



**ONYX**

INTER-ROW CULTIVATOR

# WHEN FARMING MEANS BUSINESS

Realising the full potential of farming is about growing and developing your business, not only your crop or livestock, but also your profit. Improve productivity and profitability by focusing on the positives and minimising disadvantageous aspects, through strong, dedicated management.

Success springs from determination and clear targets, from laying down the appropriate strategy and allocating correct investments for the future. Quality results require the right ideas and equipment. When there is work to be done, you need the optimal setup and smart solutions that support you towards an easier, more profitable way of working. You need solutions that make tough and demanding conditions less complicated.





## WEEDING

Efficient weed control is a prerequisite for healthy plant growth as the basis for yield, profit and safe food production.

In addition, the protection of the environment is of rising importance. With the Farm to Fork policy, new standards have been set. Since certain weeds have developed resistance to herbicides, alternatives to chemical weed control are needed.

# YOUR KVERNELAND

## INTELLIGENT FARMING SOLUTIONS

Choose the best farming solution for you and your land. Combine the highest possible yields with sustainability. This will start with the correct tillage. The choices you make depend on various factors and should match your specific circumstances, like soil structure, crop rotation, residue management, economic and ecological viabilities.

*The choice is yours!*

You must consider environmental and legal issues. From conventional methods to conservation tillage: the balance of operations at the right time has to be found to achieve high yields with the best soil condition (air, moisture, biological activity, etc.) with a minimum amount of energy, time and investment. For this, Kverneland offers a full range of intelligent farming solutions.

### CONVENTIONAL TILLAGE

#### Conventional Tillage

- **Intensive** method of cultivation
- Complete soil inversion e.g. by a plough
- Less than 15-30% crop residues left on soil surface
- Seedbed preparation done by an active tool or special seedbed harrow
- High phytosanitary effect by reduced pressure of weed and fungi diseases - fewer herbicides and fungicides needed
- Better dry-off and faster increase of soil temperature for better nutrients absorption

### CONSERVATION TILLAGE

#### Mulch Tillage

- **Reduced** intensity in terms of depth and frequency
- More than 30% of residues are left on soil surface
- Extended repose period of the soil
- Cultivator and/or discs incorporate the crop residues within the top 10cm of soil for stable bearing soil
- Full-width tillage - seedbed preparation and seeding in one pass
- Protection against soil erosion; reduce soil loss by run-off and improve water storage capacity.
- Improvement of soil moisture retention

