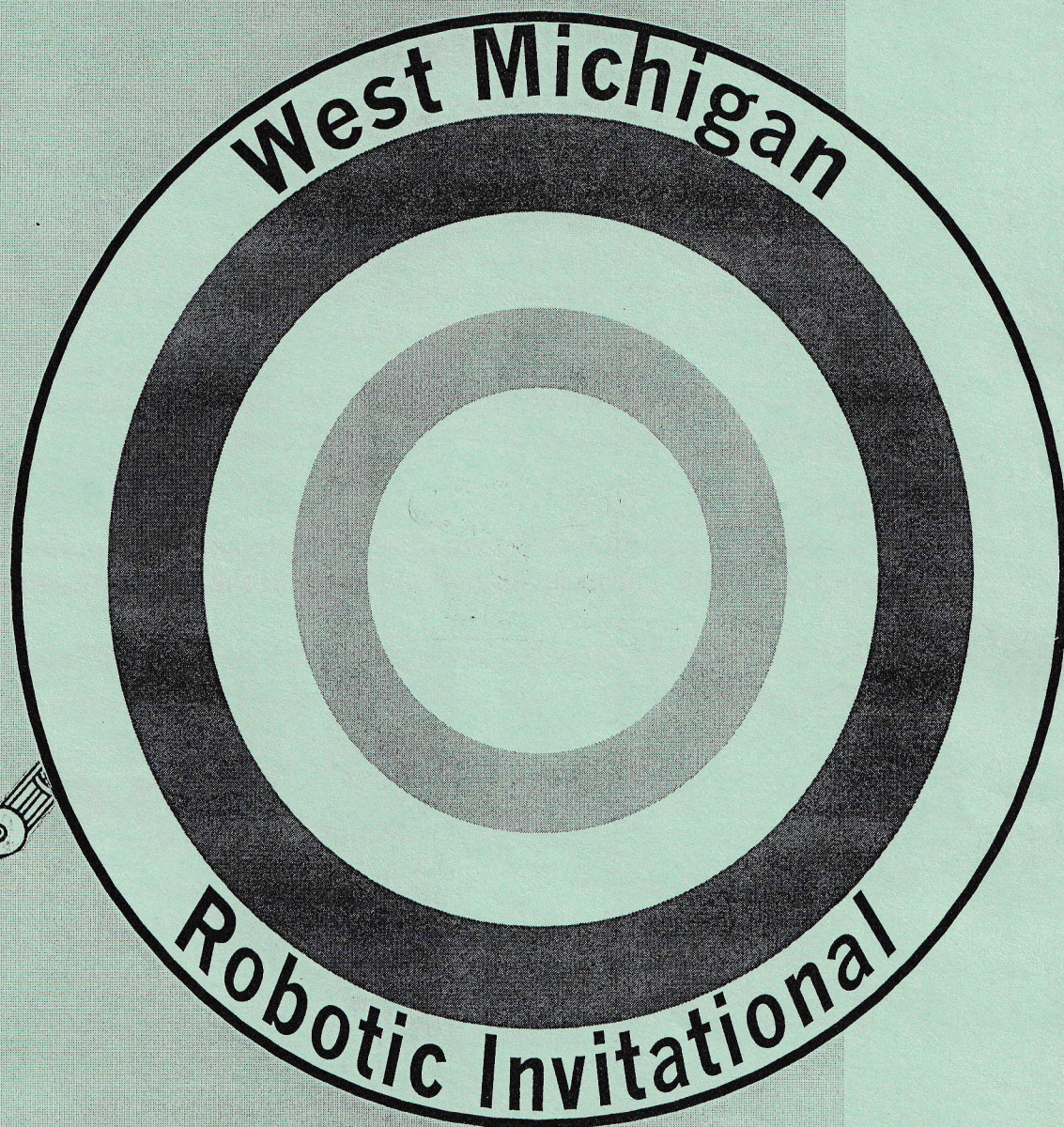
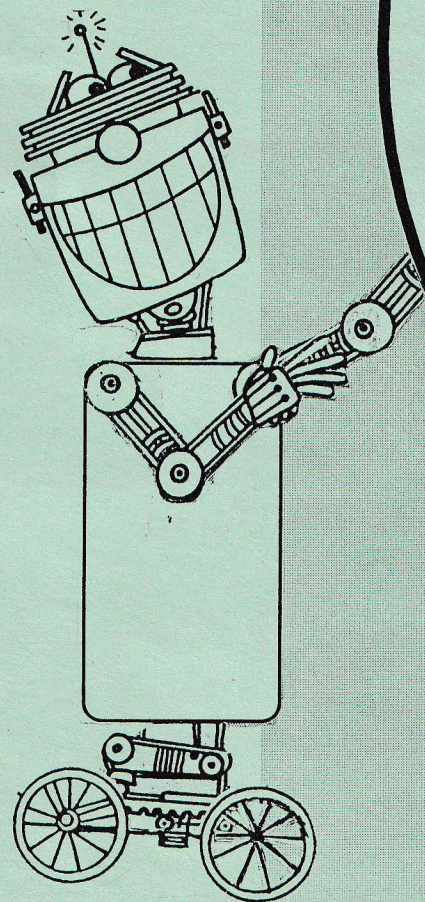


