CATALOGUE

KnotterTechnology

for Square Balers

rasspe®

GROUP SCHUMACHER

RASSPE® | Knotter solutions

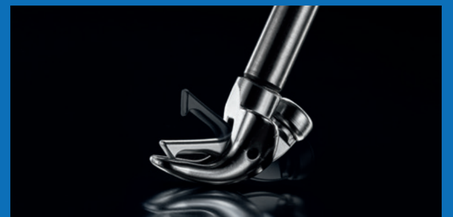
The **rasspe®** brand has a long-standing tradition in manufacturing twine knotters and tying systems for square balers. Single and double knotters and entire knotter shaft assemblies from **rasspe®** are for tying hay, straw and silage bales in the fields around the world. They bring maximum reliability and functionality to balers of all capacity levels.

Furthermore, the **rasspe®** portfolio also comprises innovative products for high-density balers – the Compact knotter, Loop double knotter – and the ATSK technology for small square balers.

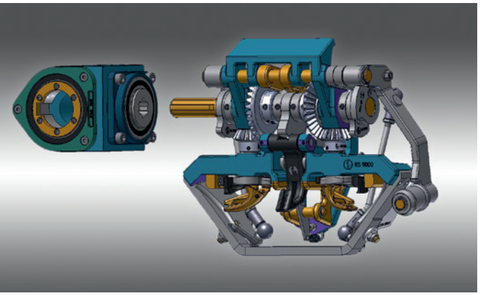
The tying expert

rasspe® is the specialist manufacturer of knotters and entire tying systems including twine brakes and needles.

Renowned harvester brands around the world rely on the **rasspe®** knotters, because they appreciate the superior reliability and durability of these products.



CONTENTS



R&D cooperations and projects

We provide expert advice, select and configure components to individual needs and tailor entire tying systems to square balers of any size and capacity. **rasspe®** stands for a long-standing expertise in the manufacturing of single and double knotters for straw and silage bales. Presenting innovations and developments that meet the demands of today and tomorrow, we are your engineering partners in the following technologies:

- Tying higher-density bales with more threads at existing work widths
- Tying unchanged densities with fewer threads
- Eliminating twine tails
- Tying in extremely abrasive conditions, e.g. sandy soils or maize straw
- Configuration management incl. preparation of drawings and prototype production

NDA agreements | **Consultation and commissioned R&D** | **FEM analysis** | **Sample and prototype manufacturing**

Loop double knotter RS 9000

5 instead of 6 = + 20%

Downsizing: 5 knotter units instead of 6

Through the improved utilization of the twine strength, the same binding power can be achieved with fewer knotters. This means that in the example, 5 knotters instead of 6, results in saving of 1500 euros in twine costs per 5000 bales.

Stronger knots: 20% points higher utilization of the tensile strength

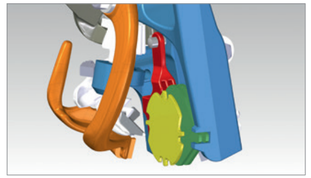
Through the improved utilization of the twine strength, higher bale weights with the same number of knots can be achieved. This reduces the costs of the transfer chain when collecting straw and green fodder.

ATSK active tailless technology RS 6003

No twine tails!

The Active tailless single knotter technology eliminates twine tails. This is an important contribution to reduce plastic remains in agriculture.

The innovation is based on the Deering single knotter RS 6003 with active twine drain.



	Loop knot Cormick system	String knot Deering system	Hybrid knot Deering system
Single knotter system	RS 8000	RS 6002 RS 6006 RS 6003 RS 6101 RS 6004	RS 6003 RS 6101
Double knotter system	RS 9000	RS 1450 RS 8800 RS 6131	—

Tailoring the knotter to the baler

Knotters are specified according to the type of baler. There are specific knotters for small balers and big balers. They mainly differ with respect to the available knotter compartment size, but also in terms of the average bale density and the annual machine output.

