

*The leading manufacturer of hand wound  
mechanical starter motors for diesel engines*





## Easy hand starting with Kineteco Spring Starters

Kineteco spring starters are used all over the world in many applications including ships' lifeboats, irrigation pumps, black start generators, mining vehicles and fire pumps to name but a few.



Kineteco is the leading manufacturer of hand wound, mechanical spring starters, which replace the electric starter motor and allow a diesel engine to be started easily and safely by hand, without a battery or alternator.

- Efficient
- Reliable
- Versatile
- Convenient
- Safe

Kineteco is dedicated to designing and producing product of the highest quality, which has ensured an enviable reputation for reliability, even though our starters are used in the toughest environments.

Kineteco delivers the highest quality professional service and support worldwide, with a growing network of distributors trained to handle all your technical and purchasing requirements.

Kineteco spring starters are fully assembled by our production engineers at our UK premises, from components sourced 100% in the UK.



## How Spring Starting Works

Kineteco spring starters require no external power systems unlike their electric, air (pneumatic) or hydraulic counterpart systems. They are simple, compact, dependable and in many cases the preferred choice for back-up starting.

The Kineteco range of spring starters are a direct replacement for the existing electric (or other) starter system, making them easy and simple to fit.

Using a Kineteco spring starter is safe and easy. The user winds the starter using the supplied cranking handle. The winding ratchet means the user can wind as fast or as slowly as they wish. Once wound, the spring starter can be tripped as and when the user is ready and chooses to do so.

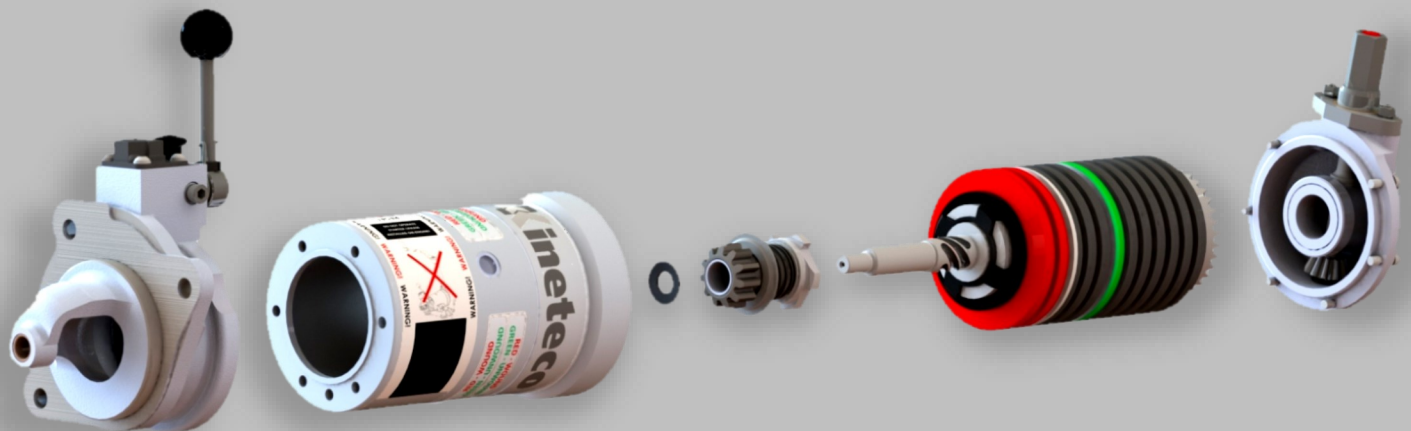
There is none of the risk associated with electrical, pneumatic or hydraulic energy sources.

Kineteco spring starters convert stored potential energy, in the form of a wound up spring, into rotational kinetic energy used to turn over and start the engine. The spring is wound by simple hand cranking. The energy is released by pushing a lever on the starter.

There are two types of spring used in Kineteco spring starters:

