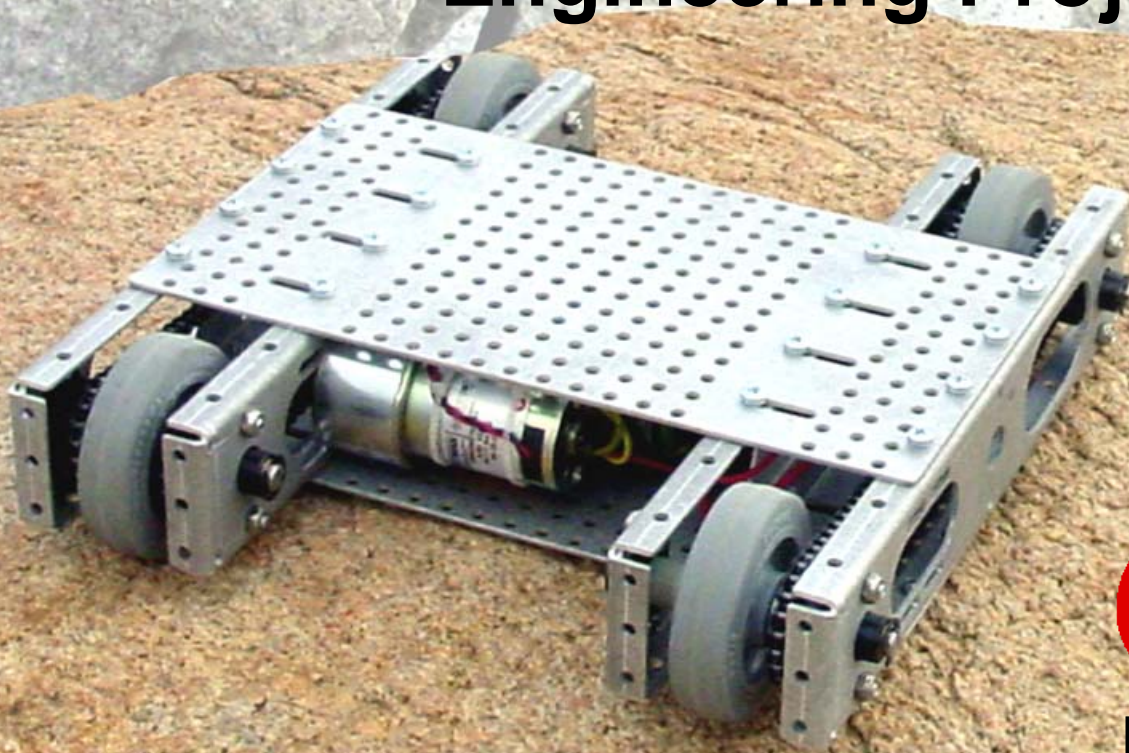
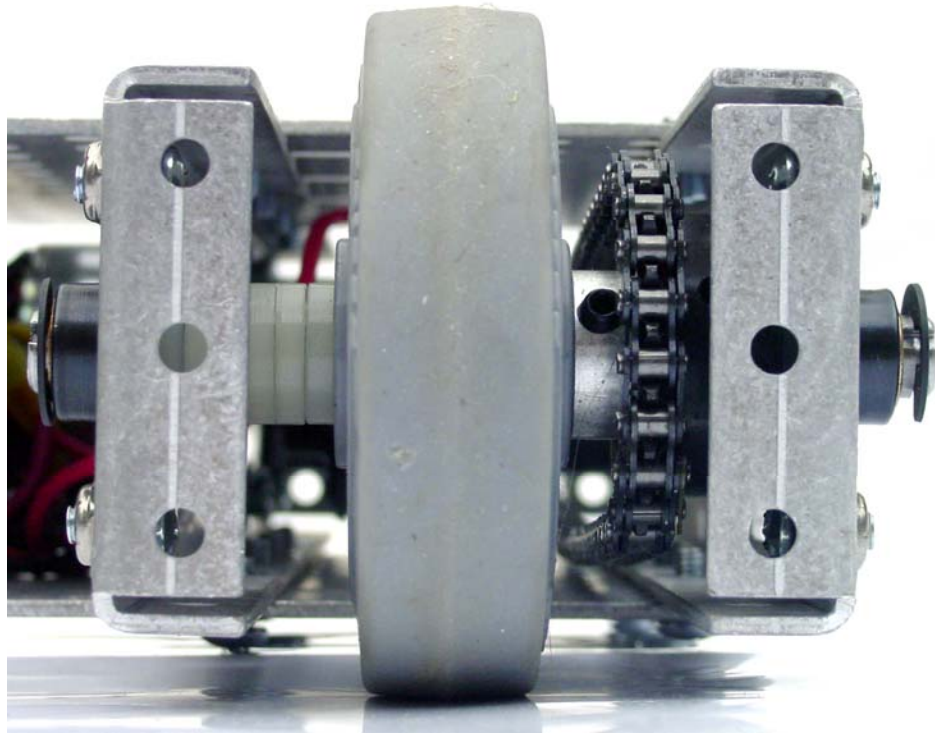


GEARS Heavy Metal Chassis

The **HMC** is a Rock Solid Platform
Ideal for Classroom Robotics
Experiments, Competitions and
Engineering Projects



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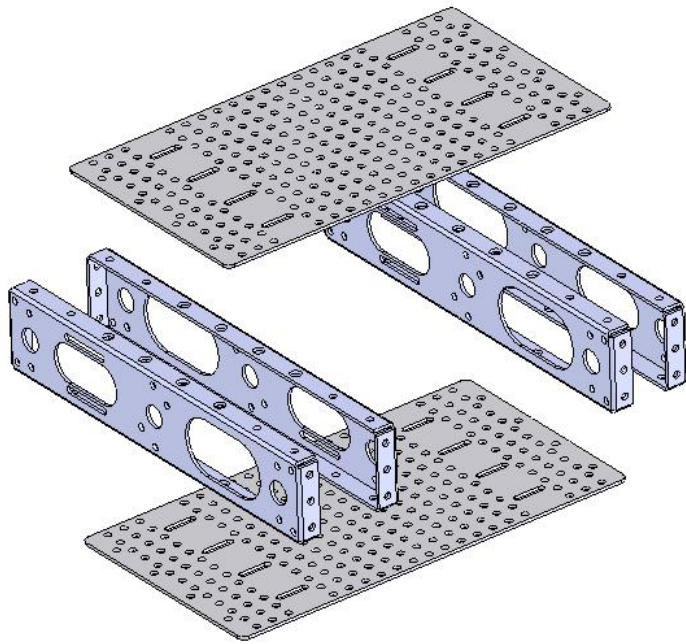