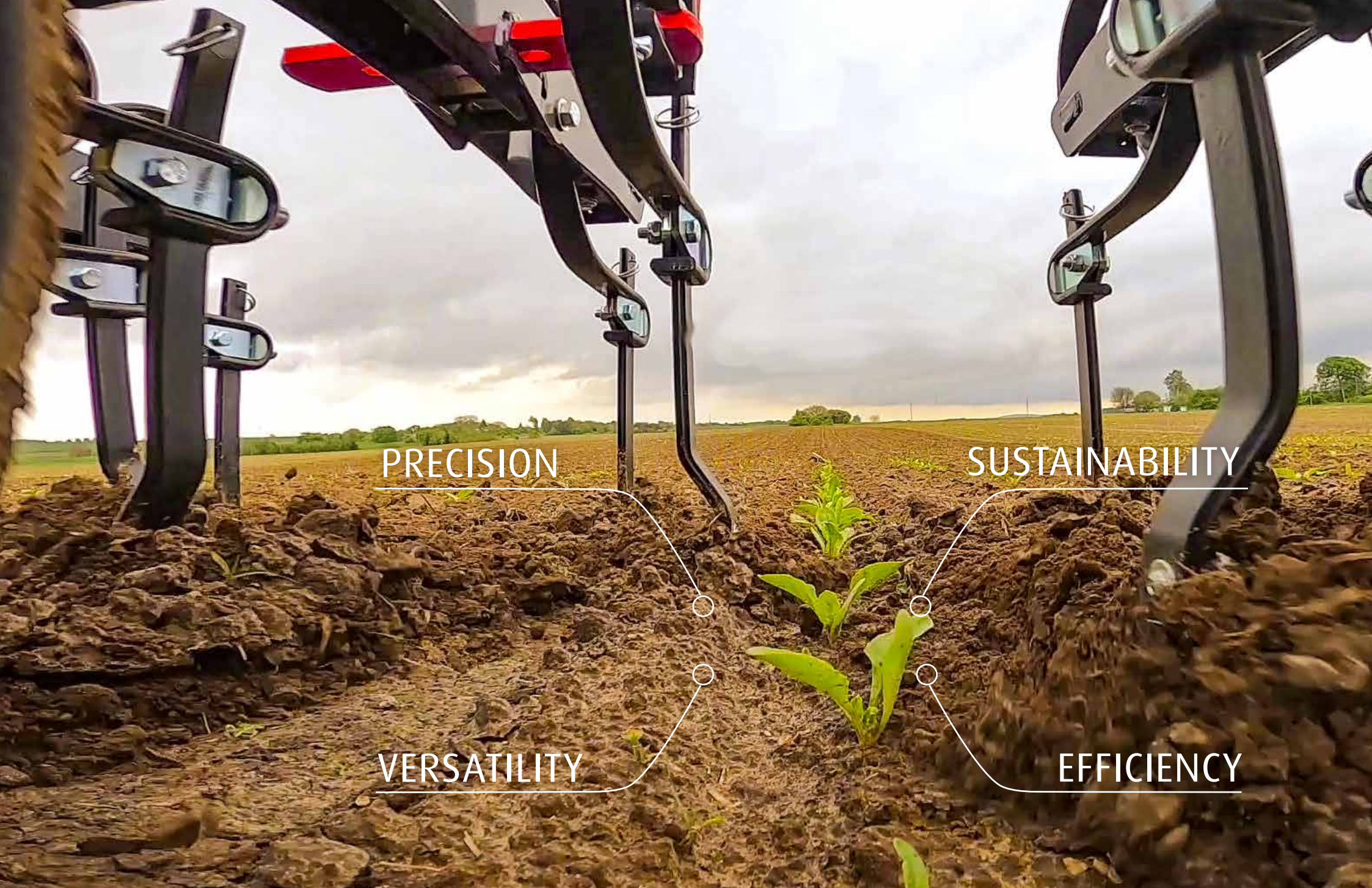
#### Strip Tillage

- **Zonal strip loosening** before or during seeding of up to 1/3 of the row width (Loibl, 2006). Up to 70% of the soil surface remains untouched
- Strip-till combines the soil drying and warming benefits of conventional tillage with the soil-protecting advantages of no-till by disturbing only the area of the soil where the seeds are placed
- Exact fertilising deposit
- Soil protection against erosion and drought

#### Vertical Tillage / No-Till

- **Extensive** method
- Working soil vertically avoids additional horizontal layers or density changes
- Increasing water infiltration, root development and nutrient take-up
- Plants' roots dictate the overall health of the plant, as they deliver nutrients and water throughout the season, contributing to a higher yield
- A strong set of roots make plants more resistant to wind and drought.
- Lower energy input required





PRECISION

SUSTAINABILITY

VERSATILITY

EFFICIENCY



## INTER-ROW CULTIVATION AT THE RIGHT TIME FLEXIBLE IN ALL ROW CROPS AND CEREALS

Certain weeds have developed resistance against herbicides, and chemicals will slow down crop development. Thus, an alternative is needed for **effective** weed control under different conditions. Mechanical weeding in row crops and cereals is an efficient tool for healthy plant growth as the basis for our customers' yield and profit, as well as for a safe food production.

The inter-row cultivator Onyx works in case of resistance and can be used in row crops and cereals. It will get as close to the plants as possible without damaging the crops by ensuring the straight line within the row. Penetration of the soil and an even depth control are challenging. Straight and accurate rows are needed with the row widths differing from crop to crop. Moreover, changing soil conditions and fields which are located on hills and slopes can be difficult and request **versability** by adjustable tools and efficient track control.

Furthermore, due to the climate changes, farmers are often faced with draught resulting in hard soil surface with limited water reserve or slaking crusts after heavy rain falls. Therefore, there is a strong need of **sustainability** to restore water and air flow and to protect the soil moisture, improving the nutrients supply of the roots. By surface capping the upper topsoil, breaking the capped surface on certain soils after rain, it restores the water and air flow, stimulating physico-chemical reactions and soil life. By creating a weatherproof layer stopping the capillary rising of water to the surface, it also increases the water reserve.

*Weeding under any conditions*

**Precision** is the key to success. For different crops and row widths, a quick adaptation is possible. Also the working width is adjustable to meet the requirements of various field and farm sizes. Individual rows can be switched on and off. An even depth and pressure control is ensured over the entire working width. Low lifting requirement reduces soil compaction. For operating in challenging conditions, the inter-row cultivator is prepared for extra control and guidance.

## WEEDING OPERATION



BEETS



CEREALS



MAIZE



SUNFLOWERS



BEANS

| Recommendation when to operate with ONYX in which crops* |              |                    |            |                      |                    |                      |                     |
|--|--------------|--------------------|------------|----------------------|--------------------|----------------------|---------------------|
| Crop   | Emergence    | 1 leaf (Cotyledon) | 2-3 leaves | 4 leaves (Tillering) | 6 leaves (Ear 1cm) | 8-9 leaves (2 knots) | Row closure Heading |
| Cereals  | Yellow       | Green              | Green      | Green                | Green              | Green                | Yellow              |
| Rape   | Red          | Yellow             | Green      | Green                | Green              | Yellow               | Red                 |
| Maize  | Red          | Yellow             | Green      | Green                | Green              | Yellow               | Red                 |
| Sunflower  | Red          | Yellow             | Green      | Green                | Green              | Green                | Yellow              |
| Soyabeans  | Red          | Yellow             | Green      | Green                | Green              | Green                | Yellow              |
| Sugar beets  | Red          | Yellow             | Green      | Green                | Green              | Green                | Yellow              |
| Optimal  | With caution | Unsuitable         |            |                      |                    |                      |                     |

\* Depending on individual circumstances



# EXTENDED SCOPE OF WEEDING APPLICATIONS OPTIONS AND BENEFITS

The inter-row cultivator, ONYX adapts to individual farming concepts and will be a good weeding partner for a wide range of applications. For successful weeding, the correct timing is of utmost importance and needs to be adapted to the soil conditions, the weed pressure and the machinery of the farm.

*For row crops and cereals.*

## For all field conditions

- ... whatever the soil's textures also in stony or mulch conditions without any blockages
- ... high precision via track control also in hilly conditions and odd-shaped fields
- ... for all field sizes with high outputs - frames from 3.00 to 12.10m

## Weeding in rows during crop development

- ... from emergence up to row closure,
- ... for different sow spacing for 12.5 to 80cm due to several tine and share configurations
- ... low lifting requirement for reduced operational costs and soil compaction

## Stimulating physico-chemical reactions and soil life

- ... supporting soil aeration and mineralisation
- ... protecting soil moisture
- ... loosening and crumbling after heavy rain falls and sun
- ... achieving an isolated subsoil to maintain water supply

# WEEDING IN THE INTER-ROW

## THE ONYX CONCEPT

The ONYX is designed to easily achieve an accurate and consistent result in field. The weeding efficiency is achieved even at high working speed, with or without guidance system depending on the row width, starting from 12.5cm for cereals. The sturdy design of the ONYX ensures a long lasting accuracy and lifetime.

