

The 2002 FIRST Robotics Competition
TEAM UPDATE #3

Date: January 22, 2002

YAHOO MESSAGE BOARD

Many of you posted questions to the message board and have not received a response in as timely a manner as we would all like. We apologize for this, and appreciate your gracious professionalism with regards to this matter. This is a new process for all and many, many questions are being asked.

Please remember to read your manual as well as the updates posted at: http://www.usfirst.org/robotics/doc_updt.htm and then you may want to re-read them. Most of the answers can be found within those documents.

“SHIPPED KIT PARTS”

We're pleased to announce that the parts will be shipping out by the end of the week. This includes:

- Anderson Power Products Catalog
- Quick Disconnect Power Connectors with 1' leads
- Revolving Light with red and blue lenses
- Reflexite retro reflective tape – 18” piece
- 10' #6AWG Red conductor wire

For those of you that have last year's revolving light and battery connectors, please feel free to use them until the new parts arrive. The 2001 and 2002 parts are the same.

Thank you for your continued patience.

PNEUMATICS

Many of you have asked about the number of cylinders allowed on the robot. The correct number is 5 NOT 7 as previously stated on the message boards. We apologize for this confusion.

The 4 additional cylinders that can be ordered are FREE. Even UPS freight is FREE. Airfreight will be billed to either a credit card or shipping account number.

Attached is a list of the Bimba and Parker part numbers. Their sites are www.bimba.com and www.parker.com. Both list their distributors where these products may be obtained on their web sites.

	Bimba Part Number	Bimba Example 6" stroke	Parker Part Number	Parker Example 6" stroke
3/4" Bore				
Cylinder	04__-DP	04 <u>6</u> -DP	.75DPSR _____	.75DPSR <u>06.0</u>
Rod Clevis	D-166-3		L07130 0200	
Pivot Bracket	D-167		L07131 0200	

1-1/2" Bore				
Cylinder	17__-DP	17 <u>6</u> -DP	1.50DPSR _____	1.5DPSR <u>06.0</u>
Rod Clevis	D-231-1		L07130 0400	
Pivot Bracket	D-299		L07131 0300	
2" Bore				
Cylinder	31__-DXP	31 <u>6</u> -DXP	2.0DXPSR _____	2.00DXPSR <u>06.0</u>
Rod Clevis	D-231-3		L07130 0500	
Pivot Bracket	D-620		L07132 0500	

INNOVATION FIRST, INC.

As requested by teams, Innovation First now carries several hard to find spares including:

- Auto-Resetting Circuit Breakers in 20A and 30A ratings
- CH Product Joysticks
- Retro Reflective Tape (available soon)
- PWM cables available (12, 24, and 36)

KIT OF PARTS

➤ Fuses

In order to increase protection against short circuits and other faults in low power devices such as the Robot Controller, Muffin Fans, or Custom Circuit Board, teams may optionally use fuses or circuit breakers rated at less than 20A and place them in the 12 Position Fuse Panels or on the Custom Circuit Board. Teams using such fuses or circuit breakers assume all risk.

