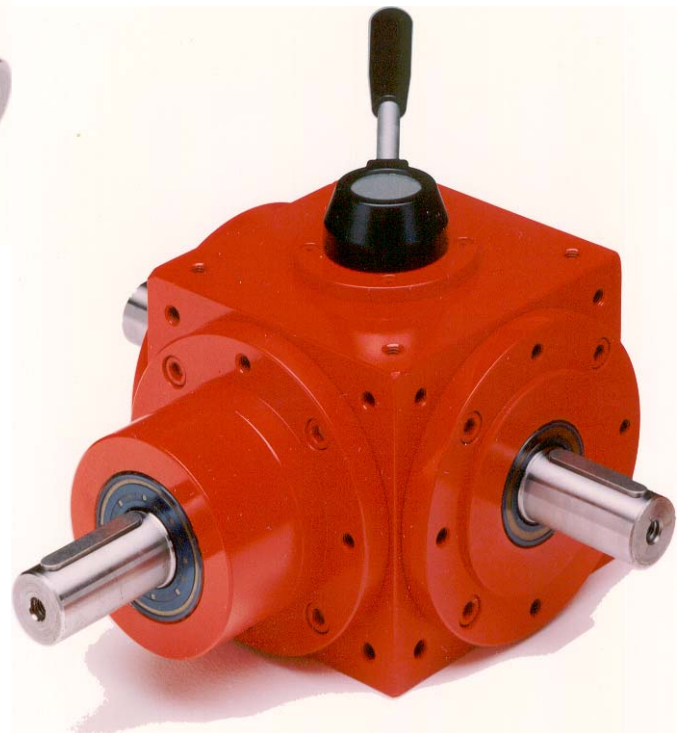
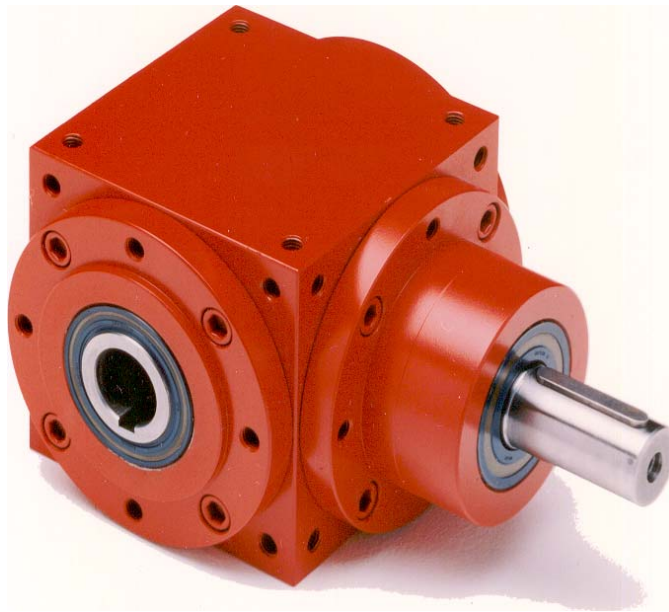




# BROWN EUROPE

**BG SPIRAL BEVEL GEARBOXES**



## BROWN EUROPE

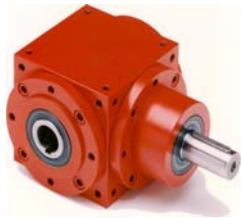
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# B G SPIRAL BEVEL GEARBOXES

## SPECIFICATION

### GENERAL

Spiral bevel gearboxes BG incorporate the most modern advances in bevel gearbox design and construction.

These gearboxes offer an extensive range of ratios together with an excellent power to size relationship as well as low noise levels even at high speed operation.

### CONSTRUCTION FEATURES

- The gearbox which is made in case iron, is of cuboid design with all external faces machined and threaded fixing positions on each face (usable depth of threaded hole = twice the diameter).
- The input and output covers and housing are supplied with two location spigot diameters (h7) together with threaded fixing holes (except size BG 75) for possible co-axial fixing.
- The alloy steel spiral bevel gears are cut in the GLEASON system, case hardened, tempered and lapped to the exact mounting position. Input and output shafts are manufactured in hardened and tempered steel with all surfaces ground.
- Input and output shaft tolerance (j6). Hollow shaft tolerance (H7).
- All shafts supplied with threaded end to UNI 3221 - DIN 332.
- Keyways to UNI 6604 - DIN 6885.

On request and dependent upon speed type BG spiral bevel gearboxes may be assembled with minimum backlash.

Due to the quality of the gears and machining tolerances and overall efficiency of between 94% and 97% can be expected.

The modular construction of BG spiral bevel gearboxes permits up to six input/output shafts (except ratio 1:1).

### INSTALLATION & MAINTENANCE

ask for:

**B G** INFORMATION BOOKLET

### LUBRICATION

Before delivery, the gearbox will be filled with the necessary lubricant. For input speeds up to 1000 rpm the gearboxes will be grease lubricated, for higher speeds or on request oil lubrication is available. In this case the gearboxes will be supplied with a filler/breather plug, level indicator and drain plug.

Motorised Spiral Bevel Gearboxes, Reversing Spiral Bevel Gearboxes and Dis-engaging Spiral Bevel Gearboxes are usually oil lubricated.

For high speed and/or high ambient temperature it may be necessary to apply external cooling. Please consult our technical department.

### RECOMMENDED LUBRICANT

Mobil MOBILUX EP 004 (Mineral Grease)

Mobil MOBILGEAR 630 (Mineral Oil)

The above lubricants are suitable for operation at normal ambient temperatures -5 deg.C to +40 deg. C. For extreme conditions alternative lubricants are available, these conditions must be specified at time of ordering.

### MAINTENANCE

It is recommended that the oil is changed after the first 500 hours and then after every 3000 operating hours.

### QUANTITY OF LUBRICANT

The quantity of lubricant (litres) for each unit size are as shown below:

Size	BG12	BG19	BG24	BG32	BG38	BG42	BG55	BG75
Grease	0.15	0.22	0.35	0.9	1.7	3.5	5.5	14
Oil	0.1	0.15	0.22	0.6	1.1	2.2	3.6	9

Quantities refer to units type A, ratio 1:1

### ORDER CODE

#### SPIRAL BEVEL GEARBOXES

<b>B</b>	<b>G</b>	<b>19</b>		<b>A</b>	<b>1:1</b>	
<b>BROWN GROUP</b>	<b>BEVEL</b>	<b>SIZE</b>		<b>ASSEMBLY</b>	<b>RATIO</b>	

#### SPIRAL BEVEL GEARBOXES WITH IEC MOTOR FLANGE ADAPTOR

<b>B</b>	<b>G</b>	<b>19</b>	<b>M</b>	<b>A</b>	<b>2:1</b>	<b>IEC 63</b>
<b>BROWN GROUP</b>	<b>BEVEL</b>	<b>SIZE</b>	<b>MOTORISED</b>	<b>ASSEMBLY</b>	<b>RATIO</b>	<b>MOTOR INPUT</b>

# B G SPIRAL BEVEL GEARBOXES



## TECHNICAL INFORMATION

### LUBRICATION

The selections assume the following conditions:

Life	20,000 hours
Prime Mover	Electric Motor
Shock Factor	Uniform Load (1)
Shaft Rotation	One direction
Running time	8 hours per day
Start Factor	1 start per hour
Ambient Conditions	Temperature +20 deg.C
Altitude	< 1,000 metres above sea level

### Duty Factor K1

When working conditions are different from those above, duty factors must be considered.

$$K1 = fr \cdot fL \cdot fB$$

### Running Time Factor fr

Hours/Day	24	18	12	8	4	2	1
fr	1.25	1.18	1.1	1	0.9	0.8	0.7

### Life Factor fL (Hours)

Theoretical Life	60000	40000	20000	15000	10000	5000	3000
fL	1.3	1.15	1	0.95	0.9	0.85	0.8

### Shock Factor fB

	No. of Starts per Hour					
	Irregular	1	5	20	60	120
Uniform	1	1	1.4	1.8	2.2	2.7
Moderate Shock	1	1.4	1.8	2.2	2.7	3.2
Heavy Shock	1.4	1.8	2.2	2.7	3.2	3.8

The required output torque Mreq will be multiplied for the above mentioned factors to obtain the value of torque M2 used to select a spiral bevel gearbox of the correct size.

$$M2 \geq Mreq \times K1$$

### Thermal Factor Kr

The thermal rating is that power that can be applied at the input of the bevel gearboxes, working continuously at an ambient temperature of 20 deg.C, such as to maintain the lubrication temperature under 100 deg.C.

