**Product Overview: [For 6” Dart]**

DART is a strong, fast, linear actuator designed by the engineers at [iR3 Creative](http://dartactuators.com/). It's driven by a [CIM Motor](http://www.andymark.com/CIM-motor-FIRST-p/am-0255.htm) and uses a 0.2 inch pitch ACME lead screw to actuate an aluminum tube 6 inches. Two different sensor feedback methods are available with this actuator, with a potentiometer included in the assembly. An optional DART Sensor Pack is available (but not included), using hall effect sensors detecting a moving magnet near the lead screw nut.   
  
iR3 Creative developed this actuator in 2014, and it has received a design upgrade for a new release in January of 2016. This design upgrade focused on cost savings compared to the previous design, and therefore the price has been dropped by over $80. This version functions the same as the previous version, but the internal parts are unique and different from the past version. This is why we have re-numbered this version to have an "a" as the suffix of the part number, am-3072a.  
  
The steel, double leaded screw has a 0.50" O.D., a 0.20" lead, and 53% efficiency. The 6" stroke assembly weighs approximately 3.0 lbs without the CIM motor and 5.8 lbs with. There is a 12" version ([am-3072a](http://www.andymark.com/product-p/am-3072a.htm)) of this same DART actuator if you wish to have a longer stroke.  
  
Linear actuators are not meant to be side loaded. The use of rod ends is encouraged to avoid these type of loads.  
  
This product is shipped unassembled. Please see the assembly instructions for how to put this product together. We chose to ship this product unassembled in order to be able to offer it at a low price.  
  
Note: The CIM Motor ([am-0255](http://www.andymark.com/product-p/am-0255.htm)) and the DART Sensor Kit ([am-3077a](http://www.andymark.com/product-p/am-3077a.htm)) are NOT included in this product, and need to be purchased separately.  
  
Check out [iR3's Actuator Calculator](http://dartactuators.com/calculations-actuators/)  
  
**Specifications:**

* Weight (without CIM): approximately 3.0lbs
* Weight (with CIM): 5.8 lbs
* Theoretical Force and Speed: 204 lbf at 5.3 in/s\* (using included 2.5:1 belt ratio)
* Travel: 6 inches
* CIM NOT INCLUDED

**Screw Specifications:**

* Type: Acme Lead
* Material: 4140 Steel
* Diameter: 0.50"
* Lead: 0.20"
* Efficiency: 53%

**Optional Other Ratios:**

* 2:1 163.4 lbf at 6.67in/s\*
* 1:1 81.7 lbf at 13.3 in/s\*

**Sensing Specifications:**

* 10-turn potentiometer is included, sensing the turns of the leadscrew
* A 14 tooth gear on the lead screw turns a 96 tooth gear on the potentiometer for a 6.85:1 ratio
* The potentiometer will turn 4.4 times during a 6 inch travel
* An optional hall effect sensor kit ([am-3077a](http://www.andymark.com/product-p/am-3077a.htm)) is available (but not included) as an add on

**APPLICATION NOTE:**  
Linear actuators are not meant to be side loaded. The use of rod ends is encouraged to avoid these type of loads. Each end is tapped for a 5/16"-24 thread to accept common rod end sizes.

The DART was designed to achieve equivalent forces of a 2" bore pneumatic cylinder at 60 psi and to be used with a CIM motor fused at 40 amps. While it's possible to exceed these values you may see decreased life in the various ware components.   
  
It is recommended to run this actuator with hall effect and/or current protection as it is possible to stall or "stick" the lead screws when stalled against a hard stop at both ends of travel. It's recommended to use the the hall effect switches to limit travel of the actuator from the end stops. When using faster ratios it may be possible to overrun the limits slightly and programming methods may require ease into stroke ends. If you are not able to program these functions we recommend using a Talon SRX which has on-board switch monitoring and current protection.

