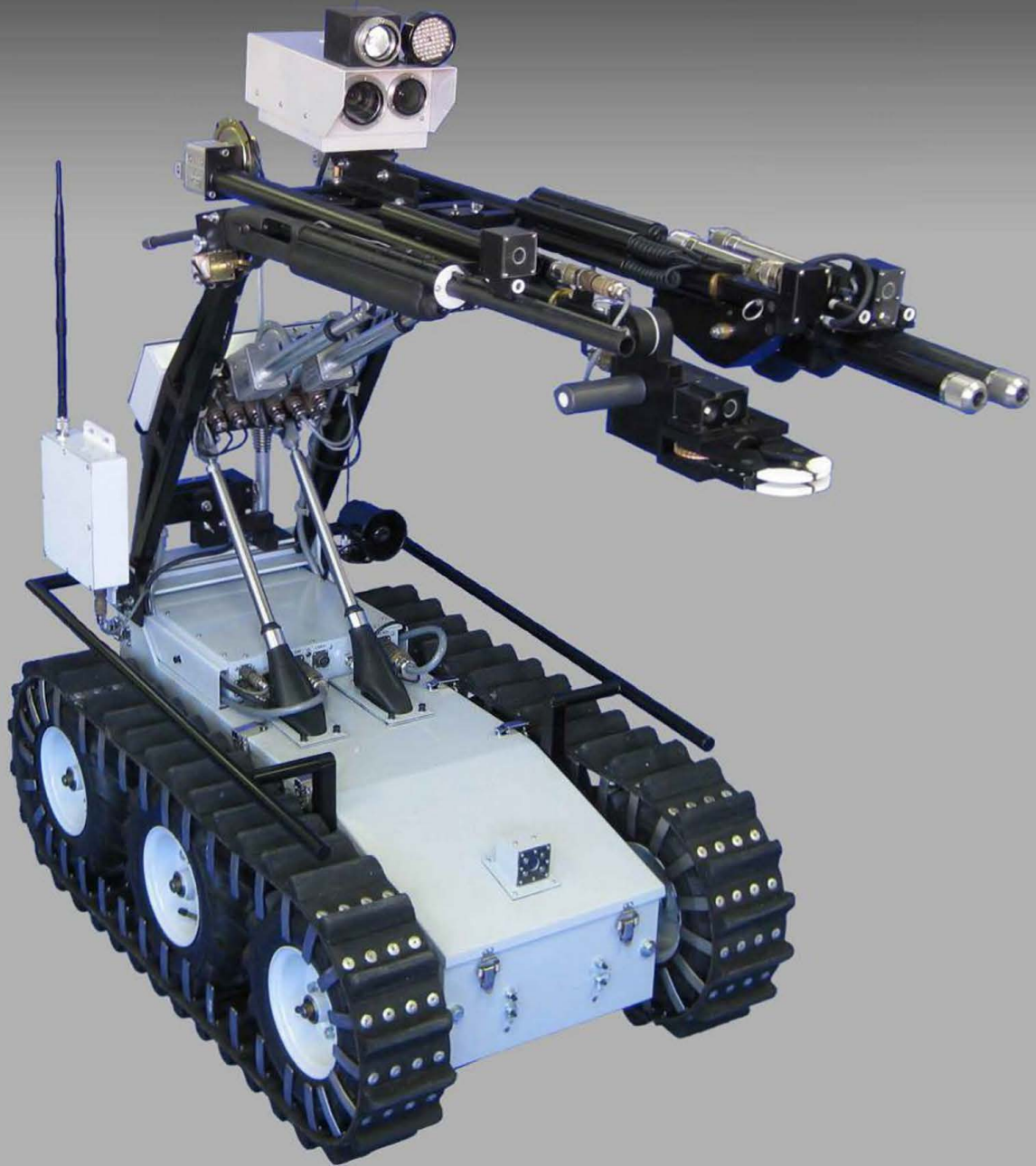# SecPro-RMI

Remote Mobile Investigator

The newest Remote Mobile Investigator from SecPro offers the same reliability, versatility and ease of operation found in our other models, with new features to make your missions easier. Built on a proven platform chosen by professionals worldwide, the SecPro-RMI adds dual extending front arms, upgraded IP-67 plugs, digital video transmission, and a total of 8 camera ports. Add a tilting disruptor mount, hitch kit and new claw tools, and the SecPro-RMI will meet all your EOD needs.