Fifth Annual



June 6, 1998

Zeeland High School
3333 96th Ave.
Zeeland, MI 49464





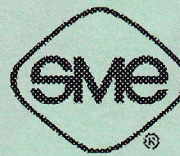
The FIRST Foundation Vision — “At FIRST, we see a world where science and technology are celebrated, where kids think science is cool and dream of becoming science and technology heroes.”

The Society of Manufacturing Engineers Chapter No.38 believes that the FIRST program is demonstrating its ability to meet it's goal.

The Goal:

To inspire curiosity and create interest in science and mathematics among today's youth by immersing them in the world of engineering.

SME is proud to be an active participant in this year's FIRST competition at Zeeland High School.



Society of Manufacturing Engineers
Grand Rapids Chapter No.38
(616) 452-1929

*I hear, I forget
I see, I remember
I do, I understand*

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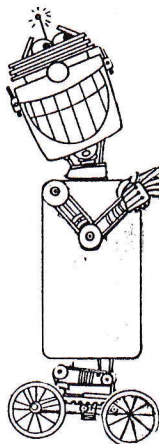
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| Team Profiles | 4 - 8 |

West Michigan Robotics Invitational

June 6, 1998

Schedule

| | |
|----------------------------------------------------------------------|--------------|
| Team check-in: (Pits open) | 8:00 - 9:15 |
| Coach's Meeting | 9:00 |
| National Anthem and Seeding Rounds | 9:30 |
| Paperwork Seminar | 9:45 |
| Lunch Break: (Cafeteria will be open) | 12:00 - 1:00 |
| VIP Lunch Featuring Dave Doiron, Representing FIRST Foundation | 12:00 - 1:00 |
| Double Elimination Rounds Begin | 1:00 |
| Crown 1998 WMRI Champion | 3:30 |
| Engineers' Driving School | 4:00 |



Welcome to today's competition from:

Holland High School and Haworth Corporation

Montague and Whitehall High Schools, and CMI-Dearborn, Inc.

West Ottawa High School and Prince Corporation

Zeeland High School and ITW/Drawform

Society of Manufacturing Engineers, Grand Rapids Chapter, No. 38

A Word About Our Founder...

Dean Kamen is president and owner of DEKA Research & Development, a Manchester, NH-based company specializing in advanced technologies in medical equipment. He also is the Chairman of Teletrol Energy Systems, Inc., a manufacturer of electronic climate control systems for large commercial and industrial buildings.

A physicist, engineer and inventor, he holds more than 30 U.S. patents. He was an undergraduate of Worcester Polytechnic Institute when he founded his first company, Auto-Syringe, Inc., in 1976 to produce the wearable infusion pumps on which he was awarded his first patents. Kamen is both an airplane and a helicopter pilot, and from 1985 to 1990 he was owner and chairman of the Enstrom Helicopter Corporation, a helicopter manufacturer.

