SCREW RECLAIMERS

TYRANNOSAURUS® series

SCREW RECLAIMERS

RECLAIMING SOLUTIONS
FOR SOLID MATERIALS

BMH TECHNOLOGY

Over 250 plant deliveries around the world

1 Renewable

BMH DESIGNS AND BUILDS solutions for recycling, material recovery, renewable energy and recreation of raw materials.

2 Future

WE WANT TO BE an integral part of building greener and cleaner future globally.

3 Together

WE WORK TOGETHER with our customers and enable them to succeed in their businesses and environmental targets. This we do together within BMH as a team.

We create solutions for waste to be reborn as raw materials and renewable energy.

We have decades of experience in waste processing and biomass handling.

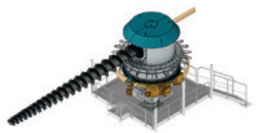
BMH TECHNOLOGY bmh.fi

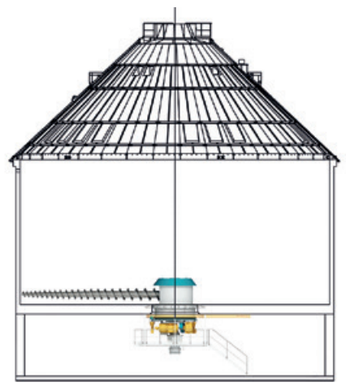
ALL BMH STORAGE SYSTEMS OPERATE ON FIRST-IN-FIRST-OUT PRINCIPLE.

TYRANNOSAURUS®
Screw reclaimers for solid materials

Cantilever Rotating Screw Reclaimers LPE Serie

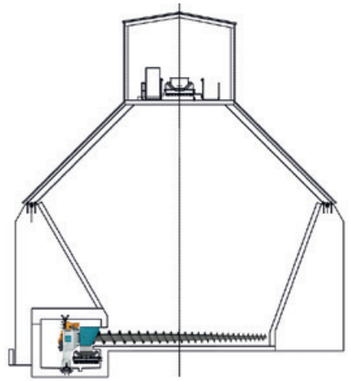
for solid bulk materials discharging





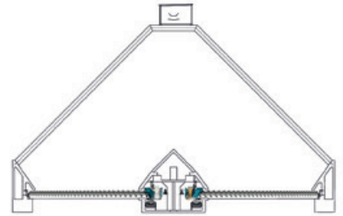
Cantilever Traversing Screw Reclaimers LPD Serie