### Maximum Thermal Input kW KT

Size	BG12	BG19	BG24	BG32	BG38	BG42	BG55	BG75
KT KW	1.5	3	6	10	16	20	35	60
Input rpm	2800	2800	2800	2800	2000	2000	1500	1000

When conditions are different from those above it will be necessary to consider the following factors:

### Ambient Temperature Factor fA

Temp °C	-10	0	10	20	30	40	50
fA	1.3	1.25	1.15	1	0.9	0.8	0.7

### Running Time Factor fD

% Running Time Factor	100	80	60	40	20
fD	1	1.2	1.4	1.6	1.8

Thermal rating KT should be multiplied by the above factors to obtain the actual thermal rating KT ACTUAL.

$$KT \text{ ACTUAL} = KT \times fA \times fD$$

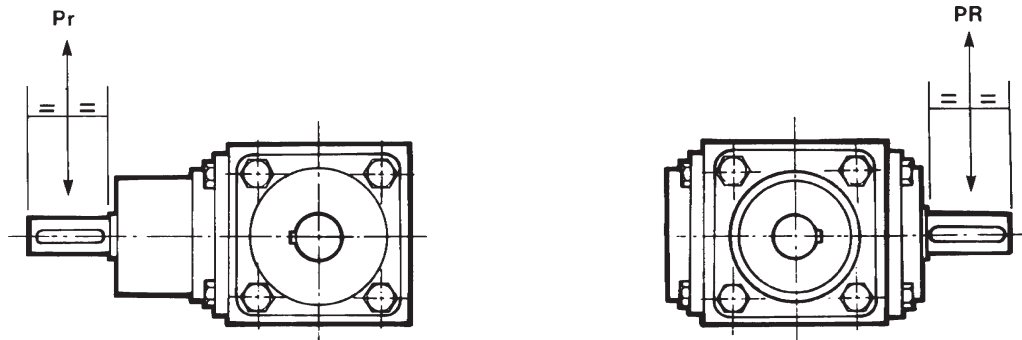
When the continuous absorbed rating in the bevel gearbox (KT ACTUAL) is over the actual thermal rating (KT), excess heat must be removed by artificial cooling.



# B G SPIRAL BEVEL GEARBOXES

## INPUT AND OUTPUT SHAFT LOADS

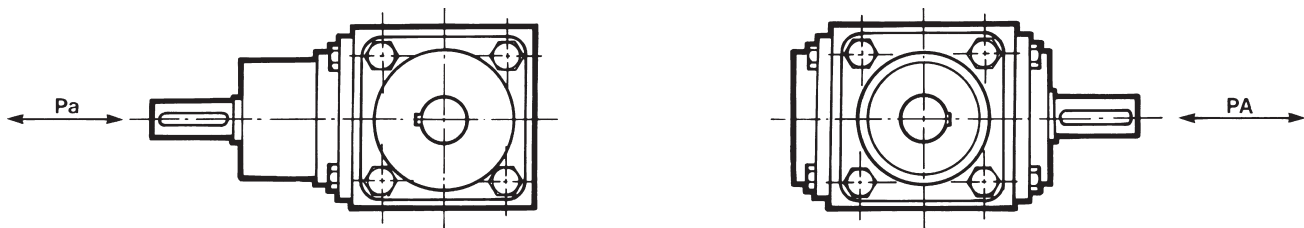
### RADIAL LOADS (N)



Input Speed 1500 rpm

UNIT SIZE	Input Shaft Pr.					Output Shaft PR
	Ratio			Ratio		All Ratio's
	1:1	2:1	3:1	4:1	5:1	
BG12		550			-	900
BG19		850			600	1500
BG24		1400			850	2200
BG32		2000			1400	3500
BG38		4000			2000	7000
BG42		6000			4000	10000
BG55		10000			6000	15000
BG75		25000			10000	35000

### AXIAL LOADS (N)



Input Speed 1500 rpm

UNIT SIZE	Input Shaft Pa.										Output Shaft PA	
	Ball Bearing					Taper Roller Bearing					Ball Bearing	Taper Roller Bearing
	Ratio			Ratio		Ratio			Ratio		All Ratio's	All Ratio's
	1:1	2:1	3:1	4:1	5:1	1:1	2:1	3:1	4:1	5:1		
BG12	300			-							500	-
BG19	450			400		650			450		700	1000
BG24	700			450		1000			650		1300	1800
BG32	1100			700		1500			1000		1700	2500
BG38	1700			1100		2400			1500		3400	5000
BG42	2700			1700		4000			2400		4800	7000
BG55	5000			2700		7800			4000		6800	10000
BG75	10000			5000		16000			7800		15000	22000

All standard units are fitted with ball bearings

# B G SPIRAL BEVEL GEARBOXES



## ASSEMBLY, SHAFT ROTATION & HANDING

### ASSEMBLY OPTIONS

Assembly		Description	Assembly		Description
	<b>A</b>	<p>Slow Shaft double projection</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>		<b>B</b>	<p>Slow Shaft double projection 2 fast shafts counter rotating</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>
	<b>AS</b>	<p>Slow Shaft single projection</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>		<b>BS</b>	<p>Slow Shaft single projection 2 fast shafts counter rotating</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>
	<b>AD</b>	<p>Slow Shaft single projection</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>		<b>BD</b>	<p>Slow Shaft single projection 2 fast shafts counter rotating</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>
	<b>AX</b>	<p>Speed Increase</p> <p>Ratio 1:1.5 1:2</p>		<b>AH</b>	<p>Hollow Slow Shaft</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>
	<b>AP</b>	<p>Reinforced slow shaft double projection</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>		<b>BH</b>	<p>Hollow Slow Shaft 2 fast shafts counter rotating</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>
	<b>C</b>	<p>Slow Shaft single projection with bearing housing</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>		<b>M</b>	<p>IEC Motor flange adaptor</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>
	<b>DR</b>	<p>Counter rotating slow shaft</p> <p>Ratio 1:1, 2:1, 3:1 4:1, 5:1</p>		<b>IO DO</b>	<p>90 deg. reversing gear Assembly IO and dis-engaging gear Assembly DO</p> <p>Ratio 1:1, 2:1</p>
	<b>DX</b>	<p>Counter rotating speed increase</p> <p>Ratio 1:2, 1:3, 1:4, 1:5</p>		<b>IC</b>	<p>Co-axial reversing gear</p> <p>Ratio 1:1</p>



