



INNOVATIVE MANURE SCRAPER SYSTEMS

Home of the clean stable

www.joz.nl/en



Dairy farmers' lives can be easier and more profitable. It is important that animals feel comfortable in the barn. We manufacture high-quality technical products that make time-consuming, heavy work a thing of the past, and barns more comfortable for animals.

Home of the clean stable

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Colophon

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DRIVE UNITS



JOZ supplies manure scrapers that are moved by rope, countersunk steel cables, stainless-steel cables, or steel chains. JOZ scraper systems can be used on slatted floors, solid concrete floors, rubber floors, and low-emission floors.



- ✓ Easy to maintain
- ✓ Longer service life thanks to large-diameter drum and heavy-duty structure
- ✓ Turned off by position measurement, not by extreme resistance

Drum drive mechanism – rope & cable

The drum drive consists of a narrow, large-diameter drum that can be used in combination with rope, plastic-coated cables or stainless-steel cables. A drum-drive system always requires two drive units. While one drive unit rolls up the rope, the other unit unrolls it. Therefore the system does not have to be under tension. The narrow drum and the guide ensure that the rope or cable is always perfectly rolled.

The drum drive can be set up on the floor (beyond the reach of the cows) or on a console which is installed inside or outside the barn. Thanks to the large diameter and the robust, powerful gear motor (0.75 kW), the drive is ideal for barns with long alleys and very intensive use.

The drum drive can be used in conjunction with JOZ lifting hatches (type 650). A steel cable can be installed between the manure scrapers if needed. The top surround of the drive unit is made of a combination of stainless steel and plastic. The front and back are easy to install or uninstall, so any maintenance required is easy to perform.

Operation of JOZ drive units

Drive units are operated by JOZ's MSC control panel. This control panel is unique because it communicates with a precision sensor on the drive motor. This allows the control panel to know where the manure scraper is on the floor at all times. JOZ can adjust the manure scraper down to the last detail as desired. Optionally, the system can be equipped with frost protection and a remote control.

See page 20 for more information on all the advantages of JOZ's control technology.





Types of floor applicable

- ✓ Slatted floor
- ✓ Solid concrete floor
- ✓ Rubber floor
- ✓ Low-emission floor



Manure alley lengths applicable

- ✓ Plastic-coated cable 8 mm, max. 120 metres
- ✓ Plastic-coated cable 10 mm, max. 100 metres
- ✓ Dyneema rope 10 mm, max. 100 metres
- ✓ Stainless-steel cable 8 mm, max. 120 metres
- ✓ Stainless-steel cable 10 mm, max. 100 metres





Advantages stainless-steel cable

- ✓ Not sensitive to manure
- ✓ Premium quality
- ✓ Usable in combination with deposit hatches
- ✓ Smooth/abrasion resistant - cow-friendly



Advantages plastic-coated cable

- ✓ Compatible with long alleys
- ✓ No pieces of steel wire in manure
- ✓ Prevents injuries to claws and hooves



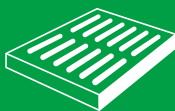
Advantages rope

- ✓ Animal-friendly
- ✓ Easy to repair
- ✓ Extremely strong Dyneema rope

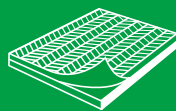
Chain drive



Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

JOZ chain scraper systems use one drive unit per system. A chain installation is suitable for one or two manure alleys and, depending on the situation, one or more scrapers can be used per manure alley.

The capacity of the drive is determined by the length of the barn, with the option of a 0.55 kW, 0.75 kW or a 1.5 kW motor gear unit. The quiet motor gear units are of heavy-duty quality for a long service life and feature a direct drive without belts. The drive is placed on a vertical console that is fitted with protective surrounds on the telescopic part of the drive unit. The stainless-steel surrounds are hot-dip galvanised. The front and rear are easy to assemble and disassemble.

A brace kit is included with the 1.5 kW system for extremely resilient attachment to the floor. This brace kit is optionally available for the 0.55-kW and 0.75-kW units, and can also be used with existing drives.



Type of drive motor and max. chain length *:

0.55 kW	max. 120 metres
0.75 kW	max. 240 metres
1.5 kW	max. 350 metres

* Maximum alley length 160 metres

Check the Dual Drive for even longer alley lengths, see page 10

Fully automatic hydraulic tensioner

Instead of manually tensioning the chain with the standard tensioning jack or crank, an automatic tensioner is available as an option. This saves money on both maintenance and labour, because you don't have to shorten an extra chain when changing the chain sprockets or tension it manually. The system is always correctly tensioned, which reduces wear. It is reliable, because you will never tension it too late.



ADVANTAGES

chain installation

- ✓ Optional automatic tensioner with extra tensioning length saves time
- ✓ Motor gear units installed on a vertical console, to be mounted between the cows or outside
- ✓ Unequal alley lengths are perfectly possible
- ✓ Combination of chain over the drive and cable on the rear possible
- ✓ If several scrapers are used in each manure alley, a drawbar can be installed between the scrapers
- ✓ Maintenance when it suits you, no nasty surprises due to cable, rope or chain breakage

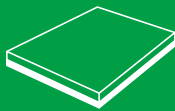
Maximum hygiene,
healthy cows and
maximum safety
thanks to vertical guards



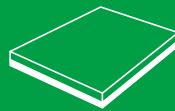
Dual Drive



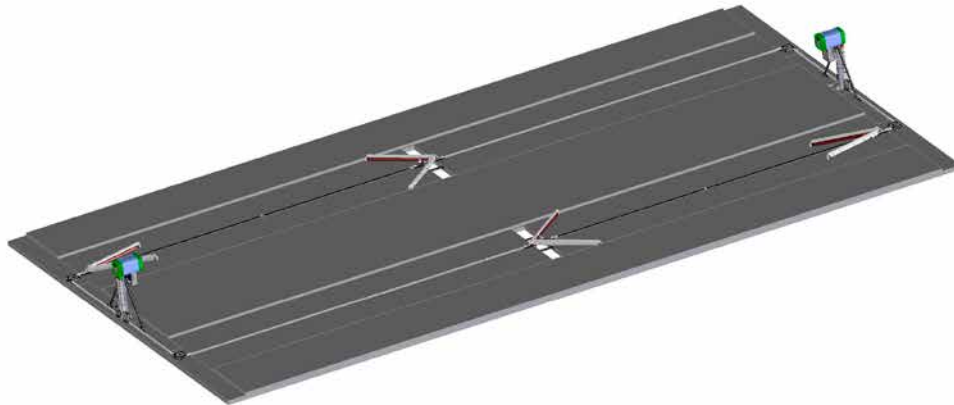
Solid concrete floor



Flat floor



Asphalt floor



More than a thousand metres with just one system!

Livestock farms are growing steadily throughout the world, with barns increasing in size. JOZ developed the Dual Drive in order to offer a suitable solution for these larger farms, where cow safety remains the priority. The Dual Drive allows systems of up to 1,000 metres long!

This system is fitted with two drive units, which means that the installation is controlled by two motors and the forces are evenly distributed. This prevents extra wear and tear, and increases safety for cows. Because of the equally distributed forces we are able to use our standard JOZ parts.

The Dual Drive system can be equipped with a 2 x 0.75 kW or 2 x 1.5 kW motor, depending on the length of the alleys. The system is controlled by an MSC control panel and a Dual Drive PCU (power control unit). Two Dual Drive systems can be operated with a single MSC.

JOZ recommends using a fully automatic hydraulic tensioner with the Dual Drive system. The system is always correctly tensioned, which reduces wear.

To further improve the ROI of the conventional systems, the special combination of a Dual Drive with Vario Sprocket and Corner Roll Plus is available. This combination increases the service life of the complete installation, which will result in less tensioning and shortening of the chain, making it even easier to use.

Characteristics:

- ✓ More than 1,000 metres with a single system
- ✓ Force evenly distributed over the installation
- ✓ Very safe for cows
- ✓ Easy to maintain

Vario Sprocket



JOZ comes with a unique solution for the uneven wear of the chain: the "Vario Sprocket with long-tempered chain". This sprocket can change its pitch and adapts to the varying pitch of the chain. The teeth are attached by a spring structure which distributes forces evenly over the Vario Sprocket. This ensures less wear and maintenance. The sprocket doesn't need to be replaced until the chain has run out.

The Vario Sprocket can only be used in combination with the JOZ long-tempered chain (13 x 65). This chain is lighter than the standard 13 mm chain, which means less stress on the entire system and a longer service life. The new sprocket including long-tempered chain can be mounted on existing installations.

Corner Roll Plus

A new hardened corner roll with hardened components, which is highly suitable for sand barns or tough conditions. The Corner Roll Plus is always fitted with a Dual Drive system or a barn with more demanding conditions. All the information about the Corner Roll Plus can be found on page 14



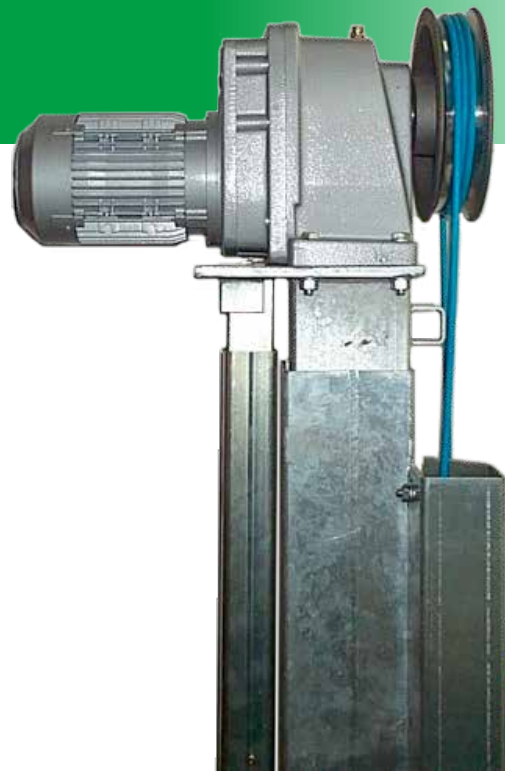
Cable drive



Slatted floor

In addition to the drum drive (rope/cable) and the chain drive, JOZ also supplies a cable scraper system that is propelled by plastic-coated steel cable. The cable scraper installation is fitted with one drive unit per system, which pulls the cable back and forth. The system is driven by a drive roller.