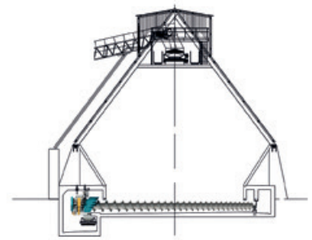
for solid bulk materials discharging



Traversing Screw Reclaimers LPA Serie

for solid bulk materials discharging



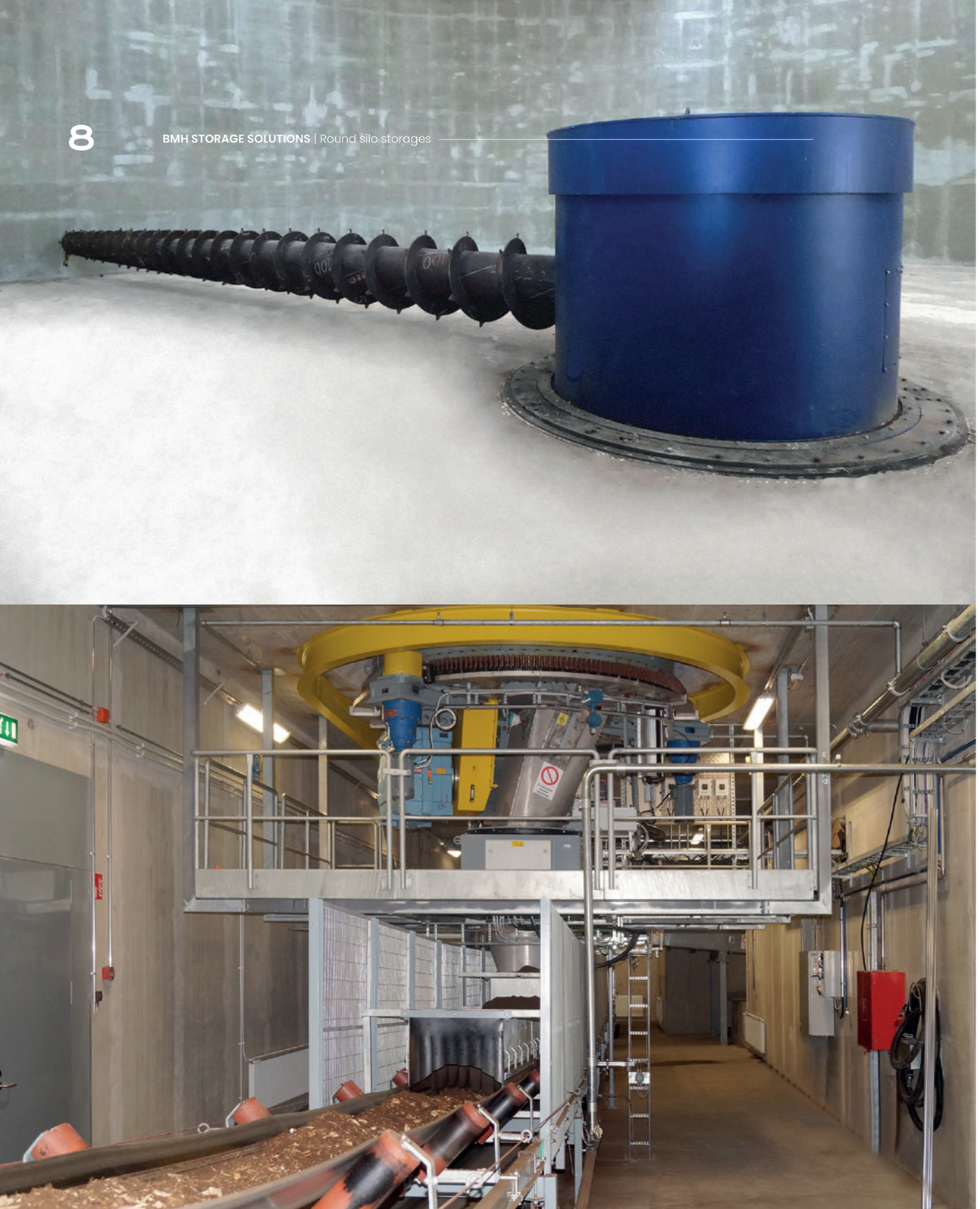


TYRANNOSAURUS® screw reclaimers can be installed in existing storage solutions to replace other dischargers.

We have delivered more than 500 successfully operating screw reclaimers since 1970.

BMH Technology is the leading global screw reclaimer manufacturer. **TYRANNOSAURUS®** screw reclaimers represent the most advanced technology and strongest design in the market for reclaiming of various bulk materials. Used together with BMH's intelligent storage and conveying solutions they form the perfect basis for any material handling system.

bmh.fi



The biggest silo volume for which we've delivered an LPE serie rotating screw reclaimer is above 60.000 m³.

ROUND SILO STORAGES

Closed structure with a compact layout

SILO STORAGES are typically built with a steel roof and concrete or steel walls and equipped with a rotating fuel distributor on top of the silo roof. Typically silo storages range from 14 up to 27 meters in diameter and have volumes up to 13 000 m³. For specific materials, the silo storages can be even bigger.

With a buffering volume equaling 4–12 hours, day silos are smaller in size and typically located closer to the boiler. They enable more accurate feeding and are able to react faster to the boiler's changing needs.

Round storage silos are equipped with TYRANNOSAURUS® Rotating Screw Reclaimers LPE that are designed for automatic discharging of material. They provide an even flow of material from the storage to fit the demand of the process.

Rotating screw reclaimers are always custom designed to meet your specific applications and to suit the handled materials.

We have delivered more than 400 rotating Screw Reclaimers worldwide since 1978.

All drive units are located below the floor surface, which allows easy access for maintenance.

TYRANNOSAURUS® LPE screw reclaimers represent the most flexible discharger type with the ability to adjust to the characteristics of different materials.

