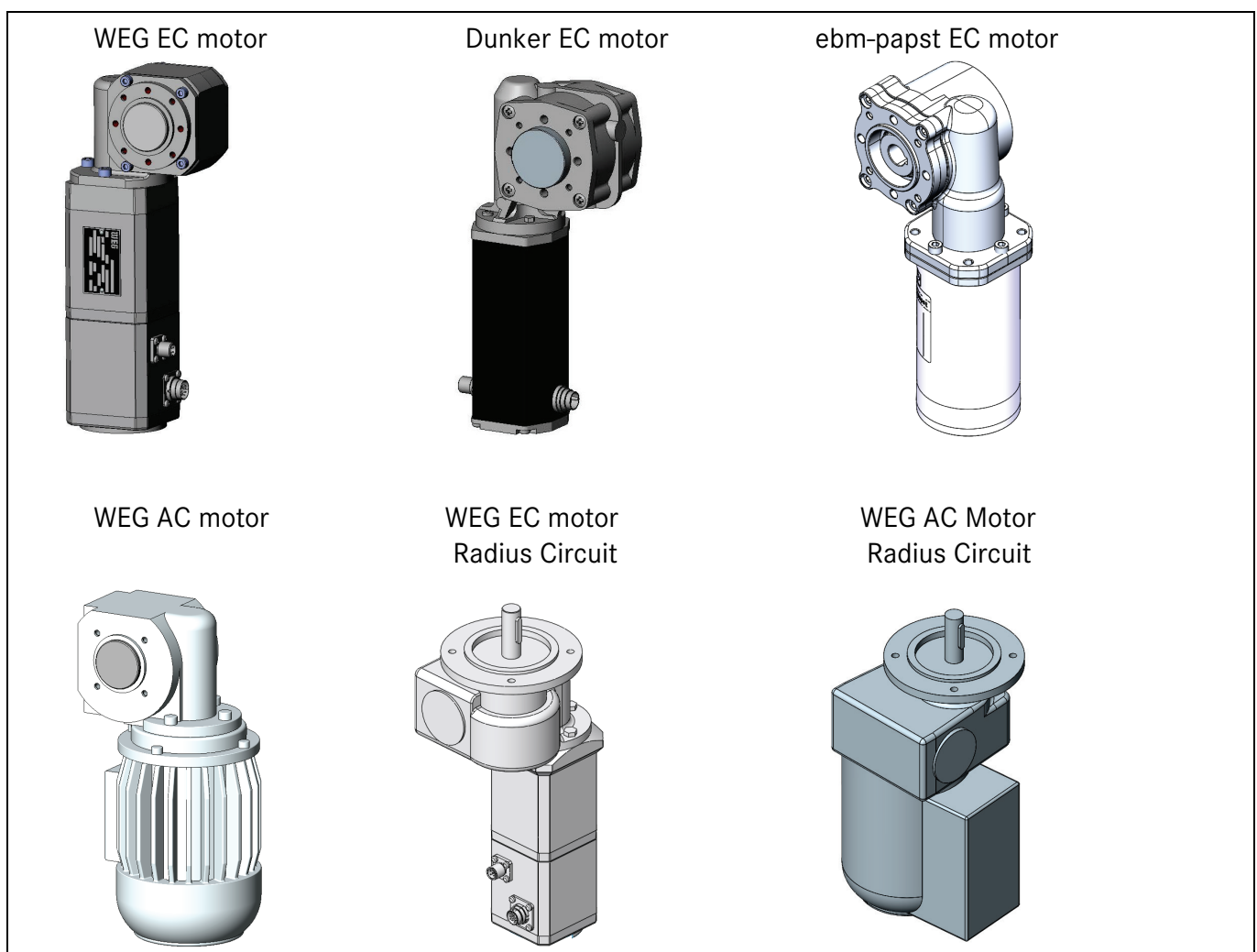


## STEIN 300 drive motors

- WEG EC motor
- Dunker EC motor
- ebm-papst EC motor
- WEG AC motor
- WEG EC motor – Radius Circuit
- WEG AC motor – Radius Circuit

## STEIN Workpiece Transport System



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**STEIN Automation GmbH & Co. KG**

Carl-Haag-Straße 26  
78054 VS-Schwenningen

Telephone: (+)49 (0)7720 / 8307 - 0

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## 1 Introduction

### 1.1 Short description

In this document, various DC and AC motors are described, which can be used at the STEIN 300 transport system.

Please check your order confirmation for the motortype which is used in your project.

### 1.2 Appropriate use and liability exclusions

The drive motors must only

- Be built into STEIN 300 belt systems.  
Compatibility is only assured with STEIN 300 components.
- Be used indoors
- Be operated in dry areas
- Be employed in areas where there is no risk of explosion
- Be used in a non-congested operation.

Unauthorised interventions, alternations or repairs carried out to the drive motors invalidate the warranty.

STEIN Automation accepts no liability for any damage caused by unauthorised interventions, alternations or repairs.

## 2 Safety instructions



**ATTENTION!**

**Always follow the safety instructions in the operating instructions of the assembly in which the drive motor is used (e.g. belt element)!**



**DANGER!**

**The drive motors must be connected up exclusively by a qualified electrical engineer!**

### 3 WEG EC drive motor

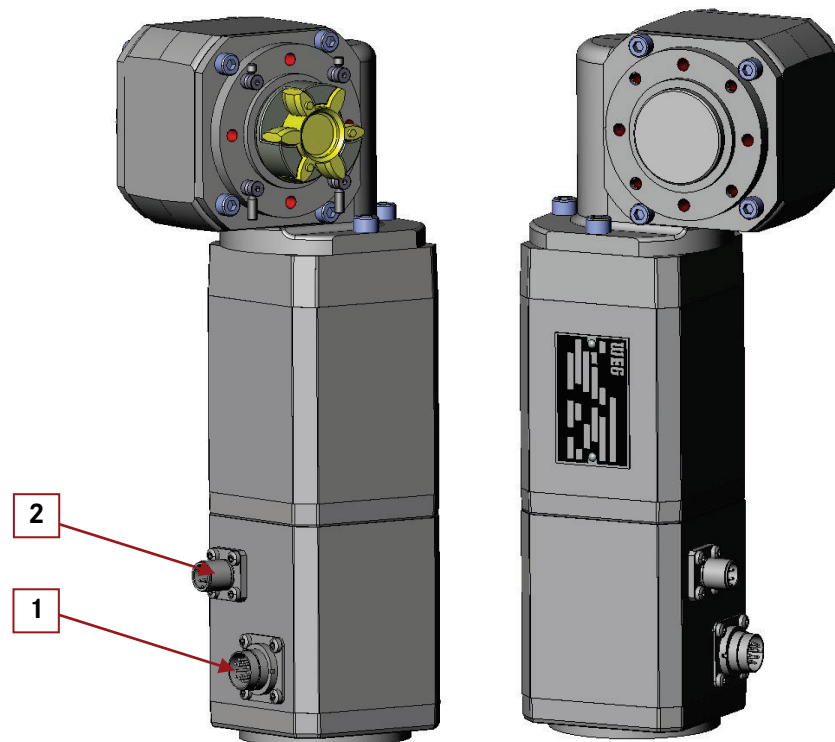
The WEG EC drive motors are brushless DC motors with integrated commutation electronics and “mini PLC”. The integrated “mini PLC” in the motor allows certain functions to be controlled and stored in the motor. Each motor can be configured with individual motor parameters.

The 40 and 24 volt power supply and the connection of the digital inputs/ outputs are provided via the STEIN’s power supply unit. Each drive motor requires its own power supply unit.

(Information on the power supply unit can be found in the power supply unit operating manual)

Fig. 3-1:  
WEG EC motor

- 1 Plug X1
- 2 Plug X2



The drive motor has the following connections:

- **Plug X1 (M16 12-pole):** For power supply and digital I/O signals.
- **Plug X2 (M12 5-pole):** CAN open connection for connecting the parameterisation of the motor functions. Optionally, the motor functions can also be carried out via the STO commands via the CAN open bus instead of the digital I/O signals.

### 3.1 Technical data

The power supply unit provides for the following output voltages.

