





FELCO develops, manufactures, and markets pruning and cutting solutions. Our complementary products and services consistently meet professional requirements and reflect our commitment to provide the best tools possible.

Since its inception in 1945, FELCO has been located in Switzerland, in the heart of the Watch Valley, between Neuchâtel and La Chaux-de-Fonds.

## Contents

	3	Swiss Precision. Made to Last.
--	---	--------------------------------

- 3 FELCO's DNA
- 4 Sustainable FELCO
- 5 A Look Into FELCO's History
- 9 Products, Materials & Design
- 10 Cutting Head Materials
- 11 Handle Materials
- 12 Straight Tools vs. Ergonomic Tools
- 12 Bypass Cutting Heads vs. Anvil Cutting Heads
- 13 Gearing Mechanisms
- 14 Power Tools

#### 15 Choosing the Right Product

- 16 The Right Foundations
- 18 Product Selector
- 19 Solution to Ergonomics: Rotative Handles

#### 20 What Type of Activity are you Conducting?

- 21 Landscaping / Municipalities
- 22 Ornamental Horticulture
- 23 Nurseries
- 24 Fruit & Nut Trees / Orchards
- 25 Grapes & Vineyards
- 26 Arboristry / Forestry
- 27 Other Settings

#### 28 Spare Parts & Maintenance

- 29 Spare Parts
- 30 Maintenance
- 31 How to Maintain Your FELCO Tool

## Swiss Precision. Made to Last.

**Design** for unique functional and robust products.

**High quality materials** for superior performance and consistency.

**Unique production processes** produce unrivaled usability.

High mechanical precision of each component to allow interchangeability.

Spare parts available to increase longevity.

## FELCO's DNA.

#### Genuine, Responsive, Reliable

In the way we listen to our customers, make our products, and serve our users.

#### Sustainable

With our approach to the environment, lifetime guarantee of any products, quality made to last.

#### **Family Business**

Deeply rooted in Switzerland with strong ethical values - Excellence, Dynamism, Team Spirit and Kindness.

**Transparency, Freedom, Accountability** For all our employees.



View of Switzerland from Neuchâtel Region

## How is FELCO a Sustainable Business?



Use of recycled coolant and lubricant for grinding

David Ribeiro Lima, apprentice, in front of a CN equipment

## Within Its Factory

- Closed-loop recycling metal scraps, lubricants
   & coolants.
- Solar panels to allow factory to create its own electricity.

## Amongst Its Employees

- FELCO assures its employees long-term careers at FELCO through apprenticeship programs.
- FELCO collaborates with specialized institutions to offer a protected workshop for people with disabilities.

## With Its Products

- · Each part of a product can be replaced.
- All the components of a product are made from recycled materials.
- $\cdot$  Zero toxins in the materials.
- · All products are produced by 100% green energy.

Exploded parts of FELCO 8

## A Look Into FELCO's History

#### As the Second World War ended

and Europe was in the process of piecing itself back together, the nation was in search of ways to improve their lives, especially when it came to agriculture. One solution appeared when a young man named Félix Flisch brought to the market a tool that, soon after, revolutionized agriculture. On August 1, 1945, Félix Flisch had created FELCO.

As soon as Félix Flisch started the company, he had a worldwide vision. Instead of focusing on selling his products locally at first, he immediately expanded the brand to multiple countries outside of Switzerland. In 1946, only one year after the

Ø	Fully Fluch	Devent N° 249065 2 femile
CONFEDERATION SUISSE PROTECTION DES INVENTIONS	. 4 3	II-7 4.9
BREVET PRINCIPAL Nº 249065.		7 4
Le bureau scanigné, apart constaté l'accompliasment des formalités posseriles par le loi, a délivré le présent hervet principal à MOIDICUI		
Pélix Flisch.	7	-5 0-5
Peseux-Neuchâtel (Suisse),	13 14	en il
pour l'invention intituite :	12 11	
Sécateur,	1	
	///	111
	///	
qui est décrite dans l'espacé dijoist.	///	
Date du dépôt de la demande 8 mai 1945, 16 1/2 h.	14.	2-11-
La durée maximum de la protection légale s'étend jusqu'au B. mai. 1960.	//	
La taxe annuelle échoit le 8 mai.	U	
La réalité, la valeur ou la nouveauté de l'invention ne sont pas garanties par la délivrance du brevet	11-	
BUREAU FÉDÉRAL DE LA PROPRIÉTÉ INTELLECTUELLE Le directeur	Fig.1	Fig.2
kup		
BERNE, le 16 mars 1948.		

