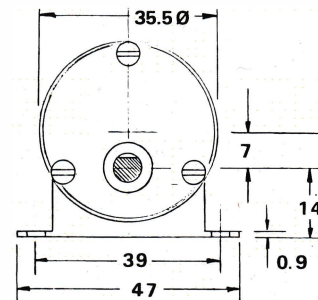
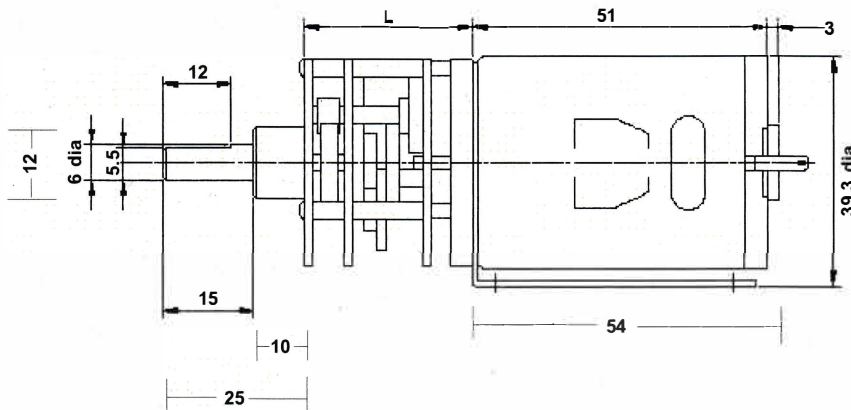


970D SERIES 35mm SINGLE RATIO METAL GEARED DATASHEET



| RATIO | L |
|--------|------|
| 6:1 | 26.0 |
| 16:1 | 28.5 |
| 47:1 | 31.5 |
| 156:1 | 34.0 |
| 750:1 | 39.0 |
| 2813:1 | 41.5 |

NOTE: all diameters in mm

Operating relative humidity 20% ~ 85%
 Operating temperature range -10°C ~ +60°C

MOTOR DATA. (RE-540/1)

| MODEL | VOLTAGE | | NO LOAD | | AT MAXIMUM EFFICIENCY | | | | | STALL TORQUE | | |
|----------|-----------------|--------------|---------|---------|-----------------------|---------|--------|------|--------|--------------|--------|------|
| | OPERATING RANGE | NOMINAL | SPEED | CURRENT | SPEED | CURRENT | TORQUE | | OUTPUT | EFF | TORQUE | |
| | | | R.P.M. | A | R.P.M. | A | oz-in | g-cm | W | % | oz-in | g-cm |
| RE-540/1 | 4.5 - 15 | 12v Constant | 14500 | 0.70 | 12048 | 2.81 | 2.22 | 160 | 19.8 | 62.7 | 14.29 | 1029 |

Stall Current RE-540/1 at 6v = 8.24A

GEARBOX SPECIFICATIONS

| Reduction ratio | Rated tolerance torque | Max momentary tolerance torque | Efficiency |
|--|------------------------|--------------------------------|------------|
| 1/6 | 1.0 kgf-cm Max. | 3.0 kgf-cm | 81% |
| 1/16, 1/19, 1/21 | 2.0 kgf-cm Max. | 6.0 kgf-cm | 73% |
| 1/31, 1/38, 1/47 | 3.0 kgf-cm Max. | 9.0 kgf-cm | 66% |
| 1/56, 1/63, 1/69 | 4.0 kgf-cm Max. | 12.0 kgf-cm | 66% |
| 1/75, 1/94, 1/104, 1/113 | 5.0 kgf-cm Max. | 15.0 kgf-cm | 59% |
| 1/125, 1/156, 1/169, 1/187 | 6.0 kgf-cm Max. | 18.0 kgf-cm | 59% |
| 1/219, 1/234, 1/250, 1/281, 1/312, 1/375, 1/422, 1/469, 1/563, 1/625 | 6.0 kgf-cm Max. | 18.0 kgf-cm | 53% |
| 1/750, 1/938, 1/1250, 1/1875 | 6.0 kgf-cm Max. | 18.0 kgf-cm | 48% |
| 1/2813, 1/3750, 1/5625 | 6.0 kgf-cm Max. | 18.0 kgf-cm | 43% |

| | |
|--------------------------------|-----------------|
| Gearbox Housing material | Metal |
| Backlash at no-load | ≤ 2° |
| Bearing at output | Sleeve Bearings |
| Radial load (10mm from flange) | ≤ 1.0 kgf |
| Shaft axial load | ≤ 0.7 kgf |
| Shaft press fit force max | < 5 kgf |
| Radial play of shaft | ≤ 0.05mm |
| Thrust play of shaft | ≤ 0.35mm |