The **HMC** is built with authentic engineering components:

- #25 Pitch Steel Chain
- Hard Steel Sprockets
- 3/8" dia. Keyed Axles
- .090" Aluminum Plate
- Keyed Drive Components
- Industrial Caster Wheels
- Pittman all Metal Gear Motors

Authentic engineering components that go together to make the world's toughest robot chassis....in less than 2 class periods!

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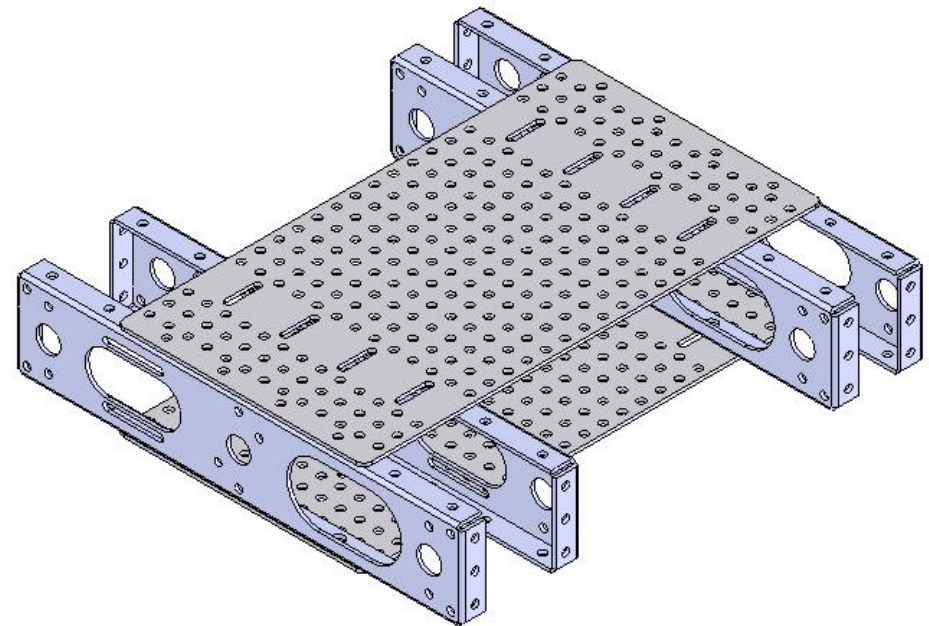


**2 pcs. 6061-T6 Aluminum
Cover Plates**

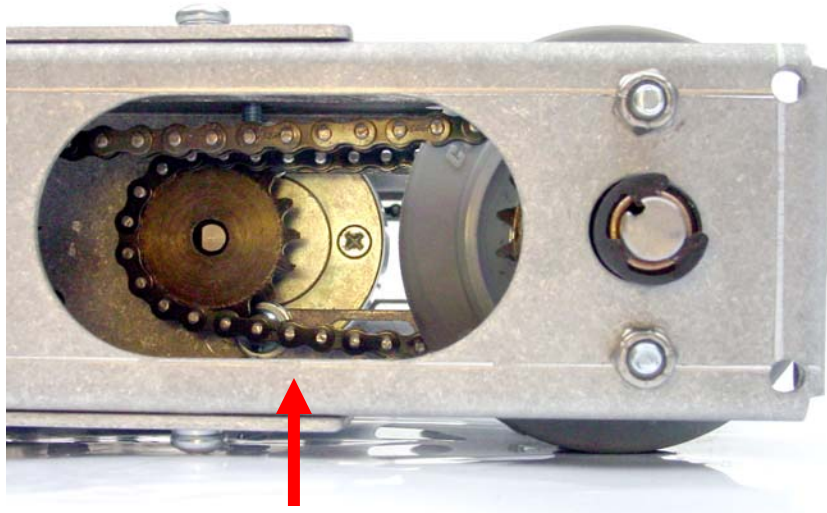
**4 pcs. 5052 Aluminum
Bulkheads with #10-32
threaded inserts so the**

**chassis structural metal
assembles in minutes**

**No reaching inside to hold
nuts and washers in
impossible to reach places!**



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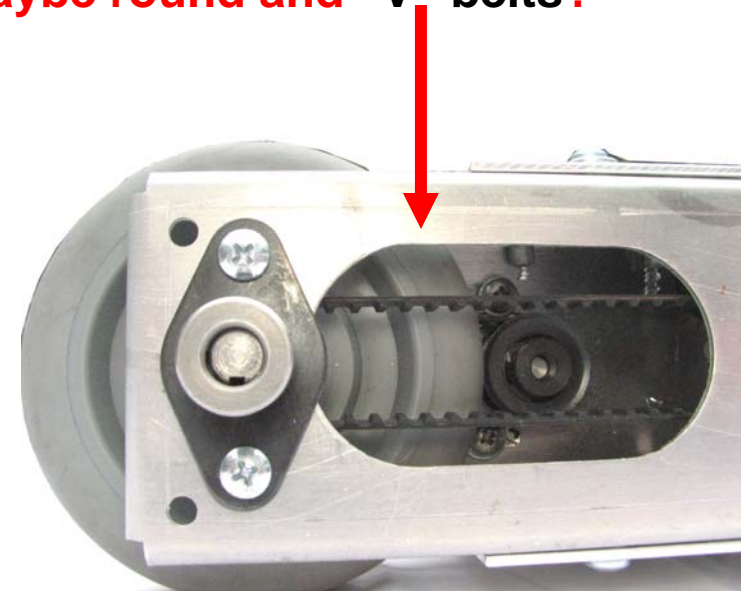
**#25 Pitch steel chain and sprockets
or maybe 24 pitch spur gears?**

