# Dodge Raptor Coupling Flexible Element

APPLIED Industrial Technologies


DODGE

## 1. NATURAL RUBBER WINGLOCK™ ELEMENT

- Finite-Element optimised flexible design, featuring WingLock technology
- Higher bond strength, improved fatigue resistance, and documented longer life
- Industry leading misalignment capabilities
- Torque range up to 38,438 Nm

## 2. EASIER INSTALLATION & REDUCED MAINTENANCE

- Slotted clamp ring holes offer 187% more hardware clearance
- Split element for easy replacement
- Drop-in interchange without any modifications or additional materials
- Maintenance free element

## 3. LONGER DRIVEN EQUIPMENT LIFE

- Rigorously tested to 10x DIN 741 coupling standards
- Significantly lower torsional and bending stiffness
- Up to 16.7x increase in connected L10 bearing life
- ISO class 10.9 hardware offers a 40% increase in proof strength

## 4. FLEXIBLE MOUNTING OPTIONS

- Close-coupled and spacer designs for a wide range of shaft gaps
- Interchangeable hubs for reduced inventory
- Finished bore hubs with setscrew locking for easy installation
- Taper-Lock bushed hubs for clean, compact installation
- Bores up to 229 mm

## ENGINEERED FOR LONGER LIFE AND IMPROVED RELIABILITY

The Dodge Raptor features patented WingLock technology, a finite-element optimised winged elastomeric design that provides longer driven equipment life and improved reliability. WingLock technology increases surface area in the most critical regions of the element, resulting in higher bond strength, improved fatigue resistance, and longer life versus competitive urethane designs. A non-lubricated natural rubber element results in lower stiffness, improved vibration damping, and industry leading misalignment capabilities.

## SUPERIOR NATURAL RUBBER ELEMENT

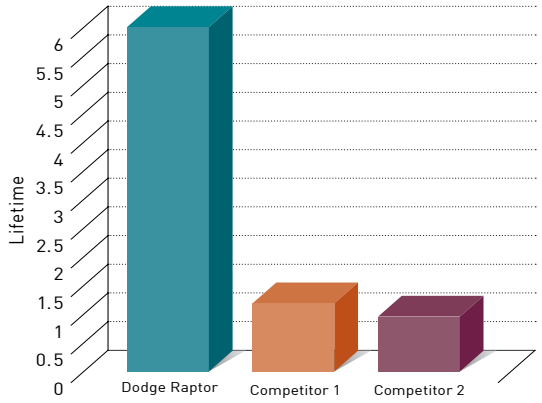
The Raptor features a flexible natural rubber element that offers a number of performance benefits versus competitive urethane designs.

- Static conductive for grounding redundancy, allows current to safely pass through the element, preventing the possibility of arcing during operation
- Exceptional resistance to hydrolysis, for improved performance in humid conditions
- Superior thermal conductivity and ability to dissipate heat

## DOCUMENTED PERFORMANCE

Comparative benchmark testing confirms the performance improvement associated with Raptor's WingLock element design. Even under worst-case misalignment and torque conditions, test results show that the Raptor lasts up to six times longer than the closest competitor.

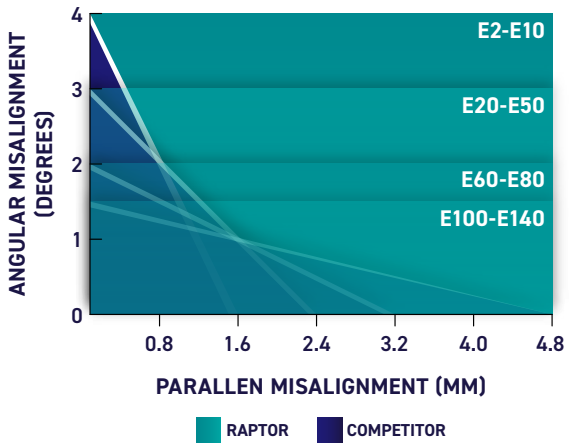
**Results based on accelerated life testing at 1.5x catalogued torque, while subject to 4° angular misalignment and 4.8 mm parallel misalignment.**




## LONGER DRIVEN EQUIPMENT LIFE

Leveraging over 50 years of expertise, the Raptor features a natural rubber element that is significantly more flexible than urethane designs.

