



RAKES

Single-rotor rakes

- ▶ Durable design
- ▶ Outstanding raking
- ▶ Ease of handling



FIRST-RATE HARVEST

For more than 95 years, FELLA has always stood for innovative technology, outstanding quality and a personal passion for the service of agriculture. As the specialist for "Made in Germany" forage harvesting technology, we offer our customers all around the world an extremely wide range of products in terms of mowers, hay tedders, rakes and conditioners.



FELLA has been represented in all key markets around the world since the 1980s. Through close contact with farmers and agricultural contractors, our machines are constantly undergoing further development towards perfection. In this way, even the most diverse markets can enjoy mutual benefits. FELLA's objective is to provide every customer with the optimum solution for his farming requirements.



TRADITION, INNOVATION, PASSION

The first rakes were produced on our company site in Feucht as early as the mid-1960s. All key components of our forage harvesting machines are assembled and tested there by specialists before they leave our works.

At the same time, our research and development department continues to invest all its expertise into the development of ever better and more efficient machines. This will guarantee the outstanding FELLA "Made in Germany" quality far into the future for all our customers the world over.

FELLA – the forage harvesting specialist:

- ▶ *"Made in Germany" quality*
- ▶ *More than 95 years of experience*
- ▶ *In-house research and development department*
- ▶ *All machines are assembled and tested on the company's site by specialists*
- ▶ *Innovative, efficient, long-lasting*

HISTORY

The name FELLA has been a byword for innovative agricultural machinery from Franconia for over 95 years. FELLA-Werke GmbH of Feucht near Nuremberg currently holds a top position in the demanding crop harvesting machinery sector. With a comprehensive range of drum and disc mower units, tedders and rakes, FELLA is in an excellent position to enjoy sustainable growth on the world market.

Since early 2011, FELLA has been fully incorporated into the AGCO Corporation and continues to drive forward the specialisation of harvest technology for them. The Feucht site, near Nuremberg, is AGCO's centre of excellence for green forage harvesting in Europe.

AN OVERVIEW OF OUR HISTORY

- ▶ **1918** Founding of "Bayerische Eggenfabrik AG" (Bavarian Harrow Factory) in Feucht
- ▶ **1921** The brand name FELLA is created, derived from the Egyptian word "Fellache" (= farmer)
- ▶ **1923** Ploughs and front carriages are incorporated in the product range
- ▶ **1932** Introduction of grass mowers, hay tedders, horse rakes and reaper-binders to the product portfolio
- ▶ **1953** FELLA launches its first conditioner with tine rotor onto the market. It is awarded with the "große Bronzene Preismünze" (great bronze medal) by the DLG (German Agricultural Association)
- ▶ **1954** FELLA launches the Jupiter, an automatic, powerful combine harvester onto the market
- ▶ **1968** Rakes added to the product portfolio
- ▶ **1980** Specialisation of products for green forage harvesting
- ▶ **1989** Concentration on the core competences of construction, assembly, sales
- ▶ **1997** The principle of the four "self-controlling factories" is introduced. Two years later, it is awarded with the International Best Factory Award
- ▶ **2000** Investment in the "new" FELLA (new building, restructuring)
- ▶ **2004** Takeover of FELLA by Argo. FELLA becomes a wholly-owned subsidiary of Laverda
- ▶ **2007** Argo and AGCO conclude a joint venture, each with a 50% share, FELLA becomes a part of both companies
- ▶ **2011** 100% takeover by AGCO: FELLA becomes the centre of excellence for green forage harvesting of AGCO in Europe
- ▶ **2013** FELLA's 95th anniversary



SERVICE

"Out of sight, out of mind." But not at FELLA!

Together with our dealers, we are always there and ready to provide reliable support to our partners, both at home and abroad – as we have been doing for almost 100 years. In conjunction with our well organised spare parts stores, regular further technical training for our dealers ensures that FELLA machines can be used, maintained and repaired to a professional standard. This comprehensive service ensures minimum downtime for your FELLA machines and makes a significant contribution to high-yield and stress-free forage harvesting.



SINGLE-ROTOR RAKES



WHY A FELLA SINGLE-ROTOR RAKE?

Excellent raking quality, easy handling and a durable design – these qualities give you good reason to buy a FELLA single-rotor rake.

