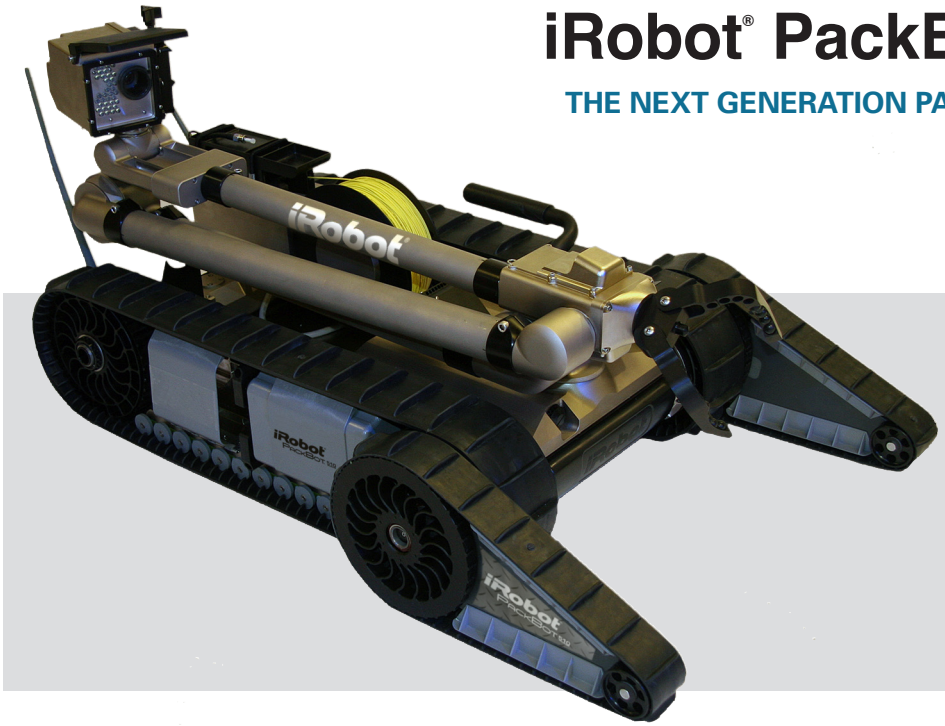
iRobot® PackBot® 510 with EOD Kit

THE NEXT GENERATION PACKBOT — THE NEXT GENERATION EOD KIT

FASTER — STRONGER — EASIER TO USE



iRobot PackBot 510 with EOD Kit combines an enhanced Chassis with an improved Manipulator and a simplified Hand Controller, to result in a faster, stronger, and easier to use robot – providing soldiers and bomb squad technicians with the ultimate protective tool for IED identification and disposal.

With more than 800 PackBot robots deployed around the world, fulfilling duties for military and civil defense forces, the PackBot 510 provides the capabilities that users have been looking for. Tested and versatile, the PackBot 510 with EOD Kit quickly adapts to different IED, conventional ordnance and SWAT missions.

With its compact profile and enhanced ease-of-use, the PackBot 510 operates with confidence on the toughest terrain – from stairs, over curbs and rubble, through urban and mountainous terrain.

THE PACKBOT 510 CHASSIS

Enhanced track technology and increased torque offer more powerful maneuverability, enhanced stair-climbing ability, and deft obstacle avoidance. The PackBot 510's advanced design expands the scope and variety of missions and ensures their efficient and successful completion.

IMPROVEMENTS:

Increased Torque: **greater stair-climbing ability; greater load pull/load capacity in all terrains; better ability to navigate over obstacles**
Improved Speed: greater top-end speed reduces deployment time
Streamlined Tracks: rounded cleats reduce detracking and optical fiber entanglement
Increased Endurance: optional Battery Expansion Kit can be added to double run-time

Chassis Specifications and Capabilities

Height
7.5"
Width
16" QuickFlip™flippers off
20.5" flippers on
Length
27.5" flippers stowed
34.6" flippers extended

Weight
42 lbs (includes 2 batteries)
Max Shock
400 G
Environmental
All-weather
Speed
Up to 5.8 mph (2.6m/s)

Flipper Velocity
90 deg/sec rotation
Microelectronics & Sensors
Onboard Mobile Pentium® PC, 256 MB SDRAM, on-board overheat protection, magnetometers, compass accelerometers, inclinometer
Total Capacity
Eight payload bays
Can carry up to 46 lbs at one time

Battery Endurance
2 NiCad packs 2-12 hours depending on mission profile (optional 4-24 hours with Battery Expansion Kit)
Up to 6+ miles of travel
Communications
RF: Fully digital 2.4 GHz (up to 3280' range* line of sight)
Optional long range antennae
* configuration dependent

About iRobot

iRobot Corp. specializes in behavior-based robots that help people complete tasks with better results. Currently, more than 800 iRobot PackBot® robots are deployed worldwide, performing thousands of missions in Iraq and Afghanistan.

These robots have also been credited with saving the lives of many men and women of the U.S. Armed Forces around the world.

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iRobot®

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THE EOD KIT:

After more than three years of battle proven deployment and thousands of successful EOD missions, iRobot has improved the EOD Kit, adding substantial capabilities to provide a better tool for soldiers, SWAT and bomb squad technicians.
The improved EOD Kit (shown on the PackBot 510 Chassis) combines a user-friendly interface and the iRobot Hand Controller to make the PackBot 510 with EOD Kit easier to operate than ever before.