*Beneficial for crop and soil*

1

### Selective weed control

The inter-row cultivator, ONYX offers a maximum in rigidity and adaptability. It is quickly prepared for larger fields by extensions. The parallelograms and working tools are rigid and rule out any wear and play. Stable and high accuracy even down to 12.5cm row width. The exclusive X-CONTROL pressure adjustment (max. 120kg) with a preloaded spring system transfers the load from the frame to the tines. A wide range of shares in Hardox and Tungsten Carbide quality as well as a full range of accessories are available to meet all sorts of conditions. The large diameter of gauge wheel avoids any bulldozing effect. Each element is working independently. Fitted with GEOCONTROL, up to 13 sections are automatically lifted by ISOBUS.

2

### Stimulating physico-chemical reactions and soil life

The shallow tillage at 2cm by the Kverneland Onyx improves aeration of the soil as a prerequisite to physicochemical reactions (humification, mineralisation of organic nitrogen). The crops will benefit from the plus of nutrients available with positive impact on the yield.

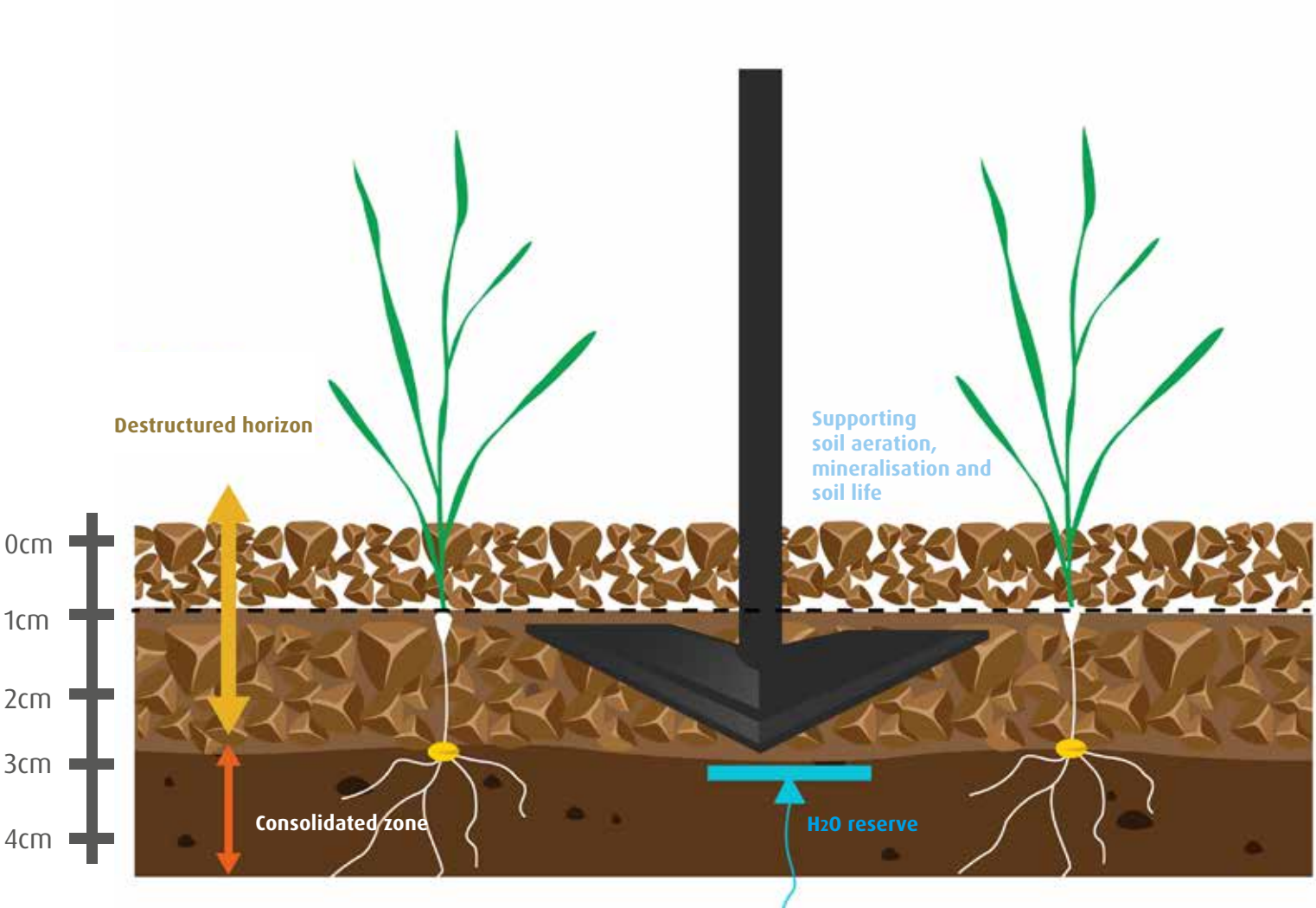
By disrupting the topsoil's upper layer, the harrow restores the fluids, water, air, vertical flows and stimulates physico-chemical reactions, mineralisation and soil life.

3

### Protecting soil moisture

By the flat-bed weeding, the Kverneland Onyx creates an isolating layer to stop the capillary rising of water to the surface, protecting the soil moisture within the seed layer.

“One pass of weeding is like two times watering,” says a proverb. With view to the climate change, this is of major importance in dry areas and a general benefit for the crop's start and growth.



- ONYX - in one pass**
- Destroys or pulls up the weed germination.
  - Breaks up the soil capped surface.
  - Destructures and aerates the top horizon.
  - Achieving an isolated subsoil to maintain the water supply of the seedbed.

# KVERNELAND ONYX

## EFFICIENT AND OPTIMIZED PERFORMANCE

The inter-row cultivator, ONYX with the Double-H shaped frame has been designed to offer a maximum in rigidity and adaptability. Ready to be upgraded by extensions, the frame is quickly prepared for larger fields and farms.