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SecPro-RMI

Features

- 6 wheels with pneumatic rubber tires for cushioned drive. Tracks used for climbing or for extra traction can be easily installed and removed.

- 8 cameras with lights (all colour except IR):
  Main camera with 260x zoom, manual/auto focus and 360° pan
  Miniature tilting camera mountable various places on the robot
  Miniature cameras built into each claw
  Drive camera integrated into chassis lid
  Back-up camera with optional remote tilt
  Black & white IR camera with IR light source
  Disruptor camera integrated into disruptor mount
  Gun camera with laser - mountable on gun rail

- Video switcher for selecting a single camera or showing 4 cameras simultaneously on monitor

- On-screen display of robot battery voltage

- Digital audio/video transmission with integrated hard drive for mission recording and easy download to flash drive

- Three claws with variable pressure selection, each equipped with camera:
  Universal claw with 10¼" (26 cm) opening
  Rotating claw with 10¼" (26 cm) opening
  Large barrel claw with 29½" (75 cm) opening

- Mounting for a shotgun and two disruptors
  All weapons equipped with camera and lasers for aiming
  Lasers flash for easy identification on TV screen
  Weapon firing controls are encoded for security

- Motorized extension of both arms, and three arm extenders allow access to hard to reach locations such as under cars, in cars, window sills, etc.

- Panning or tilting dual disruptor mount for disruption of hard to reach IED's

- The claw, cameras, and disruptor can be mounted on the arm extenders

- Wireless or wired two way communication can be used for barricaded subjects or hostage situations

- Attachment for XR150/XR200/XRS-3 X-ray unit and real-time X-ray systems

- Operator Control Unit operates all functions of the RMI wirelessly or by cable Precise movement of the RMI can be mastered with intuitive joystick control Controls, Monitor and Digital Video Reciever integrated into briefcase

- Mil-spec quarter-turn plugs, environmentally sealed to IP67 rating

- Modular construction for easy service

- Rapid no-tool robot battery change

- Operator Dolly with cable drum for up to 150 m (490') control cable

Specifications

Physical (with tracks / without tracks):
- Length - 46" (117 cm) / 43¼" (110 cm)
- Width - 27" (68.5 cm) / 26½" (67.5 cm)
- Ground Clearance - 4½" (11.5 cm) / 3¼" (8 cm)
- Height (arms down, no camera or tracks) - 28" (71 cm)
- Weight (with tracks) - 438 lbs (199 kg)

Operational:
- Speed - 0-3 km/h forward and reverse
- Battery life - 5-6 hours typical mission before recharge
- Lifting Capacity - 175 lbs (80 kg)
- Reach (without solid extenders) 90" (228.5 cm) vertical
  44" (112 cm) horizontal

SPECIFICATIONS AND NOTES ON THE SecPro-RMI (2018)

