

# **Drive Couplings**

#### **Drive Couplings Overview**

Rotating shaft-driven mechanical components are commonly used in all forms of machinery that perform the various processes and functions of modern industry. Perfect alignment of shafts and rotating components is desired, but it is nearly impossible to build a real-world machine in which adjacent shaft ends align perfectly.

Adjacent shafts can be misaligned in 3 orientations, angular, parallel and axial, see figure below. Misalignment will place stresses on shafts and related parts of the assembly such as bearings, which can result in early failure of both.

Drive couplings can be used to compensate for shaft misalignment, whether the misalignment is an intentional or an unintentional part of the design. When designing or modifying a system, there are essential factors to consider for choosing the correct couplings for the application.



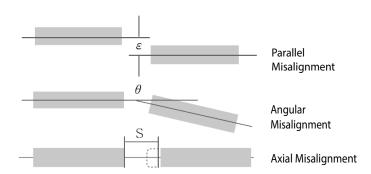
#### Design/Selection Factors:

(Refer to the specification tables herein for the particular specifications of each type of drive coupling.)

- <u>RPM</u>: For higher rpm applications, choose Jaw/Spider or Beam-Style Servo couplings. For lower rpm, consider Double-Loop or Oldham couplings.
- <u>Torque</u>: Consider the torque requirements of the application, and the torque specifications of the different drive coupling types. peak torque generally occurs at start-up, operating torque at steady-state operation, and reversing or braking torque during rapid acceleration or deceleration or direction changes.
- Backlash: Backlash is a measurement of the positional accuracy of the coupling, which is important for reversing and/or motion control applications. Zero backlash is ultimately desirable, but more expensive than necessary for low-precision applications.

For high-precision applications, choose Beam-Style Servo or Oldham couplings. For applications requiring less precision, consider Jaw/Spider or Double-Loop couplings.

 Misalignment: Some degree of angular, axial, or radial misalignment/displacement between shafts is almost unavoidable. Drive couplings can compensate for this misalignment.



|                             | Coupling       | Type Comparisor | ns              |                           |
|-----------------------------|----------------|-----------------|-----------------|---------------------------|
| Coupling Type               | Jaw / Spider   | Double Loop     | Oldham          | Beam-Style Servo          |
| Representative Photo        |                |                 |                 |                           |
| Purpose                     | most common    | light duty      | general purpose | high performance & torque |
| Hub Material                | aluminum       | stainless steel | aluminum        | 416 stainless steel       |
| Center Material             | polyurethane   | Hytrel™         | Delrin™         | 420 stainless steel       |
| Mounting Method             | clamp          | set screw       | clamp           | set screw                 |
| Electrical Isolation        | yes            | yes             | yes             | no                        |
| Backlash                    | varies         | varies          | zero            | zero                      |
| Misalignment Capacity       | ++ (axial)     | +++             | ++              | +                         |
| Breakable "Mechanical Fuse" | no (fail safe) | no              | yes             | no                        |
| Relative Price              | \$\$           | \$\$            | \$              | \$\$\$                    |



# notion Drive Couplings

### Jaw/Spider Clamp-Style Couplings





#### **Features**

- Most commonly specified coupling type
- Aluminum hubs available with different bore diameters in same coupling
- Polyurethane center "spiders" available in different durometers for different degrees of shock and vibration reduction
- Fail-safe operation
- Electrical isolation
- Wide torque range
- · High axial misalignment range
- · Cost effective
- Wide operating temperature range: -40 to 100 °C (-40 to 212 °F)

#### **Applications**

- · General applications
- High-speed applications
- Applications with high axial misalignment
- Applications in which inertia is NOT a factor