LPE SERIE

Efficient reclaiming for various bulk materials

THE CANTILEVER SELF-SUPPORTING Rotating Screw Reclaimer serie LPE is designed for automatic discharging of solid materials from round silos and open piles. The LPE serie is ideal for reclaiming biomass fuels, such as bark, pellets, palm kernel shells (PKS), hocked wood, forest residues and sawdust, wood chips, SRF, RDF and REF.

Rotating screw reclaimers provide an even flow of material from the storage to fit the demand of the process. They enable a homogenous material flow by collecting material from different layers and mixing them.

The LPE serie screw reclaimers are designed for silos with volumes ranging from 30 to 13.000 m^3.* Rotating screw reclaimers are always custom designed to meet the requirements of the handled materials and specific applications.

1

The screws are of heavy-duty construction, which ensures a long lifetime.

2

The service points are easily accessible even during operation and the automatically lubricated screw is simple to maintain.

3

A wide selection of different tooth and lining options available for demanding applications. The screw teeth are easily replaceable, and the linings can be replaced.

4

The LPE screw reclaimers have a low maintenance need, which guarantees high availability.

BMH provides a wide range of rotating LPE screw reclaimer models with capacities ranging from 10 to 1200 m^3 per hour.

*Maximum volume according to the material stored inside the silo.
SRF = solid recovered fuel / RDF = refuse derived fuel / REF = recovered fuel

Design & performance LPE

THE CORRECT LPE SCREW reclaimer model is selected according to customer specifications. BMH has a **wide selection of rotating screw reclaimers** suitable for round silo storages.

The rotating screw reclaimer is installed in the center of a silo or in the middle of a storage pile. **Two types or circulating movement occur simultaneously**. Looking from above, the reclaimer rotates slowly counterclockwise at constant torque. Looking from the screw tip, the reclaiming screw rotates counterclockwise around its center line. As the screw reclaimer rotates, it pulls material towards the center of the silo where it drops to the following equipment.

The screw reclaimer's **discharging capacity** can be flexibly adjusted according to the needs of the following process by adapting the rotation speed (RPM) of the reclaiming screw. This can be achieved by changing the motor's RPM with a frequency converter (VFD).

The rotation of the screw reclaimer is controlled with BMH's special constant torque application. It creates a constant pressure for the reclaiming screw against the material and enables an **even capacity**. It also protects the reclaiming screw from breaking and therefore allows **uninterrupted operation**. Compared to traditional frequency converters, the constant torque application allows a longer distance between the screw reclaimer and the motor control center. Despite the long distance, the application guarantees an uninterrupted and even torque.

Watch a video to see how the rotating screw reclaimer LPE works.

We've paid special attention to the materials in terms of **wear resistance**. All the parts exposed to abrasion are manufactured from either stainless or acid-proof steel and protected with hard welding. In the most challenging conditions, it's possible to use duplex steel. Additionally, all reclaiming screws can be reinforced with an abrasion or armor steel extra lining.

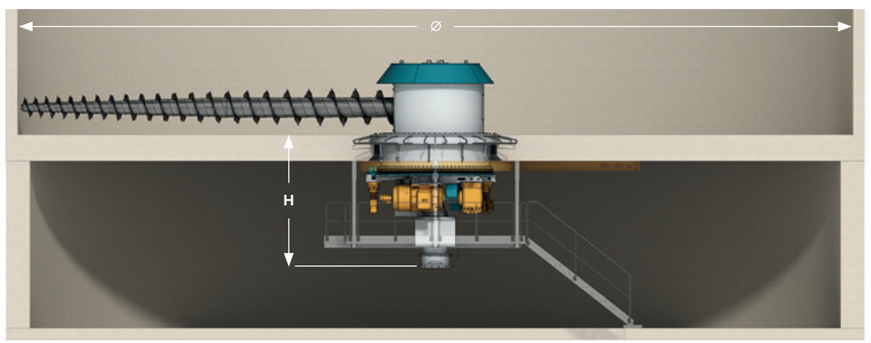
The teeth are always selected based on the characteristics of the stored material. We offer **a wide selection of different tooth and lining options** from standard to demanding applications. The screw teeth are easily replaceable, and the extra lining can be replaced.