Length (with / without tracks)	46" (117 cm) / 43¼" (110 cm)
Width (with / without tracks)	27" (68.5 cm) / 26½"" (67.5 cm)
Height with arms down (without camera and tracks)	28" (71 cm)
Ground clearance (with / without tracks)	4½" (11.5 cm) / 3¼" (8 cm)
Weight	439 lbs (199 kg)
Speed (variable forward and reverse)	0 - 1.8 mph (0 - 3 km/h)
Operating environment (all weather)	-20°C / +50°C
Maximum tilt (backwards)	78°
Maximum tilt (sideways)	53°
Maximum curb height	9½" (24 cm)
Maximum gradient	45°
Stair climbing dependant on stair construction	40° - 45°
Maximum gap crossing	19½" (49.5 cm)
Fording depth	5½" (13.9 cm)
Turning Radius	52" (132 cm)
Towing Capacity	1900 lbs (900 kg)
Drag Capacity	496 lbs (225 kg)
Payload Capacity	300 lbs (136 kg)
Robot platform power	2 x 12V 55Ah batteries
Robot platform operating time	approximately 5-6 hours
Charger system	24 V Dual smart charger

Robot Platform Specifications:
- 6 wheel drive
- ¼" aluminum chassis
- Durable powder coated polyester epoxy hybrid paint
- Removable rubber track system (can be removed in 3 minutes)
- Two high performance permanent magnet type 24 VDC motors
- Turns on own axis
- Mechanical brakes can be controlled by operator
- Chain tensioning system
- Electronic speed controller with brake switching
- Two high capacity 12 VDC 55 Ah batteries
- High current quick disconnect main battery connectors and latch type battery holder allow for battery change without the use of tools.
- Reinforced chassis for trailer hitch kit

Robot Arm Specifications:
- Lifting capacity:
  - 175 lbs (80 kg) at 8" (20.5 cm) in front of robot
  - 90 lbs (41 kg) at full extension of 44" (112 cm) in front of robot
  - 40 lbs (18 kg) with solid extender arm 67" (170 cm) in front of robot
- Maximum reach without solid extender arms:
  - Vertical 90" (228 cm)
  - Horizontal 44" (112 cm)
- Back arm travel of 68° in 19 seconds

- Front arm travel 88° in 9.5 seconds
- Right side motorized arm extension (for claw) 20" (50.5 cm) in 30 seconds
- Rotating Claw Wrist Assembly: Removable assembly with 85° of tilt **#WST-350RC***(Optional Equipment)*
- Standard Claw Wrist Assembly: Removable assembly with 91° of tilt **#WST-360SC** *(Optional Equipment)*
- Left side motorized arm extension (for disrupter) 20" (50.5 cm) in 30 seconds
- Arms and extension powered by 12 or 24 VDC linear actuators with safety clutch, controlled by zero coast speed controller.
- Tilting or panning dual recoilless disrupter mount **#DIS-DTM20MMRC** (located on left front arm):
  - Dual laser aiming. (3 mW, Red Laser)
  - Colour sighting camera with LED light
  - 270° rotation protected by clutch
  - Dual firing terminals
  - Can be removed and mounted on solid extender arms
- Mounting area for shotgun
- Solid extender arms:
  - 23" (58 cm) with 50° bend
  - 41" (104 cm) with 20° bend
  - 24" (61 cm) straight

Claw Specifications:

- **Universal claw with camera #SCW-700X**:
  A heavy duty claw with open/close function used for Heavy lifting and demanding tasks. Equipped with miniature colour camera that is mounted between the fingers for an unobstructed view of objects.
  - Closing pressure: Variable from 20 lbs – 50 lbs (9 kg – 22.5 kg)
  - Opening Dimensions: 10¼" (26 cm)
  - Camera: Colour Camera with wide angle lens
  - Lighting: LED
  - Universal mount allows for rapid removal and mounting on solid extender arms
  - Dimensions: 12 ¼" L x 5 ½" W x 6 ¼" H   (31.1cm x 14cm x 15.8cm)
  - Weight: 7.4 lbs (3.35 kg)