In 1985 he established Science Enrichment Encounters (SEE), a hands-on science museum for children in Manchester, N.H. More than 200,000 visitors have passed through the doors since its opening. Five years later he founded FIRST (For Inspiration and Recognition of Science and Technology), a national non-profit organization devoted to inspiring the next generation to see science and technology as exciting, accessible and rewarding. In early 1992 President Bush took part in the inaugural presentation of the FIRST Robotics Competition, in which corporate engineers partner with high school students to build and compete radio-controlled "robo-athletes" in a national tournament.

The First Competition...

The FIRST Competition is a national engineering contest which immerses high school students in the exciting world of engineering. Teaming up with engineers from businesses and universities, students get a hands-on, inside look at the engineering profession. In six intense weeks, students and engineers work together to brainstorm, design, construct and test their "champion robot". With only six weeks, all jobs are critical path. The teams then compete in a spirited, no-holds-barred tournament complete with referees, cheerleaders and time clocks.

The partnerships developed between schools, businesses, and universities provide an exchange of resources and talent, highlighting mutual needs, building cooperation, and exposing students to new career choices. The result is a fun, exciting and stimulating environment in which all participants discover the important connection between classroom lessons and real world applications.

Each year, the Competition is different, so returning teams always have a new challenge to look forward to. However, the details are kept secret until the unveiling at the Kick-Off workshop. This provides a high level of excitement as everyone sees the new challenge for the first time and ideas immediately begin forming in people's minds.

The 1998 Game:

Ladder Logic

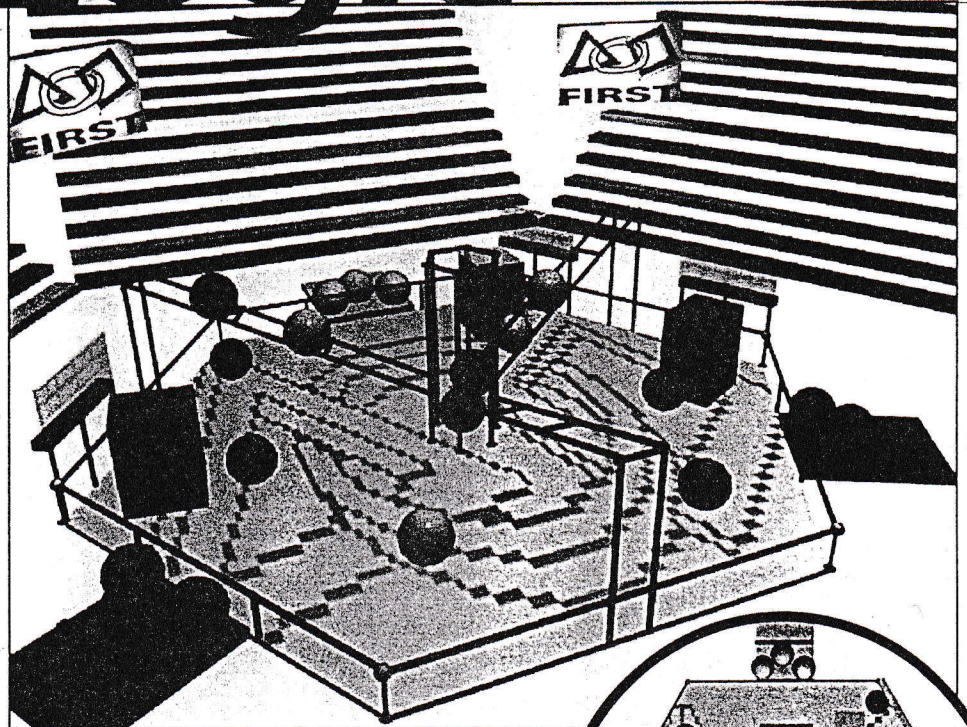
The Playing Field

The playing field is a carpeted, hexagon-shaped area with a central and three side goals. Around the perimeter of the field are three stations for human players, who drive the remote-controlled robots on the field to score points. To score points, each team has nine colored balls for their robots to transport and place on the goals. The balls are evenly distributed around the playing field.

The Robots

The robots are designed and built by the school/company teams during a six week period. The "robo-gladiators" are constructed from a wide range of materials including aluminum, fiberglass, plywood and PVC pipe. Each robot can weigh up to 130 pounds and must start each match no larger than 30" x 36" x 48".

