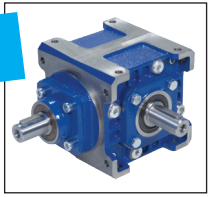
Right angle gearbox with 1 or 2 outputs

HLA19

Torque up to 43 Nm

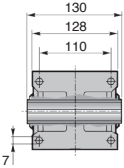
- ***Right angle bevel gearbox***
- *Max speed 1,400 rpm*
- *Output backlash: 12' to 20'*
- *Materials:*
  Components: steel
  Housing: cast iron
- *Thermal power: 4.5 kW (Heat dissipation capability)*

Spiral bevel gear

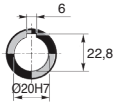


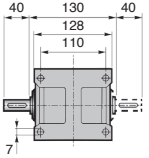
Part number

- *When ordering, specify the rotation direction and mounting position by replacing* **E** *and* **B3** *in the Part number (see presentation page)* ***(tome 2 p.266)***



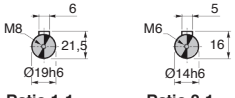
Hollow output shaft C



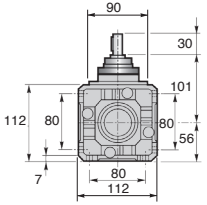


Single output shaft S or dual shafts B

With input shaft



Ratio 1:1 **Ratio 2:1** **Ratio 3:1**



DISCOUNTS

Qty	1+	2+	4+
Disc.	List	-5%	On request

Part number	Ratio	Ø input shaft (h6)	Output shaft	Max output speed (rpm)	Mechanical ouput torque (Nm)	Weight (kg)	Price each
HLA19-1-C-*E-B3*	1:1	19	hollow	1400	35	8,5	On request
HLA19-2-C-*E-B3*	2:1	14	hollow	700	40	8,5	On request
HLA19-3-C-*E-B3*	3:1	14	hollow	467	43	8,5	On request
HLA19-1-S-*E-B3*	1:1	19	single	1400	35	8,5	On request
HLA19-2-S-*E-B3*	2:1	14	single	700	40	8,5	On request
HLA19-3-S-*E-B3*	3:1	14	single	467	43	8,5	On request
HLA19-1-B-*E-B3*	1:1	19	dual	1400	35	8,5	On request
HLA19-2-B-*E-B3*	2:1	14	dual	700	40	8,5	On request
HLA19-3-B-*E-B3*	3:1	14	dual	467	43	8,5	On request

**For maximum torque and a service factor applied, see presentation page - Dimensions en mm*

Right angle gearbox with 1 or 2 outputs

Torque up to 43 Nm

HLC19

- ***Right angle bevel gearbox***
- *For 1,8 kW motor*
- *Max speed 1,400 rpm*
- *Output backlash: 12' to 20'*
- *Materials:*
  Components: steel
  Housing: cast iron
- *Thermal power: 4.5 kW (Heat dissipation capability)*

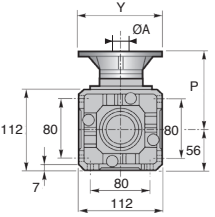
Spiral bevel gear

Part number

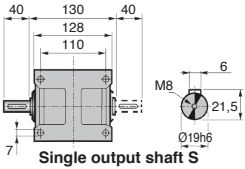
- *When ordering, specify the rotation direction and mounting position by replacing* **E** *and* **B3** *in the Part number (see presentation page* **(tome 2 p.267)**.