- **Rotating claw with camera #RCW-800X:** *(Optional Equipment)*
  Robust claw with variable closing pressure, continuous rotation clockwise and counterclockwise. This claw can be used for more precise tasks, opening doors, using a key, etc… The claw is equipped with a miniature colour camera mounted on the rotating section which allows for an unobstructed view of objects being picked up.
  - Closing pressure: Variable from 20 lbs – 38 lbs (9 kg – 17 kg)
  - Opening Dimensions: 10¼" (26 cm)
  - Camera: Colour Camera with wide angle lens
  - Lighting: LED
  - Universal mount allows for rapid removal and mounting on solid extender arms
  - Dimensions: 12 ¼" L x 4 ¾" W x 6" H   (31.1cm x 12.1cm x 15.3cm)
  - Weight: 9.2 lbs (4.1 kg)

- **Barrel claw with camera #BCW-600X:** *(Optional Equipment)*
  Large claw for lifting large heavy objects. The claw is equipped with a miniature colour camera.
  - Closing pressure: Variable from 30 lbs – 300 lbs (13.5 kg – 136 kg).

- o Opening Dimensions: 29½" (75 cm)
- o Grippers can be mounted vertical or horizontal
- o Camera: Colour Camera with wide angle lens
- o Lighting: LED
- o Universal mount allows for rapid removal.
- o Dimensions: 14" L x 18" W x 37 ½"H   (35.5cm x 45.7cm x 95.3cm)
- o Weight: 22.1 lbs (10 kg)

- **Large Universal claw with camera #SCW-700XL**: *(Optional Equipment)*
  A Large version of the standard Universal Claw.
  A heavy duty claw with open/close function used for Heavy lifting and demanding tasks. Equipped with miniature colour camera that is mounted between the fingers for an unobstructed view of objects.
  - o Closing pressure: Variable from 20 lbs – 50 lbs (9 kg – 22.5 kg)
  - o Opening Dimensions: 11 1/2" (29 cm)
  - o Camera: Colour Camera with wide angle lens
  - o Lighting: LED
  - o Universal mount allows for rapid removal and mounting on solid extender arms
  - o Dimensions: 14 1/2" L x 5 ½" W x 6 ¼" H   (37cm x 14cm x 15.8cm)
  - o Weight: 7.5 lbs (3.4 kg)

Camera Specifications:

- **Main Camera #CAM1-MC1000XD**– Colour 260x zoom camera with remote zoom and manual/auto focus control, LED light source, and 360° panning with automatic stop at dead center.
- **Infrared Camera #CAM1-IR902-UG** *(Optional Equipment)* - Black/white low light infrared camera (mounted in Main Camera housing) with infrared light source.
- **Back-up Camera #CAM2-BC3000X** – Miniature colour camera with housing and LED light source, mounted on robot as a Back-up camera.
- **Tilting Camera #TC5000X** - Miniature colour camera with remote tilt and LED light source. Can be mounted on many locations on the arm assembly and used with extender arms to search in or under a car or in 2nd story windows.
- **Drive Camera #CAM-DRV9** - Miniature colour camera with LED light source. Camera is mounted on front cover of robot.
- **Rotating Claw Camera (Mounted on Claw #RCW-800X)** *(Optional Equipment)* - Miniature colour camera with LED light source. Camera is mounted on the rotating part of the claw so there is always a perfect view of the claw and the object being picked up.
- **Universal Claw Camera (Mounted on Claw #SCW-700X)** - Miniature colour camera with LED light source. Mounted to Universal Claw, inside grippers.
- **Barrel Claw Camera (Mounted on Claw #BCW-600X)** *(Optional Equipment)* - Miniature colour camera with LED light source. Mounted to Barrel Claw, above grippers.
- **Disrupter Camera (Mounted on Disrupter #DIS-DTM20MMRC)** - Miniature colour disrupter aiming camera with LED light source.
- **Gun Camera #CAM-G1100X** *(Optional Equipment)* - Miniature colour gun camera with integrated laser. Mounts on gun barrel.
- **PTZ Mast Camera #PTZ-M10FTX** *(Optional Equipment)* - Miniature pan and tilt colour camera with 10x zoom on a mast complete with LED light source, mounts on the back rail of the robot in place of the back-up camera. 360° panning and 126° tilt, motors protected by clutch.