Knotter systems

There are two ways of describing or defining knotters.
One is by describing the type of knot they tie and another by defining the tying system. Knots split into so-called string knots, loop knots and hybrid knots. Tying systems split into systems that tie the twine cycle with one single knot and those that apply two knots.

Loop knot

System Cormick

- The end of the thread is formed to a loop
- The knot is made without straining the thread
- The thread's tensile strength is retained

String knot

System Deering

- The end is pulled through the knotter
- The thread's tensile strength is compromised
- The system produces twine tails

Hybrid knot

System Deering

- One end of the thread is formed to a loop
- Another end is pulled through the knotter
- No twine tails (Active-Tailless-Single-Knotter Technology)

Tying one knot per thread

- Each knotter ties one thread
- Each thread is tied into one knot
- The tail is pinched by retainers as the bale is being formed in the chamber

Tying two knots per thread

- Each knotter ties one thread which splits into an upper and lower twine
- Each thread is tied into two knots
- The twine is not strained while the bale is being formed

SINGLE KNOTTER PORTFOLIO

Bale size and weight

RS 6002	RS 6003	RS 6004	RS 8000	RS 6006	RS 6101
Compact design eg 3 twines on 460 mm working width Collecting short chopped straw System Deering	High-performance 2-3 Knotter units Divided hub Easy maintenance Available with centralized lubrication System Deering	Main hub with bush No divided hub 2-3 Knotter units System Deering	Loop knotter High knot stability No twine rests Long service life For bales with 2-3 twines System Cormick	Long service life Divided hub 4-6 Knotter units System Deering	HDC Knotter 4-6 Knotter units Divided hub Collection of hay, straw and silage Pre-assembled unit for high twine tension System Deering

SINGLE KNOTTER
RS 6002

This compact single knotter works to the Deering principle and has a compact design. The RS 6002 spaces the threads at narrow 120 mm. For example, a small square baler can be specified with 3-twines on a 460 mm work width. The RS 6002 is also excellent for tying bales from chopped straw for use as bedding, for example.

Technical data

Knotter type	RS 6002
Small square baler	x
Large square baler	–
Single knotter	x
Double knotter	–
String knot (Deering)	x
Loop knot (Cormick)	–
Hybrid knot (Deering)	–

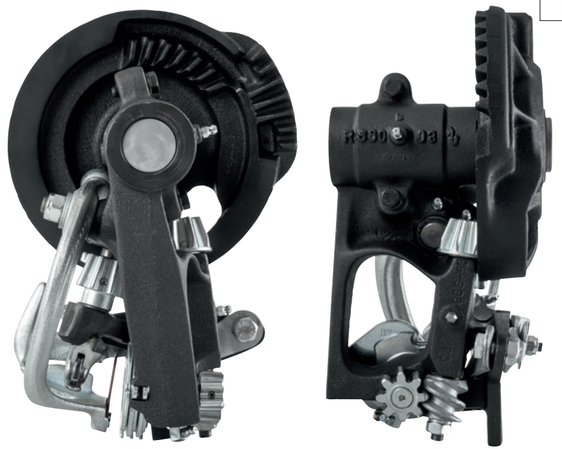
Knotter type	RS 6002
Recommended roll length for sisal twine (m/kg)	250 – 150
Recommended roll length for synthetic twine (m/kg)	400 – 320
HDC [1]	–
Width (mm)[2]	125
Ø Knotter shaft (mm)	35
Split hub	–

SINGLE KNOTTER
RS 6003

This is a stronger version of a single knotter working to the Deering principle. This knotter stands out for its extremely high durability and suitability for high-performance balers. The RS 6003 is typically used on balers that produce small packs and deliver high annual bale outputs. The model is particularly suitable for difficult conditions, for example in abrasive crops such as maize straw. The knotter has a split and re-enforced hub.
Suitable for small balers and 2-3 threads.

Version with centralized lubrication

On demand the RS 6003 can be fitted with centralized lubrication system, that ensures easy maintenance and reliability.



