### MINI-VIBRATING MOTOR
Tiny motor with offset weighted shaft. Designed to vibrate in mobile communications devices. Operates on 1.5-4.5 Vdc. 15mm – length including shaft. 4mm diameter x 8mm long. Solder terminals.

- **CAT# DCM-491**  
  60¢ each  
  100 for 45¢ each  
  1000 for 30¢ each

### 6 VDC MOTOR
Nissei Denki. 29.4mm long x 20.0mm long shaft. Shaft, 10mm long x 1.5mm diameter. No-load specs: 12,000 RPM @ 6 Vdc, 40mA. Operates on 1-8 Vdc range. Two threaded mounting holes on motor face on 12mm centers. Solder-lug terminals.

- **CAT# DCM-410** $1.35 ea.  
  • 100 for $1.05 ea.

### 6 VDC 13,000 RPM MOTOR
Relatively powerful little motor. 13,000 RPM @ 6Vdc / 250 Ma. 1.08” diameter x 1.83” long. 2mm diameter shaft with a 9mm gear. Red and black 18 AWG wire leads with miscellaneous connectors.

- **CAT# DCM-485** $1.50 each  
  10 for $1.25 each

### 6 VDC MINI-MOTOR
Mabuchi #RF-130CH 12250. Body: 17mm dia. x 22.5mm long. Shaft: 1.5mm dia. x 8.6mm long. Operates on 2-6 Vdc. No load spec: 8100 RPM @ 6 Vdc, 0.036A. At max efficiency: 6600 RPM @ 6 Vdc, 0.16A. 0.76m N-M (0.76 gcm) torque. Stall Torque 4.12 m N-m (42 gcm) 0.7A

- **CAT# DCM-454** $1.00 each  
  50 for 90¢ each  
  • 100 for 80¢ each  
  800 for 75¢ each  
  • 1600 for 65¢ each

### 6-12 VDC MOTOR
Johnson Motor HC613LG-6411. A fairly powerful motor, probably designed for 6-12Vdc. Operates as low as 2 Vdc. Requires about 1.5A @ 12Vdc, no load. 37mm dia. x 57mm long. 3mm dia. shaft. Solder-lug terminals.

- **CAT# DCM-462** $1.75 each  
  10 for $1.50 each

### 8 - 16 VDC MOTOR
Mabuchi #FC-280PT-20150 24.2 x 18.3 x 30.5mm long, excluding shaft. 2mm diameter x 9mm long splined shaft. No-load rating: 11,800 RPM @ 12Vdc, 0.56A. Push-in-style terminals. Push wire into slots to make connection.

- **CAT# DCM-374** $1.25 each  
  10 for $1.15 each  
  • 100 for 95¢ each

### VIBRATING MOTOR
Nichibio# LDSB-12160E-R-CE. Powerful, smooth-running vibrating motor with offset weight. Operates on 12Vdc @ 350ma/24Vdc @ 800mA. 27.5mm diameter x 38mm long body. Weight is 14mm diameter x 12mm long. Solder-loop terminals.

- **CAT# DCM-494** $1.50 each  
  10 for $1.35 each  
  • 120 for $1.20 each
### 6-24 VDC MOTOR
Mabuchi # FK-130SH
25.1mm long x 15.4mm x 20.4mm.
2mm diameter shaft. 8mm long.
Nominal, no-load ratings: 7200 RPM @ 12Vdc @ 0.30A, Solder-loop terminals.
CAT# DCM-476 $1.20 each
50 for $1.05 each • 600 for 90¢ each

### 16MM PRECISION DC MOTOR
Namiki #SCL16-3424
Precision DC coreless motor. Quiet, smooth operation.
The low inertia coil provides quick response, quiet operation, and no cogging. 16mm dia. x 34mm long.
1.5mm dual shaft. No-load measurements: 9000 RPM @ 18V @ 11mA. 9" leads
CAT# DCM-3424 $9.00 each

### 12 VDC MOTOR
Buehler# EC775596
12 Vdc 200 ma, 5600 RPM, 34mm dia. x 55mm long.
3mm dia shaft with pulley.
CAT# DCM-455 $2.00 each

