

## EV Parts and Resources

Parts

# Monsterscooterparts (monsterscooterparts.com/trsc.html): Most vehicle parts

The screenshot shows the Monsterscooterparts website. The top navigation bar includes links for Home, Customer Service, Check Order Status, and a View Cart button. A banner for 'WE SHIP WORLDWIDE' is displayed. The main content area features a large 'RECREATIONAL SCOOTER PARTS' banner with a focus on 'BATTERIES', highlighting a 'ONE YEAR LIMITED WARRANTY INCLUDED WITH MOST BATTERIES' and a 'SHOP NOW' button. Below this, a section titled 'Scroll to Shop Our Most Popular Brands:' features logos for Razor and Minimoto. A sidebar on the left lists various scooter parts categories, and a 'Shop by Brand' section is visible at the bottom.

**MONSTER SCOOTER PARTS**

Home | Customer Service | Check Order Status | **VIEW CART**

Call Toll Free: 1.800.798.0325

WE SHIP WORLDWIDE  
NEXT DAY SHIPPING AVAILABLE

Hello Guest, [Log In](#) | [Register](#) | **E-MAIL US**

DISCUSSION FORUM | BLOG | SCOOTER RESOURCES | SERVICE CENTERS | Search Our Site | **GO** | **LIVE HELP OFFLINE**

Home > Recreational Scooter Parts

**RECREATIONAL SCOOTER PARTS**

**BATTERIES**

ONE YEAR LIMITED WARRANTY INCLUDED WITH MOST BATTERIES

**SHOP NOW**

Scroll to Shop Our Most Popular Brands:

**Razor** **MINIMOTO**

We carry a wide range of gasoline-powered and electric scooter parts, including the most reliable electric scooter battery packs, and the perfect electric scooter charger to keep you scootin' in style.

**Shop by Brand**

- Engines
- Exhaust
- Forks
- Fuel Tanks & Caps
- Fuses & Fuse Holders
- Handlebar Grips
- High Performance Parts
- Ignition Coils
- Key Switches
- Kickstands
- Lights, Lenses & Reflectors
- Motors (Electric)
- Motor Kits
- Pull Starts & Pawls
- Rims
- Seats
- Shocks & Steering
- Spark Plugs
- Sprockets
- Switches
- Throttle Controls
- Tires (Scooters)
- Tires (ATVs and Dirt Bikes)
- Tire & Tube Sets
- Tubes
- Transmissions
- Wheel Assemblies