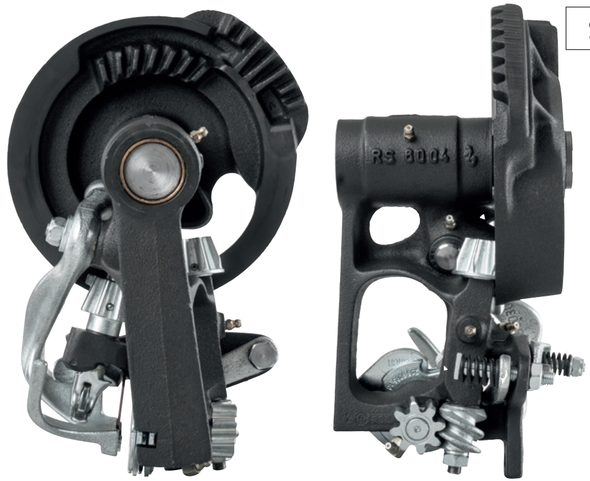
Technical data

Knotter type	RS 6003
Small square baler	x
Large square baler	–
Single knotter	x
Double knotter	–
String knot (Deering)	x
Loop knot (Cormick)	–
Hybrid knot (Deering)	x

Knotter type	RS 6003
Recommended roll length for sisal twine (m/kg)	250 – 150
Recommended roll length for synthetic twine (m/kg)	400 – 320
HDC [1]	–
Width (mm)[2]	172
Ø Knotter shaft (mm)	35
Split hub	x

SINGLE KNOTTER
RS 6004

This single Deering knotter is typically used on balers that make small packs of grain straw, hay and silage. The main hub is bushed.



Technical data

Knotter type	RS 6004
Small square baler	x
Large square baler	–
Single knotter	x
Double knotter	–
String knot (Deering)	x
Loop knot (Cormick)	–
Hybrid knot (Deering)	–

Knotter type	RS 6004
Recommended roll length for sisal twine (m/kg)	250 – 150
Recommended roll length for synthetic twine (m/kg)	400 – 320
HDC [1]	–
Width (mm)[2]	172
Ø Knotter shaft (mm)	35
Split hub	–

SINGLE KNOTTER
RS 8000

This single Cormick knotter is typically used on balers that produce small packs of grain straw, hay and silage. The model ties the knot in a loop without tails. The RS 8000 stands out for great longevity and maximum retention of twine strength. Suitable for small balers and 2-3 threads.

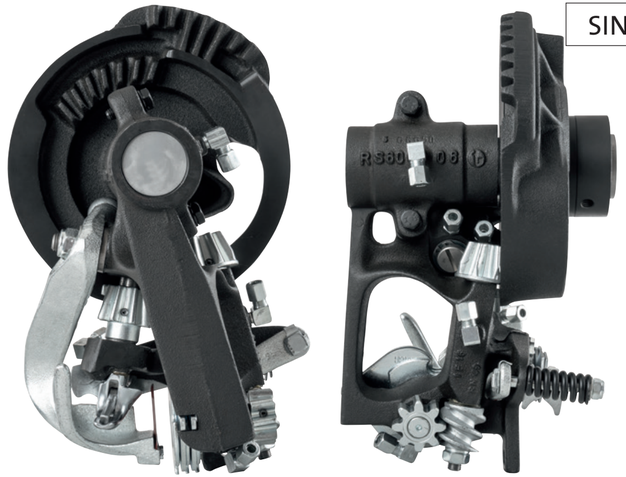
Technical data

Knotter type	RS 8000
Small square baler	x
Large square baler	–
Single knotter	x
Double knotter	–
String knot (Deering)	–
Loop knot (Cormick)	x
Hybrid knot (Deering)	–

Knotter type	RS 8000
Recommended roll length for sisal twine (m/kg)	200 – 125
Recommended roll length for synthetic twine (m/kg)	400 – 250
HDC [1]	–
Width (mm)[2]	115
Ø Knotter shaft (mm)	30 / 35
Split hub	–

SINGLE KNOTTER
RS 6006

The single knotter stands out for its high durability. Fitted with a split hub for easy maintenance, the RS 6006 ties up to 130m/kg twines. It is suitable for large square balers with 4-6 knotter units and bale diameters of 800 x 600mm up to 1200 x 700mm.