### 24 VDC MOTOR
Operates on 18-30 Vdc.
24 Vdc, 0.2A no-load rating.
36mm dia. x 57mm long.
3mm dia. x 20mm long shaft.
Solder/oc terminals and shaft on the same end.
CAT# DCM-461 $1.25 each
10 for $1.00 each

### DC GEAR MOTORS

#### SMALL 3-12VDC GEAR MOTOR
Mini DC gear motor, ideal for robotics. Light weight, high torque, low RPM.
1" long gearhead motor with all metal gears. 1:10 reduction ratio.
Rated 3-12Vdc. 100 RPM @ 6Vdc/0.07A.
CAT# DCM-497 $5.00 each

#### 3.7 VDC MOTOR WITH PROPELLER
Tiny motor and gear-driven propeller for model airplanes or propeller driven cars. Overall propeller length, 75mm. Motor, 7mm diameter x 26mm long.
CAT# DCM-498 $4.75 each

#### 6 VDC, 25 RPM GEAR MOTOR
New gear head motor prepped with an arm that rotates an offset axle in a 1" circle. Can be used to facilitate reciprocating action. Motor is 1.45" D x 3.00" L. No-load specs: 25 RPM @ 6Vdc, 150mA. Prepped with wire leads and drive arm. Includes a custom mounting bracket and slotted metal link rod.
CAT# DCM-470 $4.75-$4.25 each
10 for $4.00 each • 100 for $3.75 each

#### 6-24 VDC GEAR MOTOR, 1:84 RATIO
Hennkwell# PZ22GR9120R-0848BBH.
Good quality 22mm diameter planetary gear brush motor.
Smooth, quiet operation.
Wide operating range, 6-24Vdc. Dual ball bearings. Rated 142RPM @ 24Vdc, no-load.
113 RPM with load. 6mm diameter x 14mm shaft with hole. 2mm diameter shaft at rear of motor.
Overall length of motor and gearbox, 60mm. Solder lug terminals.
CAT# DCM-9120 $7.95 each

#### 12 VDC GEAR MOTOR
No-load measurements:
520 RPM @ 12Vdc, 250mA. Works as low as 3Vdc (approx. 100RPM).
Overall length, 57mm. Gearbox, 27mm dia. x 23mm long. Motor, 24mm diameter x 30mm long. Flatted shaft, 6mm diameter x 20mm long.
48mm leads terminated with 2-conductor female connector, 2mm spacing (fits our connector CAT# SBH-1).
CAT# DCM-475 $4.25-$4.75 each
25 for $3.75 each • 100 for $3.25 each

#### 85 RPM 12 VDC GEAR MOTOR
33JPF-15380-50.
Quality 12Vdc gear-motor runs 85rpm @ 42mA (no-load), but has input voltage range from 2 - 20 Vdc. At 12 Vdc draws about 160ma typical under load. Overall length excluding shaft - 50mm. Overall dia. - 33mm. Flatted shaft length 6.5mm, shaft diameter 4.0mm. Solder lugs.
Ideal for robotics, modelers, hobby projects.
CAT# DCM-416 $4.50-$5.50 each
10 for $4.00 each

#### 24 VDC GEAR MOTOR W/ TURNTABLE
Powerful, low-current DC motor and gearbox with a 4.9" diameter nylon turntable. Turntable can be removed from motor.
Motor gearbox has a 3/8" diameter shaft that is flatted and splined.
Specifications:
45RPM @ 24 Vdc, 60mA - operates at 12Vdc at 1/2 speed. Mabuchi motor RS-380SH 1.1" dia. x 1.67".
Moloon gearbox CHM-2435-1 2.75" x 3.00" x 0.57".
CAT# DCM-351 $9.75 each