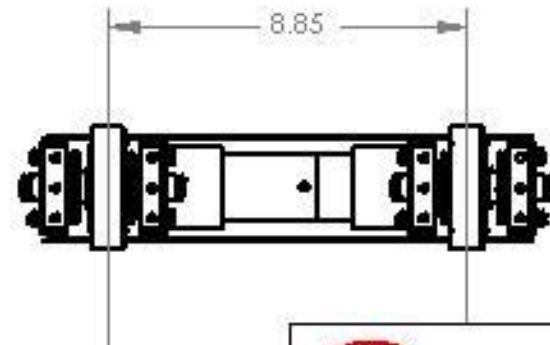
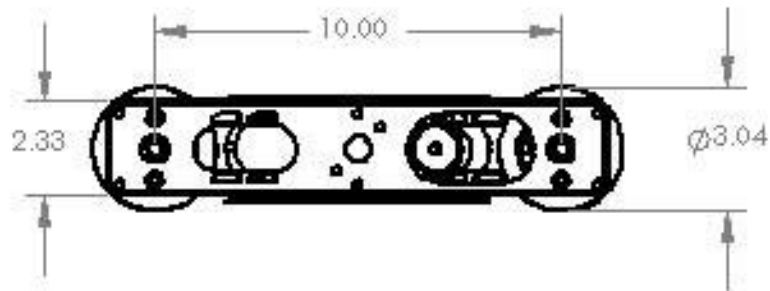
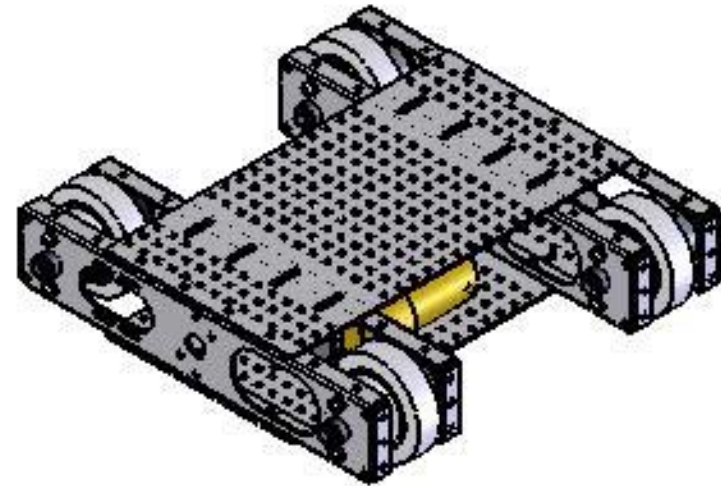
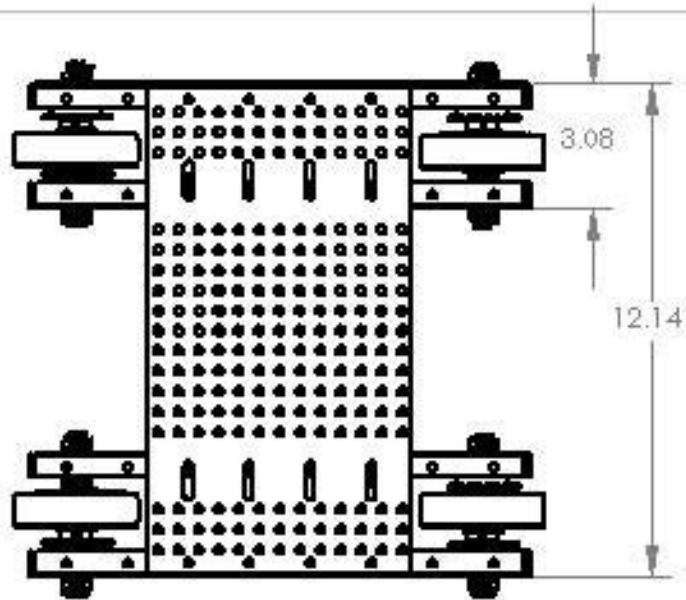
**.....and the parts you buy
will last for years and
years...so you don't have
to keep buying the same
parts over and over again**

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**Using real engineering
components means you
can build a library of parts
quickly, easily and
inexpensively using a
variety of sources.....**

**XL timing belts and pulleys or
maybe round and "V" belts?**





Small enough to fit on a desktop, tough enough to drive off the desktop!

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SEE	DWG. NO.	REV
A	Heavy Metal Chassis	1
SCALE: 1:8	WEIGHT:	SHEET 1 OF 1