|              | Jaw     | / Spi | der Alu | minum                 | Clamp                     | -Style Dri                          | ve Coupli             | ng Hubs*           |         |                |
|--------------|---------|-------|---------|-----------------------|---------------------------|-------------------------------------|-----------------------|--------------------|---------|----------------|
|              |         | Size  |         | May                   |                           | Torsional                           | Ma                    | ax Misalignmer     | nt      | Mainht         |
| Part Number* | Price   | (mm)  | Bore    | Max<br>RPM            | Torque                    | Stiffness                           | Parallel<br>(in [mm]) | Axial<br>(in [mm]) | Angular | Weight<br>(lb) |
| DC-JAC14-03  | \$14.00 |       | 3/16in  |                       |                           |                                     |                       |                    |         |                |
| DC-JAC14-05M | \$14.00 | 14    | 5mm     | 27,280                |                           |                                     |                       |                    |         | 0.039          |
| DC-JAC14-06M | \$14.00 | 14    | 6mm     | 21,200                |                           |                                     |                       |                    |         | 0.059          |
| DC-JAC14-04  | \$14.00 |       | 1/4in   |                       |                           |                                     |                       |                    |         |                |
| DC-JAC20-04  | \$17.00 | 20    | 1/4in   | 19.040                |                           |                                     |                       |                    |         | 0.058          |
| DC-JAC20-05  | \$17.75 | 20    | 5/16in  | 13,040                |                           |                                     | 0.002                 | 0.030              | 1.0°    | 0.030          |
| DC-JAC30-05  | \$26.00 |       | 5/16in  |                       |                           |                                     | [0.05]                | [0.76]             | 1.0     |                |
| DC-JAC30-08M | \$25.50 |       | 8mm     | 3/8in<br>10mm<br>12mm |                           |                                     |                       |                    |         |                |
| DC-JAC30-06  | \$26.00 | 30    | 3/8in   |                       |                           |                                     |                       |                    |         | 0.070          |
| DC-JAC30-10M | \$26.00 | ] 30  | 10mm    |                       |                           |                                     |                       |                    |         | 0.070          |
| DC-JAC30-12M | \$26.00 |       | 12mm    |                       | Th                        |                                     |                       |                    |         |                |
| DC-JAC30-08  | \$26.00 |       | 1/2in   |                       |                           | e and torsional<br>f the assembly   |                       |                    |         |                |
| DC-JAC40-08M | \$30.00 |       | 8mm     |                       | varies de                 | pending upon                        |                       |                    |         |                |
| DC-JAC40-06  | \$30.25 |       | 3/8in   |                       |                           | iter "spider" is<br>fer to the "Jaw |                       |                    |         |                |
| DC-JAC40-10M | \$30.25 |       | 10mm    |                       |                           | Prive Coupling                      |                       |                    |         |                |
| DC-JAC40-12M | \$30.25 |       | 12mm    | ]                     | Spiders"table(pagetPTR-52 |                                     |                       |                    |         |                |
| DC-JAC40-08  | \$30.50 | 40    | 1/2in   | 11,200                |                           | and torsional specifications.       | 0.008<br>[0.2]        | 0.050<br>[1.27]    | 1.2°    | 0.145          |
| DC-JAC40-14M | \$30.25 |       | 14mm    |                       | 501111655 5               | specifications.                     | [0.2]                 |                    |         |                |
| DC-JAC40-10  | \$30.25 |       | 5/8in   |                       |                           |                                     |                       |                    |         |                |
| DC-JAC40-16M | \$30.00 |       | 16mm    |                       |                           |                                     |                       |                    |         |                |
| DC-JAC40-12  | \$30.50 |       | 3/4in   |                       |                           |                                     |                       |                    |         |                |
| DC-JAC55-10  | \$35.00 |       | 5/8in   |                       |                           |                                     |                       |                    |         |                |
| DC-JAC55-19M | \$30.50 |       | 19mm    |                       |                           |                                     |                       |                    |         |                |
| DC-JAC55-12  | \$35.50 | 55    | 3/4in   | 8,480                 |                           |                                     | 0.009<br>[0.23]       | 0.060<br>[1.52]    | 0.9°    | 0.383          |
| DC-JAC55-22M | \$35.00 |       | 22mm    |                       |                           |                                     | [0.20]                | [1.02]             |         |                |
| DC-JAC55-14  | \$35.50 |       | 7/8in   |                       |                           |                                     |                       |                    |         |                |
| DC-JAC65-20  | \$57.00 | 65    | 1-1/4in | 6.800                 |                           |                                     | 0.009                 | 0.060              | 0.9°    | 0.683          |
| DC-JAC65-32M | \$57.00 | 00    | 32mm    | 0,800                 |                           |                                     | [0.23]                | [1.52]             | 0.9     | 0.083          |

<sup>\*</sup> A complete jaw/spider coupling assembly consists of two hubs and one spider, each of the same "size" and each purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.



# motion Drive Couplings

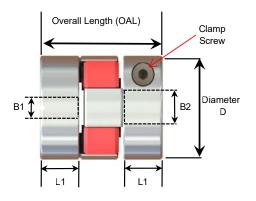
# Jaw/Spider Clamp-Style Coupling Spiders

| _              |         |      | / 0        |       |              | <u>.</u>       |             |                     |
|----------------|---------|------|------------|-------|--------------|----------------|-------------|---------------------|
|                |         | Jav  | v / Spider | Drive | Couplin      | ig Spidei      | <b>'S</b> * |                     |
| Part Number*   | Price   | Size | Durometer  | Color | To           | rque (lb·in [N | ·m])        | Torsional Stiffness |
| Part Nulliber" | FIICE   | SIZE | Duronietei | COIOI | Rated        | Мах            | Reversing** | (lb·in/rad [Nm/rad) |
| DC-JS14-80A    | \$8.00  |      | 80A        | blue  | 6 [0.7]      | 12 [1.4]       |             | 71 [8]              |
| DC-JS14-92A    | \$8.00  | 14   | 92A        | white | 11 [1.2]     | 21 [2.4]       | 2 [0.2]     | 124 [14]            |
| DC-JS14-98A    | \$8.00  |      | 98A        | red   | 18 [2.0]     | 35 [4.0]       |             | 195 [22]            |
| DC-JS20-80A    | \$11.25 |      | 80A        | blue  | 16 [1.8]     | 32 [3.6]       |             | 142 [16]            |
| DC-JS20-92A    | \$12.00 | 20   | 92A        | white | 27 [3.1]     | 53 [6.0]       | 4 [0.5]     | 257 [29]            |
| DC-JS20-98A    | \$11.50 |      | 98A        | red   | 44 [5.0]     | 89 [10.1]      |             | 487 [55]            |
| DC-JS30-80A    | \$13.00 |      | 80A        | blue  | 35 [4.0]     | 71 [8.0]       | 9 [1.0]     | 407 [46]            |
| DC-JS30-92A    | \$13.25 | 30   | 92A        | white | 66 [7.5]     | 133 [15.0]     |             | 646 [73]            |
| DC-JS30-98A    | \$13.25 |      | 98A        | red   | 111 [12.5]   | 221 [25.0]     |             | 1151 [130]          |
| DC-JS40-80A    | \$14.50 |      | 80A        | blue  | 43 [4.9]     | 86 [9.7]       | 11 [1.2]    | 3363 [380]          |
| DC-JS40-92A    | \$14.50 | 40   | 92A        | white | 88 [9.9]     | 177 [20.0]     | 23 [2.6]    | 5045 [570]          |
| DC-JS40-98A    | \$14.50 |      | 98A        | red   | 150 [16.9]   | 300 [33.9]     | 39 [4.4]    | 10621 [1200]        |
| DC-JS55-80A    | \$16.00 |      | 80A        | blue  | 151 [17.1]   | 301 [34.0]     | 39 [4.4]    | 12391 [1400]        |
| DC-JS55-92A    | \$16.00 | 55   | 92A        | white | 310 [35.0]   | 620 [70.1]     | 80 [9.0]    | 14161 [1600]        |
| DC-JS55-98A    | \$16.00 |      | 98A        | red   | 530 [59.9]   | 1060 [119.8]   | 142 [16.0]  | 23012 [2600]        |
| DC-JS65-80A    | \$20.50 |      | 80A        | blue  | 407 [46.0]   | 814 [92.0]     | 106 [12.0]  | 24782 [2800]        |
| DC-JS65-92A    | \$20.50 | 65   | 92A        | white | 840 [94.9]   | 1680 [189.8]   | 221 [25.0]  | 26552 [3000]        |
| DC-JS65-98A    | \$20.50 |      | 98A        | red   | 1415 [159.9] | 2830 [319.7]   | 381 [43.0]  | 43369 [4900]        |