ORDER TOLL FREE 1-800-826-5432
12-24 RPM VENDING MACHINE GEAR MOTOR W/ SWITCH
P/N CJM-2407-12. 12-24 RPM motor trips a momentary SPDT Microswitch once every rotation. Motor and switch terminals can be accessed via a pc board attached to the rear of the motor. Operates on 12-24Vdc, 60-70mA, no-load rating. Plastic gearbox dimensions: 3.5” x 2.5” x 0.6”. Plastic output shaft is 0.3” cube with holes on two sides. Motor is 1” diameter x 1.5” long.
CAT # DCM-594 $4.00 each

GEARMOTOR & WHEEL ASSEMBLY
4.5 - 10 Vdc gear motor with a 2.75” dia. x 1” wide hard plastic wheel and rubber tire. Wheel can be attached to either side of motor. Motor with gearbox is 2.5” long x 0.75” x 0.9” not including axle or wheel. Low current consumption, 120 RPM @ 6 Vdc, 100Ma (no-load rating).
CAT# AC-32 $3.00 each

3 AMP DC MOTOR SPEED CONTROLLER
Controls the speed of a DC motor using Pulse-Width-Modulation. An efficient method of changing the speed of a DC motor without changing voltage. Has a potentiometer with on-off switch and a four-position screw terminal strip for easy connection to motor and power source. Can be used as a lighting dimmer and similar applications with DC loads up to 3A. 30 x 28mm pc board.
CAT # MSC-35 $5.75 each

STEPPER MOTORS

STEPPER MOTOR DRIVER
Dual H-Bridge driver using L298N chip. 5V logic. Operates on 5-35Vdc. 25W max power. 43 x 43 x 26mm.
CAT# SMD-298 Reduced Price $5.95 $4.75 each

STEPPER MOTOR & DRIVER BOARD
Includes our driver board, CAT# ME-16 (see below) and a 5-wire stepper motor that plugs directly into the board. Ideal for beginning robotics projects. Motor is a 4-phase, unipolar stepper, #28BYJ-48.
CAT# ME-125 $5.35 set

STEPPER MOTOR DRIVER BOARD
Four LEDs indicate the status of the stepper. Jumper for 5V / 12V use. 5-contact header mates with connector on some standard stepper motors. 32 x 34 x 11mm.
CAT# ME-16 $2.50 each

STEPPER W/ WORM GEAR & LEAD SCREW
For converting rotary to linear motion. 0.25” dia. x 0.80” long worm gear with nylon lead screw. Lead screw is 0.25” thick with arms that extend in both directions, 1.4” overall length.
CAT# SMT-387 Reduced Price $6.75 $2.50 each • 100 for $2.00 each

STEPPER WITH ROTATING MAGNET
Attached to the shaft is a small 6.3mm dia. x 6.3mm long cylindrical neodymium magnet. Ideal for applications that use hall effect sensors.
CAT# SMT-388 Reduced Price $3.50 $1.50 each 100 for $1.25 each

Both the above motors are Portescap #26MO48T29. Mini 5V 7.5º 2Ω coil stepper motor. 48 steps per revolution. 26mm dia. x 13mm excluding shaft. Six 5” wire leads with 6-pin connector, 2mm spacing. Mounting flanges with 35mm centers.

STEPPER / SPINDLE MOTOR
Seagate 73192-193MCCMAS. 45mm diameter x 20mm high stepper motor. 5mm diameter 10mm long shaft with aluminum bearing. 54mm mounting centers. Six 3” wire leads terminate to 6-pin socket.
CAT# SMT-379 Reduced Price 60¢ each • 10 for 50¢ each

STEPPER / SERVO MOTOR CONTROLLER,
DK Electronics V1.0. Arduino compatible motor shield. The board has two STMicroelectronics L293D Motor H-Bridge IC’s which can drive up to 4 DC motors (or up to 2 stepper motors) with 0.6 A per bridge (1.2 A peak). 70 x 54 x 13mm.
CAT# SMD-293 $6.95 each

12 VDC MOTOR-DRIVE ACTUATOR FOR AUTO DOOR LOCKS
Nylon plunger moves 0.75”. Push or pull, depending on polarity. Includes mounting hardware and a 10” metal extension rod which fits through the hole in the end of the plunger. Overall dimensions of actuator assembly (retracted): 8.42” x 2.35” x 1.15”. Rubber boot protects against moisture and dust. Pigtail leads.
CAT # DLA-1 $5.50 each
### SERVOS

#### STANDARD SERVO
Digital high torque servo. Metal gears and bushing, 180° rotation. Servo arms and screws included. Dimensions: 40.7 x 19.7 x 42.9mm.