- Approximately 50% lower torsional and bending stiffness
- Longer life for all types of equipment – including motors, pumps, compressors, and gearboxes
- Reduced connected equipment bearing loads yield up to a 16.7x increase in L10 bearing life
- Better shock damping and less vibration




## ATTENTION TO EVERY DETAIL

Dodge highly engineered every aspect of the Raptor for performance, including specification of high- strength ISO Class 10.9 flanged head cap screws. This robust hardware gives a 40% increase in proof strength versus competitor's standard head Grade 5 fasteners. Serrations under the flanged head and a thread locking patch help to resist loosening and minimize the potential for stripping. This attention to detail provides a more reliable connection between elastomeric element and shaft hubs.

Dodge Grade 8 (ISO Grad 10.9 equivalent) serrated flanged-head cap screw (shown without Nylok patch).

Competitor Grade 5 (ISO Grade 8.8 equivalent) hex-head cap screw.

APPLIED
Industrial Technologies

## EASIER INSTALLATION & REDUCED MAINTENANCE

The Dodge Raptor has everything needed for easier installation and reduced maintenance costs:

- Split element for easy replacement without moving and re-aligning connected equipment
- Slotted clamp ring holes offer 187% extra mounting clearance versus competitor's designs
- 50% lower torsional stiffness makes the element significantly easier to manipulate by hand during installation
- Maintenance free non-lubricated natural rubber element for trouble-free operation


Raptor's slotted clamp rings offer more clearance at the bolt holes, for an easier installation versus competitive designs.

## EASY AS 1-2-3

Installation for Dodge Raptor couplings are quick and easy. The Raptor's horizontally split element doesn'trequire locking shafts during installation, meaning a faster installation, requiring fewer tools and eliminating shaft damage. Simply fasten the shaft hubs, install the element, and tighten the hardware.

### STEP 1
**FASTEN THE SHAFT HUBS**

### STEP 2
**INSTALL THE ELEMENT**

### STEP 3
**TIGHTEN THE HARDWARE**

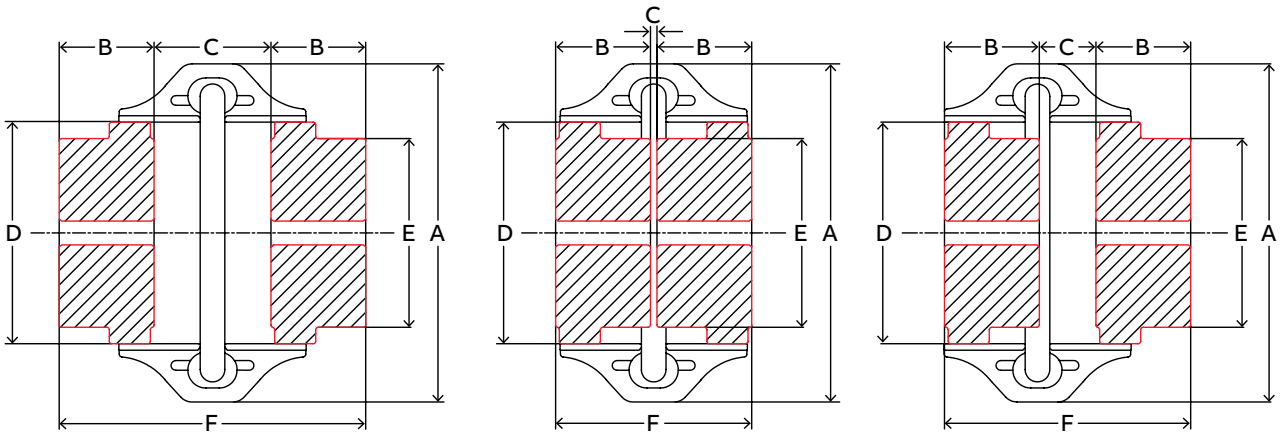
## THIRD-PARTY ATEX CERTIFIED

When it comes to applications in hazardous environments, there's no reason for customers to assume any risk by using a product which is self-certified. That's why Raptor couplings are third-party ATEX certified for worry-free use in hazardous environments. All required product markings and documentation are included with each coupling at no additional charge.

The Raptor is backed by over 50 years of natural rubber expertise and offers an industry leading 5-year warranty, even when used with competitors components.