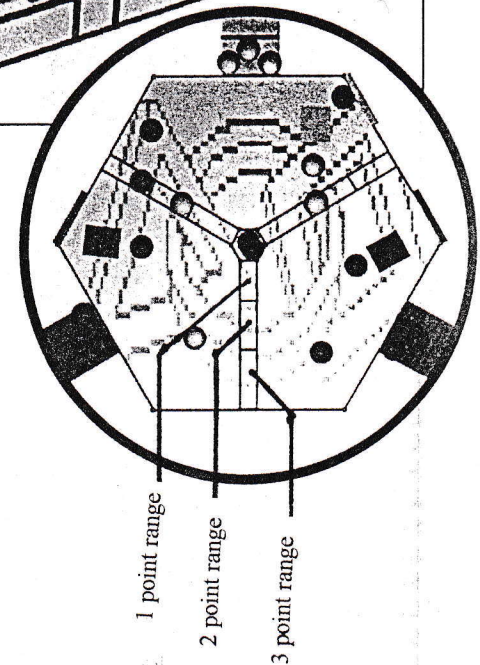
The robots use a 12 Vdc sealed lead acid battery for an on-board power supply. This battery powers cordless drill motors, automobile seat adjuster motors, window lift motors and power sliding van door motors, a diaphragm air pump, air cylinders, speed controllers and a programmable control system. The drivers use joysticks and switches to remotely control the robots via a telemetry radio system.



Scoring

In two minute matches, the three robots and human players score points by placing the balls onto the side goals or into the central goal. The balls are color-coded to identify team ownership. A human player, located outside the perimeter of the field, is allowed to hand balls to the robot or throw balls directly at the goals.

At the end of each match, the scores are counted. The balls placed on the side goals are worth 1, 2 or 3 points and the balls placed in the central goal double the score. The winner of each match is the team with the highest score.



The Juggernauts

Team Number: 1

Oakland Technical Center NE Campus; Pontiac, MI
3-Dimensional Services
Rochester Hills, MI

Robot Name: **The Juggernaut**

Students on Team: 14

Years in Competition: 2 years

Previous Awards:

National Competition; Best Play Award, 9th place overall

Team Motto: Teamwork is the key to success

Denovo

Team Number: 27

Oakland Science, Math & Technology Academy; Clarkston, MI
Eastern Michigan University

Students on Team: 17

Years in Competition: 2

Previous Awards: 1997 Midwest Regional; Motorola Quality Award
1998 Great Lakes Regional; Special Judges' Award

The Mobsters

Team Number: 33

Avondale High School; Auburn Hills, MI
Chrysler

Robot Name: **Mugzy**

Students on Team: 22

Years in Competition: 2

Previous Awards:

Chief Delphi Tournament; 2nd Place

Demolition

Team Number 35

Montague High School; Montague, MI
Whitehall High School; Whitehall, MI
CMI-Dearborn, Inc.

Robot Name: **Demolisher**

Years in Competition: 1

Students on Team: 15

Team Motto: Don't mess with C4!



Genesis*Team Number: 46*Northwestern Community High School; Flint, MI
Delphi Energy and Engine Management SystemsTeam Nickname: **Delphi Wildcats**Robot Name: **Ferocious Feline**

Number of Students: 27

Years in Competition: 1

Previous Awards:

Rookie All-Star Award

Team Motto: T.E.A.M. - Together Everyone Achieves More

Chiefs*Team Number: 47*Pontiac Central High School; Pontiac MI
Delphi Interior & Lighting SystemsRobot Name: **Chief Delphi**

Number of Students: 38 Students

Years Competing: 3

Awards Won:

1997 National Chairman's Award

1997 National Competition Finalist

1997 DEKA New England Regional;
Judges' Award

1996 National Rookie All-Star Award

1996 DEKA New England Regional;
Rookie Allstar Award

1996 WPI Scholarship Award

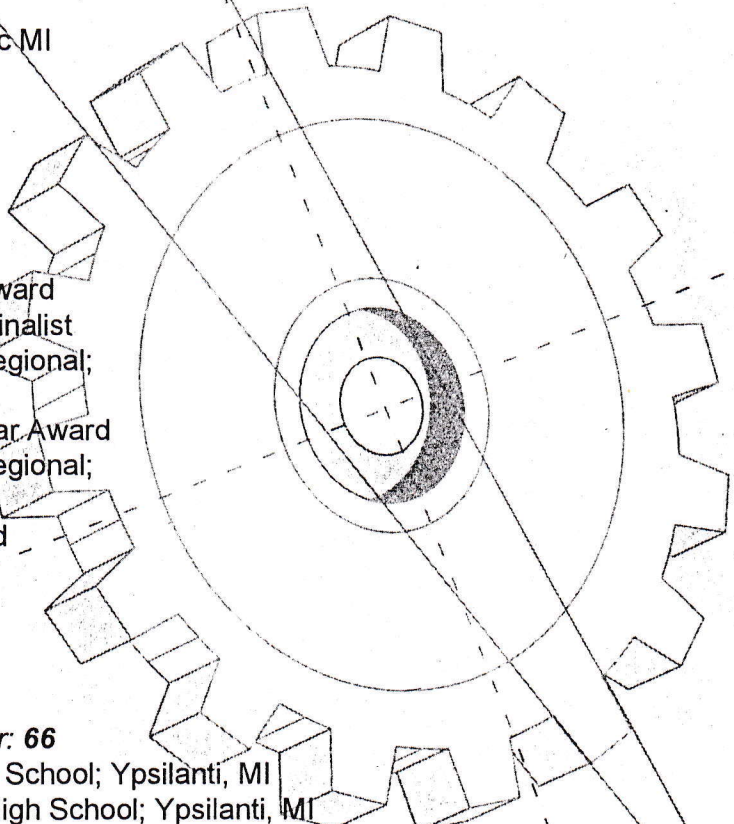
Team Motto: Excited About First

FAMS*Team Number: 66*Ypsilanti High School; Ypsilanti, MI
Willow Run High School; Ypsilanti, MIRobot Name: **SHORT CIRCUIT**

Number of Students: 20

Years in Competition: 1

Team Motto: Together Everyone Achieves More



The Hot Team

Team Number: 67

Milford High School; Highland, MI
Lakeland High School; White Lake, MI
Harbor High School; Highland, MI
General Motors Proving Ground

Robot Name: **The HOTbot**

Students on Team: 52

Years in Competition: 2

Previous Awards:

- 1997 National Rooke All-Star Award
- 1998 Southwest Regional: Honeywell Leadership
in Control Award, 4th in robot competition
- 1998 Motorola Midwest Regional: Motorola
Quality Award, 3rd in robot competition
- 1998 Great Lakes Regional: Honeywell Leadership
in Control Award, 4th in robot competition (Cont'd)
- 1998 National Championship: Honeywell Leadership
in Control Award, Chairman's Award finalist,
4th in robot competition

Team Motto: Heroes of Tomorrow

Truck Town Terror

Team Number: 68

Oakland County School Districts; Clarkston MI
General Motors Truck Group

Robot Name: **T3**

Students on Team: 23

Years in Competition: 1

Team Motto: Bigger, Faster, Stronger, Smarter

Team Hammond

Team Number: 71

Clark High School; Hammond, IN
Hammond High School; Hammond, IN
Morton High School; Hammond, IN
Beatty Machine & Manufacturing