**CAT # DCS-116** $9.20 each

#### SG92R MINI SERVO
TowerPro SG92R 9g digital servo. POM with Carbon fiber gears. 180° rotation. Teflon bushing. Servo arms and screws included. Servo Plug fits JR and Futaba “S” type connector. 23 x 12.2 x 27mm

**CAT# DCS-118** $5.25 each
10 for $4.95 each

#### CONTINUOUS ROTATION SERVO
Model DS04-NFC 360° rotation, standard size servo. For remote control projects. 40.8 x 20 x 39.5mm Servo Plug fits JR and Futaba “S” type connector that fits most receivers.

**CAT# DCS-117** $9.50 each

#### 3-CHANNEL SERVO TESTER
Connect up to three servos simultaneously to test and compare speed and reaction time without use of transmitter/receiver. Three modes of operation are manual adjust - servo rotates in conjunction with rotation of pot, neutral position - servo centers itself in neutral or middle position, and automatic "window wiper" - servo independently cycles back and forth. Power input 4.8 - 6 Vdc. 1.3” x 1.1” x 0.5” h. Mode select button. Ideal for RC hobbyists.

**CAT# STR-110** Reduced Price $6.00 each

#### 12A RC MODEL MOTOR CONTROLLER
HobbyWing Skywalker Series 12A ESC. This motor controller is good choice for general R/C applications such as Airplane/Heli/Multi-copter projects. Full Protection Features: Low voltage cutoff protection / Over-heat protection / Throttle signal lost protection. Output: Continuous 12A, Burst 15A up to 10 Secs. Can be used with our 3-phase brushless motors.

**CAT# SC-112** $12.50 each

### 3-PHASE BRUSHLESS DC MOTOR
BEI # DIH23-30-0132. Smooth, quiet, high-torque brushless DC motor. 2.25” dia. x 3.0” long. 0.25” dia. x 1” long shaft. 5270 RPM with no load. Built in speed sensor. 7-15Vdc operating voltage. Can be used with our controllers SC-112, SC-120, SC-130 and the servo tester STR-110. Spec sheet online.

**CAT# DCM-459** $16.95 each

### GEARS & ROTATING PARTS

#### 92 PIECE ASSORTMENT OF GEARS, PULLEYS, AXLES
Large set of 92 various sized plastic gears, racks, wheel set, pulleys, belts and axles.

**CAT# GR-53** Reduced Price $9.45 set

#### 4 GEAR SET
Four matched unbreakable plastic gears. The three larger gears are beveled on one side and can mesh at 90° as well as the normal 180° angle. They have 5mm bores. Inserts are supplied to reduce the bore size to 3mm. The smallest gear has a 2mm bore. Gears are 41, 31, 21 and 13mm.

**CAT# GR-86** $2.25 each

#### 26MM DIAMETER WHEEL
- Overall diameter: 26mm
- Hub outer diameter: 24mm
- Tire width: 9mm
- Central bore: 1.9mm, fits 2mm axles
- Product material: the center is ABS plastic, and the outer skin is hard rubber

**CAT # WH-28** Reduced Price 4 for $1.50

#### 42MM DIAMETER RUBBER WHEEL
42mm diameter x 19mm thick rubber wheel with flatted 3mm diameter hole. Soft black rubber tire with hard white ABS plastic hub. Fits our motor, CAT# DCM-497

**CAT # WH-29** $1.10 each

#### SOLAR POWERED RACING CAR
Owkit# OWI-MSK681 Great little solar powered racing car kit for kids ages 8+. Easy and fast to assemble, no batteries required. Assembled size: 2.62” x 2.17” x 2.40” high. 20 pieces.

**CAT # MSK-681** $11.95 each