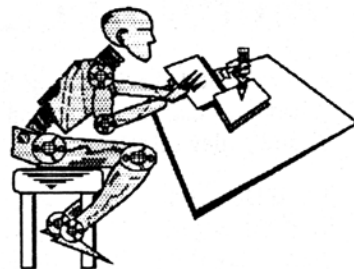


# DPRG

DALLAS  
PERSONAL  
ROBOTICS  
GROUP



October 1993

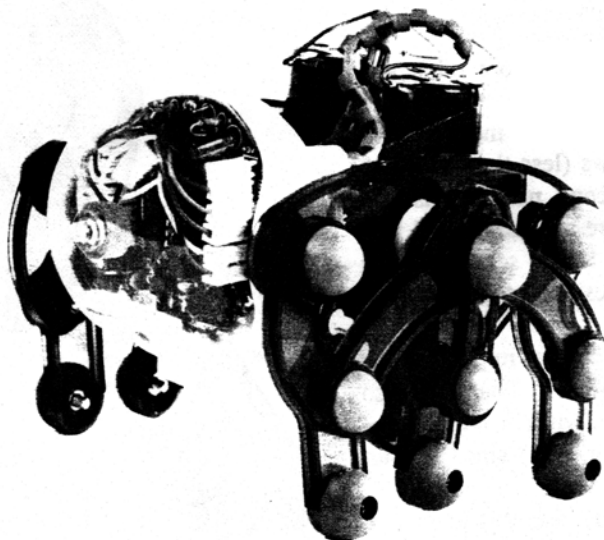
A Newsletter for Personal Robot Enthusiasts

## 10 Point Type, Smaller But More Abundant

You may have noticed something different about the DPRG newsletter, but can't quite put your finger on it. We've reduced the type size to 10 point so we can pack in even more valuable information than you ever thought possible. So get your magnifying glass out and reserve more time from your busy schedule to enjoy personal robotics.

### Your Published!

You know all of that valuable information you've accumulated over the years? Remember all of those lessons learned from smoking transistors, missing curly brackets and broken gear teeth? Well, its time to share your pain and experience with others who are about to embark on the same project. Not only will you become a **CERTIFIED PUBLISHED AUTHOR**, but your article will be sent to the **GLOBAL MASSES** resulting in cheers and praise from the **PERSONAL ROBOTICS COMMUNITY**. So, sit down and write an article for the benefit of mankind and yourself. You can send it to the DPRG via mail or through the BBS in any format - even napkins.



This Spider robot kit uses an infrared sensor to avoid obstacles. The unit sells for \$76 and is available from the Computer Museum Store, 300 Congress St. Boston, MA 02210 (617) 426-2800 x307.

## October Meeting Contest Trial Runs

At the October meeting we'll set up the contest course once again so members can test out their robots in preparation for the November contest.

Once again we will distribute data books for Intel and Motorola microprocessors along with catalogs describing stepper motors and other robot-related items.

## Robotics/AI BBS

(214) 258-1832

### President's Note

Greetings fellows robot enthusiasts! Welcome to another issue of the DPRG newsletter. The November contest is quickly approaching and you can hear the sound of electric screwdrivers and keyboards in the background. The September meeting was packed with homebrew robots. Not a single store-made unit was found (such as heros). All were crafted by people who love making things (specifically robots) work! The activity level was so high that there wasn't any time for the normal bureaucratic nonsense that consumes 50% of the time at other club's meetings. People were huddled around robots as their creators showed off new accessories. Although not all units were ready for the contest trial run, most were capable of moving under operator/computer control. If you think it's simple to get to that point, just ask any builder how many hours it took.