**For more information:**
new.abb.com/mechanical-power-transmission

## RATINGS AND DIMENSIONS
## CLOSE COUPLED - FINISHED BORE



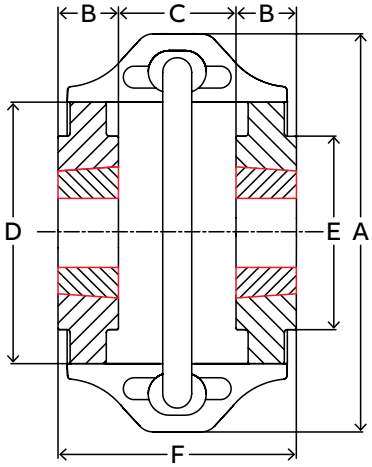

**OUTBOARD** **INBOARD** **HYBRID**

| COUPLING SIZE | MIN. BORE | MAX. BORE [1] | kW/100 | MAX TORQUE (Nm)[2] | MAX. (RPM) | A | B | C[4] | | | D | E | F[4] | | | WEIGHT [2] (KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | OUT-BOARD | INBOARD | HYBRID | | | OUT-BOARD | IN-BOARD | HYBRID | |
| E23 | - | 28 | .23 | 22 | 6,600 | 89 | 24 | 48 | 34 | 41 | 47 | 42 | 96 | 82 | 89 | 0.6 |
| E3M | - | 34 | .43 | 42 | 6,600 | 102 | 38 | 34 | 20 | 27 | 59 | 51 | 110 | 96 | 103 | 1.1 |
| E4M | - | 42 | .65 | 63 | 6,600 | 116 | 43 | 34 | 11 | 22 | 66 | 57 | 119 | 96 | 108 | 1.5 |
| E5M | - | 48 | 1.09 | 105 | 6,600 | 137 | 44 | 47 | 20 | 33 | 80 | 71 | 136 | 109 | 122 | 2.5 |
| E10M | - | 55 | 1.72 | 165 | 6,600 | 162 | 48 | 47 | 13 | 30 | 93 | 84 | 142 | 109 | 126 | 3.5 |
| E20M | - | 60 | 2.72 | 261 | 6,600 | 184 | 52 | 68 | 6 | 37 | 114 | 89 | 172 | 110 | 141 | 5.8 |
| E30M | - | 75 | 4.32 | 413 | 5,800 | 210 | 59 | 76 | 1 | 38 | 138 | 102 | 193 | 118 | 156 | 8.9 |
| E40M | - | 85 | 6.51 | 622 | 5,000 | 241 | 64 | 84 | 11 | 47 | 168 | 118 | 211 | 138 | 174 | 15.2 |
| E50M | - | 90 | 9.06 | 865 | 4,200 | 279 | 70 | 99 | 2 | 51 | 207 | 125 | 239 | 142 | 191 | 23.1 |
| E60M | - | 105 | 14.8 | 1,413 | 3,800 | 318 | 83 | 108 | 13 | 60 | 222 | 146 | 273 | 178 | 225 | 32.3 |
| E70M | - | 120 | 26.2 | 2,501 | 3,600 | 356 | 92 | 122 | 13 | 68 | 235 | 165 | 306 | 197 | 252 | 37.2 |
| E80M | - | 155 | 46.7 | 4,463 | 2,000 | 406 | 124 | 170 | 19 | 94 | 286 | 197 | 417 | 267 | 342 | 76.8 |
| E100M | 63 | 171 | 101 | 9,613 | 1,900 | 533 | 140 | 96 | 45 | 70 | 259 | 267 | 375 | 324 | 350 | 114.6 |
| E120M | 75 | 190 | 201 | 19,226 | 1,800 | 635 | 152 | 125 | 57 | 91 | 448 | 299 | 429 | 362 | 396 | 190.2 |
| E140M | 85 | 228 | 402 | 38,453 | 1,500 | 762 | 178 | 128 | 77 | 102 | 530 | 381 | 483 | 432 | 458 | 269.2 |

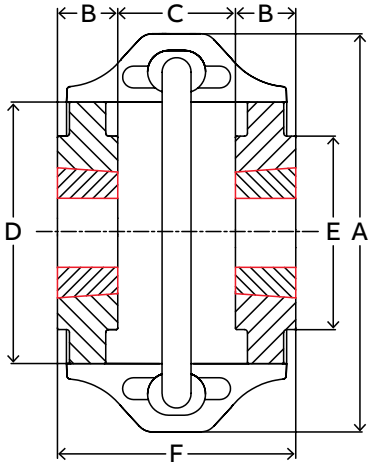
1. Consult page 29 for larger bore capacities with shallow keys
2. Weight of complete coupling in kilograms
3. All dimensions in millimeters
4. Hubs are reversible and will accommodate different shaft spacing requirements