With every model, you benefit from FELLA's decades of experience in rake technology, no matter what kind of jobs you are looking to master with your new FELLA rake. Whether you decide in favour of a rake from the lightweight Alpine series, the universally deployable 300 series or the powerful 400 series, in all cases you will be acquiring a machine which can fully satisfy your individual requirements. See for yourself!



Benefits at a glance:

- ▶ *Decades of experience*
- ▶ *Large product range*
- ▶ *Sturdy design*
- ▶ *Ease of handling*
- ▶ *All machines manufactured from high-quality materials and all components powder-coated – colour coating particularly impact-resistant and long-lasting, providing a brilliant look which lasts for years*

OPINIONS BASED ON ACTUAL USE:

"We place great emphasis on clean forage, and that is why we have opted for a FELLA rake. The machine with the compression/tension patent is ideal for us because we have to cover a large number of mountain pastures. We were particularly attracted by the fact that swaths can be deposited on the right, and by the compact and simple design of the rake. We have enjoyed a successful, long-standing partnership with FELLA."

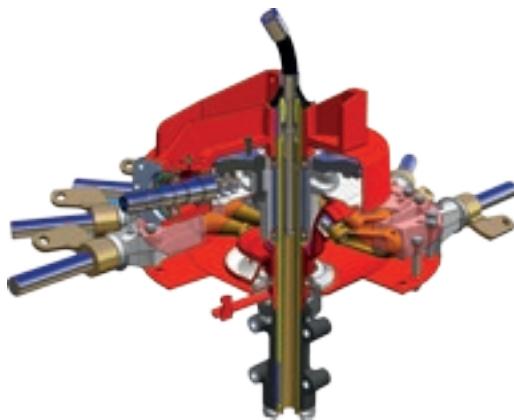
Schulz family, Wilhelmsthal (Oberfranken), Germany



TYPICAL FEATURES OF THE FELLA RAKES

RAKE HEAD

The rake head from FELLA is impressive because of its enclosed design that protects all of the important components against dirt and dust. This design is a guarantee for a long service life. The optimised shape of the cam track, which is made of unbreakable spheroidal graphite cast iron, provides maximum smooth running and quick, precise lifting of the tines. The large-dimensioned drive unit and the precision, manufactured tine arm housing made of aluminium alloy both are good examples of modern and practice-proven design.



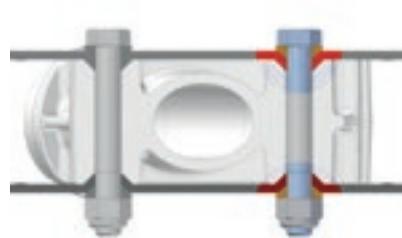
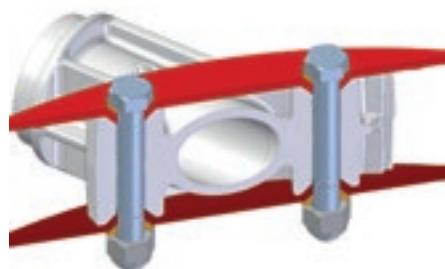
TANGENTIALLY ARRANGED ROTOR ARMS

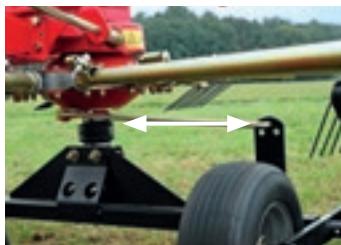
Best raking quality is achieved with the tangential arrangement of the tine arms and an ideal swath is created. It makes significantly higher working speeds possible – the best prerequisites if the harvesting weather is not in your favour.



SPECIAL SCREW-ON CONNECTION FOR THE RAKE HEAD

The rake head is bolted together using a conical washer to form a sturdy fix. This has the advantage that the bolts are not subjected to shearing effect, but rather only to compressive and tensile forces. In addition, this results in a perfect centring and stability for a long service life. If necessary, the support arms can be replaced individually without having to dismantle the rake socket.





INDIVIDUAL TINE CONTROL BY CAM TRACK ADJUSTMENT

The point at which the tines are lifted from the swath can be changed quickly and without tools* at any time and, as a result, be adjusted to specific operating and forage conditions. All you have to do is simply reposition the cam track retaining rod in the hole arrangement and you then avoid any loss of forage and produce tidily formed swaths. Other adjustments can be made to the longitudinal and transverse inclination of the rotor head. In this way, you can achieve high driving speeds – even under difficult working conditions.