### Dimensions (in [mm])

| Jaw / Spider |                 |          |
|--------------|-----------------|----------|
| Hub Bore     | <b>Dimens</b> i | ons      |
| Hubs         | Sizes           | ØB       |
| DC-JACxx-03  | 14              | 3/16 in  |
| DC-JACxx-05M | 14              | 5mm      |
| DC-JACxx-06M | 14              | 6mm      |
| DC-JACxx-04  | 14, 20          | 1/4 in   |
| DC-JACxx-05  | 20, 30          | 5/16 in  |
| DC-JACxx-08M | 30, 40          | 8mm      |
| DC-JACxx-06  | 30, 40          | 3/8 in   |
| DC-JACxx-10M | 30, 40          | 10mm     |
| DC-JACxx-12M | 30, 40          | 12mm     |
| DC-JACxx-08  | 30, 40          | 1/2 in   |
| DC-JACxx-14M | 40              | 14mm     |
| DC-JACxx-10  | 40, 55          | 5/8 in   |
| DC-JACxx-16M | 40              | 16mm     |
| DC-JACxx-12  | 40, 55          | 3/4 in   |
| DC-JACxx-19M | 55              | 19mm     |
| DC-JACxx-22M | 55              | 22mm     |
| DC-JACxx-14  | 55              | 7/8 in   |
| DC-JACxx-20  | 65              | 1-1/4 in |
| DC-JACxx-32M | 65              | 32mm     |



| Jaw  | Jaw / Spider Aluminum Clamp-Style Drive Coupling Assembly<br>Dimensions* |         |             |             |             |  |  |  |  |  |  |
|------|--|---------|-------------|-------------|-------------|--|--|--|--|--|--|
| Size | Components   | Clamp   | L1          | OAL         | D           |  |  |  |  |  |  |
| OIZE | Components   | Screw   | in [mm]     |             |             |  |  |  |  |  |  |
| 14   | (2) DC-JAC14-xxx + (1) DC-JS14-xxx                                       | #4-40   | 0.28 [7.1]  | 0.86 [21.8] | 0.55 [14.0] |  |  |  |  |  |  |
| 20   | (2) DC-JAC20-xxx + (1) DC-JS20-xxx                                       | #5-40   | 0.39 [9.9]  | 1.20 [30.5] | 0.78 [19.8] |  |  |  |  |  |  |
| 30   | (2) DC-JAC30-xxx + (1) DC-JS30-xxx                                       | #6-32   | 0.43 [10.9] | 1.35 [34.3] | 1.18 [30.0] |  |  |  |  |  |  |
| 40   | (2) DC-JAC40-xxx + (1) DC-JS40-xxx                                       | #10-24  | 0.98 [24.9] | 2.55 [64.8] | 1.57 [39.9] |  |  |  |  |  |  |
| 55   | (2) DC-JAC55-xxx + (1) DC-JS55-xxx                                       | 1/4-20  | 1.16 [29.5] | 2.97 [75.4] | 2.17 [55.1] |  |  |  |  |  |  |
| 65   | (2) DC-JAC65-xxx + (1) DC-JS65-xxx                                       | 5/16-18 | 1.40 [35.6] | 3.53 [89.7] | 2.55 [64.8] |  |  |  |  |  |  |

<sup>\*</sup> Assembly dimensions are for any (2) hubs + (1) spider of the same "size" as assembled. B1 & B2 are the Bore sizes for the selected DC-JACxx Jaw/Hub.

See our website: www.AutomationDirect.com for complete Engineering drawings.

<sup>\*</sup> A complete jaw/spider coupling assembly consists of two hubs and one spider, each of the same "size" and each

purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.

\*\* Reversing Torque is the rapid reversal of rotation and has a lower value to account for stopping inertia and driving in the opposite rotation. For slow direction reversals, Nominal Torque applies.



