



# VEX IQ Challenge Legal Parts

## 2018-2019

This document is a supplement to rule <R6> of the VEX IQ Challenge Ringmaster Game Manual, which governs what VEX IQ parts are legal for use in the VEX IQ Challenge. Rule <R6> is quoted below for reference:

**<R6>** Robots may be built ONLY from Official *Robot* Components from the VEX IQ product line, unless otherwise specifically noted within these rules.

- a. During inspections if there is a question about whether something is an official VEX IQ component, a team will be required to provide documentation to an inspector that proves the component's source. Such types of documentation include receipts, part numbers, or other printed documentation.
- b. Only the VEX IQ components specifically designed for use in *Robot* construction are allowed. Using additional components outside their typical purpose is against the intent of the rule (i.e. please don't try using VEX IQ apparel, team or event support materials, packaging, field elements or other non-robot products on a VEX IQ Challenge *Robot*).
- c. Products from the VEX EDR or VEXpro product line cannot be used for *Robot* construction. Products from the VEX product line that are also cross listed as part of the VEX IQ product line are legal.
- d. Mechanical/structural components, aside from those excluded below, from the VEX Robotics by HEXBUG product line are legal for *Robot* construction. However, electrical components from the VEX Robotics by HEXBUG product line are illegal for *Robot* construction.

The following mechanical and structural components from the VEX Robotics by HEXBUG product line are excluded:

- i. All rubber bands
- e. Official Robotics Components from the VEX IQ product line that have been discontinued are still legal for *Robot* use. However, teams must be aware of <R6a>.
- f. 3D printed versions of VEX IQ components are not legal for use.

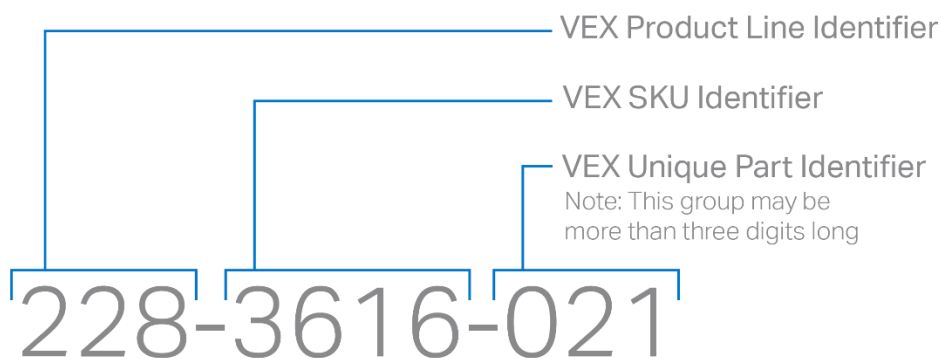
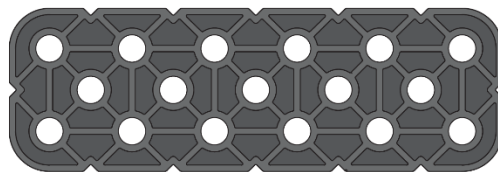
## VEX IQ Challenge 2018-2019 Legal Parts

This document is current as of August 8, 2018 and is subject to change whenever new VEX IQ, VEX Robotics by HEXBUG, or other legal components are released. The most recent version of this document can always be found at [www.vexrobotics.com](http://www.vexrobotics.com). Questions concerning part legality can be posted in the official VEX IQ Challenge Q&A Forum, found at [www.vexiqforum.com](http://www.vexiqforum.com).

Note: Because VEX IQ parts come in many colors, any colors depicted in the renderings below may not necessarily reflect the colors of the final physical products.

### VEX IQ Part Number Information

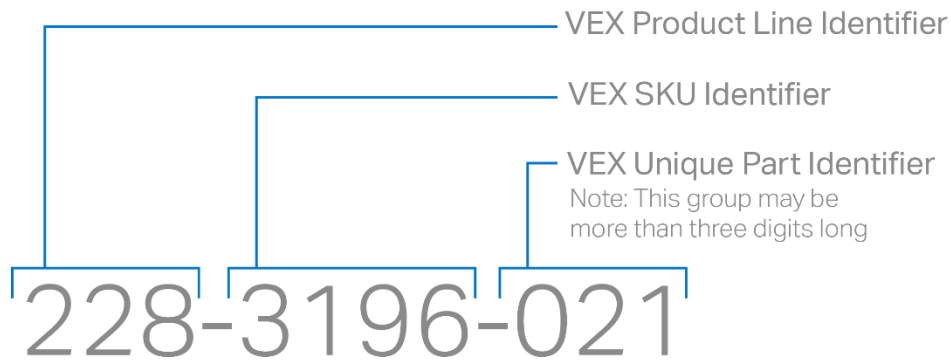
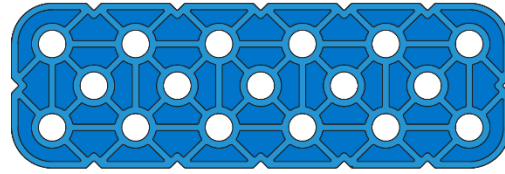
Example Part Number: Dark Grey 2x6 Beam



# VEX IQ Challenge 2018-2019 Legal Parts



Example Part Number: Blue 2x6 Beam



## Where to Find Part Identifier

Embossed part numbers can be found on larger VEX IQ parts. Some examples of their locations are pictured below.