RAKE DEPOSIT TO THE RIGHT

All FELLA single-rotor rakes place the swath to the right. In this way, you always have your perfect swath in view, because the operating controls in the tractors nowadays are on the right. Depositing on the right – makes ergonomic sense!

Swath deposit on the right –
swath always in view!



PERFECT WORKING HEIGHT

The linear height adjustment, which is fitted as standard, can be very easily adjusted to suit your working conditions.

POWER TRAINS

All power trains in the FELLA rakes are equipped with overload protection. This prevents expensive repairs and long downtimes during the critical forage harvesting season.



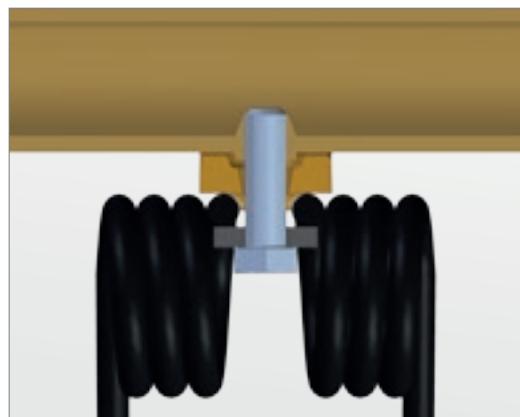
Linear height adjustment

TINE FIXTURE

The tines are not pushed over the tine tube; instead each tine is bolted in from the bottom. The advantage of this is that the side of the arm facing the forage is absolutely smooth and therefore does not allow forage to stick to it. If there is wear, not all of the tines need to be removed to change the inner tines. In addition, the tines have greater freedom of movement, because they are not limited by the tube.



Each tine is bolted in place individually beneath the tine arm



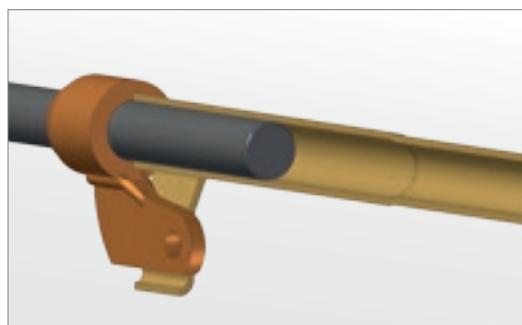
Tine fixture



Absolutely smooth front side of the tine arm

TINE ARMS

All tine supports at FELLA are made of sturdy tube material and are manufactured from one piece of metal. The connection point to the tine arm is machined for a perfect fit which makes it possible to insert the tine arms easily and reduces wear on this heavily stressed point to a minimum. In addition, this design makes repairs quick and easy when they are required.



Perfectly fitting connection point to the tine arms



Single-rotor rake from FELLA



FIRST-RATE HARVEST!

Based on tradition, innovation and passion.



SUMMARY OF SINGLE-ROTOR RAKE

p. 12-13

THREE-POINT ATTACHMENT WITH RIGID HEADRACK

Specially developed single rotor rake for use in alpine terrain



p. 14-17

THREE-POINT ATTACHMENT WITH TRAILING DEVICE

Single-rotor rake with large working range, versatile use and neat raking performance



p. 20-21

TRACTOR LINKAGE DRAWBAR HITCH

Trailed single-rotor rake with large working width for small tractors



MACHINE DESIGNATIONS AND ABBREVIATIONS

- **TS:** Rake
- **DS:** Three-point headstock, rigid
- **DN:** Three-point headstock with trailing device
- **T:** Tractor linkage drawbar/hitch

Machine designation	TS 301 DS	TS 351 DS
Approx. working width in m	3.40	3.60
Approx. rotor diameter in m	2.50	2.70
Approx. weight in kg	330	370
Approx. power requirement in kW/hp	17/23	25/34

Machine designation	TS 301 DN	TS 351 DN	TS 391 DN	TS 400 DN	TS 426 DN	TS 456 DN
Approx. working width in m	3.40	3.60	3.80	3.85	4.20	4.50
Approx. rotor diameter in m	2.50	2.70	2.90	3.00	3.20	3.40
Approx. weight in kg	360	420	440	520	580	620
Approx. power requirement in kW/hp	17/23	20/27	20/27	20/27	30/41	30/41