# notion Drive Couplings

# **Double Loop Couplings**

|               | Dou     | ble I | Loop    | Stainl | ess Steel Dri                     | ve Coup             | lings              |                |                |
|---------------|---------|-------|---------|--------|-----------------------------------|---------------------|--------------------|----------------|----------------|
|               |         |       |         | Max    | Max Torque @                      | Ma                  | ent                | Wainht         |                |
| Part Number   | Price   | Size  | Bore    | rpm    | Max Displacement<br>([lb·in] N·m) | Radial<br>([in] mm) | Axial<br>([in] mm) | Angular<br>(°) | Weight<br>(lb) |
| DC-DLSS10-02  | \$44.00 |       | 1/8 in  |        |                                   |                     |                    |                |                |
| DC-DLSS10-03  | \$44.00 | 10    | 3/16 in |        |                                   |                     |                    |                |                |
| DC-DLSS10-06M | \$44.00 |       | 6mm     |        | [4.4] 0.5                         | [0.10] 2.6          | [0.18] 4.5         | 10             | 0.06           |
| DC-DLSS10-04  | \$44.00 |       | 1/4 in  |        | [4.4] 0.5                         | [0.10] 2.0          | [0.10] 4.3         | 10             | 0.00           |
| DC-DLSS10-05  | \$43.00 |       | 5/16 in |        |                                   |                     |                    |                |                |
| DC-DLSS10-08M | \$42.00 |       | 8mm     |        |                                   |                     |                    |                |                |
| DC-DLSS20-04  | \$49.00 |       | 1/4 in  | 3,000  |                                   |                     |                    |                |                |
| DC-DLSS20-05  | \$49.00 |       | 5/16 in |        | [15.9] 1.8                        |                     |                    |                |                |
| DC-DLSS20-08M | \$49.00 | 20    | 8mm     |        |                                   |                     | [0.30] 7.5         |                | 0.20           |
| DC-DLSS20-06  | \$49.00 | 20    | 3/8 in  |        |                                   |                     | [0.30] 7.3         |                | 0.20           |
| DC-DLSS20-12M | \$49.00 |       | 12mm    |        |                                   |                     |                    |                |                |
| DC-DLSS20-08  | \$49.00 |       | 1/2 in  |        |                                   |                     |                    |                |                |
| DC-DLSS30-12M | \$55.00 |       | 12mm    |        |                                   | [0.13] 3.2          |                    | 15             |                |
| DC-DLSS30-08  | \$55.00 | 30    | 1/2 in  |        | [44 2] 5 0                        | [0.13] 3.2          | 10 221 0 5         | 15             | 0.27           |
| DC-DLSS30-14M | \$55.00 | 30    | 14mm    |        | [44.3] 5.0                        |                     | [0.33] 8.5         |                | 0.27           |
| DC-DLSS30-10  | \$55.00 |       | 5/8 in  |        |                                   |                     |                    |                |                |
| DC-DLSS40-08  | \$60.50 |       | 1/2 in  |        |                                   |                     |                    |                |                |
| DC-DLSS40-14M | \$60.50 | 40    | 14mm    |        | [00 E] 10 O                       |                     | [0.43] 11.0        |                | 0.30           |
| DC-DLSS40-10  | \$60.50 | 40    | 5/8 in  |        | [88.5] 10.0                       |                     |                    |                |                |
| DC-DLSS40-16M | \$60.50 |       | 16mm    |        |                                   |                     |                    |                |                |

#### **Features**

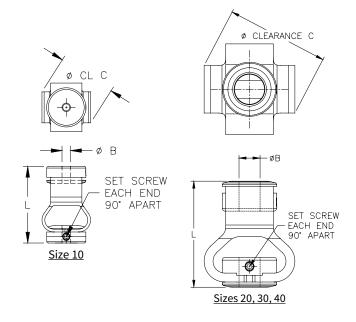
- High torsional rigidity
- One-piece design
- Hubs made of series 300 stainless steel
- Double loop made of DuPont Hytrel<sup>TM</sup>
- Corrosion protection
- Outstanding resistance to acids, alkalis, solvents, oils, grease, ozone
- Wide operating temperature range: -40 to 100 °C (-40 to 212 °F)
- · Electrical isolation
- Damping of shock and vibration
- Speeds up to 3,000rpm

#### **Applications**

- Light-duty applications
- Medium-speed applications
- Applications in which inertia is NOT a factor



## Dimensions (in [mm])



| Double Loop S |      | ess St<br>nensio |         | Coupli       | ng        |  |  |
|---------------|------|------------------|---------|--------------|-----------|--|--|
| Part Number   | Size | Set<br>Screw     | ØB      | ØC<br>(in [i | L<br>nm1) |  |  |
| DC-DLSS10-02  |      |                  | 1/8 in  | ( [.         | ]/        |  |  |
| DC-DLSS10-03  |      |                  | 3/16 in | 1.06 [26.9]  |           |  |  |
| DC-DLSS10-06M | 10   | M3               | 6mm     |              |           |  |  |
| DC-DLSS10-04  | 10   |                  | 1/4 in  |              |           |  |  |
| DC-DLSS10-05  |      |                  | 5/16 in |              |           |  |  |
| DC-DLSS10-08M |      |                  | 8mm     |              |           |  |  |
| DC-DLSS20-04  |      |                  | 1/4 in  |              |           |  |  |
| DC-DLSS20-05  |      | M4               | 5/16 in | 1.89 [48.0]  |           |  |  |
| DC-DLSS20-08M | 20   |                  | 8mm     |              |           |  |  |
| DC-DLSS20-06  |      |                  | 3/8 in  |              |           |  |  |
| DC-DLSS20-12M |      |                  | 12mm    |              |           |  |  |
| DC-DLSS20-08  |      |                  | 1/2 in  |              |           |  |  |
| DC-DLSS30-12M |      |                  | 12mm    |              |           |  |  |
| DC-DLSS30-08  | 30   | M5               | 1/2 in  | 2.13         | 2.17      |  |  |
| DC-DLSS30-14M | 30   | CIVI             | 14mm    | [54.1]       | [55.1]    |  |  |
| DC-DLSS30-10  |      |                  | 5/8 in  |              |           |  |  |
| DC-DLSS40-08  |      |                  | 1/2 in  |              |           |  |  |
| DC-DLSS40-14M | 40   | M6               | 14mm    | 2.20         | 2.20      |  |  |
| DC-DLSS40-10  | 40   | IVIO             | 5/8 in  | [55.9]       | [55.9]    |  |  |
| DC-DLSS40-16M |      |                  | 16mm    |              |           |  |  |

See our website: <a href="www.AutomationDirect.com">www.AutomationDirect.com</a> for complete Engineering drawings.