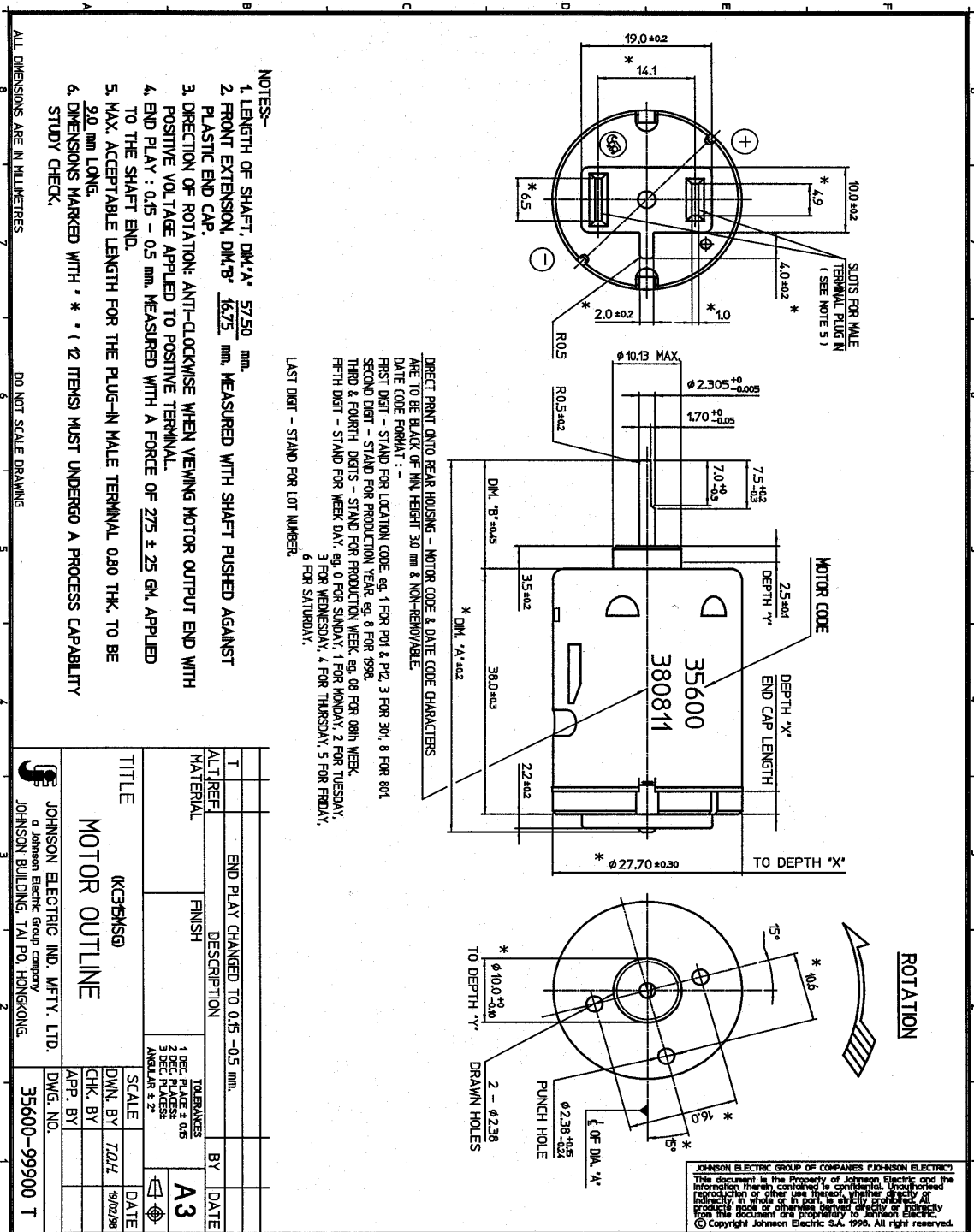
➤ Atwood Mobile (Chiaphua) Motor and Gear

For questions or problems concerning the Atwood Mobile motor or it's mating gear please contact Christine Wong of Chiaphua at: cwong@cclna.com or Ed Prevot at: msainc@erols.com.

Marcus Sales Co. (tel. 516-671-6820) in Glen Head, NY is preparing to stock additional Chiaphua motors to teams that want to purchase them. Marcus should be ready to begin doing so in another week. They will ship motors to teams on a COD basis only via UPS. Teams should FAX their orders to Marcus at 516-671-7610, and provide the address they want the motors shipped to, their phone number, and return FAX number.

ADDITIONAL SPEC SHEETS

Johnson Electric Motor



JOHNSON ELECTRIC ENGINEERING LTD.