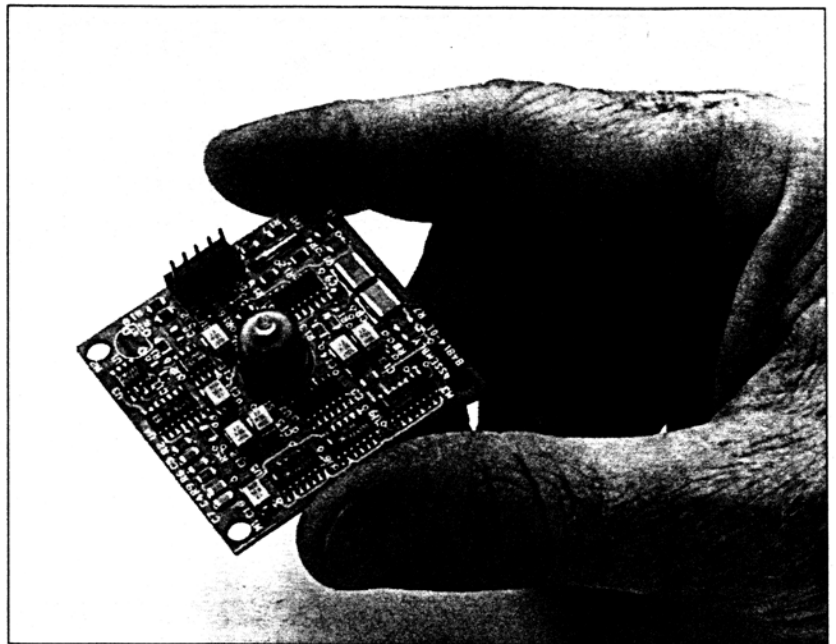
During the October meeting, we'll setup the contest course once again so members can try out their designs. All in all, the contest has been a real attention grabber, it won't be the last! See you at the meeting.

Roger Arrick

# News-worthy Items



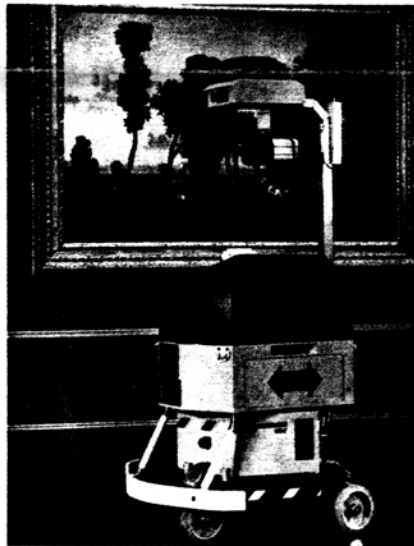
*Scout-About is a home robot security system. Samsung Electronics America Inc. developed the robot that silently roams through the area to be secured. It then stops and monitors a 30-ft radius for intruders. When security is breached (it senses motion and heat), Scout-About sounds an audible alarm that alerts an automatic dialer to contact a central monitoring system, which calls authorities. Due to the unit's portability (it weighs under 16 lb), it is ideal for those who don't want to invest in a permanent, hard-wired system. The unit can be used with its radio-frequency monitor to listen for a baby's cries in the nursery or with its medical alert pendant for those who need special care.*



## RIGHT-SIZE BIAXIAL CLINOMETER

Efficient and precise Model 900 biaxial clinometer satisfies a broad range of requirements for manufacturing, robotics, and all machine positioning and control applications. Features include a gravity-referenced tilt sensor, 2 x 2 x 0.64-in. dimensions, and a wide input voltage range. **Applied Geomechanics Inc.**, 1336 Brommer St., Santa Cruz, CA 95062 (408) 462-2801

## Air-Sampling Robot Protects Artwork



*The Cybermotion SR2 environmental patrol robot monitors air quality in the Los Angeles County Museum of Art. The robot also can detect intruders.*

The Los Angeles County Museum of Art is using a mobile security robot from Cybermotion Inc., Roanoke, VA, to help maintain tighter environmental controls in the museum.

The Cybermotion SR2 robot is equipped with air-sampling equipment that can detect gas, smoke, temperature, and humidity conditions that can harm works of art.