### **Oldham Drive Couplings**



#### **Features**

- Large radial misalignment capability
- Hubs made of aluminum 2011 T8
- Center discs made of Delrin<sup>TM</sup>
- Mechanical 'fuse' prevents damage to other components in over-torque conditions
- Zero backlash
- Corrosion-resistant
- Non-magnetic
- Operating temperature range: -20 to 60 °C (-4 to 140 °F)

- Electrical isolation
- Absorbs shock and isolates vibration
- Dampens resonance
- Speeds up to 3,000rpm
- · Low inertia

#### **Applications**

- General-purpose applications
- Medium-speed applications

|               |         | Oldh                  | nam Al | uminı | ım Cla        | mp-Style          | Drive Co            | upling Hu          | ıbs*           |                              |        |
|---------------|---------|-----------------------|--------|-------|---------------|-------------------|---------------------|--------------------|----------------|------------------------------|--------|
| Part Number*  | Price   | Size                  | Bore   | Max   |               | orque<br>n [N·m]) |                     | Max Offset         |                | Moment of Inertia            | Weight |
| rait Nulliber | riice   | SIZE                  | Duit   | rpm   | Peak          | Static<br>Break   | Radial<br>(in [mm]) | Axial<br>(in [mm]) | Angular<br>(°) | (lb·in·s²x10 <sup>-5</sup> ) | (Ib)   |
| DC-DAC19-05M  | \$19.50 |                       | 5mm    |       |               |                   |                     |                    |                |                              | 0.032  |
| DC-DAC19-04   | \$19.50 | 19                    | 1/4 in |       | 15 [1.7]      | 71 [8.0]          |                     |                    | 1.5            | 0.518                        | 0.032  |
| DC-DAC19-08M  | \$19.50 |                       | 8mm    |       |               |                   |                     |                    |                |                              | 0.033  |
| DC-DAC25-04   | \$26.50 |                       | 1/4 in |       |               |                   |                     | 0.004 [0.1]        |                |                              | 0.055  |
| DC-DAC25-08M  | \$26.50 |                       | 8mm    |       |               |                   |                     | 0.00-7 [0.1]       |                | 2.23                         | 0.054  |
| DC-DAC25-06   | \$26.50 | 25                    | 3/8 in |       | 35 [4.0]      | 115 [13.0]        |                     |                    |                |                              | 0.050  |
| DC-DAC25-10M  | \$26.50 |                       | 10mm   |       |               |                   | 0.016               |                    |                |                              | 0.050  |
| DC-DAC25-12M  | \$26.50 |                       | 12mm   |       |               |                   | [0.41]              |                    |                |                              | 0.051  |
| DC-DAC33-06   | \$38.00 |                       | 3/8 in |       |               |                   | [0]                 |                    |                |                              | 0.097  |
| DC-DAC33-10M  | \$28.00 |                       | 10mm   |       |               |                   |                     |                    |                |                              | 0.095  |
| DC-DAC33-12M  | \$38.00 | 33                    | 12mm   |       |               |                   |                     |                    |                |                              | 0.095  |
| DC-DAC33-08   | \$38.00 |                       | 1/2 in |       | 80 [9.0]      | 465 [52.5]        |                     |                    |                | 10.0                         | 0.093  |
| DC-DAC33-14M  | \$37.50 |                       | 14mm   | ]     |               |                   |                     |                    |                |                              | 0.091  |
| DC-DAC33-10   | \$30.00 |                       | 5/8 in | ]     |               |                   |                     |                    |                |                              | 0.088  |
| DC-DAC33-16M  | \$18.50 |                       | 16mm   | ]     |               |                   |                     | 0.006 [0.15]       |                |                              | 0.087  |
| DC-DAC41-08   | \$41.50 |                       | 1/2 in | in    |               |                   |                     |                    |                |                              | 0.186  |
| DC-DAC41-14M  | \$42.00 | 14mm 3,000 5/8 in 150 | 14mm   | 3,000 |               |                   |                     |                    |                |                              | 0.181  |
| DC-DAC41-10   | \$41.75 |                       | 3      | 2     | 20.1          | 0.177             |                     |                    |                |                              |        |
| DC-DAC41-16M  | \$42.00 | 41                    | 16mm   | 1     | [16.9]        | 500 [56.5]        |                     |                    | 3              | 28.1                         | 0.172  |
| DC-DAC41-19M  | \$42.00 |                       | 19mm   | 1     |               |                   |                     |                    |                |                              | 0.168  |
| DC-DAC41-12   | \$42.00 |                       | 3/4 in | 1     |               |                   |                     |                    |                |                              | 0.163  |
| DC-DAC50-08   | \$86.00 |                       | 1/2 in | 1     |               |                   |                     |                    |                |                              | 0.260  |
| DC-DAC50-14M  | \$86.00 |                       | 14mm   | ]     |               |                   |                     |                    |                |                              | 0.255  |
| DC-DAC50-10   | \$86.00 |                       | 5/8 in |       |               |                   | 0.020               |                    |                |                              | 0.249  |
| DC-DAC50-16M  | \$86.00 | 50                    | 16mm   | ]     | 265<br>[29.9] | 840 [94.9]        | [0.51]              |                    |                | 66.7                         | 0.244  |
| DC-DAC50-19M  | \$86.00 |                       | 19mm   | 1     | [23.3]        |                   |                     |                    |                |                              | 0.238  |
| DC-DAC50-12   | \$86.00 |                       | 3/4 in | ]     |               |                   |                     | 0.000 10.01        |                |                              | 0.233  |
| DC-DAC50-16   | \$86.00 | 1                     | 1in    | 1     |               |                   |                     | 0.008 [0.2]        |                |                              | 0.227  |
| DC-DAC57-10   | \$94.00 |                       | 5/8 in | 1     |               |                   |                     |                    |                |                              | 0.457  |
| DC-DAC57-16M  | \$94.00 | 1                     | 16mm   | 1     |               |                   |                     |                    |                |                              | 0.439  |
| DC-DAC57-19M  | \$94.00 | 57                    | 19mm   | 1     | 390<br>[44.1] | 1325 [149.7]      |                     |                    |                | 109.7                        | 0.422  |
| DC-DAC57-12   | \$94.00 |                       | 3/4 in | 1     | [44.1]        |                   |                     |                    |                |                              | 0.404  |
| DC-DAC57-16   | \$94.00 | 1                     | 1in    | 1     |               |                   |                     |                    |                |                              | 0.386  |