### **Disc Springs** (also referred to as 'Belleville Washers')

Conically shaped steel washers which are compressed by means of a ball screw

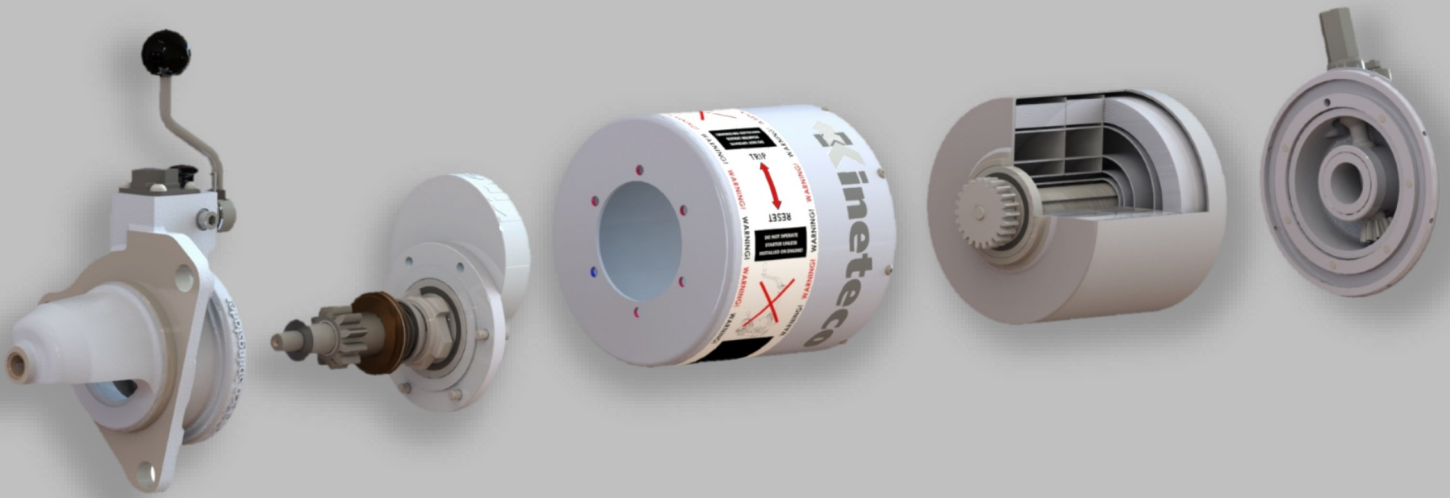


Disc spring benefits for spring starting are:

- High output torque
- Robust

**Power Springs** (also referred to as 'clock' springs)

Coiled flat steel sheet which is wound up



Power spring benefits for spring starting are:

- High number of output revolutions
- Compact

In addition to differing spring technologies, Kineteco have pioneered the use of gearbox technology in spring starting.

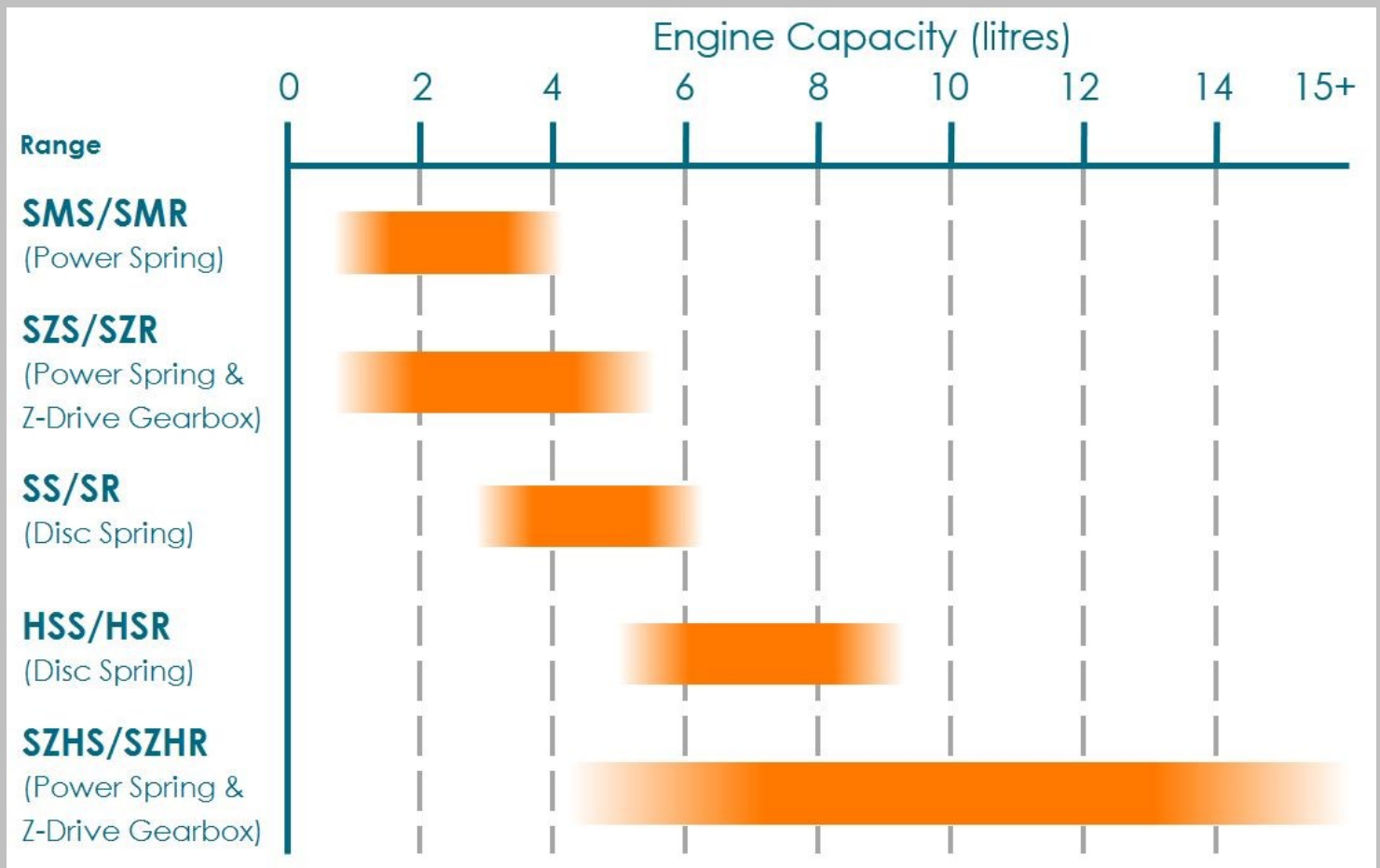
Using a Z-drive gearbox on the SZS/SZR and SZHS/SZHR models not only allows the energy delivery from the spring to be tuned to the engine starting application but also allows the body of the spring starter to be moved away from the engine and create more clearance.