40 V output voltage -	3 A (Continuous current) 5 A (Peak)
24 V output voltage -	0,3 A

**i**

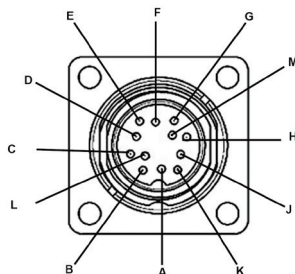
For more information about the power supply unit, please refer to the operating instructions of the power supply unit.

### 3.2 Motor plug wiring

Plug M16 12-pole		
Pin	Meaning	Remarks
E+F	40 Volt	Voltage
M+G	0 Volt	
D	24 Volt	Logic voltage - 24 Volt max. 300 mA
B	Input 0	The motor functions can be selected via these 4 inputs. (The ASI bus is connected via the ASI I/O circuit board in the power supply unit)
C	Input 1	
L	Input 2	
J	Input 3	
H	Input 4	
A	Out 1	The motor can report its conditions via these two outputs. (Connection via ASI I/O circuit board in the power supply unit)
K	Out 2	

Plug M12 5-pole		
Pin	Meaning	Remarks
4	CAN H	
5	CAN L	

Fig. 3-2:  
Plug wiring  
M16 12-polig



**i**

Further information on the control of the motor can be obtained on request from STEIN Automation.

### 3.3 Dimension sheet

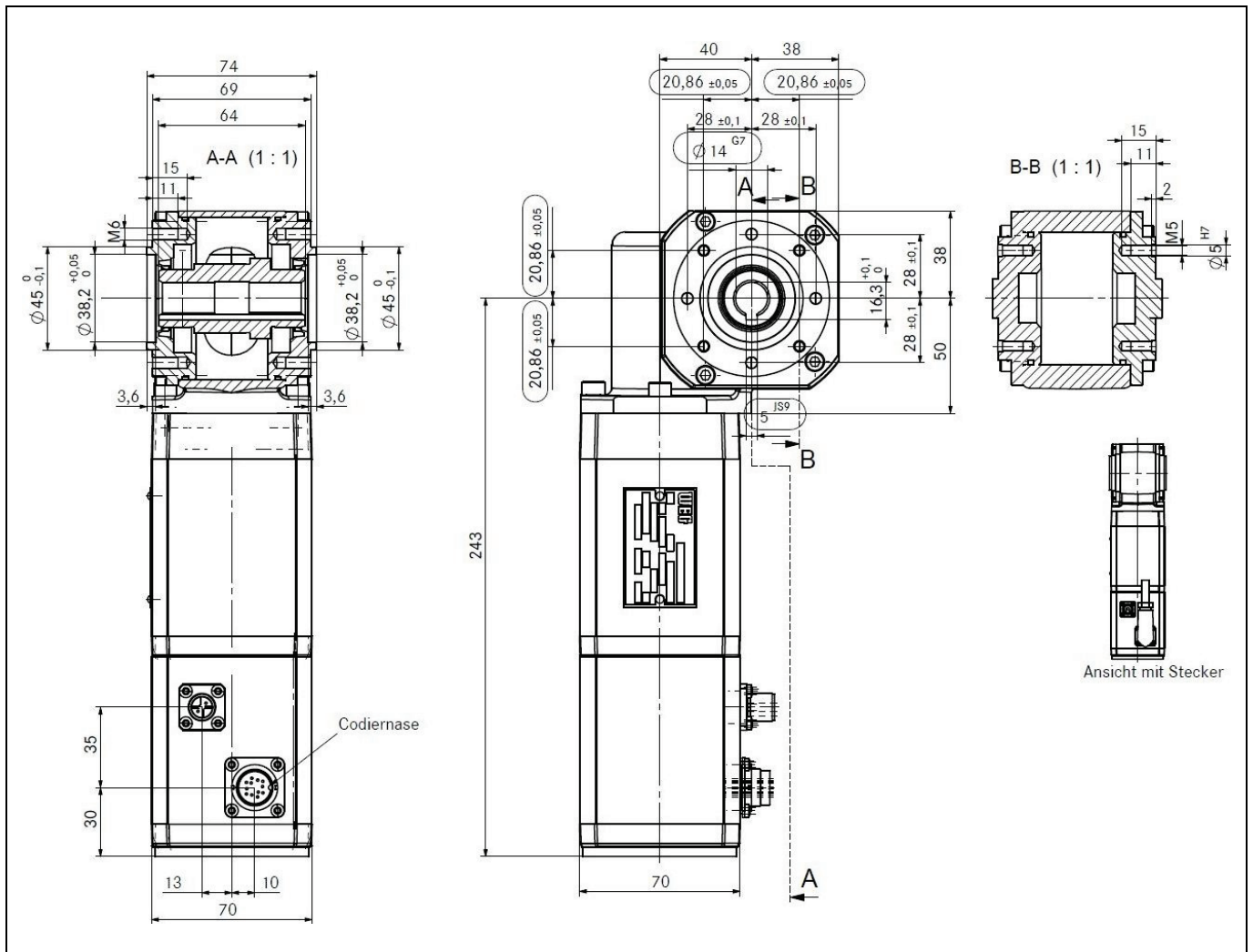


Fig. 3-3: Dimension sheet WEG EC motor

### 3.4 Spare parts



Fig. 3-4: WEG EC motor

Pos.		Order number	Description	Number
		S10523	WEG EC motor gear unit 30:1	1
		S10524	WEG EC motor gear unit 20:1	1
		S10525	WEG EC motor gear unit 50:1	1



## 4 Dunker EC drive motor

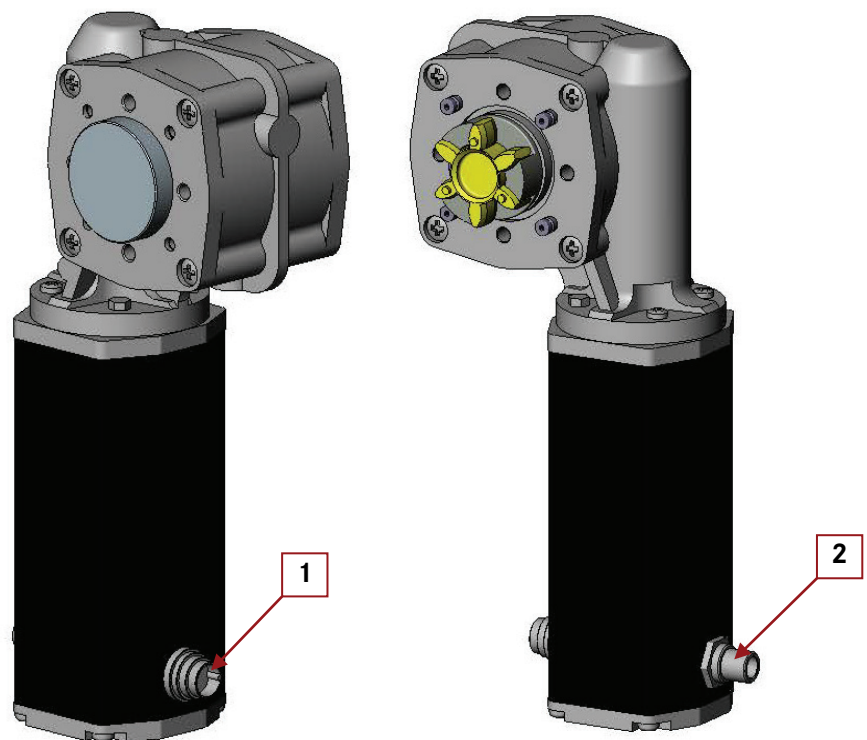
The Dunker EC drive motors are brushless DC motors with integrated commutation electronics and “mini PLC”. The integrated “mini PLC” in the motor allows certain functions to be controlled and stored in the motor. Each motor can be configured with individual motor parameters.

The 40 and 24 volt power supply and the connection of the digital inputs/ outputs are provided via the STEIN’s power supply unit. Each drive motor requires its own power supply unit.

(Information on the power supply unit can be found in the power supply unit operating manual)

Fig. 4-1:  
Dunker EC motor

- 1 Plug X1
- 2 Plug X2



The drive motor has the following connections:

- **Plug X1 (M16 12-pole):** For power supply and digital I/O signals.
- **Plug X2 (M12 5-pole):** CAN open connection for connecting the parameterisation of the motor functions. Optionally, the motor functions can also be carried out via the STO commands via the CAN open bus instead of the digital I/O signals.

## 4.1 Technical data

The power supply unit provides for the following output voltages.