# B G SPIRAL BEVEL GEARBOXES

## SELECTION

UNIT SIZE	Input rpm	RATIO 1:1		RATIO 1.5:1		RATIO 2:1		RATIO 3:1		RATIO 4:1		RATIO 5:1		Weight Kg	Dimensions Page
		Input kW	Output Torque Nm	Input kW	Output Torque Nm	Input kW	Output Torque Nm	Input kW	Output Torque Nm	Input kW	Output Torque Nm	Input kW	Output Torque Nm		
BG 12	2800	3.0	10.1			1.6	10.6	0.6	5.8					2.5	8/12
	2000	2.2	10.6			1.2	10.9	0.4	6.3						
	1500	1.8	11.5			0.9	11.5	0.4	6.9						
	1000	1.3	12.5			0.7	12.5	0.3	7.5						
	800	1.1	13.4			0.6	13.4	0.2	8.1						
	600	0.9	14.4			0.5	14.4	0.2	8.6						
	400	0.6	15.4			0.3	15.4	0.1	6.0						
	100	0.2	16.8			0.1	16.7	0.0	9.5						
	50	0.1	18.2			0.04	18.2	0.0	9.8						
	10	0.02	19.2			0.01	19.2	0.0	10.1						
BG 19	2800	31.1	105.4	10.3	52.2	9.0	60.9	3.4	34.3	2.9	39.3	1.8	31.2	6.0	8/12
	2000	22.8	108.2	7.5	53.4	6.5	62.0	2.5	34.9	2.1	39.7	1.3	31.7		
	1500	17.5	110.9	5.7	54.4	5.0	62.9	1.9	35.5	1.6	40.0	1.0	32.0		
	1000	12.0	113.5	3.9	55.7	3.4	64.5	1.3	36.1	1.1	40.9	0.7	32.5		
	800	9.7	114.9	3.2	56.3	2.8	65.3	1.0	36.5	0.9	41.3	0.6	32.7		
	600	7.4	116.2	2.4	57.1	2.1	65.9	0.8	36.8	0.7	41.6	0.4	32.9		
	400	5.0	118.7	1.6	57.8	1.4	66.7	0.5	37.4	0.4	42.0	0.3	33.2		
	100	1.3	124.4	0.4	59.8	0.4	69.7	0.1	38.4	0.1	43.0	0.1	33.9		
	50	0.7	126.1	0.2	60.7	0.2	70.5	0.1	38.6	0.1	43.3	0.03	34.1		
	10	0.1	127.8	0.05	61.3	0.03	71.1	0.0	38.9	0.0	43.7	0.0	34.4		
BG 24	2800	33.6	113.7	17.0	86.5	11.4	77.2	4.9	50.0	5.5	73.9	3.6	60.7	12	8/12
	2000	25.1	119.1	12.4	88.3	8.4	79.4	3.6	51.2	4.0	75.3	2.7	64.0		
	1500	19.5	123.0	9.5	90.0	6.4	80.5	2.7	52.0	3.0	76.4	2.1	65.0		
	1000	13.5	128.1	6.5	92.5	4.3	81.9	1.9	52.9	2.1	77.8	1.4	66.0		
	800	11.0	130.5	6.2	93.3	3.5	82.8	1.5	53.7	1.7	78.4	1.1	66.7		
	600	8.5	133.9	4.0	95.0	2.6	83.6	1.1	54.1	1.3	79.2	0.9	68.7		
	400	5.8	137.0	2.7	96.5	1.8	84.7	0.8	55.0	0.8	80.0	0.6	69.3		
	100	1.5	146.2	0.7	100.0	0.4	85.3	0.2	56.2	0.2	81.1	0.2	71.3		
	50	0.8	149.5	0.4	101.3	0.2	85.5	0.1	56.4	0.1	82.5	0.1	72.0		
	10	0.2	154.4	0.1	102.9	0.0	86.1	0.0	56.6	0.0	83.4	0.0	73.3		
BG 32	2800	78.2	264.8	33.1	168.1	22.1	149.9	10.4	105.3	7.3	98.8	5.0	84.1	22	8/12
	2000	58.3	276.3	24.8	176.6	16.4	155.5	8.1	115.9	5.6	105.5	3.7	88.3		
	1500	45.2	285.8	19.3	182.9	12.5	158.4	6.2	118.0	4.2	106.8	2.8	89.7		
	1000	31.3	297.2	13.3	189.2	8.5	161.2	4.2	120.1	2.8	108.1	1.9	91.1		
	800	25.6	302.9	11.0	195.5	6.9	164.0	3.4	122.2	2.3	109.5	1.6	92.5		
	600	19.6	310.5	8.4	199.7	5.3	166.8	2.6	124.3	1.8	110.8	1.2	94.6		
	400	13.4	318.2	5.8	206.0	3.6	169.7	1.8	126.4	1.2	112.1	0.8	96.0		
	100	3.6	339.1	1.5	210.2	0.9	175.3	0.5	130.6	0.3	117.5	0.2	98.1		
	50	1.8	346.7	0.8	214.4	0.5	181.0	0.2	132.7	0.2	120.1	0.1	99.5		
	10	0.4	358.2	0.2	218.6	0.1	183.8	0.0	134.8	0.0	122.8	0.0	100.9		
BG 38	2800	132.9	450.2	69.9	355.2	39.4	266.7	19.9	202.1	15.3	207.9	11.1	187.8	37	8/12
	2000	97.6	463.1	51.6	366.9	28.9	274.2	14.5	206.4	11.2	211.9	8.1	191.7		
	1500	75.3	475.9	39.6	375.2	22.2	280.9	11.0	209.4	8.6	216.3	6.2	195.1		
	1000	51.5	488.8	27.2	386.9	15.2	288.5	7.6	215.4	5.8	220.8	4.2	197.8		
	800	42.1	499.1	22.1	392.7	12.3	292.5	6.1	218.1	4.7	223.0	3.4	199.5		
	600	32.2	509.4	16.8	398.6	9.4	296.9	4.7	221.1	3.6	225.2	2.6	201.7		
	400	22.0	522.2	11.5	408.6	6.4	302.2	3.1	224.1	2.4	228.7	1.7	204.5		
	100	5.8	550.5	3.0	428.6	1.7	314.9	0.8	232.1	0.6	236.3	0.4	211.2		
	50	3.0	562.1	1.5	435.2	0.8	319.1	0.4	234.4	0.3	238.5	0.2	212.8		
	10	0.6	578.8	0.3	443.6	0.2	324.9	0.1	238.0	0.1	242.1	0.0	215.6		

# B G SPIRAL BEVEL GEARBOXES



## SELECTION

UNIT SIZE	Input rpm	RATIO 1:1		RATIO 1.5:1		RATIO 2:1		RATIO 3:1		RATIO 4:1		RATIO 5:1		Weight Kg	Dimensions Page
		Input kW	Output Torque Nm	Input kW	Output Torque Nm	Input kW	Output Torque Nm	Input kW	Output Torque Nm	Input kW	Output Torque Nm	Input kW	Output Torque Nm		
BG 42	2800	166.1	562.8	87.4	444.0	49.2	333.3	24.9	252.6	19.2	259.8	13.9	234.8	57	8/12
	2000	122.1	578.8	64.5	458.6	36.1	342.8	18.1	258.0	14.0	264.8	10.1	239.7		
	1500	94.1	594.9	49.4	469.0	27.8	351.1	13.8	261.8	10.7	270.4	7.7	243.8		
	1000	64.4	611.0	34.0	483.6	19.0	360.6	9.5	269.3	7.3	275.9	5.2	247.3		
	800	52.6	623.9	27.6	490.9	15.4	365.6	7.7	272.6	5.9	278.7	4.2	249.4		
	600	40.3	636.7	21.0	498.2	11.7	371.1	5.8	276.3	4.5	281.5	3.2	252.2		
	400	27.5	652.8	14.4	510.7	8.0	377.8	3.9	280.1	3.0	285.9	2.2	255.6		
	100	7.3	688.2	3.8	535.7	2.1	393.6	1.0	290.1	0.8	295.4	0.6	264.0		
	50	3.7	702.6	1.9	544.1	1.1	398.9	0.5	293.0	0.4	298.2	0.3	266.0		
	10	0.8	723.5	0.4	554.5	0.2	406.1	0.1	297.6	0.1	302.6	0.1	269.5		
BG 55	1500	202.4	1279.7	121.6	1153.4	62.2	786.5	28.2	535.3	27.3	691.5	21.0	662.9	87	8/12
	1000	139.2	1319.9	83.2	1184.1	42.8	811.5	19.4	552.4	18.7	708.1	14.3	676.8		
	800	113.0	1339.2	67.7	1204.5	34.7	822.6	15.7	558.2	15.1	716.5	11.5	683.7		
	600	85.9	1358.6	51.7	1224.9	26.4	833.7	11.9	565.7	11.5	725.4	8.8	692.1		
	400	59.4	1408.5	35.6	1265.7	18.0	856.0	8.1	576.2	7.8	736.5	5.9	701.1		
	100	15.8	1497.0	9.5	1347.4	4.7	894.9	2.1	601.2	2.0	765.4	1.5	727.5		
	50	8.1	1529.2	4.8	1378.0	2.4	914.3	1.1	609.5	1.0	772.6	0.8	734.4		
	10	1.7	1577.5	1.0	1418.8	0.5	931.0	0.2	619.5	0.2	785.4	0.2	744.9		
BG 75	1500	432.0	2731.6	205.7	1951.2	151.6	1917.0	103.9	1971.4	64.5	1631.1	45.0	1422.7	255	8/12
	1000	300.8	2852.8	142.1	2022.1	104.3	1979.2	71.3	2027.8	44.1	1674.5	30.7	1457.5		
	800	245.5	2910.1	115.6	2055.3	84.9	2012.5	57.9	2058.2	35.8	1696.2	24.9	1473.4		
	600	188.6	2980.8	88.6	2100.2	64.8	2048.6	44.1	2092.9	27.2	1720.8	18.9	1493.6		
	400	129.5	3071.7	60.6	2155.1	44.2	2096.4	30.0	2133.4	18.5	1752.6	12.8	1518.2		
	100	34.9	3305.8	16.1	2292.6	11.7	2216.5	7.9	2241.9	4.8	1829.2	3.3	1579.0		
	50	17.8	3383.3	8.2	2338.8	5.9	2257.0	4.0	2276.6	2.4	1853.8	1.7	1597.8		
	10	3.6	3379.9	1.7	2403.9	1.2	2310.5	0.8	2322.9	0.5	1888.5	0.3	1622.5		

