

# RE2 Family of Manipulators

*Powerful, precise, modular robotic arms*

RE2 offers three classes of innovative, power-dense manipulators ranging from small, light-weight arms to large, workhorse arms. All of RE2's manipulators provide smooth, precise tool-point or direct joint control, allowing unmanned ground vehicles (UGVs) to be more efficient and effective.

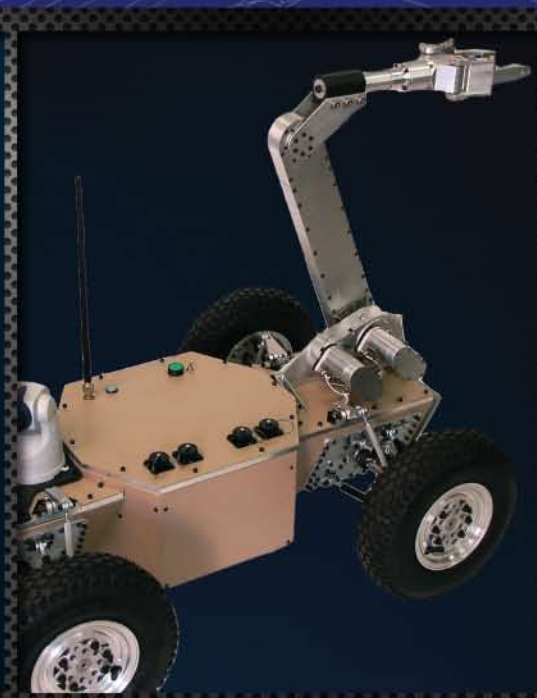
The RE2 design philosophy is to create novel and practical solutions that maximize capability at a reasonable cost. All three classes of manipulators incorporate the following design features that enhance adaptability and modularity:

- Self-contained, on-board computing
- Support for common protocols (e.g. CAN and Ethernet)
- Compatibility with interoperability standards and products (e.g. JAUS and ROS)
- Adaptability to a wide range of power systems (typical range 12V to 60V)
- Ability to interface with RE2's Quick Releases for automatic tool changing capability

These features allow RE2's manipulators to be easily adapted to meet custom requirements and to be rapidly integrated onto a wide range of UGVs.



DS4-MS manipulator shown on  
Macro USA Scorpion SUGV



DS2-FR manipulator shown on  
RE2 ForeRunner RDV high-speed UGV



BA4-A manipulator featuring RE2's  
QBA-A Quick Release for automatic  
tool changing

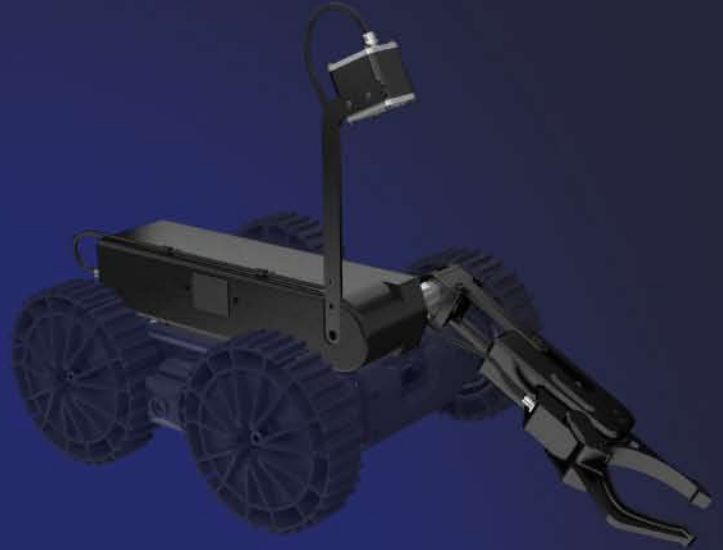
**re<sup>2</sup>**

**innovative. powerful. fielded.**

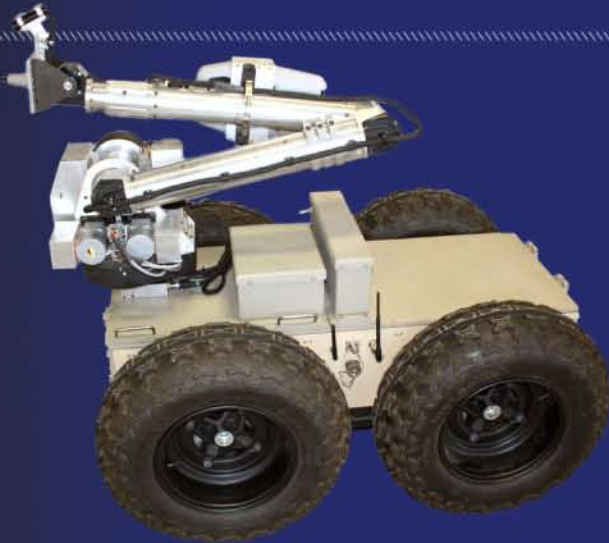
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## D-Series Manipulators

The D-Series of robotic arms offers power-dense manipulation for small/micro UGVs. Arms in this series typically weigh between three and fifteen pounds and are well-suited for robots used for dismounted operations. The dexterity of these arms is typically between one and four degrees of freedom, but higher dexterity arms are available.



DS1-MA arm shown on a Macro USA Armadillo MUGV



TM3-SRT shown on the AFRL IVAN platform (Segway RMP-400)

## T-Series Manipulators

The T-Series of robotic arms provides powerful manipulation capability for medium-sized (less than 165 pounds) UGVs. Arms in this series weigh between fifteen and sixty pounds, perfect for robots used in tactical operations. The T-Series arms support greater dexterity, offering models with up to 8 degrees of freedom.

## B-Series Manipulators

Arms in the B-Series are true workhorse manipulators, offering superior strength and dexterity for larger UGVs (over 165 pounds). B-Series arms weigh over sixty pounds and serve robots typically used for base/infrastructure operations.



BS8-DMS manipulating a pipe bomb