40 V output voltage -	3 A (Continuous current) 5 A (Peak)
24 V output voltage -	0,3 A

**i**

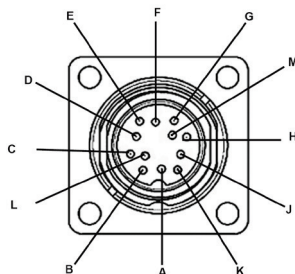
For more information about the power supply unit, please refer to the operating instructions of the power supply unit.

## 4.2 Motor plug wiring

Plug M16 12-pole		
Pin	Meaning	Remarks
E+F	40 Volt	Voltage
M+G	0 Volt	
D	24 Volt	Logic voltage - 24 Volt max. 300 mA
B	Input 0	The motor functions can be selected via these 4 inputs. (The ASI bus is connected via the ASI I/O circuit board in the power supply unit)
C	Input 1	
L	Input 2	
J	Input 3	
H	Input 4	
A	Out 1	The motor can report its conditions via these two outputs. (Connection via ASI I/O circuit board in the power supply unit)
K	Out 2	

Plug M12 5-pole		
Pin	Meaning	Remarks
4	CAN H	
5	CAN L	

Fig. 4-2:  
Plug wiring  
M16 12-pole



**i**

Further information on the control of the motor can be obtained on request from STEIN Automation.

### 4.3 Dimension sheet

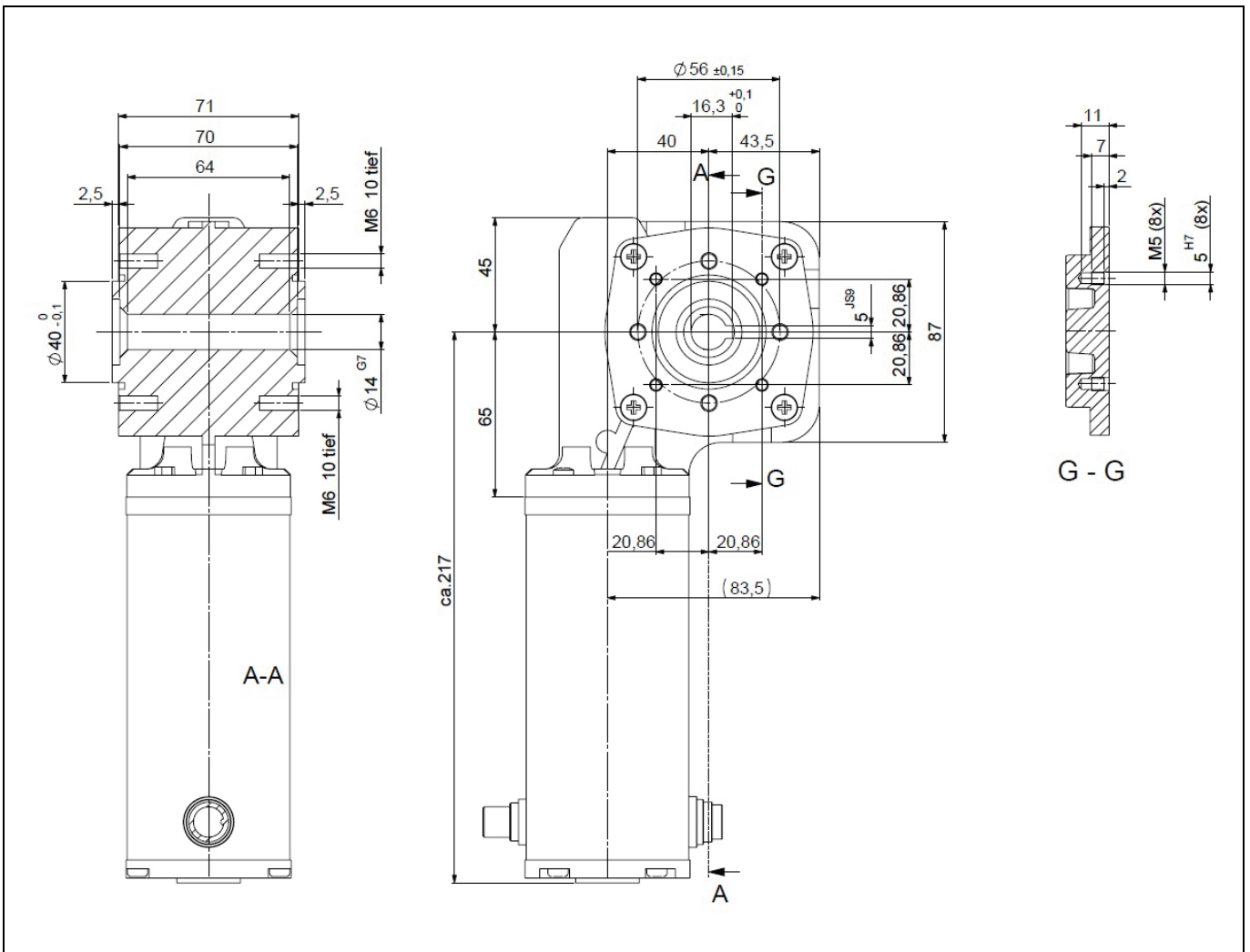



Fig. 4-3: Dimension sheet Dunker EC motor

#### 4.4 Spare parts



Fig. 4-4: Dunker EC motor

Pos.		Order number	Description	Number
		S10520	Dunker EC motor gear unit 30:1	1
		S10522	Dunker EC motor gear unit 20:1	1
		S10521	Dunker EC motor gear unit 50:1	1

## 5 ebm-papst EC drive motor

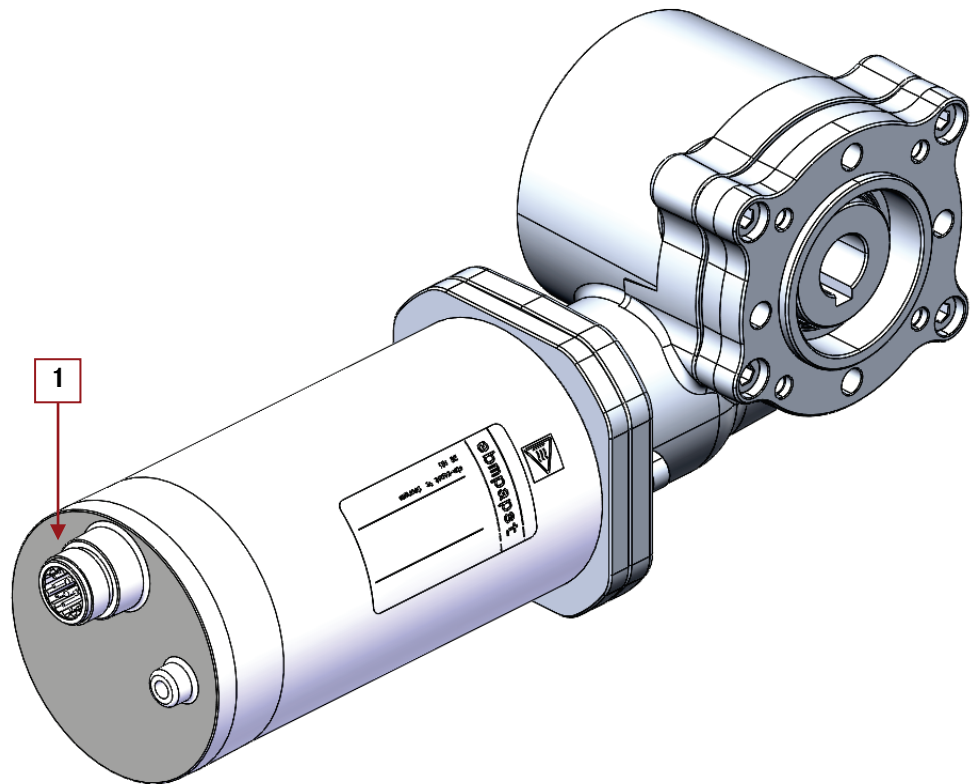
The ebm-papst EC drive motors are brushless DC motors with integrated commutation electronics and “mini PLC”. The integrated “mini PLC” in the motor allows certain functions to be controlled and stored in the motor. Each motor can be configured with individual motor parameters.

The 40 and 24 volt power supply and the connection of the digital inputs/ outputs are provided via the STEIN's power supply unit and an adapter cable. Each drive motor requires its own power supply unit and an adapter cable.