## Product Range — Which Starter?

Kineteco spring starters are suitable for a large range of diesel engines and can start small 400cc single cylinders all the way up to 15L 6 cylinders.

The chart below can be used to identify which spring starter is suitable for your application. This chart is to be used as a rough guide, as starting performance varies between engine makes and models and is dependent on climate and load.

Check the website to see if Kineteco already fit an engine. For engines not listed, the technical team will be able to assist with finding the correct spring starter.



## Starter Models Overview

### SS/SR

The original spring starter with standard duty disc springs  
Rugged, reliable with a guaranteed 5,000 start lifecycle  
Versatile for all environments  
Available with all additional features



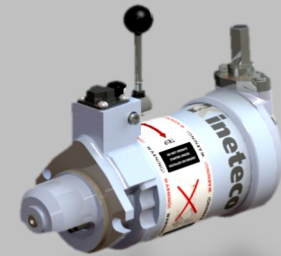
### HSS/HSR

The original spring starter with heavy duty disc springs  
Rugged, reliable with a guaranteed 5,000 start lifecycle  
Versatile for all environments, starting engines up to 9L  
Available with all additional features



### SMS/SMR

Compact, lightweight spring starter using power springs  
Fits smaller engines than the SS/HSS models  
Lower cost option with high reliability



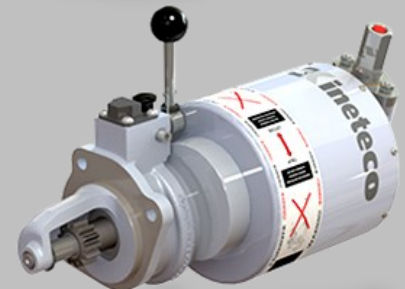
### SZS/SZR

Power spring starter with Z-drive gearbox  
Gearbox allows for fitment to smaller engines  
Gear ratios available to start a wider range of engines



### SZHS/SZHR

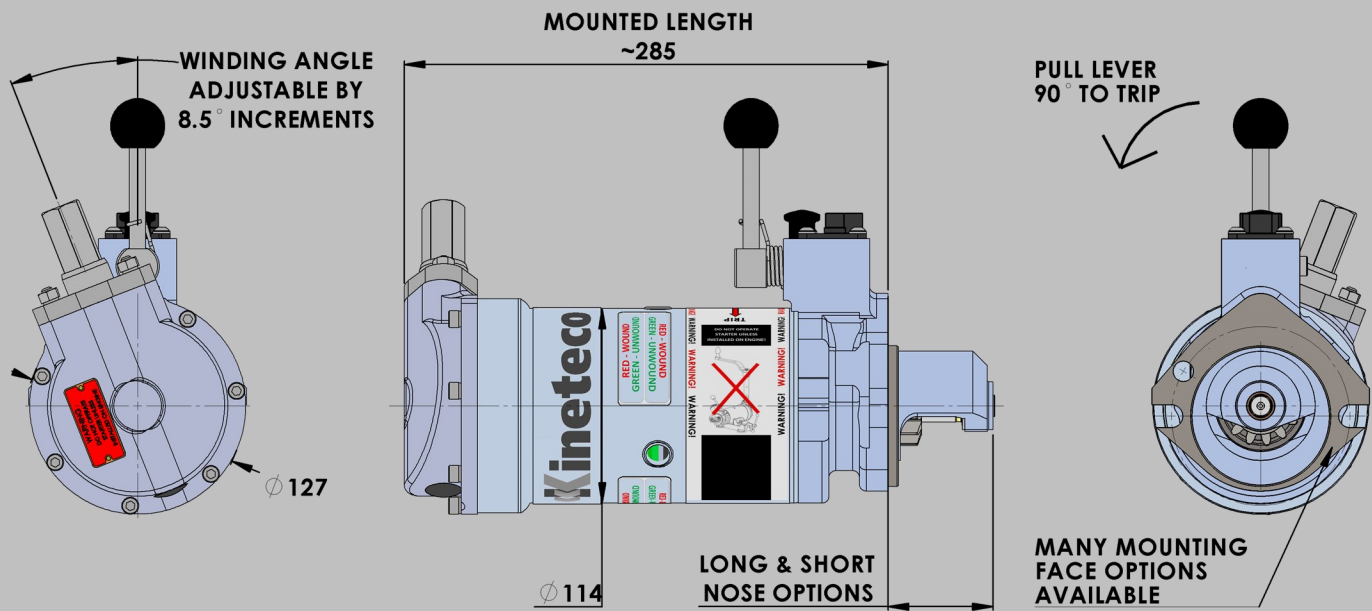
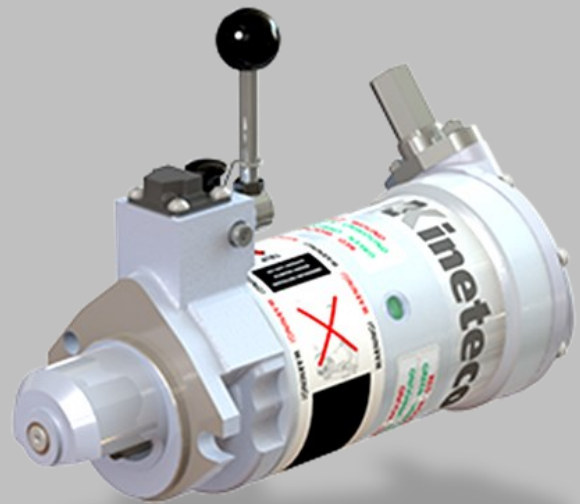
High powered Z-drive power spring starter  
65% more starting energy than an HSS  
Starts engines up to 15L  
Gearbox adds flexibility of fitment and pinion output