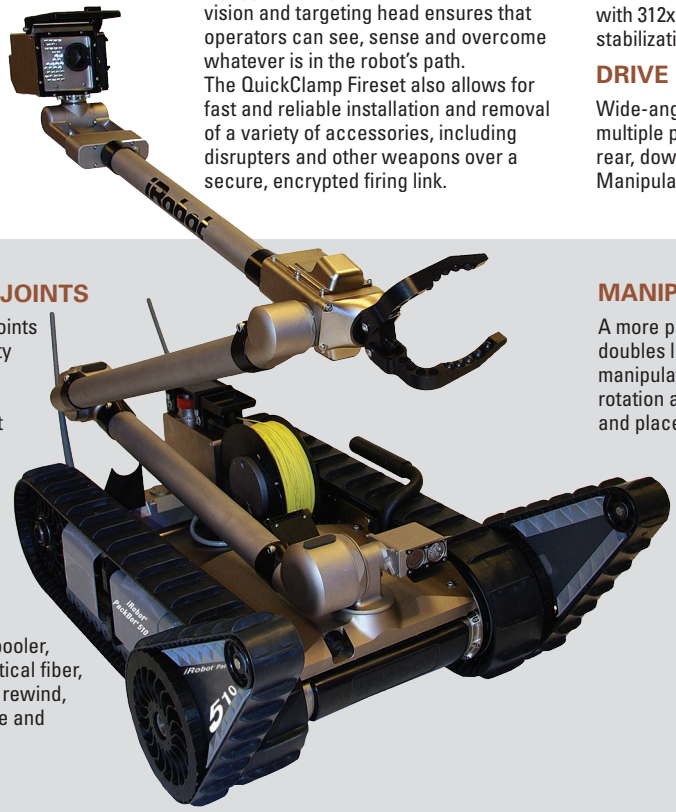
EOD KIT CONTENTS AND SPECIFICATIONS*:

2 Hand Controllers
Manipulator 1.0
QuickClamp Fireset
Firing Key
SmartSpool™ Fiber Optic Spooler
Portable Command Console (PCC) 1.0
3 Batteries
Dual Micro Charger Kit
Rugged Equipment Cases
User Documentation

Robot Height with EOD Kit
16″ Manipulator in stowed position
87″ with Manipulator fully extended
Robot Width with EOD Kit
16″ QuickFlip flippers off
20.5″ flippers on
Total Capacity with EOD Kit
15 lbs

Robot Length with EOD Kit
32″ flippers stowed
40″ flippers extended
Robot Weight with EOD Kit
68 lbs fully loaded (includes 2 batteries)

*If not noted here, specifications are identical to PackBot 510 Chassis.



VISION AND TARGETING HEAD

Equipped with powerful cameras, the vision and targeting head ensures that operators can see, sense and overcome whatever is in the robot's path.
The QuickClamp Fireset also allows for fast and reliable installation and removal of a variety of accessories, including disrupters and other weapons over a secure, encrypted firing link.

SURVEILLANCE CAMERA

Continuous pan and 220º tilt, color CCD with 312x zoom, auto focus, image stabilization and low light capabilities.

DRIVE CAMERA

Wide-angle, mounted on base of unit with multiple positions, allowing for forward, rear, downward views. Can also view Manipulator positions.

ARM CAMERAS

Two color cameras provide view of head from 2nd elbow, allowing for maneuvering in tight situations.

LIGHTS

Variable-intensity LEDs mounted at each camera location. Surveillance camera has both wide and narrow focused LED arrays for enhanced depth-of-field in low light.

STRONGER MANIPULATOR JOINTS

Strengthened elbow joints doubles lifting capacity and enables the robot to lift up to 30 pounds with arm in a compact position or 10 pounds while fully extended.

SMARTSPOOL™ FIBER OPTIC SPOOLER

The intelligent fiber spooler, with up to 820 ft. of optical fiber, automatic payout and rewind, eliminating fiber tangle and excess tension.

MANIPULATOR

A more powerful Manipulator design doubles lifting, carrying and manipulation capacity. 360-degree base rotation allows for precision targeting and placement of disrupters.

Manipulator Specification

Reach
80″ horizontal
Capacity
10 lbs at full extension
30 lbs max.
Weapons/Tools
1 firing circuit/ supports multiple disrupters
Degrees of Freedom (DoF)
8 independent DoF
Shoulder rotation: Continuous
Shoulder pivot: 220º
Elbow 1: 340º
Elbow 2: 340º
Gripper rotation: Continuous
Gripper open: 180º
Head rotation: Continuous
Head tilt: 220º

PORTABLE COMMAND CONSOLE (PCC) AND HAND CONTROLLER

iRobot's Hand Controller optimizes the ease-of-use and significantly reduces on-robot training time. The PCC provides operators with pre-set manipulator positions and 3D-active robot on-screen display enabling operators to easily position and visualize the robot.

PCC Specifications and Capabilities

Size
18″ W x 14.6″ L x 18.5″ H (open)
7″ H (closed)
Weight
41 lbs with 1 battery
Environmental
All Weather Operation
Screen
10.5″ Daylight Readable
Processor
Pentium with 128 MB RAM

Power
2 Battery Slots, interchangeable with Robot
Input Devices
iRobot Hand Controller
Membrane keyboard with integral mouse
Two multi-degree-of-freedom controllers
Membrane keypad with mission specific buttons
Portability
Carry handle and strap
Duration
3 hrs nominal mission
Can be run from external power supply

Software
Multi-image display with full screen option
3D active model of vehicle
Gauge display of batteries
Gauge display of fiber
Image capture capability
Power-saving sleep mode
Multiple speed ranges
Multiple pre-set manipulator positions
Auxiliary USB, Ethernet, video output
Multi-lingual
Two way audio communications