RPM PSI®
Rotating Precision Mechanisms Inc.

Antenna, Optical and Sensor Positioning Systems and Components

Applications
- Air Traffic Control (ATC)
- Military Radar (Land/Air/Sea)
- Satellite Communications (TT&C)
- Unmanned Aerial Vehicles (UAV)
- Test and Instrumentation (RF/Optical)

www.rpm-psi.com
COMPANY PROFILE

Rotating Precision Mechanisms, Inc. (RPM) was formed and incorporated in 1975 as a California Corporation.

For over 31 years RPM has provided customers a broad range of precision products and accessories in the field of RF/Microwave, Electro-Optics and similar areas requiring positioners.

RPM has assembled a team of degreed senior level engineers and production specialists to cover each of the disciplines necessary to produce and deliver high quality, precision systems and sub-systems.

RPM has over 250 years of combined direct mechanical and electrical control engineering experience in pedestal and rotator design.

PRODUCT DEVELOPMENT

Typically, RPM assists customers in the definition phase of a program. We help our customers identify specific positioner requirements and then select designs and hardware approaches which will meet the overall system objectives in a cost effective manner.

Our modular approach to hardware development often makes it possible to adapt existing designs to new requirements. This reduces development time and cost, while assuring high quality sub-systems using proven components.

The positioner product line includes rotators, pedestals, gimbals and stabilized platforms in both geared and direct drive configurations.

RPM’s product line has been used for both tracking and non-tracking applications. We have provided positioners for use in ground based, airborne and shipboard applications. Ground based systems come in fixed, transportable, and vehicle mounted configurations. Positioners are available in both post and split yoke styles with options for dual drive and multiple axis arrangements. Designs use conservative performance ratings, resulting in trouble free, long-life operation.

In addition to our standard proprietary lines, RPM supplies modified and custom designs to meet the customer’s specific requirements. RPM provides spare parts and product support for all products manufactured since the company’s inception. In addition, complete refurbishment and upgrades to pedestals and hardware manufactured by other companies can be provided in a timely and cost effective manner.

Over 1500 positioners in use worldwide provide a complete array of standard, Commercial Off The Shelf (COTS) and Non-Developmental Items (NDI) for both commercial and military applications.

ENGINEERING

RPM uses the most modern computer design tools such as AutoCAD 2007® (CAD), Mechanical Desktop 2007® and Inventor 11® (Parametric Solid Modeling), OrCAD 9.1® and Multisim 9® (Electronics), COSMOS/DesignSTAR 2006® (FEA), Lab Windows® (Instrumentation), and SURFCAM 2005® (CAM).

3-D Inventor  Wire Frame Model  Finite Element Analysis Model

PG-1502
MANUFACTURING AND TESTING

RPM provides precision manufacturing and testing of the positioner/pedestal and its control system. In addition, we provide turnkey integration of antennas, sensors, optics, rotary joints, sliprings, waveguide and other associated equipment.

Precision operation and optimum performance is assured by critical inspection of each part. Each product is subjected to a rigorous final inspection and performance test. Each standard model is designed to be modified at minimum cost and integrated into the most demanding specification requirements.

As a team member, we provide extended expertise related to positioning equipment, freeing the prime contractor's engineering staff to concentrate their efforts on the overall system.

Experience and a detailed understanding of the environment in which the product will be used is a key part of engineering quality hardware. Having this experience gives RPM's staff of engineers the background needed to design and manufacture the highest quality positioning products for your application.

FACILITIES

RPM is housed in 30,000 sq. feet of modern, secure, totally air conditioned buildings in Northridge, California, a Los Angeles suburb. An additional 20,000 sq. foot rear fenced yard is available for static and dynamic testing.

RPM is recognized by customers in the commercial, government and scientific communities as the preeminent supplier of positioning systems and components.

RPM, operating as a small business, maintains a quality assurance program in compliance with RPM-1-45208A, based on MIL-I-45208 and is an approved vendor by DCMAO, the FAA and many large prime contractors. RPM business practices and accounting methodology are consistent with the requirements of FAR.