*Precise and strong performance*

### Double-H frame

The Double-H shaped beam offers a maximal sturdiness and allows a firm fixation of the weeding elements. In addition, it increases the penetration force by transferring the load to the tines and shares. Its sturdy concept provides safe transport on roads. The ONYX is equipped with the standard version of Cat. II linkage. The spacing between the elements can be simple changed due to the universal frame system (UF System). Hydraulic and electrical interfaces are simple to connect with the push pull system and are easily accessible.

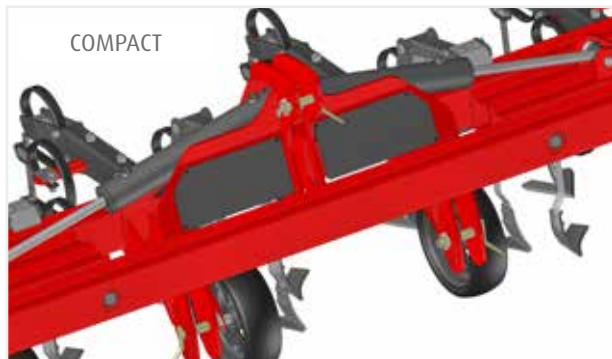
### Three models

There are different ONYX models available, mounted and foldable: standard, compact and integrated according to their type of linkages.

Each frame can be upgraded with frame extensions with different tube lengths of twice 120, 800 or 1450mm to obtain a width on the compact folding version of up to 7.70m and the wide folding version of up to 12.10m.

| Onyx model                    | Onyx 2000                            | Onyx 3000                   | Onyx 4000                 |
|-------------------------------|--------------------------------------|-----------------------------|---------------------------|
| Frame mounted                 | rigid and fold                       | rigid and fold              | fold                      |
| Linkage                       | standard CAT. II                     | compact CAT. II             | integrated                |
| Guidance Interface connection | without or with - removable          | only with - removable       | only with - not removable |
| Guidance interface            | Kverneland Lynx 2000 & 3000 or other | Kverneland Lynx 2000 & 3000 | Kverneland Lynx 3000      |







## HIGH QUALITY WITH LONG LASTING COMPONENTS

Accuracy, as a chain, does not suffer a weak link. From the hitch to the tine, every component of the machine features decisive innovation (modular tine-holders, tapered pins, hydraulic transport locks, etc.) for a proven and lasting effect. Thus, the Onyx inter-row cultivator maintains its best performances, even under more demanding conditions as with precision farming systems.

*Sturdy and stable.*

### X-CONTROL parallelogram

The parallelograms are equipped with conical pins and hardened polymer bushings which do not float and rule out any wear and play. This provides excellent stability and high accuracy from 12.5cm up to 80cm row width. The constant depth control over the entire working width ensures best results in row crops and cereals. A hydraulic or mechanical parallelogram version is available. They are adjustable in both depth and pressure. Both versions are equipped with a preloaded double springs system, the exclusive X-CONTROL. This pre-loaded, spring-based system provides an individual load transfer from the frame to the tines of max. 120kg and eliminates any play or bouncing of the element. This gives the tines extra stability. The working depth stays absolutely constant, which is essential for the effectiveness of flatbed weeding at shallow depths without mixing the horizons.



## 2 PARALLELOGRAMS

2 parallelogram versions: hydraulic or mechanical. Both with preloaded spring system (X-CONTROL) for optimal depth control by transferring the load from the frame to the tines.

## 3 SLIDERS

Max. 4 sliders per parallelogram with 3 different lengths (250, 350 and 420mm) can be attached to one weeding element

## 2 DEPTH WHEELS

2 versions of depth guidance wheels are available 355x120mm as standard and 355x75mm for narrow row spacing (cereals)



## 3 HOLDERS

Each weeding segment is attached with two bolts. Up to three holders can be bolted: short (1 central tine) medium (1 central tine + 2 laterals) long (1 central tine + 4 laterals)

## 2 TINES

2 type of tines: "A" straight which is adjustable and for shallow tillage or a semi-curved "SC" vibrating tine for deeper and more intensive tillage.

## 4 SHARES

4 share types in several widths: "A" for flatbed weeding, Lateral "L" as close to the row. "DF" Duck-foot or "HDF" half duck-foot. The aim is to scalp the weeds, protect the plants and preserve moisture.



## VERSATILE ADJUSTABLE TO INDIVIDUAL REQUIREMENTS

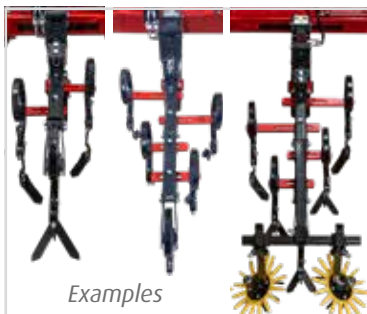
The right weeding machine for your row crops needs to be adaptable to a number of inter-row elements and additional tools to suit your with your individual field and soil conditions.

The X-CONTROL parallelograms can be fixed without restriction across the entire width of the frame so that row spacing can be adapted to any crop type, e.g. for cereals from 12.5cm. With the universal frame system (UF System) all connections can be easily changed thanks to its leak-free push-pull systems and ISOBUS connections which are available in specific spacings over the entire frame. The UF System enables a quick adaptation from one crop to another.

*Prepared for all conditions*

The depth guidance wheels ensure a good ground following in all conditions at a constant working depth in front of each weeding element without a bulldozing effect. According to row width, two versions (narrow or wide with low pressure) are available to avoid over rolling and damaging the crop. These guidance wheels are for setting the working depth and must be adjusted via a screw. A scale from 0-10 helps to be as precise as possible.

Precise weed control with flexible adaptation of the inter-row are ensured by the tine holder and slider system. Up to 3 holders and up to 5 tines per inter-row weeding element manage the full cut between the plant rows of 12.5 to 80cm spacing.



