

## Epicyclic Modules

Reliance offers a component gear set with a modular design approach for building a custom gearbox based on standard modules. It can be used as an individual stage, providing ratios of up to 5:1, or the modules can be stacked to create a higher ratio gearbox. It is ideal for heavier duty, or long-life, torque amplification, and speed reduction applications; the units have been used successfully in sealed sub-sea applications and in motorsports mechanisms.

The gear modules can also be supplied mounted in an aluminium housing complete with output shaft and support bearings, or as a housed unit completed with input and output shaft.



### Transmission efficiency

98% per single unit, 95% in double units, the power source may be smaller than with many other reduction gears.

### Noise reduction

Gear noise is reduced by a special construction of disk-sided planetary gears.

### Load equalised structure

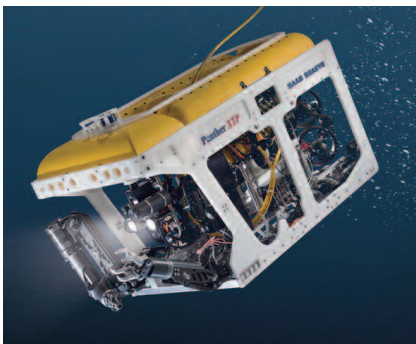
The inherent problem of loadsharing with planetary gear systems is solved by the load equalised construction.

### High torque transmission

The epicyclic module is a compact unit with high torque transmission because it is designed to equalise the loads of each planetary gear.

### Many reduction ratios

It is possible to obtain many reduction ratios by combining standard units (3:1, 4:1, 5:1).



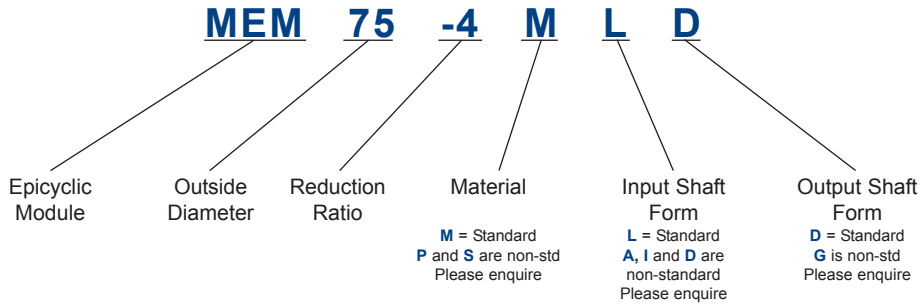
Sub-sea systems



Motorsports industry



## Part number structure



### Material

- M** = Metal carrier  
Metal housing  
Metal internal/planet gears  
Metal sun gear
- P** = Plastic carrier  
Plastic housing  
Plastic internal/planet gears  
Metal sun gear
- S** = Metal carrier  
Plastic housing  
Plastic internal/planet gears  
Metal sun gear

### Input shaft form

- L** = splined shaft 11 teeth 1.0 module 45° P.A. (standard)
- A** = D shaped shaft 8 mm diameter x 7mm
- I** = splined hole 8 mm diameter with 9 splines 0.75 module 20° P.A.
- D** = splined hole 11 teeth 1.0 module 45° P.A. (standard)

### Output shaft form

- D** = splined hole 12 mm diameter 11 splines 1.0 module 45° P.A. (standard)
- G** = splined hole 19.5 mm diameter 25 splines 0.75 module 45° P.A.

### Reduction ratios

- Metal units (M) Hybrid units (S) 3:1, 4:1, 5:1
- Plastic units (P) 3.11:1, 3.71:1, 4.8:1
- Insert 3 for 3:1, 4 for 4:1, 5 for 5:1



All dimensions in mm

**Associated Products**

Motors: [page 2-1](#)

Couplings: [page 8-1](#)

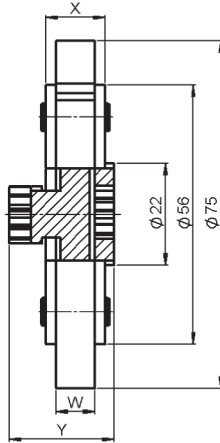
Hardware: [page 13-1](#)

Initial Module - MAD

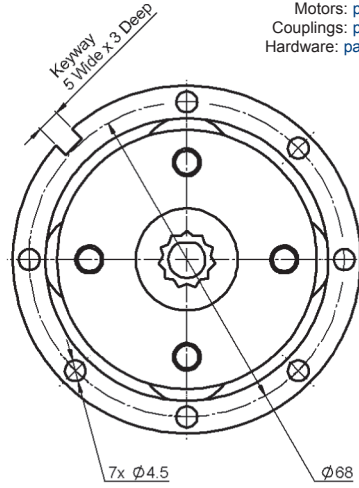


Input Shaft (D Cut Hole)  
Ø8 x 7

Subsequent Module - MLD



Input Shaft (External Spline)  
Splined hole Ø12  
11 Splines  
1 Module, 45° P.A.