A well equipped machine shop with modern CNC machining centers for the manufacture of all parts is on the premises, allowing quick response and delivery cycles.
Each model series has many standard designs; only a few are shown here. Please contact factory for additional information. All specifications shown in this catalog are general in nature and subject to change without notice.

PEDESTALS

13m Telemetry Tracker
PMRF/Oceantronics
RPM PG-5001

MODEL/SERIES DESCRIPTIONS

PG - Pedestal, Geared:
High output drive torque, servo controller applications.

PT - Pedestal, Torque Motor:
Direct drive, EL/AZ pedestal (no gearing/no backlash) for high accuracy with exceptional low and high velocity performance.

Post/split yoke, dual drive and multi-axis (up to 6) designs are available.

* Most popular standard EL/AZ Pedestal Model Series
Each model series has many standard designs; only a few are shown here. Please contact factory for additional information. All specifications shown in this catalog are general in nature and subject to change without notice.

ROTATORS

Rotator for
100 x 100 ft Antenna
RPM  RG-4003

MODEL/SERIES DESCRIPTIONS

RG - Rotator, Geared:
High torque, free running and servo controlled applications

RT - Rotator, Torque Motor:
Direct drive rotator (no gearing/no backlash) for high accuracy with exceptional low and high velocity performance
Each model series has many standard designs; only a few are shown here. Please contact factory for additional information. All specifications shown in this catalog are general in nature and subject to change without notice.

ANTENNAS, CONTROLLERS & MISC.

8 ft Telemetry Tracking System
RPM  PG-10520
RPM works with Antenna and RF vendors to develop solutions for specific customer requirements.

Model A-150  S-Band
Model A-160  L-Band
Model A-170  S/X-Band

Options:
- Severe Environmental Power
- Commercial Power with Battery Back-up
- Severe Environmental Assemblies

FC-2002
S-Band ConScan Autotracking Feed

Moving Target Indicator (MTI) Reflectors
Autonomous Solar Powered

CM-2000 Series
- ATX Form-Factor Motherboard
- Windows® based Software
- Local/Remote Operation
- Customer-Defined Screens, Menus, Functions & Interfaces
- Tracking & Non-tracking Use

DE-2000 Series
- Exterior Environmental Enclosure (NEMA 4x)
- Digital/Analog
- 8051 or X86 Based

CB-2006 Series
- Hand Held Control Unit
- Digital/Analog
- 8051 Based
- Rate Knob or Joystick

T-100 Series
- AN/MSW-13-19
- 200+ lb Capacity
- Adjusts From 40-60" High
- Night Leveling
- Net Wt 41 lbs

T-102 Series
- TOW-Type Tripod
- Quick Release Clamp
- 400 lb Capacity
- Adjusts From 13.5-28" High
- Net Wt 24 lbs

MA-100 Series
- Portable, Manually Extending. Quadripod
- Adjusts From 6-19.5 ft
- 50 lb Capacity
- Net Wt 120 lbs

J-150 Series
- AN/TPQ-36/37
- 3,000 lb Capacity
- 36" Travel
- Net Wt 32 lbs

Product Lines Not Shown:
Antenna Test Range Equipment
Position Accuracy Test Set
PA-1000
Center Head Boresight Laser Set
PA-1500
Slip Rings SRU/SRH
<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>RG-0525</td>
<td>IFF Antenna Rotator</td>
</tr>
<tr>
<td>RG-0703</td>
<td>JTE-IFF Antenna Rotator</td>
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<td>RG-1052</td>
<td>IFF Antenna Rotator</td>
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<td>IFF Antenna Rotator</td>
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<td>RG-1521A</td>
<td>IFF Antenna Rotator</td>
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<td>RG-2504</td>
<td>PAR 80 Antenna Rotator</td>
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<tr>
<td>RG-2504B</td>
<td>Antenna Rotator</td>
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<tr>
<td>RG-2509</td>
<td>Tower Mounted SSR Antenna Rotator</td>
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<tr>
<td>RG-3501</td>
<td>Antenna Rotator with Mechanical Limits</td>
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<tr>
<td>RG-4004</td>
<td>MPN-14( ) Antenna Rotator</td>
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<tr>
<td>PG-2000A</td>
<td>AN/MPN-25 Operational</td>
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**AIR TRAFFIC CONTROL (ATC): MOVING TARGET INDICATOR (MTI) REFLECTORS**

