

# Right angle gearbox with 1 or 2 outputs

## HLA19

## Torque up to 43 Nm

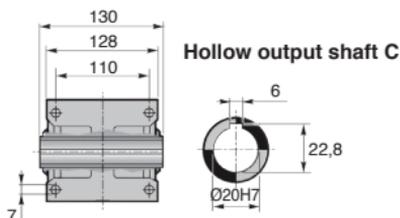
- Right angle bevel gearbox
- Max speed 1,400 rpm
- Output backlash: 12' to 20'
- Materials:
  - Components: steel
  - Housing: cast iron
- Thermal power: 4.5 kW (Heat dissipation capability)

Spiral bevel gear

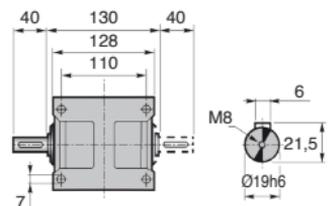


### Part number

- 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)

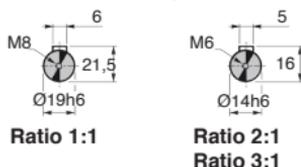


Hollow output shaft C



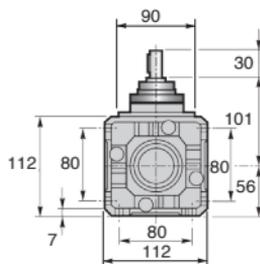
Single output shaft S or dual shafts B

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 output 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

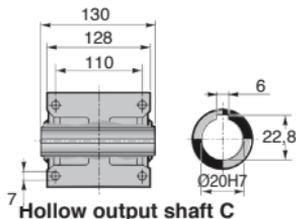
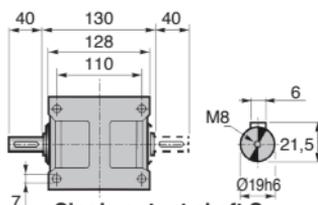
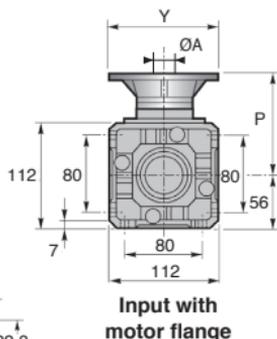


## Part number

- 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 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)

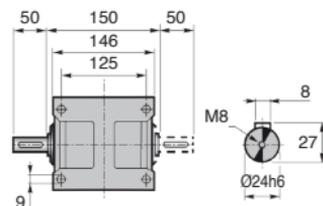
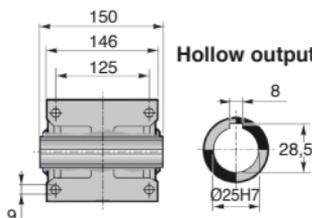
Spiral bevel gear



### Part number

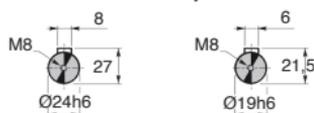
- When ordering, specify the rotation direction and mounting position by replacing **E** and **B3** in the Part number (**tome 2 p.256**).

Hollow output shaft C



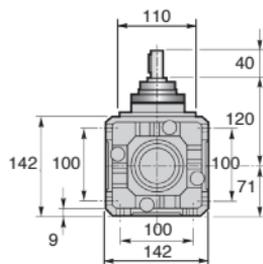
Single output shaft S or dual shafts B

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 in 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

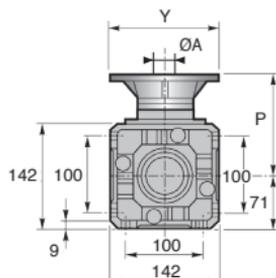


## Part number

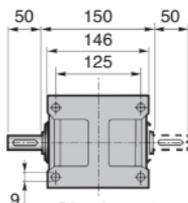
- When ordering, specify the rotation direction and mounting position by replacing **E** and **B3** in the Part number (see presentation page (tome 2 p.267).