FELCO original patent from 1945

company was founded, the first exports to Belgium, Holland, Germany, and South Africa took place. In the span of a couple of months, FELCO was already an international company.

In order to become worldwide, FELCO had to learn to be successful selling their products to the richest and poorest countries of the world without having to jeopardizing quality. As a solution, FELCO started using simplified designs to create some of their products in order to reduce the cost yet maintain high quality. By taking this step, FELCO was able to successfully offer solutions to users with limited budgets.

**In 1948,** the FELCO 2, which is the first FELCO tool that deeply impacted agriculture as we know it today, was launched. Félix Flisch was able to build a tool that perfectly fit the person's ergonomics, as it was both light and comfortable to use. This emphasis on the user's comfort differentiated FELCO products from any other products that had been invented.



Juliette and Félix Flisch

From that point on, the company started to expand and develop multiple families of products all which had the same DNA. In the 1950s, the first series of cable cutters with a triangular cutting head were launched. 10 years later, the ergo line pruners with a rotative handle and orientated cutting head were introduced. In the 1970s, the first power tools driven by air were placed on the market, followed by the first handsaws in the 1980s.

Beginning of the 1990s, the first autonomous power tools driven by a battery were put on the market. As such new and unique products were being produced, the FELCO factory in Switzerland was being built and slowly expanding throughout the years.

Since the beginning, FELCO's goal was to produce and create products that fit to the user's ergonomics. As each new family of products was being invented throughout the years, the emphasis on the user's comfort which differentiated FELCO tools from any other agricultural products was the main priority.



Original factory FELCO 1945

As the demand for products was increasing each year, FELCO was faced with the challenge of transforming a limited craft production into a large-scale industrial activity. This transition had to maintain, and even strengthen, key success factors such as consistency of quality. Targeting large scale production with limited cost and short lead-time was a priority. The control of key suppliers such as PRETAT for forging, and key technologies such as robotic and CN machining all supported this strategy.



Les Geneveys-sur-Coffrane, Switzerland



FELCO's 75th Anniversary

#### As FELCO celebrated its 50th anniversary in1995,

it was already a key player in its industry with a broad assortment of products and a large footprint in the world's agricultural market.

In the last 25 years, management focus has been to scale up the overall product portfolio, industrial activity, and distribution over the world. By 2010, FELCO products were distributed over 100 countries and about 90% of FELCO sales came from exports.

In 2020, FELCO now controls 60% of its own distribution with subsidiaries in Switzerland, France, Belgium, Luxembourg, Netherlands, Germany, Austria,

South Africa, Australia, USA, and Canada. As FELCO celebrates its 75th anniversary, the range of product assortment is bigger than ever as it offers multiple solutions for various types of activity and level of productivity.

FELCO is an organization which is able to design, industrialize, produce and distribute all of its product line and for that FELCO has received many awards throughout the years. From what started off as a small workshop with only four employees including Félix Flisch, FELCO is now one of the largest and bestknown professional pruner companies in the world.



PRETAT, FELCO Group forging plant in Cornol, Switzerland

## Products, Materials & Design

M

# What materials are used for **cutting heads?**

The cutting head is the essence of any product. For pruners, the cutting head is two pieces. For saws or knives, the cutting head is one piece. In order to manufacture a cutting head, you need to find the perfect balance between **Tenacity**, **Elasticity** and **Hardness**. In order to meet these criteria, FELCO has been working with 3 distinct types of materials: **High Carbon Steel**, **Stainless Steel & Chrome-Plated Carbon Steel**.



Cutting blades in high carbon steel

## High Carbon Steel

High Carbon Steel is used on all pruners, loppers, and cable cutters blades. It offers the best compromise between tenacity, elasticity and hardness. However, it has the disadvantages of being high cost, hard to manufacture, and does not have natural resistance to corrosion.



Snip cutting head in stainless steel

## Stainless Steel

Stainless Steel is used on snips and knives blades. It has the advantage to resist corrosion as it is stainless, which means that no matter how many times you clean it the blade will not rust. However, it does not fully meet the 3 criteria especially in terms of hardness and tenacity.