# VEX IQ Challenge 2018-2019 Legal Parts



## Beams



## Corner Connectors



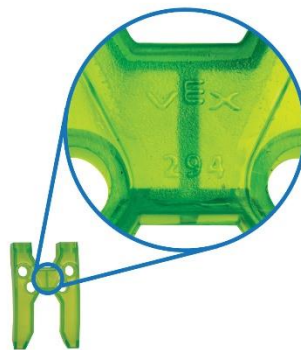
## Wheels



## Gears/Sprockets/Pulleys



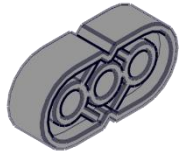
## VEX Robotics by HEXBUG





## Structure

228-2500-001



1x2 Beam

228-2500-004

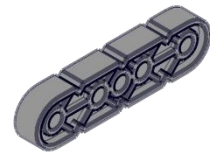
228-2500-002



1x3 Beam

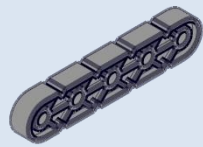
228-2500-005

228-2500-003



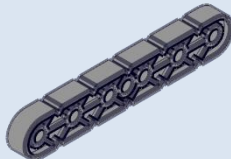
1x4 Beam

228-2500-006



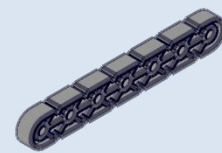
1x5 Beam

228-2500-007



1x6 Beam

228-2500-008



1x7 Beam

228-2500-009



1x8 Beam

228-2500-010



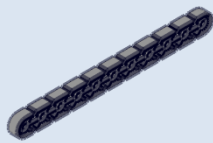
1x9 Beam

228-2500-011



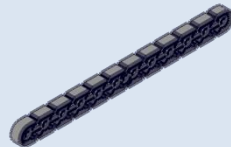
1x10 Beam

228-2500-012



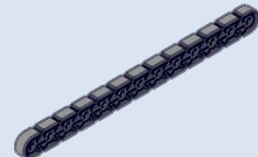
1x11 Beam

228-2500-013



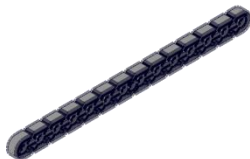
1x12 Beam

228-2500-014



1x13 Beam

228-2500-015



1x14 Beam

228-2500-016



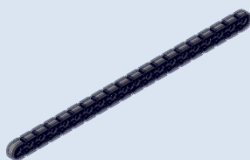
1x16 Beam

228-2500-017



1x18 Beam

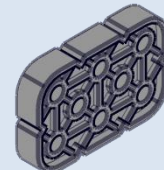
228-2500-018



1x20 Beam

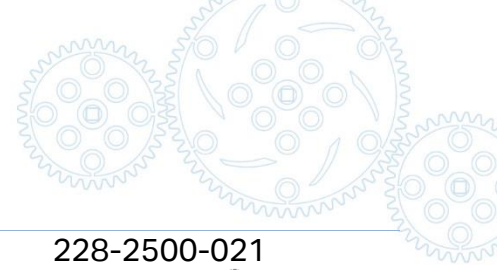





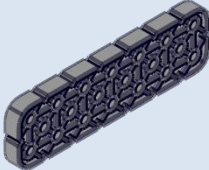
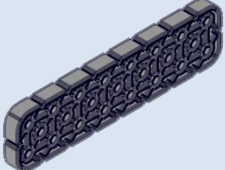
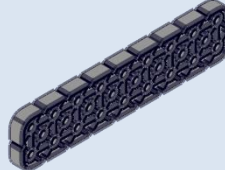






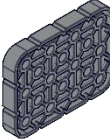
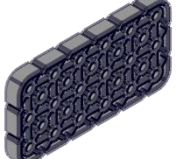
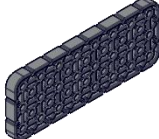
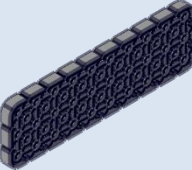
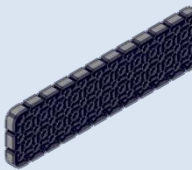
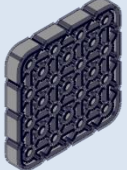
2x2 Beam



2x3 Beam

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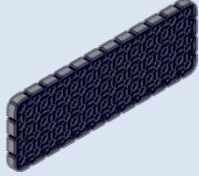
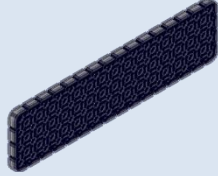





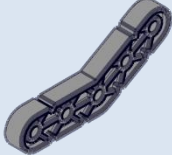





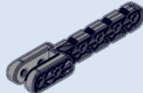
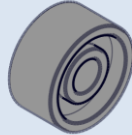


<p>228-2500-019</p>  <p>2x4 Beam 228-2500-022</p>	<p>228-2500-020</p>  <p>2x5 Beam 228-2500-023</p>	<p>228-2500-021</p>  <p>2x6 Beam 228-2500-024</p>
 <p>2x7 Beam 228-2500-025</p>	 <p>2x8 Beam 228-2500-026</p>	 <p>2x9 Beam 228-2500-027</p>
 <p>2x10 Beam 228-2500-028</p>	 <p>2x12 Beam 228-2500-029</p>	 <p>2x14 Beam 228-2500-030</p>
 <p>2x16 Beam 228-2500-032</p>	 <p>2x18 Beam 228-2500-034</p>	 <p>2x20 Beam 228-2500-035</p>
 <p>3x4 Plate 228-2500-036</p>	 <p>3x6 Plate 228-2500-037</p>	 <p>3x8 Plate 228-2500-040</p>
 <p>3x10 Plate</p>	 <p>3x12 Plate</p>	 <p>4x4 Plate</p>

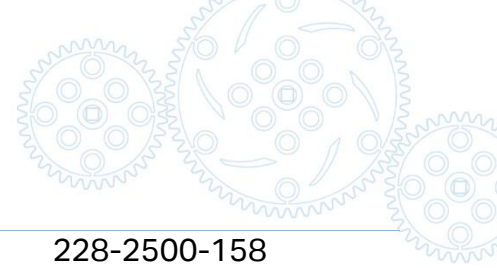





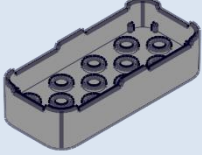
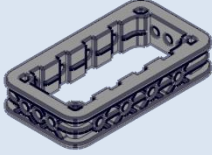




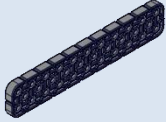
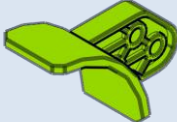


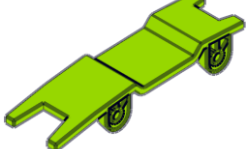
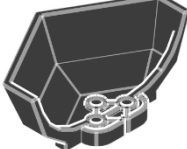
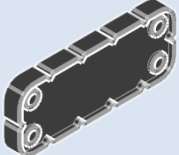
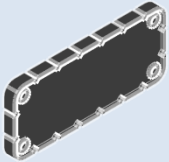
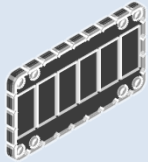
# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-042</p>  <p>4x6 Plate</p>	<p>228-2500-043</p>  <p>4x8 Plate</p>	<p>228-2500-044</p>  <p>4x10 Plate</p>
<p>228-2500-045</p>  <p>4x12 Plate</p>	<p>228-2500-046</p>  <p>4x16 Plate</p>	<p>228-2500-051</p>  <p>6x12 Plate</p>
<p>228-2500-059</p>  <p>12x12 Plate</p>	<p>228-2500-144</p>  <p>3x4 Tee Beam</p>	<p>228-2500-145</p>  <p>2x3 Right Angle Beam</p>
<p>228-2500-146</p>  <p>3x3 Right Angle Beam</p>	<p>228-2500-147</p>  <p>3x3 30 Degree Angle Beam</p>	<p>228-2500-148</p>  <p>3x3 45 Degree Angle Beam</p>
<p>228-2500-149</p>  <p>3x3 60 Degree Angle Beam</p>	<p>228-2500-150</p>  <p>3x5 Right Angle Beam</p>	<p>228-2500-151</p>  <p>4x4 Offset Right Angle Beam</p>
<p>228-2500-152</p>  <p>5x6.5 Tee Beam</p>	<p>228-2500-153</p>  <p>1x7 Spider Fork Beam</p>	<p>228-2500-154</p>  <p>1x1 Beam</p>

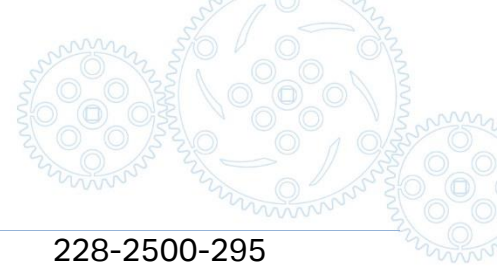
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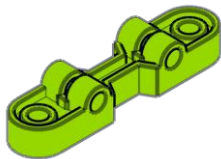
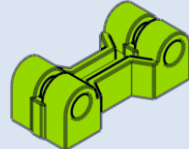
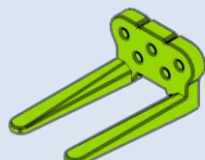



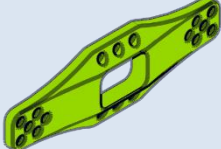
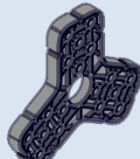