Power supply and sensor data are connected through the slip ring unit, which enables the continuous one-direction rotation.

LPE serie / Technical details

MODEL	SILO Ø [m]	H [m]	CAPACITY* [m³/h]	WEIGHT [kg]
LPE10	3–4,5	1,6–1,9	60	2500
LPE20	4,5–6,5	2,2–2,4	250	6000
LPE25	5–7	2,5–2,7	300	8000
LPE30	7–14	2,5–2,7	500	12500
LPE35	12–15	2,5–2,7	600	14500
LPE40	12–17	2,8–3,0	600	20500
LPE45	15–20	2,8–3,0	500	22000
LPE50	17–25	3,2–3,4	700	28000
LPE55	24–27	3,2–3,4	600	33000
LPE60	24–30	3,2–3,4	500	36000

* These are only indicative values based on our experience of typical capacities.
The actual volumes are always calculated case by case.



The biggest biomass volume for which we've delivered an LPA serie traversing screw reclaimer is 100.000 m³.

A-FRAME STORAGES & OPEN PILES

Outstanding storage volume & high reclaiming capacity

A-FRAME STORAGES are typically built with a steel roof and concrete walls and equipped with a travelling distributing belt conveyor at the top part of the building. The length of the A-frame storage sets a maximum volume for the storage. Typically, A-frame storages have a reclaiming width of 8-18m with one reclaimer and 18-36m with two reclaimers and range in volumes between 3000 -100.000 m³. The volumes can be even bigger with wood chip storages for example.

Open piles, typically used with pulp wood chips, can be even up to 200.000 m³ in volume. Compared to biomass, pulp wood chips are easier to handle, which allows higher and wider piles.

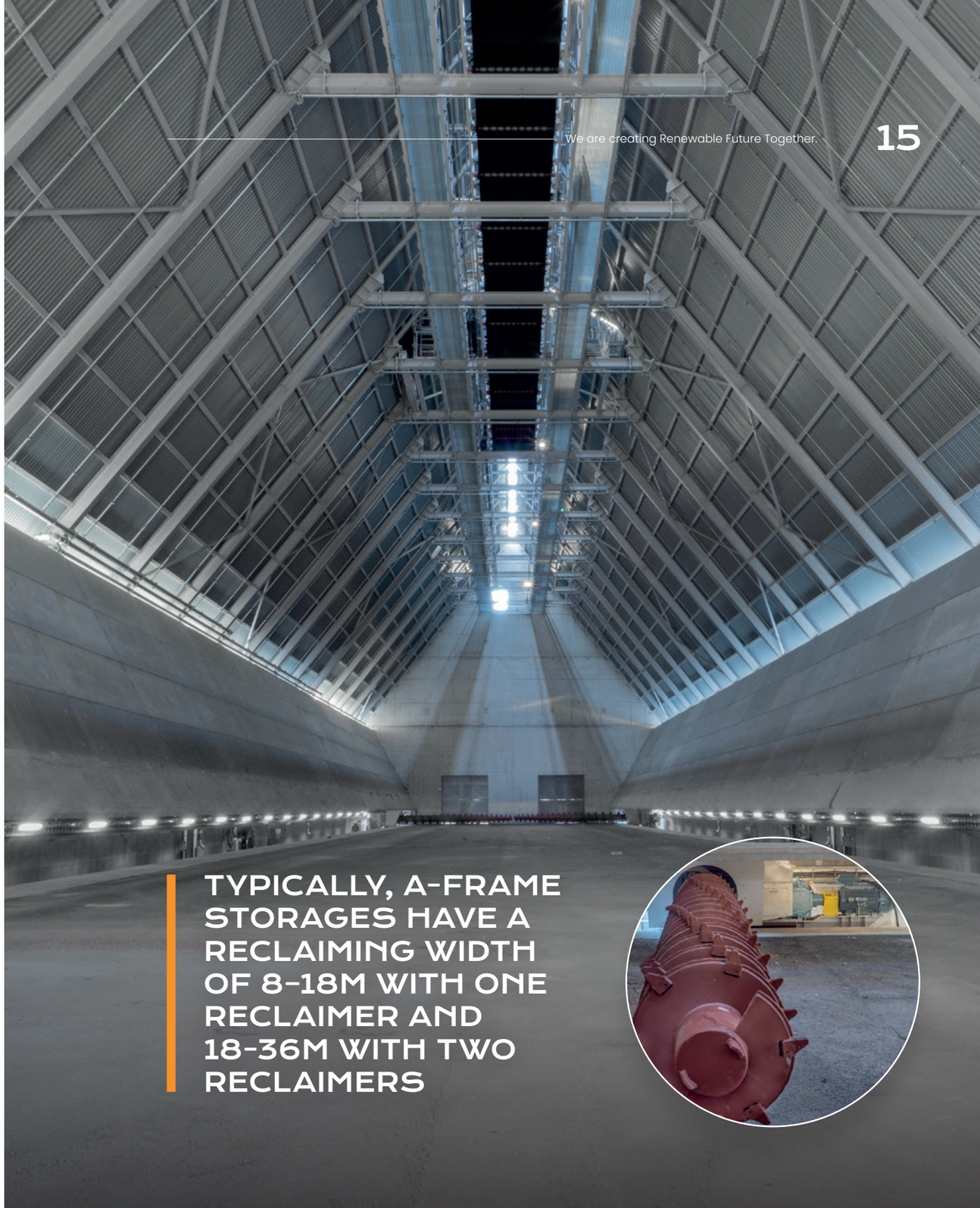
A-frame storages and open piles are equipped with TYRANNOSAURUS® Traversing Screw Reclaimers type LPD and LPA that provide an even flow of material. They are both designed for automatic discharging of material and ideal for high-volume storages. The LPD screw reclaimer is a cantilever type whereas the LPA is supported from both ends of the screw.

