

# BHL260 series servo motors

Motors Reference Guide

BHL260 en. Edition 7.2001



**b**

**Schneider**  
 **Electric**



## GENERAL WARNINGS ON PRODUCT USE



*All the international, state, regional and local standards must be complied with during the installation and during the use of this product. Only properly qualified personnel having extensive knowledge in servomotor technology should install, commission and/or maintain the product.*



*During the working operation the motor housing can reach a temperature higher than 100°C. Safeguards must therefore be used to provide protection against accidental or direct contact with the motor housing .*



*The servomotors with keyed shaft must never be rotated under power unless connected to the mechanics of the machine. The key could come out from the shaft and due to the centrifugal force could cause damage to personnel and machines.*



*The motors assembled vertically (with the upwards shaft) may be seriously damaged by liquids collected next to the shaft end output. Make therefore sure that there is no liquid deposit next to the motor shaft end .*



*The holding brake is not to be considered a safety device. In the case of a vertical axis, interpose safety interlock or additional safety brakes to stop the axis from falling. It could cause damage to personnel and machines.*



*If a brake is provided on the motor, no axial loadings must be applied. If it is supplied with reverse polarity, the brake stays locked on. If the holding brake is not being used for a long time, the oxidation of its parts may lead to a braking torque reduction.*

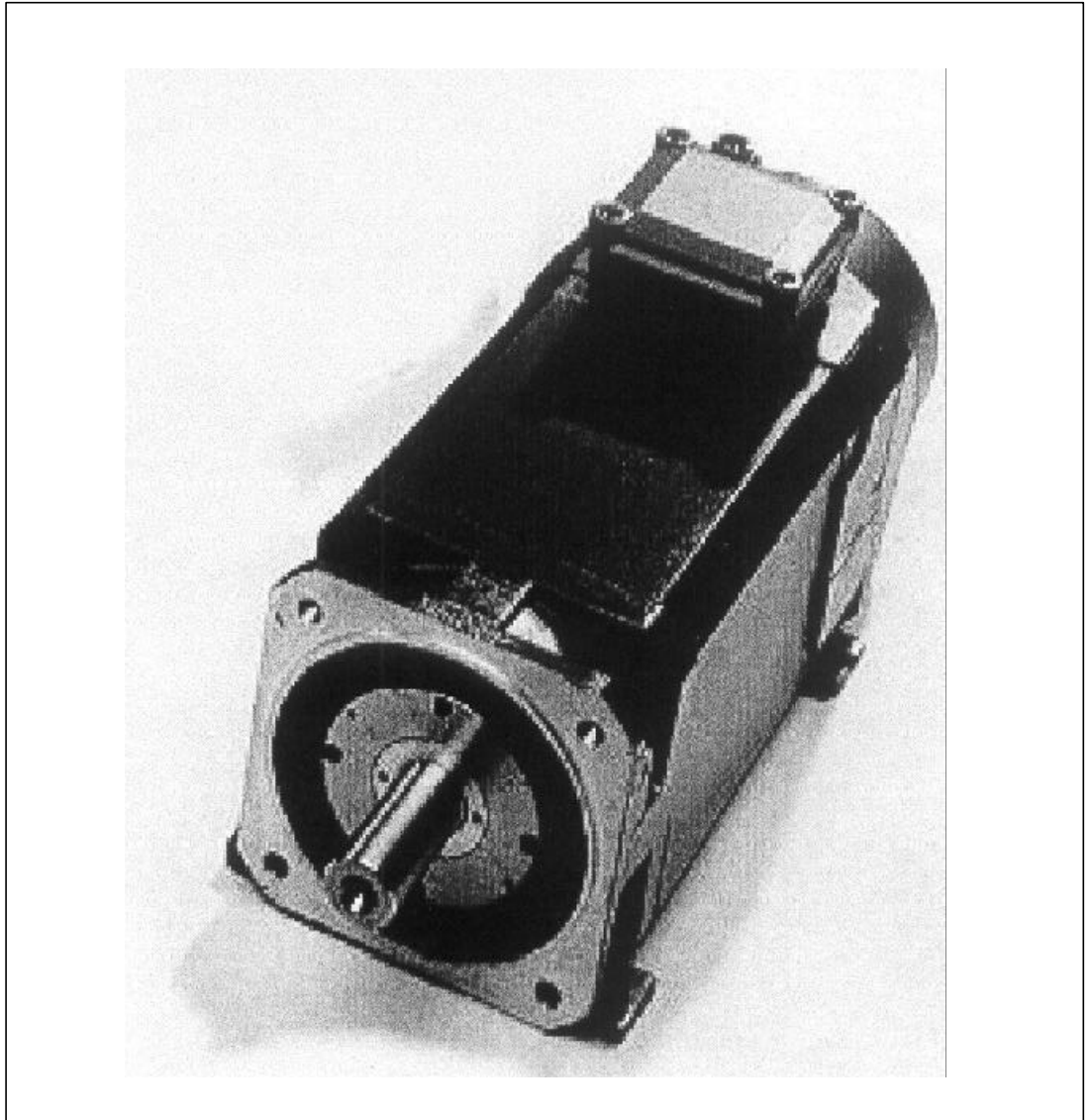


*Use only original Schneider Electric cables. The original Schneider Electric cables have special characteristics (capacitance value...). Not to respect these characteristics can cause serious damage to servomotors.*

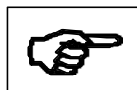


*During the servomotor installation, always make sure that the connection cable used is the one established in the reference guide. The use of an incorrect cable leads to the violation of the international standards.*

## BHL260 series servo motors



*During the working operation the motor housing can reach a temperature higher than 100°C. Safeguards must therefore be used to provide protection against accidental or direct contact with the motor housing .*



*The products and equipment described in this document are subjected to both technical and operational improvements or modifications at any time .  
Their description cannot therefore be considered contractually binding .*

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## GENERAL FEATURES

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### General features

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- BHL260 brushless servo motors are synchronous motors and have permanent Samarium Cobalt magnets
- This means that they have a high power-to-weight ratio, low inertia, a large dynamic range of speeds and a compact size
- A high overtorque is possible with no risk of demagnetisation
- Their sinusoidal emf associated with performing control makes their rotation very smooth, even at very low speed
- Thermal protection is provided by a sensor and read by the Lexium Drive
- Power connections by connector, or by power connections box in the forced ventilation version.
- Feedback connections by connector.

### Applications

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- Robotics : for their low overall dimensions and low inertia
- Special and automatic machines.

## CHARACTERISTICS

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### General characteristics

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- General characteristics as per IEC 34.1
- Sm Co magnets on the rotor
- Torque range : 120 to 290 Nm
- Protection class : IP 65 as per IEC 529
- Shaft end : IP54 protection as per IEC 529
- Power connector output : by connector or by power connections box in the forced ventilation version
- Optional holding brake (24 VDC)
- PTC temperature sensor embedded in the motor winding. Fully thermally protected when used with properly wired Lexium series drives
- Winding insulation class : H (180°) as per VDE 0530
- Out-of-round, concentricity, perpendicularity between flange and shaft as per DIN 42955 R
- No mounting restrictions  
IMB5 - IMV1 - IMV3 as per DIN42950
- Balancing : class S as per ISO 2373 (full key)
- Operating temperature range : from 0 to 40° C.

## CHARACTERISTICS

### General characteristics definitions

Characteristics	Unit	Description
Continuous rated stall torque	[Nm]	Maximum available stall torque considering the thermal limitation; the thermal limitation complies with the H class insulation system. This torque can be supplied without any limitation of time.
Continuous rated stall current	[Arms]	Equivalent rms phase current for producing the continuous rated stall torque.
Maximum current	[Arms]	Maximum rms phase current.
Maximum continuous power	[W]	Maximum available continuous power considering the thermal limitation; the thermal limitation complies with the H class insulation system. The maximum continuous power can be supplied without any limitation of time.
Current at the maximum continuous power	[Arms]	Rms phase current for producing the maximum continuous power
Speed at the maximum continuous power	[rpm]	Speed at which the maximum continuous power is obtained.
Maximum mechanical speed	[rpm]	Maximum speed considering mechanical limitations (bearings, centrifugal forces).
Torque constant at 25 °C	[Nm/Arms]	Ratio between the continuous rated stall torque and the continuous rated stall current. The ratio between torque and current is constant up to about twice the continuous rated stall torque; for higher torques the torque constant decreases (iron saturation effect).
Back EMF constant at 25 °C	[V s/rad]	Rms phase to phase voltage generated by the motor when rotating at 1 rad/s
Mechanical time constant	[ms]	$\frac{3}{2} \cdot R_w \cdot \frac{J_{Mot}}{K_T^2}$ Where: $R_w$ = Winding resistance $J_{Mot}$ = Rotor Inertia $K_T$ = Torque constant
Electrical time constant	[ms]	Ratio between winding inductance and winding resistance
Thermal time constant	[min]	4-5 times the thermal time constant is needed for stabilizing the motor temperature (with the motor working in the same conditions for all the time).
Winding resistance at 25 °C (L-L)	[Ohm]	Phase to phase winding resistance
Winding inductance at 25 °C (L-L)	[mH]	Phase to phase winding inductance.

### Tolerances of electromagnetic parameters for BHL motors

Tolerances of electromagnetic parameters for BHL motors		
Motors data	Typical value	Maximum value
Continuous stall torque	± 3.5 %	± 7.5 %
Torque constant	± 3.5 %	± 7.5 %
Back-e.m.f. force constant	± 3.5 %	± 7.5 %
Winding resistance	± 5 %	± 10 %
Winding Inductance	± 5 %	± 10 %
Motor moment of inertia	±3 %	± 10 %



## CHARACTERISTICS

### Motor IP degree protection

MOTOR HOUSING DEGREE OF PROTECTION	
Environmental condition	Degree of protection
Nebulization (atomization)	IP65
Spraying (not continuous)	

SHAFT EXTENSION DEGREE OF PROTECTION	
Environmental condition	Degree of protection
Dry. (Typical workshop environmental condition)	IP54 Life : 20.000 hours without lubrication

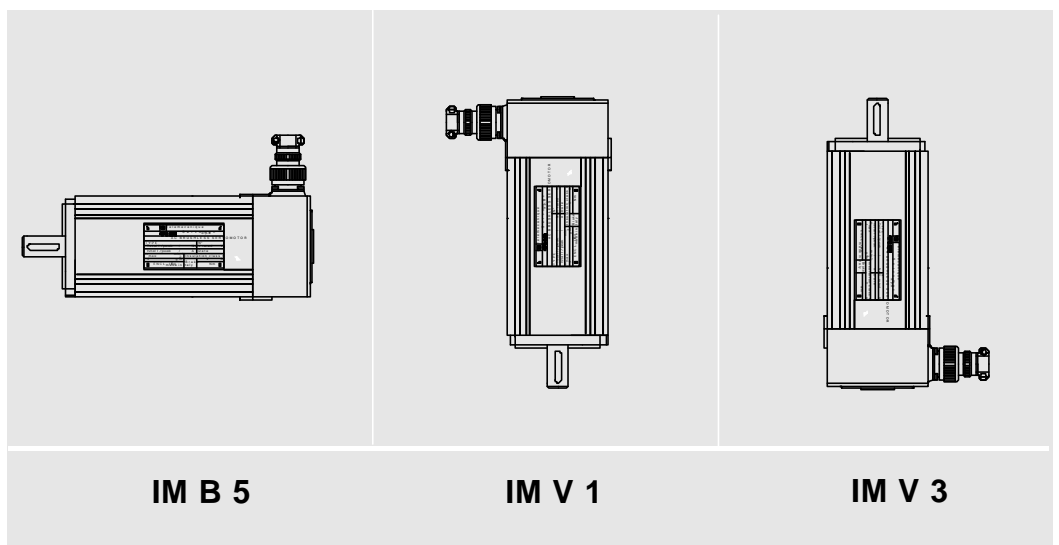


The above mentioned protection degrees are guaranteed only by using cables assembled Schneider Electric.



The motors assembled vertically (with the upwards shaft) may be seriously damaged by liquids collected next to the shaft end output. Make therefore sure that there is no liquid deposit next to the motor shaft end .

### Mounting arrangements allowed



## CHARACTERISTICS

### Motor feedback

The standard motor is equipped with a 1 pole pair resolver .