## Input flange

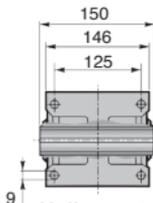
- The following flanges are available: 63B5, 71B5, 80B5, 90B5 and 80B14 and the reference should be added to the Part number



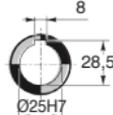
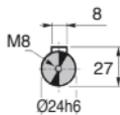
Input with motor flange



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)

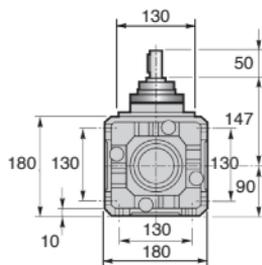
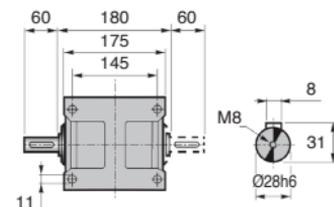
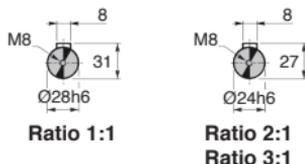
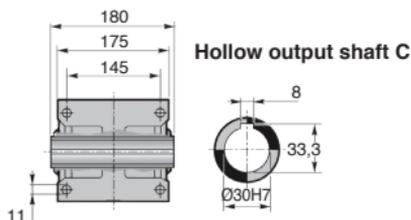
Spiral bevel gear



### 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).

### With input shaft



### 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

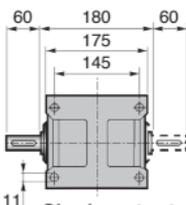
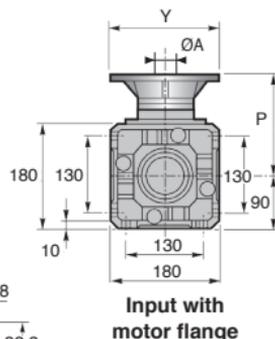


## Part number

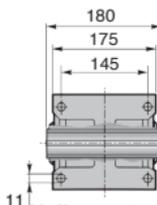
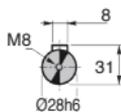
- When ordering, specify the rotation direction and mounting position by replacing **E** and **B3** in the Part number (see presentation page (tome 2 p.267).

## Input flange

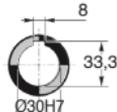
- The following flanges are available: 63B5, 71B5, 80B5, 90B5 and 80B14 and the reference should be added to the Part number



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%	-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:

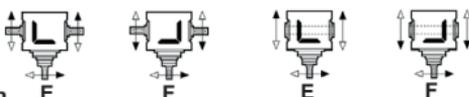
**Basic Part number - Input type-Direction of rotation-Mounting position**

**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

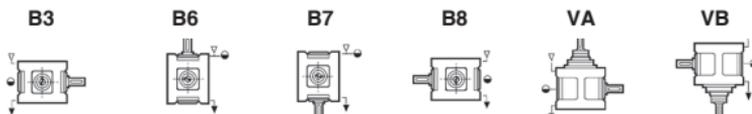
HLA  
HLC

### 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 (P<sub>T0</sub>) (kW) for all gearbox sizes.

n <sub>1</sub> (rpm)	Thermal power (kW)		
	L19	L24	L28
1400	4,5	6,7	10,3

**FS:** service factor with motor

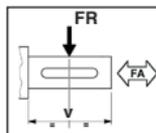
**T<sub>2</sub>:** Torque with service factor

**T<sub>2M</sub>:** Torque with service factor of 1  
**Values highlighted in grey** should be modified using the appropriate service factor and thermal power.

L	n <sub>1</sub> = 1400		LC			LA	
	ir ratio	n <sub>2</sub> rpm	T <sub>2</sub> Nm	P <sub>1</sub> kW	FS'	T <sub>2M</sub> Nm	P 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 <sub>n</sub>	L					
	19		24		28	
Input shaft (at 1400 rpm)						
	Fr <sub>1</sub>	Fa <sub>1</sub>	Fr <sub>1</sub>	Fa <sub>1</sub>	Fr <sub>1</sub>	Fa <sub>1</sub>
1-2-3	400	80	630	125	1000	200
Input shaft (at 1400 rpm)						
	Fr <sub>2</sub>	Fa <sub>2</sub>	Fr <sub>2</sub>	Fa <sub>2</sub>	Fr <sub>2</sub>	Fa <sub>2</sub>
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.