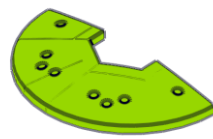
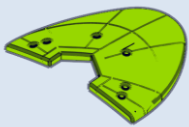
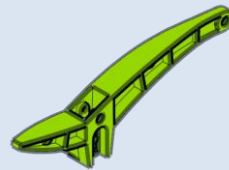



<p>228-2500-156</p>  <p>3x3 Plus Gusset Beam 228-2500-156</p>	<p>228-2500-157</p>  <p>Rubber Band Anchor 228-2500-160</p>	<p>228-2500-158</p>  <p>Cable Anchor 228-2500-198</p>
 <p>Single Motor Support Cap 228-2500-203</p>	 <p>Dual Motor Support Cap 228-2500-204</p>	 <p>XL Turntable Spider Top Plate 228-2500-205</p>
 <p>6x10 Bone Plate 228-2500-206</p>	 <p>6x Pitch Cube Face 228-2500-285</p>	 <p>12x12 Truss Plate 228-2500-286</p>
 <p>2x11 Beam 228-2500-287</p>	 <p>160mm Fender Panel Left 228-2500-288</p>	 <p>160mm Fender Panel Right 228-2500-289</p>
 <p>Racer Nose Panel 228-2500-290</p>	 <p>Racer Windscreen 228-2500-291</p>	 <p>Hex Cup Half 228-2500-292</p>
 <p>Blank Year Plate</p>	 <p>Blank Award / VIQC Team Number Plate</p>	 <p>Blank VRC / VEXU Team Number Plate</p>

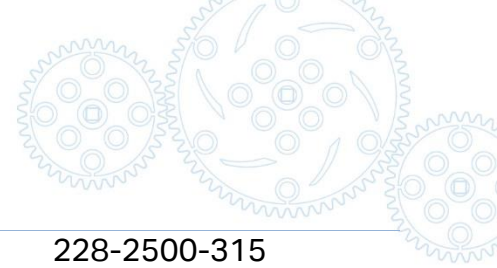


# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-293</p>  <p>1x8 Ballista Arm 228-2500-293</p>	<p>228-2500-294</p>  <p>Ball Machine Claw 228-2500-298</p>	<p>228-2500-295</p>  <p>Track Tiebar with Mounting 228-2500-299</p>
 <p>Track Tiebar 228-2500-300</p>	 <p>Fork Lift Beam 228-2500-301</p>	 <p>Skyhook Hood 228-2500-302</p>
 <p>Strandbeast Shoulder Blade 228-2500-303</p>	 <p>Strandbeast Leg 228-2500-304</p>	 <p>Strandbeast Face Plate 228-2500-305</p>
 <p>Strandbeast Spine Arch 228-2500-306</p>	 <p>3-Way 2x3 Plate 228-2500-307</p>	 <p>3-Way Perpendicular 1x2 Plate 228-2500-308</p>
 <p>Spider Leg 228-2500-309</p>	 <p>Spider Face Plate 228-2500-310</p>	 <p>Spider Top Plate - Front 228-2500-311</p>
 <p>Spider Top Plate - Rear</p>	 <p>Scarab Leg</p>	 <p>Scarab Top Shell</p>

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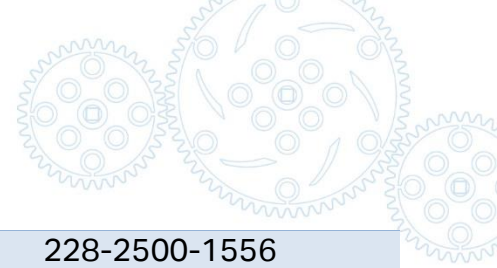
<p>228-2500-312</p>  <p>Scarab Front Shell 228-2500-312</p>	<p>228-2500-313</p>  <p>Scarab Rear Shell 228-2500-313</p>	<p>228-2500-315</p>  <p>Ant Front Plate 228-2500-315</p>
 <p>Ant Center Plate 228-2500-316</p>	 <p>Ant Rear Plate 228-2500-317</p>	 <p>Ant Front Antenna 228-2500-320</p>
 <p>Ant Rear Antenna 228-2500-321</p>	 <p>2x6 Beam with Chamfered Ends 228-2500-322</p>	 <p>1x6 Smooth Beam 228-2500-323</p>
<p>228-2500-400</p>  <p>2x1 Left Corner Beam 228-2500-400</p>	<p>228-2500-401</p>  <p>2x1 Right Corner Beam 228-2500-401</p>	<p>228-2500-471</p>  <p>17x Robot Arm Beam 228-2500-471</p>
 <p>12x Robot Arm Beam 228-2500-472</p>	 <p>6x2x2 Tee Beam 228-2500-478</p>	 <p>76mm Ball (Sun) 228-2500-481</p>
<p>228-2500-487</p>  <p>19mm Ball (Moon) 228-2500-487</p>	<p>228-2500-495</p>  <p>38mm Ball (Earth) 228-2500-495</p>	 <p>2x4 25mm Ball Shooter Plate (Weak) 228-2500-507</p>

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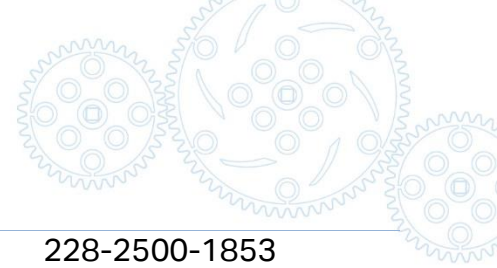
<p>228-2500-509</p>  <p>2x4 25mm Ball Shooter Plate (Strong)</p>	<p>228-2500-510</p>  <p>1x1 Smooth Panel</p>	<p>228-2500-511</p>  <p>1x2 Smooth Panel</p>
<p>228-2500-513</p>  <p>1x4 Smooth Panel</p>	<p>228-2500-1110</p>  <p>1x6 (3-4-5 Triangle) Diagonal Offset Truss Beam</p>	<p>228-2500-1117</p>  <p>7x9x11 (6-8-10 Triangle) Truss Plate</p>
<p>228-2500-1189</p>  <p>2x3 Delta Tee Beam</p>	<p>228-2500-1199</p>  <p>2x4x2 Double 60 Degree Beam</p>	<p>228-2500-1268</p>  <p>2x Wide, 3x3 60 Degree Angle Beam</p>
<p>228-2500-1270</p>  <p>4x4 25mm Tube Plus Plate</p>	<p>228-2500-1277</p>  <p>25mm Half Tube 6x Pitch Straight</p>	<p>228-2500-1287</p>  <p>25mm Half Tube 60 Degree Turn Small</p>
<p>228-2500-1302</p>  <p>25mm Half Tube 3x Pitch Barrel End</p>	<p>228-2500-1357</p>  <p>3x4 1x Offset Trapezoid Plate</p>	<p>228-2500-1436</p>  <p>2x6 Handle Plate</p>

# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-1445</p>  <p>2x8 Medium Convex Plate</p>	<p>228-2500-1486</p>  <p>2x2 45 Degree Beam</p>	<p>228-2500-1556</p>  <p>2x6x2 30 Degree Jogged Beam</p>
<p>228-2500-1600</p>  <p>3x12 Girder Plate; 2x8 2x Offset Trapezoid</p>	<p>228-2500-1601</p>  <p>5x2x2 Tee Beam</p>	<p>228-2500-1660</p>  <p>Ball Pin Bushing</p>
<p>228-2500-1665</p>  <p>1x4 Ball Socket Linkage</p>	<p>228-2500-1698</p>  <p>5x Pitch Diameter, 10x Pitch Long Half Round Panel</p>	<p>228-2500-1704</p>  <p>2x4 Base, Extended 0.5 x 1x Pitch Sloped Panel</p>
<p>228-2500-1705</p>  <p>2x5 Base, Extended 0.5 x 1x Pitch Sloped Panel</p>	<p>228-2500-1727</p>  <p>1x3 Base, Extended 0.5 x 1x Pitch, Diagonal Left Corner Sloped Panel</p>	<p>228-2500-1728</p>  <p>1x3 Base, Extended 0.5 x 1x Pitch, Diagonal Right Corner Sloped Panel</p>
<p>228-2500-1828</p>  <p>4x6 Base, Dual 0.5 x 2x Pitch Double Slope Panel</p>	<p>228-2500-1848</p>  <p>4x2 Base, Dual 0.5 x 2x Pitch Fade Double Slope Panel</p>	<p>228-2500-1849</p>  <p>4x5 Base, Dual 0.5 x 2x Pitch Extended Fade Slope Panel</p>

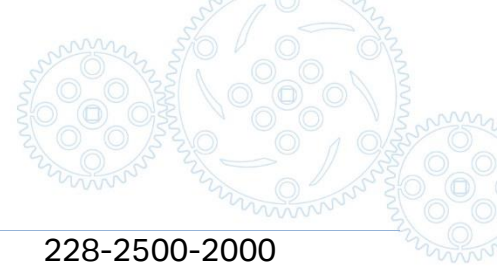
# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-1851</p>  <p>Minifigure Upper Torso 228-2500-1854</p>	<p>228-2500-1852</p>  <p>Minifigure Lower Torso 228-2500-1855</p>	<p>228-2500-1853</p>  <p>Minifigure Shoulder Pin 228-2500-1856</p>
 <p>Minifigure Arm - Left 228-2500-1857</p>	 <p>Minifigure Arm - Right 228-2500-1858</p>	 <p>Minifigure Leg - Left 228-2500-1859</p>
 <p>Minifigure Leg - Right 228-2500-1897</p>	 <p>Minifigure Seat - Over-beam Snap Hole 228-2500-1898</p>	 <p>Minifigure Seat - Arm Rest Snap Pin 228-2500-1899</p>
 <p>Astronaut Figure 228-2500-1900</p>	 <p>Astronaut Head 228-2500-1905</p>	 <p>Astronaut Backpack 228-2500-1909</p>
 <p>1.5x3 Oblong Satellite Dish 228-2500-1911</p>	 <p>2.5x1.4 Widescreen Monitor 228-2500-1915</p>	 <p>1x Pitch Actuator Handle 228-2500-1918</p>
 <p>Medium Rocket Engine Nozzle</p>	 <p>2.5x3 Cylindrical Tank</p>	 <p>3x Pitch Ducted Fan Housing</p>

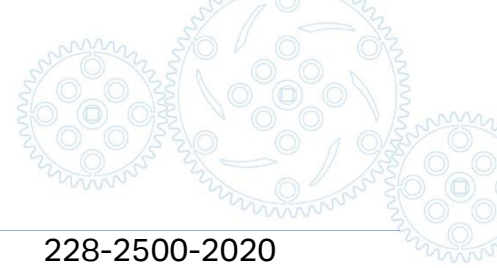


# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-1921</p>  <p>4x Pitch Ducted Fan Housing 228-2500-2001</p>	<p>228-2500-1924</p>  <p>2x1x1 Landing Gear Beam 228-2500-2002</p>	<p>228-2500-2000</p>  <p>6x6 Hexagon Plate 228-2500-2003</p>
 <p>4x7x4 Offset Channel Beam 228-2500-2004</p>	 <p>3x5x3.5 Vehicle Cab 228-2500-2006</p>	 <p>4.5x4.5 Diagonal Corner Panel 228-2500-2007</p>
 <p>2x7 Landing Gear Panel 228-2500-2008</p>	 <p>2x5 Eagle Head Panel 228-2500-2009</p>	 <p>2x4.75 Curved Fade Panel 228-2500-2010</p>
 <p>3x5.5 Front Shuttle Panel 228-2500-2011</p>	 <p>3x5 Dual Curved Fade Panel 228-2500-2012</p>	 <p>9x4.5 Solar Flat Panel 228-2500-2013</p>
 <p>2x1x1.5 Offset Wing Connector 228-2500-2015</p>	 <p>Right Shuttle Wing 228-2500-2016</p>	 <p>Left Shuttle Panel 228-2500-2017</p>
 <p>3x3.5 Hexagon Flat Panel</p>	 <p>3x4 End Flat Panel</p>	 <p>2.5x5 Asymmetric End Flat Panel</p>

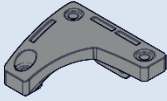
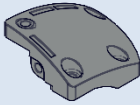
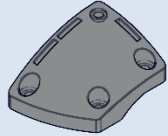
# VEX IQ Challenge 2018-2019 Legal Parts



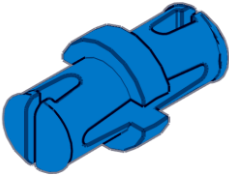
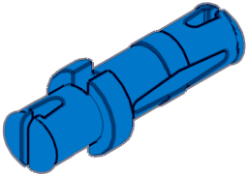
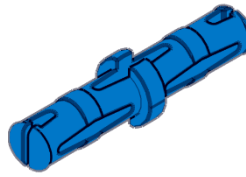
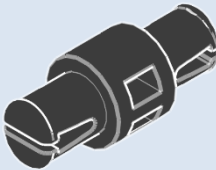
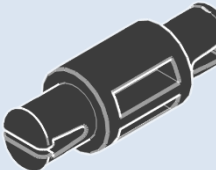
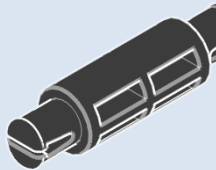
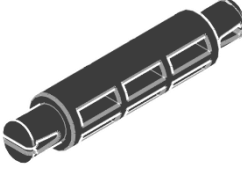
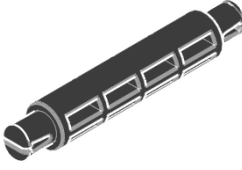

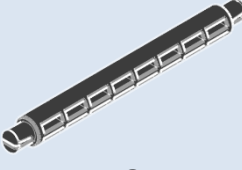
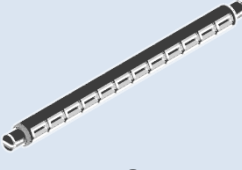
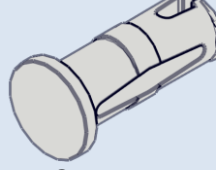
<p>228-2500-2018</p>  <p>4x7 Landing Skid Plate</p>	<p>228-2500-2019</p>  <p>2x3x2.5 Roll Cage</p>	<p>228-2500-2020</p>  <p>1x3 Bottom Shuttle Nose Panel</p>
<p>228-2500-2021</p>  <p>Large Vehicle Cab Left Panel</p>	<p>228-2500-2022</p>  <p>Large Vehicle Cab Right Panel</p>	<p>228-2500-2023</p>  <p>Large Vehicle Cab 4x Wide Windshield</p>
<p>228-2500-2024</p>  <p>2x Wide, 4x Pitch Diameter Half Puck</p>	<p>228-2500-2100</p>  <p>3x1, R5 x Flat Curve Panel</p>	<p>228-2500-2101</p>  <p>3x2, R5 x Flat Curve Panel</p>
<p>228-2500-2108</p>  <p>4x1, R6 x Flat Curve Panel</p>	<p>228-2500-2109</p>  <p>4x2, R6 x Flat Curve Panel</p>	<p>228-2500-2116</p>  <p>3x3, R5 x R5 Curve Panel</p>
<p>228-2500-2120</p>  <p>Dual R5, Left Curve Filler Panel</p>	<p>228-2500-2121</p>  <p>Dual R5, Right Curve Filler Panel</p>	<p>228-2500-2124</p>  <p>3x4, R5 x Flat Left Concave Curve Panel</p>