NOTE Shaft Rotation: If the bevel gear unit is to rotate in both directions the above ratings must be decreased by 30%

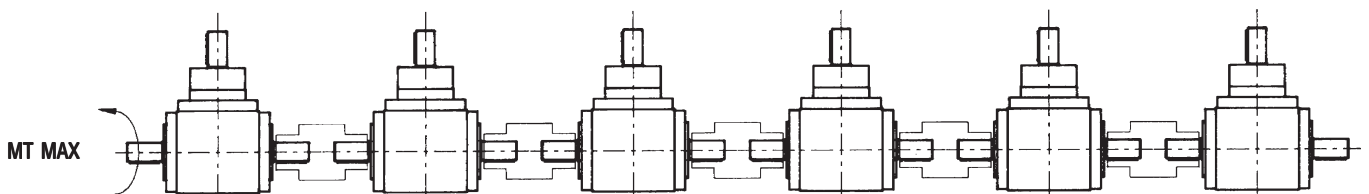
## SERIES CONNECTION

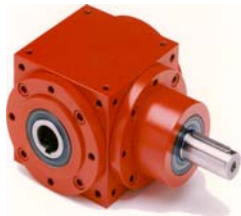
When spiral bevel gearboxes assembly A or AH are mounted in series, the maximum through torque MT MAX (Nm) mentioned below must not be exceeded. For Assembly A and AH see page 8, 9.

Size	BG19 A	BG24 A	BG32 A	BG38 A	BG42 A	BG55 A	BG75 A
Max. through torque MT Max (Nm)	60	120	300	500	700	1600	4000

If working conditions are greater than above, assembly AP gearboxes must be used which have larger shaft diameters. For Assembly AP see page 10.

Size	BG19 AP	BG24 AP	BG32 AP	BG38 AP	BG42 AP	BG55 AP	BG75 AP
Max. through torque MT Max (Nm)	120	300	500	700	1000	3000	6500



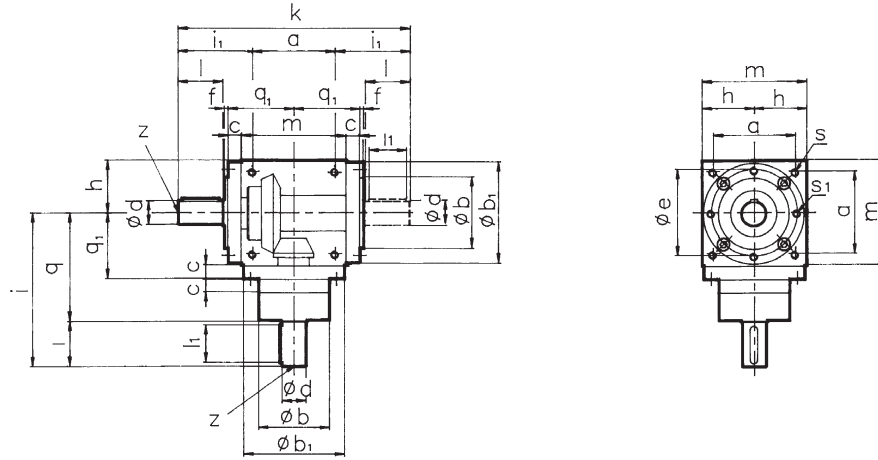
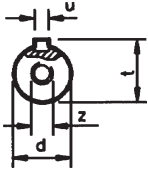


# B G SPIRAL BEVEL GEARBOXES

## DIMENSIONS SOLID INPUT AND OUTPUT SHAFT

### ASSEMBLY A, AS & AD RATIO 1:1, 2:1 & 3:1

See Page 5 for assembly options

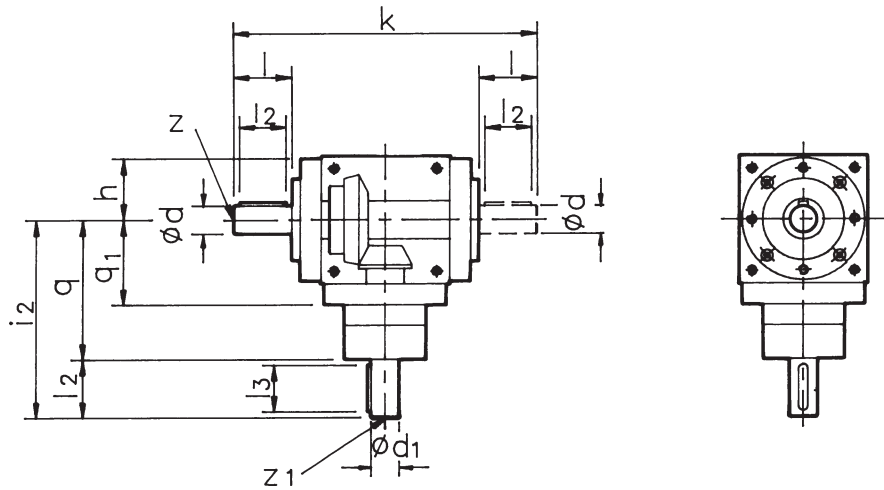
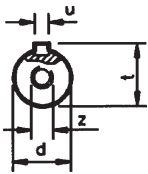


\* On BG12 the holes 'S' at centres 'a' are only available on the sides

UNIT SIZE	MOUNTING DIMENSIONS							GENERAL DIMENSIONS							SHAFT DIMENSIONS						
	a	b	b1	c	e	s	s1	f	h	i	i1	k	m	q	q1	d	l	l1	t	u	z
BG 12..	45*	44	-	-	54	M6*	M6	2	32.5	100	49.5	144	65	74	42	12	26	20	13.5	4	M4
BG 19..	70	60	86	14	72	M6	M6	4	45	140	70	210	90	100	59	19	40	35	21.5	6	M6
BG 24..	88	70	105	18	88	M8	M8	5	55	165	86	260	110	115	73	24	50	40	27.0	8	M8
BG 32..	110	95	135	18	115	M10	M10	5	70	205	100	310	140	145	88	32	60	50	35.0	10	M10
BG 38..	136	120	165	18	145	M12	M12	5	85	240	112	360	170	170	103	38	70	60	41.0	10	M12
BG 42..	155	135	190	18	165	M12	M12	5	100	275	127.5	410	200	195	118	42	80	70	45.0	12	M12
BG 55..	190	170	230	23	205	M14	M14	5	120	355	165	520	240	245	143	55	110	100	59.0	16	M14
BG 75..	248	-	300	30	-	M16	-	-	165	500	251	750	330	350	195	75	150	140	79.5	22	M16