6-22, Dai Shun St., Tai Po Industrial Estate, N.T., H.K. Fax: 852-2863 6108

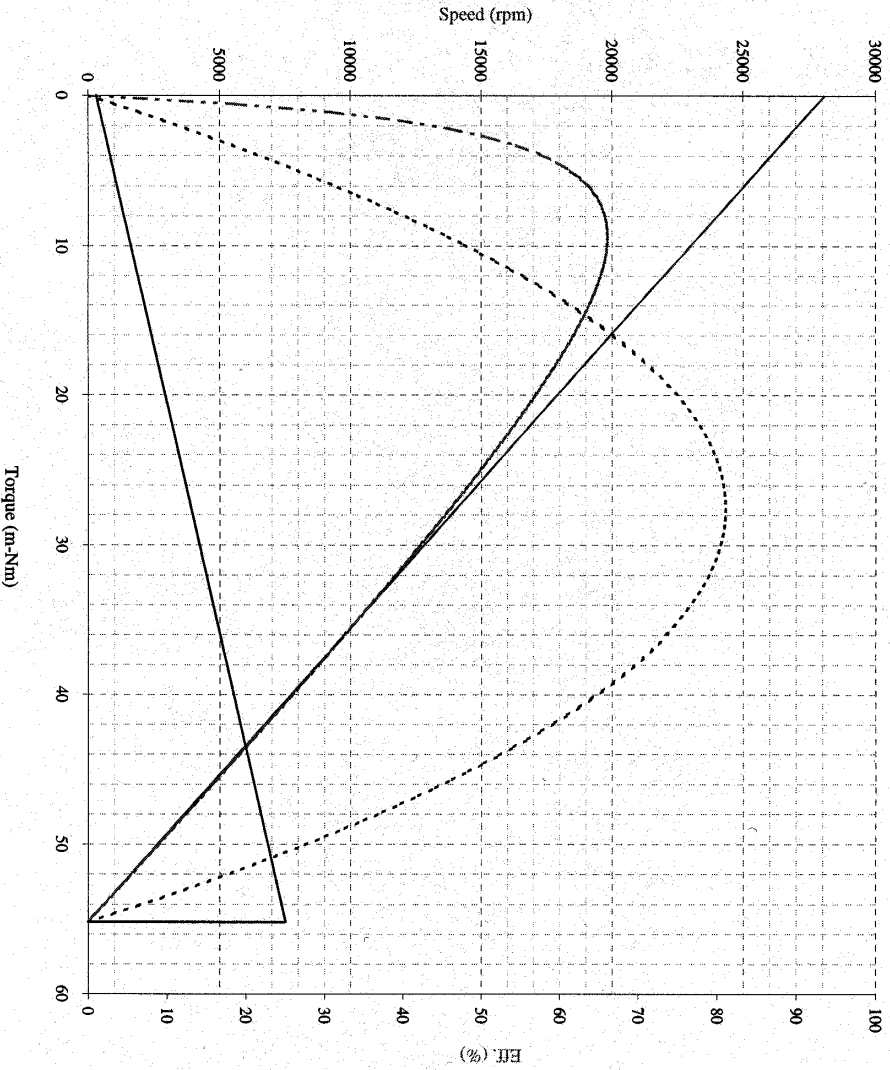
Project No : Production Motor
Curve No : KC315MSG-35600

Winding : 0.30 - 38

Date : 04/27/1999
Model :

Full Scales :

50.00 Amp
50.00 Watts



Issued by PE/ATP Dept., File No. C356003A, S/1389

Motor tested rapidly to prevent significant temperature rise.
At a constant voltage of **13.50** Volts
with a circuit resistance **0.000** Ohm
(At the ambient temperature of 25-30 deg C)

At No Load

Speed : 28086 Rpm
Current : 0.523 Amp

At Stall (Extrapolated)

Torque : 55.19 m-Nm
Current : 12.53 Amp

At Maximum Efficiency

Efficiency : 66.11 %
Torque : 9.38 m-Nm
Speed : 23311 Rpm
Current : 2.57 Amp
Output : 22.89 Watts