The SR2 also has a CCTV camera, an audio detector, and a scanner that detects intruders.

The scanner begins a survey by recording an image of an area in all directions. The scanner then searches for disturbances or changes in the image, which are evaluated in both passive infrared and microwave images to determine the likelihood that an intruder is present.

A fleeing intruder causes an alarm. If an intruder remains still within 25 ft of the scanner, microwave radar picks up his breathing and heartbeat.

## Robot Contest

*\$1,000 Grand Prize*

Can your robot run a maze, search for a burning candle and extinguish it? If so, contact Jake Mendelsohn, 950 Trout Brook Dr., West Hartford, CT 06119, (203) 231-2824.

## Robotics Society of Southern California

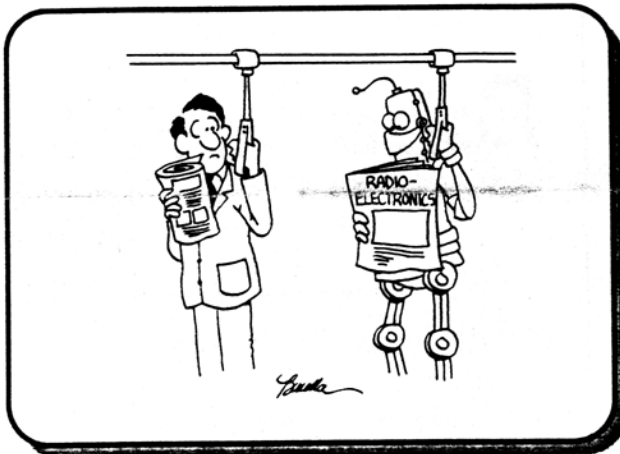
The RSSC has a newsletter and sponsors workshops and contests.

**Mail:** RSSC, 10471 S. Brookhurst, Anaheim, CA 92804  
**Robot Dawn BBS:** (714) 538-0614 1200/2400 8-N-1  
**President:** Jerry Burton (714) 535-8161

# Mechanical Parts Sources

You'll find the following list of mechanical parts sources useful when building your robot. Most of these companies have catalogs that they will send to you at no cost. Many of these catalogs also contain valuable technical information such as gear and pulley calculations.

Allied Devices	2365 Milburn Ave. Baldwin, NY 11510	516-223-9100	Small gears, bearings, pulleys.
Bayside Controls	20-02 Utopia Pkwy. Whitestone, NY 11357	718-352-8300	Gear reducers for NEMA motors.
Boston Gear	14 Hayward St. Quincy, MA 02171	800-343-3353	Large gears, bearings, pulleys.
Browning Mfg.	Maysville, KY 41056	606-564-2011	Large gears, bearings, pulleys.
Helical Products	901 W. McCoy Ln. Santa Maria, CA 93456	805-928-3851	Helical shaft couplers.
LoveJoy Inc.	2655 Wisconsin Ave. Downers Grove, IL 60515	312-852-0500	Shaft couplers.
Martin Sprocket	P.O. Box 888, Arlington, TX 76004	817-465-6377	Large gears, bearings, pulleys.
McMaster Carr	P.O. Box 4355 Chicago, IL 60680	708-833-0300	MOTHERLOAD, parts, tools, etc.
Nordex	50 Newton Rd. Danbury, CT 06810	203-792-9050	Small gears, bearings, pulleys.
PIC Design	P.O. Box 1004 Middlebury, CT 06762	800-243-6125	Small gears, bearings, pulleys.
Plastock	Three Oak Rd. Fairfield, NJ 07006	201-575-0038	Plastic gears and pulleys.
SECS Inc.	520 Homestead Ave. Mt. Vernon, NY 10550	914-667-5600	Small gears, bearings, pulleys.
Seitz	Torrington Ind. Ln. Torrington, CT 06790	203-489-0476	Small gears, bearings, pulleys.
Small Parts	6891 N.E. Third Ave. Miami, FL 33238	305-751-0856	Gears, drill bits, tools, metal.
Solidur Plastics	200 Industrial Dr. Delmont, PA 15626	412-468-6868	Small pulleys, rails.
Stock Drive Products	2101 Jericho Trpk New Hyde Park, NY 11040	516-328-0200	Small gears, pulleys, metric/USA
Union Gear	111 Penn St. Quincy, MA 02269	617-479-6800	Large gears, bearings, pulleys.
Winfred M. Berg	499 Ocean Ave. East Rockaway, NY 11518	516-599-5010	Small Gears, bearings, pulleys.