Open piles and A-frame storages with a service area allow easy maintenance of LPD and LPA reclaiming screws even when the storage is full.

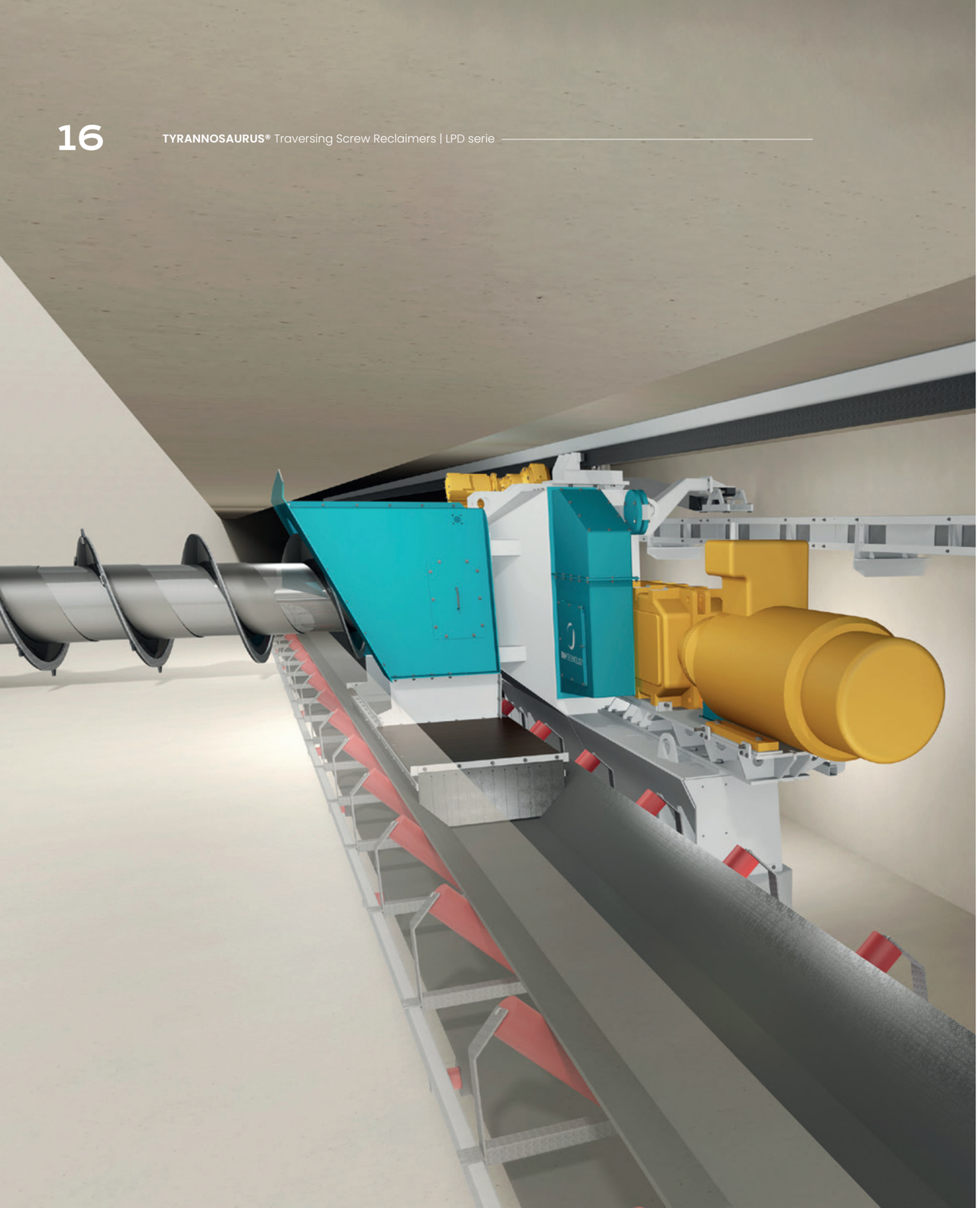
Traversing screw reclaimers are always custom designed to meet your specific applications and to suit the handled materials.