Saw blade in chrome-plated carbon steel

## Chrome-Plated Carbon Steel

Chrome Plated Carbon Steel is used on saw blades. It meets the two criteria of hardness and tenacity by ensuring its lifetime lasting ability. The blade is protected against rust as it is chrome plated.

# What materials are used for **handles?**

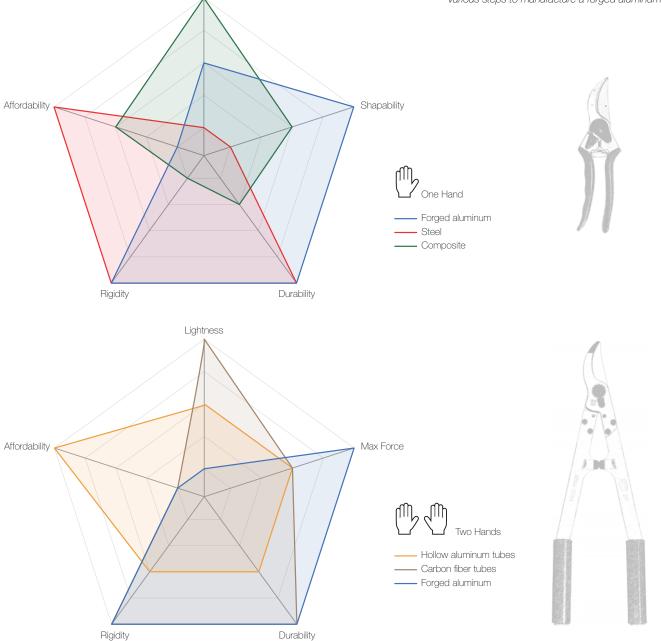
For one-handed tools, materials used include forged aluminum, steel and composite.

For two-handed tools, materials used include forged aluminum, hollow tube aluminum and carbon fiber tubes.

Lightness



Various steps to manufacture a forged aluminum handle



## Straight Tools vs. Ergonomic Tools

Straight tools are for multipurpose use. By using a straight tool, you can adapt various postures and the tool can be held in many different ways.

**Ergonomic tools** are for **specific** purpose. By using an ergonomic tool, you will be provided with more comfort, precision and less effort will be needed as long as it is held in the correct position.



Comparison of straight (FELCO 4) and ergonomic (FELCO 8) tools

## Bypass Cutting Heads vs. Anvil Cutting Heads

Bypass cutting heads are two blades, where one blade passes the other blade. By bypassing the blade, the material is never crushed, it is sliced which creates a clean cut preventing any diseases or fungi such as mushrooms to infiltrate the wood and cause it to rot. Anvil cutting heads require the blades to make a smaller opening to cut a piece of material against a flat surface, requiring less effort and producing a symmetrical cut. However, if not maintained properly, an anvil cutting head has a higher risk than a bypass tool to crush or damage material.



Comparison of bypass (FELCO 220) and anvil (FELCO 230) cutting heads

## Gearing Mechanisms

Gearing Mechanisms are used to cut bigger and higher branches without having to use the force of your body weight.

The **advantage** of a gearing mechanisms is that it provides the force in order to cut a certain type of materials.

The **disadvantage** of a gearing mechanism is that it requires the product's handles to be wide open, therefore limiting reach and maneuverability.



Cable cutter gearing mechanism



## Power Tools

Power Tools are a division of FELCO products that require a very limited amount of effort when used as they are electric tools. These tools have a higher rate of productivity because they limit the amount of effort and fatigue while making multiple cuts over days, weeks, and even months of work.

Purchasing a FELCOtronic is a significant investment. However, it will only take a few months to obtain a return on investment.