### ASSEMBLY A, AS & AD RATIO 4:1 & 5:1

See Page 5 for assembly options



Other dimensions as above

Unit Size	GENERAL DIMENSIONS					INPUT SHAFT DIMENSIONS						OUTPUT SHAFT DIMENSIONS					
	h	i2	k	q	q1	d1	l2	l3	t1	u1	z1	d	l	l1	t	u	z
BG 12..	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BG 19..	45	130	210	100	59	14	30	25	16.0	5	M5	19	40	35	21.5	6	M6
BG 24..	55	155	260	115	73	19	40	35	21.5	6	M6	24	50	40	27.0	8	M8
BG 32..	70	195	310	145	88	24	50	40	27.0	8	M8	32	60	50	35.0	10	M10
BG 38..	85	230	360	170	103	28	60	50	31.0	8	M10	38	70	60	41.0	10	M12
BG 42..	100	255	410	195	118	32	60	50	35.0	10	M10	42	80	70	45.0	12	M12
BG 55..	120	325	520	245	143	42	80	70	45.0	12	M12	55	110	100	59.0	16	M14
BG 75..	165	460	750	350	195	55	110	100	59.0	16	M14	75	150	140	79.5	22	M16

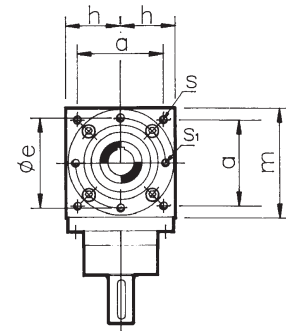
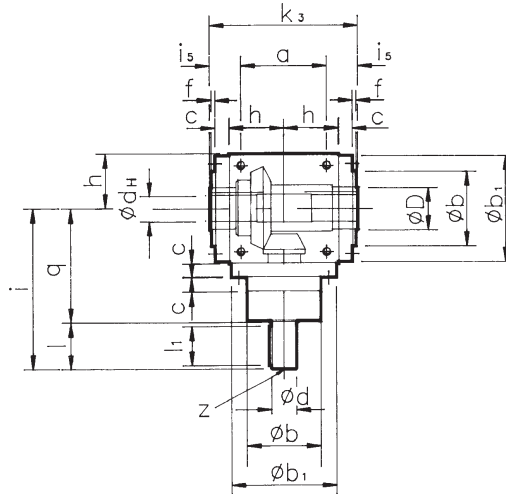
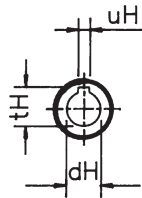


# B G SPIRAL BEVEL GEARBOXES



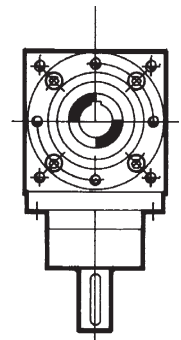
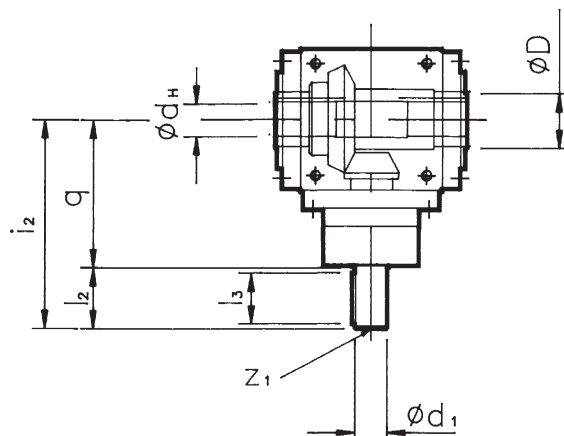
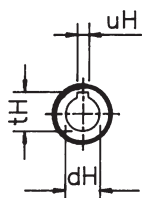
## DIMENSIONS HOLLOW OUTPUT SHAFT

### ASSEMBLY AH RATIO 1:1, 2:1 & 3:1



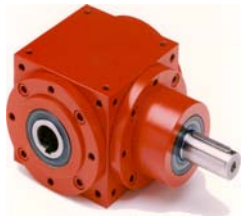
UNIT SIZE	MOUNTING DIMENSIONS							GENERAL DIMENSIONS						INPUT SHAFT DIMENSIONS						HOLLOW SHAFT DIMENSIONS				
	a	b	b1	c	e	s	s1	f	h	i	i5	k3	q	d	l	l1	t	u	z	D	dH	tH	uH	
BG 12..AH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BG 19..AH	70	60	86	14	72	M6	M6	4	45	140	30	130	100	19	40	35	21.5	6	M6	30	19	21.8	6	
BG 24..AH	88	70	105	18	88	M8	M8	5	55	165	36	160	115	24	50	40	27.0	8	M8	35	24	27.3	8	
BG 32..AH	110	95	135	18	115	M10	M10	5	70	205	40	190	145	32	60	50	35.0	10	M10	50	32	35.3	10	
BG 38..AH	136	120	165	18	145	M12	M12	5	85	240	42	220	170	38	70	60	41.0	10	M12	60	38	41.3	10	
BG 42..AH	155	135	190	18	165	M12	M12	5	100	275	47.5	250	195	42	80	70	45.0	12	M12	60	42	45.3	12	
BG 55..AH	190	170	230	23	205	M14	M14	5	120	355	55	300	245	55	110	100	59.0	16	M14	75	55	59.3	16	
BG 75..AH	248	-	300	30	-	M16	-	-	165	500	101	450	350	75	150	140	79.5	22	M16	120	75	79.9	22	

### ASSEMBLY AH RATIO 4:1 & 5:1



Other dimensions as above

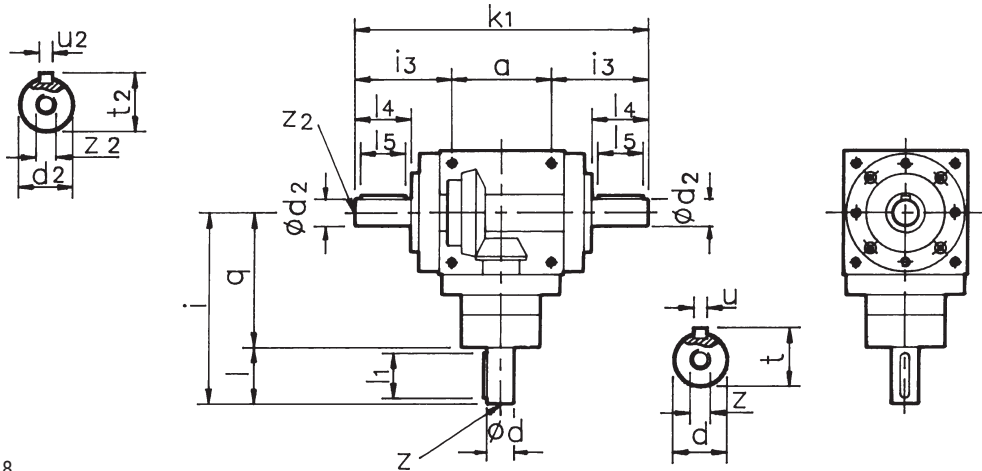
UNIT SIZE	GENERAL DIMENSIONS		INPUT SHAFT DIMENSIONS						HOLLOW SHAFT DIMENSIONS			
	i2	q	d1	l2	l3	t1	u1	z1	D	dH	tH	uH
BG 12..AH	-	-	-	-	-	-	-	-	-	-	-	-
BH 19..AH	130	100	14	30	25	16.0	5	M5	30	19	21.8	6
BG 24..AH	155	115	19	40	35	21.5	6	M6	35	24	27.3	8
BG 32..AH	195	145	24	50	40	27.0	8	M8	50	32	35.3	10
BG 38..AH	230	170	28	60	50	31.0	8	M10	60	38	41.3	10
BG 42..AH	255	195	32	60	50	35.0	10	M10	60	42	45.3	12
BG 55..AH	325	245	42	80	70	45.0	12	M12	75	55	59.3	16
BG 75..AH	460	350	55	110	100	59.0	16	M14	120	75	79.9	22