The cable drive is operated by JOZ's MSC control panel. Read more about JOZ's control solutions on page 20.



Type of drive motor and max. length of cable:

0.55 kW	max. 100 metres
0.75 kW	max. 120 metres



DRIVE UNIT ACCESSORIES

JOZ has developed special products that extend the service life of drive units.



- ✓ Cow-friendly corner rolls
- ✓ Long service life
- ✓ JOZ is here to help

Drive unit accessories



Corner roll

Standard corner roll

The corner rolls can be used on slatted floors, solid concrete floors, rubber floors, and low-emission floors.

Cow welfare was taken into account in the construction of the thick-walled corner roll. For example, JOZ has fully integrated the greasing nipple of the corner roll so that the claws of the cows' hooves cannot become damaged. The large diameter and the hardened axle ensure that the fully hot-dip galvanised corner roll has a long lifespan.

A special 180-degree corner roll is available for a single alley with chain. A corner roll is also available for situations where rope or cable has to run tightly along a wall.

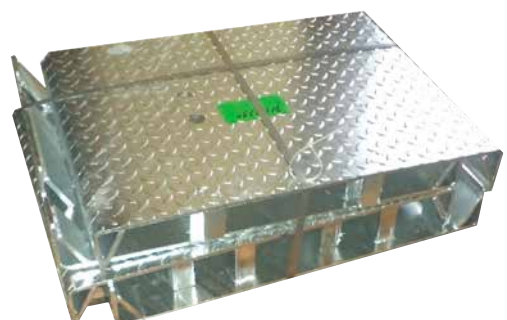
Corner Roll Plus

A new hardened corner roll with hardened components, which is highly suitable for sand barns or tough conditions. The Corner Roll Plus is equipped with a wear-resistant through-axle, and the corner roller is fitted with a wear-resistant sleeve. The through-axle is characterised by its drop shape. A very resistant structure that can be mounted on existing installations.

Corner roll cover

Cow-friendliness is a high priority for JOZ. The robust corner rolls that are used by JOZ in the barn are not ideal for hooves, so JOZ has a solution in the form of a rubber cover. The profile at the top of the rubber makes it easier for cows to grip.

In addition to the rubber cover, a lid can be mounted on top of the corner roll. Corner rolls covered with this lid can also be driven over. This has benefits in achieving MDV (Sustainable livestock farming) recognition.





Stand-alone compression spring

For drive units implemented as a grate installation, a compression spring which can be installed on the corner roll is supplied as standard. The compression spring forms the mechanic end points of the system. While 'learning', the MSC control panel measures the distance between the compression spring ends. In automatic mode, the compression springs are then no longer used to stop the scraper at the end points, because the MSC control panel stops the system when the correct distance is reached. This maximises the lifespan of the chain, rope or cable. With concrete installation, a stand-alone compression spring is supplied as standard. This compression spring can be installed at a different location.



Connecting link

The new connecting link with Allen key socket is more durable than its predecessor. If the manure scraping system has to operate under more demanding conditions, or if it is fitted with deposit hatches or a 1.5 kW gear motor, JOZ recommends using a welded link.



Lift sockets

Special lift socket

With cable systems and combined cable/chain systems a special lift socket must always be used. This allows the cable to be attached to the scraper. It can also be used to attach the cable and chain to each other.



Complete lift socket

The enclosed lift socket is used with cable systems. This allows the cable to be attached to the scraper, where the lift socket stops the cable or rope from becoming pinched during attachment. This prevents premature fracture. A lift socket allows the cable or rope to be easily detached at any time, which simplifies maintenance.

These lift sockets are supplied as standard with the slatted floor scraper with cable.



Clamp bushing for cable

A clamp bushing with thimble is used for the 10 mm stainless-steel cable. The clamp bushing connects the cable securely to the manure scraper. The thimble keeps the cable in a loop, extending its service life. The clamp bushing is more cow-friendly than the lift sockets, and is ideal for use with UNP profiles and the stand-alone compression spring.

Tensioning the chain

The manure scraper system functions best when the chain tension is correct. It keeps the system running smoothly, and a properly tensioned chain prevents unnecessary wear. The chain can be tensioned in several ways:

- **Standard JOZ manual tensioner**

The chain can be correctly tensioned with the standard JOZ manual tensioner.

- **Heavy-duty 70x70 JOZ manual tensioner**

A stronger tensioner is required for heavy-duty systems. The heavy-duty tensioner is supplied with a drive of at least 1.5 kW as standard.

- **Collet**

The JOZ collet simplifies maintenance work, such as shortening the chain.

- **Automatic hydraulic tensioner**

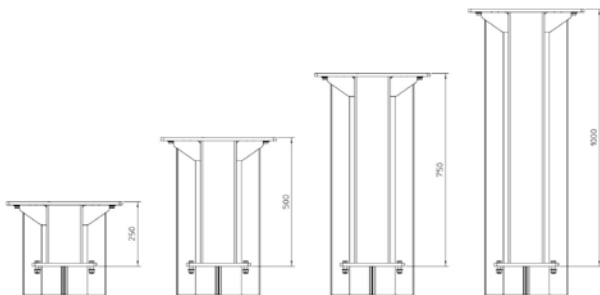
Instead of using the standard manual tensioner to tension the chain, an automatic tensioner is available as an option. This saves money on both maintenance and labour, because you don't have to shorten an extra chain when changing the chain sprockets or tension the chain manually. The system is always correctly tensioned, which reduces wear. The automatic tensioner keeps the chain ideally tensioned at all times, so it is an extremely reliable solution.





Drive unit brace kit

The brace kit provides additional reinforcement for the drive unit. The brace kit is used as standard with units of 1.5 kW or more. This can also be necessary with low-quality concrete.



Console extensions

These extensions are used to raise the drive mechanisms on the drive unit. This may be required if the drive mechanisms have to be kept out of the reach of animals, or if the drive unit has to be placed in a pit or side drain (level differences).

The extensions are available in 4 different sizes and supplied as a complete set:

Product Description	Increase in height
Drive unit console extension 250	25 cm
Drive unit console extension 500	50 cm
Drive unit console extension 750	75 cm
Drive unit console extension 1000	100 cm

Important information

- JOZ recommends using the brace kit with every type of extension (more stability)
- The kit consists of the extension piece, two chain guards, and accompanying mounting material
- Can be used with the new console model, not the old model





INTERESTED IN WHAT OUR FARMERS HAVE TO SAY?

joz.nl/en/farmers-stories/

CONTROL TECHNOLOGY



The unique JOZ control panel distinguishes itself by communicating with a precision sensor on the engine. This allows the control panel to know where the manure scraper is on the floor at all times.

- ✓ Simple operation (three buttons for manual start, stop and reverse scrape)
- ✓ Unique cow protection for empty and full manure scraper,
- ✓ suitable for all JOZ drive units

Precision communication

The unique JOZ control panel distinguishes itself by communicating with a precision sensor on the engine. This allows the control panel to know where the manure scraper is on the floor at all times. Various settings are possible, and JOZ can adjust the manure scraper in detail as desired. The simple operation of this system makes it easy to use for farmers or anybody temporarily substituting them.

The control panel is available with a frequency inverter (single phase - 230 V) or a power control unit (PCU) (3-phase - 380 V). The advantage of the frequency inverter is the stepless speed control when switching on and off, which increases the service life of the motor gear unit. The advantage of the PCU is that it is insensitive to voltage drops. In addition, the system offers unique cow protection. The sensitivity of the cow guard can be adjusted electronically. There are also various inputs and outputs available to which the installer can fit a pump or sprinkler installation, for example. All in all, it makes JOZ's control technology unique in its kind!

Speed control

It is also possible to limit the speed at, for example, a gate or a letterbox deposit hatch. The speed can then be temporarily reduced to approx. 2 metres per minute. The speed of the entire scraping cycle can also be set between 4 and 6 metres per minute. The PCU works with pulses.

Manure scraper position

The control panel offers the option of setting the manure scrapers to a special position at adjustable times. This option is handy for the livestock farmer if the scrapers are normally parked by the entrance to the waiting area or the barn door to the pasture. When the cows have to be milked or allowed into the fields, the scraper can be automatically set in a position where it doesn't get in the way for the cows. The cycle counter; in other words, the distance travelled and the route still to be travelled is also shown in the display. The duration of the switch-off delay is also visible on the screen.

When the combi or comb scraper is not moving, the main wings remain open. This isn't cow-friendly and cows can damage their hooves. The MSC control panel can set the main wings of the scraper to close in the standby position. The scraper will then move slightly forward so that the main wing goes into the scraper position. It is also possible to park the scrapers in an adjustable position instead of by the corner rolls. If there are a lot of cow movements near the corner rolls, JOZ recommends always setting a different parking position. In this position setting, the scraper first returns to the corner roll at the start of the scraper cycle so that the entire alley is scraped.

Remote control (optional)

The installation can be started or stopped at a distance with the remote control. The scraper or scrapers can be moved from the shovel when laying straw in the cubicles so that you don't have to wait for them.



Remote control application:

- 1 remote control per MSC
 - 2 drum drives per remote control
 - 2 cable/chain drives per remote control
- 150 metre range
- Start/stop function
- MSC automatically returns to auto mode

Deposit

Depositing is even easier with the MSC control panel. When depositing waste from a single manure alley (in a single line installation), the deposit side can be chosen. An advantage of the MSC control panel is the phased movements or reduced speed when depositing in the middle or at the end of the manure alley. The slurry and manure then falls into the deposit opening in small amounts, avoiding its blockage or the blockage of the cross channel.