<sup>\*</sup> A complete Oldham coupling assembly consists of two hubs and one torque disc, each of the same "size" and each purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.



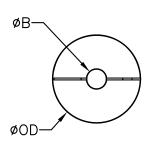
## **Oldham Drive Couplings**

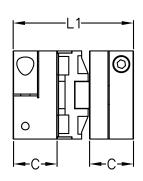


| Oldham Aluminum Clamp-Style Drive<br>Coupling Torque Discs* |         |      |        |  |  |  |  |  |  |  |
|---|---------|------|--------|--|--|--|--|--|--|--|
| Part Number *   | Price   | Size | Color  |  |  |  |  |  |  |  |
| DC-DDS19  | \$2.25  | 19   |        |  |  |  |  |  |  |  |
| DC-DDS25  | \$4.75  | 25   |        |  |  |  |  |  |  |  |
| DC-DDS33  | \$8.00  | 33   | hlasi. |  |  |  |  |  |  |  |
| DC-DDS41  | \$10.00 | 41   | black  |  |  |  |  |  |  |  |
| DC-DDS50  | \$23.00 | 50   |        |  |  |  |  |  |  |  |
| DC-DDS57  | \$32.00 | 57   |        |  |  |  |  |  |  |  |

<sup>\*</sup> A complete Oldham coupling assembly consists of two hubs and one torque disc, each of the same "size" and each purchased separately. The two hubs can be of different "bore" diameters, if needed for the application.

#### Dimensions (in [mm])





|              | luminum Di     |        |  |  |
|--------------|----------------|--------|--|--|
| Coupling Hub | Rore Dime      | nsions |  |  |
| Hubs         | Sizes          | ØB     |  |  |
| DC-DACxx-05M | 19             | 5mm    |  |  |
| DC-DACxx-04  | 19, 25         | 1/4 in |  |  |
| DC-DACxx-08M | 19, 25         | 8mm    |  |  |
| DC-DACxx-06  | 25, 33         | 3/8 in |  |  |
| DC-DACxx-10M | 25, 33         | 10mm   |  |  |
| DC-DACxx-12M | 25, 33         | 12mm   |  |  |
| DC-DACxx-08  | 33, 41, 50     | 1/2 in |  |  |
| DC-DACxx-14M | 33, 41, 50     | 14mm   |  |  |
| DC-DACxx-10  | 33, 41, 50, 57 | 5/8 in |  |  |
| DC-DACxx-16M | 33, 41, 50, 57 | 16mm   |  |  |
| DC-DACxx-12  | 41, 50, 57     | 3/4 in |  |  |
| DC-DACxx-19M | 41, 50, 57     | 19mm   |  |  |
| DC-DACxx-16  | 50, 57         | 1in    |  |  |

| Oldh | Oldham Aluminum Clamp-Style Drive Coupling Assembly Dimensions* |              |                |                |                |  |  |  |  |  |  |
|------|---|--------------|----------------|----------------|----------------|--|--|--|--|--|--|
| Size | Components  | Cap<br>Screw | С              | L1**           | ØOD            |  |  |  |  |  |  |
|      |   | OUIGW        |                | (in [mm])      |                |  |  |  |  |  |  |
| 19   | (2) DC-DAC19-xxx + (1) DC-DDS19                                 | #4-40        | 0.37<br>[9.4]  | 1.02<br>[25.9] | 0.75<br>[19.1] |  |  |  |  |  |  |
| 25   | (2) DC-DAC25-xxx + (1) DC-DDS25                                 | М3           | 0.46<br>[11.7] | 1.28<br>[32.5] | 1.00<br>[25.4] |  |  |  |  |  |  |
| 33** | (2) DC-DAC33-xxx + (1) DC-DDS33                                 | M4           | 0.59<br>[15.0] | 1.89<br>[48.0] | 1.31<br>[33.3] |  |  |  |  |  |  |
| 41   | (2) DC-DAC41-xxx + (1) DC-DDS41                                 | M4           | 0.70<br>[17.8] | 2.00<br>[50.8] | 1.63<br>[41.4] |  |  |  |  |  |  |
| 50   | (2) DC-DAC50-xxx + (1) DC-DDS50                                 | M5           | 0.81<br>[20.6] | 2.35<br>[59.7] | 1.97<br>[50.0] |  |  |  |  |  |  |
| 57   | (2) DC-DAC57-xxx + (1) DC-DDS57                                 | M6           | 1.12<br>[28.4] | 3.07<br>[78.0] | 2.25<br>[57.2] |  |  |  |  |  |  |

<sup>\*</sup> Assembly dimensions are for any (2) hubs + (1) torque disc of the same "size" as assembled. Among components of the same "size," the only dimension that varies is the hub bore diameter (ØB), which is shown separately.