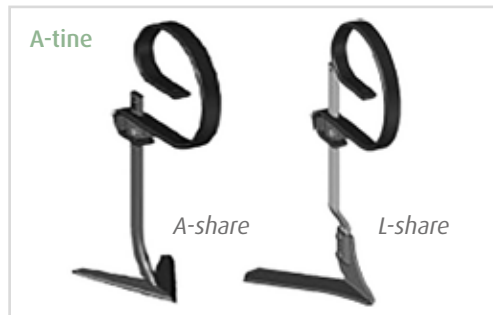
## VERSATILE FOR PERFECT WEEDING TO MEET ALL KIND OF CONDITIONS

The Kverneland Onyx can be equipped with different tines and shares to meet all requirements and conditions. The aim is to protect the plant while suffocate and scalping the weeds as close to the crops as possible, maintaining soil moisture by shallow tillage and moving the soil as less as necessary.

The height adjustable straight **A-tine** without vibration effect with either A-shaped flatbed weeding or L-shape lateral adjustable shares ensure shallow tillage with precise scalping of the weed and can be used in all crops. The L-shares which are available in left and right version limits soil projections on young crops and are mounted on tines positioned close to the seeding row. Several share widths and assembly options are available for row widths from 12.5 to 80cm.

Alternatively a semi-curved **SC-tine** with duck foot share (DF-share) or half duck foot share (HDF-share) allow deeper and more intensive soil tillage due to a higher vibrating effect.

Optionally a **ridger share** positioned on the tine which is the closest to the sowing row of the crop and guides the soil flow directly to the sowing line. It is particularly suitable for developed higher crop vegetation to avoid suffocation of crop but not of the weed in the line.





WORKING DEPTH



## USER COMFORT IS KEY

### EASY ADJUSTMENT

Kverneland always focuses on safe operation and user comfort. With all the adjustments being done without the need of special tools, a lot of precious time is saved!

Adjusting the ONYX is easily done with only one spanner (22mm). A wide range of configuration possibilities are available to meet all kind of requirements and conditions and to achieve best results.

1. With the hydraulic linkage of the tractor the implement is adjusted horizontally aligned with the complete frame.
2. The working depth is set-up by the gauge wheels of each element. The pressure adjustment at the parallelogram is regulated via a pre-loaded spring which transfers the weight to the tines and shares. Scales indicates the exact adjustment.
3. For the precise row width each tine can be adjusted to the side with sliding elements.
4. Finally, each additional accessory e.g. finger weeder, side plates, finger harrow, discs etc. or the feeler and camera must be fine-tuned to the field conditions and growth level.

*Easy set-up and adjustment.*

The spring protection of the weeding element supports the penetration and ensures a constant working depth.



## MORE STABILITY SIMPLE AND PRECISE



### **Pneumatic gauge wheel**

Either two or four additional gauge wheels positioned in front of the middle frame bar or/and at the outer extensions ensure an optimal following of the ground contour, give more stability and a constant depth control especially with larger working widths.

Depth setting is done mechanically via a clamp lockable crank on all wheels. A scale indicates the depth for precise adjustment.



### **Parking legs**

Original parking legs are delivered as standard for storage of the machine. The parking legs allow an easy and safe coupling and uncoupling to the tractor.

## SAFE ON THE ROAD

### EASY TO CONVERT



Easy conversion from working to transport position with the mounted three-part hydraulic folding frame.

A transport folding lock is fitted as standard for total safety on the road. The locking device reduces the risk of accidental opening during transport and eliminates wear or tear.

An additional road light kit ensures good visibility and safe transport on the roads.

## SIDESHIFT



The **Terminal** has a bright 9-inch touchscreen with high contrast and is waterproof and can work with one or two cameras and a feeler. The terminal is used to set the row template, crop, row spacing and crop colour. The Lynx can also be operated manually via the terminal.



| Model                   | Lynx 2000                   | Lynx 3000    |
|-------------------------|-----------------------------|--------------|
| Linkage Lynx            | Cat. II                     | Cat. II      |
| Linkage Onyx            | Cat. II                     | Cat. III/II  |
| Linkage- Lifting (kg)   | 1600                        | 2800         |
| Weight (kg)             | 550                         | 965 to 1020  |
| Track width (m)         | 1.50 to 2.30                | 1.50 to 2.00 |
| Lateral range (mm)      | 500 (2x250)                 | 500 (2x250)  |
| Anchor wheel (mm)       | 480x150                     | 550x180      |
| Height adjustment (m)   | 0.60 to 0.68                | -            |
| Oil requirement (l/min) | 18                          | 18           |
| Camera                  | 1 x standard / 2nd optional |              |
| Feelers kit             | option                      | option       |
| LED working light       | option                      | option       |



## LYNX 2000 & LYNX 3000

### PRECISION SELF-STEERING

The Kverneland Lynx guidance interface side shift with camera control ensure flexibility, easy operation and absolute accuracy in the row. Thanks to the large movement range of up to 25cm on either side and the virtual re-alignment of guidance interface (VH-Control) in hilly conditions or curved sowing lines ensuring efficient and precise weeding. The LYNX guidance interface features a top-of-the-technology colour scanner camera allowing mechanical weeding also in higher vegetation. Here special row sensors/feelers support the steering of the Lynx.

Depending on the individual requirements needs, the independent guidance interface allows operating different attached row elements, according to the crops to be weeded. The investment made in the self-guidance system is highly valuable, as it is dedicated to various inter-row cultivators and row systems.

One **camera** is standard and a second optional. The camera features Tillet & Hague technology, has a 6mm waterproof lens, HD-vision and enables 30 frames per second. It managed high-crop operation, recognises shadow effects and strong light intensity. This prevents damage to crops during weeding. A second camera compensates for signal losses at headlands, gelled plots and places where the crop has not emerged. This achieves an even more accurate hoeing image.