**STREET SCOOTER PARTS**

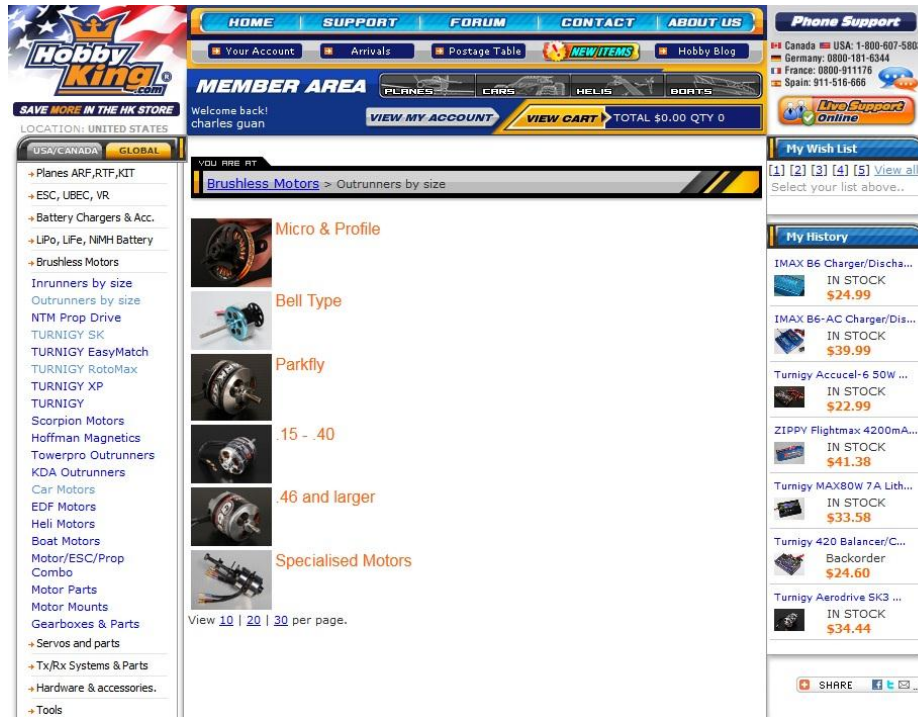
**MOBILITY SCOOTER PARTS**

## Relevant sections:

- Motors
  - Motor Kits
- Wheel Assemblies
  - Front Wheels
  - Rear Wheels
- Throttle Controls (Universal)
- Brakes
- General vehicle mechanics such as sprockets, chain, belts, etc.

|   |   |  |
|---|---|--|
| <p>24 Volt 100 Watt Motor, Controller, and Throttle Kit<br/>Item Code: X98-0546<br/>Price: \$60.99</p>          | <p>24 Volt 350 Watt Motor, Controller, and Throttle Kit<br/>Item Code: X98-0547<br/>Price: \$75.99</p>    | <p>24 Volt 450 Watt Electric Bike Conversion Kit with Motor, Batteries, Controller, and Throttle<br/>Item Code: C80-8762<br/>Price: \$339.99</p> |
| <p>24 Volt 500 Watt Motor, 5-Pin Controller, &amp; Throttle Kit<br/>Item Code: X98-0615<br/>Price: \$134.99</p> | <p>24 Volt 500 Watt Motor, Controller, &amp; Throttle Kit<br/>Item Code: X98-0548<br/>Price: \$99.99</p>  | <p>24 Volt 650 Watt Motor, 5-Pin Controller, &amp; Throttle Kit<br/>Item Code: X98-1038<br/>Price: \$142.99</p>                                  |
| <p>24 Volt 750 Watt Motor, 5-Pin Controller, &amp; Throttle Kit<br/>Item Code: X98-1037<br/>Price: \$159.99</p> | <p>24 Volt 900 Watt Motor, Controller, &amp; Throttle Kit<br/>Item Code: X98-0545<br/>Price: \$264.99</p> | <p>36 Volt 1000 Watt Motor, Controller, &amp; Throttle Kit<br/>Item Code: X98-0544<br/>Price: \$139.99</p>                                       |

# Hobbyking (hobbyking.com): Motors, R/C-only controllers, hobby parts



## Relevant sections:

- Brushless motors
  - .46 and larger Outrunners
- ESC
  - Above 80 amp

## Cautions:

- Do not trust ESC amp ratings! Notes on R/C type ESC use: Instructable doc. Sections 4 – 7
- Take note of motor dimensions and shaft diameter – may influence your power transmission component choice
- Convert “Kv” to Kt in Nm/A before comparing motors.
- Take note of internal resistance (IR) of motors.
- You are recommended towards using a real vehicle-class controller.

# Kelly Controls LLC (kellycontroller.com): Vehicle controllers, throttle/pedals

The screenshot shows the Kelly Controls LLC website. The header features the company logo, tagline "Lead To Clean World", and a shopping bag icon. A navigation bar includes links for Home, Certificates, Products, Manual & Software, Shopping Cart, My account, Contact us, FAQs, and a Chinese version link. The main content area is divided into a left sidebar with category links and a central product table.