## SS/SR Series

*Starting first time even in the most demanding conditions*

- The original spring starter
- Unique 50 years' reliable service
- Rugged steel construction
- High torque disc spring power
- Wide range of engines to 6L
- Manual set and trip mechanism
- Crank wound with detachable handle



## Kineteco SS/SR Series

### Spring Starter Specification

<b>Description</b>	Spring starter with disc springs on a ball screw wound by a detachable handle, set and tripped by hand. Formerly made by Lucas/CAV
<b>Rotation of Starter</b>	SS = CW SR = CCW
<b>Engine Capacity</b>	Max. 6 cylinders, up to 1L per cylinder (subject to local environmental conditions and engine start-up load)
<b>Torque</b>	95 Nm
<b>No. of Output Turns</b>	3
<b>Output Energy</b>	Nom. 1000 Joules
<b>Cold Starting</b>	To 0°C (32°F) starting aids may be required
<b>Maximum Winding Load</b>	61 Nm torque
<b>To Wind Fully</b>	10 turns
<b>Mounting Flange Types</b>	SAE 1, SAE2/3, SAE 4/5, Ford. Can be customised
<b>Pinions Available</b>	Fellows stub 10/12, 8/10, Module 2.5, 3.0. From 11 to 18 teeth Can be customised
<b>Winding Handle Position</b>	Variable in 8.5° increments
<b>Weight</b>	16kgs
<b>Shipping Dimensions</b>	40 x 22 x 27 cm
<b>Standard Equipment</b>	Winding handle and handbook

### Options – All models have the following options available

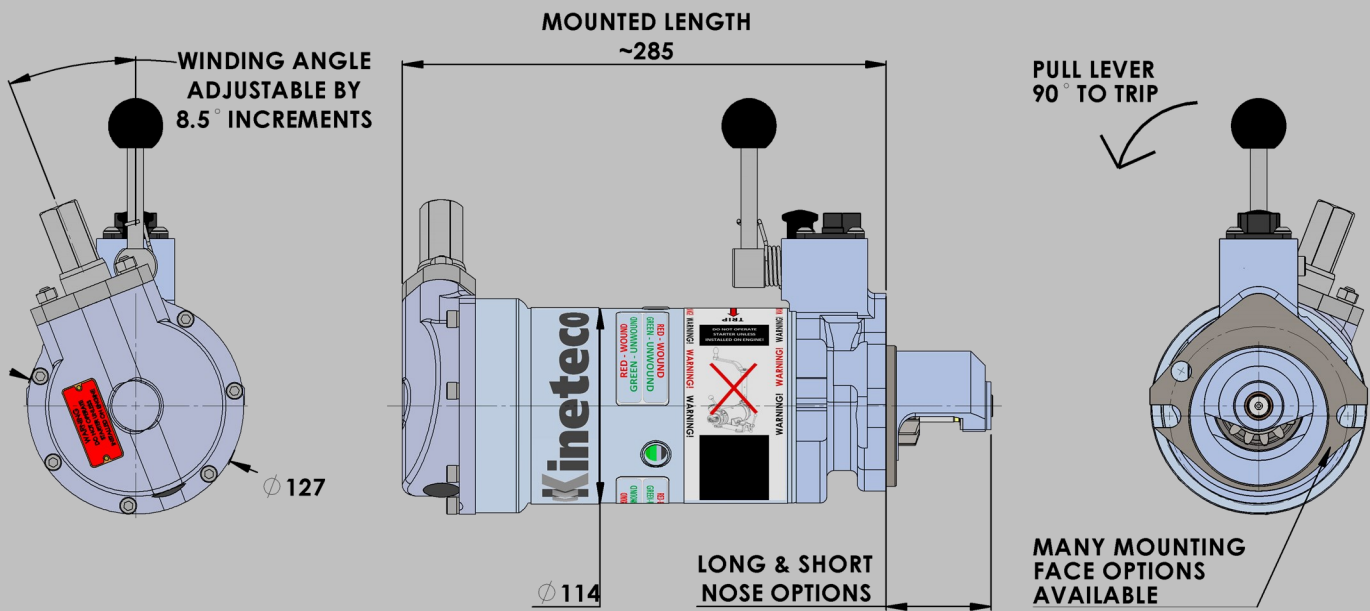
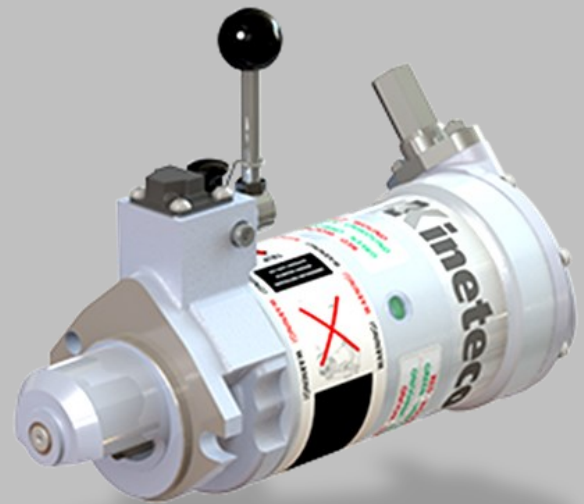
<b>F</b>	Flameproof
<b>E</b>	E-pack for dual starter installations
<b>M</b>	Sealed version for marine environments