It is available, as an option, a version with high resolution SinCos multiturn and singleturn encoder assuring the following functions :

- It gives the angular position of the rotor to allow static switching .
- It measures the rotor speed via the associated servo-drive .  
This information is used by the speed control .
- It supplies the information concerning the position, in absolute or incremental form, for the position adjustment.  
(See SinCos multiturn and singleturn high resolution encoder)

RESOLVER	Technical characteristics
Max. mechanical speed	8000 RPM
Excitation voltage	4.7Vrms
Excitation frequency	8kHz 0,1%
Excitation current	30mA (max)
Precision	< ±15 arcminutes
Number of poles	2
Transformation ratio	0.5
Operating temperature range	-55 °/ +155 °C

ENCODER	Technical characteristics	
	Encoder P	Encoder Q
Max. mechanical speed	6000 RPM	
Precision	< ±45 arcseconds	
Operating temperature range	-40 ° / +125 °C	
Supply voltage	7V - 12V	
Resolution per revolution (with Lexium Drive)	21 BITS	
Revolutions	4096	-
Electrical interface	1Vpp Hiperface SinCos	

## CHARACTERISTICS

### Cables

The cable shown in the table below are available, in different sections and compositions, as an option for making power and signal connections.

The cables are available with feedback or power connector motor side or with connectors on both ends .

See paragraph on page 24/25, Accessories.

- The cables are multi-conductors for dynamic laying .
- The over-temperature protection for the motors is connected by the feedback cable .
- The brake connection is included in the motor power cable .
- The fan connection is separated cable .



During the servomotor installation, always make sure that the connection cable used is the one established in the reference guide. The use of an incorrect cable, leads to the violation of the international standards.

### BHL2602K5xx2xx5 (without fan) cables

General characteristics	AGOCAV006 Power cable	AGOCAV002 / 003 Transducer cable
Standard of utilization	UL and cUL Recognized - CE	
Working temperature	0 + 80°C	
External sheath / Colour	Polyurethane polyester PUR 11Y conforming with VDE / RAL 5010	
Insulation	Polyolefin, TPE-E for signals	
Mechanical data :	<b>Resistance to tensile strength</b> : Dynamic : 20N/mm <sup>2</sup> / Static : 50N/mm <sup>2</sup> <b>Chemical resistance</b> : VDE 0472 side 803B - UL1581 - VDE028 side10 <b>Acceleration (max)</b> : 4m/sec <sup>2</sup> <b>Bending radius (min)</b> : 12 times the external diameter of the cable in flex <b>Flexibility</b> : 10.000.000 of cycles in flex 12 times the external cable diameter with an acceleration of 4m/sec <sup>2</sup> at a speed of 120m/min	
Capacitance (Cond./Shield)	< 150pF/m	< 120pF/m
Shielding	Tin-plated copper sheath >85% coverage	
Working voltage	600V	300V
Max. utilization length	75m	



Use only original Schneider Electric cables. The original Schneider Electric cables have special characteristics (capacitance value...). Not to respect these characteristics can cause serious damage to servomotors.

## CHARACTERISTICS

### BHL2602K1xxVxx5 (with fan) cables

General characteristics	Power RPC445S	Fan AGOCAV001	Transductor AGOCAV002 / 003
Standard of utilization	IEC 332-1, CE		<b>See cable table used for motor without fan</b>
Working temperature	0 + 80°C		
External sheath / Colour	Polyurethane / RAL 5010		
Insulation	Polypropylene, polyester for brake		
Mechanical data :	<b>Resistance to tensile strength</b> : Dynamic : 20N/mm <sup>2</sup> / Static : 50N/mm <sup>2</sup> <b>Chemical resistance</b> : VDE 0472 side B <b>Acceleration (max)</b> : 4m/sec <sup>2</sup> <b>Bending radius (min)</b> : 12 times the external diameter of the cable in flex <b>Flexibility</b> : 3.000.000 of cycles in flex 12 times the external cable diameter with an acceleration of 4m/sec <sup>2</sup> at a speed of 120m/min		
Capacitance (Cond./Shield)	< 250pF/m	-	
Shielding	Tin-plated copper sheath >85% coverage	Not shielded cable	
Working voltage	450 / 750V		
Max. utilization length	75m		

### Detailed characteristics of shielded cables

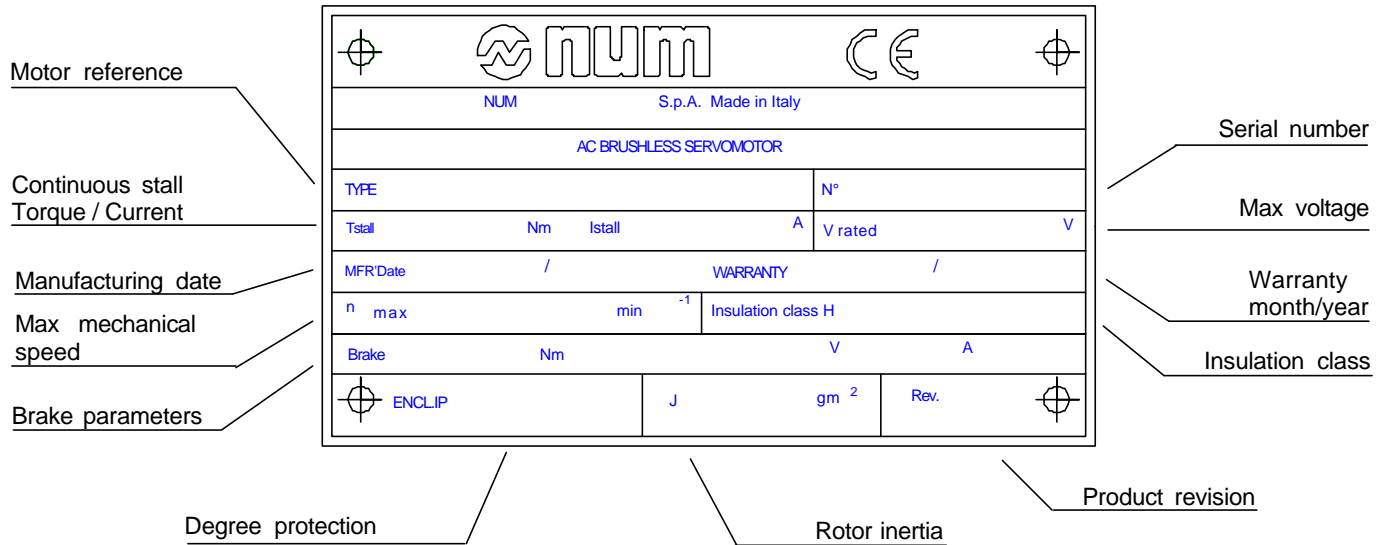
General characteristics	External diameter [mm]	Bending radius [mm]	Cable description
BHL260 2K5 xx 2 xx 5	22.1	266	(4 x 10mm <sup>2</sup> + 2 x 1mm <sup>2</sup> ) shielded <b>AGOCAV006</b>
BHL260 2K1 xx V xx 5	24.8	298	(4 x 21mm <sup>2</sup> + 2 x 1mm <sup>2</sup> ) shielded <b>RPC445S</b>
Resolver	7.5	90	(4 x 2 x 0.25mm <sup>2</sup> ) shielded <b>AGOCAV003</b>
P or Q encoder	9.4	112	(4 x 2 x 0.38mm <sup>2</sup> + 2 x 0.5mm <sup>2</sup> ) shielded <b>AGOCAV002</b>
Fan (three-phases)	8	96	4 x 1mm <sup>2</sup> <b>AGOCAV001</b>



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## CHARACTERISTICS

### Motor identification example



## CHARACTERISTICS

### Motor ordering code

Motor order code	BHL	260	2	K	5	M	A	2	C	0	5
<b>Series</b>											
<b>Size</b>											
<b>Length</b>											
<b>Winding type</b>											
<b>Power connection</b>											
• by connector (without fan version)					5						
• by power terminal box (with fan version)					1						
<b>Transducer type</b>											
• 1 pp resolver (Standard)							M				
• SinCos high resolution multiturn encoder							P				
• SinCos high resolution singleturn encoder							Q				
<b>Brake</b>											
• Without brake (Standard)							A				
• With brake							F				
<b>System ventilation</b>											
• Without fan									2		
• With fan									V		
<b>Shaft</b>											
• Keyed (Standard)									C		
• Smooth									L		

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 CHARACTERISTICS
 

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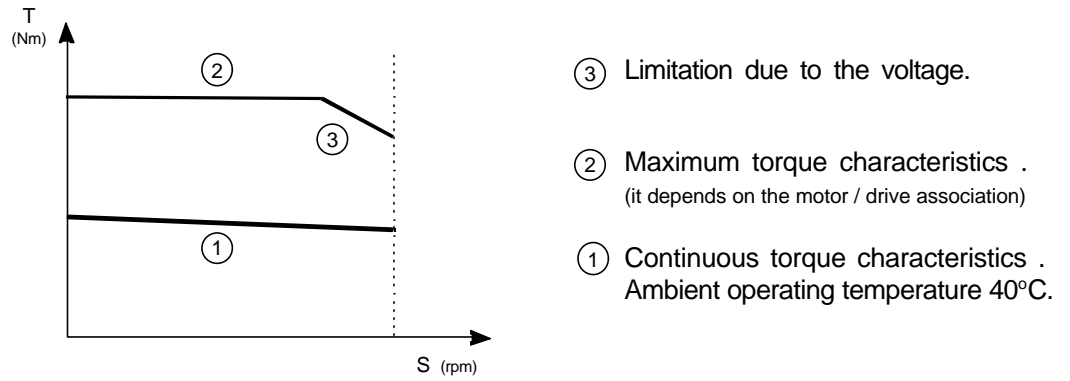
 Motor / Servo-Drive associations
 

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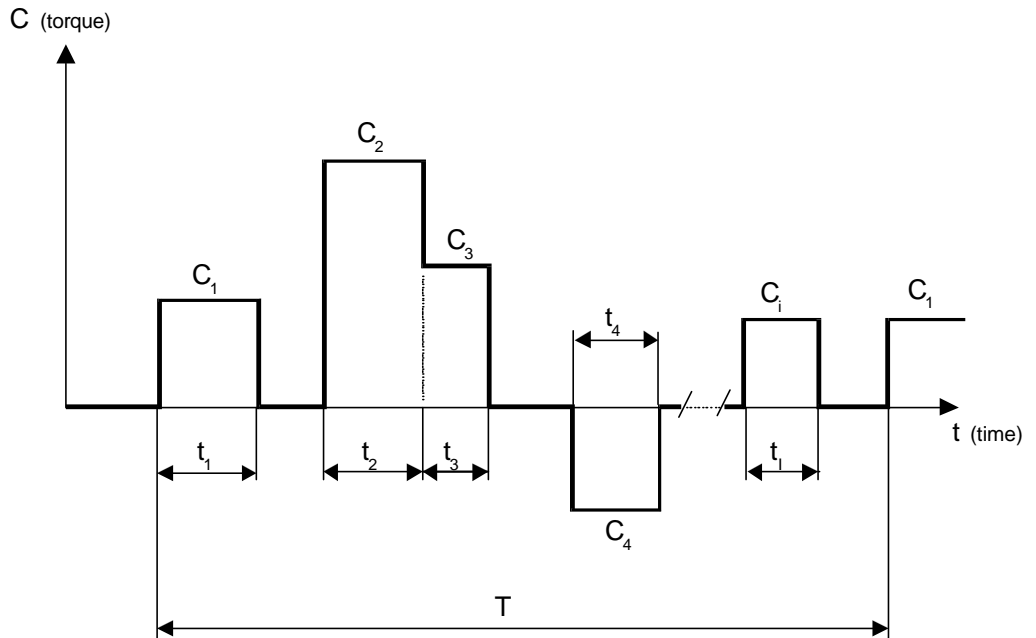
<b>Lexium Drive MHDx</b>				<b>1198N00</b>
<b>Permanents rms current</b>				<b>70 A</b>
<b>BHL260 series servo motors</b>	<b>Stall torque [Nm]</b>	<b>Max torque [Nm]</b>	<b>Max speed [rpm]</b>	
<b>BHL2602K5 xx 2 xx 5</b>	120	290	3000	
<b>BHL2602K1 xx V xx 5</b>	160	290	3000	