**Categories:**

- AC Induction Motor Controller KIM(24V-72V)
- Low Cost Mini Brushless Controller KBS(12V-72V)
- General Brushless Controllers (12V - 144V)
- Sensorless BLDC Controller KSL(12V-120V)
- Ebike Brushless Controller KEB(24V-72V)
- Low Cost Mini DC Controller KDS(12V-72V)
- Phase Out, See KDZ Compact DC Controller KD(24V-72V)
- New! DC Series/PM /Sep-Ex Controller KDZ/KDC(12V-120V)

| IMAGE | PRODUCTS  | PRICE                    | WEIGHT |
|-------|---|--------------------------|--------|
|       | KBS24051,20A,12-24V, Mini Brushless DC Controller   | \$99.00 <b>\$79.00</b>   | 1.70   |
|       | KBS24051L,20A,12-24V, Mini Brushless DC Controller  | <b>\$79.00</b>           | 1.70   |
|       | KBS24051E,30A,12-24V, Mini Brushless DC Controller  | <b>\$99.00</b>           | 1.70   |
|       | KBS24051EL,30A,12-24V, Mini Brushless DC Controller | <b>\$99.00</b>           | 1.70   |
|       | KBS24101,40A,12-24V, Mini Brushless DC Controller   | \$149.00 <b>\$119.00</b> | 1.70   |

**Search**

Search Advanced Search

**New Products**

HSR/HSE Controllers (144VDC, 1000A Max)  
High Power Opto-Isolated Series/Reg-Br  
Motor Controllers with Regen

**HSR/HSE(144VDC,1000A Max)**

Max

2/4

**FAQs**  
Confused about technology.

Relevant sections:

- KBS line (brushless dc)
- KDS line (brush DC)
- Pedal/Sensor (throttles)

“Full featured” vehicle controllers that are configurable to your vehicle’s specific needs (current limits, forward and reverse, regenerative braking)

Note that the KDS line does not perform regenerative braking!

# Stock Drive Products (sdp-si.com/eStore/): Timing Belt drives, precision parts

**SDPSI** Stock Drive Products / Sterling Instrument  
Shop online or call 1.800.819.8900 Contact Us, Help  
©2002 Stock Drive Products / Sterling Instrument. All rights reserved. See Terms of Use and Privacy Policy.

Home | Store Home

Search for

☐ Part Number ☐ Keyword

☐ Inch Unit ☐ Metric Unit

Reset Part Index

**SDPSI ONLINE SHOPPING**

SDP/SI is a leading manufacturer of small mechanical components; servicing a wide variety of aerospace, medical and commercial industries for over 50 years.

Enjoy a COOL Gift!  
An LED Flashlight (while supplies last), when you place an order of \$100.00 or more on the eStore (not including freight & handling).

Save 5% on your next purchase of \$100.00 or more

Search for

☐ Part Number ☐ Keyword

☐ Inch Unit ☐ Metric Unit

Reset Part Index

**NEW PRODUCTS**

## Relevant sections:

- Metric Pulleys
  - Metal and Plastic Timing Pulleys
    - 3mm HTD, 5mm HTD
- Metric Belts and Cables
  - Timing Belts
    - 3mm HTD, 5mm HTD