Specific zone

The MSC control panel allows you to divide the manure alley into specific zones. For example, the front section where the dry cows stay at night is not scraped at night due to calving. Cow protection can be adjusted per zone.

Maintenance & notifications

Every system requires maintenance, and that includes a manure scraper installation. The MSC control panel gives messages about maintenance intervals. This can be adjusted by the technician. The system can detect breakage of the chain, cable or rope, and report it on the display.

Automatic restart

The control panel is also equipped with an automatic restart function after a power cut. Even if power fails in the night and is restored after some time, it does not affect the manure scraping system much. After power is restored, the installation performs an automatic restart. This restarts the scraping cycle, and the manure alley is scraped clean again.



Frost protection (optional)

Frost protection is automatically enabled if the temperature drops below zero. The lower the temperature, the more often the scraper moves a small distance forwards and backwards. This prevents the installation from icing up.

If lifting hatches are fitted, it is also possible to scrape the entire alley during the frost protection movements to prevent them from icing up too.

JOZ data logger

When scraping manure on a low-emission floor the connection of a JOZ data logger to the MSC control panel is compulsory. The Dutch government requires livestock farmers to clean the entire manure alleys of low-emission floors every 1.5 to 2 hours. This does depend on the type of floor. You are also obliged as a livestock farmer to prove that you have done this for the last three months. The JOZ data logger registers the scraping movements in a log file, which can be easily read via a USB stick (as an Excel file).



ADVANTAGES

J0Z control panel

The control panel is unique, and not just because of the speed limiter, the remote control and all the other facets mentioned. It also has:

- ✓ The option of linking an external emergency stop or other signals
- ✓ The option of connecting manure removal systems in the deposit area to create a fully automatic system
- ✓ The option of a power start after laying straw in the cubicles



The well-being of your cows is central to J0Z's cow security measures.



MANURE SCRAPERS

JOZ develops and supplies high-tech manure scrapers for every type of barn and cubicle bedding.



- ✓ Clean environment, cleaner cows
- ✓ Fewer hoof problems
- ✓ Fewer bacteria (especially at the edges of cubicles)
- ✓ Better general hygiene in the barn

Cleaner floor, healthier cows

Cow comfort is an important economic parameter in livestock farming. Cow comfort, animal well-being and hygiene cannot be viewed separately. They influence each other and JOZ takes each of these aspects into account for every solution.

Healthy legs and hooves are the basis for proper cow performance and a longer life. Hoof disorders are related to nutrition, hygiene and the environment in the barn.

Infectious hoof diseases, such as digital dermatitis, interdigital dermatitis and foot rot are caused by bacteria that occur in cattle manure. Lameness causes a lot of damage on cattle farms. This damage can be broken down into direct economic damage (costs of treatment and non-delivery of milk from sick or treated cows) and indirect damage (lower milk production, decreased fertility and early disposal). Good hoof health contributes to animal welfare, and makes farmwork easier.

JOZ takes these aspects into account and uses the principle of clean and dry hooves as basis for selection of the right manure scraper. "Home of the clean stable"!

The type of floor affects walkability and, as such, the level of animal comfort and tranquillity in the barn. Environmental requirements and legislation mean farmers are not always free to choose a particular floor. JOZ has a suitable, tried and tested manure scraping system for each combination of floor type, cubicle bedding and animal.

JOZ supplies the following types of scrapers:

- Combi scraper
- Multi-scraper
- Delta scraper
- Flex scraper
- Slatted floor scraper

Robust and animal-friendly

"In addition to their optimal performance, all JOZ manure scrapers have a very animal-friendly finish and are hot-dip galvanised for optimum corrosion protection."



Home of the clean stable

COMBI SCRAPER

The JOZ combi scraper was developed for barns with solid or semi-solid floors. These can be flat floors with deposit points at fixed distances, or sloping floors where the manure drains to the middle or outside. The drive-over combi scraper was specially designed for barns where vehicles are used.

JOZ supplies different types of combi scrapers, depending on the barn

1. Single-acting combi scraper
2. Single-acting combi scraper drive-over
3. Single-acting combi scraper with retractable pulling bar
4. Dual-acting combi scraper with end deposit
5. Comb scraper
6. Combi scraper HCI W5 floor
7. JOZ Chicken scraper



The JOZ combi scraper
is robust, compact,
and delivers the best
scrapping result!

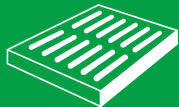


Dual-acting combi scraper with end deposit
See page 28

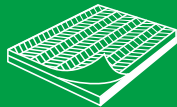
Single-acting combi scraper



Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

The scraper requires little room to park and opens very fast at the beginning of the alley. The principle of the combi scraper is that it has main wings on each side of the central pulling bar, which are in vertical position during scraping and are raised when the scraper returns. This way, the combi scraper can return through the manure virtually without carrying along any manure. The two side wings scrape the side

walls perfectly clean along the entire width, even if the walls are not perfectly straight.

Characteristics:

- Equal or unequal alley length with chain
- Suitable for flat floor and UNP guides
- Version with or without rubber on the main and side wings
- Can be used with chain, cable, or rope drive units
- Animal-friendly construction and tail protector
- Normal amount of cubicle bedding, little to no straw



Suitable for:

Alley width from: 135 cm to 600 cm *

**alley widths over 600 cm in consultation with JOZ*

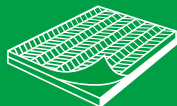
Single-acting combi scraper drive-over



Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

The single-acting combi scraper is also available in a drive-over version. The scraper requires little room to park and opens very fast at the beginning of the alley.

Characteristics:

- Equal or unequal alley length with chain
- Suitable for flat floor and UNP guides
- Version with or without rubber on the main and side wings
- Manual folding of the frame
- Supplied with hook for removing locking pins and folding the frame in or out
- Can be used with chain, cable, or rope drive units
- Normal amount of cubicle bedding, little to no straw

Please note: no side wing limiter possible



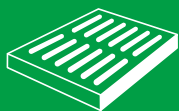
Suitable for:

Alley width from: 135 cm to 420 cm

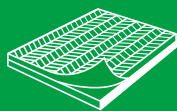
Single-acting combi scraper with retractable pulling bar



Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

If you want a manure alley to be as clean as possible, or if there is little space at the deposit point, you can opt for a single-acting combi scraper with a retractable pulling bar. This manure scraper clears the entire manure alley, then the long pulling bar retracts when approaching the deposit point, so every part of the barn is covered. A unique feature of this scraper in the unequal alley version is the fact that it can be turned off manually, while the other scraper of the same system continues to run.



Characteristics:

- Equal or unequal alley length with chain
- Suitable for flat floor and UNP guides
- Version with or without rubber on the main and side wings
- Limited space needed to park the scraper
- Strip on the side wing
- Scraper opens very quickly at the beginning of the alley
- Can be used with chain, cable, or rope drive units
- Animal-friendly construction and tail protector
- Normal amount of cubicle bedding, little to no straw

Note: no bottom connection possible and not suitable for lifting hatches

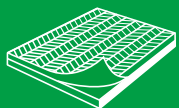
Suitable for:

Alley width of: 135 cm to 460 cm

Dual-acting combi scraper with end deposit



Solid concrete floor



Rubber floor



Low-emission floor

Dual-acting combi scrapers with end deposit are used in barns that have a deposit point at the beginning and end of the manure alley. This scraper cleans the alley on both the outward and the return pass. This scraper has a standard side wing limiter.



Characteristics:

- Equal or unequal alley length with chain
- Suitable for flat floor and UNP guides
- Version with or without rubber on the main and side wings
- Limited space needed to park the scraper
- Scrape the entire alley width in a short distance
- Can be used with chain, cable, or rope drive units
- Animal-friendly construction and tail protector
- Normal amount of cubicle bedding, little to no straw

Suitable for:

Alley width of: 135 cm to 460 cm

Comb scraper



Rubber/concrete slatted floor

The comb scraper is a type of combi scraper used for slatted floors. These can be either concrete or rubber floors. A comb scraper is only available as a single-acting version and is suitable for chain, cable or rope drive units. Normal quantity of cubicle bedding, straw only with single pass.

Characteristics:

- Equal or unequal alley length with chain
- Only suitable for UNP guides



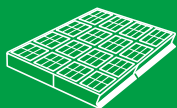
- Always fitted with rubber on the main and side wings
- Limited space needed to park the scraper
- Heavy-duty
- Scrape the entire alley width in a short distance
- Strip on the side wing
- Adjustable side wing limiter as standard
- No extended side wings possible
- Distance between 1st groove and cubicle edge depends on the type of floor
- Animal-friendly design with tail protector
- Normal amount of cubicle bedding, little to no straw

Please note: no side wing limiter possible

Suitable for:

Alley width of: 135 cm to 400 cm

Combi scraper HCI W5 floor



HCI W5 element floor

The HCI W5 floor is a solid, sloping floor with smooth, sloping urine channels. By allowing the urine channel to drain separately from the slab, the liquid and solid fractions are separated on the slab. JOZ has designed a unique scraper for the HCI W5 floor. The scraper is suitable for chain, cable or rope drive units. Furthermore, the scraper can handle a normal amount of cubicle bedding and little to no straw.



Characteristics:

- Equal or unequal alley length with chain
- Always fitted with rubber on the main and side wings
- Hinged arms that follow the slope
- Main frame bent forward
- Suitable for lifting hatch
- Strip on the side wing
- Side wing limiter
- Limited space needed to park the scraper
- Animal-friendly design with tail protector

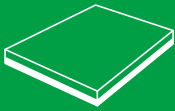
Suitable for:

Alley width of: 250, 300, 350 or 400 cm.