## CHARACTERISTICS

### Torque and speed characteristics diagram



### General thermal sizing



By viewing the cycle in the drawing, the thermal torque value  $C_{EQ}$  requested to the motor will be :

$$C_{EQ} = \sqrt{\frac{C_1^2 \cdot t_1 + C_2^2 \cdot t_2 + C_3^2 \cdot t_3 + C_4^2 \cdot t_4 + \dots + C_i^2 \cdot t_i}{T}}$$

Where:

- $T$  = Total cycle time
- $C_i$  = Torque value (Nm)
- $t_i$  = Time (Seconds)



## DETAILED MOTOR CHARACTERISTICS

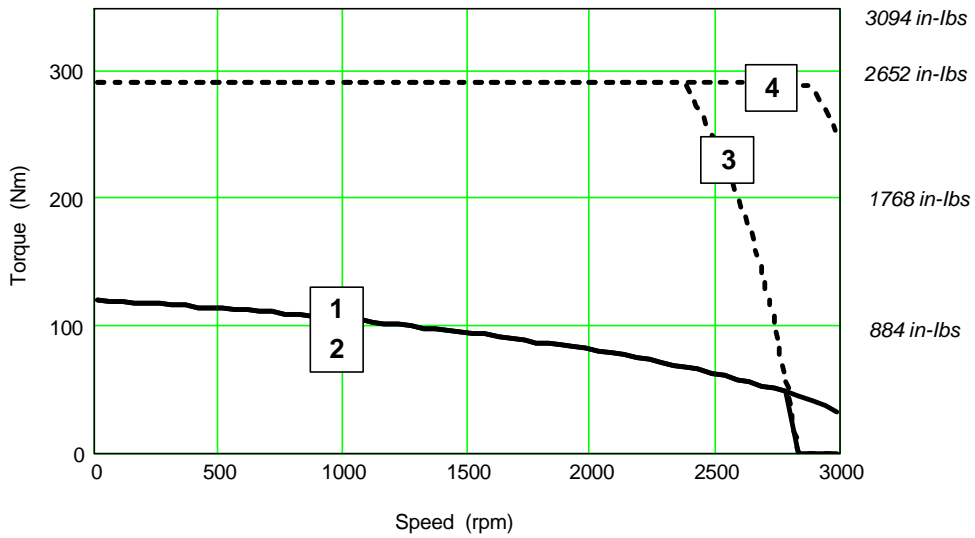
### BHL260 - Technical characteristics

TECHNICAL DESCRIPTION	UNIT	BHL2602K5 xx 2 xx 5 (without fan)	BHL2602K1 xx V xx 5 (with fan)
Continuous rated stall torque	[Nm]	120	160
Continuous rated stall current	[Arms]	52	69.3
Maximum current	[Arms]	208	
Maximum continuous power	[W]	16900	33200
Current at maximum continuous power	[Arms]	32.1	45.8
Speed at maximum continuous power	[rpm]	2200	3000
Maximum mechanical speed	[rpm]	3000	
Rotor inertia without brake	[gm <sup>2</sup> ]	66.2	
Rotor inertia with brake	[gm <sup>2</sup> ]	69.3	
Torque constant at 25°C	[Nm/Arms]	2.31	
BEMF constant at 25°C	[V s/rad]	1.33	
Mechanical time constant	[ms]	2.35	
Electrical time constant	[ms]	13	
Thermal time constant	[min]	70	50
Stator resistance (L-L) 25°C	[Ohm]	0.126	
Stator inductance (L-L) 25°C	[mH]	1.65	
Number of poles		6	
Static friction	[Nm]	3	
Motor weight without brake	[kg]	126	131
Motor weight with brake (optional)	[kg]	130	135
Brake torque	[Nm]	80	
Brake voltage	[Vdc]	24 Vdc +5%, -10%	
Brake current	[Adc]	1,5	
Brake release time (on application of power)	[ms]	97	
Brake locking time (on removal of power)	[ms]	53	
Fan voltage (Three-phases)	[Vac]	-	400Vac ± 5%
Fan current	[A]	-	0.2

DETAILED MOTOR CHARACTERISTICS

**BHL2602K5 xx 2 xx 5 (without fan) - Speed / Torque curves**

BHL2602K5 xx 2 xx 5 with Lexium MHD•1198N00

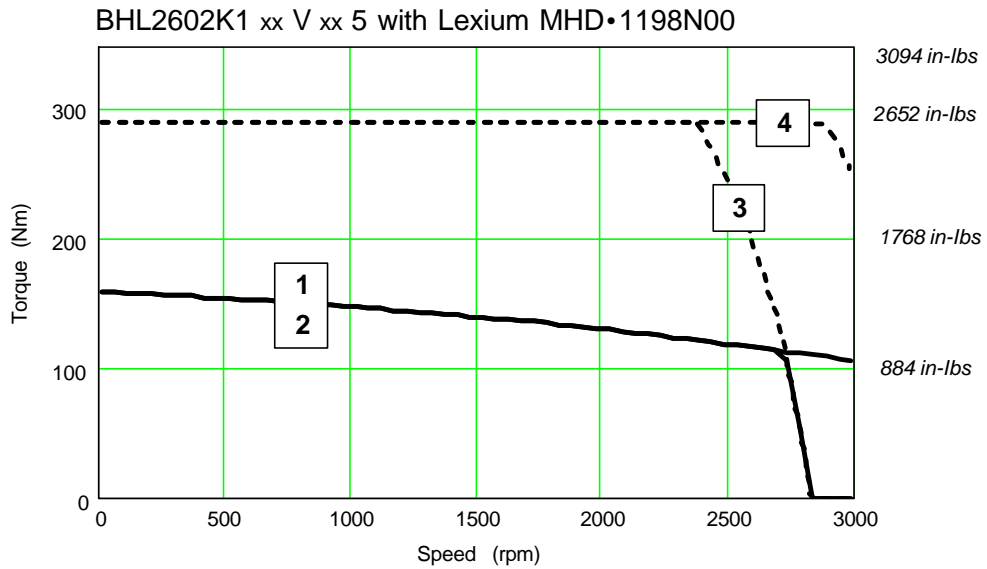


LEGEND

- |   |  |
|---|--|
| <b>1</b> = Continuous torque at 400V (three-phases) | <b>3</b> = Max torque at 400V (three-phases) |
| <b>2</b> = Continuous torque at 480V (three-phases) | <b>4</b> = Max torque at 480V (three-phases) |

DETAILED MOTOR CHARACTERISTICS

**BHL2602K1 xx V xx 5 (with fan) - Speed / Torque curves**



LEGEND

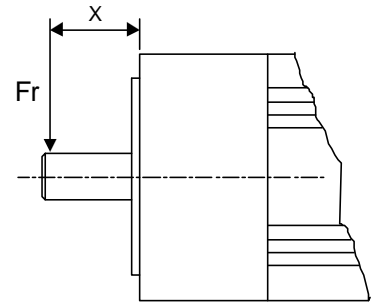
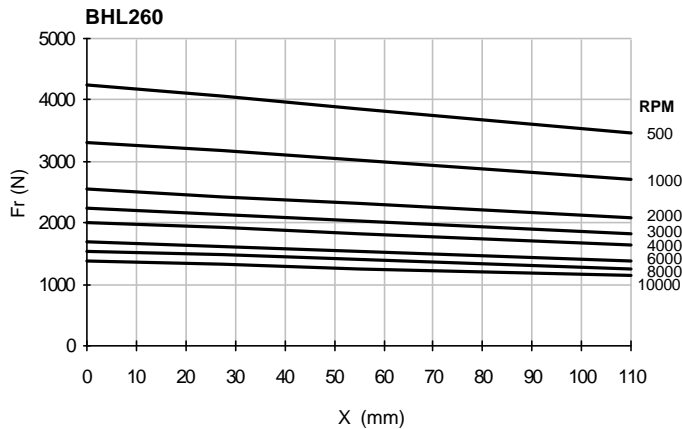
- |   |  |
|---|--|
| <b>1</b> = Continuous torque at 400V (three-phases) | <b>3</b> = Max torque at 400V (three-phases) |
| <b>2</b> = Continuous torque at 480V (three-phases) | <b>4</b> = Max torque at 480V (three-phases) |

## DETAILED MOTOR CHARACTERISTICS

### BHL260 - Radial and axial load

The curves below show the permissible radial load versus the operating speed and dimensions X for a bearing life of 20,000 hours .

Fr : load applied to the shaft

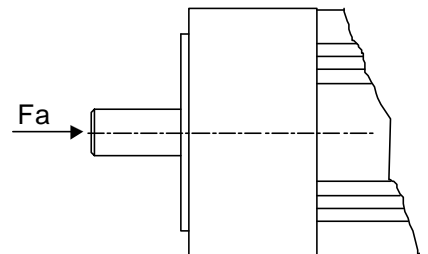
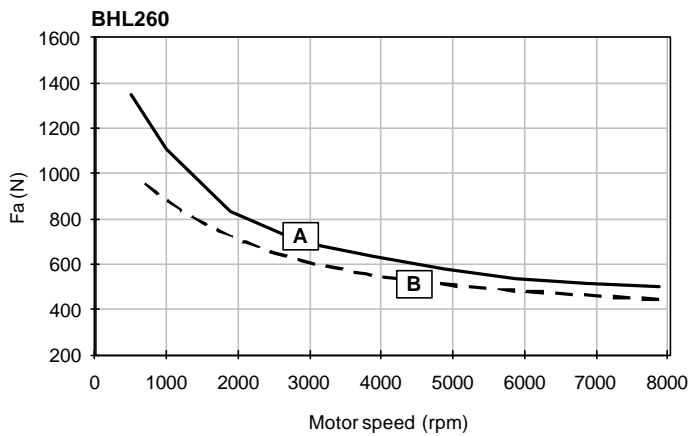


The curves below show the permissible axial load versus the operating speed for a bearing life of 20,000 hours .

Fa: shaft load

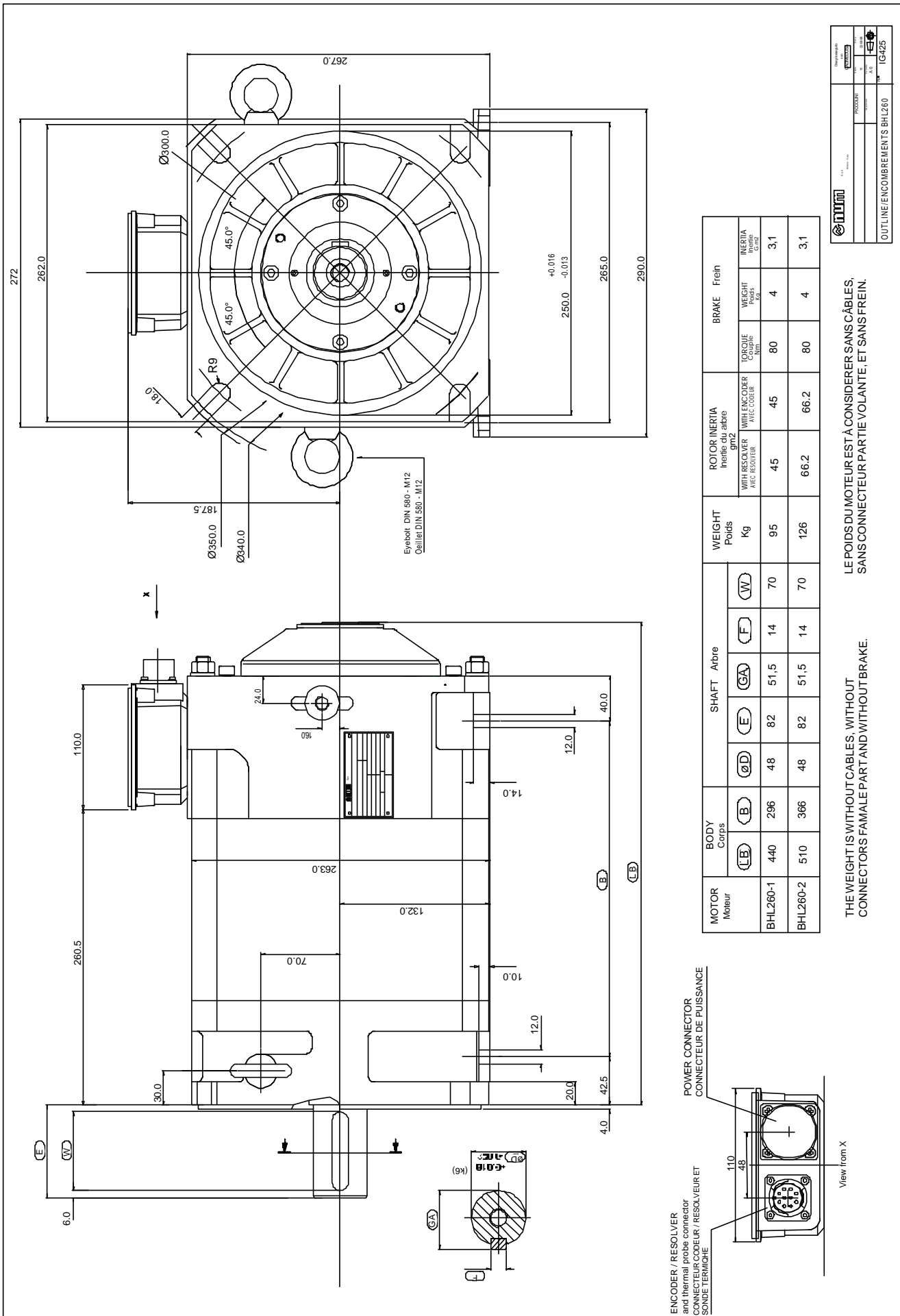
Useful axial load :

- Determine the authorized load from the curve .