Fast and Easy to Construct Using Proven Engineering Methodologies

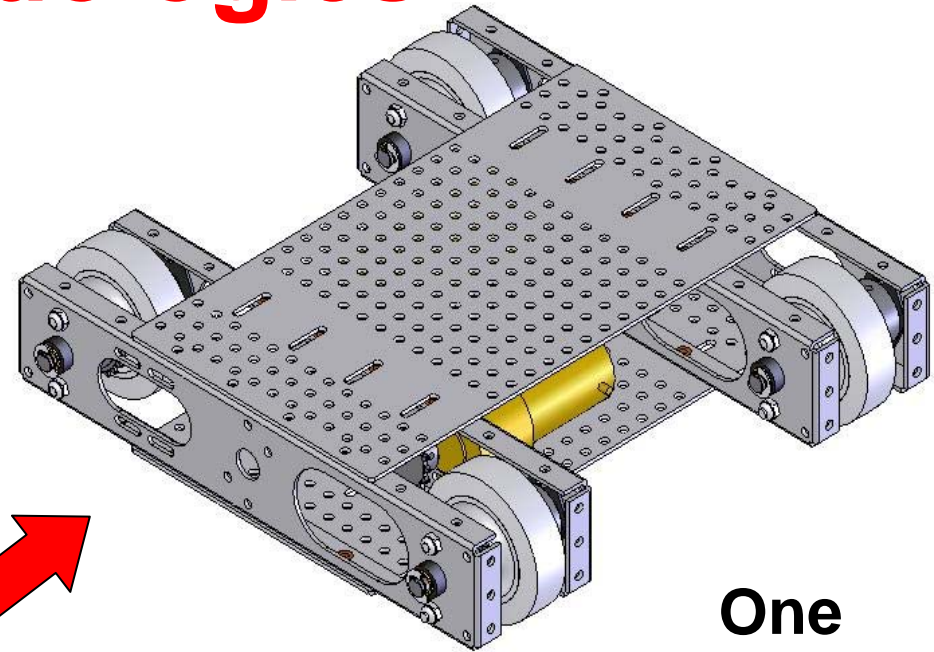
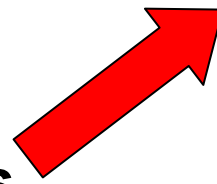
162 Components

Make

4 Sub-Assemblies

Make

2 Modules



One Machine

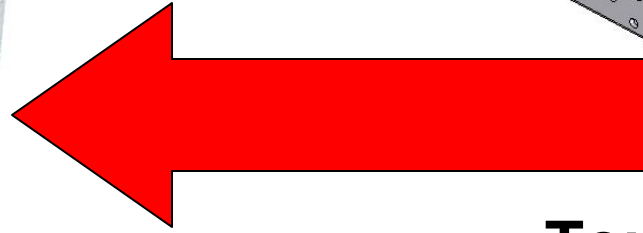
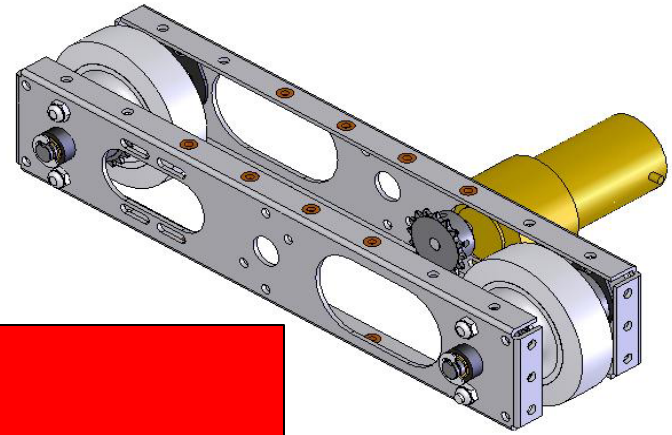


Suggest Construction Time – 2 Students 70 – 90 Minutes

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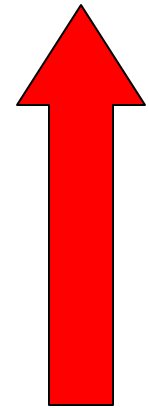
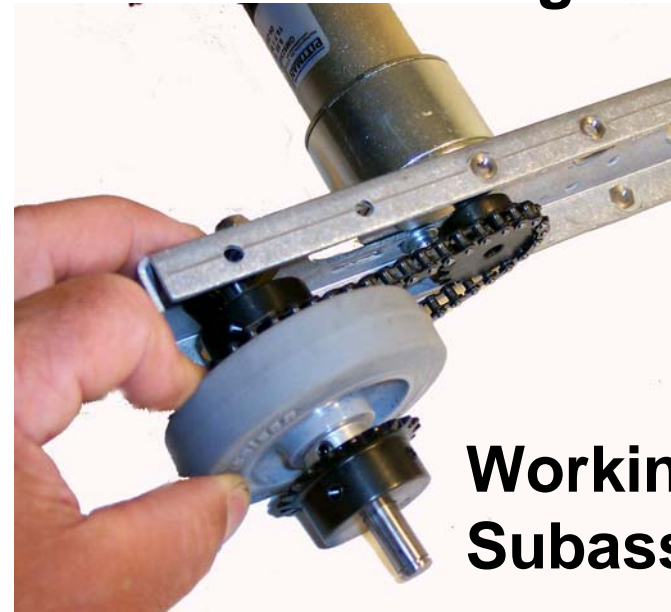
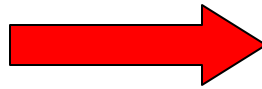
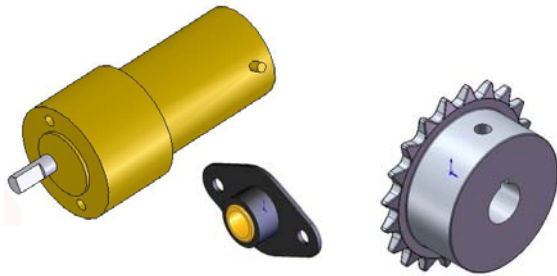
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Best Machines



