

# Datasheet

4540877 / 8347672 / 4540883 / 7521973 / 7521977 / 4540899 / 7521986



## 942D SERIES 32mm (37mm motor) PLANETRY (EPICYCLIC) METAL GEARBOX

|          |              |             |
|----------|--------------|-------------|
| 942D51   | (4.5v - 15v) | RATIO 5:1   |
| 942D271  | (4.5v - 15v) | RATIO 27:1  |
| 942D511  | (4.5v - 15v) | RATIO 51:1  |
| 942D1001 | (4.5v - 15v) | RATIO 100:1 |
| 942D1391 | (4.5v - 15v) | RATIO 139:1 |
| 942D2641 | (4.5v - 15v) | RATIO 264:1 |
| 942D5161 | (4.5v - 15v) | RATIO 516:1 |
| 942D7211 | (4.5v - 15v) | RATIO 721:1 |

Designed for heavy-duty industrial and model applications this robust unit boasts a powerful high quality motor with sintered bronze bearings. The metal gearbox incorporates sleeved bearings, enabling the high torque transfer from the motor to be transmitted through the gearbox.

### MOTOR DATA.

| MODEL | VOLTAGE         |                | NO LOAD |         | MAX EFFICIENCY |         |         |        |        |      | STALL TORQUE |     |
|-------|-----------------|----------------|---------|---------|----------------|---------|---------|--------|--------|------|--------------|-----|
|       | OPERATING RANGE | NOMINAL        | SPEED   | CURRENT | SPEED          | CURRENT | TORQUE  |        | OUTPUT | EFF  | g - cm       |     |
|       |                 |                | R.P.M.  | A       | R.P.M.         | A       | oz - in | g - cm | W      | %    |              |     |
| 540/1 | 4.5 - 15.0      | 12.0v CONSTANT | 14,724  | 0.52    | 12380          | 2.75    | 2.14    | 152    | 19.35  | 58.6 | 13.9         | 956 |

## REDUCTION TABLE. R.P.M. (no load)

| SUPPLY VOLTAGE | 4.5v | 6.0v | 9.0v | 12.0v | 15.0v |
|----------------|------|------|------|-------|-------|
| 942D51         | 1104 | 1472 | 2209 | 2945  | 3681  |
| 942D271        | 205  | 273  | 409  | 545   | 682   |
| 942D511        | 108  | 144  | 217  | 289   | 361   |
| 942D1001       | 55   | 74   | 110  | 147   | 184   |
| 942D1391       | 40   | 53   | 79   | 106   | 132   |
| 942D2641       | 21   | 28   | 42   | 56    | 70    |
| 942D5161       | 11   | 14   | 21   | 29    | 36    |
| 942D7211       | 7.6  | 10   | 15   | 20    | 26    |

| WEIGHT   |      |
|----------|------|
| 942D51   | 254g |
| 942D271  | 279g |
| 942D511  | 306g |
| 942D1001 | 303g |
| 942D1391 | 306g |
| 942D2641 | 329g |
| 942D5161 | 333g |
| 942D7211 | 350g |

## GEARED MOTOR TORQUE RATINGS AT MAX. EFFICIENCY.

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

| At 12V<br>(g.cm) |       |
|------------------|-------|
| 5:1              | 618   |
| 27:1             | 2918  |
| 51:1             | 4725  |
| 100:1            | 9264  |
| 139:1            | 10000 |
| 264:1            | 12000 |
| 516:1            | 12000 |
| 721:1            | 12000 |

| 942D SERIES                            |              |
|--|--------------|
| No load Backlash:                      | Max 2.5 deg. |
| Max Radial Load:<br>(10mm from flange) | 3000gf.      |
| Shaft Axial Load:                      | 2500gf.      |

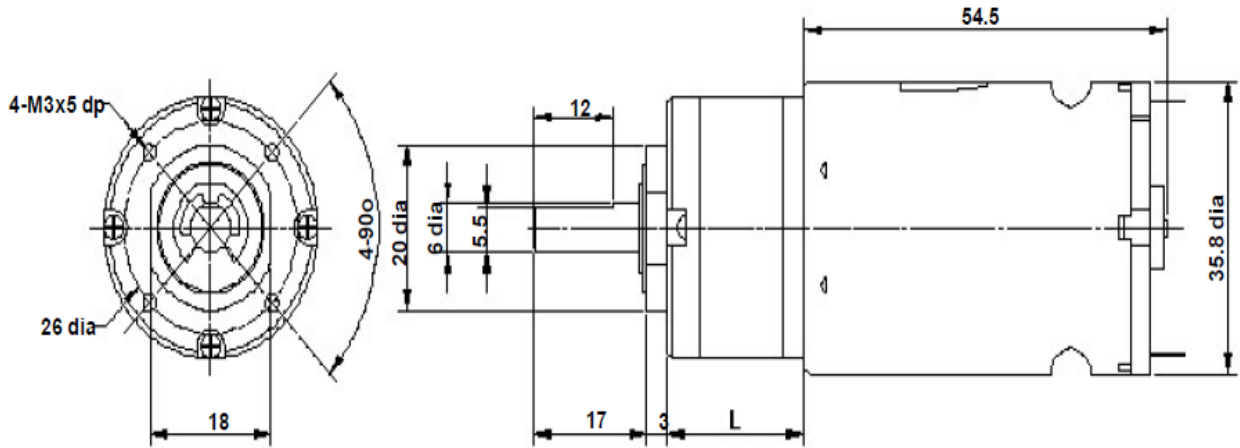
24 volt versions are available for this range of motor-gearboxes. Performance data is similar to 12 volt versions. This version also has an extended 10mm rear shaft to accommodate motor encoders. When ordering please use 12v version part number suffixed with 24V. I.E. 942D1001 will be 942D100124V

**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.

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

## MOTOR DATA. (RE-540/1 24v).

| 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 24v | 12 - 24v        | 24v CONSTANT | 14452   | 0.30    | 12111                 | 1.57    |         | 177    | 22     | 65  |              | 1094   |



| GEARBOX REF.     | L    |
|------------------|------|
| 942D51 (5:1)     | 20.8 |
| 942D271 (27:1)   | 26.5 |
| 942D511 (51:1)   | 32.5 |
| 942D1001 (100:1) | 33.6 |
| 942D1391 (139:1) | 33.4 |
| 942D2641 (264:1) | 40.0 |
| 942D5161 (516:1) | 40.0 |
| 942D7211 (721:1) | 40.0 |

## ADVANTAGES OF PLANETARY GEARBOXES.

**EFFICIENCY:** Efficiencies of planetary gearboxes can be above 90% while some other types of transmission can be 50% or less. This allows the use of smaller motors.

**SIZE:** Planetary gearboxes can be half the size of conventional boxes.

**WEIGHT:** Weight savings can be as high as 60%, allowing smaller, lighter support structures.

**MAINTENANCE:** Other than routine oil changes, no maintenance is required, eliminating the need to hold spares.

**REVERSIBLE:** Planetary gears can be equally efficient in either direction. This is an advantage for use in running machinery in both clockwise and anti-clockwise directions.

**COAXIAL:** The coaxial configuration of input and output shafts allows planetary gears to be installed in line with a motor and a machine.