Equipped with the largest **anchor wheel** on the market. The Lynx keeps the weeding equipment on track even in challenging hilly conditions, without bulldozing effect. Standard scrapers keep the anchor wheels clean.

Kverneland is offering two models: Lynx 2000 and Lynx 3000 suitable for various tractors. There is also the option of a fully integrated version with Lynx 3000 and Onyx 4000 F.







*iM FARMING - smart,  
efficient, easy farming*

## GEOCONTROL COST SAVING WITH PAYBACK

Weeding with GPS-GEOCONTROL function in combination with an ISOBUS compatible implement ONYX is a major step towards precision farming and cost savings. Each weeding element with hydraulic control is automatically lifted or unlifted due to the Automatic Lifting System in exactly the right place. The one-to-one hydraulic adjustment of the parallelograms is steered from the terminal weeding element by weeding element via GPS shut-off. Manual operation is also possible but often not as precise as with GPS-GEOCONTROL. Aim is the total preservation of the growing plants especially handy in triangular fields, on curved or odd-shaped headlands. You can also continue weeding at night since the GPS-GEOCONTROL switch on/off is completely reliable.

The machines equipped with ISOBUS technology with the help of the IsoMatch Tellus PRO terminal are fully configurable and automated, does not require the driver's attention when operating, and relieves them from stress of damaging plants. In addition, it allows to automatically dodge some pre-defined areas providing a true precision operation, even with poor visibility or high vegetation.

**Result:** In every situation, 100% of the plot is being hoed, 100% of the growing crop is being preserved.



### Be a PRO in increasing productivity

The **IsoMatch Tellus PRO** 12-inch terminal provides you with the optimal solution for an all-in-one control system inside the tractor cab. It is the centre for connecting all ISOBUS machines, running precision farming applications and Farm Management Systems. It offers everything you need to get the maximum out of your machines and crop, as well as cost savings in fertiliser, chemicals and seeds by using automatic section control and variable rate control. With the unique dual screen functionality it gives you the opportunity to view and manage two machines and/or processes simultaneously.

*Improve your performance  
Maximum efficiency, minimum waste*

### Easy control management

The **IsoMatch Tellus GO+** is a cost-efficient 7-inch terminal, especially developed for managing the machine in a simple way. Easily set up the machine with the soft keys and simply use the hard keys and rotary switch for optimal control while driving.



## ACCESSORIES



### Side discs

The side discs are placed at the tine and running close to the sowing row. Young plant are protected from soil covering.

The discs roll over stones, clods and residues and are compatible with «SC-tine» («duckfoot» share)



### Side plates

The side plates are placed at the tine which has the closest position to the sowing line and protect young crops from soil suffocation and stones moved by the scalping shares.

The front angle lifts the leaves, in order to be as closed as possible to the plant. Compatible with straight A-tine (A share) and semi-curved SC-tine.



### Finger weeder

The finger weeder are working directly at the sowing row and can be placed directly on the frame or attached to the tine holder.

Placed on the frame it works independently of the tine holder and ensures good ground following. Attached to the tine holder it lifts automatically at the same time as the tine which is especially an advantage with GPS-GEOCONTROL function.

Three diameters are available:

- 370mm (row spacings > 50cm)
- 290mm (45 and 50cm row spacings)
- 250mm (mainly for vegetables)

| Recommendation when to use which accessories | Flat      | Vibrating | Lateral   | Ridger share | Side discs | Side plates | Finger weeders | Finger harrow | Ridger discs | Swivel or Straight opener discs |
|--|-----------|-----------|-----------|--------------|------------|-------------|----------------|---------------|--------------|---------------------------------|
|  | "A" share | "SC" tine | "L" share |              |            |             |                |               |              |                                 |
| Soft soil                                    | ✓         | ✓         | ✓         | ✓            | ✓          | ✓           | ✓              | ✓             | ✓            | ✓                               |
| Hard soil                                    | -         | ✓         | -         | ✓            | ✓          | ✓           | -              | ✓             | ✓            | ✓                               |
| Stony soil                                   | →         | ✓         | →         | ✓            | ✓          | ✓           | -              | ✓             | ✓            | -                               |
| Young crop                                   | ✓         | ✓         | ✓         | -            | ✓          | ✓           | -              | -             | -            | ✓                               |
| Developed crop                               | ✓         | ✓         | ✓         | ✓            | ✓          | ✓           | ✓              | →             | ✓            | →                               |
| Precision weeding                            | ✓         | -         | ✓         | -            | ✓          | ✓           | ✓              | ✓             | -            | ✓                               |
| Shallow tillage 3-4cm                        | ✓         | →         | ✓         | ✓            | ✓          | ✓           | ✓              | ✓             | ✓            | ✓                               |
| Stubble tillage 4-6cm                        | -         | ✓         | -         | ✓            | ✓          | ✓           | →              | →             | ✓            | ✓                               |
| Soil scalping                                | ✓         | →         | ✓         | -            | ✓          | ✓           | ✓              | ✓             | -            | ✓                               |
| Hilling on the row                           | →         | ✓         | -         | ✓            | -          | -           | -              | -             | ✓            | -                               |
| Row weeding                                  | -         | -         | -         | -            | -          | -           | ✓              | ✓             | -            | -                               |
| Low working speed 5-10km/h                   | ✓         | ✓         | ✓         | ✓            | ✓          | ✓           | ✓              | ✓             | ✓            | ✓                               |
| High working speed 10-15km/h                 | -         | -         | -         | ✓            | -          | -           | ✓              | ✓             | ✓            | →                               |

✓ Optimal      → with caution      - Not suitable



### Finger harrow

The finger harrow (410 x 7mm) is mounted behind each inter-row element. It is available in different configurations with 3, 4, 5, 7 or 9 tines. Each tine is spring protected by coil. The harrows are placed and bolted on the last tine holder and work inter-row but also on the sowing line.