**Product Overview: [12” Dart]**

DART is a strong, fast, linear actuator designed by the engineers at [iR3 Creative](http://dartactuators.com/). It's driven by a [CIM Motor](http://www.andymark.com/CIM-motor-FIRST-p/am-0255.htm) and uses a 0.2 inch pitch ACME lead screw to actuate an aluminum tube 12 inches. Two different sensor feedback methods are available with this actuator, with a potentiometer included in the assembly. An optional [DART Sensor Pack (am-3077a)](http://www.andymark.com/DART-actuator-sensor-kit-p/am-3077a.htm) uses hall effect sensors detecting a moving magnet near the lead screw nut, which can be used to create soft stops before you reach the limits of travel and prolong the life of your system.  
  
iR3 Creative developed this actuator in 2014, and it has received a design upgrade for a new release in January of 2016. This design upgrade focused on cost savings compared to the previous design, and therefore the price has been dropped by over $80. This version functions the same as the previous version, but the internal parts are unique and different from the past version. This is why we have re-numbered this version to have an "a" as the suffix of the part number, am-3072a.  
  
The steel, double leaded screw has a 0.50" O.D., a 0.20" lead, and 53% efficiency. The 12" stroke assembly weighs approximately 3.0 lbs without the CIM motor and 5.8 lbs with. There is a 6" version ([am-3076a](http://www.andymark.com/product-p/am-3076a.htm)) of this same DART actuator if you wish to have a shorter stroke.  
  
Linear actuators are not meant to be side loaded. The use of rod ends is encouraged to avoid these type of loads.  
  
This product is shipped unassembled. Please see the assembly instructions for how to put this product together. We chose to ship this product unassembled in order to be able to offer it at a low price.  
  
Note: The CIM Motor ([am-0255](http://www.andymark.com/product-p/am-0255.htm)) and the DART Sensor Kit ([am-3077a](http://www.andymark.com/product-p/am-3077a.htm)) are NOT included in this product, and need to be purchased separately.  
  
Check out [iR3's Actuator Calculator](http://dartactuators.com/calculations-actuators/)  
  
**Specifications:**

* Weight (without CIM): approximately 3.0lbs
* Weight (with CIM): 5.8 lbs
* Theoretical Force and Speed: 204 lbf at 5.3 in/s\* (using included 2.5:1 belt ratio)
* Travel: 12 inches
* CIM NOT INCLUDED

**Screw Specifications:**

* Type: Acme Lead
* Material: 4140 Steel
* Diameter: 0.50"
* Lead: 0.20"
* Efficiency: 53%

**Optional Other Ratios:**

* 2:1 163.4 lbf at 6.67in/s\*
* 1:1 81.7 lbf at 13.3 in/s\*

**Sensing Specifications:**

* 10-turn potentiometer is included, sensing the turns of the leadscrew
* A 14 tooth gear on the lead screw turns a 96 tooth gear on the potentiometer for a 6.85:1 ratio
* The potentiometer will turn 8.76 times during a 12 inch travel
* An optional hall effect sensor kit ([am-3077a](http://www.andymark.com/product-p/am-3077a.htm)) is available (but not included) as an add on

**APPLICATION NOTE:**  
Linear actuators are not meant to be side loaded. The use of rod ends is encouraged to avoid these type of loads. Each end is tapped for a 5/16"-24 thread to accept common rod end sizes.

The DART was designed to achieve equivalent forces of a 2" bore pneumatic cylinder at 60 psi and to be used with a CIM motor fused at 40 amps. While it's possible to exceed these values you may see decreased life in the various ware components.   
  
It is recommended to run this actuator with hall effect and/or current protection as it is possible to stall or "stick" the lead screws when stalled against a hard stop at both ends of travel. It's recommended to use the the hall effect switches to limit travel of the actuator from the end stops. When using faster ratios it may be possible to overrun the limits slightly and programming methods may require ease into stroke ends. If you are not able to program these functions we recommend using a Talon SRX which has on-board switch monitoring and current protection.