Machine designation	TS 456 T
Approx. working width in m	4.50
Approx. rotor diameter in m	3.40
Approx. weight in kg	600
Approx. power requirement in kW/hp	30/41

THREE-POINT ATTACHMENT WITH RIGID HEADRACK

TS 301 DS TS 351 DS

- Specialists for alpine terrain
- Front and rear mounting possible
- Tidy raking



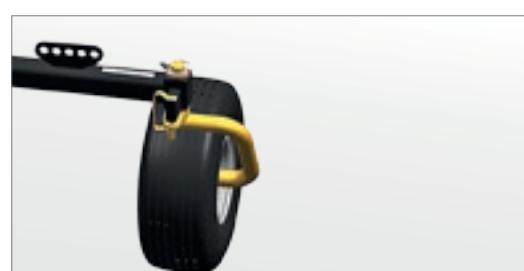
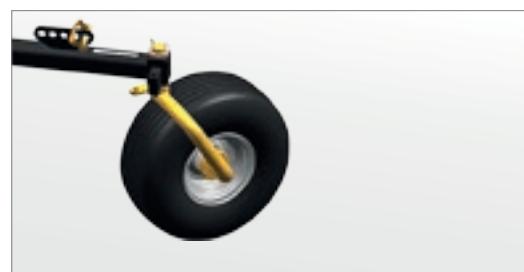
TS 351 DS



Universal gear



Transport position



Lockable pivoting wheels



THE SPECIALISTS FOR ALPINE TERRAIN

Whether front or rear mounted, with the single-rotor rakes TS 301 DS and TS 351 DS, FELLA offers two all-round performers with rigid headrack for alpine terrain. Due to its low weight and short and compact attachment, these FELLA rakes can be used with a tractor power of as low as approx. 20 hp. Ideal for mountainous regions which demand powerful machines, while at the same time carefully handling the sensitive soil structure. The ease of handling of the FELLA single-rotor rake is another impressive feature.

SWATH

Very exact swaths are possible even with a large forage mass thanks to the extra strong tine arms and the long tines. Thanks to a cam track that can be adjusted on the outside, optimal swath formation is guaranteed at all times for all follow-up devices. In addition, the width of the swath can be adjusted to your requirements using the continuously adjustable swath former.

TRANSPORT

The removable tine arms and the fold-up swath former, mean the transport and storage widths are narrow. In addition, thanks to the spring support, the swath former can be folded with little effort.

DRIVE

The drive is via single-stage bevel gear with a split double bearing pinion shaft. In addition, the gear box and cam track are enclosed and dust-tight, guaranteeing a long service life.

At a glance:

- ▶ Allrounder for Alpine terrain, either rear or front-mounted
- ▶ Low weight, small tractors
- ▶ Perfect and exact swaths
- ▶ Sturdy, dust-tight, double bearing drive
- ▶ Narrow transport and storage width
- ▶ Moveable lower link bracket
- ▶ Lockable pivoting wheels as standard
- ▶ Short headrack
- ▶ Cloth infinitely adjustable

WE RECOMMEND*:

- ▶ Contact wheel 15/6.00-6, for improved ground following
- ▶ Front-mounting set



*AS AN OPTION

THREE-POINT ATTACHMENT WITH TRAILING DEVICE

TS 301 DN
TS 351 DN
TS 391 DN

- ▶ Operation with small tractors
- ▶ Ease of handling
- ▶ Tidy raking



TS 391 DN



Transport position



THE ALL-ROUNDERS

The single-rotor rakes with trailing device from the 300 series are outstanding due to their low weight, their sturdy design, their ease of handling and their versatile use. These rakes can therefore be used with a tractor power of as low as approx. 23 hp. Perfect for use in different regions. Thanks to its 8 or 10 tine arms and 3 or 4 tines, each arm guarantees perfect and tidy raking performance at all times. Only the best for your quality forage!

SWATH

Very exact swaths are possible even with a large forage mass thanks to the extra strong tine arms and the long tines. Thanks to a cam track that can be adjusted on the outside, optimal swath formation is guaranteed at all times for all follow-up devices. In addition, the width of the swath can be adapted to your requirements using the continuously adjustable swath former.