# VEX IQ Challenge 2018-2019 Legal Parts



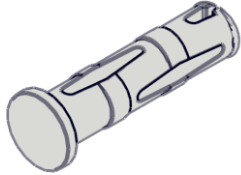
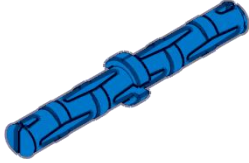

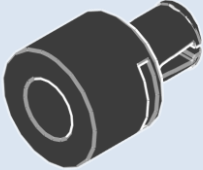
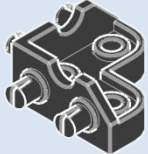

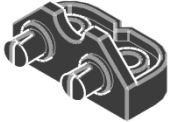
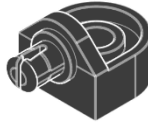
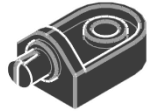
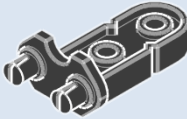
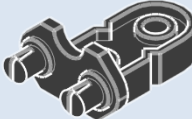
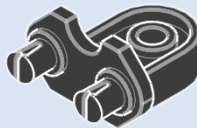
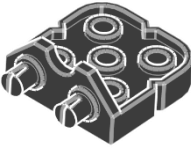

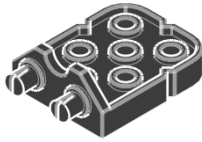
<p>228-2500-2125</p>  <p>3x4, R5 x Flat Right Concave Curve Panel</p>	<p>228-2500-2134</p>  <p>3x4x3, R5 x R6 x Flat R5 Left Curve Panel</p>	<p>228-2500-2135</p>  <p>3x4x3, R5 x R6 x Flat R5 Right Curve Panel</p>
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## Connectors

<p>228-2500-060</p>  <p>1x1 Connector Pin</p>	<p>228-2500-061</p>  <p>1x2 Connector Pin</p>	<p>228-2500-062</p>  <p>2x2 Connector Pin</p>
<p>228-2500-063</p>  <p>0.25x Pitch Standoff</p>	<p>228-2500-064</p>  <p>0.5x Pitch Standoff</p>	<p>228-2500-065</p>  <p>1x Pitch Standoff</p>
<p>228-2500-066</p>  <p>1.5x Pitch Standoff</p>	<p>228-2500-067</p>  <p>2x Pitch Standoff</p>	<p>228-2500-069</p>  <p>3x Pitch Standoff</p>
<p>228-2500-070</p>  <p>4x Pitch Standoff</p>	<p>228-2500-072</p>  <p>6x Pitch Standoff</p>	<p>228-2500-086</p>  <p>0x2 Connector Pin</p>

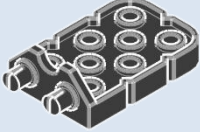
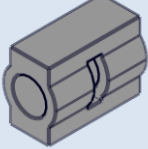
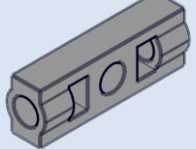


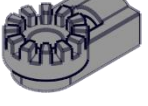
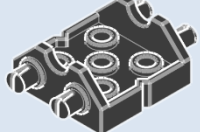
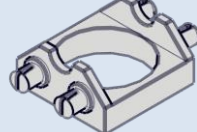
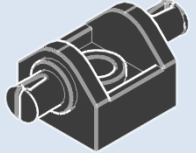
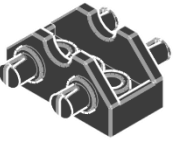
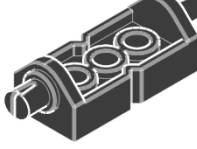
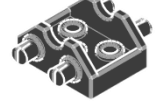
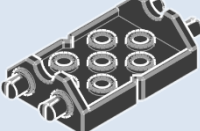

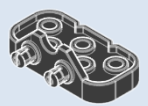
# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-087</p>  <p>0x3 Connector Pin</p>	<p>228-2500-089</p>  <p>3x3 Connector Pin</p>	<p>228-2500-099</p>  <p>0x1 Sheet Pin</p>
<p>228-2500-109</p>  <p>0.5x Pitch Standoff Extender</p>	<p>228-2500-126</p>  <p>Large Chassis Corner Connector</p>	<p>228-2500-127</p>  <p>Small Chassis Corner Connector</p>
<p>228-2500-128</p>  <p>2x Wide, 1x2 Corner Connector</p>	<p>228-2500-129</p>  <p>1x Wide, 1x1 Corner Connector</p>	<p>228-2500-130</p>  <p>1x Wide, 1x1 Offset Corner Connector</p>
<p>228-2500-131</p>  <p>2x Wide, 2x1 Offset Corner Connector</p>	<p>228-2500-132</p>  <p>2x Wide, 2x1 Corner Connector</p>	<p>228-2500-133</p>  <p>2x Wide, 1x1 Offset Corner Connector</p>
<p>228-2500-134</p>  <p>2x Wide, 2x2 Corner Connector</p>	<p>228-2500-135</p>  <p>2x Wide, 1x2 Offset Corner Connector</p>	<p>228-2500-136</p>  <p>2x Wide, 2x2 Offset Corner Connector</p>

# VEX IQ Challenge 2018-2019 Legal Parts

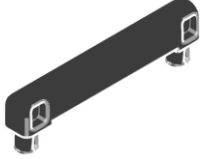
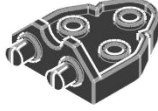

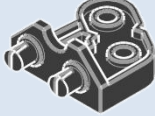
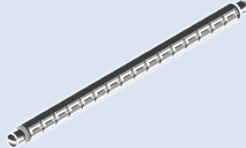
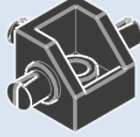
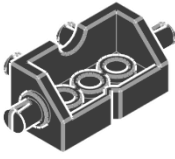
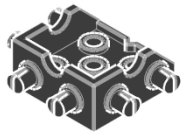
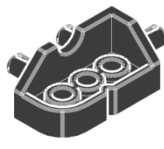
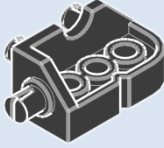
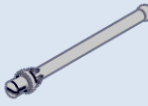



<p>228-2500-137</p>  <p>2x Wide, 3x2 Corner Connector</p>	<p>228-2500-170</p>  <p>Mini Standoff Connector</p>	<p>228-2500-171</p>  <p>Straight Standoff Connector</p>
<p>228-2500-172</p>  <p>End Standoff Connector</p>	<p>228-2500-175</p>  <p>45 Degree Standoff Connector</p>	<p>228-2500-192</p>  <p>Locking Angle End Standoff Connector</p>
<p>228-2500-220</p>  <p>Double 2x Wide, 2x2 Corner Connector</p>	<p>228-2500-259</p>  <p>Double 2x Wide, 1/2" Pipe Connector</p>	<p>228-2500-270</p>  <p>Double 1x Wide, 1x1 Corner Connector</p>
<p>228-2500-271</p>  <p>Double 2x Wide, 1x2 Corner Connector</p>	<p>228-2500-272</p>  <p>Double 1x Wide, 2x1 Corner Connector</p>	<p>228-2500-274</p>  <p>Double 2x Wide, 1x2 Offset Corner Connector</p>
<p>228-2500-277</p>  <p>Double 2x Wide, 2x2 Double Offset Corner Connector</p>	<p>228-2500-279</p>  <p>1x Wide, 1x2 Corner Connector</p>	<p>228-2500-283</p>  <p>2x Wide, 1x3 Offset Corner Connector</p>