<u>Briefcase OCU (Operators Control Unit) #OCU-104XD24:</u>

- Briefcase OCU with robot controls and 10.4" (26.4 cm) sunlight readable TFT LCD
- OFDM-based digital video receiver/transmitter with forward error correction
- Proprietary software RCV Version 1.3. Video decoding-H.264. Video record MPEG-4 AVC (PART 10)
- Computer: 1.2 GHz processor with 4GB DDR3 1333 MHz memory. Windows operating system
- Features automatic frequency selection and frequency hopping 802.11
- Flicker free video reception
- Two-way digital audio
- Video picture rotation in 90° increments
- On-screen battery status display for OCU and robot
- Radio signal strength indicator
- On-screen date and time indicator
- Video multiplexer: Single camera view or 4 camera view
- Integrated 120 GB SSD hard drive for video recording. Storage space for over 100 hours of video.
- USB output for copying video to USB flash drive
- Audio/Video outputs and headphone jack
- Ethernet Bridge for sensors
- Video transmission: 2.4 GHz (other frequencies available upon request), 200 mW output
- Robot control transmission: 72 MHz, Digitally coded, 400 mW output
- Joysticks to control proportional robot functions:
  - Robot Drive (front/back, right/left)
  - Front Arm and Back Arm
  - Front Arm Extension (right and left side, shared joystick)
  - Claw rotation and tilt/pan of disrupter (shared joystick)
  - Zoom and Focus of main camera (shared joystick)
  - Camera Pan or Tilt control (rotary joystick)
- Switches for On/Off functions:
  - Camera selection (8-position rotary dial)
  - Camera Lights
  - Claw open/close (with pressure selection)
  - Lasers on/off
  - Quad screen (4 camera view) or single camera view
  - Weapon locking switch with key
  - Weapons enable (Fire)
  - Weapon selection (Disrupter 1, Disrupter 2 and Shotgun)
- Control Operations (joystick and switch) can be performed simultaneously
- Fuses for TV/Radio system, Robot control, and Charging
- Range: up to1000m line of sight
- Dimensions: 16.125" (41 cm) L x 13.375" (34 cm) W x 8.0625" (20.5 cm) H
- Case Material: Injection Molded Polypropylene, Watertight.
- Weight: 25 lbs (11.34 kg)
- Battery: Lithium-ion 12 V, 9.6 Ah (with integrated Battery Management System)
- Battery life: 3 hours
- Charging time: 2 hours
- 110V AC/220V AC for continuous operation. Batteries can be charged while running on AC

Hand Held Controller #HHC-650XD:
A small robot controller for loading/ off loading of the robot from a vehicle. The controller operates the robot drive and arms and is connected to the robot via a retractile cord and ¼ turn connector.
- 1 joystick
- 1 switch (switches joystick function to control the Drive or Robot Arms)
- Dimensions 4.35" (111 mm) x 3.21" (82mm) x 1.73" (44mm)
- Weight 1.75 lbs (800 g)

OCU Tripod #TPOD-ULT140:
- Heavy duty tripod with mounts for OCU
- Light weight anodized aluminum construction
- Height adjustable from 37" – 45" (94 cm – 114 cm)
- Weight: 8 lbs (3.6 kg)

Operators Dolly Specifications:
- 45" (114 cm) steel dolly (durable powder coated polyester epoxy hybrid paint)
- 10" (25.5 cm) pneumatic tires
- Cable reel with contact ring assembly for continuous feed
- 328 ft (100 m) heavy duty control cable with 4 pin quick disconnect plugs. Optional cable length 492 ft (150 m).
- Cable spec: one 75 Ohm and two #18 conductors with copper braid shield and urethane jacket.
- Weight of Operators Dolly (with 100 m cable): 68 lbs (31 kg)

