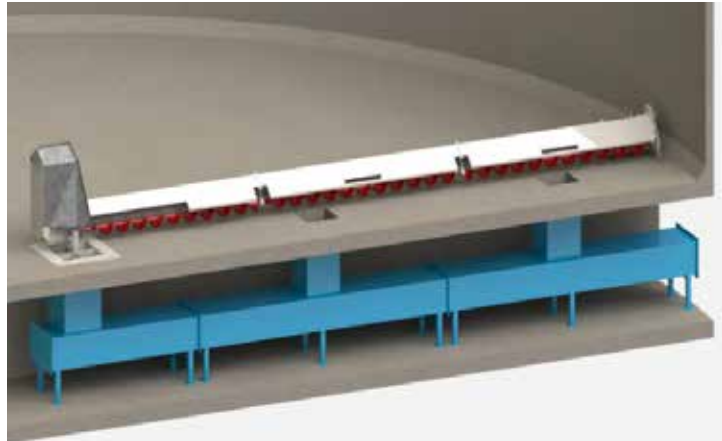
S and SCD Types

« S » Type

The electric motor is inside the silo, directly coupled to a reducer driving the auger.

Advantages / Reduced space requirement, simple and reliable.

ATEX Certification II 2D 125°C

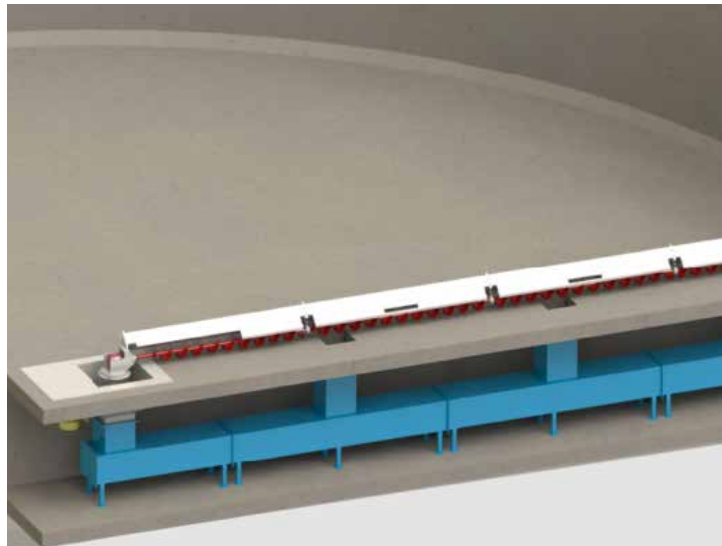






« SCD » Type

The electric motor is moved off-centre below the silo, the transmission is ensured by a pulley-belt system under a closed casing.

Advantages / Can stand high gravity flow when shut-down, heavy-duty design, easy maintenance.

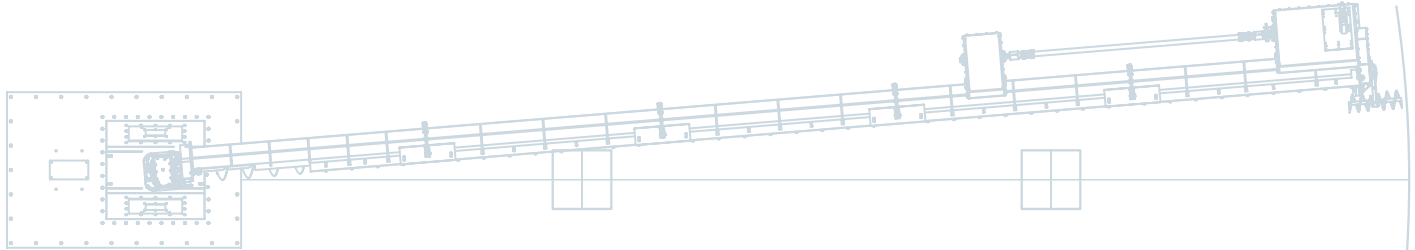
ATEX Certification II 1/2D 125°C



Which model of SPIROGYRE sweep-auger ?				
ANGLE OF REPOSE	<45°			
PRODUCTS	Wheat, maize, barley, oat, rape, sunflower seeds...	Soybean grains, peas, beans, rice, clean and dry wood pellets...		
VERSIONS	SPIROGYRE S or SCD	SCD Reinforced SPIROGYRE (thicker flight, continuous weld of the flight on the tube, reinforced beam, covered wheel)		
OPTIONS	 Clearing screw*	 Brushes	 Level detector	 Parking position detector