# VEX IQ Challenge 2018-2019 Legal Parts

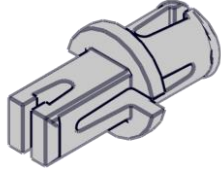


<p>228-2500-314</p>  <p>1x4 Bearing Surface Block</p>	<p>228-2500-368</p>  <p>2x Wide, 60 Degree Omni 1x2 Corner Connector</p>	<p>228-2500-371</p>  <p>2x Wide, 30 Degree Right 1x2 Corner Connector</p>
<p>228-2500-372</p>  <p>2x Wide, 30 Degree Left 1x2 Corner Connector</p>	<p>228-2500-1061</p>  <p>8x Pitch Standoff</p>	<p>228-2500-1250</p>  <p>Triple 1x Wide, 1x1 Corner Connector</p>
<p>228-2500-1251</p>  <p>Triple 1-2-1x Wide, 1x2 Corner Connector</p>	<p>228-2500-1253</p>  <p>Triple 2x Wide, 2x2 Corner Connector</p>	<p>228-2500-1254</p>  <p>1x2 Left Chassis Corner Connector</p>
<p>228-2500-1255</p>  <p>1x2 Right Chassis Corner Connector</p>	<p>228-2500-1906</p>  <p>4x Pitch Antenna</p>	<p>228-2500-1934</p>  <p>6x Pitch Flexible Standoff (Flexible)</p>



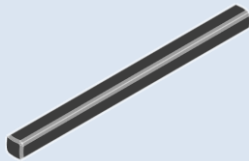
**Motion**

228-2500-073



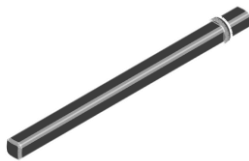
1x1 Idler Pin

228-2500-076



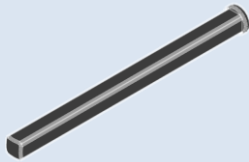
4x Pitch Plastic Shaft

228-2500-079



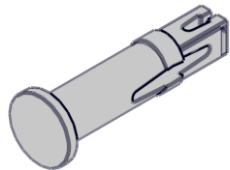
4x Pitch Plastic Motor Shaft

228-2500-082



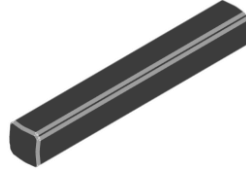
4x Pitch Capped Plastic Shaft

228-2500-085



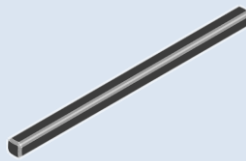
0x3 Smooth Idler Pin

228-2500-074



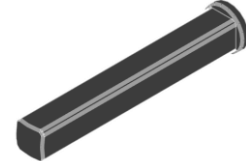
2x Pitch Plastic Shaft

228-2500-077



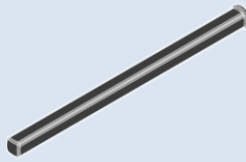
5x Pitch Plastic Shaft

228-2500-080



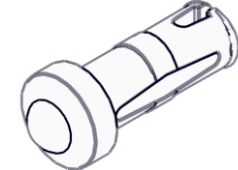
2x Pitch Capped Plastic Shaft

228-2500-083



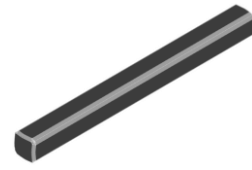
5x Pitch Capped Plastic Shaft

228-2500-090



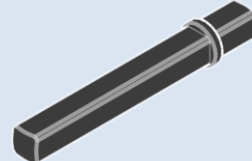
0x2 Connector Pin with Spherical Cap

228-2500-075



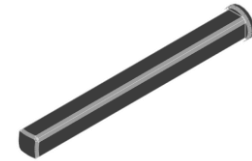
3x Pitch Plastic Shaft

228-2500-078



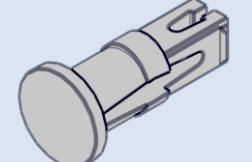
2x Pitch Plastic Motor Shaft

228-2500-081



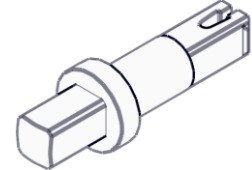
3x Pitch Capped Plastic Shaft

228-2500-084



0x2 Idler Pin

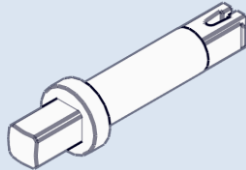
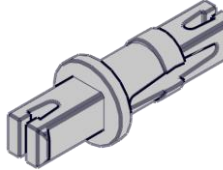
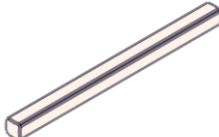

228-2500-091



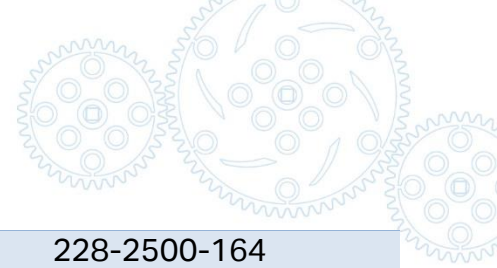
1.5x Pitch Plastic Motor Snap Shaft

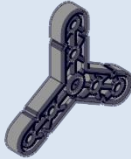

















# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-092</p>  <p>2x Pitch Plastic Motor Snap Shaft</p>	<p>228-2500-093</p>  <p>2.5x Pitch Plastic Flanged Snap Shaft</p>	<p>228-2500-094</p>  <p>3x Pitch Plastic Motor Shaft</p>
<p>228-2500-097</p>  <p>0x3 Idler Pin</p>	<p>228-2500-098</p>  <p>1x2 Idler Pin</p>	<p>228-2500-112</p>  <p>Washer</p>
<p>228-2500-114</p>  <p>0.25x Pitch Spacer</p>	<p>228-2500-117</p>  <p>2x Pitch Shaft</p>	<p>228-2500-119</p>  <p>3x Pitch Shaft</p>
<p>228-2500-120</p>  <p>4x Pitch Shaft</p>	<p>228-2500-121</p>  <p>5x Pitch Shaft</p>	<p>228-2500-122</p>  <p>6x Pitch Shaft</p>
<p>228-2500-123</p>  <p>7x Pitch Shaft</p>	<p>228-2500-124</p>  <p>8x Pitch Shaft</p>	<p>228-2500-125</p>  <p>Shaft Bushing</p>
<p>228-2500-140</p>  <p>2x2 Center Lock Beam</p>	<p>228-2500-141</p>  <p>1x3 Center Lock Beam</p>	<p>228-2500-143</p>  <p>Rubber Shaft Collar</p>







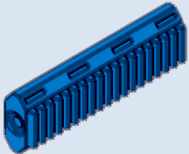
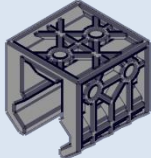