Tough Modules

Quality Components



Working Subassemblies

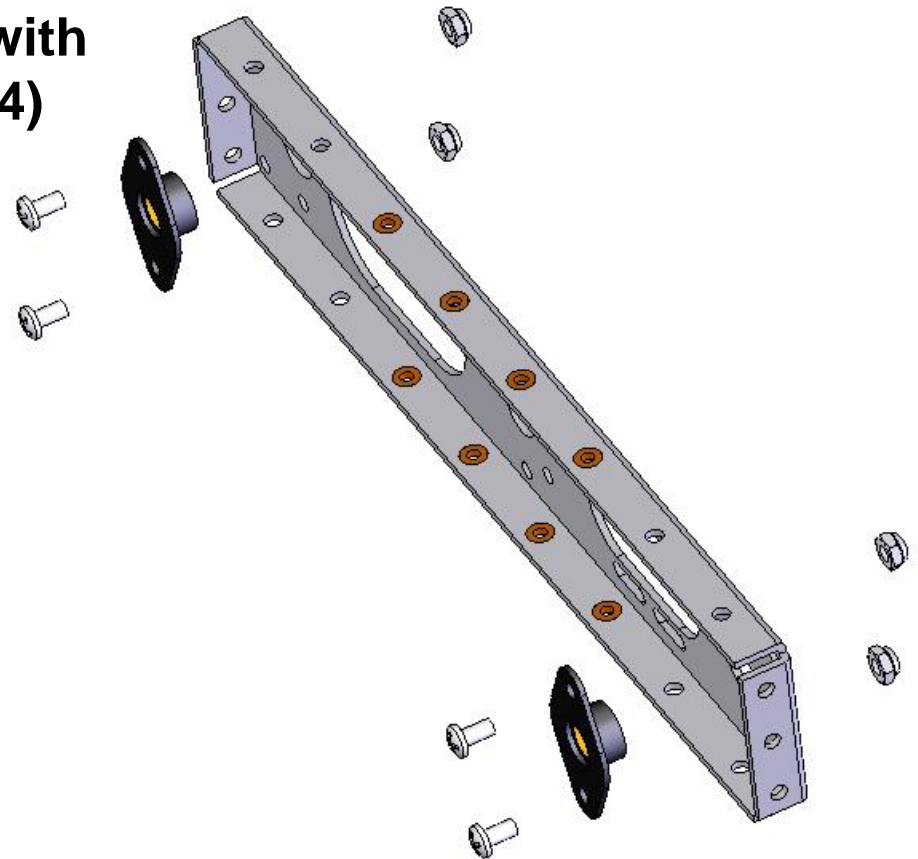
Gears = *Great Engineering and Versatility*
Educational Systems, LLC

Bulkhead Assembly

0.090" 5052 Aluminum Bulkhead with Threaded Stainless Steel Inserts (4)

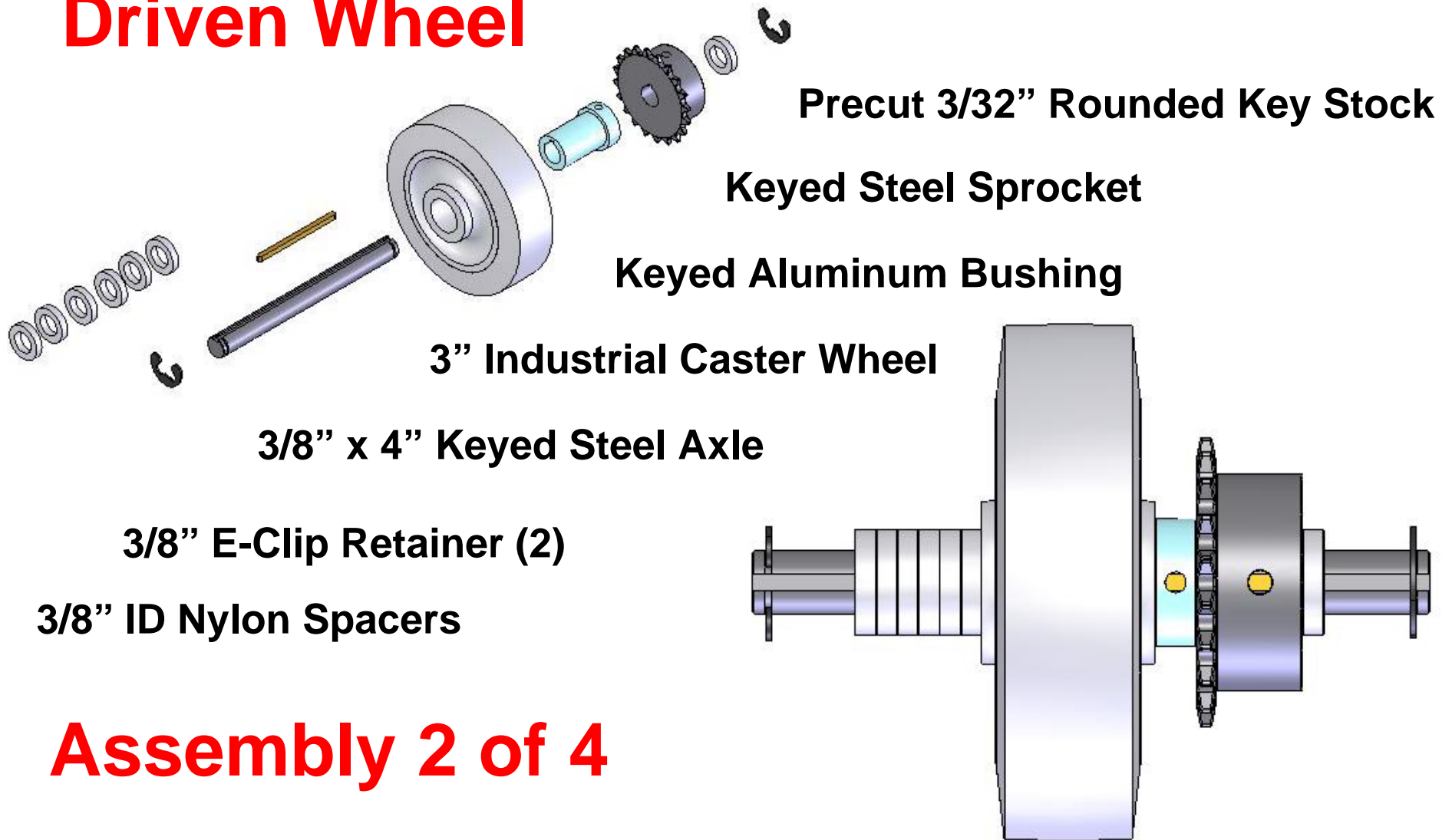
Self Aligning Flanged Bronze Bearings (8) *200lb capacity ea.*