Input flange

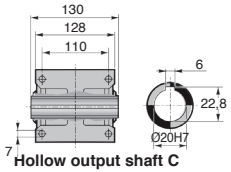
- *The following flanges are available: 63B5, 71B5, 80B5, 90B5 and 80B14 and the reference should be added to the Part number*



Input with motor flange



Single output shaft S or dual shafts B



Hollow output shaft C

Input flange

IEC	63B5	71B5	80B5	90B5	80B14
Y	140	160	200	200	120
P	104	111	131	131	131
ØA	11	14	19	24	19

DISCOUNTS

Qty	1+	2+	4+
Disc.	List	-5%	On request

Part number	Ratio	Output shaft	Max output speed (rpm)	Mechanical output torque* (Nm)	Weight (kg)	Price each
HLC19-1-C-*63B5-E-B3*	1:1	hollow	1400	35	11,5	On request
HLC19-2-C-*63B5-E-B3*	2:1	hollow	700	40	11,5	On request
HLC19-3-C-*63B5-E-B3*	3:1	hollow	467	43	11,5	On request
HLC19-1-S-*63B5-E-B3*	1:1	single	1400	35	11,5	On request
HLC19-2-S-*63B5-E-B3*	2:1	single	700	40	11,5	On request
HLC19-3-S-*63B5-E-B3*	3:1	single	467	43	11,5	On request
HLC19-1-B-*63B5-E-B3*	1:1	dual	1400	35	11,5	On request
HLC19-2-B-*63B5-E-B3*	2:1	dual	700	40	11,5	On request
HLC19-3-B-*63B5-E-B3*	3:1	dual	467	43	11,5	On request

**For maximum torque and a service factor applied, see presentation page - Dimensions in mm*

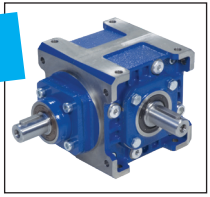
Right angle gearbox with 1 or 2 outputs

HLA24

Torque up to 78 Nm

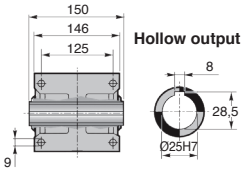
- ***Right angle bevel gearbox***
- *Max speed 1,400 rpm*
- *Output backlash: 12' to 20'*
- *Materials:*
  Components: steel
  Housing: cast iron
- *Thermal power: 6.7 kW (Heat dissipation capability)*

Spiral bevel gear

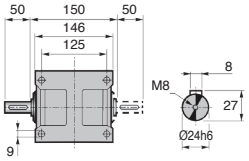


Part number

- *When ordering, specify the rotation direction and mounting position by replacing* ***E*** *and* ***B3*** *in the Part number* **(tome 2 p.256)**.



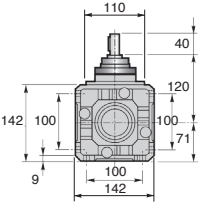
Hollow output shaft C



Single output shaft S or dual shafts B

With input shaft

Ratio 1:1 | **Ratio 2:1** **Ratio 3:1**



DISCOUNTS

Qty	1+	2+	4+
Disc.	List	-5%	On request

Part number	Ratio	Øinput shaft (h6)	Input shaft	Max output speed (rpm)	Mechanical output torque* (Nm)	Weight (kg)	Price each
HLA24-1-C-*E-B3*	1:1	24	hollow	1400	73	14	On request
HLA24-2-C-*E-B3*	2:1	19	hollow	700	72	14	On request
HLA24-3-C-*E-B3*	3:1	19	hollow	467	78	14	On request
HLA24-1-S-*E-B3*	1:1	24	single	1400	73	14	On request
HLA24-2-S-*E-B3*	2:1	19	single	700	72	14	On request
HLA24-3-S-*E-B3*	3:1	19	single	467	78	14	On request
HLA24-1-B-*E-B3*	1:1	24	dual	1400	73	14	On request
HLA24-2-B-*E-B3*	2:1	19	dual	700	72	14	On request
HLA24-3-B-*E-B3*	3:1	19	dual	467	78	14	On request

**For maximum torque and a service factor applied, see presentation page - Dimensions en mm*

Right angle gearbox with 1 or 2 outputs

Torque up to 78 Nm

HLC24

- ***Right angle bevel gearbox***
- *For 4 kW motor*
- *Max speed 1,400 rpm*
- *Output backlash: 12' to 20'*
- *Materials:*
  Components: steel
  Housing: cast iron
- *Thermal power: 6.7 kW (Heat dissipation capability)*

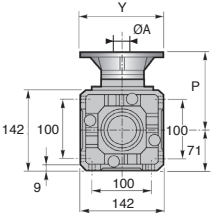
Spiral bevel gear

Part number

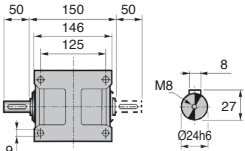
- *When ordering, specify the rotation direction and mounting position by replacing* **E** *and* **B3** *in the Part number (see presentation page* **(tome 2 p.267)**.