Technical data

Knotter type	RS 6006
Small square baler	–
Large square baler	x
Single knotter	x
Double knotter	–
String knot (Deering)	x
Loop knot (Cormick)	–
Hybrid knot (Deering)	–

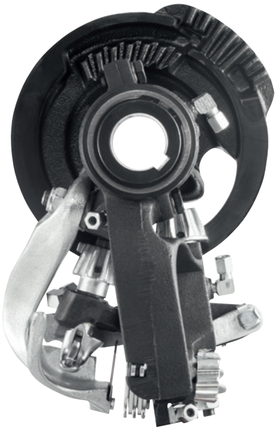
Knotter type	RS 6006
Recommended roll length for sisal twine (m/kg)	100 – 70
Recommended roll length for synthetic twine (m/kg)	150 – 130
HDC [1]	–
Width (mm)[2]	178
Ø Knotter shaft (mm)	40
Split hub	x

HDC
SINGLE KNOTTER
RS 6101

This double Deering knotter is hard wearing and has a split hub for easy service and maintenance. Suitable for high-capacity square balers with 4-6 knotters and for 800 x 600mm to 1200 x 700mm bales. Used in cereal straw, hay and silage.

The RS 6131 is an HDC single knotter, which means the knotter is pre-assembled and the frame and disc pairing is preset. This means the discs on the knotter shaft cannot work loose.

HDC SINGLE KNOTTER **RS 6101**

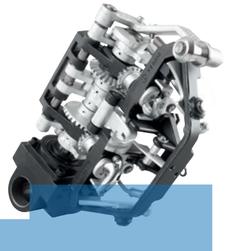


Technical data

Knotter type	RS 6101
Small square baler	–
Large square baler	x
Single knotter	x
Double knotter	–
String knot (Deering)	x
Loop knot (Cormick)	–
Hybrid knot (Deering)	x

Knotter type	RS 6101
Recommended roll length for sisal twine (m/kg)	100 – 70
Recommended roll length for synthetic twine (m/kg)	150 – 130
HDC [1]	x
Width (mm)[2]	178
Ø Knotter shaft (mm)	40
Split hub	x

DOUBLE KNOTTER PORTFOLIO



Bale size and weight

RS 1450	RS 6131	RS 8800	RS 9000
Standard design	HDC Knotter	HDC Knotter	Loop-Doubleknotter
Hard wearing	4-6 Knotter units	Compact design	Up to 8 knotter units
Split hub	Split hub	Up to 8 knotter units	High bale densities
4-6 Knotter units	Collection of hay, straw and silage	Increased bale density and weight	No twine tails
Twines up to 120m/kg	Pre-assembled unit for high twine tension	Twine distance 135mm	Only one shaft necessary
System Deering	System Deering	Pre-assembled unit for high twine tension	Very easy maintenance
		System Deering	All knotting functions are integrated in the main module and therefore, can be exchanged easily
			All peripheral knotting functions are integrated in the main module
			System Cormick

DOUBLE KNOTTER
RS 1450

This double Deering knotter is hard wearing and has a split hub for easy service and maintenance. Suitable for high-capacity square balers with 4-6 knotters and for 800 x 600 mm to 1200 x 900 mm bales. The RS 1450 ties up to 120m/kg twines. Used in cereal straw, hay and silage.