#10-32 Machine Screws and Nylon Lock Nuts



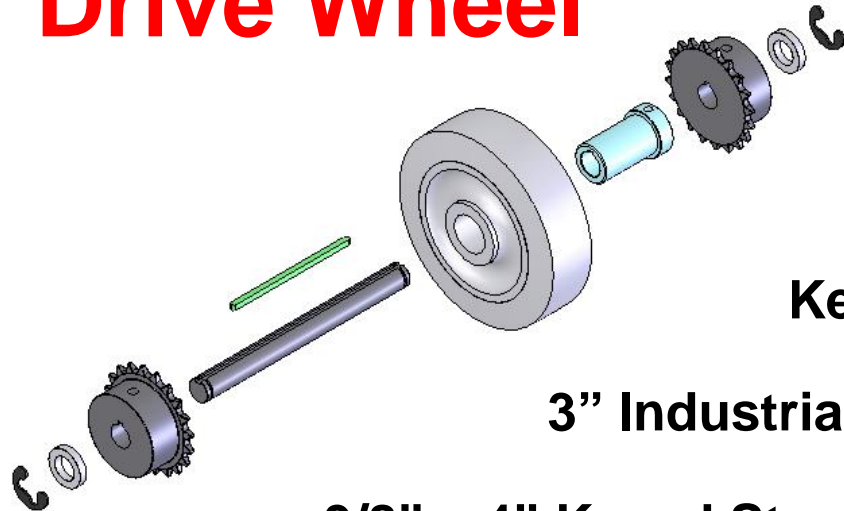
Assembly 1 of 4

Driven Wheel



Assembly 2 of 4

Drive Wheel



Precut 3/32" Rounded Key Stock

Keyed Steel Sprocket

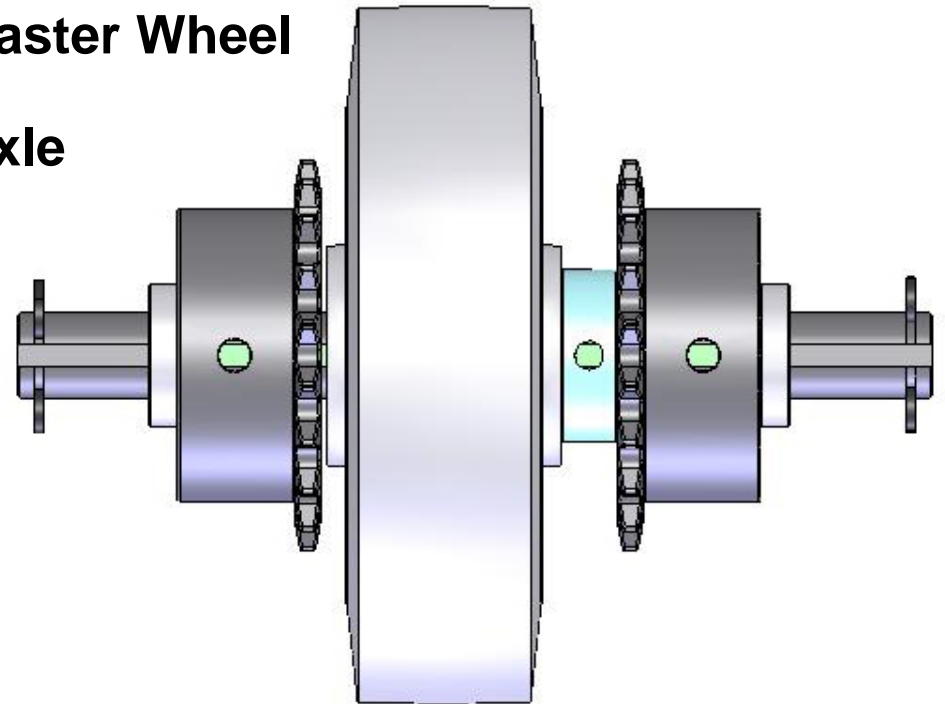
Keyed Aluminum Bushing

3" Industrial Caster Wheel

3/8" x 4" Keyed Steel Axle

3/8" E-Clip Retainer (2)

3/8" ID Nylon Spacers



Assembly 3 of 4

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Suggest Construction Time – 2 Students 10 - 15 Minutes

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Motor - Sprocket

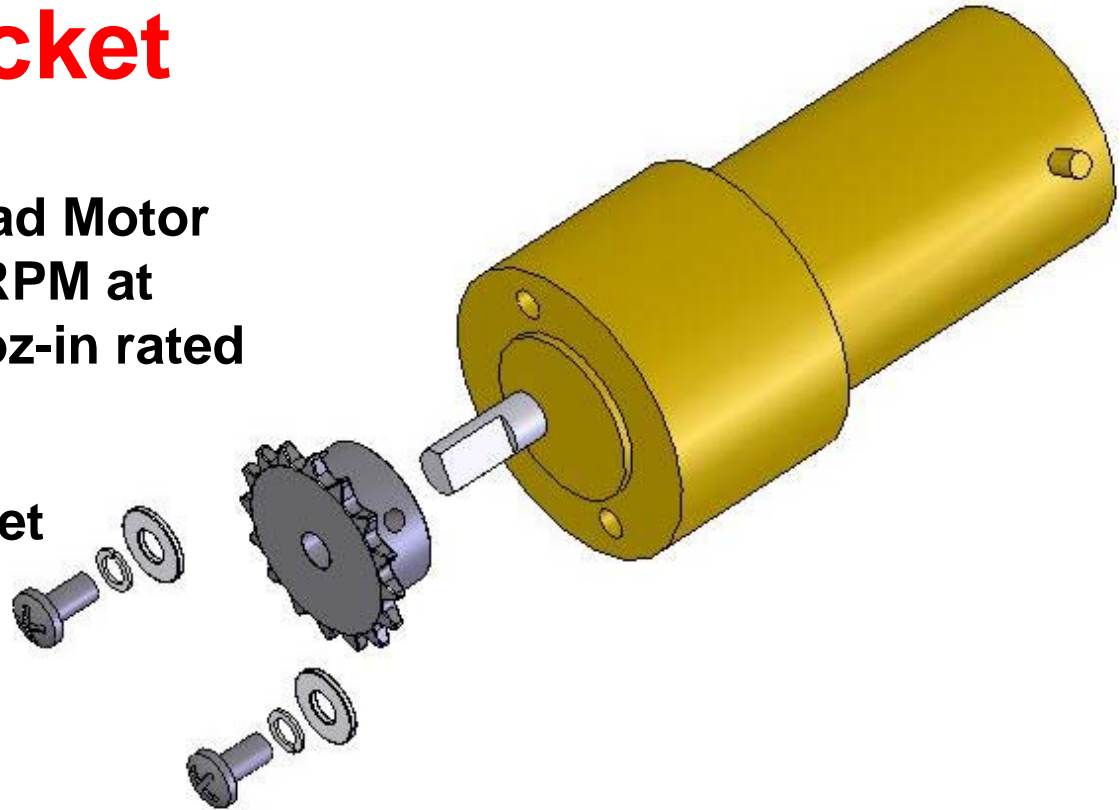
**Pittman 19.7:1 Gearhead Motor
9.6 Volt Winding, 250 RPM at
Nominal Voltage, 500 oz-in rated
gearbox torque**