Robot Name: **Beattyjuice III**

Students on Team: 30

Years in Competition: 3

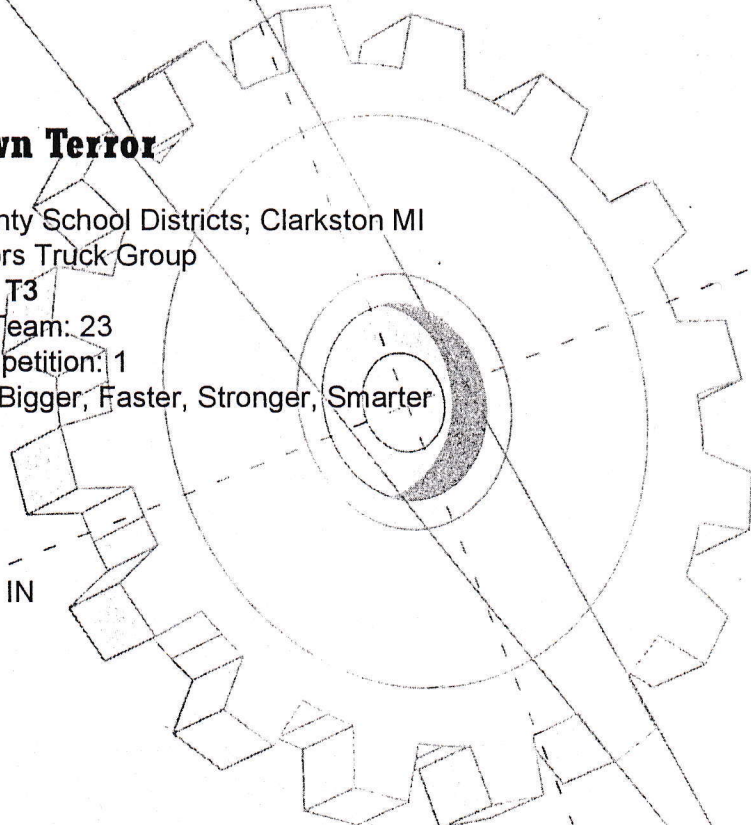
Previous Awards:

- 1997 Midwest Regional: Top Seed
and Champion
- 1997 National Competition: Champions
- 1997 Honeywell Leadership in Control Award

Team Motto: Kick some 'bot

DIESEL TECHNOLOGY

COMPANY



engineering
mannesmann
Dematic

Rapistan Systems

Phantom

Team number: 74
Holland High School; Holland, MI

Robot Name: **Phantom**
Students on Team: 25
Years in Competition: 4
Team Motto: You won't even see us coming.



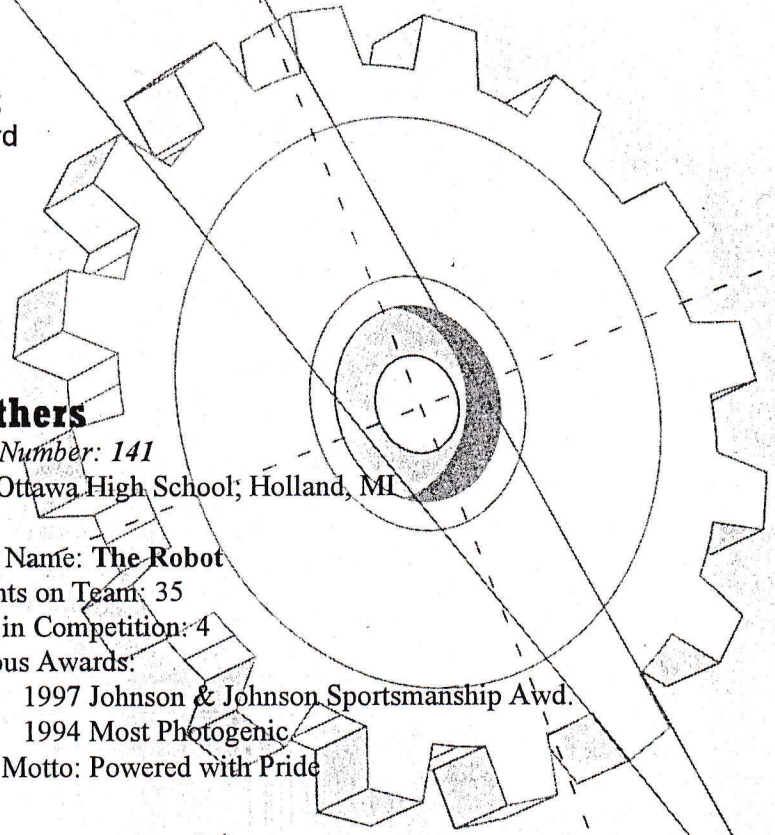
BOB (Built on Brains)