**LEGEND**

- A** = Load with horizontal motor mounting
- B** = Load with vertical motor mounting



INVERTER	PROTECTOR	TYPE	IG425
OUTLINE/ENCOMBREMENTS BHL260			

MOTOR	Body	Shaft	Weight	Rotor Inertia	Brake
Moteur	Corps	Arbre	Poids	Inertie du rotor	Frein
BHL260-1	LB 521	E 82	100	45	4
BHL260-2	LB 591	E 82	131	66.2	4

WITH RESOLVER	WITH ENCODER	TORQUE	INERTIA
Avec Résolveur	Avec Codeur	Couple	inertie rotor
45	45	80	3.1
66.2	66.2	80	3.1

Encoder / Resolver and thermal probe connector  
CONNECTEUR CODEUR / RESOLVEUR ET SONDE THERMIQUE

POWER CABLE CLAMP  
PRESSE-CÂBLE POUR CÂBLE PUISSANCE

FAN CONNECTOR  
CONNECTEUR VENTILATEUR

View from X

Eye-bolt: DIN 580 - M12  
Oeillet: DIN 580 - M12

AIR INLET  
ENTRÉE AIR

AIR OUTLET  
SORTIE AIR

LE POIDS DU MOTEUR EST À CONSIDÉRER SANS CÂBLES, SANS CONNECTEUR PARTIE VOLANTE, ET SANS FREIN.

LE Poids du Moteur est à considérer sans câbles, sans connecteur partie volante, et sans frein.

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## OPTION

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### Motor holding brake

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The permanent magnet holding brake included in the motor is applied by a current failure.



**The brake is only intended for use as a holding static brake and not as a dynamic brake. About 1800-2000 braking operations can be performed in case of emergency or power failure with a total inertia equal to two times the rotor inertia.**

For ordering, see page 14.



**The holding brake is not to be considered a safety device. In the case of a vertical axis, interpose safety interlock or additional safety brakes to stop the axis from falling. It could cause damage to personnel and machines.**



**If a brake is provided on the motor, no axial loadings must be applied. If it is supplied with reverse polarity, the brake stays locked on. If the holding brake is not being used for a long time, the oxidation of its parts may lead to a braking torque reduction.**

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### Smooth shaft end (without key)

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The motor shaft can be ordered without a key .

For ordering, see page 14.

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### Encoder feedback SinCos multiturn type P

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For technical characteristics, see page 10.

For ordering, see page 14.

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### Encoder feedback SinCos singleturn type Q

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For technical characteristics see page 10.

For ordering, see page 14.

Available accessories

Motor cable with connectors

ACCESSORIES : MOTOR CABLE WITH CONNECTORS			
ACCESSORIES		BHL2602K5xx2xx5	BHL2602K1xxVxx5
Complete cable with motor side and drive side connector (1)	• Power	AGOKIT020M0xx (4)	Not used. The cable is connected to the power terminal box and directly to the drive.
	• Resolver • Encoder	AGOFRU014M010 AGOFRU013M010	
Cable with motor side connector (2)	• Power	AGOKIT020M0xx	Not used. The cable is connected to the motor power terminal box.
	• Resolver • Encoder	AGOKIT024M0xx AGOKIT023M0xx	
Fan cable (3)		Not used.	AGOFRU012M0xx

NOTES.

(1) Complete cable = Cable with motor side connector + drive side both end assembled.  
The complete cable is available only by 10 meters length.

(2) Cable with motor side moving connector assembled.  
The last three figures of the code show the length of cables in meters  
In the code, the connector on the drive side is included but not assembled (except AGOKIT020Mxx)  
The available lengths are AGOKIT020M, 023M and 024M... **005, 015, 025, 050, 075 meters.**

(3) Fan cable.  
The last three figures of the code show the length of cables in meters  
The available lengths are AGOFRU012M .. **005, 015, 025, 050, 075 meters.**

(4) The cable is directly connected to the drive power terminal board.



Use only original Schneider Electric cables. The original Schneider Electric cables have special characteristics (capacitance value...). Not to respect these characteristics can cause serious damage to servomotors.



During the servomotor installation, always make sure that the connection cable used is the one recommended in the reference guide. The use of an incorrect cable leads to the violation of the international standards.



## Available accessories

## Cables, connectors, crimping tool

ACCESSORIES : CABLES, CONNECTORS, CRIMPING TOOL			
ACCESSORIES		BHL2602K5xx 2 xx 5	BHL2602K1xx V xx 5
Cable (1)	• Power	AGOCAV006	RPC445S
	• Resolver • Encoder	AGOCAV003 AGOCAV002	
	• Fan	Not used	AGOCAV001
Motor side connector (2)	• Power	AMOCONN005D	Not used
	• Resolver • Encoder	AMOCON003D AMOCON002D	
	• Fan	Not used	CONN113D00
Crimping tool (3)	• Power	AMOKIT002CRP	Not used. Power terminal board on motor and drive side.
	• Resolver • Encoder	AMOKIT001CRP	
Drive side connector	• Power	Not used, the cable is directly connected to the drive.	
	• Resolver • Encoder	AEOCON011 AEOCON010	

## NOTES.

(1) The cable is available in multiples of meters. (i.e AGOCAV003 unit 10 = 10 meters of resolver cable)

(2) The motor side connector have crimping contacts (except the fan connector code CONN113D00).

(3) Crimping tool code AGOKIT001CRP consists of:  
 - Crimping tool for resolver / encoder and thermal probe cable.  
 - Contacts positioner for resolver / encoder and thermal probe cables.

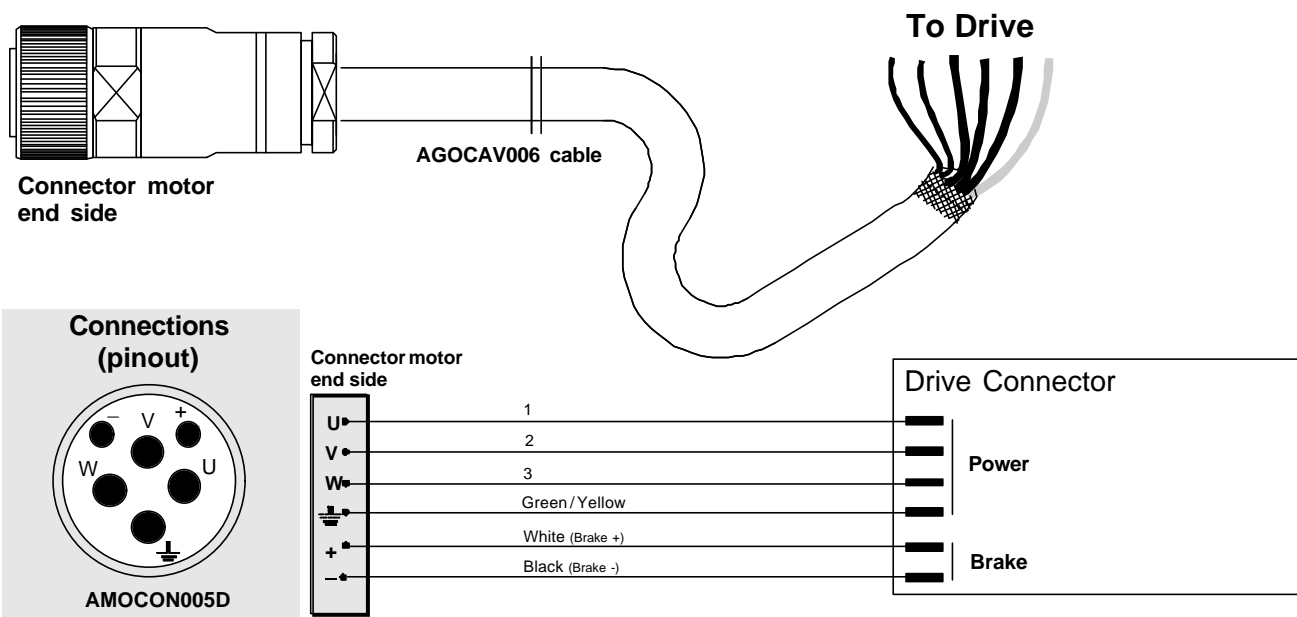
Crimping tool code AGOKIT002CRP consists of:  
 - Crimping tool for power and brake cables  
 - Contacts positioner for power and brake cables

## Spare parts

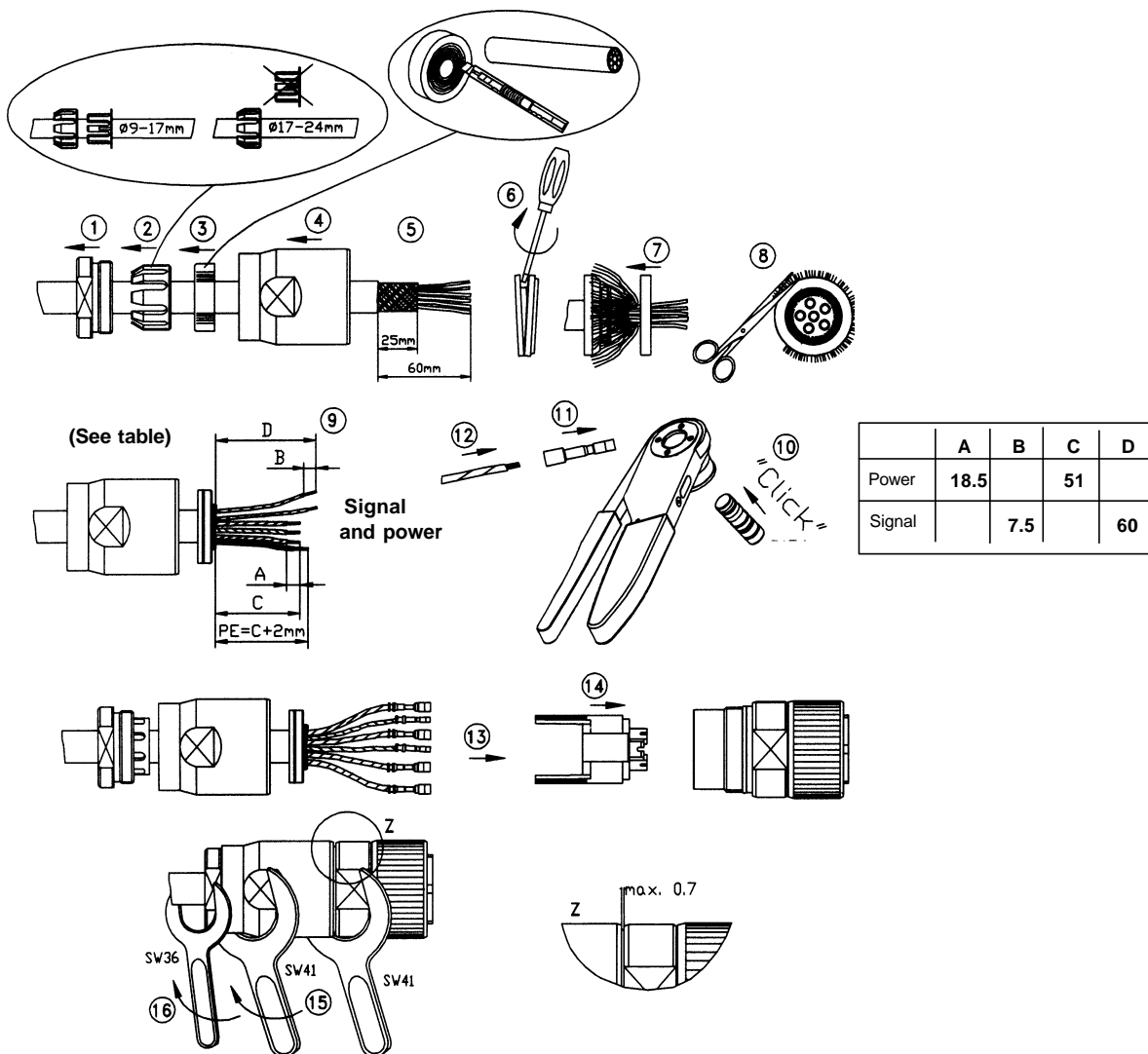
## Available spare parts

BHL260 SPARES PARTS		
SPARES PARTS	BHL2602K5 <small>xx 2 xx 5</small>	BHL2602K1 <small>xx V xx 5</small>
Internal crimping contact	• Power	AMOCTC004F AMOCTC003F
	• Brake	
	• Resolver	AMOCTC001F AMOCTC001F
	• Encoder	
Shaft end key	AMOCHI00870x14	
Eyebolt	AMOGOL002M12	

