



### MAIN TECHNICAL DATA

Type	AZF45..- nose / AZF46..- noseless			
Nominal voltage (V)	12		24	
Rated power (kW)	3.4	4.2	4.0	5.5
Length-nose	< 274			
Length-noseless (mm)	< 321			
Weight-nose	9.8 to 10.3			
Weight-noseless (kg)	11			
Engagement	direct		two stage	
Yoke diameter (mm)	95			
Stator	4-pole windings			
Drive assembly	6 rollers			
Solenoid 12V	pull-in current < 62 A			
	hold-in current < 14 A			
24V	pull-in current < 30 A			
	hold-in current < 7.5 A			
Terminals	30 - M8, M10			
	50 - M4, M5, M6, 6.3 x 0.8			
Basic protection	Protected against ingress of dust, solid foreign objects and splashing water (IP 56)			
Ambient temperature	- 40°C to + 110°C			

### STARTER MOTORS WITH REDUCTION GEAR

#### APPLICATIONS

Diesel engines of 4 to 12 litre displacement.

#### FEATURES

- High specific power output and efficiency.
- Excellent cold crank capability with low current drain from battery.
- Reduced weight and dimensions in comparison to direct drive starter motors.
- Highly efficient drive assembly for idle run of the pinion.

#### DESIGN

Nose or noseless versions for specific applications on the engine.

Excitation using 4-pole windings enables high torque output.

Rubber shock absorber, low-noise, iron planetary reduction gear with pinion and armature in one axis.

Pinion shift mechanism with solenoid, fork lever and helix enabling direct engagement.

Solenoid switch with pull-in and hold-in winding and double return spring for effective breaking of the main contacts.

Six-roller clutch and drive assembly is designed to transmit power from the starter motor to the engine.

High quality thermal resistant materials.

Support brackets of grey cast iron, nodular cast iron or die cast aluminium.

Free of asbestos, cadmium, beryllium and ammonia.

24V starter motors with direct engagement can be additionally equipped with an auxiliary electronic or electro-mechanical start relay which enables triggering of the starter motor with low current (< 2A ).

Electronic soft start relay in a 24V version enables effective two-stage soft engagement. It controls the starting process and prevents damage and overloading of the starter pinion and the engine ring gear.

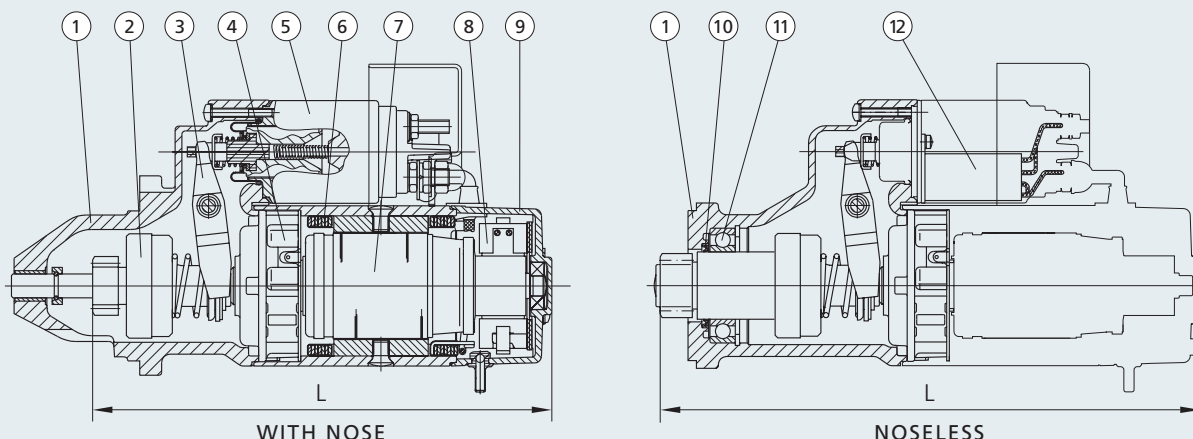
For the nose version additional dust protection with a lip seal on the pinion is available.

Water protection is achieved with drain holes, O-rings and a rubber boot.

Oil-proof versions for wet clutch applications.

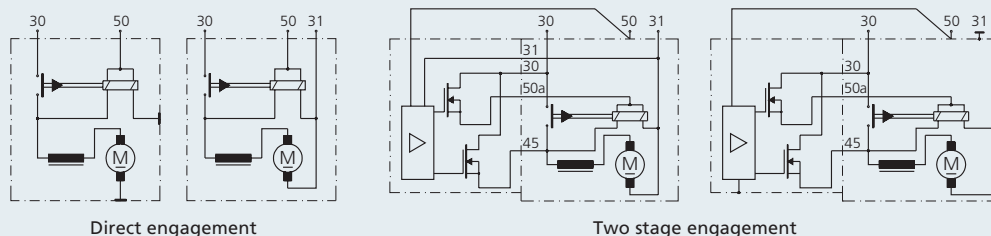
Insulated return versions are available.

CROSS SECTION



1. Drive end bracket • 2. Drive assembly • 3. Engaging lever • 4. Reduction gear • 5. Starter switch • 6. Stator  
 7. Armature • 8. Brush holder • 9. Commutator end bracket • 10. Gasket • 11. Bearing • 12. Soft start relay (option)

CONNECTION DIAGRAMS



CHARACTERISTICS