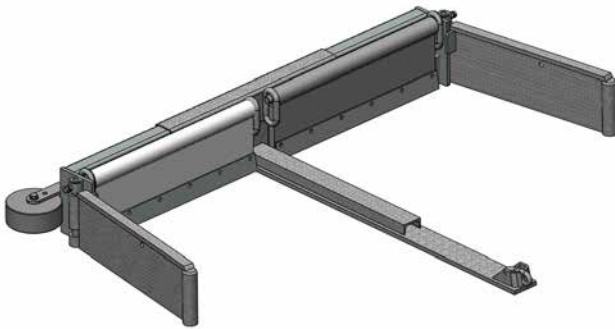




JOZ Chicken manure scraper



Flat floor



JOZ manufactures manure scrapers for all forms of animal husbandry, including poultry farming. The JOZ Chicken manure scraper is a type of combi scraper with heavy-duty main wings that uses guided rollers next to the main frame. This scraper aggressively cleans the floor using a spoiler, which always produces a perfect result, even with extremely dry manure. These scrapers are made from manganese steel in order to minimise wear and tear.

Characteristics:

- Extra heavy-duty main wings
- Manganese steel scrapers
- Side wing limiter
- Guided rollers next to the main frame
- Reinforced main frame
- Secure fastening of chain to pulling bar
- Chickens, ducks, furred animals
- Can be used with chain, cable and rope drive units

Suitable for:

Alley width: 135 cm to 340 cm



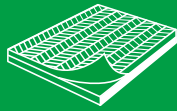
Multi-scraper



Solid concrete floor



Slatted floor



Rubber floor



Low-emission floor

More than 60 years' experience in manure removal technology and the drive to create the best products for livestock farmers and their animals has resulted in the introduction of the Multi-Scraper. JOZ is proud of this achievement, because the multi-scraper, which features modular construction, adaptability, hard-wearing components and a rounded, animal-friendly design, is the leader in its class.

The multi-scraper is made up of various parts in cast steel, which is more wear resistant than construction steel. The modular design means that all wear parts can be easily replaced, allowing the manure scraper to enjoy an unlimited service life with minimal maintenance costs. All wear parts are equipped with visual wear indicators so that they can be replaced at the right time before the scraper's performance decreases.

The animal-friendly curves around the entire scraper, the two special main frame hinged arms (which allow the frame to be bent forward at will even after the scraper is first used), the swing capacity of the scraper and the configurable pulling bar make this multi-scraper a unique high-quality product with an optimal and unmatched scraping result.

The advantage of moving the scraper's main arms forward is that, when a lot of (dry) bedding is used, the manure and bedding will glide to the middle of the scraper. As a result, manure will never run into the cubicles and the scraper pulls more evenly and lightly. This ensures maximum hygiene and lower maintenance costs.

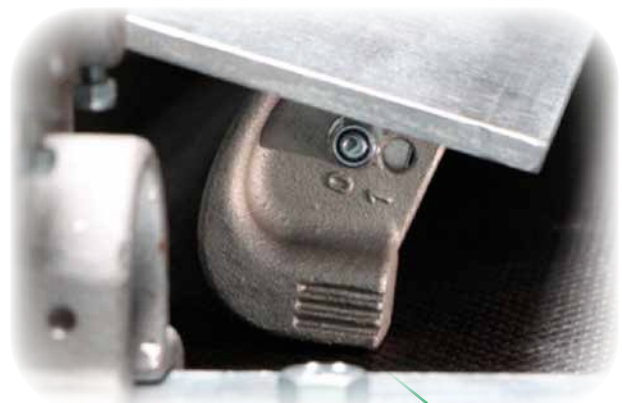
The advantage of the hinged arms is that the scraper follows the floor optimally and makes it perfectly clean. The multi-scraper is therefore ideal for floors that slope towards the centre.



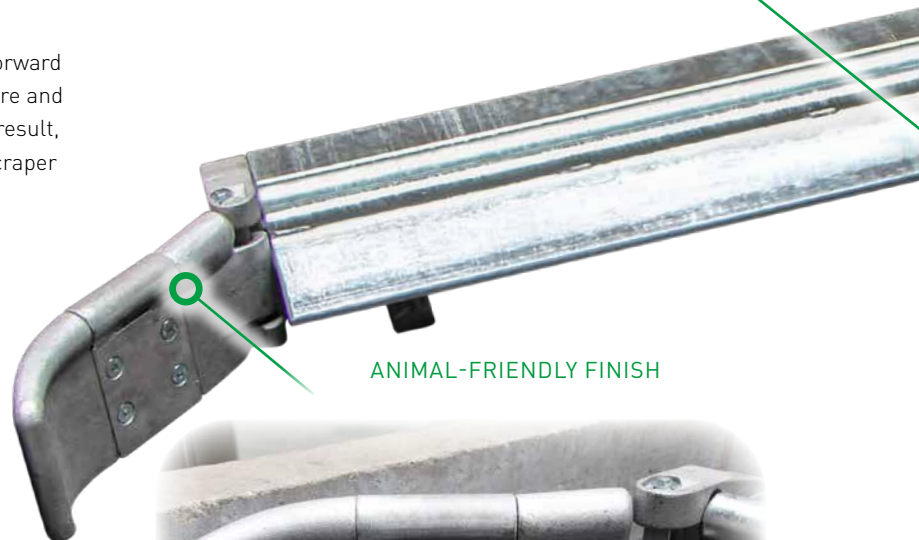
[Watch the video on YouTube.](#)

Suitable for:

Alley width of: 135 cm to 460 cm



WEAR INDICATORS ON FEET INSTEAD OF MAIN FRAME



ANIMAL-FRIENDLY FINISH



The multi-scraper features:

- Most animal-friendly construction
- Equal or unequal alley length with chain
- Suitable for flat floor and UNP guides
- Version with or without rubber on the main and side wings
- Limited space needed to park the scraper
- Configurable
- Swing capacity
- Wear indicators
- The main frame can be kept straight or bent forward at any time if desired
- Scraper opens very quickly at the beginning of the alley
- Can be used with chain, cable or rope drive units
- Normal amount of bedding, little to no straw



Delta scraper



Solid concrete floor



In the case of a barn with cubicles or a sloped barn in combination with the use of a lot of long straw, the delta scraper is the most suitable. The straw is guided to the middle of the scraper, along with the manure, so that the manure does not enter the lying area and the scraper pulls evenly and lightly. This means cows do not have to walk through the manure when they step over the scraper. When the delta scraper returns, the arms fold together so that a minimal amount of straw and manure is carried along. In its folded position, it is possible to drive over the scraper, which is useful when using a vehicle to spread straw in the cubicles. The cows are not hindered by the delta scraper, as it returns with its arms folded inward. The guide profile in the centre of the floor keeps the scraper stable.

The delta scraper pulls the solid manure to the end of the manure alley. If desired, the manure can be temporarily stored on a manure plate or transported to a manure heap completely automatically, using a side discharge system. The JOZ electronic control panel enables phased deposit. Depending on the roughness of the floor, the scraper needs about 1.5 times the width of the manure alley to open com-



pletely. This should be taken into account when designing the barn. JOZ offers a folding scraper with a quick opener, so that the folding scraper is opened mechanically and less distance is required before the folding scraper scrapes the entire manure alley width. See also page 38.

The delta scraper is also the perfect solution for barn alleys with varying width. The scraper adapts effortlessly to the varying width of manure alleys, and leaves no manure behind.

Characteristics:

- Equal or unequal alley length with chain
- Only suitable for manure alley with UNP guides
- Easy to maintain
- Can be driven over
- Can be used in barns with a sloping floor
- Frame equipped with spoiler, which exerts extra pressure on the floor (resulting in a cleaner floor)
- Takes 1.5 times the alley width to open the scraper arms
- Can be used with chain and cable drive units
- Animal-friendly and strong construction
- Ideal for barns with straw bedding



Suitable for:

Alley width of: 135 cm to 520 cm

HDX Delta Scraper



Solid concrete floor



The delta scraper is the most robust scraper in the JOZ range. In addition to the standard delta scraper, the range includes the specially developed HDX delta scraper for barns with sand bedding and barns with demanding conditions.

Manure scrapers wear faster in barns with sand bedding in the cubicles, so JOZ developed a new manure scraper specially for these barns that can cope with these more demanding conditions. This delta scraper is the most wear-resistant delta scraper on the market.

The HDX delta scraper can be supplied in full and semi-delta versions; the latter is also known as a single-arm delta scraper. Page 48 contains more information about JOZ side discharge systems.

The HDX delta scraper is part of JOZ's Heavy-Duty Line and is always sold in combination with the hardened Corner Roll Plus; a corner roll with reinforced components that keeps the manure scraper system running better. Any maintenance required is easier than with other scrapers, as all wear parts are replaceable.