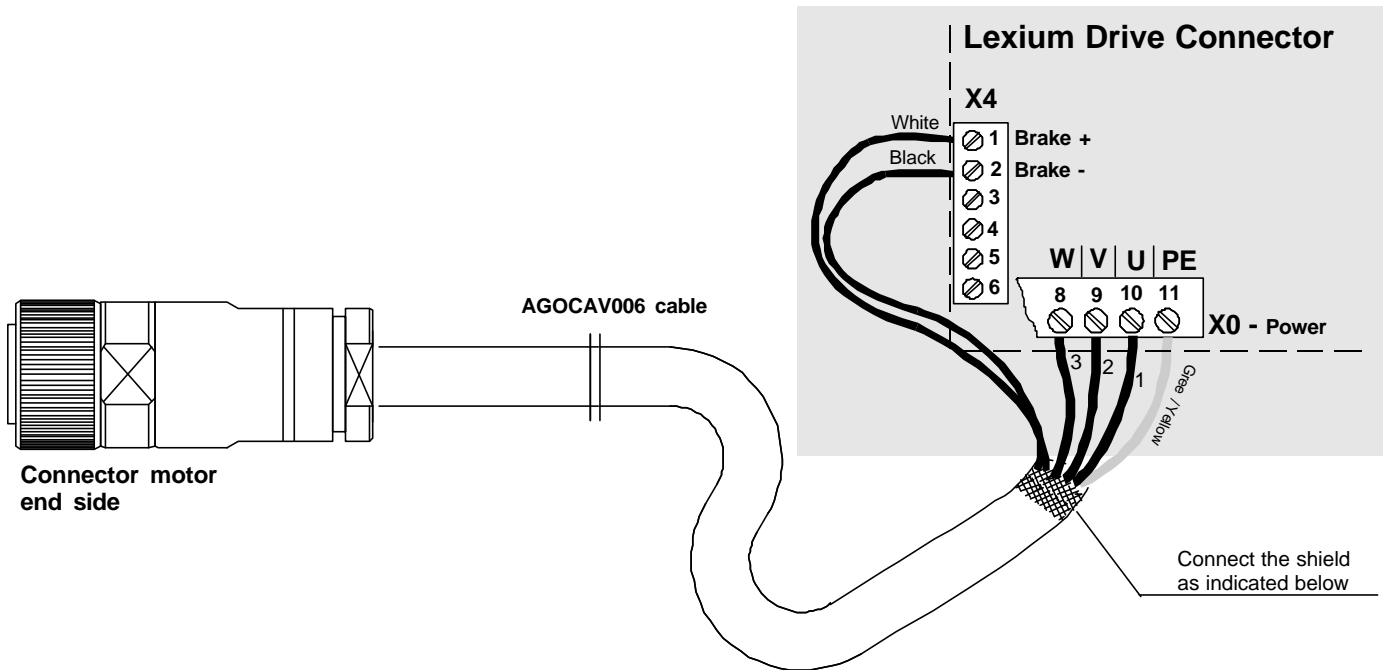
BHL2602K5 - Wiring the motor power connector (without fan)



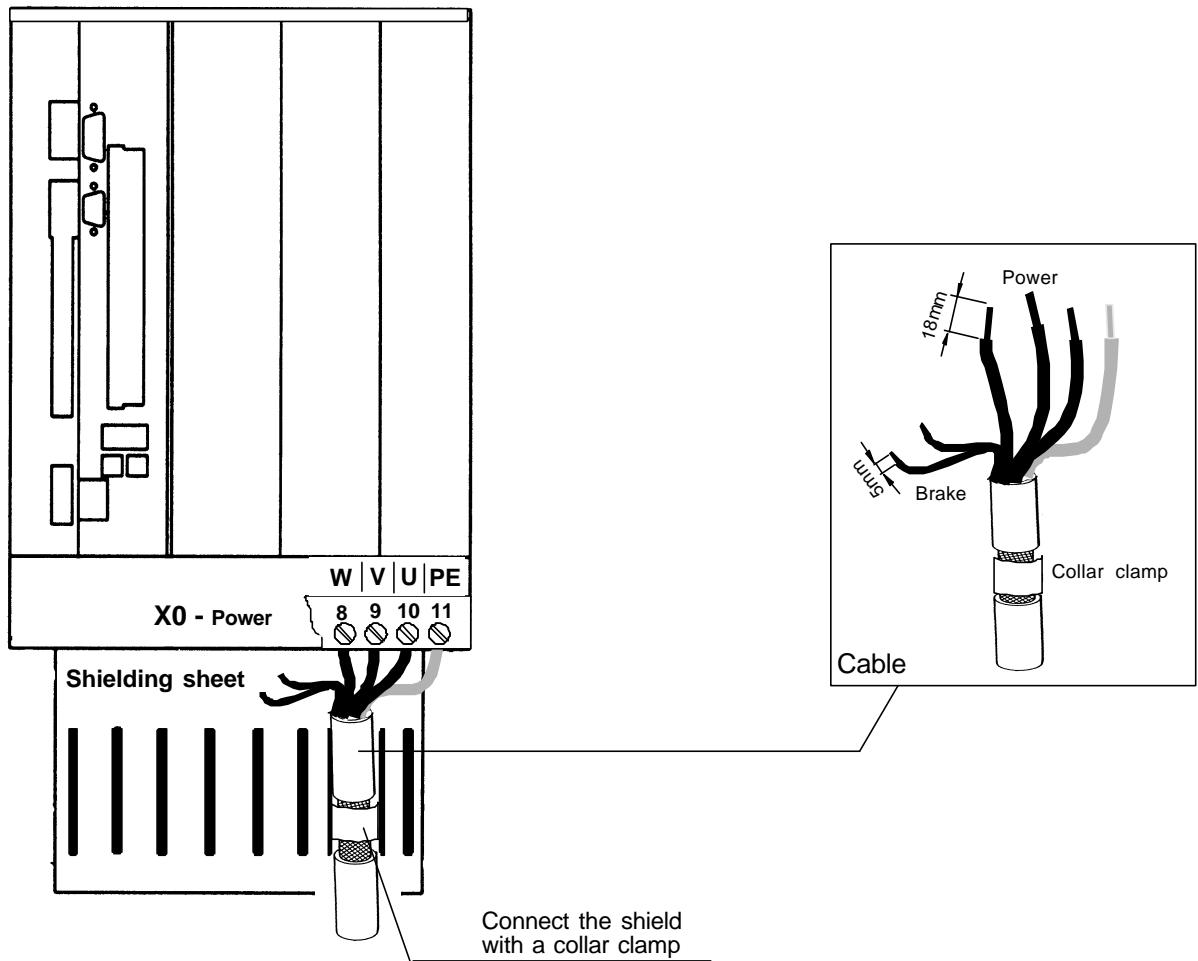
If you assemble your own motor power connector with shielding, please do so according to the following procedure.



BHL2602K5 - Wiring the drive power connector (without fan) to Lexium Drive MHDx1198N00

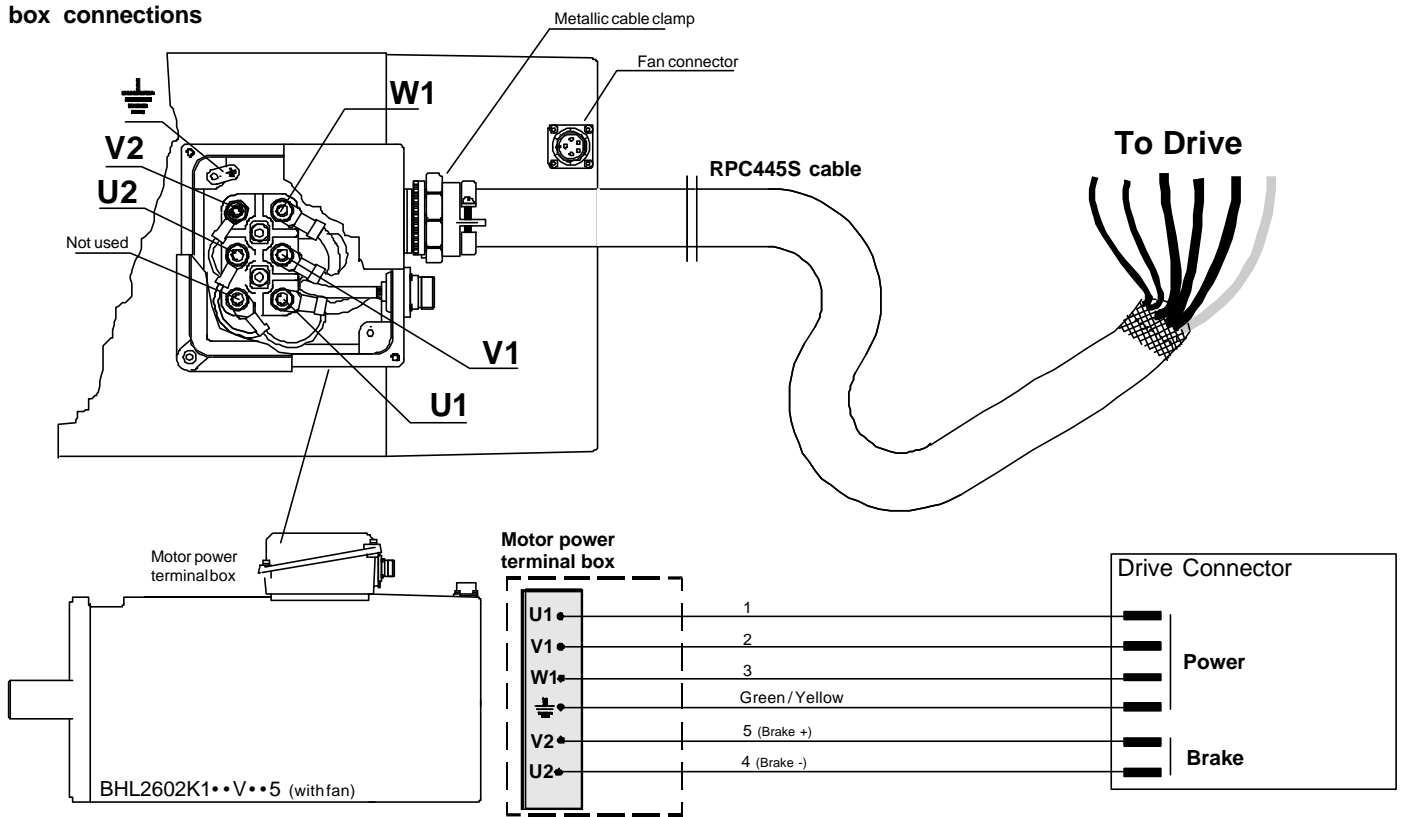


**Lexium Drive**



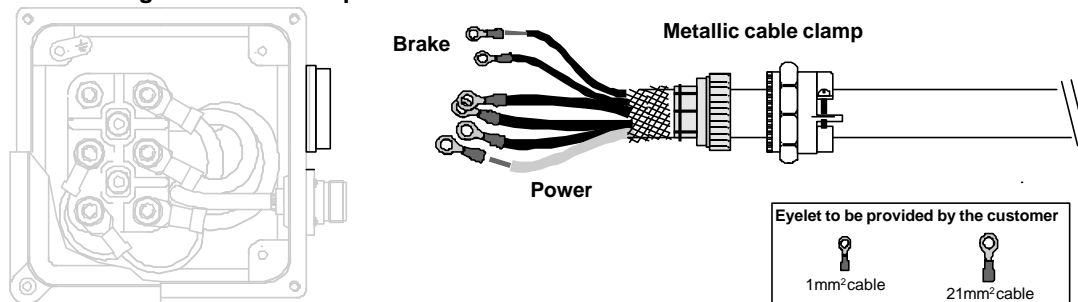
## BHL2602K1 - Wiring the motor power terminal box connections (with fan version)