PERFECT GROUND ADAPTATION

Thanks to the wide-track chassis and movable lower link bracket, optimum ground following is guaranteed. These models are particularly well suited to hillsides.

DRIVE

The drive is via single-stage bevel gear with a split double bearing pinion shaft. In addition, the gear box and cam track are enclosed and dust-tight, which guarantees a long service life.

At a glance:

- ▶ *Single-rotor rake with trailing device*
- ▶ *Low weight, sturdy design*
- ▶ *Tidy raking and therefore first-class swath formation*
- ▶ *Perfect ground contour following*
- ▶ *Good on hillsides*
- ▶ *Sturdy, dust-tight, triple bearing drive*
- ▶ *One-piece, D-shaped three-point headrack*
- ▶ *Adjustable transverse inclination*
- ▶ *Spring-loaded cloth folding*
- ▶ *Infinitely adjustable cloth*

WE RECOMMEND*:

- ▶ Contact wheel 15/6.00-6, for improved ground following
- ▶ Tandem axle, for smooth running and tidy work in all conditions and with all types of forage



*AS AN OPTION

THREE-POINT ATTACHMENT WITH TRAILING DEVICE

TS 400 DN TS 426 DN TS 456 DN

- Wide working width
- Enormous raking power
- Precise swaths



TS 456 DN





WIDER WORKING WIDTHS

The 400 series differs from the 300 series due to its large-dimensioned rake head and the larger working width that comes as a result. With up to 12 tine arms and 48 tines, tidy and even raking is always guaranteed for working widths of up to 4.50 m. The series features a very sturdy design, ease of handling and excellent manoeuvrability due to its standard trailing device.

SWATH

Very exact swaths are possible even with a large forage mass thanks to the extra strong tine arms and the long tines. Thanks to a cam track that can be adjusted on the outside, optimal swath formation is guaranteed at all times for all follow-up devices. In addition, the width of the swath can be adjusted to your requirements using the continuously adjustable swath former.

PERFECT GROUND FOLLOWING

Thanks to the wide-track chassis and movable lower link bracket, optimum ground following is guaranteed, even at wide working widths. These models are particularly well suited to hillsides.

DRIVE

The drive is via single-stage bevel gear with a split double bearing pinion shaft. In addition, the gear box and cam track are enclosed and dust-tight, which guarantees a long service life.

At a glance:

- ▶ *Single-rotor rake with trailing device*
- ▶ *Large working widths*
- ▶ *Tidy raking and therefore first-class swath formation*
- ▶ *Perfect ground contour following*
- ▶ *Good on hillsides*
- ▶ *Sturdy, dust-tight, triple bearing drive*
- ▶ *One-piece, D-shaped three-point headrack*
- ▶ *Adjustable lateral inclination*
- ▶ *Infinitely adjustable cloth*

WE RECOMMEND*:

- ▶ Spring-centred contact wheel 15/6.00-6, for improved ground adaptation
- ▶ Tandem axle with 16/6.50-8 super-balloon tyres



*AS AN OPTION

Trailed single-rotor rake from FELLA



FIRST-RATE HARVEST!

Based on tradition, innovation and passion.



TRACTOR LINKAGE DRAWBAR HITCH

TS 456 T

- ▶ Large working width – small tractor
- ▶ Very easy hitchin
- ▶ Tidy raking



TS 456 T



Transport position



Transport position



Large lifting height

HIGH WORK PERFORMANCE WITH SMALL TRACTORS

With the trailede TS 456 T, FELLA offers a single-rotor rake that has all of the benefits of a three-point machine, but can even be used with small tractors. The simple hitch to tractor linkage drawbars or adjustable drawbars is typical for these machines.

SWATH

Very exact swaths are possible even with a large forage mass thanks to the extra strong tine arms and the long tines. Thanks to a cam track that can be adjusted on the outside, optimal swath formation is guaranteed at all times for all follow-up devices. In addition, the width of the swath can be adjusted to your requirements using the continuously adjustable swath former.

MAXIMUM CONVENIENCE

The wide-track chassis with tandem axle ensures optimum ground following and very good efficiency on slopes. The hydraulic gantry axle with its parallel lifting offers enormous chassis clearance. This also allows you to drive over very large swaths without losses. Changing from working position to transport position is conveniently carried out from the tractor seat.