## HSS/HSR Series

*Starting up to 9 litre engines with ease*

- Heavy duty version of the original spring starter
- Unique 50 years reliable service
- Rugged steel construction
- High torque disc spring power
- Suits a wide range of engines
- Manual set and trip mechanism
- Crank wound with detachable handle



## Kineteco HSS/HSR Series

### Spring Starter Specification

<b>Description</b>	Spring starter with heavy duty disc springs, on a ball screw wound by a detachable handle, set and tripped by hand. Formerly made by Lucas/CAV
<b>Rotation of starter</b>	HSS = CW HSR = CCW
<b>Engine Capacity</b>	Max. 6 cylinders, up to 1.5L per cylinder (Subject to local environmental conditions and engine start-up load)
<b>Torque</b>	126 Nm
<b>No. of Output Turns</b>	3
<b>Output Energy</b>	Nom. 1500 Joules
<b>Cold Starting</b>	To 0°C (32°F) starting aids may be required
<b>Maximum Winding Load</b>	81 Nm torque
<b>To Wind Fully</b>	10 turns
<b>Mounting Flange Types Available</b>	SAE 1, SAE2/3, SAE 4/5, Ford. Can be customised
<b>Pinions Available</b>	Fellows stub 10/12, 8/10, 6/8; Module 2.5, 3.0. From 11 to 18 teeth Can be customised
<b>Winding handle position</b>	Variable in 8.5° increments
<b>Weight</b>	16kgs
<b>Shipping Dimensions</b>	40 x 22 x 27 cm
<b>Standard Equipment</b>	Winding handle and handbook

### Options - All models have the following options available

<b>F</b>	Flameproof
<b>E</b>	E-pack for dual starter installations
<b>M</b>	Sealed version for marine environments



## Kineteco SMS/SMR Series

### Spring Starter Specification

<b>Description</b>	SS/SR based spring starter, power spring pack, set and tripped by hand. Designed, manufactured by, and exclusive to, Kineteco
<b>Rotation of starter</b>	SMS = CW SMR = CCW
<b>Engine Capacity</b>	Max. 4L (subject to local environmental conditions and engine start-up load)
<b>Torque (Range)</b>	47Nm
<b>No. of Output Turns</b>	7
<b>Output Energy</b>	Nom. 950 Joules
<b>Cold Starting</b>	To 5°C (41°F) starting aids may be required
<b>Maximum Winding Load</b>	25Nm torque
<b>To Wind Fully</b>	20 turns
<b>Mounting Flange Types Available</b>	SAE 1, SAE2/3, SAE 4/5, Ford. Can be customised
<b>Pinions Available</b>	Fellows stub 10/12, 8/10, 6/8; Module 2.5, 3.0. From 11 to 18 teeth Can be customised
<b>Winding handle position</b>	Variable in 8.5° increments
<b>Weight</b>	14kgs
<b>Shipping Dimensions</b>	40 x 22 x 27 cm
<b>Standard Equipment</b>	Winding handle and handbook