(Information on the power supply unit can be found in the power supply unit operating manual)

Fig. 5-1:  
ebm-papst EC motor

### 1 Plug X1



The drive motor has the following connections:

- **Plug X1 (M16 12+3-pole):** For power supply, RS485 interface for parameterisation and digital I/O signals.

## 5.1 Technical data

The power supply unit provides for the following output voltages.

40 V output voltage -	3 A (Continuous current) 5 A (Peak)
24 V output voltage -	0,3 A

**i**

To connect the ebm-papst EC motor to the Stein power supply unit, an adapter is required. Also see chapter **Fehler! Verweisquelle konnte nicht gefunden werden..**

**i**

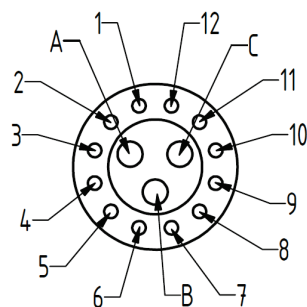
For more information about the power supply unit, please refer to the operating instructions of the power supply unit.

## 5.2 Motor plug wiring

Plug M16 12+3-pole		
Pin	Meaning	Remarks
1	Digital IN A	NPN 24V
2	Digital IN B	NPN 24V
3	Digital IN 1	NPN 24V
4	Digital IN 2	NPN 24V
5	Digital OUT 1	PNP 24V
6	Digital OUT 2	PNP 24V
7	Digital OUT 3	PNP 24V
8	Analog IN 1	0...10V (differential)
9	Analog GND	GND for Analog IN 1 (differential)
10	RS485 +	Programming bus
11	RS485 -	Programming bus
12	U Logik	Logic power supply +24V
A	Ballast	Ballast resistor
B	UZK	Power supply +48V
C	GND	Power- / Signal-GND

Fig. 5-2:  
Plug wiring  
M16 12-pole

Ansicht auf 12+3 polige Buchse  
(nur sinnbildlich dargestellt)



**i**

Further information on the control of the motor can be obtained on request from STEIN Automation.

### 5.3 Possible combinations

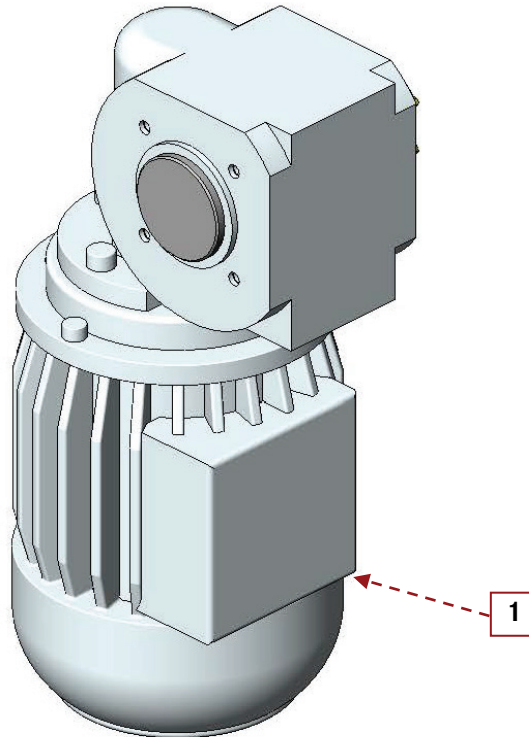
		Spare part number	S10560	S10561	S10562	S10563	S10564	S10565	S10570
	Description	S Number							
Motor	EBM EC Motor ECI-63.20-K4-Plug 48V	S10533	X		X				
Motor	EBM EC Motor ECI-63.20-K4-DOO SG 30 i=30 (BHF Gear)	S10528		X		X		X	
Motor	EBM EC Motor ECI-63.20-K4-DOO SG 50 i=50 (BHF Gear)	S10529					X		
Motor	EBM EC Motor ECI-63.20-K4 with internal break and gear SG30_01 i=30	S10569							X
Software	STEIN Software for EBM EC Motor	S10550		X			X		
Software	EBM Software for EBM EC Motor Firmware: 4420080011.bin Config file: 223515.kickzip	S10551	X			X		X	
Software	EBM Special Firmware for Pallet Fast Feed System				X				
Gear	Neugart PLE040-032-SSSA3AA-Y6/25/25/40/B14/M5	S10546	X						
Gear	Planetary gear PLE 40, 1-layered_MB 3583_6_25_25_40_B14_M5	S10531							
Gear	Planetary gear / Angular gear WPLE 40, 1-layered_MB 4388_6_25_25_40_B14_M5	S10532			X				
Cable	Cable for Inpotron power supply (300_824_001)	S20876		X			X		
Cable	Cable K4 Logic/Power L=3m for control by customer	S20877	X		X	X		X	X
Cable	Cable K4 Logic/Power L=5m with straight connector for control by customer	S20889							
Cable	Cable K4 Logic/Power L=5m with angled connector for control by customer	S20891							

## 6 WEG AC drive motor

The WEG AC motor is a three-phase motor in which the speed is fixed via the gear ratio. For power supply (400 volt) the motor is connected to a power unit.

Fig. 6-1:  
WEG AC motor  
(Three-phase current)

- 1 Cable with plug to the power unit





## 6.1 Technical data

The power unit provides an output voltage of 400 volts.

**i**

For more information about the power unit please refer to the operating instructions of the power unit.

Nominal data for connection to frequency	50 Hz
Rated speed	1370 min <sup>-1</sup>
Rated voltage	220 - 240 / 380 - 415 V
Rated current	0,68 / 0,35 A
Rated power	90 W
Power factor	cos φ 0,78
Ambient temperatur	40°C
Duty type	IP54
Insulation class according to EN 60034-1	F

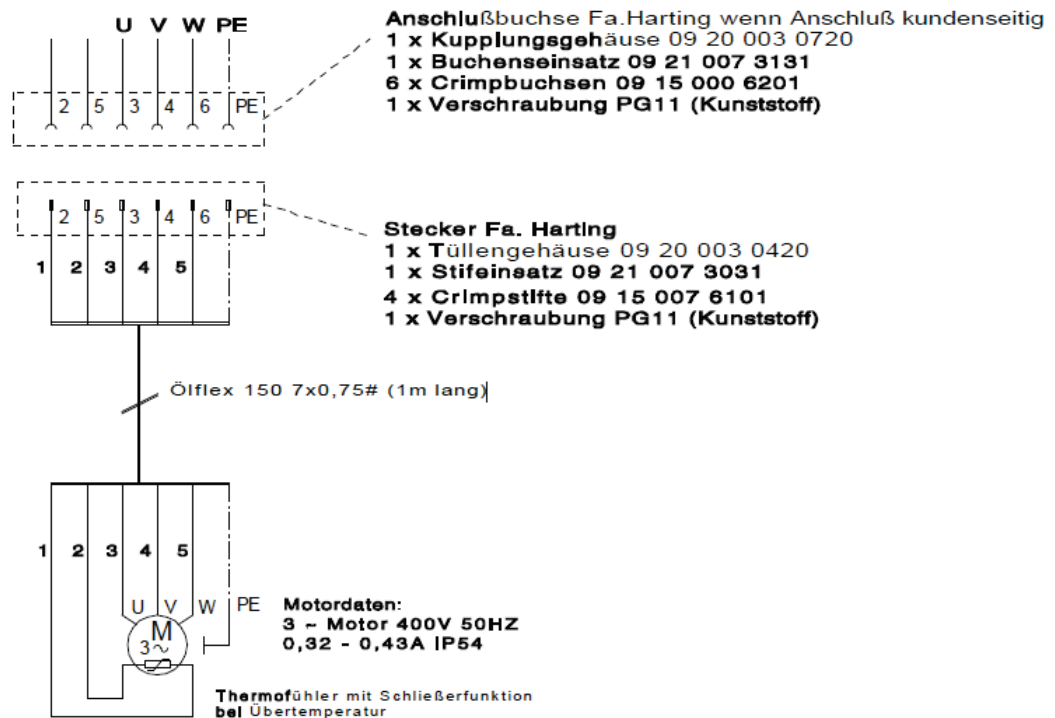
**i**

The gear ratio of the drive motor can be found on the nameplate.