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
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<tbody>
<tr>
<td>A-150C</td>
<td>S-Band Solar Power with SB-200</td>
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<tr>
<td>A-150C</td>
<td>S-Band Enhanced Solar Power with SB-200A</td>
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<tr>
<td>A-170</td>
<td>S/X-Band Commercial Power with Battery Back-up &amp; LB-100</td>
</tr>
<tr>
<td>A-170D</td>
<td>S/X-Band Solar Power with SB-201A</td>
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<tr>
<td>SB-200</td>
<td>Solar Power Module</td>
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</tbody>
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Typical examples of RPM Pedestals, Rotators, Antennas and Controls used for Military Radar.

AN/SPQ-9B Fire Control and Search Radar on the U.S.S. NIMITZ
RPM RG-1522

Photo courtesy of Northrop Grumman
Typical examples of RPM Pedestals, Rotators, Antennas and Controls used for Satellite Communications.

Satellite
Communication
Antenna
RPM PG-2508

Photo courtesy of ORBCOMM & MFGRATECH
Typical examples of RPM Pedestals, Rotators, Antennas and Controls used for Unmanned Aerial Vehicles.

Ground Data Terminal (GDT)
RPM PG-1019

Photo courtesy of General Atomics Aeronautical Systems, Inc.
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UNMANNED AERIAL VEHICLES (MOBILE)

PG-1014A
UCAV

PG-1021A
TIGDL/EAGLE/ASTOR/MIST II A

PG-1021B
5 ft Drone Control

UNMANNED AERIAL VEHICLES (TRANSPORTABLE) GEAR DRIVE

PG-0503
TCDL

PG-0507
MP-CDL

PG-0602
Predator GDT

UNMANNED AERIAL VEHICLES (TRANSPORTABLE) DIRECT DRIVE

PT-0513A
UCARS

PT-0513A
TALS

PT-0513B
UCARS/V2
Ship Landing of Fire Scout
Typical examples of RPM Pedestals, Rotators, Antennas and Controls used for Test & Instrumentation.

Photo courtesy of Northrop Grumman
Amherst Systems
Upgrade of All Manufacturers' Pedestals

Performance: Meeting or Exceeding Original Specs
Motors: New DC Permanent Magnet, Brushless or Dual Bias Drive
Gearboxes: New Bearings, Gears and Redesigned, Welded Steel Construction A/R
Position Transducers: New A/R
Wiring: New A/R
PARTIAL CUSTOMER LIST