# B G SPIRAL BEVEL GEARBOXES

## DIMENSIONS - REINFORCED THROUGH SHAFT

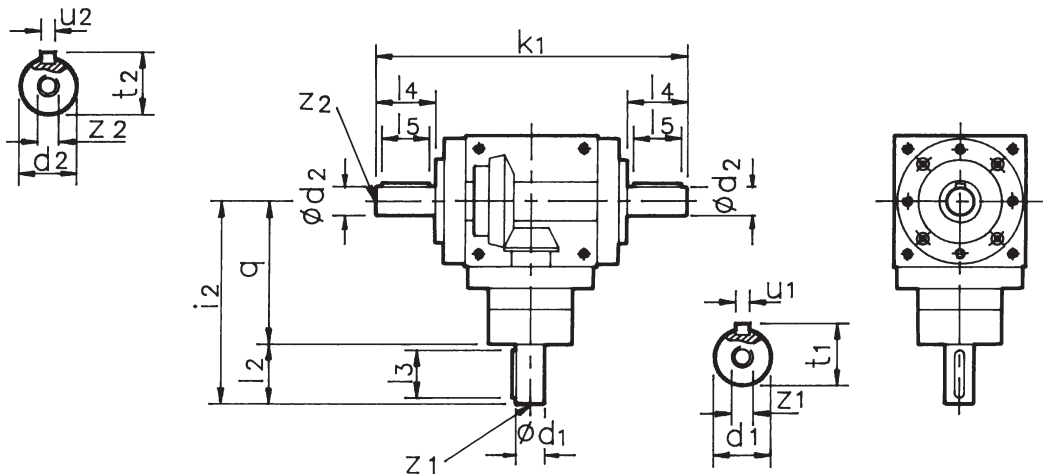
### ASSEMBLY AP RATIO 1:1, 2:1 & 3:1



Other dimensions as Type A page 8

Unit Size	GENERAL DIMENSIONS					INPUT SHAFT DIMENSIONS						OUTPUT SHAFT DIMENSIONS					
	a	i	i3	k1	q	d	l	l1	t	u	z	d2	l4	l5	t2	u2	Z2
BG 12...AP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BG 19...AP	70	140	80	230	100	19	40	35	21.5	6	M6	24	50	40	27.0	8	M8
BG 24...AP	88	165	96	280	115	24	50	40	27.0	8	M8	32	60	50	35.0	10	M10
BG 32...AP	110	205	110	330	145	32	60	50	35.0	10	M10	38	70	60	41.0	10	M12
BG 38...AP	136	240	122	380	170	38	70	60	41.0	10	M12	42	80	70	45.0	12	M12
BG 42...AP	155	275	137.5	430	195	42	80	70	45.0	12	M12	48	90	80	51.5	14	M14
BG 55...AP	190	355	165	520	245	55	110	100	59.0	16	M14	70	110	100	74.5	20	M14
BG 75...AP	248	500	251	750	350	75	150	140	79.5	22	M16	90	150	140	95.0	25	M16

### ASSEMBLY AP RATIO 4:1 & 5:1



Other dimensions as above

Unit Size	GENERAL DIMENSIONS			INPUT SHAFT DIMENSIONS						OUTPUT SHAFT DIMENSIONS					
	i2	k1	q	d1	l2	l3	t1	u1	z1	d2	l4	l5	t2	u2	Z2
BG 12...AP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BG 19...AP	130	230	100	14	30	25	16.0	5	M5	24	50	40	27.0	8	M8
BG 24...AP	155	280	115	19	40	35	21.5	6	M6	32	60	50	35.0	10	M10
BG 32...AP	195	330	145	24	50	40	27.0	8	M8	38	70	60	41.0	10	M12
BG 38...AP	230	380	170	28	60	50	31.0	8	M10	42	80	70	45.0	12	M12
BG 42...AP	255	430	195	32	60	50	35.0	10	M10	48	90	80	51.5	14	M14
BG 55...AP	325	520	245	42	80	70	45.0	12	M12	70	110	100	74.5	20	M14
BG 75...AP	460	750	350	55	110	100	59.0	16	M14	90	150	140	95.0	25	M16

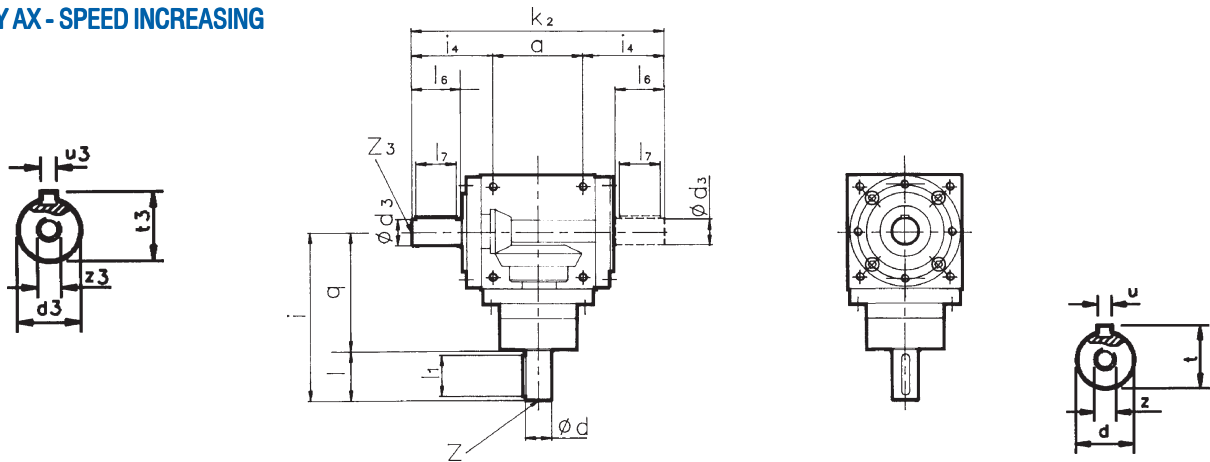
Use Assembly 'AP' to transmit a greater through torque than Assembly 'A' see page 7