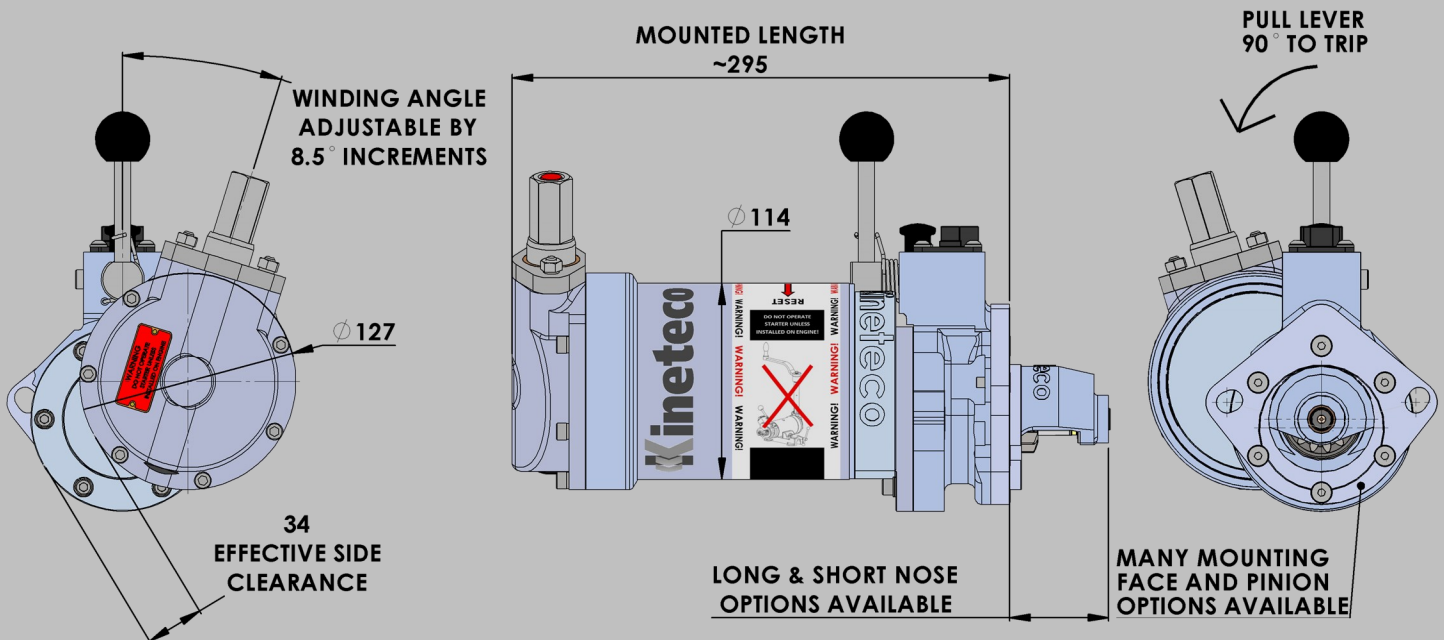
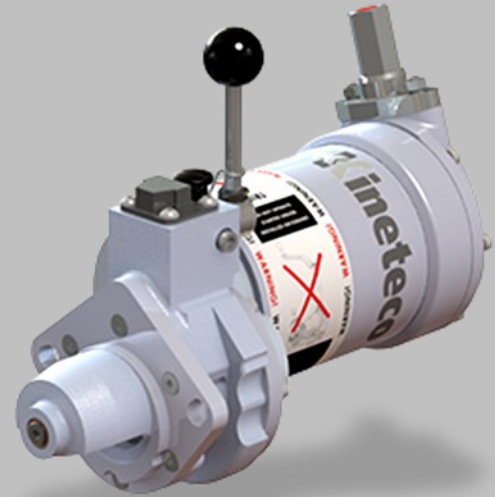
### Options - All models have the following options available

<b>F</b>	Flameproof
<b>E</b>	E-pack for dual starter installations
<b>M</b>	Sealed version for marine environments

## SZS/SZR Series

### Hand starting for the modern engine

- Z-drive spring starter with offset gearbox
- Small, lightweight starter for engines with restricted block clearance
- Smooth action power spring for easy winding
- Standard SS/SR nosepieces with
- manual engagement and trip mechanism
- Standard SS/SR crank wind with detachable handle



## Kineteco SZS/SZR Series

### Spring Starter Specification

<b>Description</b>	SS/SR based spring starter with Z-Drive gearbox, power spring pack, set and tripped by hand. Designed, manufactured by, and exclusive to, Kineteco
<b>Rotation of Starter</b>	SS = CW SR = CCW
<b>Engine Capacity</b>	Max. 4L (subject to local environmental conditions and engine start-up load)
<b>Torque (Range)</b>	20 – 73 Nm Incremental (gearing dependant)
<b>No. of Output Turns</b>	4.4 – 16 Incremental (gearing dependant)
<b>Output Energy</b>	Nom. 950 Joules
<b>Cold Starting</b>	To 5°C (41°F) starting aids may be required
<b>Maximum Winding Load</b>	25Nm torque
<b>To Wind Fully</b>	20 turns
<b>Mounting Flange Types</b>	SAE 1, SAE2/3, SAE 4/5, Ford. Can be customised
<b>Pinions Available</b>	Fellows stub 10/12, 8/10, 6/8; Module 2.5, 3.0. From 11 to 18 teeth Can be customised
<b>Winding Handle Position</b>	Variable in 8.5° increments
<b>Weight</b>	14kgs
<b>Shipping Dimensions</b>	40 x 22 x 27 cm
<b>Standard Equipment</b>	Winding handle and handbook