### Power terminal box connections

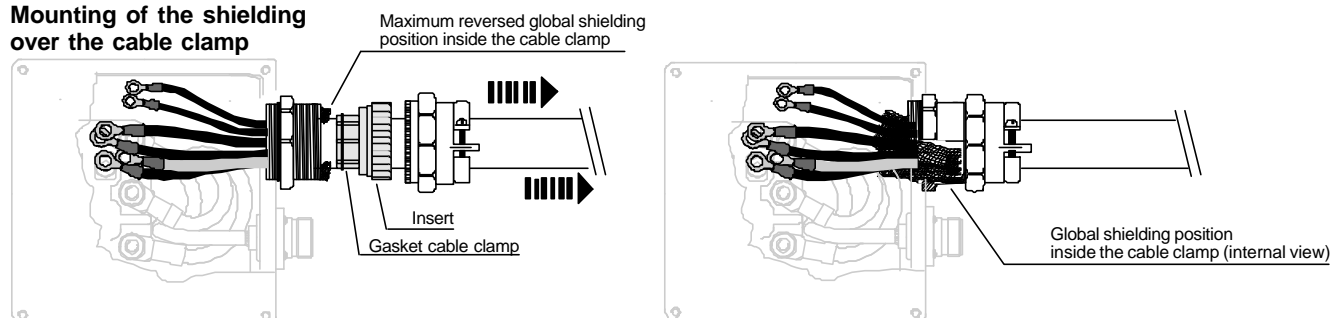


If you assemble your own motor power cable with shielding on the power terminal box, please do so according to the following procedure.

### Mounting of the power and brake cable through the cable clamp

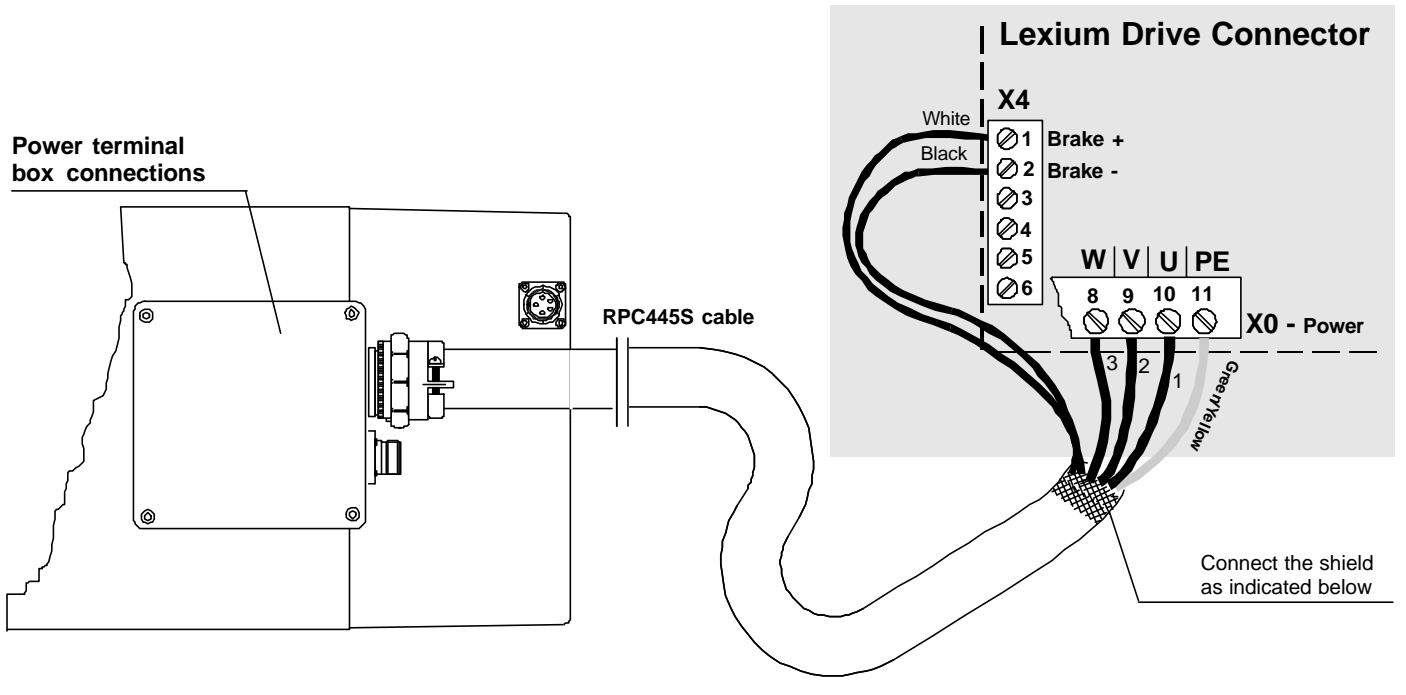


### Mounting of the shielding over the cable clamp

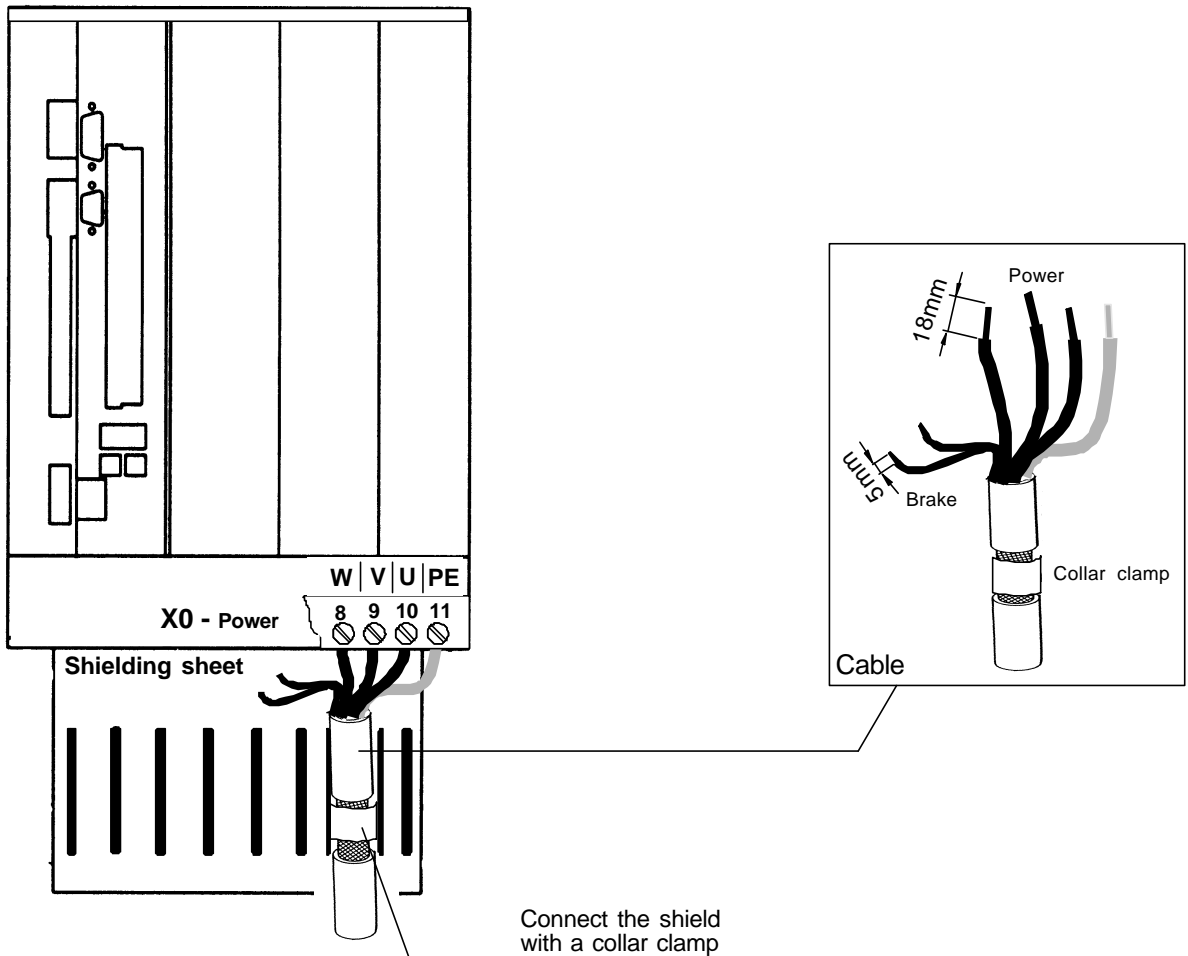


The global shield must be always reverse on the internal side of the insert as far as the gasket cable clamp , in such a way to use the largest contact areas. (see figure above)

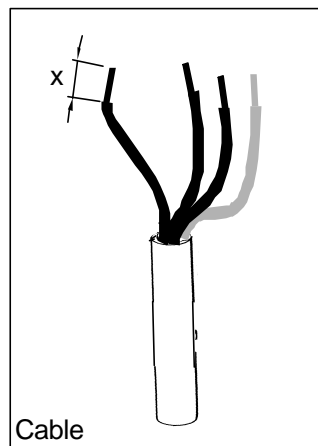
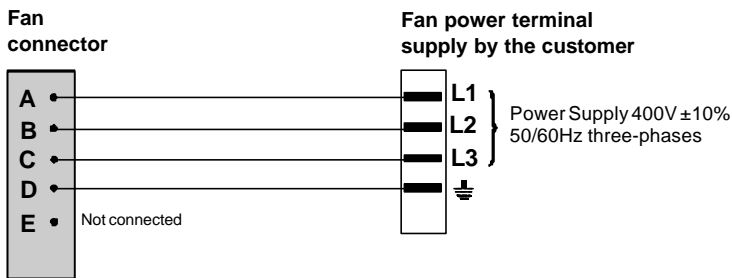
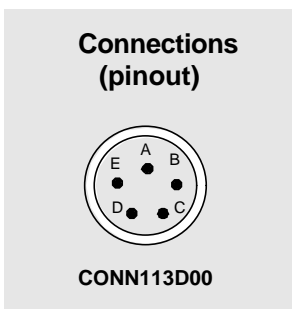
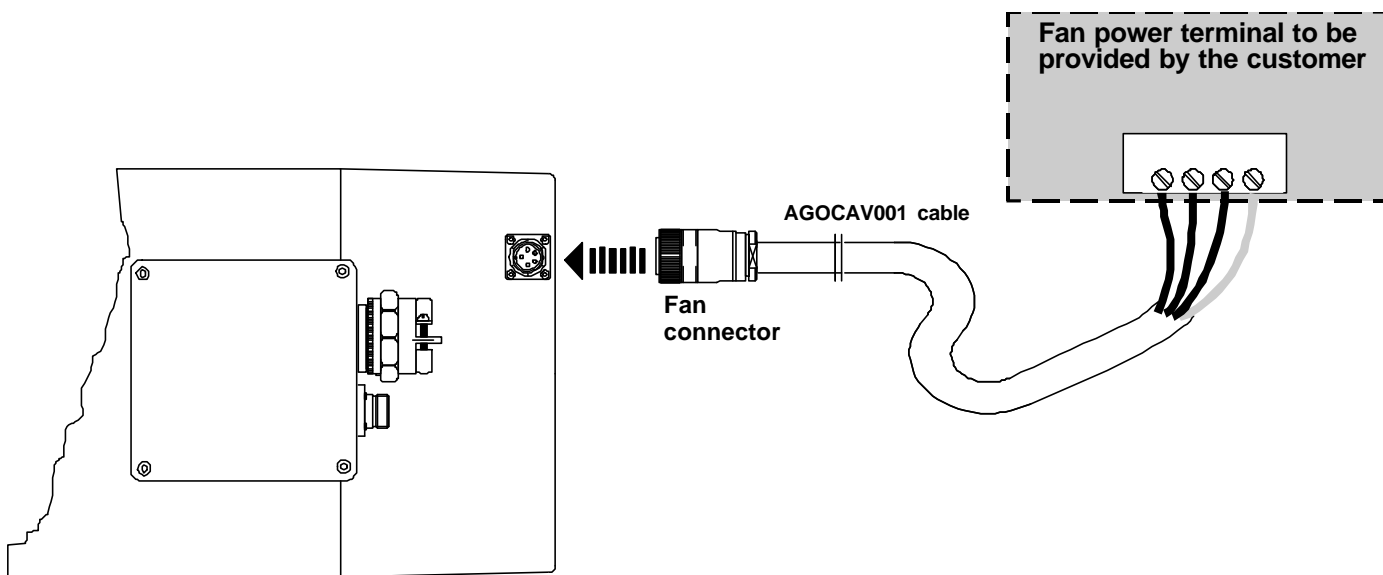
BHL2602K1 - Wiring the drive power connector (with fan version) to Lexium Drive MHDx1198N00