Characteristics:

- Equal or unequal alley length with chain
- Only suitable for manure alleys with UNP guides
- Easy to maintain
- Can be driven over
- Can be used in barns with a sloping floor
- Frame equipped with spoiler, which exerts extra pressure on the floor (resulting in a cleaner floor)
- Needs 1.5 times the alley width to open
- Can be used with chain and cable installations
- Animal-friendly and strong construction
- Ideal for barns with sand bedding or straw bedding
- Delta scraper reinforced with additionally wear-resistant steel
- Quick opener cannot be used



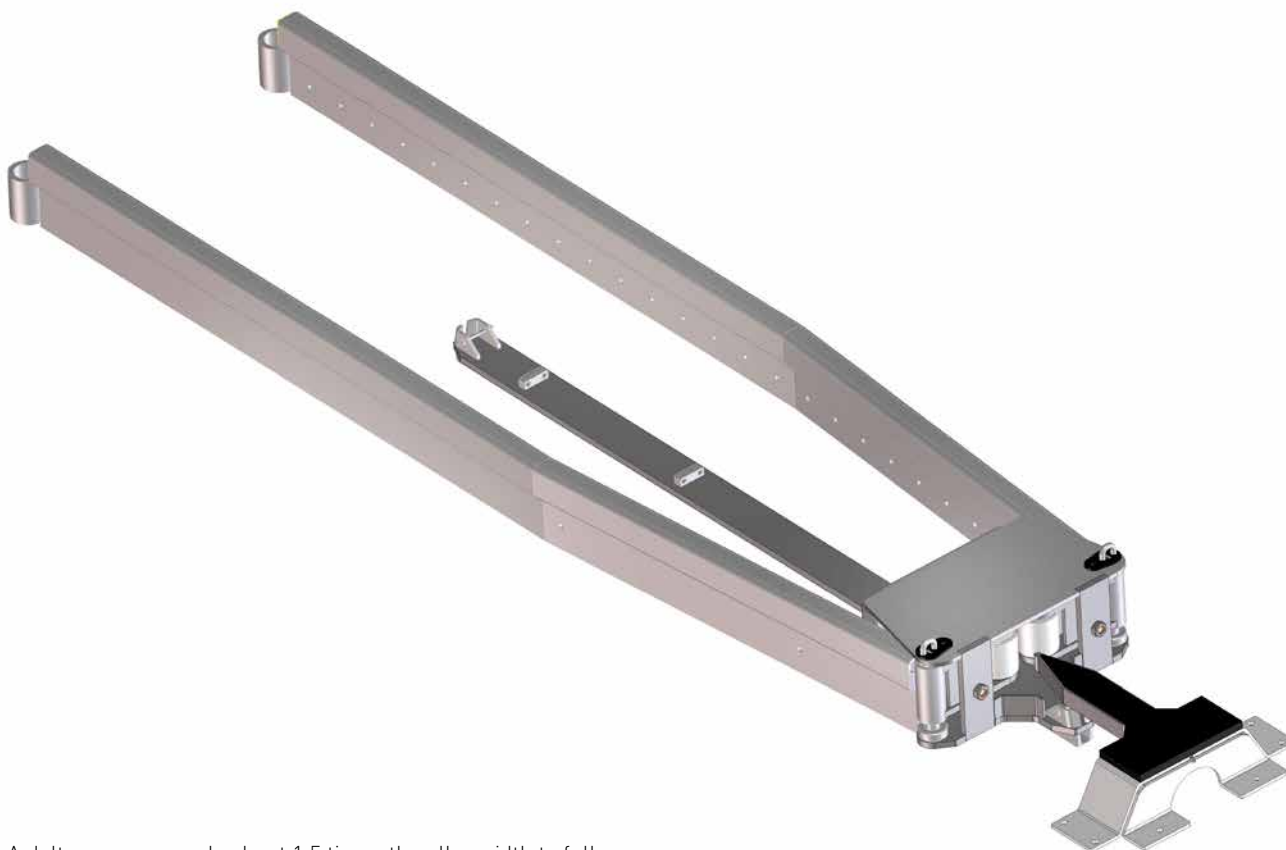
Suitable for:

Alley width of: 259 cm to 427 cm

Quick opener for the delta scraper



Solid concrete floor



A delta scraper needs about 1.5 times the alley width to fully open. That means that the first 6 metres in a 4 m wide alley are only partially scraped. The JOZ quick opener offers a solution here.

The quick opener is a steel wedge fitted with rubber that is mounted in front of the corner roll at the beginning of the manure alley. The delta scraper has rollers fitted on the inside of the arms, next to the hinge point. The wedge presses against the rollers, and forces the scraper to open.

The JOZ MSC control panel has a special setting that temporarily gives the scraper extra power when opening, but retains its ideal, sensitive cow protection setting during scraping.

Note: the arms open quickly, so no cows may be present in this section. This area must be fenced off.

Benefits of a quick opener:

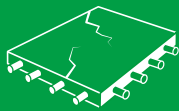
- Minimum space required in the manure alley before the delta scraper is fully opened
- The entire manure alley is scraped; a large parking space is not needed

Characteristics:

- Only to be used in a zone fenced off from people and animals
- Can only be used with a JOZ delta scraper designed for the purpose
- Can only be used with the JOZ MSC electronic control panel
- Cannot be used with deposit on a flat manure plate
- Cannot be used with unequal alley lengths



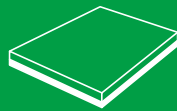
Flex scraper



Solid concrete floor



Low-emission floor



Flat floor



JOZ has extensive experience with manure scrapers in barns with sand bedding. The main challenge in barns with sand bedding in the cubicles is limiting wear and tear, as sand is highly aggressive. This experience has resulted in the flex scraper. The flex scraper was specially developed for barns with sand bedding, but can also be used for all other bedding.

The flex scraper has special 4 cm thick wear-resistant rubber on the entire underside, making it very easy to maintain. The entire frame is at the top of the scraper, and there is no contact between the steel and the floor. Thanks to the narrow main frame, the scraper opens rapidly and both arms fold double on the return pass. This means that during the return pass it is possible to drive over the flex scraper, and it allows cows to pass the scraper without having to negotiate obstacles. The flex scraper has a kink in the main frame as standard, which prevents manure and bedding from ending up in the cubicles. Manure and bedding slides towards the middle of the scraper, which keeps the flex scraper scraping more evenly and easily.

Characteristics:

- Equal or unequal alley length with chain
- Can be used on flat floors and UNP guides
- Reinforced galvanised frame on top of the scraper
- Easy to maintain
- Can be driven over
- Opens faster than the delta scraper
- Can be used with chain, cable and rope drive units
- Animal-friendly and strong construction
- Ideal for barns with sand bedding
- Suitable for barns with straw up to 1.5 kg straw per cow per day

Suitable for:

Alley width of:	135 cm to 400 cm
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Flex scraper with E-rubber



Solid concrete floor



Low-emission floor



Flat floor



Every farmer faces the same manure problem: how do I keep my barn floors clean? The flex scraper with E-rubber is the solution. It results in clean, dry floors, improves hygiene in the barn, and prevents hoof problems.

This new version of the flex scraper was launched at the same time as the Heavy Duty Line. This flex scraper is fitted with E-rubber over the entire underside of the scraper, which, like the standard flex scraper, makes it very easy to maintain. No steel is in contact with the floor. E-rubber has been specially developed for sand barns and barns with more demanding conditions. It can also be mounted on existing systems.

The flex scraper with E-rubber is very animal-friendly, and can be used on asphalt floors and hard-to-reach places, such as under a slatted floor. The flex scraper with E-rubber also has a narrow main frame to allow it to open quickly. Both arms fold double when the scraper returns. This means it is possible to drive over the flex scraper with E-rubber, and it

allows cows to pass the scraper on its return without having to negotiate obstacles. The kink in the main frame keeps manure and bedding out of the cubicles.

Characteristics:

- Equal or unequal alley length with chain
- Can be used on flat floors with UNP guides
- Reinforced galvanised frame on top of the scraper
- Easy to maintain
- Opens faster than a delta scraper
- Can be used with chain, cable and rope drive units
- Animal-friendly and strong construction
- Ideal for barns with sand bedding and more demanding conditions
- Suitable for barns with up to 1.5 kg straw bedding per cow per day



Suitable for:

Alley width of: 135 cm to 400 cm

SLATTED FLOOR SCRAPER

Slatted floor scrapers are mainly used on slatted floors and some low-emission floors. Slatted floor scrapers are suitable for cable, rope or chain systems.


No lateral guides

An important advantage of the JOZ slatted floor scraper is that no lateral guides are required. Special rotors on the sides of the scraper ensure that obstacles such as standpipes by the feeding fence, water mains, and tails can be circumvented with-

out problems. Even if the manure alleys are not all the same length, a JOZ slatted floor scraper can be used with a chain, cable or rope without problems.

Automatically adjustable

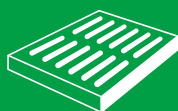
Powered by a silent electric motor, the scraper is pulled over the floor by a chain, cable or rope at a speed of 4 m/min. The scraper can be operated fully automatically with the latest JOZ control panel.



JOZ supplies two types of slatted floor scrapers, depending on the barn situation where they will be used.

- ✓ Animal-friendly finish
- ✓ Optional: retractable pulling bar
- ✓ Better general hygiene
- ✓ Less manure on the slatted floor and behind the boxes, and therefore fewer hoof problems and cleaner cubicles

Rubberised slatted floor scraper with rotor



Slatted floor



Low-emission floor

Characteristics of rubberised slatted floor scraper with rotor

- Strong, animal-friendly construction
- Available in a reinforced version as standard for wide alleys and large amounts of cubicle bedding



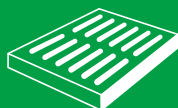
- Rotors guarantee clean cubicle walls and make metal guides in the crossing unnecessary
- Rubber guide eye for rope/cable/chain
- 2 rubber strips under the scraper for highly effective cleaning
- Unequal alley for chain, otherwise 2 scrapers per (longest) alley
- Standardly supplied with 220 cm pulling bar for extra stability
- Can be used with cable, rope or chain drive units
- Normal amount of cubicle bedding

Option: pulling bar from the centre

Suitable for:

Alley width: up to 320 cm

Galvanised slatted floor scraper with rotor



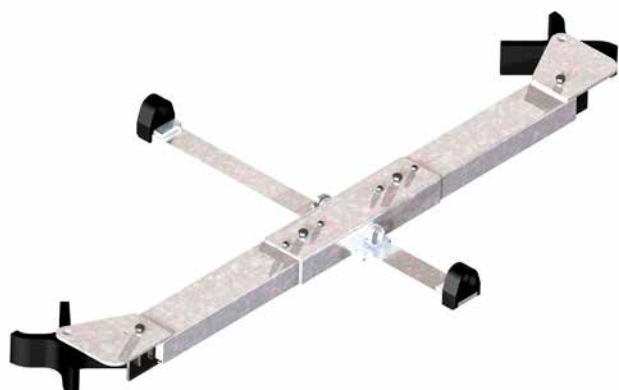
Slatted floor



Low-emission floor

Features of the galvanised slatted floor scraper with rotor

- Reinforced version as standard for wide alleys and large amounts of cubicle bedding
- Rotors guarantee clean cubicle walls and make steel guides in the crossing unnecessary