We have delivered more than 150 traversing screw reclaimers worldwide since 1978.

OVERVIEW



TYPICALLY, A-FRAME STORAGES HAVE A RECLAIMING WIDTH OF 8-18M WITH ONE RECLAIMER AND 18-36M WITH TWO RECLAIMERS



TYRANNOSAURUS® LPD screw reclaimers are the perfect solution for discharging material from various types of rectangular storages and open piles.

LPD SERIE

Versatile reclaimers for multiform storages

THE CANTILEVER self-supporting Traversing Screw Reclaimer serie LPD is designed for automatic discharging of solid materials from A-frame storages, rectangular storage silos, receiving bins and open piles. The LPD serie is ideal for reclaiming biomass fuels, such as bark, hocked wood and forest residues, wood chips, SRF, RDF and REF.

Traversing screw reclaimers provide an even flow of material from the storage to fit the demand of the process. They enable a homogenous material flow by collecting material from different layers and mixing them.

The LPD serie traversing screw reclaimers are designed for A-frame storages with typical volumes ranging from 1.000 to 30.000 m^3*. Traversing screw reclaimers are always custom designed to meet the requirements of the handled materials and specific applications.

1

The screws are of heavy-duty construction, which ensures a long lifetime.

2

The service points are easily accessible even during operation and the automatically lubricated screw is simple to maintain.

3

A wide selection of different tooth and lining options available for demanding applications. The screw teeth are easily replaceable, and the linings can be replaced.

4

The LPD screw reclaimers have a low maintenance need, which guarantees high availability.

Possibility to place several screw reclaimers on the same tracks.

BMH provides a wide range of travelling LPD screw reclaimer models with capacities ranging from 80 to 600 m^3 per hour.

*Maximum volume according to the material stored inside the silo.
SRF = solid recovered fuel / RDF = refuse derived fuel / REF = recovered fuel

Design & performance LPD

THE CORRECT LPD SCREW reclaimer model is selected according to customer specifications. BMH has a **wide selection of traversing screw reclaimers** suitable for A-frame storages.

The traversing screw reclaimer is installed on parallel rail tracks in a machinery tunnel either on one or both sides or two in the middle of the storage pile. The reclaiming screw(s) always extends across the storage area. **Two types or movement occur simultaneously**. The reclaimer moves slowly horizontally under the pile at constant force. Looking from the screw tip, the reclaiming screw rotates counterclockwise around its center line. As the screw reclaimer moves, it pulls material towards the dropping chute of the reclaimer from where it drops to the preceding equipment.

The screw reclaimer's **discharging capacity** can be flexibly adjusted according to the needs of the preceding process by adapting the rotation speed (RPM) of the reclaiming screw. This can be achieved by changing the motor's RPM with a frequency converter (VFD).