Technical data

Knotter type	RS 1450
Small square baler	–
Large square baler	x
Single knotter	–
Double knotter	x
String knot (Deering)	x
Loop knot (Cormick)	–

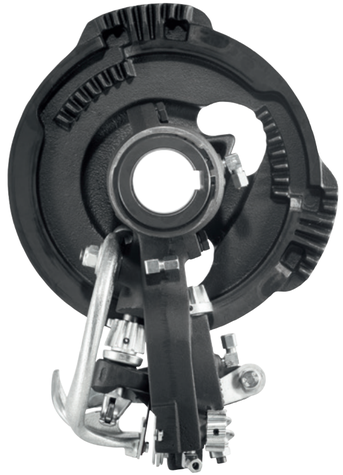
Knotter type	RS 1450
Recommended roll length for sisal twine (m/kg)	–
Recommended roll length for synthetic twine (m/kg)	150 – 120
HDC [1]	–
Width (mm)[2]	190
Ø Knotter shaft (mm)	55,65
Split hub	x

HDC DOPPELKNOTER **RS 6131**

This double Deering knotter is hard wearing and has a split hub for easy service and maintenance. Suitable for high-capacity square balers with 4-6 knotters and for 800 x 600 mm to 1200 x 900 mm bales. The RS 6131 ties up to 120m/kg twines. Used in cereal straw, hay and silage.

The RS 6131 is an HDC double knotter, which means the knotter is pre-assembled and the frame and disc pairing is preset. Suitable for high twine tension.

DOUBLE KNOTTER **RS 6131**



Technical data

Knotter type	RS 6131
Small square baler	–
Large square baler	x
Single knotter	–
Double knotter	x
String knot (Deering)	x
Loop knot (Cormick)	–

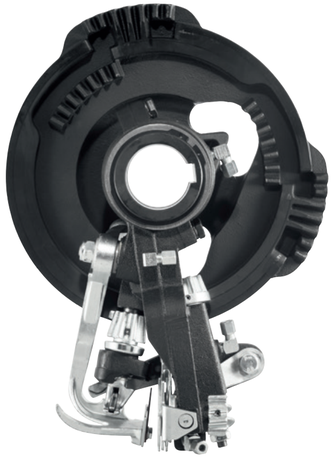
Knotter type	RS 6131
Recommended roll length for sisal twine (m/kg)	–
Recommended roll length for synthetic twine (m/kg)	150 – 120
HDC [1]	–
Width (mm)[2]	172
Ø Knotter shaft (mm)	55
Split hub	x

HDC COMPACT DOUBLE KNOTTER **RS 8800**

This Deering knotter is hard wearing and has a split hub for easy service and maintenance. Suitable for high-capacity square balers with 4-6 knotters and for 800 x 600mm to 1200 x 900mm bales. The RS 8800 ties up to 110m/kg twines. Suitable for cereal straw, hay and silage.

The compact and slim design of the RS 8800 spaces the threads at a narrow 135mm so that a higher number of threads can be applied to the same bale width. This design offers the following advantages:

A More knotters (up to 8) are installed into a 1,200mm work width.
B The same number of knotters can handle higher bale densities.



Technical data

Knotter type	RS 8800
Small square baler	–
Large square baler	x
Single knotter	–
Double knotter	x
String knot (Deering)	x
Loop knot (Cormick)	–

Knotter type	RS 8800
Recommended roll length for sisal twine (m/kg)	–
Recommended roll length for synthetic twine (m/kg)	150 – 110
HDC [1]	x
Width (mm)[2]	135
Ø Knotter shaft (mm)	55
Split hub	x

LOOP DOUBLE KNOTTER **RS 9000**

This Cormick knotter combines the advantages of loop knots with those of tying two knots. The knotter achieves a substantially higher performance than any other tying system currently on the market. This novel tying system achieves a 20% higher efficiency of the rated twine strength. Tying the twine into loops eliminates tails. The knotter is driven by only one shaft. Its push-fit design makes for easy service and maintenance or replacement. In addition, this model can also handle stronger twine.