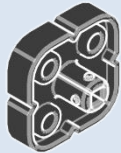



# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-161</p>  <p>3x3 Wye Lock Beam 228-2500-161</p>	<p>228-2500-163</p>  <p>10mm Pulley 228-2500-163</p>	<p>228-2500-164</p>  <p>20mm Pulley 228-2500-164</p>
<p>228-2500-165</p>  <p>30mm Pulley 228-2500-165</p>	<p>228-2500-166</p>  <p>40mm Pulley 228-2500-166</p>	<p>228-2500-168</p>  <p>Rubber Shaft Collar v1 228-2500-168</p>
<p>228-2500-191</p>  <p>Small Turntable Center Bushing 228-2500-191</p>	<p>228-2500-193</p>  <p>Small Turntable Outer Housing 228-2500-193</p>	<p>228-2500-194</p>  <p>Large Turntable Center Bushing 228-2500-194</p>
<p>228-2500-195</p>  <p>Large Turntable Outer Housing 228-2500-195</p>	<p>228-2500-196</p>  <p>XL Turntable Spider Housing 228-2500-196</p>	<p>228-2500-197</p>  <p>XL Turntable Spider Bushing 228-2500-197</p>
<p>228-2500-199</p>  <p>XL Turntable Outer Housing 228-2500-199</p>	<p>228-2500-200</p>  <p>XL Turntable Plain Bushing 228-2500-200</p>	<p>228-2500-202</p>  <p>XL Turntable 36 Tooth Ring Gear Bushing 228-2500-202</p>
<p>228-2500-207</p>  <p>Tire (100 mm Travel) 228-2500-207</p>	<p>228-2500-208</p>  <p>Small Wheel Hub (Ø44 mm) 228-2500-208</p>	<p>228-2500-209</p>  <p>Tire (200 mm Travel) 228-2500-209</p>

# VEX IQ Challenge 2018-2019 Legal Parts


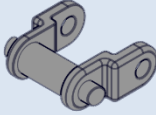
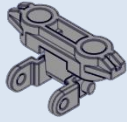


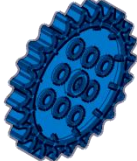


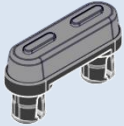
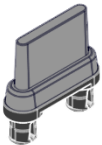

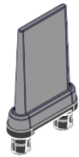








<p>228-2500-210</p>  <p>Tire (160 mm Travel) 228-2500-213</p>	<p>228-2500-211</p>  <p>Large Wheel Hub (Ø64 mm) 228-2500-214</p>	<p>228-2500-212</p>  <p>Tire (250 mm Travel) 228-2500-215</p>
 <p>12 Tooth Gear 228-2500-216</p>	 <p>36 Tooth Gear 228-2500-217</p>	 <p>60 Tooth Gear 228-2500-218</p>
 <p>Rack Gear 228-2500-219</p>	 <p>Linear Slide 228-2500-221</p>	 <p>36 Tooth Crown Gear 228-2500-222</p>
 <p>Worm Gear 228-2500-223</p>	 <p>2x30mm Rubber Belt 228-2500-224</p>	 <p>2x40mm Rubber Belt 228-2500-225</p>
 <p>2x50mm Rubber Belt 228-2500-226</p>	 <p>2x60mm Rubber Belt 228-2500-227</p>	 <p>Inner Twist Lock Collar 228-2500-228</p>
 <p>Outer Twist Lock Collar</p>	 <p>24 Tooth Gear</p>	 <p>48 Tooth Gear</p>















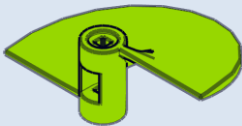

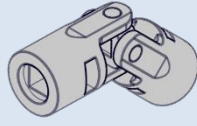

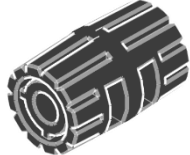

# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-229</p>  <p>Spider 48 Tooth Ring Gear 228-2500-232</p>	<p>228-2500-230</p>  <p>Chain Link 228-2500-233</p>	<p>228-2500-231</p>  <p>Tank Tread Attachment Link 228-2500-235</p>
 <p>8 Tooth Sprocket 228-2500-236</p>	 <p>16 Tooth Sprocket 228-2500-237</p>	 <p>24 Tooth Sprocket 228-2500-239</p>
 <p>32 Tooth Sprocket 228-2500-240</p>	 <p>40 Tooth Sprocket 228-2500-241</p>	 <p>Traction Link 228-2500-242</p>
 <p>Short Intake Flap 228-2500-243</p>	 <p>Medium Intake Flap 228-2500-244</p>	 <p>Long Intake Flap 228-2500-245</p>
 <p>Scarab Thrust Washer for 60 Tooth Gear 228-2500-246</p>	 <p>18 Tooth Bevel Gear 228-2500-247</p>	 <p>Differential Gear 228-2500-260</p>
 <p>1x4 Crank Arm with 23 Tooth Gear</p>	 <p>60 Tooth Internal Ring Gear</p>	 <p>9x Pitch Shaft</p>







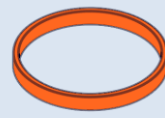
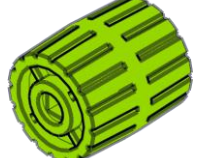

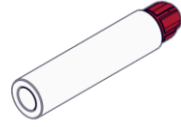

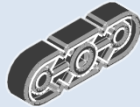



# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-261</p>  <p>10x Pitch Shaft 228-2500-264</p>	<p>228-2500-262</p>  <p>11x Pitch Shaft 228-2500-265</p>	<p>228-2500-263</p>  <p>12x Pitch Shaft 228-2500-266</p>
 <p>14x Pitch Shaft 228-2500-267</p>	 <p>16x Pitch Shaft 228-2500-268</p>	 <p>18x Pitch Shaft 228-2500-269</p>
 <p>20x Pitch Shaft 228-2500-297</p>	 <p>22x Pitch Shaft 228-2500-318</p>	 <p>24x Pitch Shaft 228-2500-319</p>
 <p>Hexcalator Wheel 228-2500-324</p>	 <p>Ant Wheel - 96mm 228-2500-347</p>	 <p>Ant Wheel - 86mm 228-2500-350</p>
 <p>1.5x Pitch Screw Segment - CW 228-2500-354</p>	 <p>Differential Gear (High Strength) 228-2500-355</p>	 <p>Universal Joint 228-2500-420</p>
 <p>Hand Knob</p>	 <p>Dial Knob</p>	 <p>1x Wide Spool</p>