# B G SPIRAL BEVEL GEARBOXES



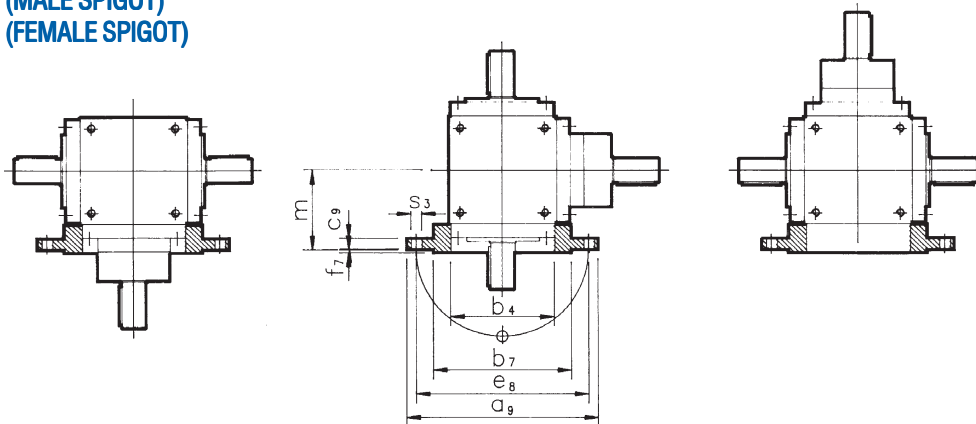
## DIMENSIONS

### ASSEMBLY AX - SPEED INCREASING



UNIT SIZE	RATIO		GENERAL DIMENSIONS					INPUT SHAFT DIMENSIONS					OUTPUT SHAFT DIMENSIONS						
			a	i	i4	k2	q	d	l	l1	t	u	z	d3	l6	l7	t3	u3	Z3
BG 12..AX	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BG 19..AX	1:1.5	1:2	70	140	60	190	100	19	40	35	21.5	6	M6	14	30	25	16.0	5	M5
BG 24..AX	1:1.5	1:2	88	165	76	240	115	24	50	40	27.0	8	M8	19	40	35	21.5	6	M6
BG 32..AX	1:1.5	1:2	110	205	90	290	145	32	60	50	35.0	10	M10	24	50	40	27.0	8	M8
BG 32..AX	1:2	1:2	110	205	80	270	145	32	60	50	35.0	10	M10	19	40	35	21.5	6	M6
BG 38..AX	1:1.5	1:2	136	240	102	340	170	38	70	60	41.0	10	M12	28	60	50	31.0	8	M10
BG 42..AX	1:1.5	1:2	155	275	117.5	390	195	42	80	70	45.0	12	M12	38	70	60	41.0	10	M12
BG 42..AX	1:2	1:2	155	275	107.5	370	195	42	80	70	45.0	12	M12	32	60	50	35.0	10	M10
BG 55..AX	1:1.5	1:2	190	355	135	460	245	55	110	100	59.0	16	M14	42	80	70	45.0	12	M12
BG 55..AX	1:2	1:2	190	355	125	440	245	55	110	100	59.0	16	m14	38	70	60	41.0	10	M12
BG 75..AX	1:1.5	1:2	248	500	211	670	350	75	150	140	79.5	22	M16	55	110	100	59.0	16	M14

### MOUNTING BASE - FC (MALE SPIGOT) FP (FEMALE SPIGOT)



Note: Mounting Base FP maybe supplied with female spigot 'b4' leaving dimension 'm' unchanged

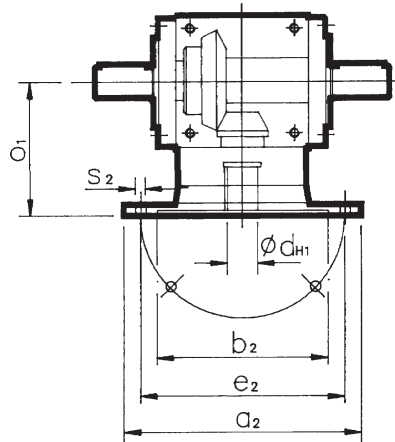
UNIT SIZE	GENERAL DIMENSIONS							
	a9	b4H7	b7g6	c9	e8	f7	s3	m
BG 12..	-	-	-	-	-	-	-	-
BG 19..	160	86	110	12	130	3.5	9	70
BG 24..	200	105	130	13	165	3.5	11	85
BG 32..	250	135	180	15	215	4	14	105
BG 38..	300	165	230	15	265	4	14	125
BG 42..	300	190	230	15	265	4	14	145
BG 55..	350	230	250	18	300	5	18	175
BG 75..	450	300	350	25	400	5	18	230



# B G SPIRAL BEVEL GEARBOXES

## MOTOR INPUT HOUSINGS

### ASSEMBLY MA



For hollow and other shaft configurations refer to standard drawings

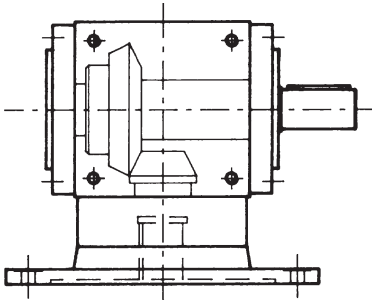
UNIT SIZE	RATIO			MOTOR INPUT B5							MOTOR INPUT B5						MOTOR INPUT B5									
				o1	IEC	a2	b2	dH1	e2	s2	IEC	a2	b2	dH1	e2	s2	IEC	a2	b2	dH1	e2	s2				
BG 12..MA	1:1	2:1	3:1	90	63	140	95	11	115	9	71/ B14	105	70	14	85	9										
BG 19..MA	1:1	2:1	3:1	90	63	140	95	11	115	9		105	70	14	85	9										
BG 19..MA	4:1	5:1		90	71	160	110	14	130	M8																
BG 24..MA	1:1	2:1	3:1	120	71	160	110	14	130	M8	80	200	130	19	165	M10	90	200	130	24	165	M10				
BG 24..MA	4:1	5:1		120	71	160	110	14	130	M8	80	200	130	19	165	M10	80	200	130	19	165	M10				
BG 32..MA	1:1	2:1	3:1	140	80	200	130	19	165	M10	90	200	130	24	165	M10	100/ 112	250	180	28	215	M12				
BG 32..MA	4:1	5:1		140	80	200	130	19	165	M10	90	200	130	24	165	M10		250	180	28	215	M12				
BG 38..MA	1:1	2:1	3:1	155	90	200	130	24	165	M10	100/ 112	250	180	28	215	M12	132	300	230	38	265	M12				
BG 38..MA	4:1	5:1		155	90	200	130	24	165	M10		250	180	28	215	M12		300	230	38	265	M12				
BG 42..MA	1:1	2:1	2:1	200	100/ 112	250	180	28	215	M12	132	300	230	38	265	M12	160	350	250	42	300	M16				
BG 42..MA		3:1		200		250	180	28	215	M12	132	300	230	38	265	M12										
BG 42..MA	4:1	5:1		200	100/ 112	250	180	28	215	M12																
BG 55..MA	1:1	2:1	3:1	220	100/ 112	250	180	28	215	M12	132	300	230	38	265	M12	160	350	250	42	300	M16				
BG 55..MA	4:1	5:1		220		100/ 112	250	180	28	215	M12	132	300	230	38	265							M12			