9000



```
FELCO 802 in use
```

#### Cost vs Savings with FELCOtronic | Example with current prices and costs in USA

FELCOtronic costs including labor, yearly maintenance (from 2nd pruning season) and investment (for 1st pruning season)
 Manual labor costs



Cumulative savings with FELCOtronic

Pruning Seasons

## Choosing the Right Product

FELCO 6

# The right **foundations** and **solutions** will help you...







limits effort and injuries

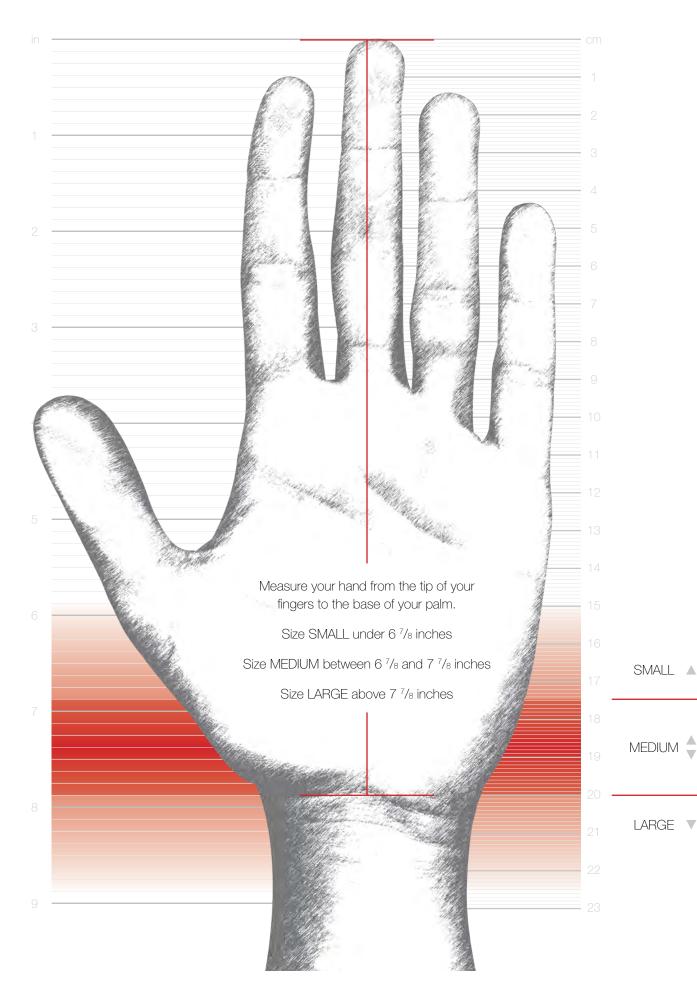
Save time

Avoid shocks

avoid the source of cumulative micro injuries



FELCO 15 in use



## Product Selector





MEDIUM







LARGE



F11



F4











felco.com

## Solutions to Ergonomics: **Rotative Handles**

In the 1960s, FELCO developed the first rotative handle pruner in collaboration with the Max Plank Institute in Germany. This was a disruptive innovation.

#### PROS

- Rotative handles allow force to be spread throughout multiple muscles of your hand, which causes less effort and fatigue than if you were using the same muscle over and over again as you do with regular handles.
- As your hand is moving with the rotation of the handles, it reduces the amount of friction between your fingers and the handle.
- With the limited amount of effort due to the handle always being perfectly positioned into the user's hand, it allows for a higher number of cuts, as many as over 5,000 cuts a day.

#### CONS \_\_\_\_\_

- The rotative handle is made to fit perfectly into one's hand in a specific position. Therefore, if the work is not continuous and the same position is not held over a long period of time, it will take time to readjust the handle every time a new position is adopted.
- It is highly recommended to size down for increased comfort.



FELCO 15 in use

## What Type of Activity Are You Conducting?

The following pages contain our recommendations for tools that are useful in these settings. Applicable tools are not limited to those shown.