* Required in certain cases

SPIROGYRE OUTPUTS according to DIFFERENT RAW MATERIALS



QUALITY
& EXPERIENCE

SPIROGYRE Range

		TYPE	S140	S170	SCD170	S210	SCD210	S280	SCD280	SCD350 ⁽¹⁾
		Ø silo	Ø 6 to 15 m	Ø 6 to 18 m		Ø 6 to 32 m		Ø 13 to 32 m		Ø 13 to 38 m
		Density								
	Wheat Corn	0,75	25 TPH	50 TPH	25 to 50 TPH	80 TPH	50 to 80 TPH	180 TPH	100 to 180 TPH	200 to 300 TPH
		Cleaning screw	no			required only from Ø 27,31 m				
	Barley Oats Canola seeds	0,65	-	40 TPH	20 to 40 TPH	65 TPH	40 to 65 TPH	160 TPH	80 to 160 TPH	150 to 230 TPH
		Cleaning screw	-	advised, required from Ø 27,31 m						
	Sunflower seeds	0,5	-	20 TPH	15 to 20 TPH	30 TPH	20 to 30 TPH	80 TPH	60 to 80 TPH	110 to 140 TPH
		Cleaning screw	-	advised, required from Ø 27,31 m						
	Soya beans Peas Beans	0,75	-	-	25 to 30 TPH	-	30 to 50 TPH	-	90 to 110 TPH	175 to 220 TPH
		Cleaning screw	-	-	advised, required from Ø 27,31 m + reinforced SPIROGYRE					
	Paddy Rice	0,55	-	-	15 to 25 TPH	-	25 to 35 TPH	-	65 to 80 TPH	130 to 160 TPH
		Cleaning screw	-	-	yes + reinforced SPIROGYRE					
	Wood pellets	0,65	-	-	15 to 25 TPH	-	25 to 40 TPH	-	70 to 90 TPH	140 to 180 TPH
		Cleaning screw	-	-	yes + reinforced SPIROGYRE					

Other material, refer to us
(1) SCD350 is reinforced on standard

TPH : Ton per hour

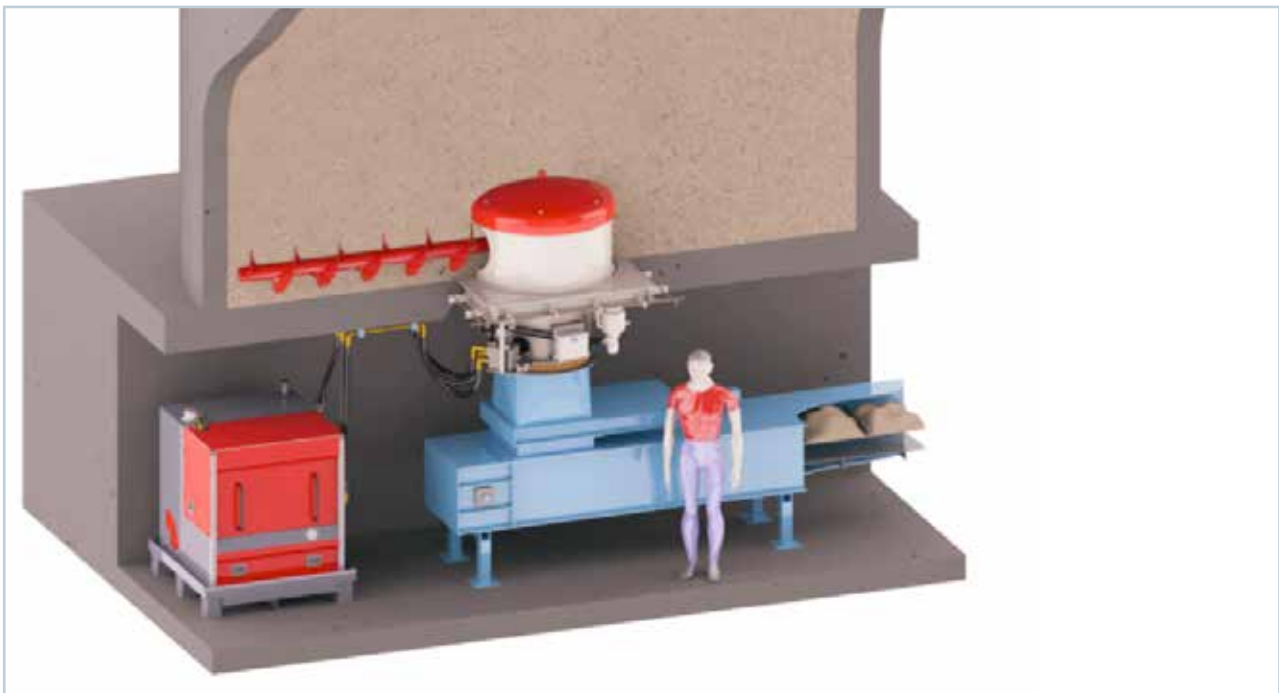
SPIROGYRE densities, products diameters, performances