## 6.2 Motor plug wiring

Pin	Meaning
1	Neutral wire
2	Thermal sensor
3	L1 (U)
4	L2 (V)
5	Thermal sensor
6	L3 (W)
PE	Protective conductor

Fig. 6-2:  
Plug wiring  
M16 12-pole



**i**

Further information on the control of the motor can be obtained on request from STEIN Automation.

### 6.3 Dimension sheet

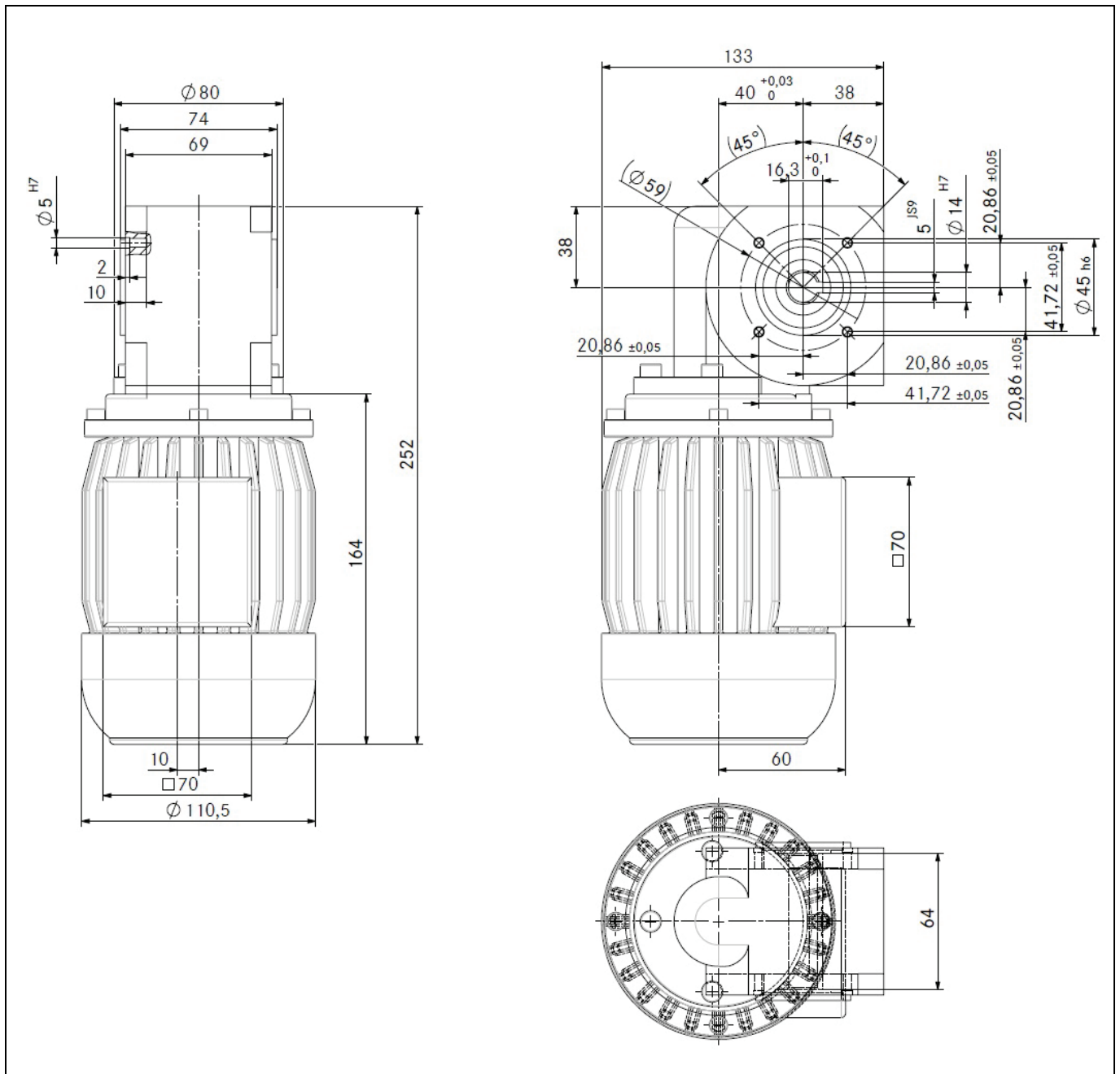


Fig. 6-3: Dimension sheet WEG AC motor

## 6.4 Spare parts

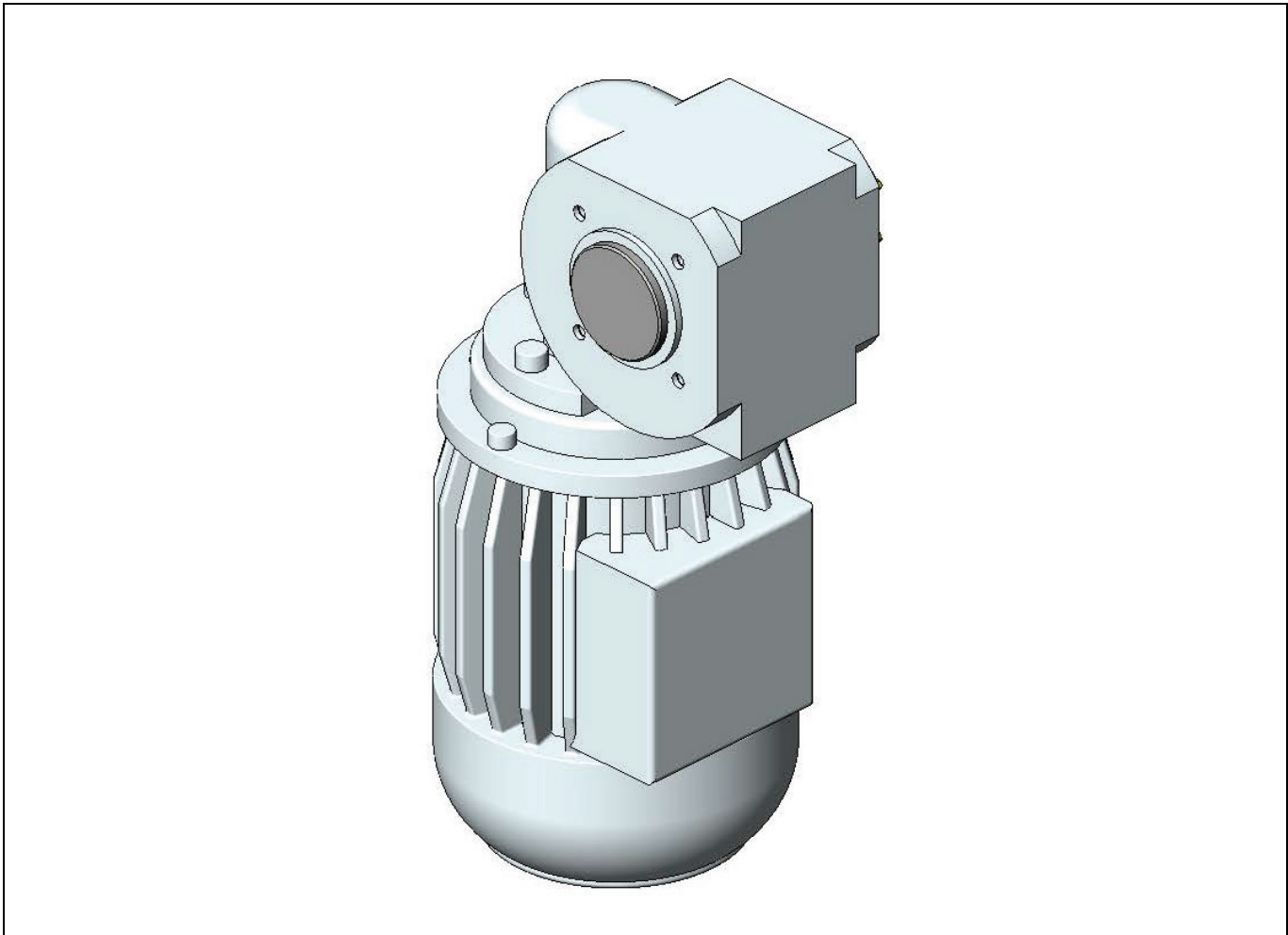



Fig. 6-4: WEG AC-Motor

Pos.		Order number	Description	Number
		300 002 040	<b>WEG Motor gear unit 40:1 (~ 6,9 m/min)</b>	1
		300 002 030	<b>WEG Motor gear unit 30:1 (~ 9,1 m/min)</b>	1
		300 002 020	<b>WEG Motor gear unit 20:1 (~ 13,7 m/min)</b>	1
		300 002 015	<b>WEG Motor gear unit 15:1 (~ 18,3 m/min)</b>	1