Horticulture | page 22



Fruit & Nut Trees / Orchards | page 24



Arboristry / Forestry | page 26



Landscaping / Municipalities | page 21



Nurseries | page 23



Grapes & Vineyards | page 25



Other Settings | page 27

## Landscaping / Municipalities

#### One-Handed Pruner | F2



tool ergonomics: basic

cutting capacity: high

versatility: high

optimal duration of use: mid

## Lopper | F211-60



## Ornamental Horticulture

#### One-Handed Pruner | F14



tool ergonomics: superior

cutting capacity: low

versatility: high

optimal duration of use: mid

#### One-Handed Pruner | F6



tool ergonomics: superior

cutting capacity: mild

versatility: high

optimal duration of use: mid

#### One-Handed Pruner | F8



tool ergonomics: superior

cutting capacity: high

versatility: high

optimal duration of use: mid





tool ergonomics: basic

cutting capacity: high

versatility: high

optimal duration of use: short

#### One-Handed Pruner | F2



tool ergonomics: basic

cutting capacity: high

versatility: high

optimal duration of use: mid

#### One-Handed Pruner | F6



tool ergonomics: superior

cutting capacity: mild

versatility: high

optimal duration of use: mid

## Fruit & Nut Trees / Orchards

#### One-Handed Pruner | F7



tool ergonomics: superior

cutting capacity: high

versatility: mild

optimal duration of use: long

# Lopper F220 tool ergonomics: superior cutting capacity: high versatility: mild optimal duration of use: mild

#### Power Tool | F822



tool ergonomics: superior

cutting capacity: high

versatility: high

optimal duration of use: long

## Grapes & Vineyards

#### One-Handed Pruner | F15



tool ergonomics: superior

cutting capacity: low

versatility: mild

optimal duration of use: long

#### One-Handed Pruner | F12



tool ergonomics: superior

cutting capacity: mild

versatility: mild

optimal duration of use: long

#### Power Tool | F802



tool ergonomics: superior

cutting capacity: mild

versatility: high

optimal duration of use: long

## Arboristry / Forestry



#### Power Tool | F822



tool ergonomics: superior

cutting capacity: high

versatility: high

optimal duration of use: long





tool ergonomics: basic

cutting capacity: high

versatility: high

optimal duration of use: mid



## Spare Parts & Maintenance

## Spare Parts

#### All parts of a FELCO tool are replaceable.



# Why are FELCO tools made to last?

The core of the tool is built strong and guaranteed for life. All parts made with forged aluminum have a lifelong guarantee. Any part of the product that becomes worn out over time is easily replaceable.



# When should I replace parts of my FELCO tool?

Worn out parts are meant to be replaced based on intensity and duration of use. Replacement is needed if the quality of cut, ease of use adjustment or use are no longer guaranteed. The main parts that should be replaced are either the blade, the spring or the anvil blade.



# Is it easy for me to replace the parts of my FELCO tool?

**Yes.** All components are made with the highest level of precision, making them easily replaceable while maintaining their quality of use for many years. Most parts are replaceable at a customer level and don't require special tools.

## Maintenance

### Why maintain your FELCO tool?



# By cleaning and removing rust...

...you prolong the tool's lifespan.



# By greasing the tool...

...you reduce the amount of friction and therefore effort when making a cut.



# By adjusting the tool...

...you improve the quality of cut.



# By sharpening the blade...

...your cut is clean and does not harm the plant. You improve the ease of cut and therefore reduce the effort to cut.

## How to maintain your FELCO tool

#### Sharpening

Sharpen your tool in the course of the day or when it becomes dull. Use of a FELCO 903 sharpener:



1. Sharpen the edge



2. Pressure on the edge.



3. Remove the burr.

## Adjusting

Adjust your tool in the course of the day or when required. Use of a FELCO 2/30 adjustment key:



1. Remove the spring.



4. Block locking segment.



2. Free locking segment.



5. Fully open and release.



3. Adjust the tightness.



6. Blade crossing should be between 1/2 & 2/3.



7. Spring back in place.

## Cleaning & Oiling

Clean and oil your FELCO tool at the end of the day. Use of FELCO 980 oil and FELCO 981 cleaner:



1. If wet, dry with cloth



4. ...off the sap grove...



2. Spray cutting head with cleaning spray.



5. ...and off the anvil blade edge.



3. Use adjustment key to scrape sap off blade..



6. Spray oil.

#### Complete Cleaning

A complete cleaning of your FELCO tool, including dismantling and greasing, should be done at least once each season:



1. Use a metal brush to remove dirt & rust from the cutting head.



2. Remove the spring.



5. Remove the blade.



3. Unlock the locking segment.



6. Brush all metallic surfaces to remove dirt & rust.



4. Unscrew and remove the nut.

7. Use cleaning spray on blade & anvil blade.



8. Use adjustment key to scrape dirt and rust from blade and anvil blade.



9. Finish cleaning blade and anvil blade with abrasive sponge.



12. Load the grease pocket.



10. All components clean and ready to be

reassembled.

13. Grease external side of blade before assembly.



16. Adjust cutting head and then place spring.



11. Fix anvil blade then grease external surface.

14. Place bolt and load with grease.



15. Finish cutting head assembly.



17. Oil cutting head and spring.



18. Complete!



Notes
-------




## Notes