The movement of the screw reclaimer is controlled with BMH's special constant torque application. It creates a constant pressure for the reclaiming screw against the material and enables **an even capacity**. It also protects the reclaiming screw from breaking and therefore **allows uninterrupted operation**. Compared to traditional frequency converters, the constant torque application allows a longer distance between the screw reclaimer and the motor control center. Despite the long distance, the application guarantees an uninterrupted and even force.

Watch a video to see how the travelling screw reclaimer LPD works.

We've paid special attention to the materials in terms of **wear resistance**. All the parts exposed to abrasion are manufactured from either stainless or acid-proof steel and protected with hard welding. In the most challenging conditions, it's possible to use duplex steel. Additionally, all reclaiming screws can be reinforced with an abrasion or armor steel extra lining.

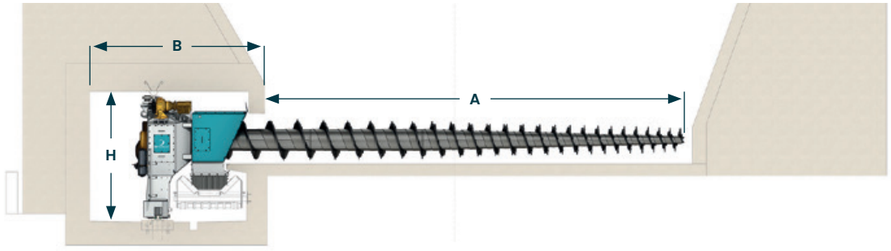
The teeth are always selected based on the characteristics of the stored material. We offer a **wide selection of different tooth and lining options** from standard to demanding applications. The screw teeth are easily replaceable, and the extra lining can be replaced.

Power supply and sensor data are connected through the power chain cables, which can significantly shorten cabling distances especially in long storages.

LPD serie / Technical details

MODEL	RECLAIMING WIDTH (A) [m]	TUNNEL WIDTH (B) [m]	TUNNEL HEIGHT (H) [m]	CAPACITY* [m³/h]	WEIGHT [kg]
LPD40	5–8	4,0	3,3	300	16000
LPD50	8–11	4,0	3,3	600	20000
LPD55	10–12,5	4,0	3,3	600	22000
LPD60	10–13	4,0	3,5	800	25000

* These are only indicative values based on our experience of typical capacities.
The actual volumes are always calculated case by case.



TYRANNOSAURUS® LPA screw reclaimers are supported from both ends of the screw, which allows the biggest possible storage volumes.

LPA SERIE

High-volume solution for storages with limited length

Possibility to place several screw reclaimers on the same tracks.

THE TRAVERSING SCREW RECLAIMER SERIE LPA is designed for automatic discharging of solid materials from larger storages. Its long screw requires a supporting rail and drive arrangements in a machinery tunnel also at the free end of the screw. LPA screw reclaimers are ideal for reclaiming biomass fuels, such as bark, hocked wood and forest residues, wood chips, SRF, RDF and REF from A-frame storages, rectangular storage silos, receiving bins and open piles.

Traversing screw reclaimers provide an even flow of material from the storage to fit the demand of the process. They enable a homogenous material flow by collecting material from different layers and mixing them.

The LPA serie traversing screw reclaimers are designed for A-frame storages and open piles with typical volumes ranging from 20.000 to 150.000 m³*. Traversing screw reclaimers are always custom designed to meet the requirements of the handled materials and specific applications.

1

The screws are of heavy-duty construction, which ensures a long lifetime.

2

The service points are easily accessible even during operation and the automatically lubricated screw is simple to maintain.

3

A wide selection of different tooth and lining options available for demanding applications. The screw teeth are easily replaceable, and the linings can be replaced.

4

The LPA screw reclaimers have a low maintenance need, which guarantees high availability.

BMH provides a wide range of travelling LPA screw reclaimer models with capacities ranging from 100 to 800 m³ per hour.

*Maximum volume according to the material stored inside the silo.
SRF = solid recovered fuel / RDF = refuse derived fuel / REF = recovered fuel

Design & performance LPA

THE CORRECT LPA SCREW reclaimer model is selected according to customer specifications.. BMH has a **wide selection of traversing screw reclaimers** suitable for larger storages.