Input flange

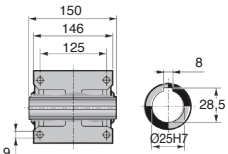
- *The following flanges are available: 63B5, 71B5, 80B5, 90B5 and 80B14 and the reference should be added to the Part number*



Input with motor flange



Single output shaft S or dual shafts B



Hollow output shaft C

Input flange

IEC	71B5	80B5	90B5	100/112B5
Y	160	200	200	250
P	128	148	148	158
ØA	14	19	24	28

DISCOUNTS

Qty	1+	2+	4+
Disc.	List	-5%	On request

Part number	Ratio	Output shaft	Max output speed (rpm)	Mechanical output torque* (Nm)	Weight (kg)	Price each
HLC24-1-C-*71B5-E-B3*	1:1	hollow	1400	73	19	On request
HLC24-2-C-*71B5-E-B3*	2:1	hollow	700	72	19	On request
HLC24-3-C-*71B5-E-B3*	3:1	hollow	467	78	19	On request
HLC24-1-S-*71B5-E-B3*	1:1	single	1400	73	19	On request
HLC24-2-S-*71B5-E-B3*	2:1	single	700	72	19	On request
HLC24-3-S-*71B5-E-B3*	3:1	single	467	78	19	On request
HLC24-1-B-*71B5-E-B3*	1:1	dual	1400	73	19	On request
HLC24-2-B-*71B5-E-B3*	2:1	dual	700	72	19	On request
HLC24-3-B-*71B5-E-B3*	3:1	dual	467	78	19	On request

**For maximum torque and a service factor applied, see presentation page - Dimensions in mm*

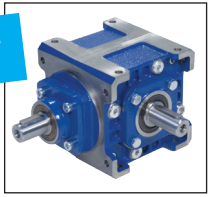
Right angle gearbox with 1 or 2 outputs

HLA28

Torque up to 182 Nm

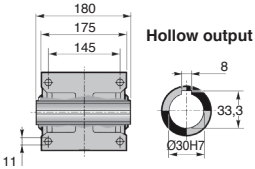
- ***Right angle bevel gearbox***
- *Max speed 1,400 rpm*
- *Output backlash: 12' to 20'*
- *Materials:*
  Components: steel
  Housing: cast iron
- *Thermal power: 10.3 kW (Heat dissipation capability)*

Spiral bevel gear

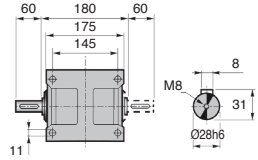


Part number

- *When ordering, specify the rotation direction and mounting position by replacing* ***E*** *and* ***B3*** *in the Part number (see presentation page* ***(tome 2 p.256)****.*

