SLY AGRISEM

BOSS
DRILL

NO-TILL DRILL
MINIMUM TILLAGE

COMPANY

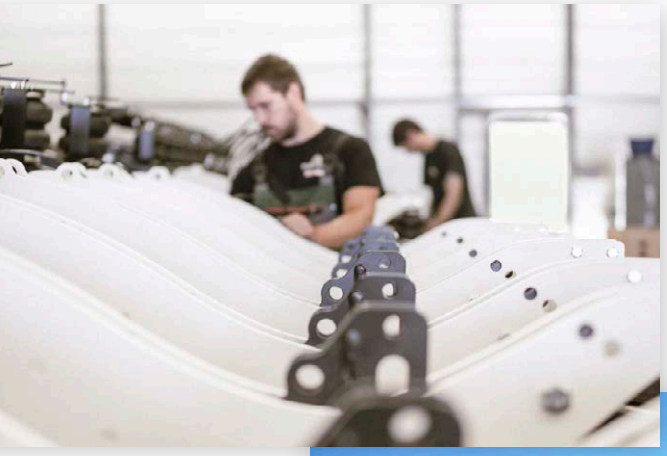
SLY has been created by Cyrille Geneste and George Sly, farmers in France and England. The advantage of being real min-till and no-till farmers, is that we are aware of the reality of the job itself, in and out of the field.
It, of course, make us the very first users and testers of our machines.

Every new idea and machine is tested thoroughly in real conditions on Cyrille's family farm, in a variety of soil types.

At SLY, we have ideas and we stain for our vision of sustainable farming.
The world climate is changing, consumer demand is changing : let's move forward together.

We cannot always promise to be perfect but we strive to be as close as possible! Minimum and No tillage practices are what we believe in. Mining the soil of nutrients will be regulated soonner or later. Our everyday work is to imagine, develop and manufacture machines which will help you to perform with new challenges.

«SLY aims to serve farming, not the other way around»



It's the big difference with our competitors. You will not find a product or machine in our catalog, that doesn't fit our values, even if it is very profitable, easy to produce or to sell. Our ambition is not to meet the needs of demanding shareholders or to see everlasting corporate growth.

To really focus on helping the soil and sustainable food supply we must take a different approach.

SLY AGRISEM

BOSS STORY

At SLY, conservation agriculture is at the heart of our concerns. Firstly known by the Strip-Till, SLY took a step forward with the BOSS.

This no-till drill is the result of a long period of collaboration with experienced no-till drill farmers. The challenge was to imagine a drill allowing us to overcome the difficulties encountered with actual no-till drill: Residue in the furrow, difficulty in penetrating hard/dry soil and difficulty in closing seed furrow in wet conditions.

We have travelled the world to find a no-till coulter design we could adapt for European conditions.
Weather and climate is constantly changing, conditions change, residue levels change, so choosing the correct coulter is vital to your success. We quickly found out that the no-till drill which could fix most of these issues, is available in Australia, pioneers of the No-till technic, and made by BOSS. The Boss unit from Australia has been adapted by Sly for European conditions, we have successfully combined years of BOSS's experience in the toughest conditions, with our knowledge of the European requirements and we end up with a new and innovative double angled disc no-till drill: The BOSS

The great strengh of the product is its double angled disc which reduce the down pressure requirement and the seed furrow compaction. This ensure a great furrow quality : clean and less pack or even « unpack », which will allows a seed germintation and root development.

The range is large and scalable to answer everyone's need: from 3 to 12m, with no or up to 4 dosing unit, 16.7 cm,18.75 cm, 20 cm or 25 cm row spacings.

The selection of a new drill is something difficult, in order to make your choice, SLY can visit you with a demo machine. Test and compare the BOSS in front of the drills that caught your attention: essential before purchase...

THE FINDING

By combining our extensive research with customer experiences and feedback we have found that most of the problems associated with no-till are the same no matter what the brand of coulter/drill or machine.

Residue in the furrow
(Hair-Pinning)

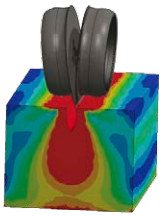
Difficulty in penetrating
hard/dry soil

Difficulty in closing seed
furrow in wet conditions

COULD THERE BE A LINK ?

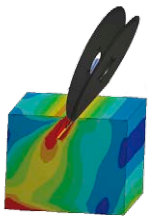
Thanks to both field testing and 3D modelling we have calculated different simulations using both existing and new designs of disc coulter. We have considered the soil as a known material to see if any correlations appear.