- Height of scraping rubber can be adjusted on both sides
- Rubber guide eye for rope/cable/chain
- Cow-friendly finish
- Unequal alley for chain, otherwise 2 scrapers per (longest) alley
- Standardly supplied with 220 cm pulling bar for extra stability
- Can be used with cable, rope or chain drive units
- Suitable for large amounts of cubicle bedding

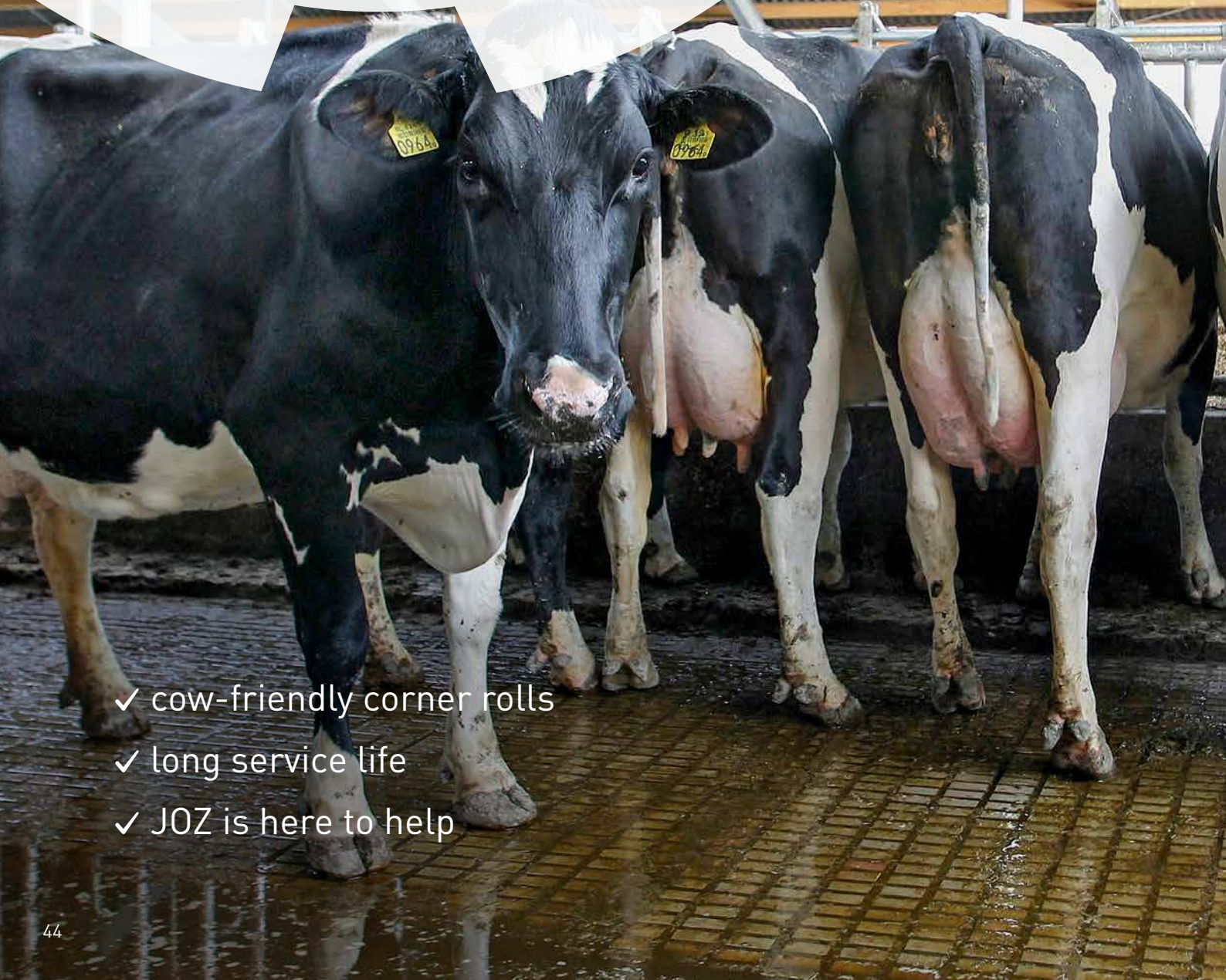
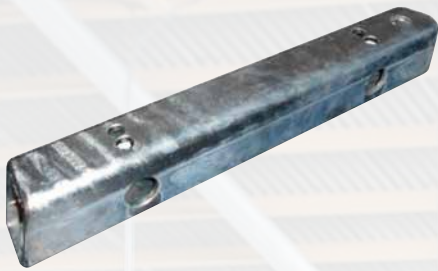
Option: pulling bar from the centre / green flag floor / meadow floor

Suitable for:

Alley width: up to 460 cm

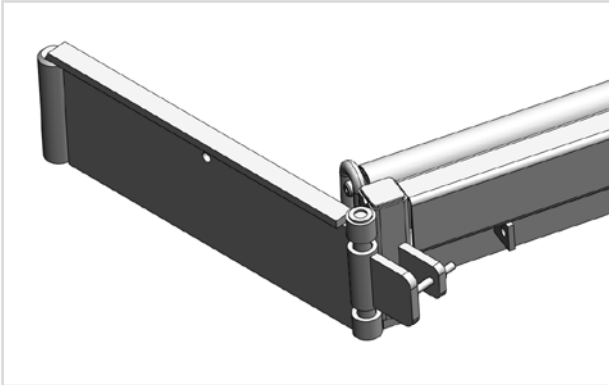
OPTIONS MANURE SCRAPERS

You might want to add a number of options to your manure scraper. These options include additional components for the manure scraper, or parts for the barn which further improve the scraper system.



- ✓ cow-friendly corner rolls
- ✓ long service life
- ✓ JOZ is here to help

Manure scraper options

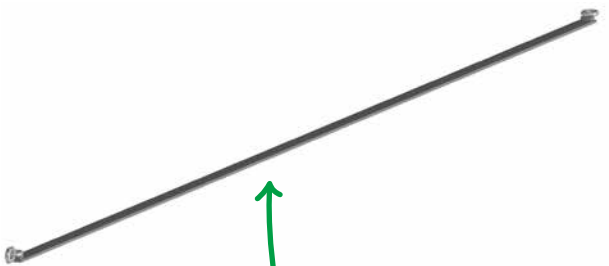


Adjustable side wing limiter

The opening of the side wing of a manure scraper can be limited by adjusting a bolt.

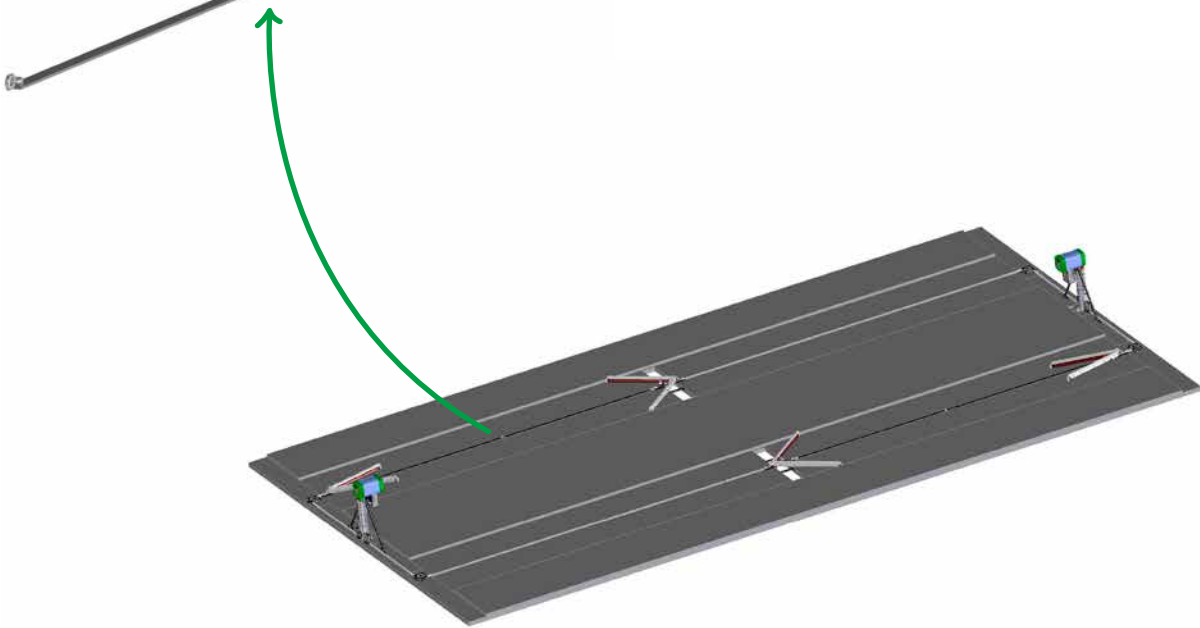
This option is available for:

- Combi scrapers for flat floors
- UNP combi scrapers, where side guides are not present everywhere
- UNP combi scrapers, where prefab cubicle decks are used



Flat steel drawbar

The drawbar can be used between two manure scrapers as a cheaper alternative to a chain. The drawbar can be attached to the pulling bars of the manure scrapers with welding links.



Manure scraper options



Sloping manure alley

Some floors slope towards the middle of the manure alley. If there is a fixed slope to the floor, a kink can be made in the frame of the scraper. If the slope varies, hinged frames should be used.

The swing capacity ensures that the manure scraper leaves the manure alley as clean as possible.



Guide irons on side wings

If the level at the crossing is the same as the manure alley and there is no guide edge, we recommended mounting a metal guide so that the scraper is correctly guided to the edge of the cubicle.