## RATINGS AND DIMENSIONS

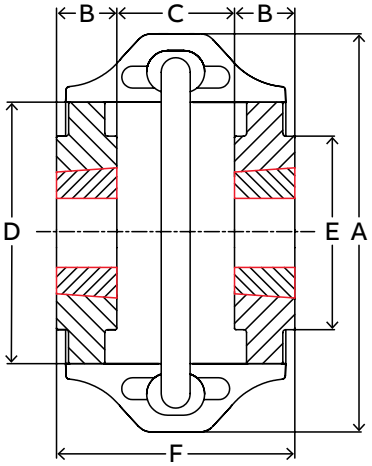
### CLOSE COUPLED - TAPER-LOCK BUSHED




OUTBOARD




INBOARD




HYBRID

| COUPLING SIZE | BUSHING SIZE | MAX. BORE [1] | kW/100 | MAX TORQUE (Nm)[2] | MAX. (RPM) | A | B | C | | | D | E | F | | | WEIGHT [5] (KG) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | OUT-BOARD | INBOARD | HYBRID | | | OUT-BOARD | IN-BOARD | HYBRID | |
| E3M | 1008 | 25 | 0.44 | 42 | 6600 | 102 | 22 | 43 | 42 | 43 | 59 | 51 | 87 | 87 | 87 | 1.0 |
| E4M | 1008 | 25 | 0.66 | 63 | 6600 | 116 | 22 | 43 | 42 | 43 | 66 | 57 | 87 | 87 | 87 | 1.3 |
| E5M | 1210 | 32 | 1.10 | 105 | 6600 | 137 | 22 | 55 | 55 | 55 | 80 | 71 | 100 | 100 | 100 | 2.2 |
| E10M | 1610 | 42 | 1.73 | 165 | 6600 | 162 | 25 | 52 | 52 | 52 | 93 | 84 | 103 | 103 | 103 | 2.9 |
| E20M | 1610 | 42 | 2.73 | 261 | 6600 | 184 | 25 | 64 | 63 | 63 | 114 | 89 | 114 | 114 | 114 | 4.2 |
| E30M | 2012 | 50 | 4.32 | 413 | 5800 | 210 | 32 | 65 | 65 | 65 | 138 | 102 | 129 | 129 | 129 | 6.7 |
| E40M | 2517 | 65 | 6.51 | 622 | 5000 | 241 | 44 | 60 | 60 | 60 | 168 | 118 | 149 | 149 | 149 | 10.8 |
| E50M | 2517 | 65 | 9.06 | 865 | 4200 | 279 | 44 | 76 | 76 | 76 | 207 | 125 | 165 | 165 | 165 | 15.9 |
| E60M | 3020 | 80 | 14.8 | 1413 | 3800 | 318 | 51 | 84 | 84 | 84 | 222 | 146 | 186 | 186 | 186 | 24.3 |
| E70M | 3535 | 95 | 26.2 | 2501 | 3600 | 356 | 89 | 60 | 60 | 60 | 235 | 165 | 238 | 238 | 238 | 35.2 |
| E80M | 4040 | 105 | 46.7 | 4463 | 2000 | 406 | 102 | 95 | 95 | 95 | 286 | 197 | 298 | 298 | 298 | 58.5 |
| E100M | 4535 | 125 | 101 | 9613 | 1900 | 533 | 89 | 153 | 90 | 122 | 259 | 267 | 331 | 268 | 300 | 115.2 |
| E120M | 5040 | 127 | 149 | 14236[2] | 1800 | 635 | 102 | 172 | 105 | 138 | 448 | 299 | 375 | 308 | 341 | 194.1 |
| E140M | 7060 | 180 | 402 | 38453 | 1500 | 762 | 102 | 177 | 76 | 126 | 530 | 381 | 482 | 380 | 431 | 323.4 |

1. All maximum bore dimensions are based off of shallow keys
2. Maximum torque is limited by maximum bushing rated torque
3. Space required to install bushing with shortened hex key

1. Space required to remove bushing with shortened hex key
2. Weight of complete coupling including the bushing at maximum bore
3. All dimensions in millimeters