#25 Pitch Steel Sprocket

**#10-32 x 3/8" Phillips
Head Machine Screws**

#10-32 Flat Washers

#10-32 Lock Washers

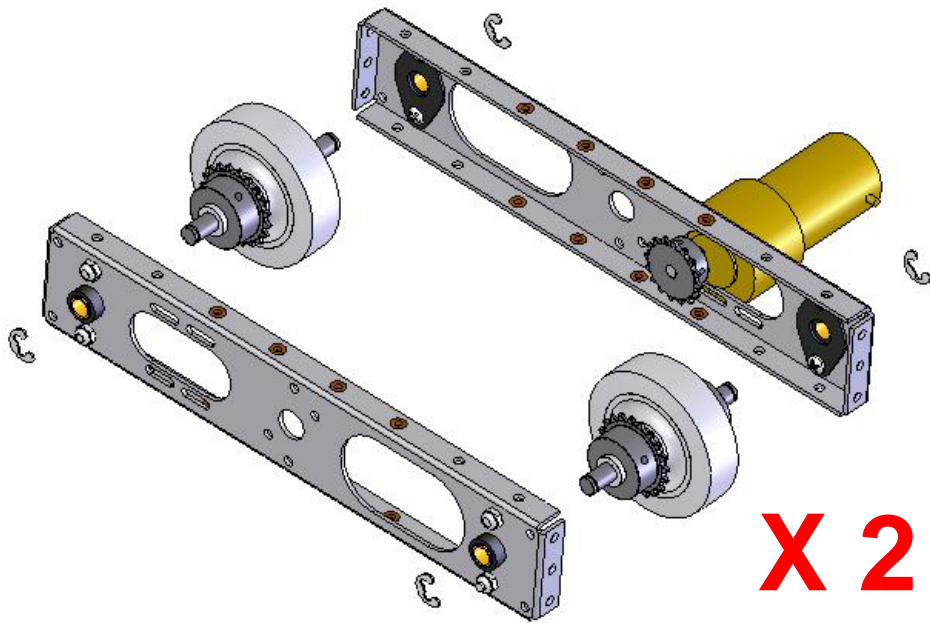


Assembly 4 of 4

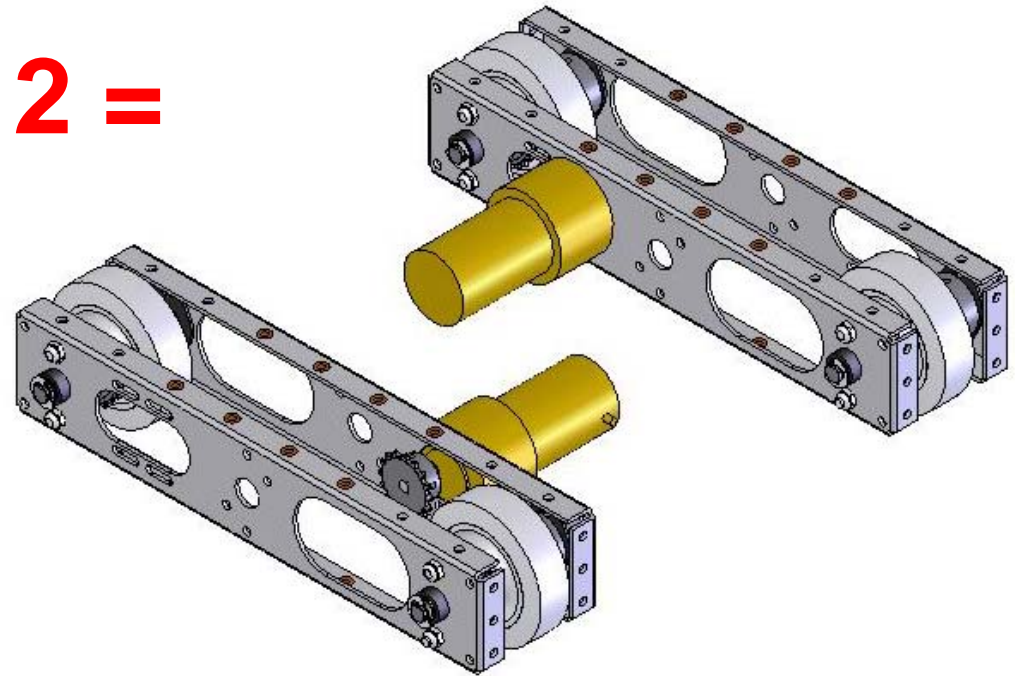


Suggest Construction Time – 2 Students 5 – 10 Minutes

Module 1 of 2



X 2 =



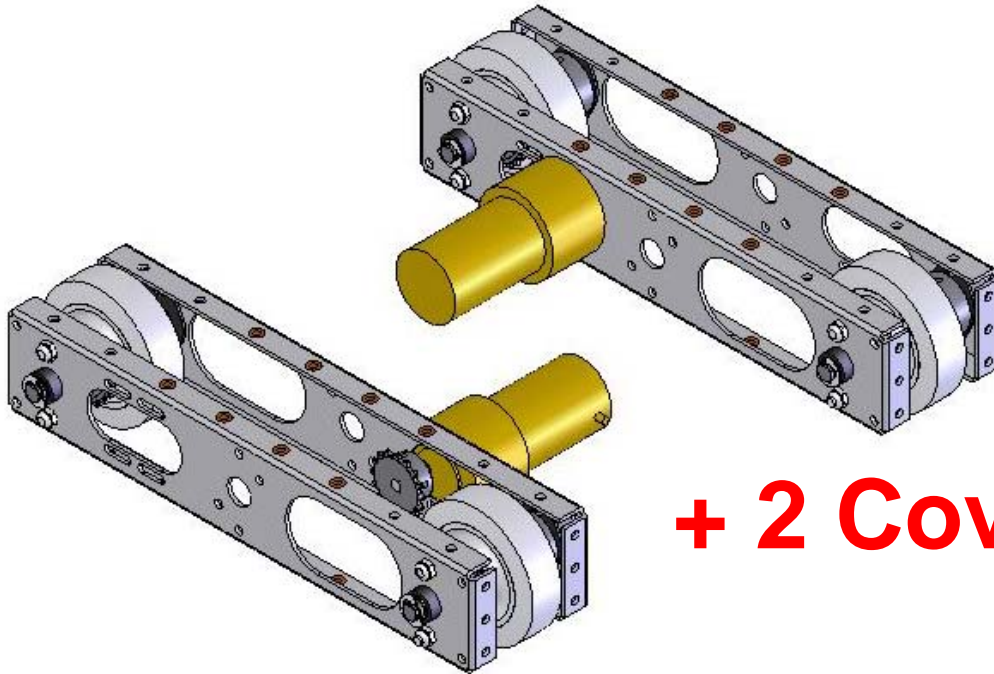
2 Drive Modules

Gears
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Suggest Construction Time – 2 Students 5 – 10 Minutes

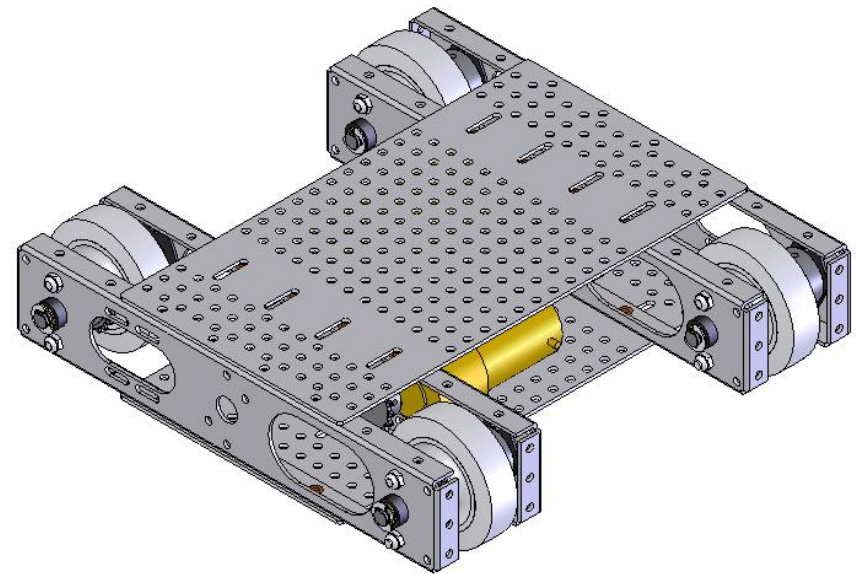