Use:

- For manure passages without a guide edge
- Solid floors with U-profile
- Slatted floors
- The manure scraper must be fitted with a side wing limiter



Bottom connection pulling bar

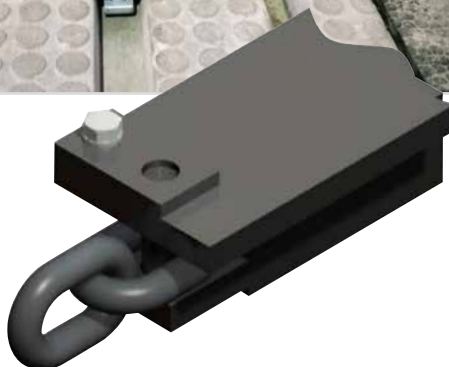
A bottom connection of the pulling bar is a very animal-friendly solution. The bottom connection can be made at the front or rear of the pulling bar. UNP guides are required.

Characteristics of bottom connection:

- Chain/cable/rope does not come out of the recess in the floor
- Shortening the chain/cable requires more effort
- The recess in the floor must be at least 30 mm deep
- Less pressure on the pulling bar!
- Corner roll / drive unit must be recessed

Application:

- Multi-scrappers, combi scrapers, and flex scrapers
- Only possible with scrapers for the same alley length
- MDV 9.1





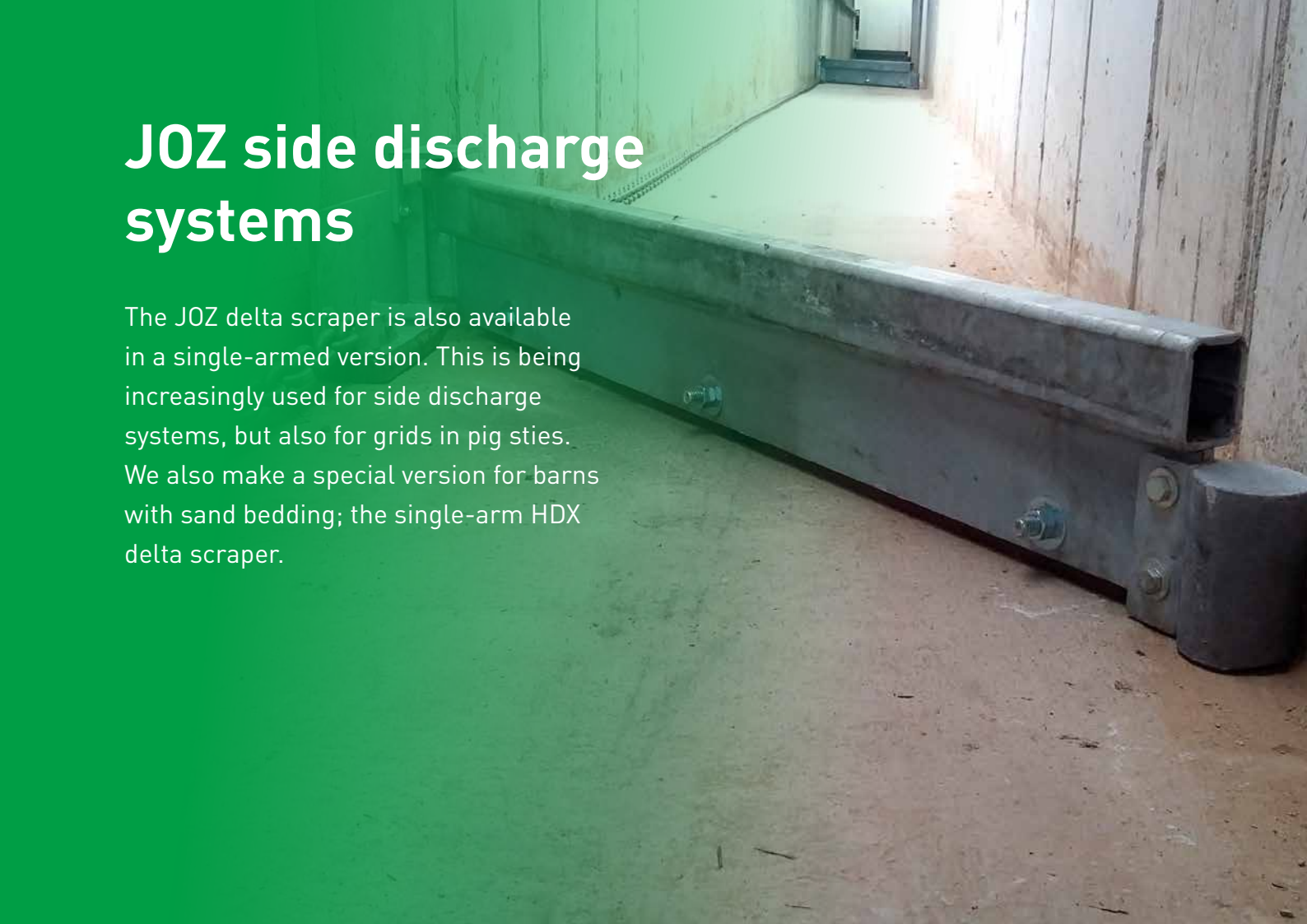
SIDE DISCHARGE SYSTEMS

In addition to its manure scrapers, JOZ has also developed scraping systems that guide manure removal further down the removal process.


- ✓ Resilient construction
- ✓ Phased deposit
- ✓ Can be used with a lot of straw and/or long straw

J0Z side discharge systems

The J0Z delta scraper is also available in a single-armed version. This is being increasingly used for side discharge systems, but also for grids in pig sties. We also make a special version for barns with sand bedding; the single-arm HDX delta scraper.



Rapid removal of the manure keeps general hygiene in the barn optimal.



Side discharge systems

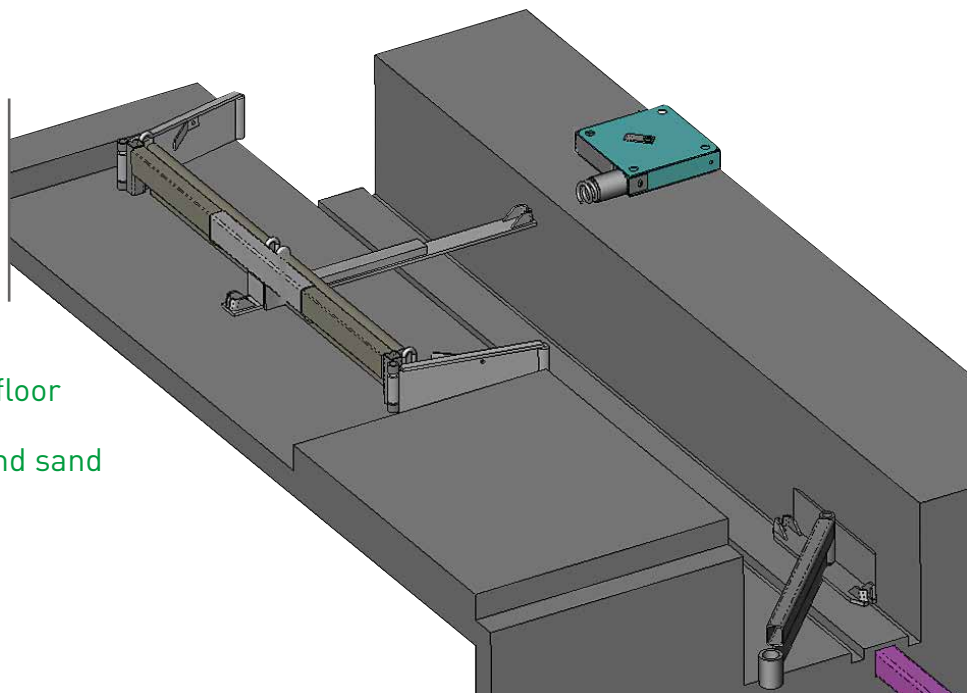
Manure can be deposited on an open deposit (pit), turning chain system or a second single-armed delta scraper. The scraping frequency depends on the frequency of supply. If a JOZ supplying system is used, optimum phased deposit can be set. If a lot of manure has to be removed in a short time, several scrapers have to be placed at the deposit point.

If sand is used as bedding in the barn, it is best to use an HDX version of the single-arm delta scraper. Several single-arm delta scrapers can be used per side discharge system. At least one single-arm delta scraper should be used every 15 metres. Instead of chain, drawbars or cable can be placed between the scrapers.

For optimal performance of the single-arm folding scraper, JOZ must be closely involved in the concrete drawings. A number of critical points that need to be taken into account are the location of the drive unit, return side of the chain, and whether the return-side chain needs to be supported. The pulling bar, drive chain and drive unit must also be placed opposite the exit side.

Advantages of a single-arm delta scraper:

- ✓ Resilient structure.
- ✓ Easy in use
- ✓ Optimal scraping result
- ✓ Standard installation parts
- ✓ Compatible with UNP and flat floor
- ✓ Can be used with long straw and sand
- ✓ Link with other MSC possible



Livestock farmers can work more smartly and more quickly. Our solutions make time-consuming and heavy work a thing of the past and make life in the barn more comfortable for livestock. Whether it concerns more efficient manure removal, smarter feeding or more comfort: JOZ has a solution for every situation.

Have a quick look www.joz.nl/en

Single-arm delta scraper



Solid concrete floor

The single-arm delta scraper is highly suitable for barns where large amounts of straw and/or long straw are used. The solid construction is easy to use, and produces perfect scraping results.

This scraper is made from high-quality materials and is very safe for cows, so it is ideal for barns with a side discharge system.

There is no distinction between a left or right version, because the scrapers are modular, making them very easy to use and user-friendly.



Suitable for:

Channel width of: 70 cm to 135 cm

Single-arm HDX delta scraper



Solid concrete floor

The single-arm HDX delta scraper can only be used for side discharge systems, installations under the floor, or gratings. This scraper is supplied as standard with a bolt-on yaw spoiler / elevation that increases the deposit capacity.

The scraper is available for a flat floor or with UNP guide. JOZ recommends always using UNP guides in barns with sand bedding.