**Lexium Drive**

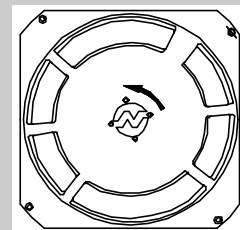


BHL2602K1 - Wiring the motor fan connector

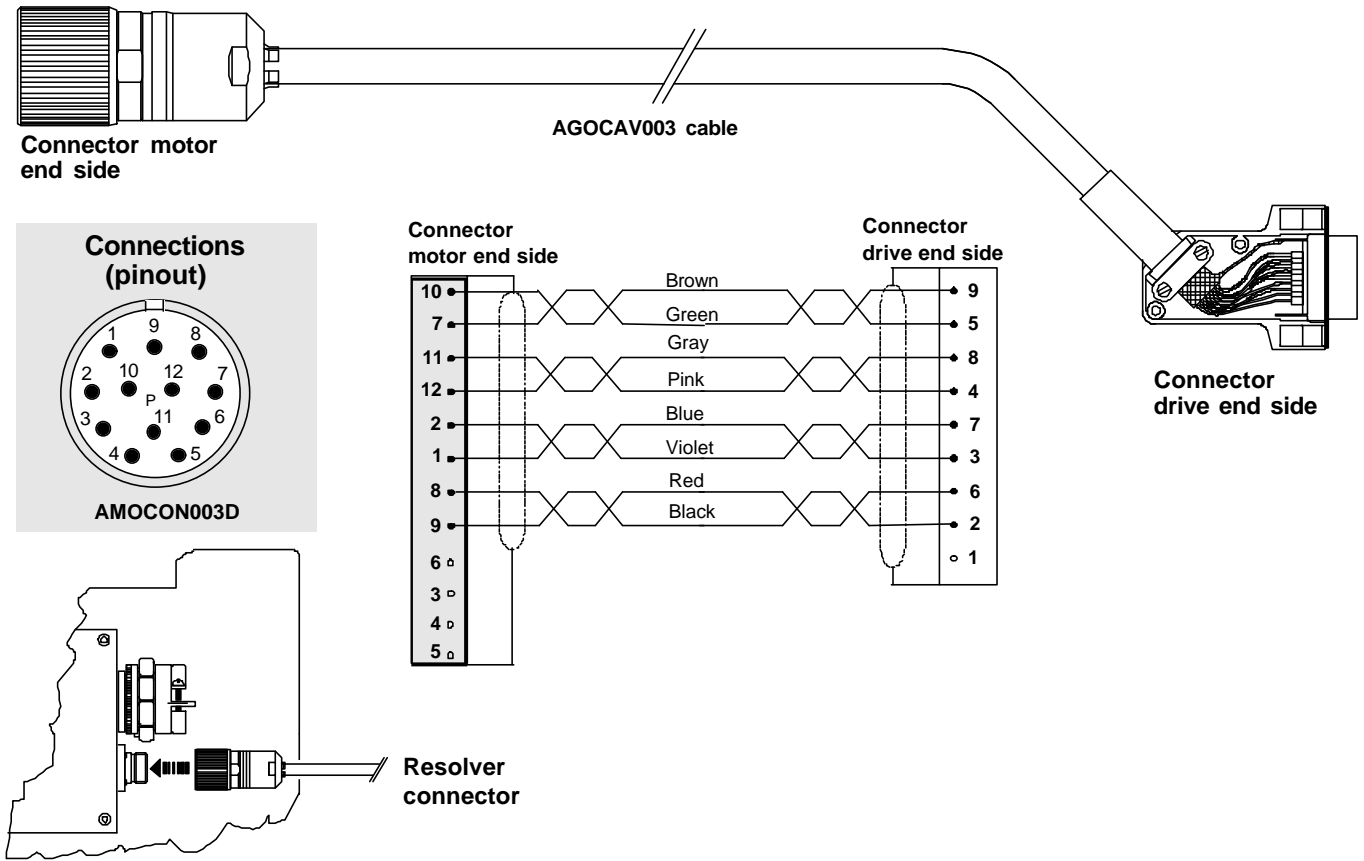


The motor ventilation must be with air inlet coming from the rear end of the motor and outflow from motor shaft side .  
Check the correct fan rotation as shown (see arrow) in the rear end of the motor.

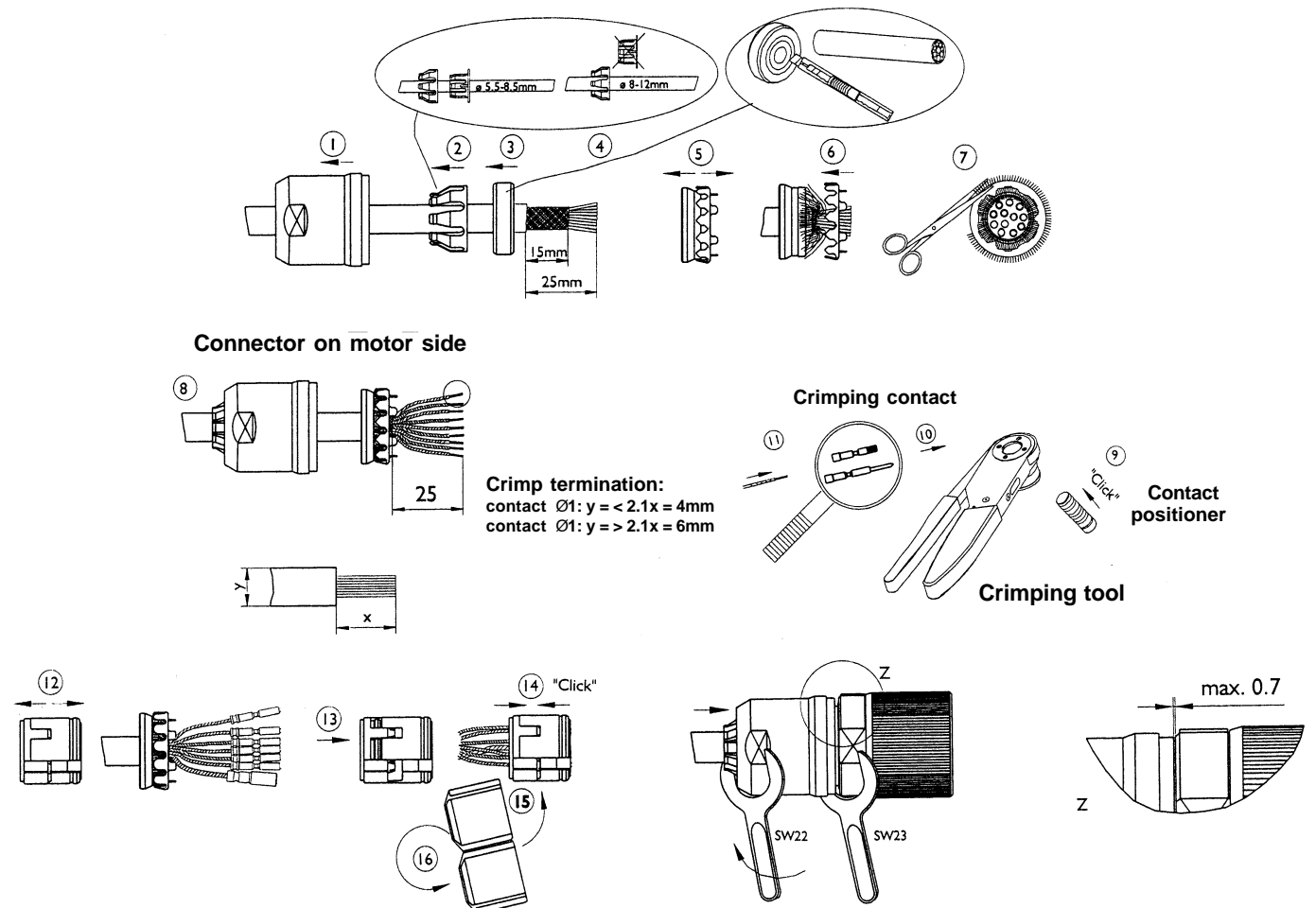
In the opposite reverse two phases.



BHL260 - Wiring the motor resolver connector

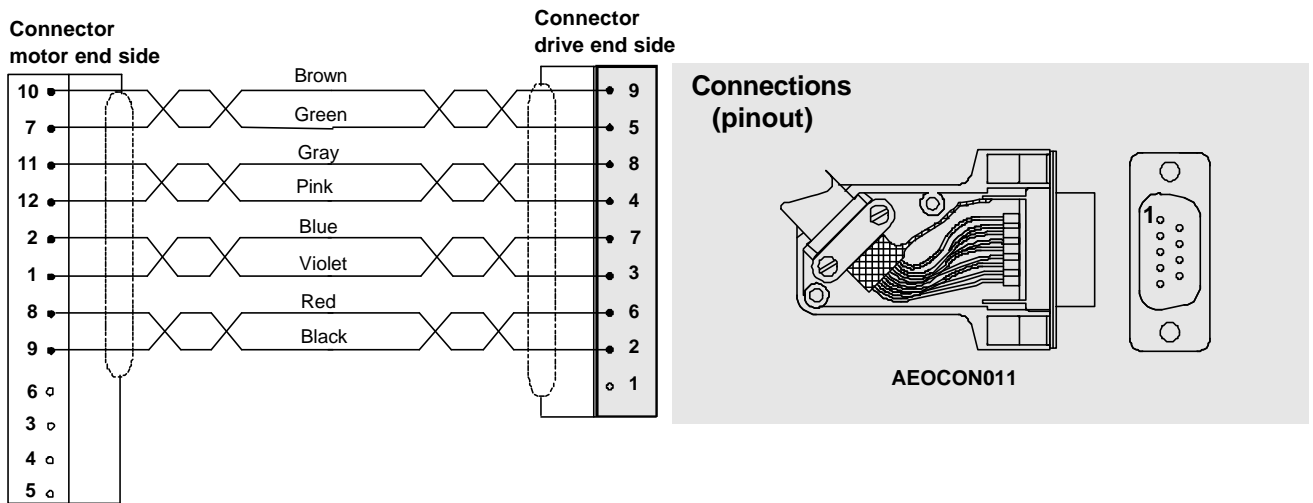


If you assemble your own motor resolver connector, please do so according to the following procedure.