The harrow uproots young weeds and puts the scalped weeds on the surface and supports for a better drying. Roots can not regrowth again. The aggressiveness is adjustable by angle and pressure. Several positions are possible. If necessary it can be lifted completely.



### Ridger disc

The ridger discs are mounted at the rear of the parallelogram and guided the soil flow to the sowing line.

The discs are particularly suitable for developed crops. Aim is to suffocate the weed but not the crop which are growing in the sowing row and are in direct competition of sun, water and nutrients. The crop plants should not get any negative impact.



### Adjustable swivel or straight opener discs

The adjustable swivel discs (see picture) or straight opener discs are placed on the parallelogram in front of the shares to cut residues and also the soil before the tine to avoid roots disturbance by the tine pass, especially of the young crop.

Both versions can be mounted pairwise to the inter-row element. It can be used for early weeding (e.g. quinoa, sugarbeet etc.)

## **PUMPKINS SOWN WITH GESEED LEVEL 2** EFFECTIVE WEEDING ACROSS AND IN SOWING DIRECTION



## RESULTS IN FIELD WITH ONYX BEFORE, DURING AND AFTER WEEDING PASS



# ORIGINAL PARTS & SERVICE

## LET'S FOCUS ON YOUR BUSINESS

ORIGINAL  
PARTS

- 
- ① LONG LASTING, HIGH QUALITY SPARE PARTS
  - ② OVER 100 YEARS OF PARTS KNOWLEDGE
  - ③ SUPPORT FROM A WIDE NETWORK OF DEALERS
  - ④ 24/7 SPARE PARTS SERVICE
  - ⑤ HIGHLY SKILLED DEALER TECHNICIANS



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# TECHNICAL DATA

| ONYX  |   |             |             |             |  |             |             |             |   |             |                     |   |               |                     |
|---|---|-------------|-------------|-------------|--|-------------|-------------|-------------|---|-------------|---------------------|---|---------------|---------------------|
| Model   | Onyx 2023   | Onyx 2048 F | Onyx 2064 F | Onyx 2077 F | Onyx 3030  | Onyx 3048 F | Onyx 3064 F | Onyx 3077 F | Onyx 4081 F   | Onyx 4092 F | Onyx 40121 F        | Onyx 4081 FXL   | Onyx 4092 FXL | Onyx 40121 FXL      |
| Mounted frame                                       | rigid   | fold        | fold        | fold        | rigid  | fold        | fold        | fold        | fold  | fold        | fold                | fold  | fold          | fold                |
| Basic frame (m)                                     | 2.84  | 4.80        | 4.80        | 4.80        | 2.84   | 4.80        | 4.80        | 4.80        | 8.10  | 8.10        | 8.10                | 8.10  | 8.10          | 8.10                |
| Extensions (m)                                      | 2 x 0.12  | -           | 2 x 0.8     | 2 x 1.45    | 2 x 0.12   | -           | 2 x 0.8     | 2 x 1.45    | -   | 2 x 0.55    | 2 x 0.55 & 2 x 1.45 | -   | 2 x 0.55      | 2 x 0.55 & 2 x 1.45 |
| Frame width (m)                                     | 2.84 or 3.08  | 4.80        | 6.40        | 7.70        | 2.84 or 3.08   | 4.80        | 6.40        | 7.70        | 8.10  | 9.20        | 12.10               | 8.10  | 9.20          | 12.10               |
| Transport width (m)***                              | 3.08  | 2.84        | 2.84        | 2.84        | 3.08   | 2.84        | 2.84        | 2.84        | 3.47  | 3.47        | 3.47                | 4.60*   | 4.60*         | 4.60*               |
| Linkage   | Standard CAT. II  |             |             |             | Compact CAT. II  |             |             |             | Integrated Lynx 3000  |             |                     | Integrated Lynx 3000  |               |                     |
| Gauge wheels 18.5x8.50-8 (no)                       | ● (2)   |             |             |             | ○ (2)  |             |             |             | ● (2) / ○ (2)   |             |                     | ● (2) / ○ (2)   |               |                     |
| Row spacings available (cm)                         | 45 - 50 - 60 - 70 - 75 - 76.2 - 80  |             |             |             | 12.5 - 15 - 16.6 - 20 - 25 - 30 - 37.5 - 40 - 45 - 50 - 60 - 70 - 75 - 76.2 - 80 |             |             |             | 12.5 - 15 - 16.6 - 20 - 25 - 30 - 40 - 45 - 50 - 60 - 70 - 75 - 76.2 - 80 |             |                     | 12.5 - 15 - 16.6 - 20 - 25 - 30 - 40 - 45 - 50 - 60 - 70 - 75 - 76.2 - 80 |               |                     |
| Parallelograms                                      | ● mechanical  |             |             |             | ● mechanical / ○ hydraulic   |             |             |             | ● hydraulic   |             |                     | ● mechanical / ○ hydraulic  |               |                     |
| Finger Harrow                                       | ○   | ○           | ○           | ○           | ○  | ○           | ○           | ○           | ○   | ○           | ○                   | ○   | ○             | ○                   |
| Finger Harrow (410 x 7mm)                           | with 3 - 4 - 5 - 7 or 9 tines; multi-position system to adjust aggressiveness |             |             |             |  |             |             |             |   |             |                     |   |               |                     |
| Finger weeder                                       | ○   | ○           | ○           | ○           | ○  | ○           | ○           | ○           | ○   | ○           | ○                   | ○   | ○             | ○                   |
| Finger weeder (mm)                                  | 250 - 290 - 370   |             |             |             |  |             |             |             |   |             |                     |   |               |                     |
| Side discs  | ○   | ○           | ○           | ○           | ○  | ○           | ○           | ○           | ○   | ○           | ○                   | ○   | ○             | ○                   |
| Adjustable swivel discs / Straight opening discs    | ○   | ○           | ○           | ○           | ○  | ○           | ○           | ○           | ○   | ○           | ○                   | ○   | ○             | ○                   |
| Ridger disc   | ○   | ○           | ○           | ○           | ○  | ○           | ○           | ○           | ○   | ○           | ○                   | ○   | ○             | ○                   |
| Side plates   | ○   | ○           | ○           | ○           | ○  | ○           | ○           | ○           | ○   | ○           | ○                   | ○   | ○             | ○                   |
| Ridger share  | ○   | ○           | ○           | ○           | ○  | ○           | ○           | ○           | ○   | ○           | ○                   | ○   | ○             | ○                   |
| Tines and share type                                | A-tine with A-share and/or L-share OR SC-tine with DF and HDF share**         |             |             |             |  |             |             |             |   |             |                     |   |               |                     |
| Pilot control kit (man. steering)                   | ○   | ○           | ○           | ○           | -  | -           | -           | -           | -   | -           | -                   | -   | -             | -                   |
| Weight for 50cm row spacing with finger harrow (kg) | 763   | 1230        | 1565        | 1720        | 700  | 1080        | 1425        | 1575        | 2095  | 2430        | 3405                | 2150  | 2430          | 3405                |
| Heaviest model without accessories (kg)             | 750   | 1150        | 1450        | 1585        | 780  | 1210        | 1520        | 1800        | 2230  | 2620        | 3250                | 2290  | 2620          | 3310                |
| Min. HP requirement                                 | 60  | 100         | 110         | 120         | 60   | 100         | 110         | 120         | 130   | 140         | 150                 | 130   | 140           | 150                 |