Results have been interesting :



V DOUBLE DISC
WITH SIDE GAUGE

SINGLE DISC
WITH SIDE GAUGE



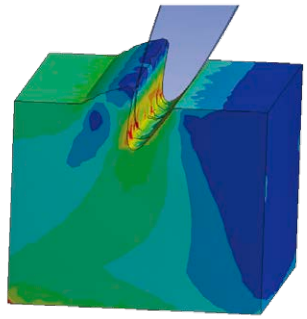
ANGLED DOUBLE V
DISC

The red zones show compaction, blue show little compaction.
Red zones have confirmed the two difficulties of penetrating in the dry versus closing a furrow in the wet. It has also shown how a lack of row cleaners can cause more severe compaction when planting. More residue means a greater surface area pushing down and therefore a wider and larger compacted area.
It is simple to understand that when any seed germinates it first anchors itself with roots and begins nutrient and water uptake, so it is vital that this first stage of life is a success.

PRINCIPLE OF THE UNDERCUT

A concept that caught our eye in Australia was the double angled disc, also called the undercut disc. This solves many problems associated with no till seeding.

When we run analysis on the double angled disc we found that the down pressure requirement was reduced and more manageable versus seed furrow compaction.



We also observed the inflation of soil on the outside of the disc.
If we place a gauge wheel at this position then severe localised compaction would occur.

TYPE OF DISC	MONODISC	V DOUBLE DISC	ANGLE DOUBLE DISC V	UNDERCUT DISC	UNDERCUT DISC
GAUGE TYPE	SIDE	SIDE	REAR	SIDE	REAR
Penetration in dry conditions	--	-	---	++	+++
Closing the furrow in wet conditions	--	---	++	-	++
Residue in the furrow	-	--	-	+	++
Depth control with residue	-	--	-	-	+

WHAT COULD BE THE IDEAL NO-TILL DRILL ?

UNDERCUT DISC + CLOSING / GAUGE WHEEL + ROW CLEANER

The Boss unit from Australia has been adapted by Sly for European conditions, it features a double angled disc. The gauge wheel is at the back of the unit and is also the closing wheel. The side wheel is mounted on a spring and acts as a scraper and keeps the soil in the furrow.
To manage residue a Sly row cleaner is available with pneumatic down pressure, controlled from the tractor cabin.

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WE KEPT THE ESSENTIALS

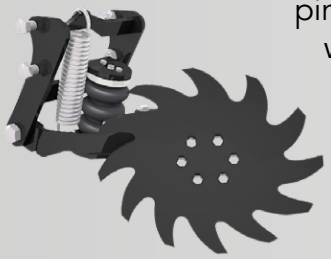
1 UNIT DOWN PRESSURE

The unit is mounted on a parallelogram. Down pressure is achieved via hydro-pneumatics.

Connected to a sensor on the gauge wheel, the hydraulic down pressure allows ultimate control of the coulter pressure. This gives an ideal situation to monitor and control furrow compaction and depth.

2 ROW CLEANING

Farmers very rarely use precision planters without row cleaners in no-till, so why do we do it with drills?



The Boss concept greatly reduces hair pinning when following a crop like wheat with chopped straw.

The use of row cleaners is optional but it allows the owner of the drill to choose which solution is correct on a given day, since no day is the same and no field is the same.

3 THE DISC & SEEDBOOT FOR A PERFECT MARRIAGE

The seedboot is placed in shadow of the disc. This allows excellent performance in wet sticky conditions. The seedboot is positioned to never touch the soil and such that the front of the disc is the only soil contact point. The wet soil is cleaned by an active scraper (the side wheel). The less static parts in contact with the soil results in far less risk of plugging/bunging. The concept allows for drilling in the same direction as last year's corn rows. If you do not need to run at an angle to last year's crop, there is a better chance of implementing practices such as CTF (controlled traffic farming). No angle generally means a smoother travel and better seed placement improving emergence and therefore yields.

BUT WE CHANGED THEM A LITTLE!

4 TWO GAUGES ARE POSSIBLE

The gauge of the unit can be done either by the rear closing wheel or the side wheel. We intentionally chose to allow both. It all comes down to the same problem, no condition is the same, our customers must have flexibility.

GAUGE WITH THE SIDE WHEEL This position will be the most accurate to drill in the best conditions or on prepared soil where there is no problems of penetration or furrow closure (fields that may have been lightly tilled or are in very good condition post harvest). The wheel is close to the seed boot and so depth control is like a precision planter.

GAUGE WITH THE CLOSING WHEEL The position will be the more efficient and accurate in pure no-till conditions: The gauge wheel is the closing wheel which is running on a cleaned row to improve depth control. In no-till, a gauge wheel on the side runs on crop residue, which means that the depth can be inaccurate and is very susceptible to the condition of the field and what residue is left. As we have found residue effects furrow compaction and a solid side wheel can increase sidewall compaction so rear gauging is preferred in no-till.