Team Number: 85
Zeeland High School; Zeeland, MI
ITW Drawform
Students on Team: 15
Years in Competition: 2
Previous Awards:
1998 Great Lakes Regional;
Best Defensive Player Award

x Panthers

Team Number: 141
West Ottawa High School; Holland, MI

Robot Name: **The Robot**
Students on Team: 35
Years in Competition: 4
Previous Awards:
1997 Johnson & Johnson Sportsmanship Awd.
1994 Most Photogenic
Team Motto: Powered with Pride



y

 **Quality System Designs**
Quality System Consulting

Extreme Velocity

Team Number: 161

Cass Technical High School; Detroit, MI
Oakland Technical School; Royal Oak, MI
Textron Automotive Company

Robot name: **Extreme Velocity**

Students on Team: 30

Years in Competition: 3

Previous Awards: 1995 Rooke All-Star
1996 Team Spirit Award

Team Motto: "XT" is in the house

Rising Phoenix

Team Number: 163

International Academy, Bloomfield Hills, MI
TRW VSSI, Siemens

Robot Name: **Talon**

Students on Team: 19

Years in Competition: 1

Previous Awards: 1997 Chief Delphi Invitational:
Rookie All-Stars Award

Team Motto: From ashes to the top!

Rochester

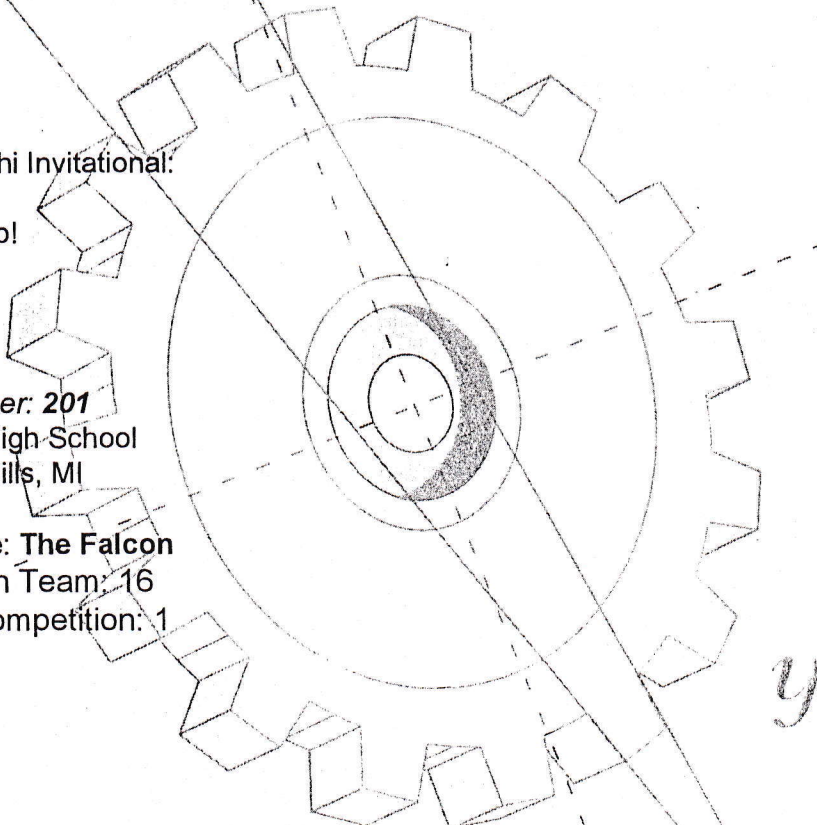
Team Number: 201

Rochester High School
Rochester Hills, MI

Robot Name: **The Falcon**

Students on Team: 16

Years in Competition: 1



GW I

ENGINEERING, INC.

DESIGNERS & BUILDERS OF AUTOMATED MACHINE SYSTEMS

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What Are the Goals of the Program?

To expose middle and high school students to engineers and the engineering profession. Our goal is to introduce the students to engineers and show them that what they do is not only vital to our country, but also can be fun.

To create an environment that makes "heroes" out of engineers and scientists. The environment of this program creates incorporates many of the same appealing aspects of the world of sports, such as: finite winners/losers, referees, practice and the game itself. The result is excitement for the field of engineering.

To demonstrate a company's engineering capability, resources and commitment. FIRST provides a forum for a participating company to "give back" to the community, to highlight the creativity and energy of its employees and to showcase its technological prowess in a very visible form.



Thanks to all our sponsors

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**And Thanks To All The Volunteers
Who Made This Event Possible**