DRIVE

The drive is via single-stage bevel gear with a split double bearing pinion shaft. In addition, the gear box and cam track are enclosed and dust-tight, which guarantees a long service life.

At a glance:

- ▶ *Exact and perfectly optimised swaths*
- ▶ *Large working width even with small tractors*
- ▶ *Maximum flexibility and extremely high level of comfort*
- ▶ *Perfect adaptation of the working height*
- ▶ *Sturdy, dust-tight, triple bearing drive*
- ▶ *Infinitely adjustable cloth*

WE RECOMMEND*:

- ▶ Contact wheel for improved following of ground contours



*AS AN OPTION

TECHNICAL SPECIFICATIONS OF SINGLE-ROTOR RAKE

	TS 301 DS	TS 351 DS	TS 301 DN	TS 351 DN	TS 391 DN
Dimensions and weight					
Approx. working width in m	3.40	3.60	3.40	3.60	3.80
Approx. rotor diameter in m	2.50	2.70	2.50	2.70	2.90
Approx. transport width without tine arms in m	1.70	1.70	1.42	1.55	1.55
Approx. transport length in m	2.03	2.13	2.00	2.21	2.31
Approx. weight in kg	330	370	360	420	440
Power requirement					
Approx. power requirement in kW/hp	17/23	25/34	17/23	20/27	20/27
Attachment					
Three-point headstock, rigid	CAT I + II	CAT I + II	-	-	-
Three-point headstock, free dropping	-	-	CAT I + II	CAT I + II	CAT I + II
Tractor linkage drawbar	-	-	-	-	-
Rotor, arms, tines					
Swath deposit	Right	Right	Right	Right	Right
Number of rotors	1	1	1	1	1
Number of tine arms per rotor	8	10	8	10	10
Number of tines per arm	3	3	3	3	4
Hydraulic control units					
Required hydraulic connections	-	-	-	-	-
Tyres, axles, lighting equipment					
Tyres	15/6.00-6	15/6.00-6	15/6.00-6	16/6.50-8	16/6.50-8
Tandem axis	-	-	□	□	□
Lighting equipment	□	□	□	□	□

■ Series □ Equipment variant - not available

* floating position required

TS 400 DN	TS 426 DN	TS 456 DN	TS 456 T
3.85	4.20	4.50	4.50
3.00	3.20	3.40	3.40
1.68	1.83	1.99	2.10
2.34	2.58	2.68	4.10
520	580	620	600
20/27	30/41	30/41	30/41
-	-	-	-
CAT I + II	CAT I + II	CAT I + II	-
-	-	-	■
Right	Right	Right	Right
1	1	1	1
10	12	12	12
4	4	4	4
-	-	-	1 x SAV*
16/6.50-8	16/6.50-8	16/6.50-8	16/6.50-8
□	□	■	■
□	□	□	□



Best harvest – based on tradition, innovation and passion.

FELLA FOR YOU

"We can't change the weather, but we have the machines that will allow you to make the most of any conditions."

Your FELLA team



PHILOSOPHY

For FELLA, close contact with our customers is very important. The experiences of farmers and agricultural contractors who use FELLA products around the world is collected and is purposefully incorporated into the design of our products.

PATENTS

It is FELLA's objective to create ingenious and sustainable solutions for our products. This has already been well documented through numerous FELLA patents.

SERVICE

"Out of sight, out of mind." But not at FELLA!

Together with our dealers, we are always there and ready to provide reliable support to our partners, both at home and abroad – as we have been doing for almost 100 years. In conjunction with our well organised spare parts stores, regular further technical training for our dealers ensures that FELLA machines can be used, maintained and repaired to a professional standard. This comprehensive service ensures minimum downtime for your FELLA machines and makes a significant contribution to high-yield and stress-free forage harvesting.

- ▶ *Exceptionally wide range of mowers, hay tedders and rakes*
- ▶ *Innovation and progress: continuous further development for a first-rate harvest*
- ▶ *Minimum downtime, maximum machine availability thanks to professional dealers and a well-organised spare parts supply*
- ▶ *Long service life machines "Made in Germany"*



**FELLA-Werke GmbH**

Fellastraße 1-3

90537 Feucht

Germany

① +49 9128 73-0

✉ +49 9128 73-117

fella-vertrieb@AGCOcorp.com

www.fella.eu

Your FELLA quality partner