## 6.5 Spare parts – with terminal block

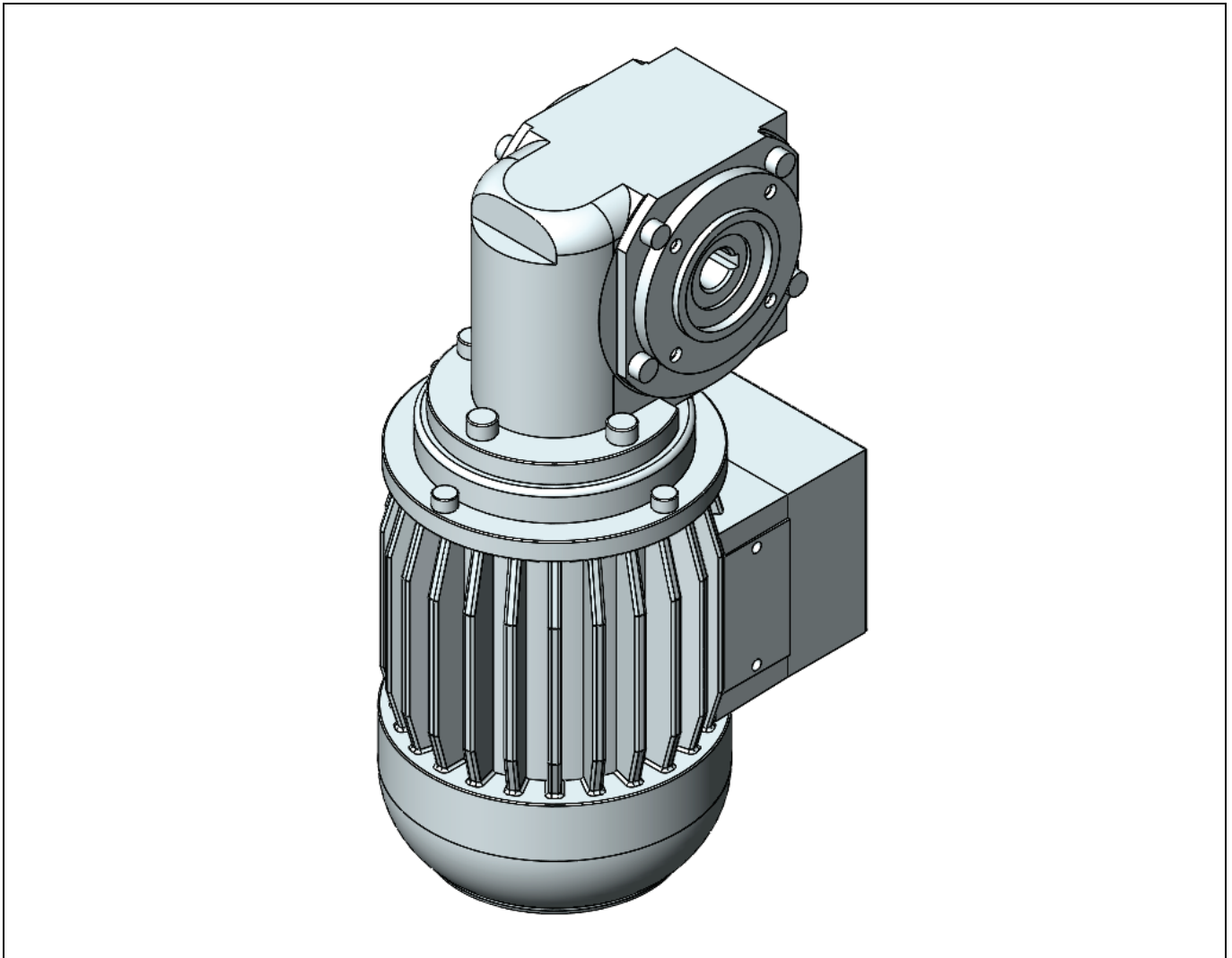



Fig. 6-5: WEG AC-Motor with terminal block

Pos.		Order number	Description	Number
		S10680	WEG Motor gear unit 80:1 (~ 3,4 m/min) with terminal block	
		S10640	WEG Motor gear unit 40:1 (~ 6,9 m/min) with terminal block	1
		S10630	WEG Motor gear unit 30:1 (~ 9,1 m/min) with terminal block	1
		S10620	WEG Motor gear unit 20:1 (~ 13,7 m/min) with terminal block	1
		S10615	WEG Motor gear unit 15:1 (~ 18,3 m/min) with terminal block	1

## 7 WEG EC drive motor – Radius Circuit

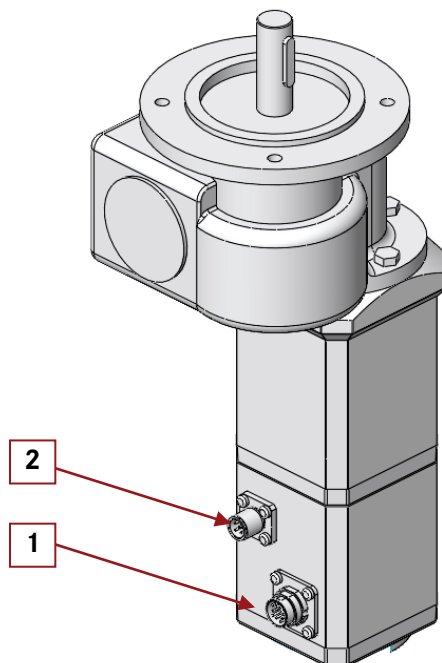
The WEG EC drive motors are brushless DC motors with integrated commutation electronics and “mini PLC”. The integrated “mini PLC” in the motor allows certain functions to be controlled and stored in the motor. Each motor can be configured with individual motor parameters.

The 40 and 24 volt power supply and the connection of the digital inputs/ outputs are provided via the STEIN’s power supply unit. Each drive motor requires its own power supply unit.

(Information on the power supply unit can be found in the power supply unit operating manual)

Fig. 7-1:  
WEG EC motor -  
Radius Circuit

- 1 Plug X1
- 2 Plug X2



The drive motor has the following connections:

- **Plug X1 (M16 12-pole):** For power supply and digital I/O signals.
- **Plug X2 (M12 5-pole):** CAN open connection for connecting the parameterisation of the motor functions. Optionally, the motor functions can also be carried out via the STO commands via the CAN open bus instead of the digital I/O signals.

## 7.1 Technical data

The power supply unit provides for the following output voltages.

40 V output voltage -	3 A (Continuous current) 5 A (Peak)
24 V output voltage -	0,3 A



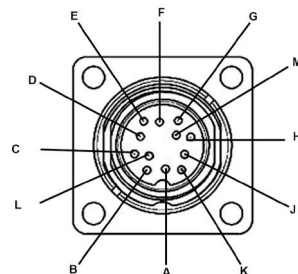
For more information about power supply unit, please refer to the operating instructions of the power supply unit.

## 7.2 Motor plug wiring

Plug M16 12-pole		
Pin	Meaning	Remarks
E+F	40 Volt	Voltage
M+G	0 Volt	
D	24 Volt	Logic voltage - 24 Volt max. 300 mA
B	Input 0	The motor functions can be selected via these 4 inputs. (The ASI bus is connected via the ASI I/O circuit board in the power supply unit)
C	Input 1	
L	Input 2	
J	Input 3	
H	Input 4	
A	Out 1	The motor can report its conditions via these two out-puts. (Connection via ASI I/O circuit board in the power supply unit)
K	Out 2	

Plug M12 5-pole		
Pin	Meaning	Remarks
4	CAN H	
5	CAN L	

Fig. 7-2:  
Plug wiring  
M16 12-pole



Further information on the control of the motor can be obtained on request from STEIN Automation.