REDUCTION TABLE. R.P.M. (NO LOAD)

| SUPPLY VOLTAGE | 4.5v | 6v | 9v | 12v | 15v |
|----------------|------|------|------|------|------|
| 970D61 | 906 | 1209 | 1813 | 2417 | 3021 |
| 970D161 | 340 | 453 | 680 | 906 | 1133 |
| 970D471 | 116 | 155 | 232 | 309 | 386 |
| 970D1561 | 35 | 47 | 70 | 93 | 116 |
| 970D7501 | 7 | 10 | 14 | 19 | 24 |
| 970D28131 | 2 | 3 | 4 | 5 | 6 |

| WEIGHT | |
|-----------|------|
| 970D61 | 274g |
| 970D161 | 278g |
| 970D471 | 285g |
| 970D1561 | 293g |
| 970D7501 | 304g |
| 970D28131 | 305g |

Note: Motor speeds may vary by (+) or (-) 12.5%

**GEARED MOTOR TORQUE RATINGS
AT MAX. EFFICIENCY.**

| | At 12v (g.cm) |
|--------|------------------|
| 6:1 | 778 |
| 16:1 | 1869 |
| 47:1 | 3000 |
| 156:1 | 3000 |
| 750:1 | 3000 |
| 2813:1 | 3000 |

NOTE: To establish Torque Rating in Nm, divide g.cm by 10,197.0

IMPORTANT NOTICE

At very low ratios the torque produced by this geared motor combination may exceed the maximum permissible torque of the gearbox. In this situation the unit must not be allowed to stall as this may damage the gears.

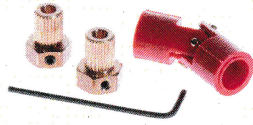
IMPORTANT NOTICE

Due to the wide range of applications for this product it is the users responsibility to establish the products suitability for their individual purpose(s).

ACCESSORIES



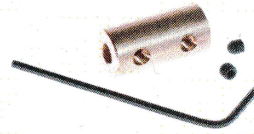
Part No. 1071.
M3 Anti vibration mount. 9g
Part No. 1072
M4 Anti vibration mount. 30g



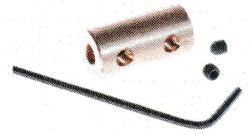
Universal Couplings. 12.5mm dia. 44mm length. **Part No. 1105/60.** 6mm - 6mm. See Page 63 for full range of combinations



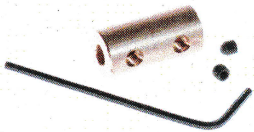
Part No. 917D2515. "O" Ring
70mm x 5mm Dia. 5g



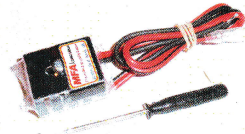
Part No. 919D1. In-Line
Coupling. 6mm - 6mm. (Dia.
12.67mm x 24.8mm). 23g



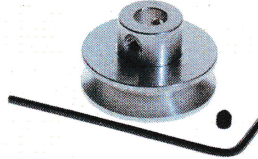
Part No. 919D1/2. In-line
Coupling. 6mm-8swg (Meccano)
Dia. 10mm x 20mm. 23g



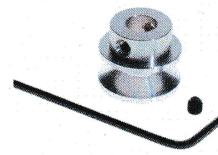
Part No. 919D1/8. In-line
Coupling. 8mm-8mm
Dia. 12.67mm x 24.8mm. 23g



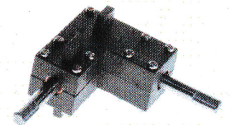
Part No. 919D2. Voltage
Regulator. (6-15v DC Input.
4v-12v output). 26mm x
31mm x 15.5mm. 30g



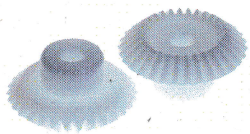
Part No. 919D4. Pulley
25mm dia. (Aluminium).
10g



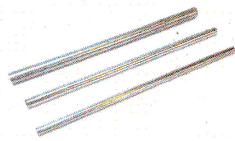
Part No. 919D5. Pulley
16mm dia. (Aluminium). 4g



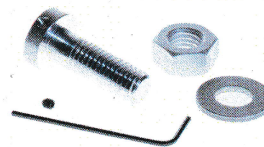
Part No. 919D24. Bevel
Gearbox. (Right Angle).
42g



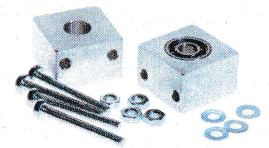
Part No. 919D25. Nylon Bevel
Gears 1:1. OD30.7mm ID 6mm.
Module 1.0. 6g



Part No. 919D26
Stainless Steel shaft 5mmOD x 150mm. 23g
Part No. 919D26/1
Stainless Steel Shaft 6mmOD x 150mm. 36g
Part No. 919D26/2
Stainless Steel Shaft 8mmOD x 150mm. 59g