The principle of HYDRAUGYRE system

For optimal safe and efficient silo emptying

The HYDRASCREW system uses hydraulic transmission. An Archimedean screw, driven by a directly coupled hydraulic motor sweeps the cell bottom radius through 360° and ensures product unloading on the FIFO principle **First in, First out**

The hydraulic transmission systems allow to transmit high low-speed torques, thanks mainly to **the MORILLON start-up system : BOOSTER.**



The advantages of the MORILLON hydraulic system

- ▶ Booster
- ▶ Respect the FIFO principle
- ▶ Full silo maintenance possibility
- ▶ A regulation of the flow without loss of efficiency and no overheating
- ▶ Smooth running and good flexibility
- ▶ « Green System » option, an ECO-FRIENDLY concept using bio-degradable lubricants
- ▶ Food oil option

Two types of HYDRASCREW systems PIVOT & CROWN types

« PIVOT » Type

Versions HP / HM / HG

Silo diameter : from 2 to 13 m

Advantages

- ▶ An economical solution
- ▶ Can be used with very damp materials (Suitable for wet products)
- ▶ Easy to use and maintain
- ▶ Low overall dimensions



« CROWN » Type

Versions HMC / HMC All In One / HGC / SHG

SHG+ / SUPER SHG

Silo diameter : from 6 to 25 m

Advantages

- ▶ High unloading capacity
- ▶ Sturdy, heavy-duty (suitable for intensive use)
- ▶ Versatile
- ▶ Easy maintenance, full silo accessibility (access trap, centralized lubrication...)
- ▶ Dual screw version : Double extraction capacity, faster sweeping



Certifications



II 1/2D 125°C
&
II 1/3D 125°C

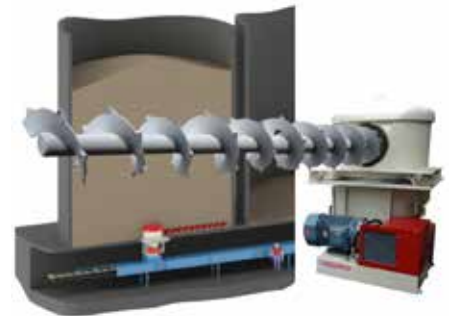
OPTIONS

- **ATEX Certification** to unload in explosive atmospheres
- **High temperature (150°C) version** to unload hot materials
- **Stainless steel** version to unload corrosive materials

The All In One system

The performance for the ecology

HYDRASCREW HMC all in one



The advantages

- ▶ Power-pack integrated in the unloader
- ▶ Low overall dimensions
- ▶ High energy efficiency
- ▶ Reduced time for installing & commissioning, plug and play system
- ▶ Reduced oil volume
- ▶ Reduced transport cost
- ▶ For silo diameters from 6 to 10 meters