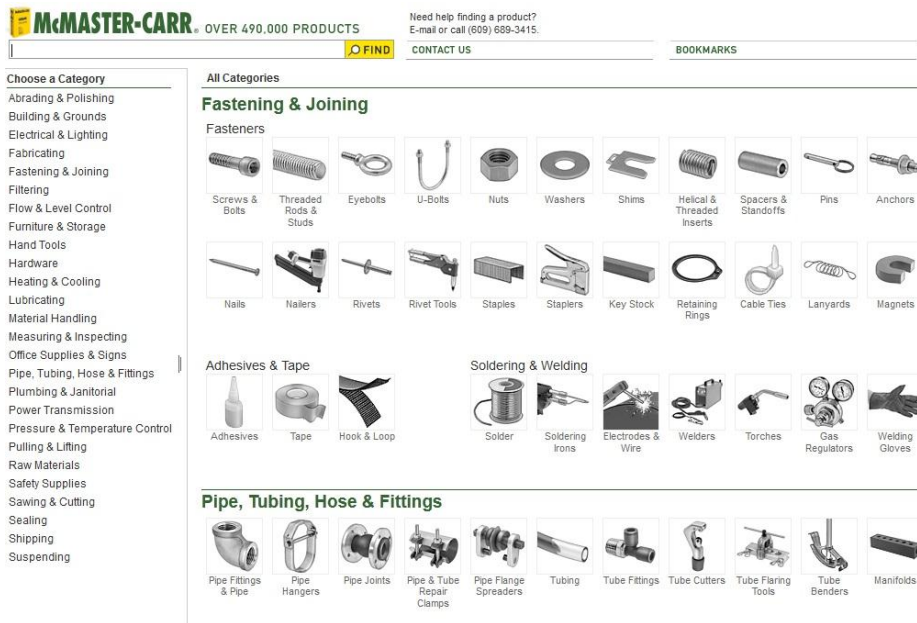
4 parts found

| Part Number      | Pitch      | No. Of Grooves | Material             | Belt Width  | Bore Size<br>Inch    | Flange & Hub Configuration | Pitch Diameter<br>Inch | Outside Diameter<br>Inch | Overall Length<br>Inch | Hub Diameter<br>Inch |
|------------------|------------|----------------|----------------------|-------------|----------------------|----------------------------|------------------------|--------------------------|------------------------|----------------------|
|                  | Reset      | Reset          | One option available | All         | One option available | All                        | One option available   | One option available     | All                    | One option available |
| A 6A25-016DF0908 | 5 mm (HTD) | 16             | Aluminum Alloy       | .354 (9mm)  | 0.250"               | 2 Flanges / With Hub       | 1.003"                 | 0.958"                   | 0.797"                 | 0.56"                |
| A 6A25-016NF0908 | 5 mm (HTD) | 16             | Aluminum Alloy       | .354 (9mm)  | 0.250"               | No Flange / With Hub       | 1.003"                 | 0.958"                   | 0.797"                 | 0.56"                |
| A 6A25-016DF1508 | 5 mm (HTD) | 16             | Aluminum Alloy       | .591 (15mm) | 0.250"               | 2 Flanges / With Hub       | 1.003"                 | 0.958"                   | 1.031"                 | 0.56"                |
| A 6A25-016NF1508 | 5 mm (HTD) | 16             | Aluminum Alloy       | .591 (15mm) | 0.250"               | No Flange / With Hub       | 1.003"                 | 0.958"                   | 1.031"                 | 0.56"                |

4 parts found

SDP-SI is an excellent resource for timing belt drives, but not chain drives.

# McMaster-Carr (mcmaster.com): Raw Materials, Power Transmission, Fasteners, Shafting



McMaster is an expansive website – search directly for what you want.

e.g. sprockets, roller chain, aluminum square tube, 3/8”-24 socket cap screw

Extensive selection of sprockets, chain, shafting and accessories, wheels (industrial casters), possible frame materials, bearings, etc. Smaller timing belt selection.

Note that raw material plates tend to be more expensive than other metals/plastics vendors. For thick plates, try:

- speedymetals.com
- onlinemetals.com


**One to 2 day delivery time to MIT for most parts! Use this to your advantage.**

**SURPLUS CENTER** BURDEN SALES CO. [View Items in Cart](#) **1-800-488-3407**

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**POWER TRANSMISSION**

**FEATURED ITEM**

 [1:1.05 OUTBOARD GEARBOX FOR ROTARY CUTTER](#)

Our Price **\$299.99** [INFO](#) [Add to Cart](#)

**GEAR REDUCERS / GEARBOXES**  
5:1 and greater ratio  
Right Angle C face input  
Right Angle Shaft input  
Inline  
Less than 5:1 ratio  
Right Angle  
Shaft Mount  
Flange Mount Gear Reducers

**ROLLER CHAIN**  
Roller Chain  
[#25](#) [#35](#) [#40](#) [#50](#) [#60](#) [#80](#)  
[Metric](#) [Conveyor](#) [Misc](#)  
Roller Chain Links  
[#25](#) [#35](#) [#40](#) [#50](#) [#60](#) [#80](#)  
[Misc](#)

**CLUTCHES / PULLEYS / BELTS**  
Clutches  
Fixed Bore Pulleys  
[1 Groove](#) [2 Groove](#)

**BEARINGS**  
Mounted Bearings  
2 Bolt Flange  
3 Bolt Flange  
4 Bolt Flange  
Pillow Block Bearings  
Replacement Bearings  
Miscellaneous Bearings