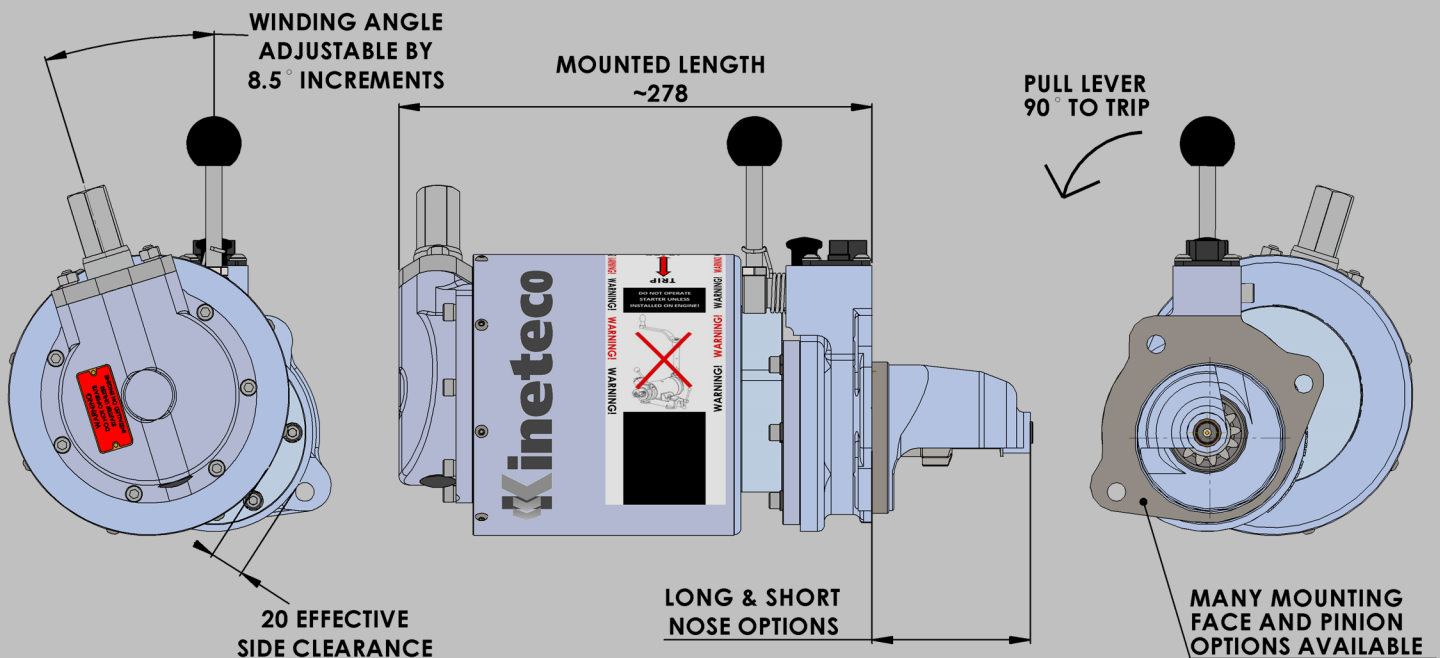
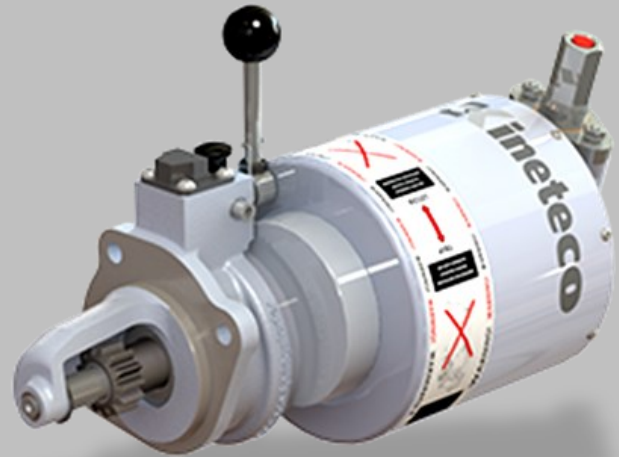
### Options - All models have the following options available

<b>F</b>	Flameproof
<b>E</b>	E-pack for dual starter installations
<b>M</b>	Sealed version for marine environments

## SZHS/SZHR Series

### Easy starting for large capacity engines

- Powerful spring starter with Z-drive offset gearbox
- Smooth action power spring for easy winding
- Standard SS/SR nosepieces with manual engagement and trip mechanism
- Standard SS/SR crank wind with detachable handle