Part No. 919D27. Gear
Adapter.
6mm bore. M10 thread. 12g



Bearing Blocks
Part No. 919D30
5mm I.D.
(19.06 x 19.0mm x 10mm) 32g
Part No. 919D30/1
6mm I.D.
(20 x 20mm x 12.5mm) 32g
Part No. 919D30/2
8mm I.D.
(19.0 x 19.0mm x 13.0mm) 32g

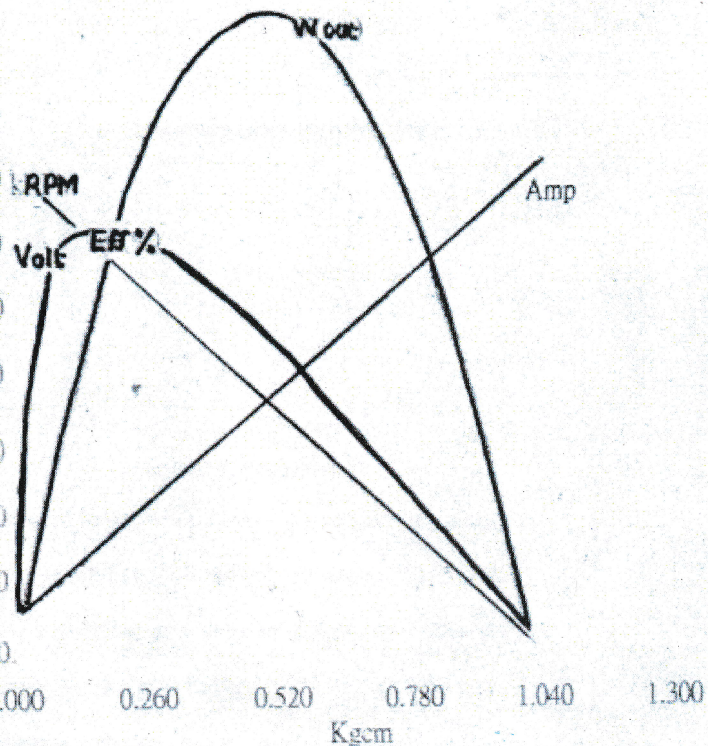
MOTOR DATA. (RE-540/1)

| MODEL | VOLTAGE | | NO LOAD | | AT MAXIMUM EFFICIENCY | | | | | STALL TORQUE | | |
|----------|-----------------|--------------|---------|---------|-----------------------|---------|--------|------|--------|--------------|--------|------|
| | OPERATING RANGE | NOMINAL | SPEED | CURRENT | SPEED | CURRENT | TORQUE | | OUTPUT | EFF | TORQUE | |
| | | | R.P.M. | A | R.P.M. | A | oz-in | g-cm | W | % | oz-in | g-cm |
| RE-540/1 | 4.5 - 15 | 12v Constant | 14500 | 0.70 | 12048 | 2.81 | 2.22 | 160 | 19.8 | 62.7 | 14.29 | 1029 |

Stall Current RE-540/1 at 6v = 8.24A

| | R.P.M. | Amps | Kgcm | Eff(%) | W(out) | W(in) |
|------------------|--------|--------|-------|--------|---------|---------|
| (Locked Rotor) | 0 | 13.864 | 1.029 | 0.00 | 0.0000 | 157.975 |
| (Max-Torque) | 0 | 13.864 | 1.029 | 0.00 | 0.0000 | 157.975 |
| (Max-Efficiency) | 12048 | 2.814 | 0.160 | 62.71 | 19.7965 | 31.568 |
| (Max-W(out)) | 6993 | 7.517 | 0.527 | 44.18 | 37.8465 | 85.656 |

| Volt | Amp | Eff(%) | W(out) | RPM |
|-------|--------|--------|--------|--------|
| 20.00 | 20.000 | 100.00 | 40.000 | 20.000 |
| 18.00 | 18.000 | 90.00 | 35.000 | 18.000 |
| 16.00 | 16.000 | 80.00 | 32.000 | 16.000 |
| 14.00 | 14.000 | 70.00 | 28.000 | 14.000 |
| 12.00 | 12.000 | 60.00 | 24.000 | 12.000 |
| 10.00 | 10.000 | 50.00 | 20.000 | 10.000 |
| 8.00 | 8.000 | 40.00 | 16.000 | 8.000 |
| 6.00 | 6.000 | 30.00 | 12.000 | 6.000 |
| 4.00 | 4.000 | 20.00 | 8.000 | 4.000 |
| 2.00 | 2.000 | 10.00 | 4.000 | 2.000 |
| 0.00 | 0.000 | 0.00 | 0.000 | 0.000 |



Torque Constant): 0.0780
 Motor Constant): 0.0611