Suitable for:

Channel width of: 70 cm to 135 cm

TURNING CHAIN SYSTEM

JOZ has been supplying its turning chain system for years, and it is still widely used today.



- ✓ A household name for over 70 years
- ✓ Simple and reliable

Simple and reliable

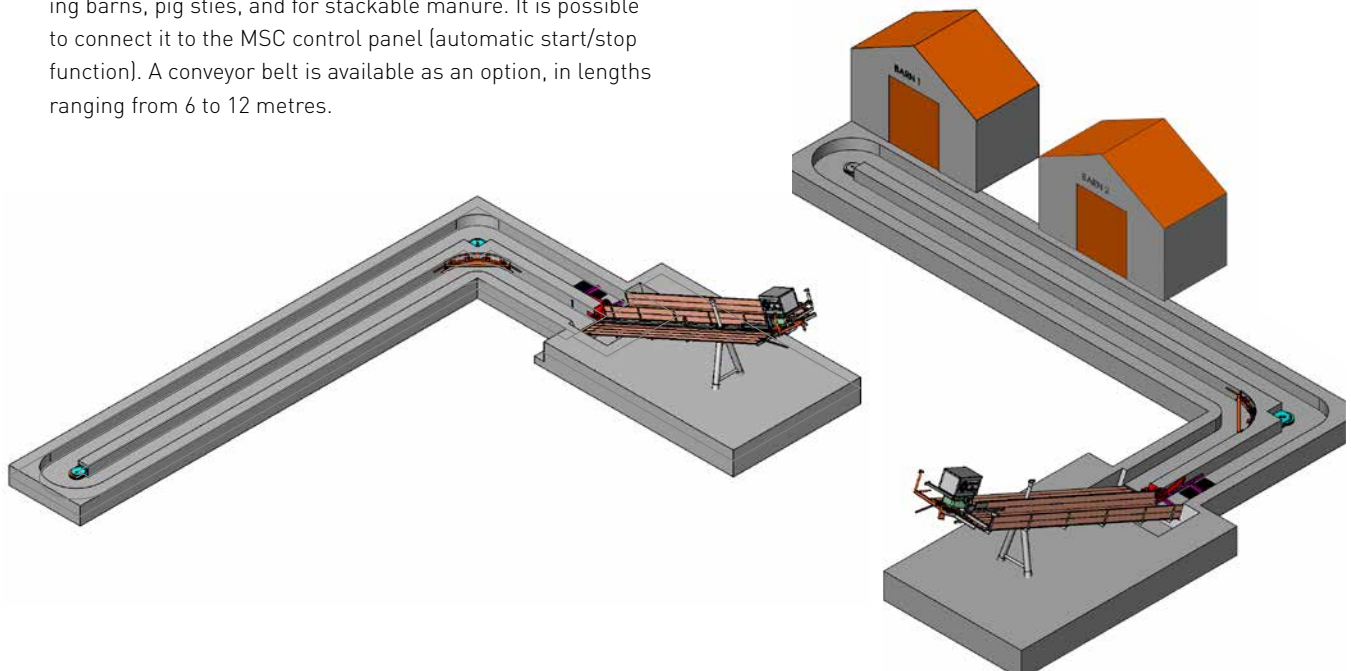
JOZ has been supplying the turning chain system for years and it is still widely used today. The fact that many of them are used to replace existing system shows that this JOZ manure removal system has proven its value. This system is still in great demand, precisely because of its simplicity and reliability.

The turning chain manure removal system is also used frequently in combination with the JOZ manure scrapers. The manure scraper moves the solid manure from the cubicles or via the sloping barn to the end of the manure alley and deposits it onto the turning chain system. This system transports the manure quickly and reliably to the manure storage.

The turning chain system is used mainly in straw barns, sloping barns, pig sties, and for stackable manure. It is possible to connect it to the MSC control panel (automatic start/stop function). A conveyor belt is available as an option, in lengths ranging from 6 to 12 metres.

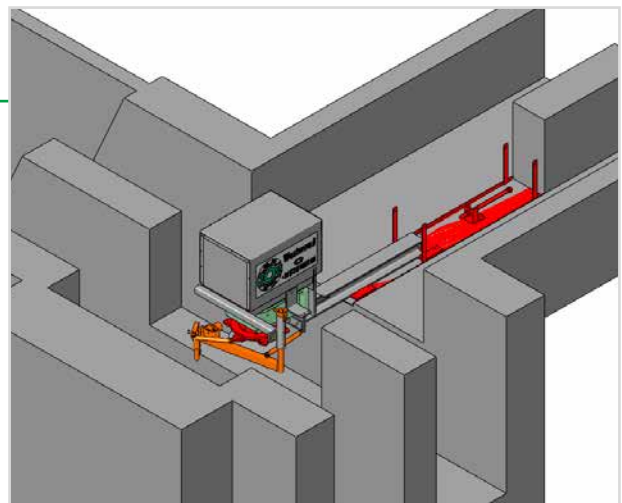
Advantages of a turning chain system:

- ✓ Resilient structure.
- ✓ Attractively priced
- ✓ Long service life thanks to high-quality materials
- ✓ Stepless traction protection



Flat floor drive

A flat floor drive is also available. If the manure has to be deposited in a pit and not on a heap, a conveyor is not recommended. In this case, the drive unit is placed on a special anchor plate which is set in concrete.



DEPOSIT SYSTEMS

There are several deposit options when removing manure from barn floors.



- ✓ Clean floor, clean cows
- ✓ Tailor-made
- ✓ JOZ is here to help

Squeaky clean

In the barn concept, JOZ considers it important that the system results in clean and dry hooves. That is the basis for good hoof health and is at the heart of all our product advice.

In slatted floors, manure is pushed through the slots by the scraper. In all solid and semi-solid floors as well as most low-emission floors, the manure scraper transports the manure to an open deposit point, guided by deposit irons. For solid and semi-solid floors we see additional options, such as diagonal steel grates and the JOZ lifting hatches.

It is important to have a deposit point at least every 60 to 80 metres. This limits the amount of manure in front of the scraper and means that the cows do not have to walk through a pool of manure. Longer barns should therefore have multiple deposit points, or one deposit point in the middle of the barn.

JOZ will gladly provide advice on this. There are lots of possibilities, but it's important to make the right decision as it can affect the success of your barn for many years!

JOZ supplies the following types of deposit points:

- Steel deposit grids
- lifting hatches
- Letterbox deposit point

Grids are made to measure and manufactured in-house

- ✓ Lifting hatches are tailor-made, and can be provided with animal-friendly rubber
- ✓ The letterbox deposit point is made in collaboration with JOZ



J0Z steel grids

The steel grids are ideal for depositing thin manure. These steel grids perform better than concrete grids as the open surface is larger. The grids are suitable for end deposit points as well as central deposit points. The maximum length is 120 cm. Deposit grids are manufactured according to customer needs. Manure that is too thick will not pass through the grids. In practice, thicker manure usually does not pass through the steel grids and the farmer has to do this manually. The deposit grids are suitable for primary manure separation.

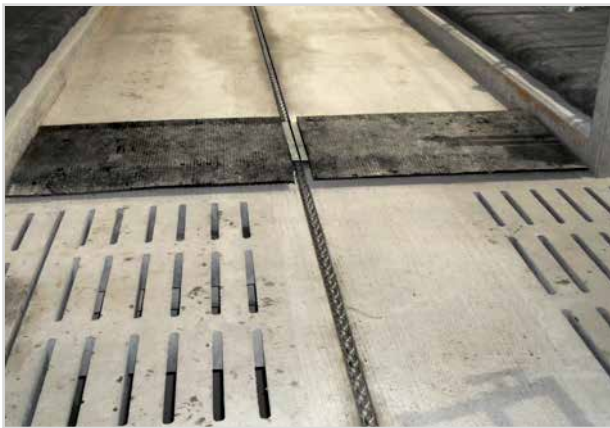


- ✓ Suitable for primary manure separation
- ✓ Available in straight and diagonal versions
- ✓ Deposit point can be walked over by animals and people, and supports vehicles

JOZ lifting hatches

The lifting hatch has been developed to shield the manure deposit point from humans, animals and traffic. The lifting hatches are automatically opened and closed by the manure scraper and controlled by the unique settings of the JOZ MSC control panel technology. This technology ensures, among other things, that the installation only increases in power when approaching the lifting hatch. This optimises cow safety in the manure alley.

Lifting hatches are manufactured according to customer needs and can be covered with animal-friendly rubber.



Characteristics:

- ✓ Walkable and drive-over deposit point
- ✓ Open deposit point, not for residual manure
- ✓ Type 650 or Type 1000 (2 lengths)
- ✓ Adjustable sensitivity
- ✓ Can be used as standard with combi scrapers
- ✓ Also suitable for low-emission floors
- ✓ Animal-friendly in combination with rubber



JOZ letterbox deposit point

An open deposit point is the only deposit point that performs reliably and under all (weather) conditions. The manure can be deposited quickly and the deposit point is at least 300 mm wide. JOZ advises an opening of 500 mm. With deep bedding, an open deposit point must be at least 450 mm wide. With open deposit points, it is important to consider the safety of animals and humans. A fence to prevent access is a prerequisite.

Safety is of paramount importance at JOZ. Therefore we offer the option of manufacturing a cover for an open deposit point, also called a 'letterbox', which is designed in cooperation with JOZ.

For low-emission floors, JOZ always advises the use of an open deposit point with a letterbox or lifting hatch, and with deposit irons. The advantages of deposit irons are that the scraper always moves above the deposit point, leaving no manure in front of the deposit point. The deposit irons are easy to install. Grids can be used for thin manure only, but this is only effective in exceptional circumstances. For example when using mattresses.



ADVANTAGES

J0Z deposit systems

- ✓ Tailor-made
- ✓ Safety of people and animals comes first
- ✓ Less residual manure
- ✓ Animal-friendly



Innovative collaboration
between the J0Z control panel
and the deposit system





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