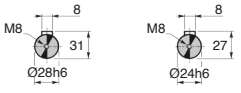


Hollow output shaft C

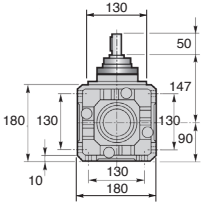


Single output shaft S or dual shafts B

With input shaft



Ratio 1:1 **Ratio 2:1**
Ratio 3:1



DISCOUNTS

Qty	1+	2+	4+
Disc.	List	-5%	On request

Part number	Ratio	ØInput shaft (h6)	output shaft	Max output speed (rpm)	Mechanical output torque* (Nm)	Weight (kg)	Price each
HLA28-1-C-*E-B3*	1:1	28	hollow	1400	146	23	On request
HLA28-2-C-*E-B3*	2:1	24	hollow	700	145	23	On request
HLA28-3-C-*E-B3*	3:1	24	hollow	467	182	23	On request
HLA28-1-S-*E-B3*	1:1	28	single	1400	146	23	On request
HLA28-2-S-*E-B3*	2:1	24	single	700	145	23	On request
HLA28-3-S-*E-B3*	3:1	24	single	467	182	23	On request
HLA28-1-B-*E-B3*	1:1	28	dual	1400	146	23	On request
HLA28-2-B-*E-B3*	2:1	24	dual	700	145	23	On request
HLA28-3-B-*E-B3*	3:1	24	dual	467	182	23	On request

**For maximum torque and a service factor applied, see presentation page - Dimensions en mm*

Right angle gearbox with 1 or 2 outputs

Torque up to 182 Nm

HLC28

- ***Right angle bevel gearbox***
- *For 9,2 kW motor*
- *Max speed 1,400 rpm*
- *Output backlash: 12' to 20'*
- *Materials:*
  Components: steel
  Housing: cast iron
- *Thermal power: 10.3 kW (Heat dissipation capability)*

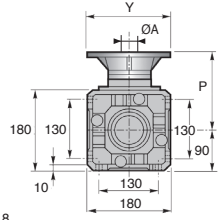
Spiral bevel gear

Part number

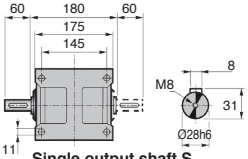
- *When ordering, specify the rotation direction and mounting position by replacing* **E** *and* **B3** *in the Part number (see presentation page* **(tome 2 p.267)**.

Input flange

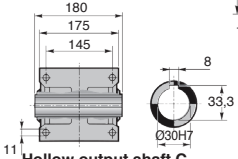
- *The following flanges are available: 63B5, 71B5, 80B5, 90B5 and 80B14 and the reference should be added to the Part number*



Input with motor flange



Single output shaft S or dual shafts B



Hollow output shaft C

Input flange

IEC	80B5	90B5	100/112B5	132B5
Y	200	200	250	300
P	171	171	181	203
ØA	19	24	28	38

DISCOUNTS

Qty	1+	2+	4+
Disc.	List	-5%	On request

Part number	Ratio	Output shaft	Max output speed (rpm)	Mechanical output torque* (Nm)	Weight (kg)	Price each
HLC28-1-C-*80B5-E-B3*	1:1	hollow	1400	146	33	On request
HLC28-2-C-*80B5-E-B3*	2:1	hollow	700	145	33	On request
HLC28-3-C-*80B5-E-B3*	3:1	hollow	467	182	33	On request
HLC28-1-S-*80B5-E-B3*	1:1	single	1400	146	33	On request
HLC28-2-S-*80B5-E-B3*	2:1	single	700	145	33	On request
HLC28-3-S-*80B5-E-B3*	3:1	single	467	182	33	On request
HLC28-1-B-*80B5-E-B3*	1:1	dual	1400	146	33	On request
HLC28-2-B-*80B5-E-B3*	2:1	dual	700	145	33	On request
HLC28-3-B-*80B5-E-B3*	3:1	dual	467	182	33	On request

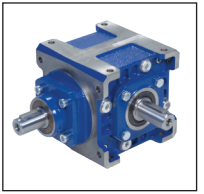
**For maximum torque and a service factor applied, see presentation page - Dimensions in mm*