## Kineteco SZHS/SZHR Series

### Spring Starter Specification

<b>Description</b>	SS/SR based spring starter with Z-Drive gearbox, heavy duty power spring, set and tripped by hand. Designed, manufactured by, and exclusive to, Kineteco
<b>Rotation of Starter</b>	SZHS = CW SZHR = CCW
<b>Engine Capacity</b>	Max. 6 cylinders, to over 2.25L per cylinder (subject to local environmental conditions and engine start-up load)
<b>Torque (Range)</b>	29.5 – 112 Nm Incremental (gearing dependant)
<b>No. of Output Turns</b>	5 – 19 Incremental (gearing dependant)
<b>Output Energy</b>	Nom. 2510 Joules
<b>Cold Starting</b>	To 5°C (41°F) starting aids may be required
<b>Maximum Winding Load</b>	40Nm torque
<b>To Wind Fully</b>	35 turns
<b>Mounting Flange Types</b>	SAE 1, SAE2/3, SAE 4/5, Ford. Can be customised
<b>Pinions Available</b>	Fellows stub 10/12, 8/10, 6/8; Module 2.5, 3.0. From 11 to 18 teeth Can be customised
<b>Winding Handle Position</b>	Variable in 8.5° increments
<b>Weight</b>	20kgs
<b>Shipping Dimensions</b>	40 x 22 x 27 cm
<b>Standard Equipment</b>	Winding handle and handbook

### Options - All models have the following options available

<b>F</b>	Flameproof
<b>E</b>	E-pack for dual starter installations
<b>M</b>	Sealed version for marine environments



## Product Features & Options

Kineteco spring starters can be specified as follows:

- F:** Flameproof finish, originally Lloyds Register approved, for use in hazardous environments
- E:** E-pack dual start protection system. For dual starter installations where an electric starter is also used, the E-pack prevents simultaneous starter engagement
- M:** Marine build, featuring sealed internals for reliable use at sea

	Clockwise	Counter-Clockwise	Disc Springs	Power Spring	Z Drive Gearbox	Flameproof	Marine option	E-Pack dual start protection	High Torque	High output turns
SS	●		●			○	○	○		
SR		●	●			○	○	○		
HSS	●		●			○	○	○	●	
HSR		●	●			○	○	○	●	
SMS	●			●			○	○		
SMR		●		●			○	○		
SZS	●			●	●		○	○		
SZR		●		●	●		○	○		
SZHS	●			●	●		○	○		●
SZHR		●		●	●		○	○		●

● Standard feature      ○ Optional extra

## E-PACK

Kineteco recommend spring starters are fitted with an E-pack system if they are intended for use in a dual starter installation with an electric starter.

Kineteco's E-pack system automatically disables the electric starter when the spring starter is engaged. This is essential on dual starter engine applications where the spring starter is used as an emergency back up to the electric starter, such as a lifeboat engine.

In a dual starter application the two starters should not be operated at the same time as this can cause damage to both starters and the engine itself.

The Kineteco E-pack system prevents this damage occurring.



Spring starters featuring an E-pack will have an 'E' suffix on the model number.

Please specify that your installation is 'dual start' when submitting your enquiry to ensure an E-pack add-on is included for your spring starter.

## Applications Guide

Kineteco are able to build a spring starter to your own configuration if your engine manufacturer is not one of those listed below.

- BAUDOUIN
- BMW
- BUKH
- CATERPILLAR
- CUMMINS
- DAEWOO
- DAF
- DAIHATSU
- DETROIT DIESEL
- DEUTZ
- DOOSAN (DAEWOO)
- FARYMANN
- FORD
- GENERAL MOTORS/BEDFORD
- HARBOR MASTER
- HATZ
- INTERNATIONAL HARVESTER
- ISUZU
- IVECO AIFO/FIAT
- JCB
- JOHN DEERE
- KIRLOSKAR
- KUBOTA
- LEYLAND
- LISTER
- LOMBARDINI
- MAN
- MERCEDES BENZ
- MERMAID
- MITSUBISHI
- MITSUI-DEUTZ
- MTU
- MWM
- ONAN
- PERKINS
- PERKINS PRIMA
- PETER
- RUGGERINI
- SABB
- SABRE
- SAMÉ
- SAVIEM
- SCANIA
- SISU/VALMET
- SIYANG POWER (EAST CHINA)
- SLANZI MOTORS
- VM
- VOLVO PENTA
- WATERMOTA MARINE
- WISCONSIN
- YANMAR

Please contact the technical team, or complete the new enquiry form on our website, to discuss your application needs in more detail.



**Kineteco International Limited**

Unit 10, Willesborough Industrial Park  
Kennington Road  
Ashford, Kent TN24 0TD  
UK

Tel: +44 (0) 1233 811500  
Email: [sales@springstarter.com](mailto:sales@springstarter.com)  
Web: [www.springstarter.com](http://www.springstarter.com)