### 7.3 Dimension sheet

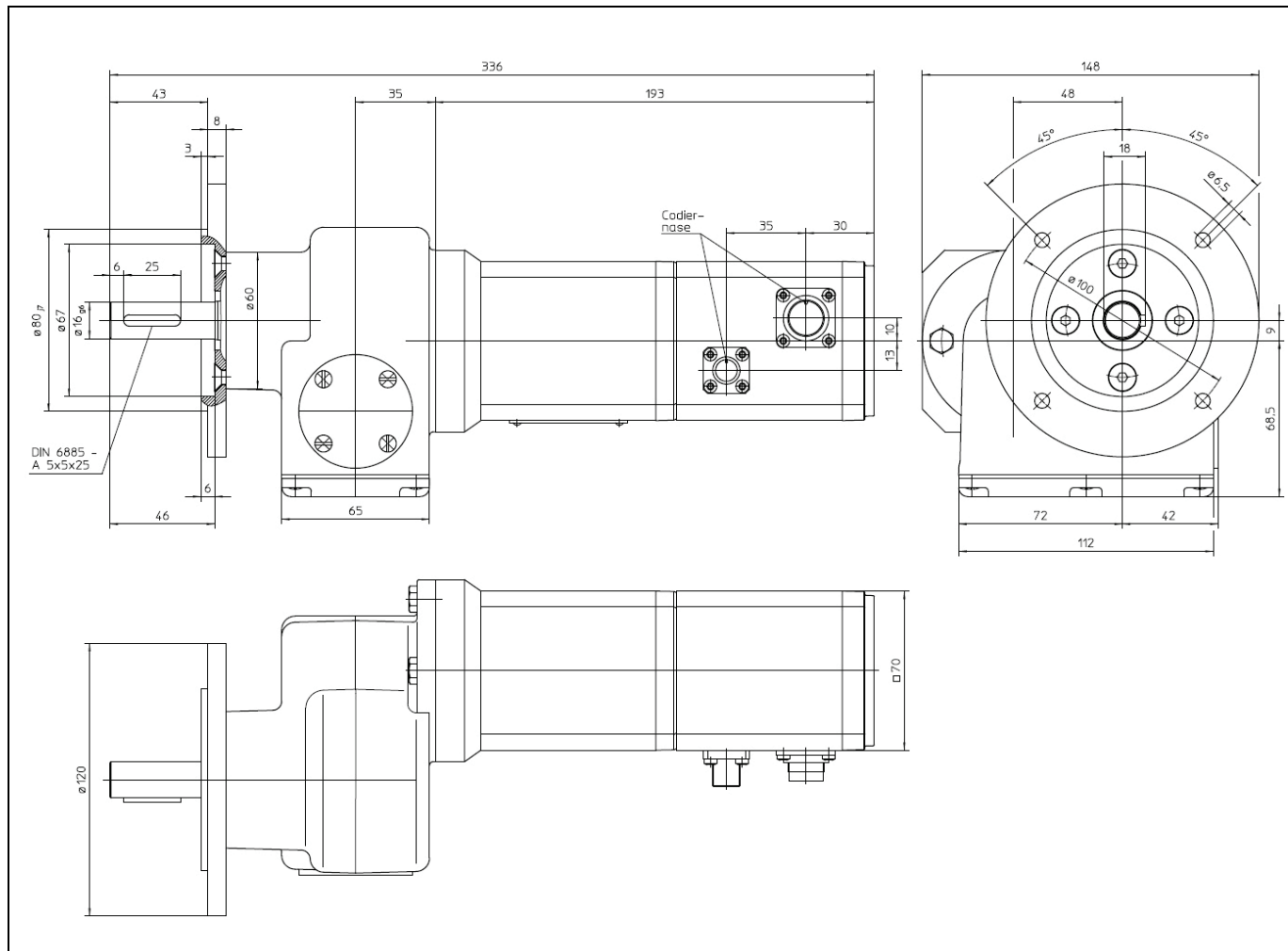


Fig. 7-3: Dimension sheet WEG EC motor for Radius Circuit



## 7.4 Spare parts

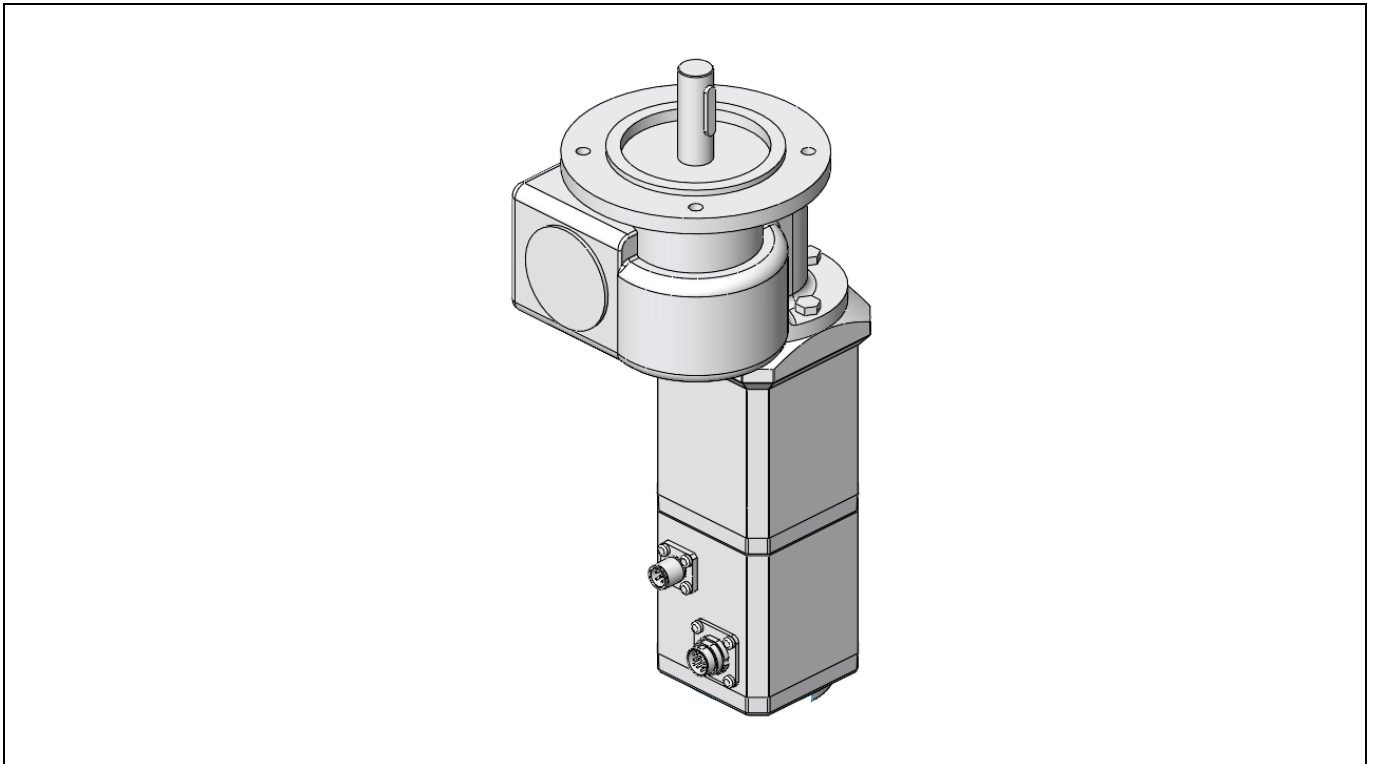



Fig. 7-4: WEG EC motor for Radius Circuit

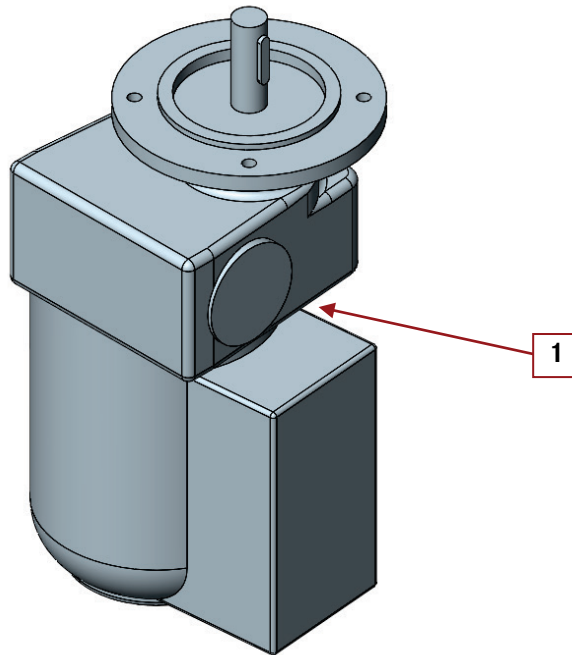
Pos.		Order number	Description	Number
		S10527	<b>WEG EC motor gear unit RB 180:1</b>	1

## 8 WEG AC drive motor – Radius Circuit

The WEG AC motor is a three-phase motor in which the speed is fixed via the gear ratio.  
For power supply (400 volt) the motor is connected to a power unit.