● Standard ○ Option - Not available

\* With mechanical parallelogram in work position

\*\* A-tine = adjustable straight tine; SC-tine = semi-curved vibrating tine; A-share= flat weeding share; L-share = lateral L-shape share; DF=duck foot share; HDF = half duck foot share left or right version

\*\*\* Transport width can be different due to configuration options, please ask your local dealer

| Inter-row (cm) | Adjustable „A-tine“   |                       |                            |  | Semi-curved „SC-tine“ |                 |                            |  |
|----------------|-----------------------|-----------------------|----------------------------|--|-----------------------|-----------------|----------------------------|--|
|                | A-shares (mm)         | L-shares (mm)         | No. of tines per inter-row | Type of shares per tine per inter-row (mm) (Standard shares) | DF-shares (mm)        | HDF-shares (mm) | No. of tines per inter-row | Type of shares per tine per inter-row (mm) (Standard shares) |
| 12             | ● 60 (C)              | -                     | 1                          | 1 × A60  | -                     | -               | -                          | -  |
| 15             | ● 80 (C)              | -                     | 1                          | 1 × A80  | -                     | -               | -                          | -  |
| 16.6           | ● 80 (C)              | -                     | 1                          | 1 × A80  | -                     | -               | -                          | -  |
| 20             | ● 160 (S) / ○ 160 (C) | -                     | 1                          | 1 × A160   | -                     | -               | -                          | -  |
| 25             | ● 160 (S) / ○ 160 (C) | -                     | 1                          | 1 × A160   | -                     | -               | -                          | -  |
| 30             | ● 200 (S) / ○ 200 (C) | -                     | 1                          | 1 × A200   | -                     | -               | -                          | -  |
| 37.5           | ● 160 (S) / ○ 160 (C) | ● 120 (S) / ○ 160 (S) | 3                          | 1 × L120 + 1 × A160 + 1 × L120                               | -                     | -               | -                          | -  |
| 40             | ● 160 (S) / ○ 160 (C) | ● 120 (S) / ○ 160 (S) | 3                          | 1 × L120 + 1 × A160 + 1 × L120                               | -                     | -               | -                          | -  |
| 45             | ● 160 (S) / ○ 160 (C) | ● 120 (S) / ○ 160 (S) | 3                          | 1 × L120 + 1 × A160 + 1 × L120                               | ● 150 (S)             | ● 130 (S)       | 3                          | 1 × HDF + 1 × DF150 + 1 × HDF                                |
| 50             | ● 200 (S) / ○ 200 (C) | ● 120 (S) / ○ 160 (S) | 3                          | 1 × L120 + 1 × A200 + 1 × L120                               | ● 200 (S)             | ● 130 (S)       | 3                          | 1 × HDF + 1 × DF200 + 1 × HDF                                |
| 60             | ● 160 (S) / ○ 160 (C) | ● 120 (S) / ○ 160 (S) | 5                          | 1 × L120 + 1 × A160 + 1 × L120                               | ● 150 (S)             | ● 130 (S)       | 5                          | 1 × HDF + 3 × DF150 + 1 × HDF                                |
| 75             | ● 160 (S) / ○ 160 (C) | ● 120 (S) / ○ 160 (S) | 5                          | 1 × L120 + 1 × A160 + 1 × L120                               | ● 150 (S)             | ● 130 (S)       | 5                          | 1 × HDF + 3 × DF150 + 1 × HDF                                |
| 76.2           | ● 160 (S) / ○ 160 (C) | ● 120 (S) / ○ 160 (S) | 5                          | 1 × L120 + 1 × A160 + 1 × L120                               | ● 150 (S)             | ● 130 (S)       | 5                          | 1 × HDF + 3 × DF150 + 1 × HDF                                |
| 80             | ● 200 (S) / ○ 200 (C) | ● 120 (S) / ○ 160 (S) | 5                          | 1 × L120 + 1 × A200 + 1 × L120                               | ● 200 (S)             | ● 130 (S)       | 5                          | 1 × HDF + 3 × DF200 + 1 × HDF                                |

Shares: A-share = flat share A-shaped; L-share = lateral L-spaped share; DF=duck foot share; HDF = half duck foot share left or right version  
 Material: C = Carbide; S = Standard

● Standard ○ Option - Not available

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