Accessories: *(Optional Equipment)*
- **Dual Shock Tube Initiator #ESI-RM2X:** Two channel shock tube initiator with robot mount.
- **Demolition Reel #DRL-AL7X:** 7" (17.8 cm) demolition reel with 225 ft (68 m) of demolition wire. Mountable anywhere on square arms. Equipped with a contact ring for continuous feed.
- **X-Ray Adaptation Kit #XRAY-KIT400X:** X-ray Adaptation kit for mounting Golden Engineering X-ray units. System contains arm mount with exposure release circuit, front chassis mount and 8" x 10" cassette holder.
- **Real Time X-Ray Mount #XRAY-RTH420:** Real time X-ray mount. Holder has mount for VCU and X-ray Source.
- **Power Drill Kit #PDM-KIT450X:** Remote drilling capability for RMI robots. Drill power can be switched on and off by means of the command transmitter. Kit includes drill mount with relay circuit, DeWalt® 18V power drill, battery charger and 2 modified batteries.
- **Power Circular Saw Kit #CSK-KIT390K:** Remote cutting capability for RMI robots. Saw power can be switched on and off by means of the command transmitter. Kit includes saw mount with relay circuit, DeWalt® 18V circular saw, battery charger and 2 modified batteries.
- **Trailer Hitch Kit #HITCH-KIT500:** Trailer hitch kit with Hitch Receiver, Ball Mount, Trailer Handle Mount, 1¼" Eye Mount.
- **Claw Tool Kit #CTL-KIT100:** Tool system designed for the Rotating Claw. Kit includes: Tire Spike, Window Breaker, Side Finger Mount and Storage Case.
- **Claw Tool Kit #CTL-KIT200:** Tool system designed for the Rotating Claw. Kit includes: Belt Cutter, Box Cutter, Small Side Cutters, Large Side Cutters, Side Finger Mount and Storage Case.
- **Claw Tool Kit #CTL-KIT300:** Tool system designed for the Rotating Claw. Kit includes:

Tire Spike, Window Breaker, Belt Cutter, Box Cutter, Small Side Cutters, Large Side Cutters, Side Finger Mount and Storage Case.

- **Boot Banger Deployment Assembly #BB-58DMK4:** Boot Banger Deployment system for the BootBanger VBIED disrupter. Attaches to the front of robot arm by fast pin.
- **Shotgun Mount and Trigger #GTM-550X:** Shotgun mount and trigger assembly for Remington 1187 & 1100 series shotguns.
- **Shotgun Laser #LSR-GN1187:** Shotgun aiming laser for Remington 1187 & 1100 series shotguns.
- **Shotgun Camera #CAM-G1100X:** Shotgun camera with aiming laser for Remington 1187 & 1100 series shotguns.

Additional Features:

- Pneumatic rubber tires allow for a smooth, cushioned drive. Removable tracks provide excellent stair climbing performance.
- A single joystick controls both the speed and direction of travel. The robot will spin on its own axis.
- Arms are lifted by dual electric actuators providing superior power and reliability. All arm functions are protected by a clutch.
- Disrupters, shotgun and claw can be carried on the robot at the same time.
- Disrupters stow neatly out of the way allowing unobstructed use of claw.
- Weapons safety circuit with 4 check lights and two minute delay enhances operator safety. 2 switch firing sequence with additional keyed arming switch further enhancing operator safety.
- Connectors are ¼-turn Mil-spec with IP67 rating.
- Electronic modules are sealed and each module is connected by plugs for simple removal and service.
- Front cover and electronic box secured by latching system for quick access without the use of tools. Latch type battery holders and quick release battery connectors allow quick replacement.
- Using solid extender arms, the robot can be configured for many different applications including under car searches (with tilting camera attached) and 2nd story window access.
- Tilting camera can be mounted on fixed extender arms with a claw or disrupter.
- Painted surfaces are of durable powder coated polyester epoxy hybrid paint.

Note: This is a specification sheet only; some equipment is listed as optional.