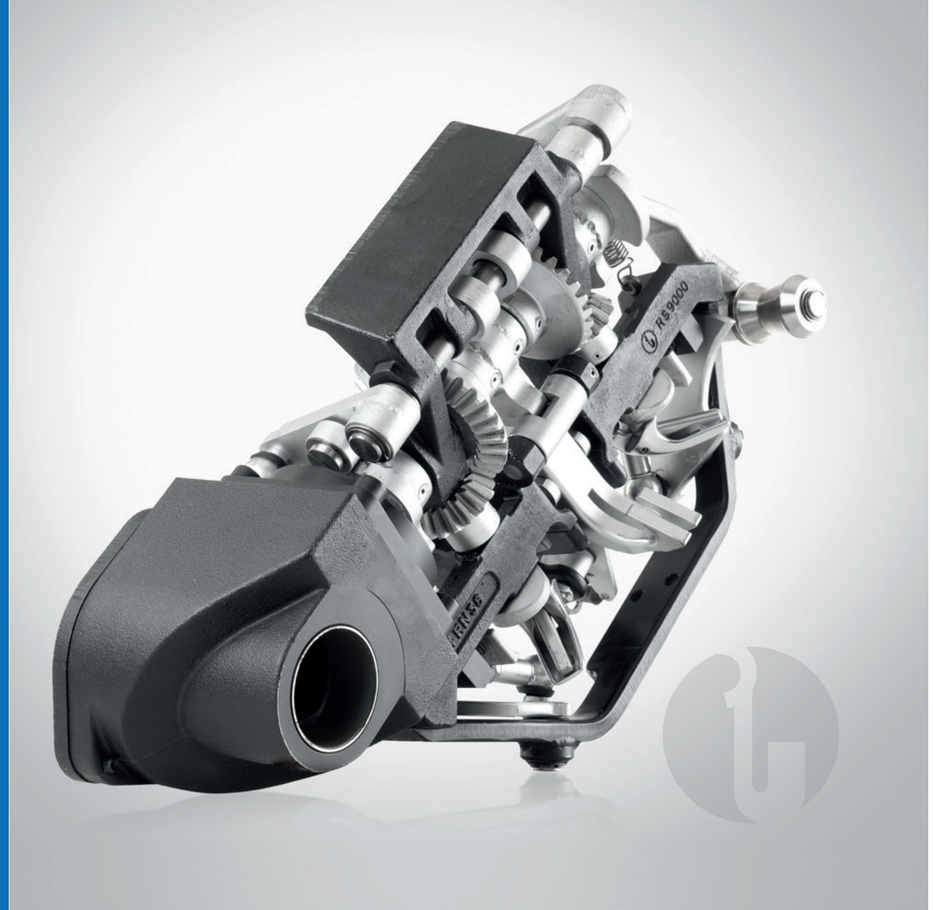
The compact design and narrower 135mm thread spacings allow manufacturers to implement the following design feature:

A Eight knotters on a 1,200mm wide bale chamber

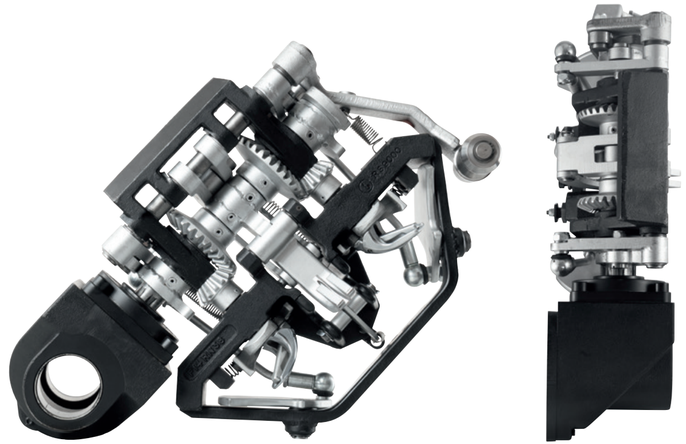
The Cormick system combined with the possibility of using thicker twines supports the following options:

