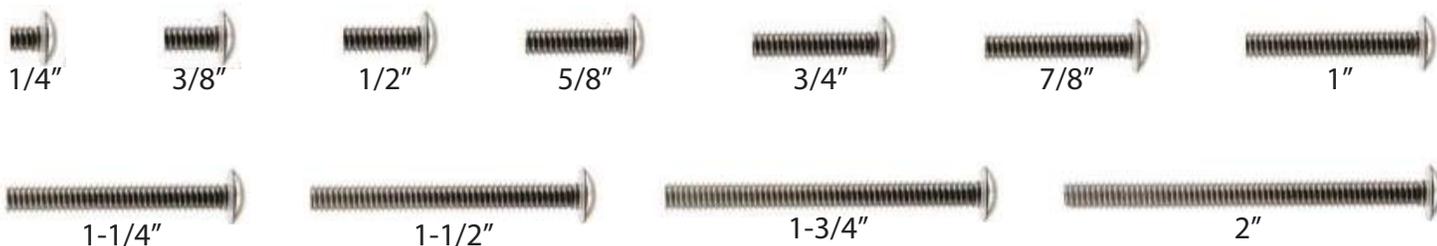


FASTENERS, SPACERS and WRENCHES



8-32 screws with 3/32 hex head.
Used for all structural connections,
can be black or silver.



8-32 keps nut
8-32 nylock nut



open wrench with
1 1/32" end (nuts)
1/4" end (standoffs)



3/32" hex wrench



1/2" standoff
1" standoff
2" standoff
aluminum standoffs with 8-32 threaded ends
also available at: 1/4", 3/4", 1-1/2", 2-1/2", 3", 4", 5", 6"



8-32 coupling screws
with 5/64 hex head
(used to join standoffs)



8-32 set screw
with 5/64 hex head
(for standard
shaft collar)



6-32 screws with 5/64 hex head.
Only used for motor and rack connections,
can be black or brass.



5/64" hex wrench



8-32 rubber link

GEARS

Standard gears,
each gear is 24 teeth larger,
ratio to 12 in ()



12T (1)



36T (3)



60T (5)



84T (7)

High strength gears,
center holds inserts or 1/4" drive shaft



84T (7)



60T (5)



36T (3)



12T (1)

Other gears



bevel gear



gear rack



worm gear



worm wheel



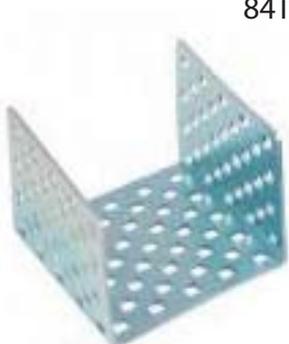
round insert



square insert



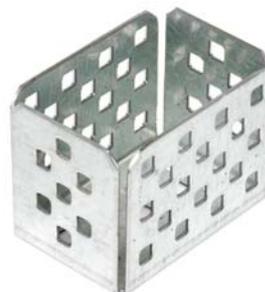
differential frame



Pulley gearbox



Rack gearbox
also holds main battery well



Worm gearbox



Bevel gearbox

MOTORS and SENSORS



393 motor



refurb gears



standard gears
100 rpm



speed gears
160 rpm



turbo gears
240 rpm



393 motor with encoder back, counts motor rotations, allows PID control



optical shaft encoder, counts shaft rotations



potentiometer, senses shaft angle



gyroscope, senses rotation in the plane of its base



accelerometer, senses X, Y and Z acceleration



LED indicator, red, yellow or green



limit switch, very sensitive



bumper switch, requires more force



jumper, acts as pressed button



LCD display, connects to UART port with a special cable



ultrasonic sensor, detects distance



line tracker, typically used in sets of three



light sensor, detects light intensity, not useful in competition



speaker module

POWER and CONTROL



cortex micro controller,
ARM cpu with multiple I/O ports,
stores and runs programs



remote control joystick,
four button groups,
two joystics



vexnet key,
NOT a thumb drive,
only a bluetooth
transmitter/receiver



main battery,
7.2V, 3000mah



main battery clamp



main battery
extension wire



battery expander,
allows two main batteries



9V backup battery
wire and holder



motor controller wire,
used in ports 2-8



wire clip, holds
ends together



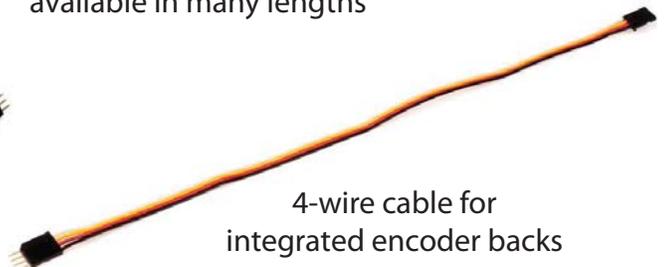
2-wire extender,
available in many lengths



3-wire Y splitter,
allows two motors to
run from one port



3-wire extender,
available in many lengths



4-wire cable for
integrated encoder backs

SPROCKET, CHAIN, and TREAD

High strength sprockets,
each sprocket is 6 teeth larger
ratio to 6 in ()

6T (1)



12T (2)



18T (3)



24T (4)



30T (5)



High strength chain



Attachment links



Tread



Specialty treads



Tread sprocket (18 teeth)



Tread guides

STRUCTURE



45 degree gusset



90 degree flat gusset



90 degree vertical gusset



cross gusset



L gusset



arc gusset



hinge



90 degree corner gusset

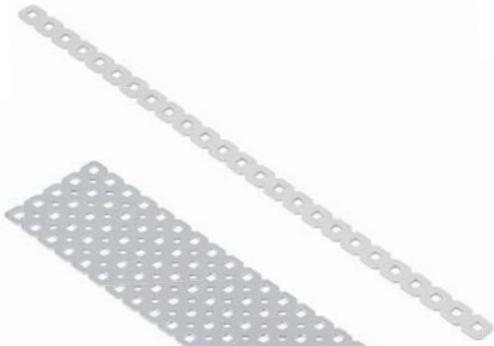


L coupler

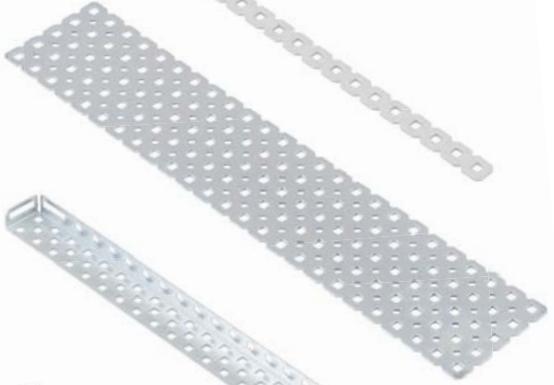


C coupler

1x25 bar



5x25 plate



1x2x25 rail



1x2x35 rail



2x2x35 L



3x3x35 L



1x2x1x35 C



1x3x1x35 C



1x5x1x35 C



Main structural members shown in their maximum available length.
 Units are the number of 1/2"-spaced holes per face.
 At the VEX store, rails are steel, all other members are aluminum.
 McCallum has many of these in steel.
 For modularity cut members in 5 unit increments when possible.

WHEELS



2.75" traction



2.75" omni,
allows smooth turning for
drives with more than 2 wheels



1.5" intake roller



3.25" traction
1/4" center for HS shaft
or inserts



3.25" omni
1/4" center for HS shaft
or inserts



5" traction



4" traction



4" omni



4" traction



4" mecanum,
allows strafing drive



6" leg,
for rugged ground