## The Compass Sensors Are Coming!

Steve Rainwater has ordered several of the Dinsmore 1490 compass sensors. These units will detect 8 directions N-S-E-W, NE-NW-SE-SW. The outputs are open-collector and are capable of driving TTL, CMOS or even LED's. The price is about \$12/each. See Steve at the October DPRG meeting.

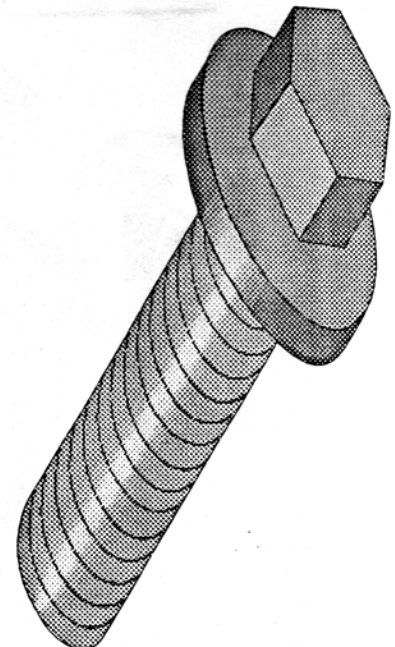
## The ABS's of Screw Threads

Are you a newcomer to mechanical designs? Have you started building your robot and discovered a strange numbering system for screws and nuts at your local hardware store? It's actually very easy. The first number designates the diameter of the screw. This measurement is based on the outside of the threads, not the inside. On small screws (less than 1/4 inch diameter) this is simply a number such as #4, #6 or #10. The second number (usually separated by a dash) designates the number of threads per inch. There are coarse and fine threads for each size screw, so don't overlook this second number. A 1/4-20 screw will not work with a 1/4-28 nut! The third number (usually separated by a 'x') designates the length of the screw not including the head.

Concerning thread types. There are several screw thread types. The most important one for robot builders is the machine screw which are made to couple with nuts. There are also wood and sheetmetal screws made to work directly with these materials without nuts. Non-machine screws sometimes don't have the second number (threads per inch) since it's not important for the applications.

Now for nuts, the same as screws except they do not have the length number on the end.

As for washers, the same except that the second and third numbers are not used since washers don't have threads or lengths.



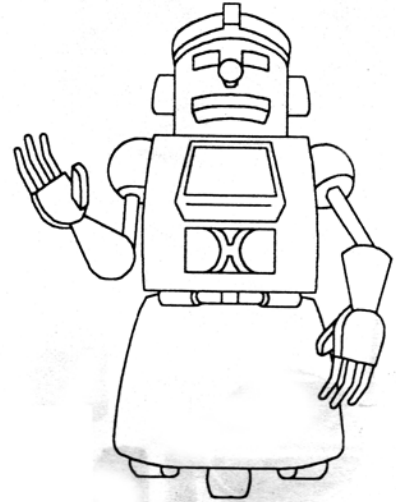


# October 1993 NEWSLETTER

## ***Inside -***

- October Meeting***
- Where to Get Mechanical Parts***
- The ABC's of Screw Threads***
- November Robot Contest Rules***

**September Meeting:**  
Saturday the 9th, 1:30 PM  
At the Dallas INFOMART



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Dallas Personal Robotics Group  
C/O Roger Arrick  
P.O. Box 1626  
Hurst, TX 76053