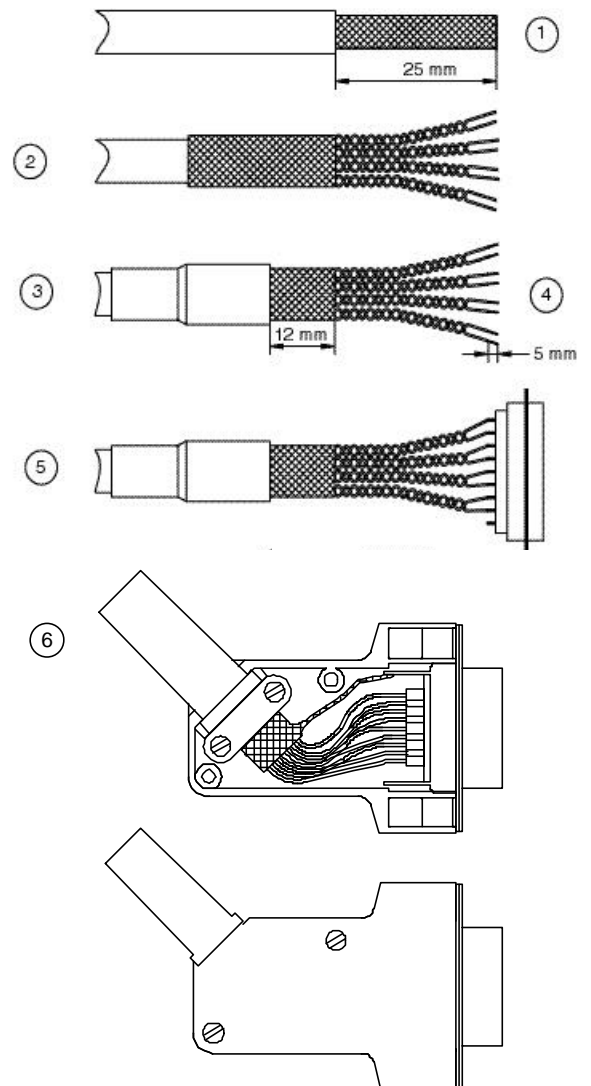


BHL260 - Wiring the drive resolver connector on Lexium MHDx1198N00 Drive side

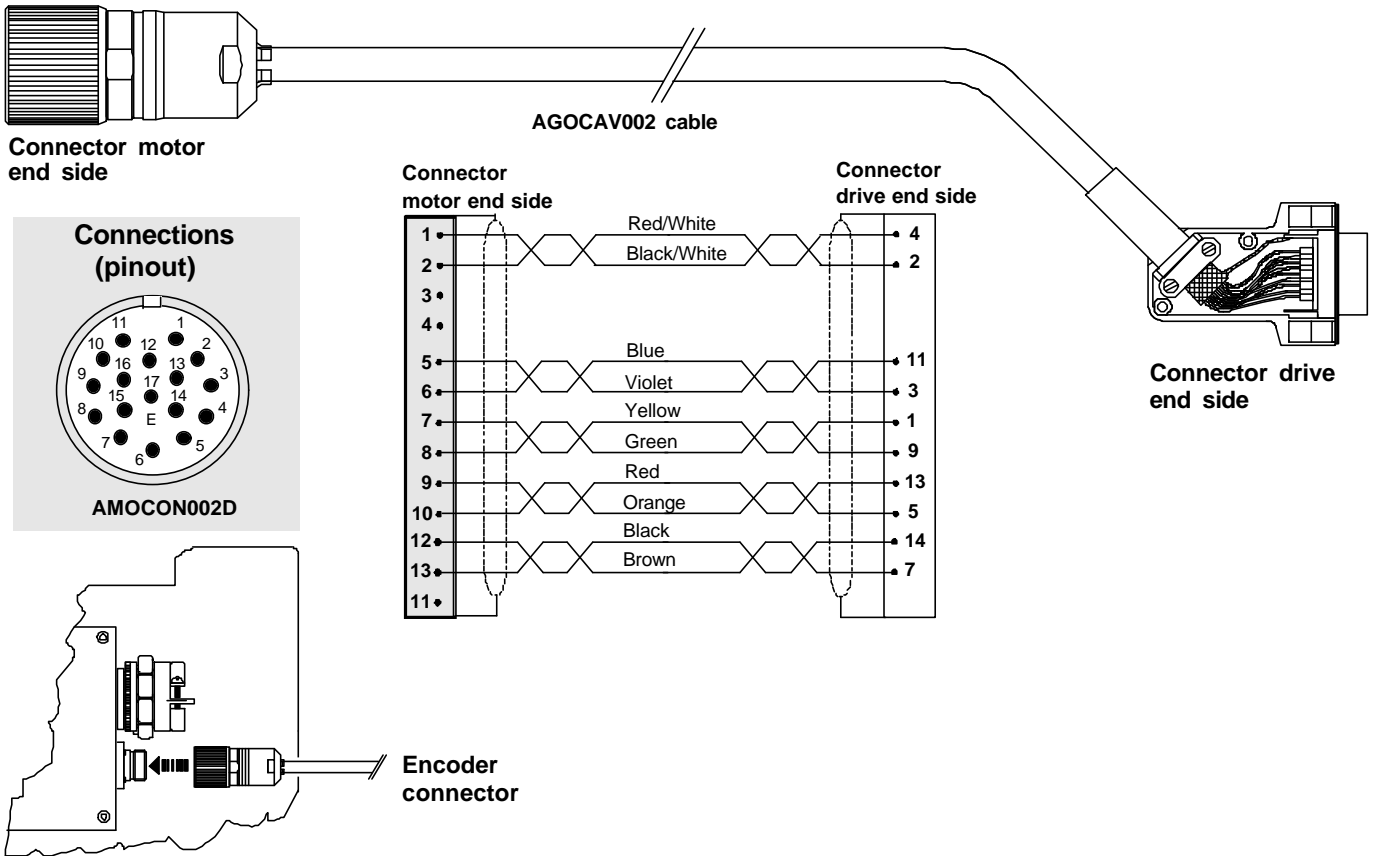


If you assemble your own drive resolver connector, please do so according to the following procedure.

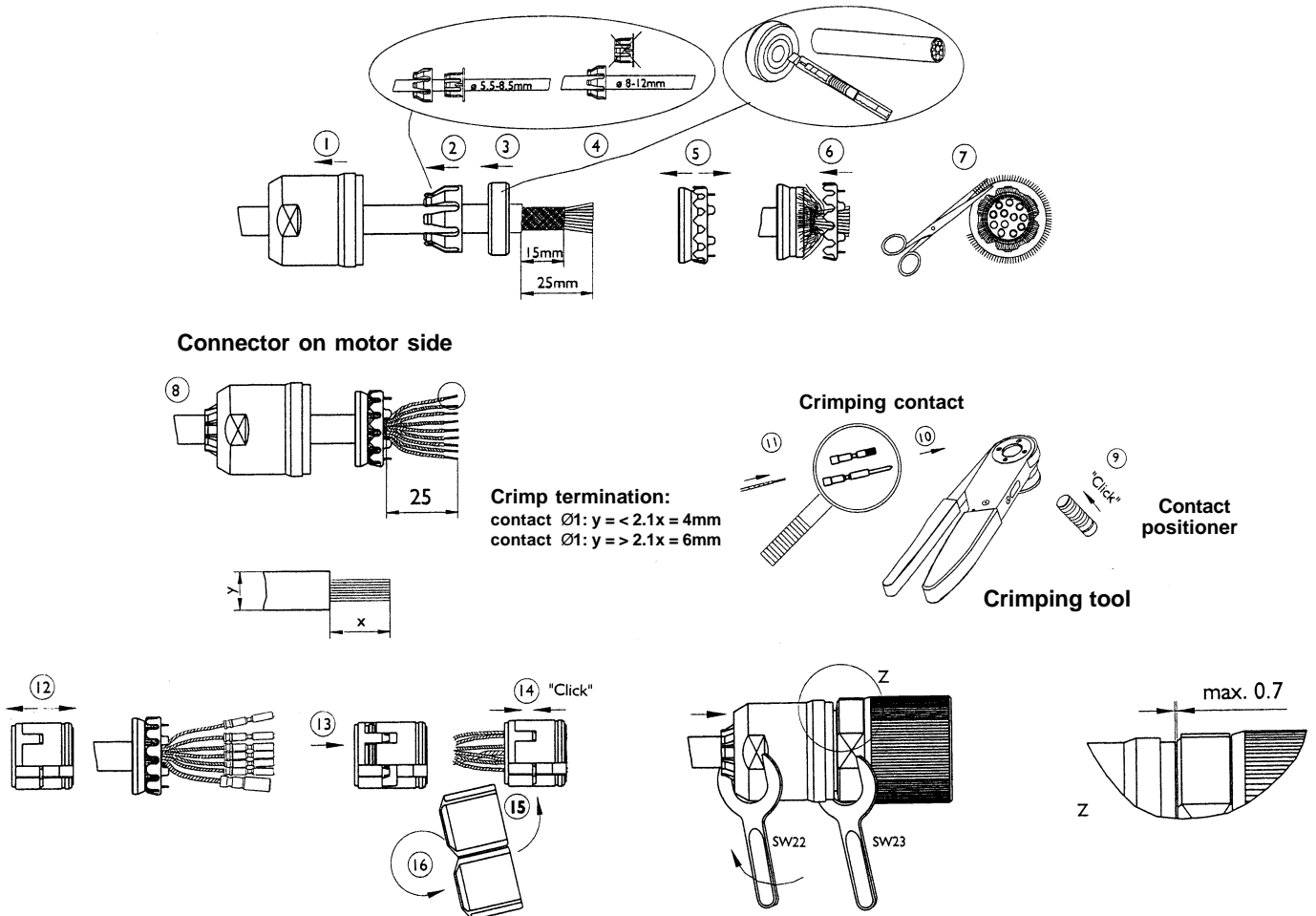
STEP	ACTION
1	Carefully remove about 25mm of the outer covering while taking care not to damage the braided shield.
2	Push the exposed braided shield back over the outer covering.
3	Leave the first 12mm of the braided shield free and insulate the rear portion with shrink tubing.
4	Carefully strip about 5mm from the individual wires while taking care not to damage the copper strands.
5	Verify pin assignments then solder the individual wires to the solder cups of the Sub-D connector. (Check the wire colours)
6	Attach the cable to the connector housing strain relief; the strain relief must have good contact with the exposed shielding of the cable. Place the Sub-D connector in the groove of the half-housing, press the two halves together and fix them by screwing.



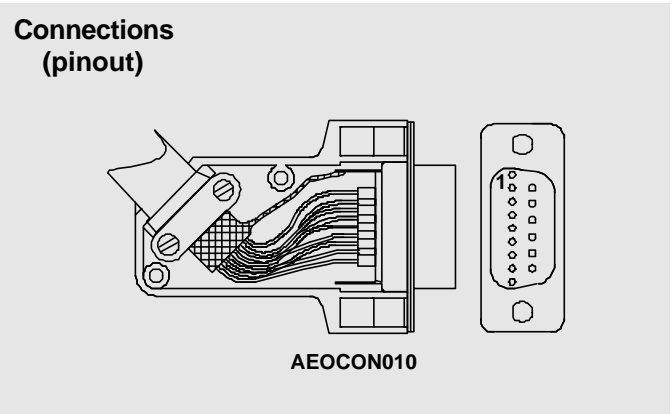
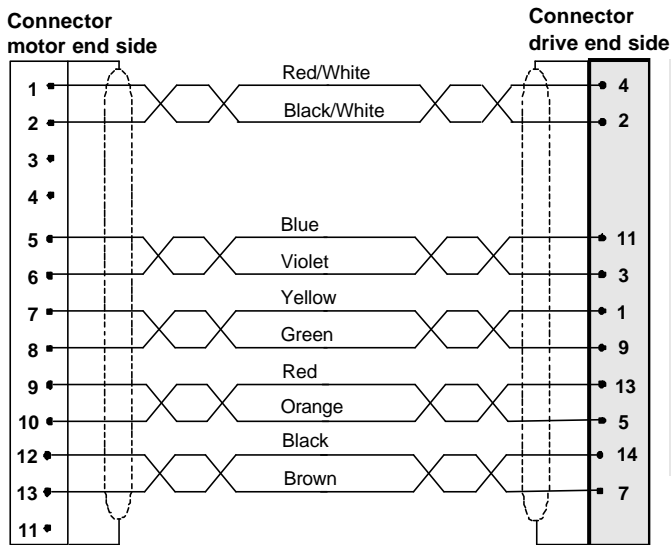
BHL260 - Wiring the motor encoder connector



If you assemble your own motor encoder connector, please do so according to the following procedure.



BHL260 - Wiring the drive encoder connector on Lexium MHDx1198N00 Drive side



If you assemble your own drive encoder connector, please do so according to the following procedure.

STEP	ACTION
1	Carefully remove about 25mm of the outer covering while taking care not to damage the braided shield.
2	Push the exposed braided shield back over the outer covering.
3	Leave the first 12mm of the braided shield free and insulate the rear portion with shrink tubing.
4	Carefully strip about 5mm from the individual wires while taking care not to damage the copper strands.
5	Verify pin assignments then solder the individual wires to the solder cups of the Sub-D connector. (Check the wire colours)
6	Attach the cable to the connector housing strain relief; the strain relief must have good contact with the exposed shielding of the cable. Place the Sub-D connector in the groove of the half-housing, press the two halves together and fix them by screwing.