**SPROCKETS**  
Weld on Sprocket & Hubs  
[#40](#) [#50](#) [#60](#) [#80](#)  
Sprockets with Hubs & Taper Lock Sprockets  
[#25](#) [#35](#) [#40](#) [#50](#) [#60](#) [#80](#) [Misc](#)  
Hubless Sprockets  
[#35](#) [#40](#) [#50](#) [#60](#) [#80](#)  
Idler Sprockets (all sizes)

**SHAFTING/COUPLERS/COLLARS**  
Keyed Shafting  
Hex/Square Shafting  
Splined Shafting

## Relevant sections:

- Power Transmission
  - Roller Chain, Sprockets, Bearings, Shafting
- Wheels / Casters
  - Pneumatic
  - Caster & Miscellaneous
- Other random odds and ends, like seats and steering wheels (!)

Surplus Center is an alternative place to look for chain drives and shafting components. Being a general industrial surplus store, they might also have other odd things which might suit your vehicle design.

## **Misc. Vendors**

These vendors may be helpful only for one or two aspects of a vehicle, but they may present better selections, prices, etc.

**Speedy Metals:** <http://www.speedymetals.com> Metal plate, sheet, tubing, profiles.

**Online Metals:** <http://www.onlinemetals.com> Same.

**VXB Bearings:** <http://www.vxb.com> Less expensive source than McMaster of special metric and inch bearings.

**Interstate Plastics:** <http://www.interstateplastics.com> Less expensive source than McMaster of most plastics such as polycarbonate (Lexan), polyethylene, if you need a large amount

Note that many vendors will only ship Ground (1+ week), so McMaster is generally your safest bet unless you need an otherwise uneconomical amount of material or number of parts.

Resource / Knowledge Base

## MIT Websites

These MIT students or affiliates have been involved in small vehicle projects here and have documented some or all of their builds online. Feel free to browse through the build histories. Blogging or documenting your build like this is heavily recommended!

**Charles Guan:** <http://www.etotheipiplusone.net> Various vehicles

**Shane Colton:** <http://scolton.blogspot.com> Various vehicles, incl. Tinykart and Pneu Scooter

**Eli Davis:** <http://elimarcDavis.blogspot.com/> 2x4scooter

**Jed Storey:** <http://mitrocketscience.blogspot.com/> 4WD e-longboard

**Amy Qian:** <http://amymakesstuff.com/> Electric penny-farthing bike, tiny go-kart

**Jordan Jin Stone:** <http://t3chnolochic.blogspot.com/> Balancing skateboard

**Julian Merrick:** <http://wattsdottime.blogspot.com/> DIY brushless motors

**Stephan Boyer:** <http://www.stephanboyer.com/p/self-balancing-electric-unicycle.html>

**Edgerton Electric Longboard:** <http://www.instructables.com/id/Electric-Longboard-Build-Clever-CIM-Motor-Drivet/>

## Other Personal Websites with EV content

**Adrian Tanner:** <http://actanner.blogspot.com/> Good R/C-controller and R/C outrunner scooter build, custom hub motor. BU student.

**Jamison Go:** <http://thevariableconstant.blogspot.com/> Various scooters and e-longboard. Georgia Tech student.

**Adam Bercu:** <http://fluxwonderland.blogspot.com/> Real electric motorcycle

## Reference Information

**EVAbum:** <http://www.evalbum.com> Collection of electric vehicles. Try searching by Type/Make under Go Karts or Scooters/Moped/Minibikes...or Unclassifiable.

**RoyMech:** <http://www.roytech.co.uk/> Excellent reference for most mechanical engineering knowledge. Formulas, reference tables, design guidelines, etc.

**Gizmologist's Lair:** <http://gizmology.net/> Helpful Notes on various engineering topics such as spur gears, chains, bearings, etc.

**Torque and Amp-Hour Calculator:** <http://architeuthis-dux.org/torquecalc.asp> Originally written for robot drivetrains. Helps calculate motor current draw, acceleration, wheelspin current, battery life, etc. Not directly applicable to vehicles, but can be abused to help with design.