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2 Drive Modules



+ 2 Cover Plates=

1 HMC Machine

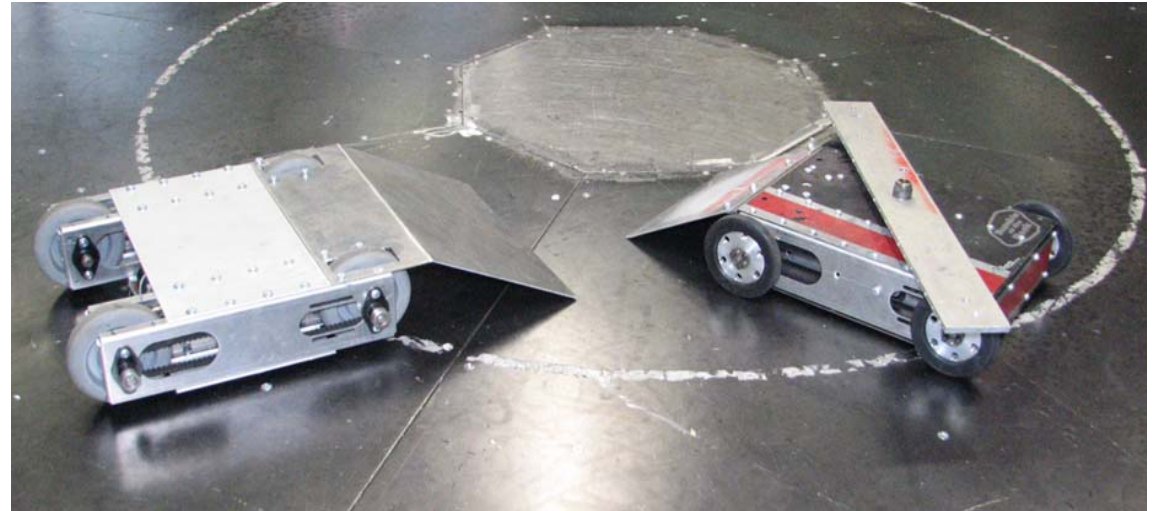


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Suggest Construction Time – 2 Students 5 – 10 Minutes

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The **HMC** Can
Be Whatever
You Want it to
be, Because...



The **HMC** chassis can
support over 200 lbs!

Capacity like this
translates into
**toughness, versatility
and value.**

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