Integrated power-pack 

The HYDRAUGYRE range

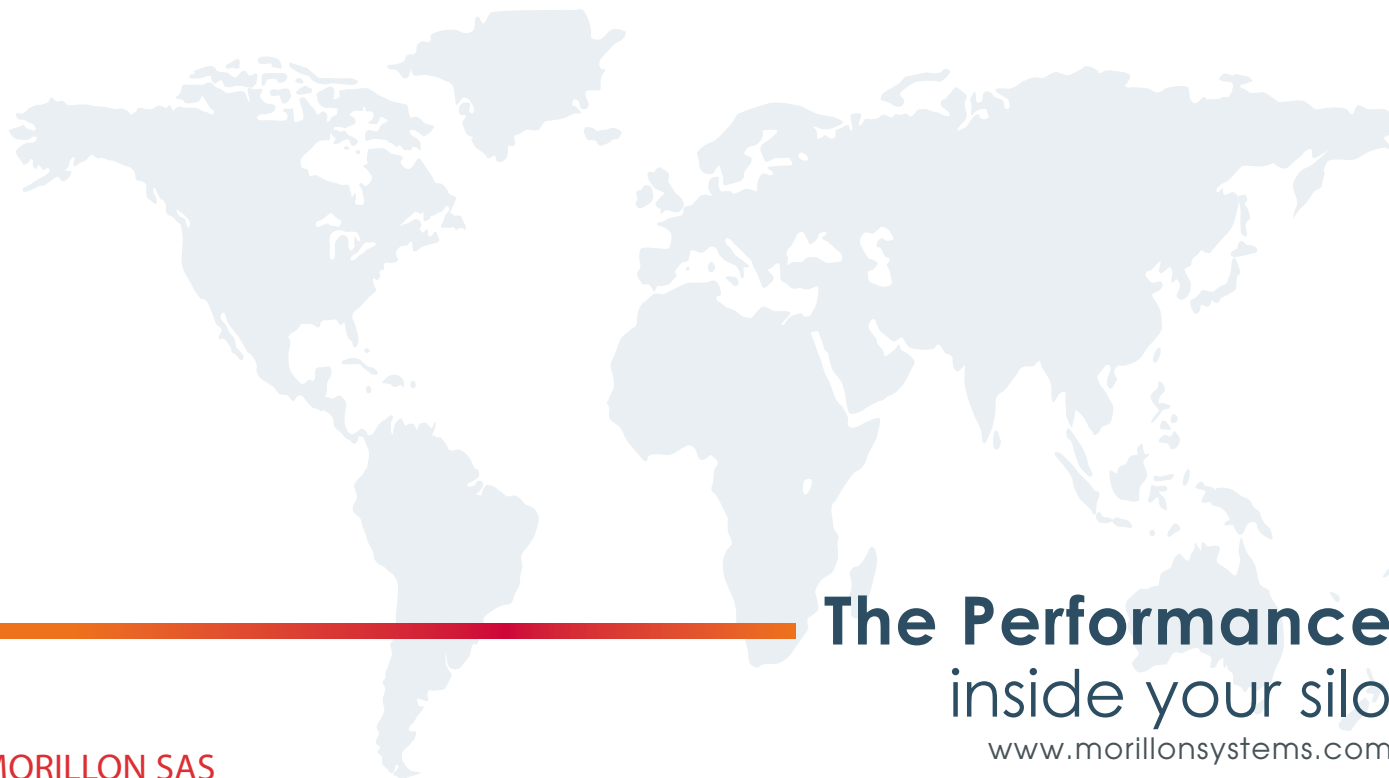
TYPE	TE1#	HP	HM	HMC	HMC VD	HG	HGC	HGC VD	SHG	SHG VD	SHG+	Super SHG
DIAMETER Ø of the silo(m)	2 to 3	2 to 4	4 to 7	6 to 10		9 to 13	9 to 14		13 to 20		13 to 22	16 to 25
Discharge* cap max (m3/h)	25	20 to 60	20 to 80	30 to 120	60 to 240	60 to 120	60 to 150	120 to 300	80 to 200	160 to 400	80 to 250	100 to 300

VD : Double screw

* Values may change according to product

Electro-mechanical unloader

diameters, performances



The Performance inside your silo

www.morillonsystems.com

MORILLON SAS

Founded in 1865, MORILLON is the European specialist of silo unloading systems. Our services include design, manufacture in our workshops, commissioning and maintenance worldwide.



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