The traversing screw reclaimer is installed on parallel rail tracks in a machinery tunnel either on one or both sides of the storage pile. The reclaiming screw(s) always extends across the storage area. **Two types or movement occur simultaneously**. The reclaimer moves slowly horizontally under the pile at constant force. Looking from the screw tip, the reclaiming screw rotates counterclockwise around its center line. As the screw reclaimer moves, it pulls material towards the dropping chute of the reclaimer from where it drops to the preceding equipment.

The screw **reclaimer's discharging capacity can be flexibly adjusted** according to the needs of the preceding process by adapting the rotation speed (RPM) of the reclaiming screw. This can be achieved by changing the motor's RPM with a frequency converter (VFD).

The movement of the screw reclaimer is controlled with BMH's special constant torque application. It creates a constant pressure for the reclaiming screw against the material and enables **an even capacity**. It also protects the reclaiming screw from breaking and therefore allows **uninterrupted operation**. Compared to traditional frequency converters, the constant torque application allows a longer distance between the screw reclaimer and the motor control center. Despite the long distance, the application guarantees an uninterrupted and even force.

We've paid special attention to the materials in terms of **wear resistance**. All the parts exposed to abrasion are manufactured from either stainless or acid-proof steel and protected with hard welding. In the most challenging conditions, it's possible to use duplex steel. Additionally, all reclaiming screws can be reinforced with an abrasion or armor steel extra lining.

The teeth are always selected based on the characteristics of the stored material. We offer a **wide selection of different tooth and lining options** from standard to demanding applications. The screw teeth are easily replaceable, and the extra lining can be replaced.

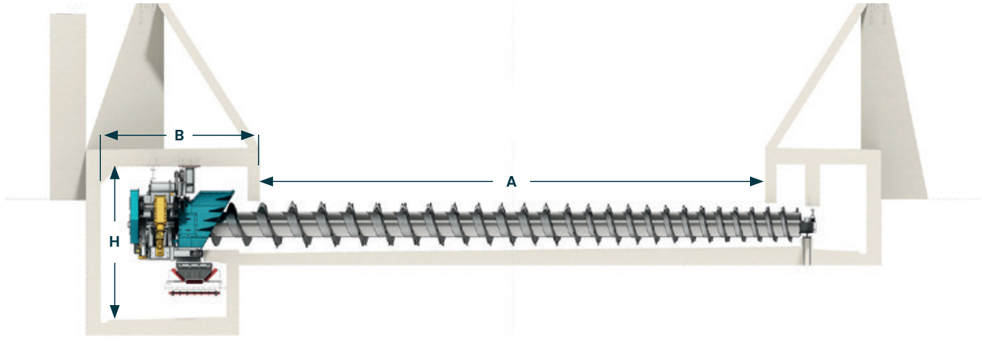
Power supply and sensor data are connected through the power chain cables, which can significantly shorten cabling distances especially in long storages.

Watch a video to see how the rotating screw reclaimer LPA works.

LPA serie / Technical details

MODEL	RECLAIMING WIDTH (A) [m]	TUNNEL WIDTH (B) [m]	TUNNEL HEIGHT (H) [m]	CAPACITY* [m³/h]	WEIGHT [kg]
LPA50	7–11	4,3	4,2	300	16000
LPA60	11–16	4,3	4,2	600	20000
LPA70	11–18	4,3	4,3	900	22000

* These are only indicative values based on our experience of typical capacities.
The actual volumes are always calculated case by case.



BMH TECHNOLOGY

Cleantech company from Finland rooting back to 1929.

We create solutions for waste to be reborn as raw materials and renewable energy.

We offer material handling solutions for our customers who work towards carbon neutrality and a greener future. With our plant solutions, equipment and life cycle services they can reuse material previously seen merely as waste. We help our customers turn municipal, industrial, commercial and wood-based waste into raw materials and renewable energy. This answers to the needs of industrial, chemical and energy production as well as construction and infrastructure.

COMPLETE SOLUTIONS

STRONG REFERENCES

EXECUTION CAPABILITY

LOCAL SERVICE

Renewable future together.

bmh.fi