Right angled gearbox

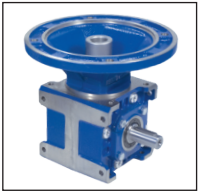
HLA
HLC

With spiral bevel gears

- Gearbox available with 3 different final ratios and 3 types of output shaft, hollow, single or dual. It is also possible to have an additional optional output shaft on the opposite side to the input.
- Three input types are available; a projecting shaft (**HLA**), a coupling for a motor (bell and joint are options) or a coupling for a compact motor with an IEC flange (**HLC**).
- The cast iron body (EN GJL 200 UNI EN 1561) has internal and external ribs to ensure rigidity and is machined on all surfaces for easy positioning. A single lubrication chamber guarantees improved heat dissipation and better lubrication of all internal components.
- The internal mechanism of these gearboxes consists of a train of steel (16CrNi4 or 18NiCrM05) GLEASON spiral bevel gears with precision lapped profiles.
- The use of high quality bearings on all axes ensures a long life even under conditions of very high radial and axial stresses.
- The body of the gearbox, flanges, bells and covers have a RAL5010 blue painted finish.



HLA With input shaft



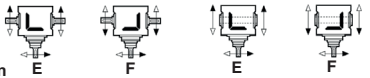
HLC With motor flange

The different types of input, rotation direction (see table below) and mounting positions (see table opposite) offer a wide variety of possible configurations and make up the final Part N°.
The following modifications should be made to the basic reference:

Basic Part number - Input type-Direction of rotation-Mounting position
***Example:* HLC19-1-C-71B5-F-VA**

i = 1 i > 1

i = 1 i > 1



Direction of rotation

Right angled gearbox

With spiral bevel gears

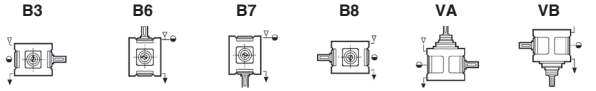
HLA
HLC

Lubrication

Right angle gearboxes require oil lubrication and are fitted with filling points, drain plugs and level gauges. The mounting position should always be specified in the Part N° when ordering. The HLA19 gearbox is lubricated for life.

Mounting position and oil volume (litres)

The quantities of oil shown in the following table are given as a guide only and apply for the mounting position shown. They have been calculated for correct operation in normal ambient temperature and an input speed of 1,400 rpm.



L	B3	B6	B7	B8	VA	VB
19	0,2	0,2	0,2	0,2	0,2	0,2
24	0,4	0,8	0,8	0,4	0,6	0,5
28	0,9	0,8	0,8	0,8	0,9	0,8

The thermal power

The table opposite gives the thermal power ratings (Pt0 (kW) for all gearbox sizes.

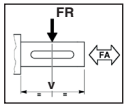
n1 (rpm)	Thermal power (kW)		
	L19	L24	L28
1400	4,5	6,7	10,3

FS: *service factor with motor*
T2: *Torque with service factor*
T2M: *Torque with service factor of 1*
***Values highlighted in grey** should be modified using the appropriate service factor and thermal power.*

L	n_1 = 1400		LC			LA	
	ir	n_2	T_2	P_1	FS'	T_{2M}	P
	ratio	rpm	Nm	kW		Nm	kW
19	1	**1400**	12	1,8	3	35	5,5
	2	**700**	24	1,8	1,7	40	3
	3	**467**	36	1,8	1,2	43	2,2
24	1	**1400**	26	4	2,7	73	11
	2	**700**	53	4	1,4	72	5,5
	3	**467**	78	4	1	78	4
28	1	**1400**	61	9,2	2,4	146	22
	2	**700**	122	9,2	1,2	145	11
	3	**467**	182	9,2	1	182	9,2

Axial and radial loads (N)

The radial loads shown in the table are given for loads applied to the mid-point of the shaft and are given for gears operating with a service factor of 1.



i_n	L					
	19		24		28	
	Input shaft (at 1400 rpm)					
	Fr_1	Fa_1	Fr_1	Fa_1	Fr_1	Fa_1
1-2-3	400	80	630	125	1000	200
	Input shaft (at 1400 rpm)					
	Fr_2	Fa_2	Fr_2	Fa_2	Fr_2	Fa_2
1	800	160	1250	250	2000	400
2-3	1000	160	1600	320	2500	500

For In the case of dual projecting shafts, the load applied to each shaft is limited to 2/3 of the value given subject to the condition that the loads are identical, are applied in the same direction and have the same direction of rotation.