At Maximum Power

Torque : 27.59 m-Nm
Speed : 14043 Rpm
Current : 6.53 Amp
Output : 40.55 Watts

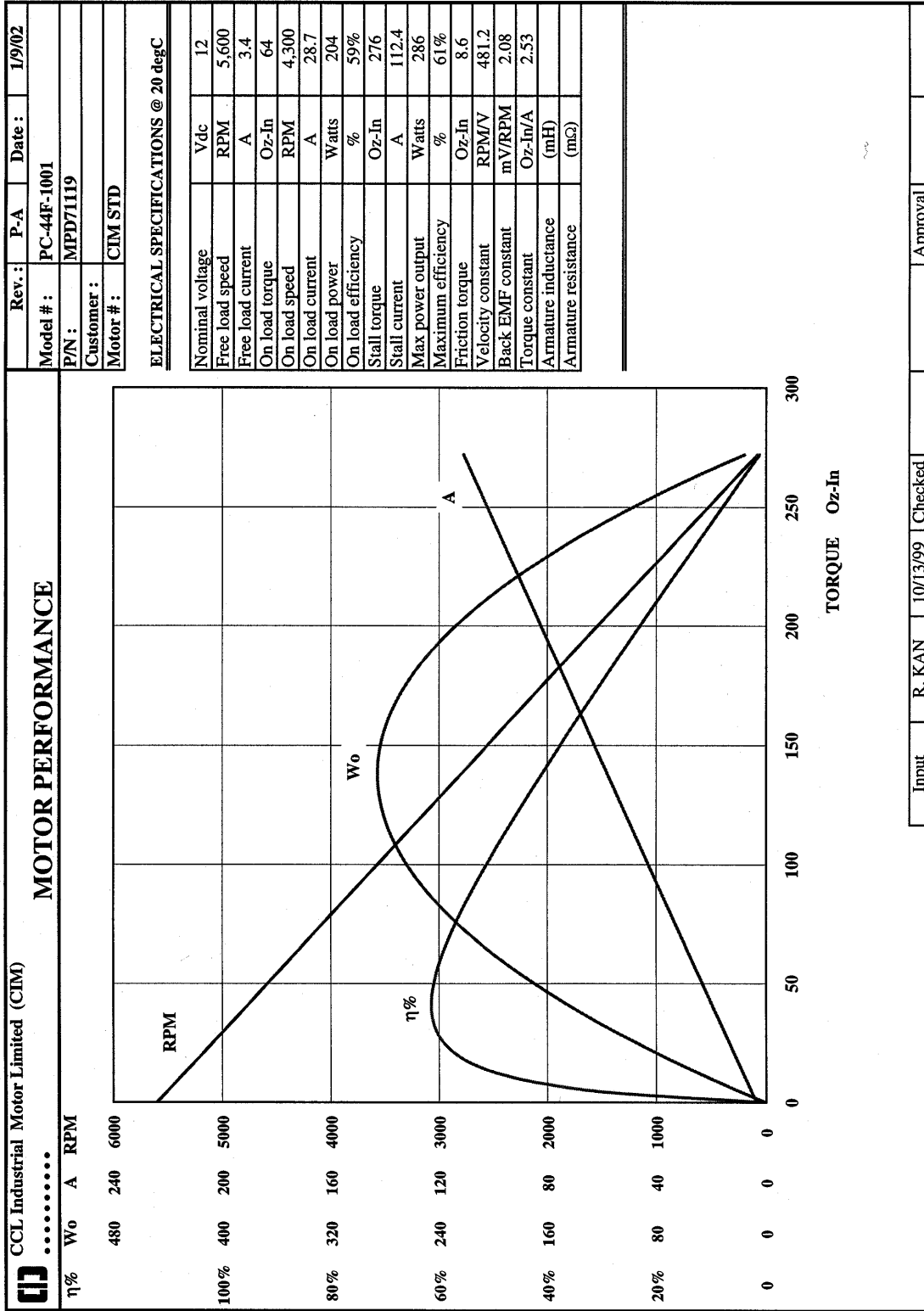
Characteristics

Torque Constant : 4.5960 m-Nm/Amp
Dy. Resistance : 1.0770 Ohms
Motor Regulation : 508.9240 Rpm/m-Nm

COMPUTER PRINT-OUT
NOMINAL MOTOR CURVES.
Performance and characteristics are measured based on limited motor samples only.

Reference no : 27413

Power Curve for Atwood Mobile (Chiaphua) Motor.



RULES UPDATE AND CLARIFICATION

- The following rules have been revised/clarified or updated
 - GM20. Robots may NOT intentionally:
 - Tip any goal over
 - Attach to the upper or lower plywood decks. (If enough force is applied to either of these decks to move the goal then you are considered to be attached).
 - Deploy any sort of mechanism below the bottom plywood deck or attach to the casters.
 - Remove any of the 1" PVC from the goals.
 - GM21. In order to pick up or pull the goal in another direction, a robot may ONLY grab onto the 16 metal pipes and their flanges between the 2 plywood decks.
- New Rule
 - GM 23. You may push on the vertical surface of the stainless steel edges around the upper and lower plywood deck to move the goal in a new direction.
- **Regarding dragging or picking up of other machines.**

Dragging or moving another robot is allowed with the stipulation that the referees must not interpret the action as malicious (i.e. designed to cause damage or tip over the robot) and the dragging mechanism must not present a risk of entanglement with the other robot (i.e. it must be easy to disengage).

FIRST WEB SITE INFORMATION

The following information has been posted on www.usfirst.org.

- Canadian Customs information
- Chairman's Award Addresses
- Link to firstcadlibrary.com parts library.
- FIRST Briefing document