See our website: www.AutomationDirect.com for complete Engineering drawings.

<sup>\*\*</sup> When DC-DAC33-08 is used with another DC-DAC33-xx bore size, L1 = 45. When 2 DC-DAC33-08 are used together, L1 = 42



### **Beam-Style Servo Stainless Steel Set-Screw Couplings**



#### **Features**

- Flexibility of bellows coupling plus torsional stiffness and strength of disc coupling
- · Hubs made of 416 stainless steel
- Flex beams made of 420 stainless steel
- · Zero backlash
- Corrosion-resistant
- Bore reducers available to fit a wide variety of bore combinations
- Very wide operating temperature range: for 24/7 applications:

   -73 to 191 °C (-100 to 375 °F)
   for intermittent applications (<8hr):
   <ul>
   -73 to 232 °C (-100 to 450 °F)

- Speeds up to 10,000rpm
- Torque up to 300 lb·in

#### **Applications**

- High performance applications
- High-speed applications
- · High-torque applications

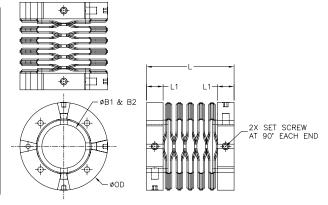
|               | Beam-Style Servo Stainless Steel* Set-Screw Drive Coupling Hubs |            |          |        |                        |               |                     |                    |                |                              |        |  |  |  |
|---------------|---|------------|----------|--------|------------------------|---------------|---------------------|--------------------|----------------|------------------------------|--------|--|--|--|
|               |   |            |          | Max    | Torsional              | Max Torque    | Ма                  | x Misalignme       | nt             | Moment of Inertia            | Weight |  |  |  |
|               | Price   | Price Size | Bore**   | rpm    | Stiffness<br>(lb·in/°) | (Ib·in [N·m]) | Radial<br>(in [mm]) | Axial<br>(in [mm]) | Angular<br>(°) | (lb·in·s²x10 <sup>-5</sup> ) | (OZ)   |  |  |  |
| DC-SBS19-0404 | \$99.00   | 19         | 1/4 in   | 10,000 | 11                     | 12 [1.4]      | 0.010 [0.25]        | 0.020 [0.51]       |                | 0.86                         | 0.84   |  |  |  |
| DC-SBS25-0808 | \$122.00  | 25         | 1/2 in   | 7.500  | 27                     | 24 [2.7]      | 0.045 (0.30)        | 0.025 [0.64]       | 0.030 [0.76]   | 3.75                         | 1.60   |  |  |  |
| DC-SBS32-1010 | \$134.00  | 32         | 5/8 in   | 7,500  | 51                     | 48 [5.4]      | 0.015 [0.38]        | 0.000 (0.70)       |                | 11.1                         | 2.45   |  |  |  |
| DC-SBS38-1212 | \$154.00  | 38         | 3/4 in   | F 000  | 89                     | 75 [8.5]      | 0 000 10 541        | 0.030 [0.76]       |                | 28.2                         | 4.94   |  |  |  |
| DC-SBS44-1414 | \$264.00  | 44         | 7/8 in   | 5,000  | 135                    | 135 [15.3]    | 0.020 [0.51]        | 0.040 [1.02]       |                | 59.2                         | 7.59   |  |  |  |
| DC-SBS51-1616 | \$308.00  | 51         | 1in      | 0.750  | 205                    | 180 [20.3]    | 0.005 10.041        | 0.050 [1.27]       |                | 115                          | 11.26  |  |  |  |
| DC-SBS63-2020 | \$354.00  | 63         | 1-1/4 in | 3,750  | 395                    | 300 [33.9]    | 0.025 [0.64]        | 0.060 [1.52]       |                | 349                          | 18.67  |  |  |  |

<sup>\*</sup> Hubs are 416 stainless; flex beams are 420 stainless.

#### Dimensions (in [mm])

#### **Beam-Style Servo Stainless Steel Drive Coupling** Dimensions ØB2\* ØOD ØB1\* Set Size Screw 19 0.75 [19.1] 0.240 [6.10] 0.250 [6.35] 0.75 [19.1] M3x0.5 25 1.00 [25.4] 0.345 [8.76] 0.500 [12.70] 1.00 [25.4] 32 1.25 [31.6] 0.386 [9.80] 0.625 [15.88] 1.25 [31.6] 1.50 [38.1] 38 0.505 [12.83] 0.750 [19.05] 1.50 [38.1] M5x0.8 44 1.75 [44.5] 0.550 [13.97] 0.875 [22.23] 1.75 [44.5] 2.00 [50.8] 2.00 [50.8] 51 0.555 [14.10] 1.000 [25.40] 63 M6x1.0 2.50 [63.5] 0.615 [15.62] 1.250 [31.75] 2.50 [63.5]

<sup>\*</sup> Use bore reducers for additional bore sizes and bore combinations. See our website: <a href="www.AutomationDirect.com">www.AutomationDirect.com</a> for complete Engineering drawings.