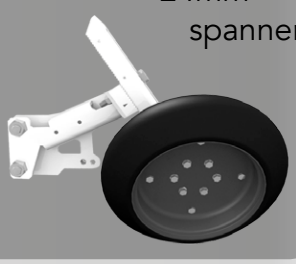
5 CLOSING FURROW MANAGEMENT

The closing wheel has a very important job to do, if incorrectly chosen it can have detrimental effects on the emergence and yield. On our unit it has two jobs, closing the slot but also most of the time gauging the seed depth. On the Boss unit the closing wheel, closing angle and the seeding depth is adjustable all without the need for tools, row by row. This gives the farmer ultimate control of the seed depth and closing furrow in any conditions or soil type (for example behind the tractor wheels).

To suit every soil type, different closing wheels are available and if none of them are your preferred the bracketry and axle is designed to suit the most common types of closing wheel available on the market.

Adjustable without tools

Adjustable with a 24mm spanner

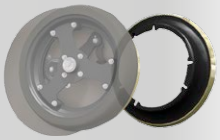


OPTIONAL

THE SEEDING UNIT

- Rear gauge: No tool depth and angle adjustment

- Active scraper: iron circle clamp on the tyre



- Floating trash wheels with in cab control

- Limiter on floating wheel: Allows to gauge with the side cleaning

FRAME/CHASSIS

- Hydraulic markers

- 710/50R26.5 Wheels

- Electrohydraulic module: 1HD - 3 functions

- Hydraulic central system 70 litre tank

TANKS

- Small seed tank

- 1,2 or 3 tanks of 1200 or 2000 liters

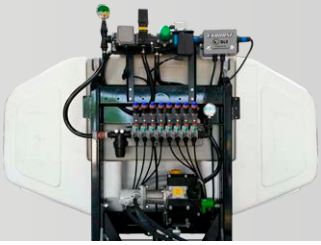
- Seeding controller
- Tramline system

LIQUID FERTILISATION EQUIPMENT

- Tank, Available capacity 700, 1100, 1200, 1500 or 2000L.

- Exadose Regulation
  - 2 models, 15 or 75 l/mn
  - Fittings, couplings
  - GPS and on/off switch
  - Software for IOS or Android

- Liquid fertilisation kit: WILGER Ball Flow Indicators + connections + 1 set of nozzle at the user's choice + assembly



THERE IS A BOSS DRILL FOR EVERY FARMER

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FROM 3 TO 6M

BOSS

3m **4m** **6m**

ROW SPACING WIDTH (m)	12 25 3	16 18,75 3	16 20 3,2	18 16,7 3	16 25 4	20 20 4	22 18,75 4	24 16,7 4	24 18,75 4,5	24 25 6	30 20 6	32 18,75 6	36 16,7 6
Paralelogram linkage (hydraulic)		●			○		○				●		
Cyclones D-Cup for 100% air release		●			○		○				●		
Depth and angle adjust. without tools		○			○		○				○		
Row cleaners (every rows)		○			○		○				○		
Row cleaners (half drill)		○			○		○				○		
Active scrapers		○			○		○				○		
Pressurized hoppers					1 - 2 or 3 Hoppers of 1200 or 2000 liters each								
Electronic regulation					Standard with hoppers - ISOBUS Compatible								
Tramline		○			○		○				○		
Seed controlling unit		○			○		○				○		
Hopper small seed 200 liters		○			○		○				○		
hydraulically actuated track markers		○			○		○				○		
Transport width					2,99m								
Wheels 500-60 R 22,5		●			○		○				●		
Wheels 710-50 R 26,5		○			○		○				○		

○ Optional ● As standard

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FROM 7 TO 12M

BIG BOSS

7m 8m 9m 12m

ROW SPACING WIDTH (m)	28 25 7	30 25 7,5	40 18,75 7,5	45 16,7 7,5	32 25 8	40 20 8	48 16,7 8	36 25 9	46 20 9,2	48 18,75 9	54 16,7 9	48 25 12	60 20 12
Paralelogram linkage (hydraulic)		●				●			●			●	
Cyclones D-Cup for 100% air release		●				●			●			●	
Depth and angle adjust. without tools		○				○			○			○	
Row cleaners (every rows)		○				○			○			○	
Row cleaners (half drill)		○				○			○			○	
Active scrapers		○				○			○			○	
Pressurized hoppers	1 - 2 or 3 Hoppers of 1200 or 2000 liters each												
Electronic regulation	Standard with hoppers - ISOBUS Compatible												
Tramline		○				○			○			○	
Seed controlling unit		○				○			○			○	
Hopper small seed 200 liters		○				○			○			○	
Transport width	2,99m												
Wheels 500-60 R 22,5		●				●			●			●	

○ Optional ● As standard

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HAVE YOU SEEN OUR OTHER PRODUCTS?

STRIP-TILL

STRIPCAT II

FERTILL

Precision Planting

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