# VEX IQ Challenge 2018-2019 Legal Parts



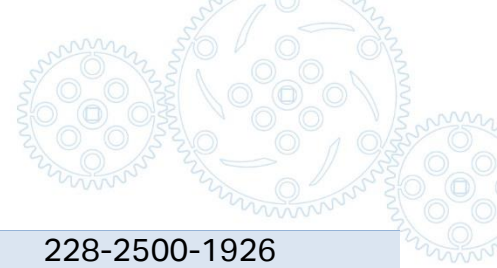
<p>228-2500-430</p>  <p>12x Pitch Rope</p>	<p>228-2500-436</p>  <p>20x Pitch Rope</p>	<p>228-2500-451</p>  <p>36 Tooth Dog Gear</p>
<p>228-2500-461</p>  <p>15 Tooth Gear (34DP)</p>	<p>228-2500-462</p>  <p>36 Tooth Gear (34DP)</p>	<p>228-2500-463</p>  <p>12 Tooth High Strength Bevel Gear</p>
<p>228-2500-470</p>  <p>Silicone Rubber Band #117B</p>	<p>228-2500-474</p>  <p>Silicone Rubber Band #32</p>	<p>228-2500-475</p>  <p>Silicone Rubber Band #64</p>
<p>228-2500-477</p>  <p>Medium Dial Knob</p>	<p>228-2500-500</p>  <p>25mm Ball</p>	<p>228-2500-506</p>  <p>Foam Dart</p>
<p>228-2500-1140</p>  <p>2x2 Center Lock Beam</p>	<p>228-2500-1141</p>  <p>1x3 Center Lock Beam</p>	<p>228-2500-1208</p>  <p>Small Wheel Hub (Ø44 mm)</p>
<p>228-2500-1211</p>  <p>Large Wheel Hub (Ø64 mm)</p>	<p>228-2500-1394</p>  <p>Large Spring Dart</p>	<p>228-2500-1399</p>  <p>Large Dart Launcher (Vertical Mount)</p>

# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-1402</p>  <p>6x Pitch Flywheel (75 g) 228-2500-1446</p>	<p>228-2500-1410</p>  <p>40 Tooth Ratchet 228-2500-1447</p>	<p>228-2500-1411</p>  <p>Short Low-Profile Pawl 228-2500-1454</p>
 <p>Propeller Clutch (CCW) 228-2500-1456</p>	 <p>Zip Flyer Propeller (CCW) 228-2500-1469</p>	 <p>1x20 Linear Motion Rack Gear 228-2500-1472</p>
 <p>1x5 Linear Motion Beam 228-2500-1480</p>	 <p>2x Pitch Linear Motion Bracket 228-2500-1560</p>	 <p>1x6 Linear Motion Rack Gear 228-2500-1580</p>
 <p>2x Pitch Shock Absorber (Strong) 228-2500-1700</p>	 <p>2x Pitch Shock Absorber (Weak) 228-2500-1907</p>	 <p>Steering Knuckle 228-2500-1908</p>
 <p>Airplane Nose Hook 228-2500-1916</p>	 <p>Small Auger Drill Bit 228-2500-1917</p>	 <p>Small Gripper Actuator 228-2500-1919</p>
 <p>0.75x Wide, 1.5x Pitch Diameter Rover Wheel</p>	 <p>1.5x Wide, 2.5x Pitch Diameter Rover Wheel</p>	 <p>3x Pitch 6-Blade Fan (CCW)</p>

# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-2500-1922</p>  <p>4x Pitch 6-Blade Fan (CCW)</p>	<p>228-2500-1925</p>  <p>2x2 Center Offset Round Lock Beam</p>	<p>228-2500-1926</p>  <p>2x Wide, 2x Pitch Diameter Rover Wheel</p>
<p>228-2500-1950</p>  <p>2x Wide, Ø32.2mm Diameter Hub</p>	<p>228-2500-1951</p>  <p>2x Wide, 3x Pitch Diameter Tire (Straight Offroad Tread)</p>	<p>228-2500-1952</p>  <p>2x Wide, 3.5x Pitch Diameter Balloon Tire (Chevron Offroad Tread)</p>
<p>228-2500-1953</p>  <p>2x Wide, Ø48.5mm Diameter Hub</p>	<p>228-2500-1954</p>  <p>2x Wide, 7x Pitch Diameter Balloon Tire (Racing Slick Tread)</p>	<p>228-2500-1955</p>  <p>2x Wide, 7x Pitch Diameter Balloon Tire (Offroad Hex Tread)</p>
<p>228-2500-1957</p>  <p>2x Wide, 3.5x Pitch Diameter Balloon Tire (Trapezoid Offroad Tread)</p>		





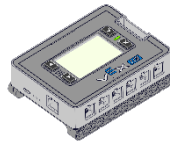
## Control

228-2530



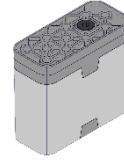
Controller

228-2540



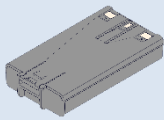
Robot Brain

228-2560



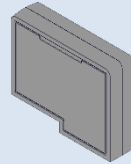
Smart Motor

228-2604



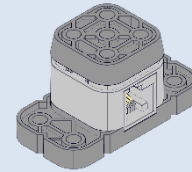
Robot Battery

228-2621



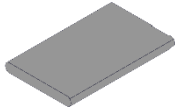
900 MHz Radio

228-2677



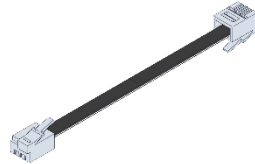
Bumper Switch

228-2779



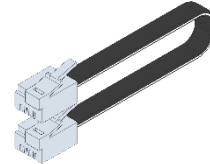
Controller Battery

228-2780-001



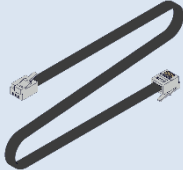
200 mm Smart Cable

228-2780-002



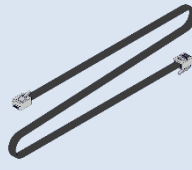
300 mm Smart Cable

228-2780-003



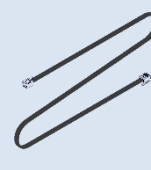
400 mm Smart Cable

228-2780-004



600 mm Smart Cable

228-2780-005



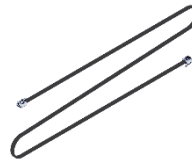
800 mm Smart Cable

228-2780-006



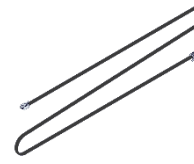
1.0 m Smart Cable

228-2780-007



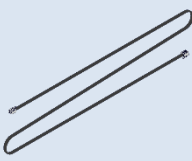
1.2 m Smart Cable

228-2780-008



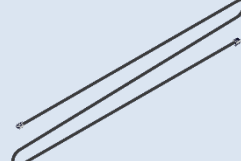
1.4 m Smart Cable

228-2780-009



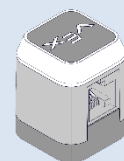
1.6 m Smart Cable

228-2780-011



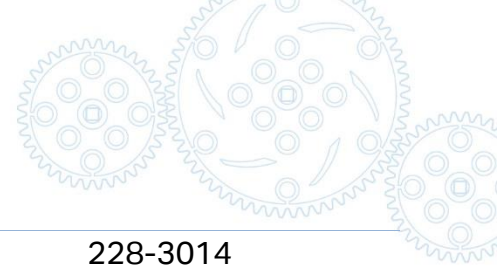
2.0 m Smart Cable

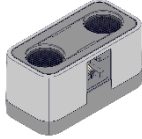
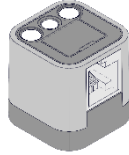
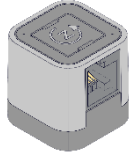
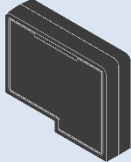

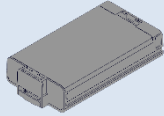
228-3010



Touch LED

# VEX IQ Challenge 2018-2019 Legal Parts



<p>228-3011</p>  <p>Distance Sensor</p>	<p>228-3012</p>  <p>Color Sensor</p>	<p>228-3014</p>  <p>Gyro Sensor</p>
<p>228-3015</p>  <p>2.4 GHz Radio</p>	<p>228-3530</p>  <p>Smart Radio</p>	<p>228-3493</p>  <p>Robot AA Battery Holder</p>