AAI Corporation
Aeroflex
Airspace Technology
American Nucleonics Corp.
Anaren Microwave, Inc.
BAE Systems (formerly Sanders Associates)
Ball Aerospace & Technologies Corp.
Boeing Company (Space & Defense Group)
Broadcast Microwave Services, Inc.
California Microwave (L-3 Communications)
Chelton/Atlantic Microwave Corp.
Cincinnati Electronics Corp. (L-3 Communications)
Comptek Research, Inc. (Northrop Grumman)
Cubic Defense Systems
Datron Systems, Inc. (L-3 Communications)
DESC
Desert Research Institute
Drev, Canada
DRS Technologies
DRS Training and Control (formerly Metric Systems)
DYNCORP
Dynetics, Inc.
E W Associates
EDO Reconnaissance (formerly Condor Systems)
E.G &G
E-O Imaging
European Aeronautical Defense & Space Co. (EADS)
EEO, Inc.
EM Systems, Inc.
EMC Corporation
Emerson Electric Company
Environmental Technology Group, Inc.
ERI
Federal Aviation Administration (FAA)
GEC Marconi (formerly TRACOR Flight Systems)
General Atomics Aeronautical Systems, Inc.
General Atomics Corporation
General Dynamics (Canada)
General Electric
Gould Electronics-NavCom Systems/3DBM
GTE Government Systems Corp.
Hanscom Electronic Systems Division (USAF)
Harris (GCSD)
Harry Diamond Labs
Herley-Vega Systems
INDRA (Madrid, Spain)
ITT AES (Formerly Kaman Sciences, Colorado)
ITT Gilfillan
Jacobs Sverdrup
Jet Propulsion Laboratory (JPL)
Johns Hopkins University
JTI
Kaman/NRL
L-3 Communications Systems—West
L-3/EMP Systems
L-3/Interstate Electronics Corp.
L-3 Integrated Systems LP
L-3/Microdyne Corporation
L-3/Randtron
Lawrence Livermore National Lab
Lockheed Aeronautical Systems Company
Lockheed Martin/WDL
Lockheed/Comsat
Lockheed Martin Integrated Systems and Solutions
Lockheed Martin/General Dynamics
Malibu Research Associates
Metric Systems
Micro-Sys
MIT/Lincoln Laboratory
MS Trading (formerly Sejin Trading, Korea))
NASA (DFRC, Goddard, Ames)
National Telecomm & Info Administration
NATO C3
NATO MEWS
Naval Research Laboratory (NRL)
NC3A Organization (formerly Shape Technical Center)
Northrop Grumman
Northrop Grumman-TRW
Northrop Grumman—Amherst Systems
Northrop/Litton Systems Canada Limited
Oceantronics
Ohio State University
Orbit Technology (formerly Orbit/Flam & Russel, Inc.)
Orbital Sciences Corporation/ORBCOMM
Orbital Sciences/Space Data Division
Radiation Systems, Inc.
Raytheon/E-Systems
Raytheon Canada LTD.
Raytheon Co. Space and Airborne Systems
Raytheon Technical Services Co. LLC
SERCO (formerly RCI)
Sea Space Corporation
Sierra Nevada Corporation
Sierra Technologies, Inc. (Sierra Res. Div.)
SkyGuide (Zurich, Switzerland)
Smithsonian Astrophysical Observatory
Synetix
Syracuse Research Corp.
TAMSCO
TeAM, Incorporated
Technology Service Corp.
Telemus
Telephonics Corp.
Thales ATM, Inc. (Formerly Airsys, Cardion)
Unicor/Federal Prison Industries
University of Nevada
University of Texas
US Department of Commerce
US Department of Transportation
US DOD, DSOC Columbus
US Air Force, Hill AFB
US Air Force, McClellan AFB
US Air Force, Columbus
US Army, Fort Monmouth
US Army, Missile Command
US Army, CECOM
US Army, Toehanna
US Army, White Sands Missile Range
US Navy, China Lake (NAWCWD)
US Navy, Corona Division (NSWC)
US Navy, Crane Division (NSWC)
US Navy, Dahlgren Division (NSWC)
US Navy, OSO SESEF (NUWC)
US Navy, Patuxent River (NAVCAD) (St. Inigos)
US Navy, Pt. Mugu (NAWC)
US Navy, Pt. Mugu (NAWCWD)
US Navy, Port Hueneme Division (NSWC)
US Navy, Barking Sands (PMRF)
United Telecommunications Limited
Wenzlau Engineering
Westinghouse Electronic Systems
SYSTEM APPLICATIONS
Airborne Gimbals
Airport Surveillance Radar (ASR)
Air Traffic Control (ATC)
Communication Intercept (COMINT)
Communication Systems
Direction Finding (DF)
Drone Control
Electronic News Gathering (ENG)
Electro Optical
Electronic Warfare (EW)
Infrared (IR)
Low Earth Orbit (LEO) Ground Stations
Meteorological Data Systems (MDS)
Mobile and Shipboard Systems
Optical Tracking
Radar
Radar Antenna Pedestals (search, scan, track)
Remote Piloted Vehicles (RPV)
Satellite Tracking
Shipboard Stabilized Gimbals
Signal Intercept (SIGINT)
Simulation Systems
Stabilized Platforms
Telemetry Tracking
Tracking, Telemetry & Control (TT&C)
Unmanned Aerial Vehicles (UAV)

PAYLOAD APPLICATIONS
Antennas
Cameras
Forward Looking Infrared (FLIR)
Lasers
Mirrors
Photo Cells
Radiometers
Sensors
Telescopes