# B G SPIRAL BEVEL GEARBOXES

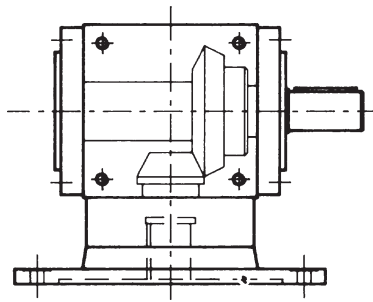
## MOTORISED ASSEMBLY OPTIONS



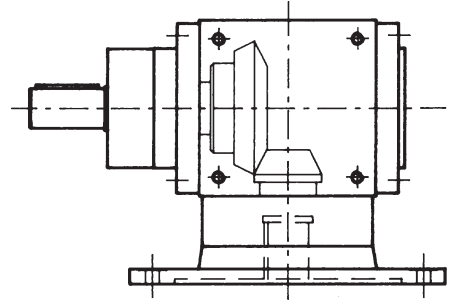
ASSEMBLY MAS



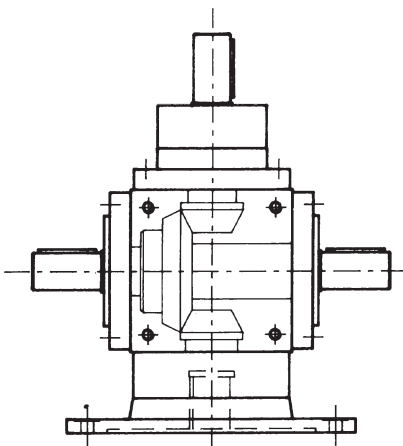
ASSEMBLY MAD



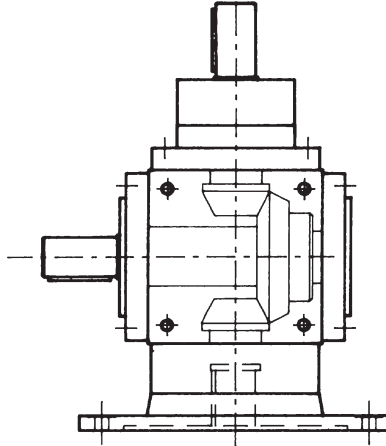
ASSEMBLY MAC



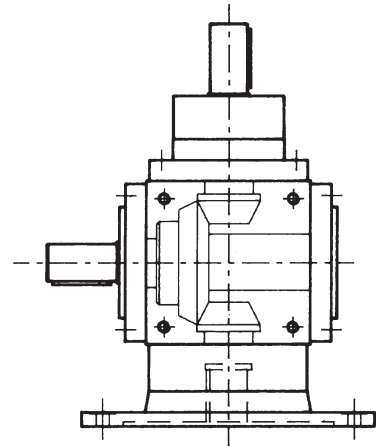
ASSEMBLY MB



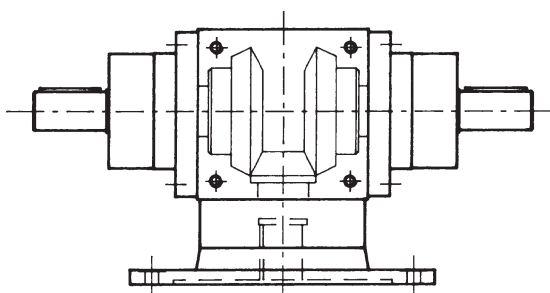
ASSEMBLY MBS



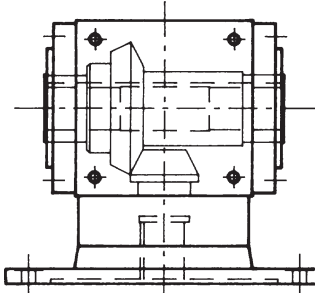
ASSEMBLY MBD



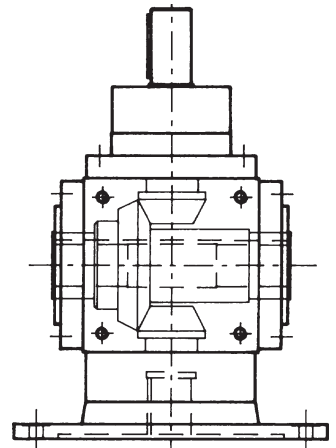
ASSEMBLY MDR



ASSEMBLY MAH



ASSEMBLY MBH

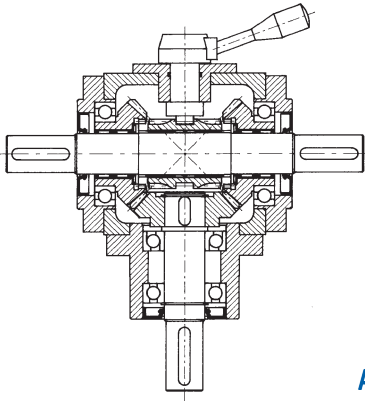




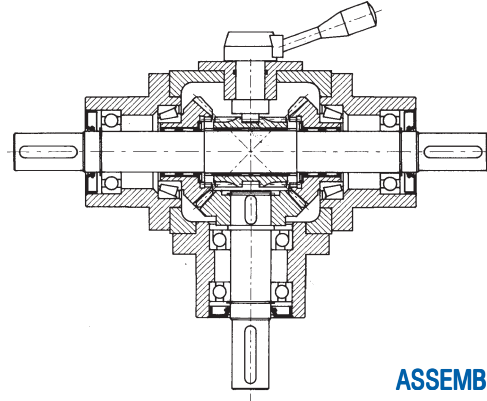
# B G SPIRAL BEVEL GEARBOXES

## REVERSING SPIRAL BEVEL GEARBOXES

### 90 DEG REVERSING SPIRAL BEVEL GEARBOXES - DESIGN IO



ASSEMBLY A



ASSEMBLY D

90 deg. reversing spiral bevel gearboxes are available with ratio 1:1 and 2:1 only. by moving the control lever from fully engaged through neutral to fully engaged in the opposite direction, the 90 deg. shaft will change rotation.

Operation of the lever, which is normally carried out by hand may only be done when the unit is stationary.

Engaging position is usually indifferent, and reversing spiral bevel gearbox is called FP (full position).

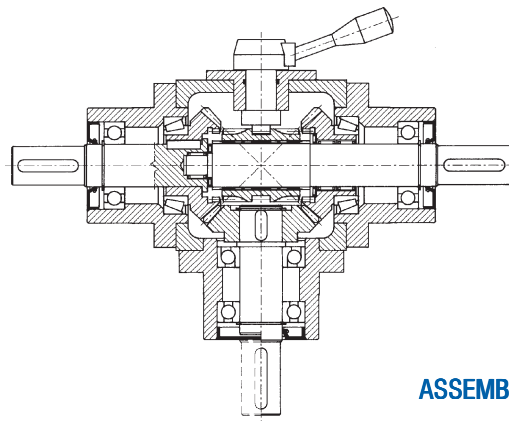
On request may be supplied with option SP (single Position) and is possibly only one engaging position on 360 deg.

Reversing bevel gearboxes are produced in sizes BG32, BG42, BG55 only.

Selection corresponds to input kW and output torque as pages 6/7 reduced by 30%.

Dimensions and mounting positions are the same as Assembly A (page 8) and Assembly DR.

### CO-AXIAL REVERSING SPIRAL BEVEL GEARBOXES - DESIGN IC



ASSEMBLY D

Co-axial spiral bevel gearboxes are available in ratio 1:1 only.

By moving the control lever from fully engaged through neutral to fully engaged in the opposite direction the co-axial shaft will change rotation.

On request co-axial reversing spiral bevel gearboxes may be supplied with a third projection shaft at 90 deg.

Operation of the lever, which is normally carried out by hand, may only be done when the unit is stationary.

Co-axial reversing bevel gearboxes are produced in sizes BG32, BG42, BG55 only.

Selection corresponds to input kW and output torque as pages 6/7 reduced by 30%.

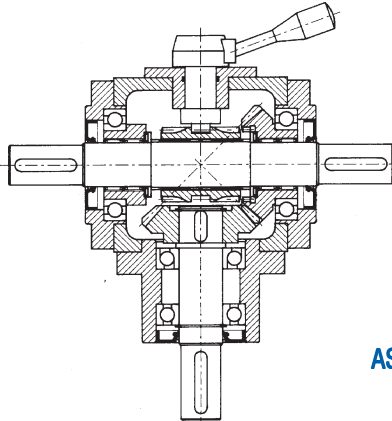
Dimensions and mounting positions are the same as Assembly DR.

# B G SPIRAL BEVEL GEARBOXES

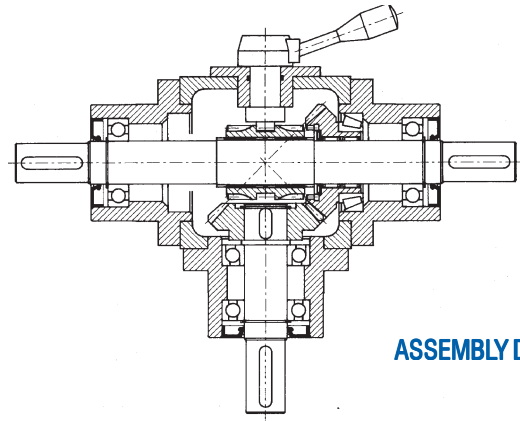
## DIS-ENGAGING SPIRAL BEVEL GEARBOXES



### DIS-ENGAGING SPIRAL BEVEL GEARBOXES - DESIGN D0



ASSEMBLY A



ASSEMBLY D

Dis-engaging spiral bevel gearboxes are manufactured in ratio 1:1, 2:1, 3:1 only.

Operation of the lever disengages the 90 deg. shaft.

This is normally carried out by hand and may only take place when the unit is stationary.

Dis-engaging spiral bevel gearboxes are produced in sizes BG32, BG42, BG55 only.

Selection corresponds to input kW and output torque as pages 6/7 reduced by 15%.

Dimensions and mounting positions are the same as Assembly A (page 8) and Assembly DR.