B Higher bale densities without increasing the number of knotters

C Downsizing: fewer knotters are required for a specific bale density



LOOP DOUBLE KNOTTER **RS 9000**



Technical data

Knotter type	RS 9000
Small square baler	–
Large square baler	x
Single knotter	–
Double knotter	x
String knot (Deering)	–
Loop knot (Cormick)	x

Knotter type	RS 9000
Recommended roll length for sisal twine (m/kg)	–
Recommended roll length for synthetic twine (m/kg)	120 – 100
HDC [1]	–
Width (mm)[2]	135
Ø Knotter shaft (mm)	55
Split hub	x

Fact sheet knotters

Knotter type	RS 8000	RS 6002	RS 6003	RS 6004	RS 6006	RS 6101	RS 1450	RS 6131	RS 8800	RS 9000
Small square baler	x	x	x	x	–	–	–	–	–	–
Large square baler	–	–	–	–	x	x	x	x	x	x
Single knotter	x	x	x	x	x	x	–	–	–	–
Double knotter	–	–	–	–	–	–	x	x	x	x
String knot (Deering)	–	x	x	x	x	x	x	x	x	–
Loop knot (Cormick)	x	–	–	–	–	–	–	–	–	x
Recommended roll length for sisal twine (m/kg)	200 – 125	250 – 150	250 – 150	250 – 150	100 – 70	100 – 70	–	–	–	–
Recommended roll length for synthetic twine (m/kg)	400 – 250	400 – 320	400 – 320	400 – 320	150 – 130	150 – 130	150 – 120	150 – 120	150 – 110	120 – 100
HDC [1]	–	–	–	–	–	x	–	x	x	–
Width (mm)[2]	115	125	172	172	178	178	190	172	135	135
Ø Knotter shaft (mm)	30 / 35	35	35	35	40	40	55,65	55	55	55
Split hub	–	–	x	–	x	x	x	x	x	–

[1] HDC [= Heavy-Duty-Combination] are knotters that work to the Deering principle. The knotter disc on these models has a longer hub, a design that makes it possible to assemble the knotter before it is fitted into the machine (preset knotter frame-disc pairing).

[2] Total width; this is different from the minimum twine spacing

Understanding twine
Using either sisal or plastic twine please pay attention to the fact that the two types come in different roll lengths and lead to different knot strengths.

Sisal is not recommended for RS 1450, RS 6131, RS 8800, RS 9000.

The roll length
The strength of the twine is down to the roll length and this defines how many meter lengths weigh one kilogram. Since a thin twine is lighter in weight than a thick twine with the same length, high numeric values characterize thin twines and low numeric values describe stronger twines.

Work width
The unit at its widest width; not to be confused with the twine spacing.

KNOTTER **SPARE PARTS**

All spare parts are produced in-house and in line with the very highest quality standards.

Spare part kits are available for all types of knotters.

Bill hook

Jaw cam

Pinion

Worm shaft

Twine disc

Twine holder

Knife arm

GROUP SCHUMACHER

Components & systems for harvesting machines

GROUP SCHUMACHER is a medium-sized global player in agricultural technology and an employer of 500 people around the world.

We are driven by the passion to improve harvester systems and components and make them available to all users.

Drawing on an extensive experience and market proximity, we develop innovative harvesting solutions that boost the productivity of manufacturers, farmers, contractors and dealers alike.

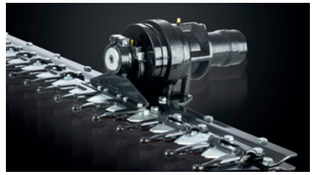
HARVESTING SOLUTION PARTNER

Our portfolio for combine harvesters

- **EasyCut II cutting system**
- **Crop lifter**
- **Modular reel**
- **Pro-Drive knife drive**
- **Straw chopper knife**
- **radura® parts program**

Our portfolio for hedge trimming

- **Hedge trimmer KM-L**
- **Hedge trimmer KM-S**
- **Hedge trimmer KM-X**



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Our strong brands

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