Output (Internal Spline)  
Splined hole Ø12  
11 Splines  
1 Module, 45° P.A.

## Part number selection table

Unit Part Number	Ratio	Weight (g)	W	X	Y	Inertia kg/cm <sup>2</sup>
<b>MEM75-3MAD</b>	3:1	231	8.4	12.6	14.8	4.22
<b>MEM75-4MAD</b>	4:1	228				4.25
<b>MEM75-5MAD</b>	5:1	248				4.38
<b>MEM75-3MLD</b>	3:1	240			22.6	4.24
<b>MEM75-4MLD</b>	4:1	248				4.27
<b>MEM75-5MLD</b>	5:1	257				4.39
<b>MEM75-3MLD8</b>	3:1	321	12.4	16.6	26.6	4.53
<b>MEM75-4MLD8</b>	4:1	315				4.44
<b>MEM75-5MLD8</b>	5:1	327				4.58
<b>MEM75-4MDG12</b>	4:1	500	16.4	20.8	25	4.96
<b>MEM75-4MLG12</b>					32.5	5.01
<b>MEM75-5MLG12</b>						5.16

### ? Technical support

- Torque graphs - see [page T3-4](#)
- Complete gearhead information - see [page T3-5](#)
- Handling information - see [page T3-6](#)
- Mounting and assembly - see [page T3-5](#)
- Further technical information - see [page T3-4](#)
- Product overview - see [page 3-24](#)

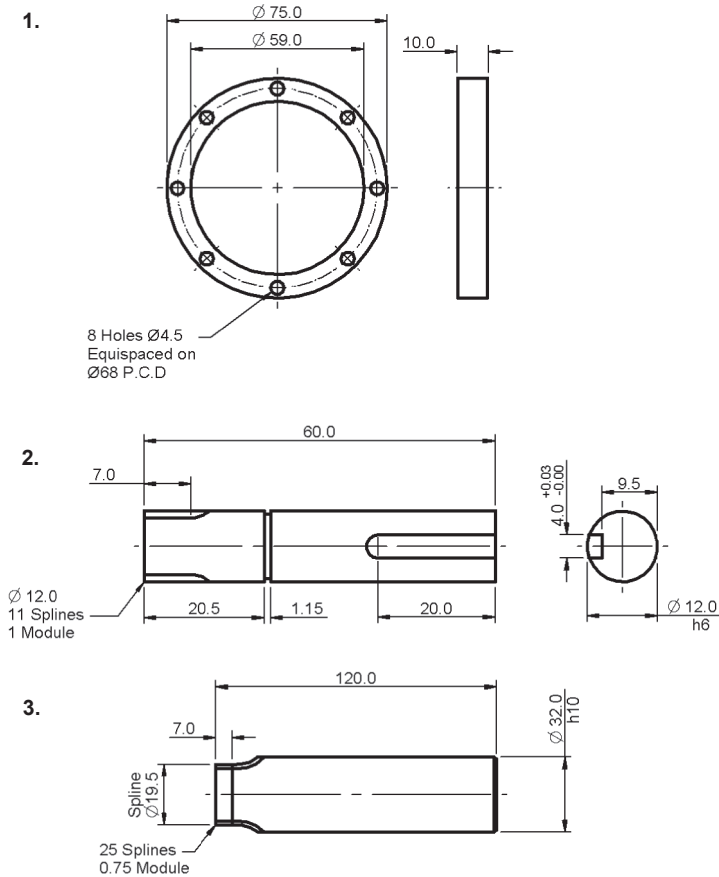
### i Product options

- Higher output variants available
- Housed units available (LGH and MEM26) - see [page T3-6](#)
- For range of accessories - see [page 3-27](#)

All dimensions in mm

## ACCESSORIES

The initial module accepts a D-shaped motor shaft. Subsequent modules use the input shaft (external spline) to plug into the output (internal spline). Finally, output internal spline adaptors are available, see below, and spacer rings should be inserted between each module as required.



	Function	Part Number	Material	Weight g	Description
1.	Spacer ring	<b>MEM75-903</b>	POM	12	For spacing modules at the correct distance
2.	$\varnothing 12$ O/P shaft	<b>MEM75-907</b>	SCM435	50	10Nm torque rated
3.	$\varnothing 32$ O/P shaft	<b>MEM75-906</b>	S45C	720	For customer to machine to requirements