<sup>\*\*</sup> Bore Reducers can be purchased separately from AutomationDirect and installed in DC-SBSxx-xxxx hubs if different bore sizes are needed. (See page tPTR-57 for Bore Reducers.)



#### **Accessories – Bore Reducers**



#### **Features**

- For use in all SureMotion drive coupling hubs to reduce bore size
- Split-collar design with 2 set screw flats will not mark shaft
- 25% greater holding power than standard split collar
- Hardened stainless steel

| Bore Reducers – Stainless Steel Clamping Type |         |                  |          |                 |           |          |
|---|---------|------------------|----------|-----------------|-----------|----------|
| Part Number                                   | Price   | Outside Diameter |          | Inside Diameter |           | Lameth   |
|   |         | Nominal          | Actual   | Nominal         | Actual    | Length   |
| DC-BRS04-02                                   | \$16.50 | 1/4 in           | 0.250 in | 1/8 in          | 0.125 in  | 0.221 in |
| DC-BRS04-04M                                  | \$16.50 |                  |          | 4mm             | 4mm       |          |
| DC-BRS04-03                                   | \$16.50 |                  |          | 3/16 in         | 0.1875 in |          |
| DC-BRS04-05M                                  | \$16.50 |                  |          | 5mm             | 5mm       |          |
| DC-BRS08-06M                                  | \$21.75 | 1/2 in           | 0.500 in | 6mm             | 6mm       | 0.449 in |
| DC-BRS08-04                                   | \$21.75 |                  |          | 1/4 in          | 0.25 in   |          |
| DC-BRS08-05                                   | \$22.00 |                  |          | 5/16 in         | 0.3125 in |          |
| DC-BRS08-08M                                  | \$21.75 |                  |          | 8mm             | 8mm       |          |
| DC-BRS08-06                                   | \$22.00 |                  |          | 3/8 in          | 0.375 in  |          |
| DC-BRS08-10M                                  | \$22.00 |                  |          | 10mm            | 10mm      |          |
| DC-BRS10-10M                                  | \$25.00 | 5/8 in           | 0.625 in | 10mm            | 10mm      | 0.460 in |
| DC-BRS10-07                                   | \$25.00 |                  |          | 7/16 in         | 0.4375 in |          |
| DC-BRS10-12M                                  | \$25.00 |                  |          | 12mm            | 12mm      |          |
| DC-BRS10-08                                   | \$25.00 |                  |          | 1/2 in          | 0.5 in    |          |
| DC-BRS10-14M                                  | \$25.00 |                  |          | 14mm            | 14mm      |          |
| DC-BRS10-09                                   | \$25.00 |                  |          | 9/16 in         | 0.5625 in |          |
| DC-BRS12-06                                   | \$30.00 | 3/4 in           | 0.750 in | 3/8 in          | 0.375 in  | 0.646 in |
| DC-BRS12-12M                                  | \$30.00 |                  |          | 12mm            | 12mm      |          |
| DC-BRS12-08                                   | \$30.00 |                  |          | 1/2 in          | 0.5 in    |          |
| DC-BRS12-10                                   | \$30.00 |                  |          | 5/8 in          | 0.625 in  |          |
| DC-BRS12-16M                                  | \$30.00 |                  |          | 16mm            | 16mm      |          |
| DC-BRS12-11                                   | \$30.00 |                  |          | 11/16 in        | 0.6875 in |          |
| DC-BRS14-14M                                  | \$32.00 | 7/8 in           | 0.875 in | 14mm            | 14mm      | 0.755 in |
| DC-BRS14-10                                   | \$32.00 |                  |          | 5/8 in          | 0.625 in  |          |
| DC-BRS14-16M                                  | \$32.00 |                  |          | 16mm            | 16mm      |          |
| DC-BRS14-11                                   | \$32.00 |                  |          | 11/16 in        | 0.6875 in |          |
| DC-BRS14-18M                                  | \$32.00 |                  |          | 18mm            | 18mm      |          |
| DC-BRS14-12                                   | \$32.00 |                  |          | 3/4 in          | 0.75 in   |          |
| DC-BRS16-10                                   | \$32.00 | 1in              | 1.000 in | 5/8 in          | 0.625 in  | 0.773 in |
| DC-BRS16-18M                                  | \$33.00 |                  |          | 18mm            | 18mm      |          |
| DC-BRS16-12                                   | \$33.00 |                  |          | 3/4 in          | 0.75 in   |          |
| DC-BRS16-20M                                  | \$33.00 |                  |          | 20mm            | 20mm      |          |
| DC-BRS16-13                                   | \$33.00 |                  |          | 13/16 in        | 0.8125 in |          |
| DC-BRS16-14                                   | \$33.00 |                  |          | 7/8 in          | 0.875 in  |          |
| DC-BRS20-22M                                  | \$34.00 | 1-1/4 in         | 1.250 in | 22mm            | 22mm      | 0.793 in |
| DC-BRS20-24M                                  | \$34.00 |                  |          | 24mm            | 24mm      |          |
| DC-BRS20-25M                                  | \$34.00 |                  |          | 25mm            | 25mm      |          |
| DC-BRS20-16                                   | \$34.00 |                  |          | 1in             | 1.0 in    |          |
| DC-BRS20-17                                   | \$34.00 |                  |          | 1-1/16 in       | 1.0625 in |          |
| DC-BRS20-18                                   | \$34.00 |                  |          | 1-1/8 in        | 1.125 in  |          |