Fig. 8-1:  
WEG AC motor -  
Radius Circuit

- 1 Cable with plug for the power unit



## 8.1 Technical data

The power unit provides an output voltage of 400 volts.

**i**

For more information about the power unit please refer to the operating instructions of the power unit.

Nominal data for connection to frequency	50 Hz
Rated speed	1370 min <sup>-1</sup>
Rated voltage	400 V (Y)
Rated current	0,29 A
Rated power	60 W
Power factor	cos φ 0,66
Ambient temperatur	40°C
Duty type	IP54
Insulation class according EN 60034-1	F

Order number	Gear ratio	Velocity
300 089 032	Getr.-Motor i = 300:1	ca. 6,9 m/min
300 089 033	Getr.-Motor i = 240:1	ca. 9,1 m/min
300 089 034	Getr.-Motor i = 180:1	ca. 13,7 m/min
300 089 035	Getr.-Motor i = 120:1	ca. 18,3 m/min

**i**

The gear ratio of the drive motor can be found on the nameplate.

## 8.2 Dimension sheet

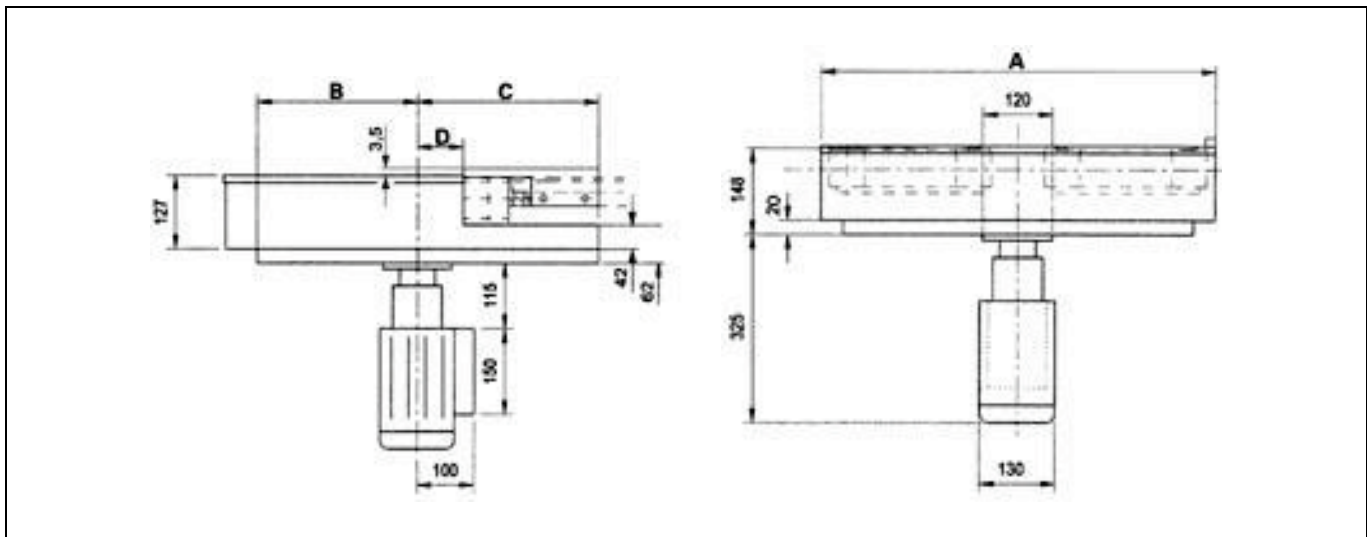


Fig. 8-2: Dimension sheet WEG AC motor for Radius Circuit

### 8.3 Spare parts

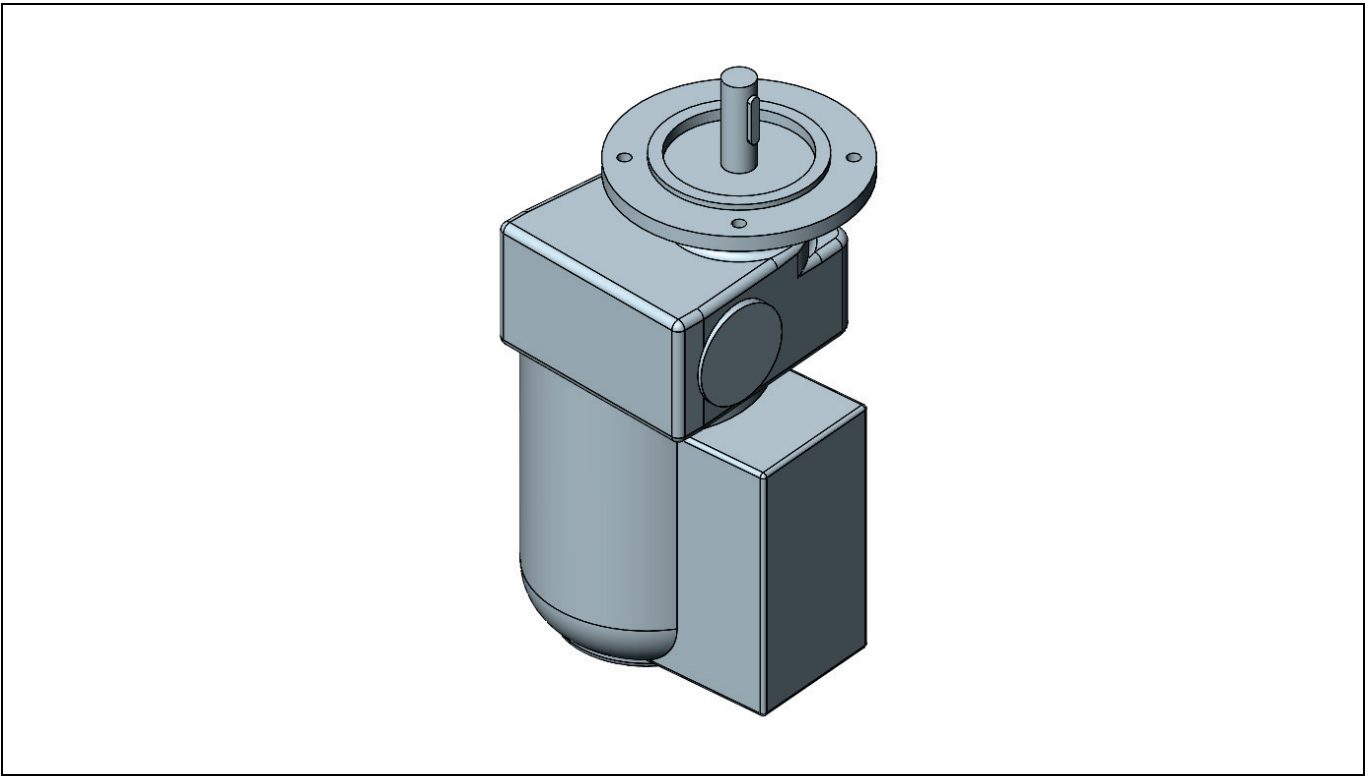
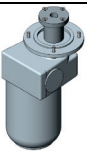


Fig. 8-3: WEG AC motor for Radius Circuit

Pos.		Order number	Description	Number
		300 089 032	<b>WEG-ODG 514T-542 i=120</b>	1
		300 089 033	<b>WEG-ODG 514T-542 i=180</b>	1
		300 089 034	<b>WEG-ODG 514T-542 i=240</b>	1
		300 089 035	<b>WEG-ODG 514T-542 i=300</b>	1

This information reflects the technical status at the time of printing.  
STEIN Automation reserves the right to make technical updates.

## **STEIN Automation GmbH & Co. KG**

Carl-Haag-Straße 26  
78054 VS-Schwenningen

Telephone +49 (0)7720 / 8307-0  
info@stein-automation.de ·

**[www.stein-automation.de](http://www.stein-automation.de)**