

# ECO Series Shock Absorbers



**ITT**

ENGINEERED FOR LIFE



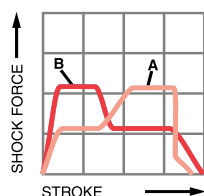
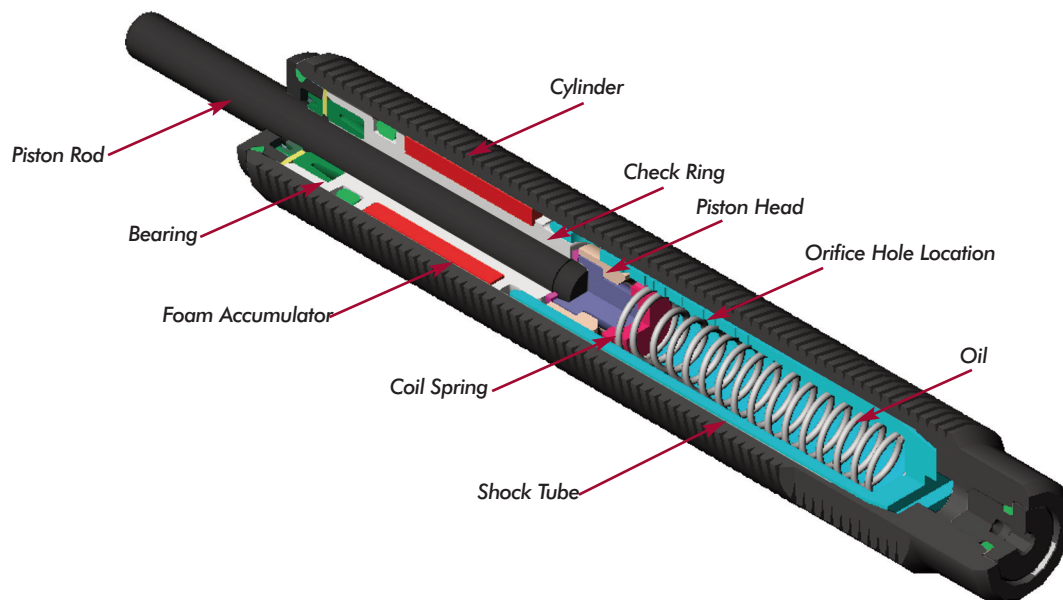
Enidine **New ECO Series** non-adjustable hydraulic shock absorbers can accommodate varying energy conditions. This family of tamperproof shock absorbers provides consistent performance, cycle after cycle. Non-adjustable models are designed to absorb maximum energy within a compact envelope size.

The **ECO Series** was designed using materials and fluids that are safe for our environment. Models can accommodate a wide range of operating conditions with varying masses or propelling forces. The **ECO Series** offers a flexible design to accommodate a wide variety of application parameters. Whether your application has a low velocity/high drive force or high velocity/low drive force condition, the **New ECO Series** will deliver the performance that you have come to expect.

### Features and Benefits

- **Extensive non-adjustable product line** offers flexibility in both size and energy absorption capacity to fulfill a wide range of application requirements.
- **Environmentally friendly materials:**
  - ROHS Compliant materials
  - Bio-degradable hydraulic oil
  - Copper-Free design
  - Recyclable packaging materials
- **Introducing our new Enicote II surface finish:**
  - ROHS Compliant
  - Rated at 350 hours salt spray corrosion protection
- **Jam Nut included** with every shock absorber.
- **ISO quality standards** result in reliable, long-life operation.
- **Tamperproof design** ensures repeatable performance.
- **Threaded cylinders provide mounting flexibility** and increase surface area for improved heat dissipation.
- **Wrench flats** promote ease of mounting
- **Capability to mount into pressure chambers**
- **Integrated positive stopping capabilities** up to 100 psi (7 bar).
- **Special materials and finishes** can be designed to meet specific customer requirements
  - Optional fluids and seal packages can expand the standard operating temperature range from (15°F to 180°F) to (-30°F to 210°F)
  - Food grade options available

## Enidine Non-Adjustable Multiple Orifice Shock Absorbers



**Self-compensating damping** maintains acceptable deceleration with conventional type damping characteristics. Self-compensating shock absorbers operate over a wide range of weights and velocities. These shock absorbers are well suited for high drive force, low velocity applications, and where energy conditions may change. Curve A shows the *shock force vs. stroke* curve of a self-compensating shock absorber impacted with a low velocity and high drive force. Curve B shows the *shock force vs. stroke* curve of a self-compensating shock absorber impacted with a high velocity and low drive force.

The design of a multi-orifice shock absorber features a double cylinder arrangement with space between the concentric shock tube and cylinder, and a series of orifice holes drilled down the length of the shock tube wall.

During piston movement, the check ring is seated and oil is forced through the orifices in the shock tube wall, into the closed cellular foam accumulator and behind the piston head.

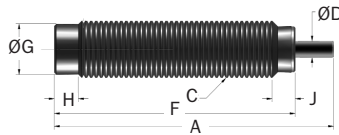
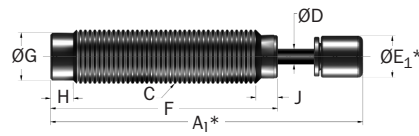
As the piston head moves it closes off orifice holes, thus reducing the available orifice area in proportion to the velocity. After the load is removed the coil spring pushes the piston rod outward. This unseats the check ring and permits the oil to flow from the accumulator and across the piston head, back into the shock tube. This allows quick repositioning for the next impact.

Low Pressure multiple orifice shock absorbers can provide progressive or self-compensating damping, depending on the impact conditions.

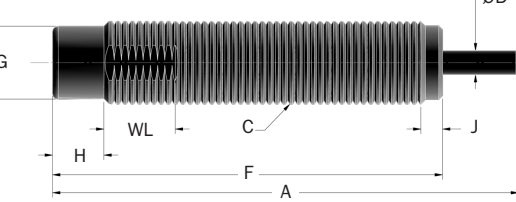
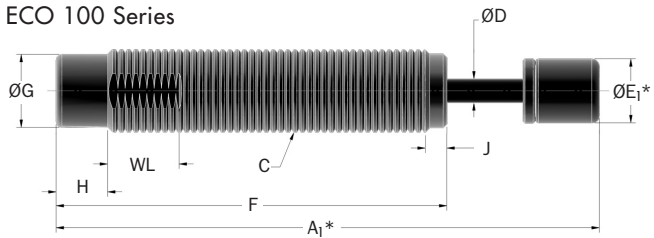
### Standard

### Technical Data

ECO 8 → ECO 10 Series



ECO 15 → ECO 100 Series



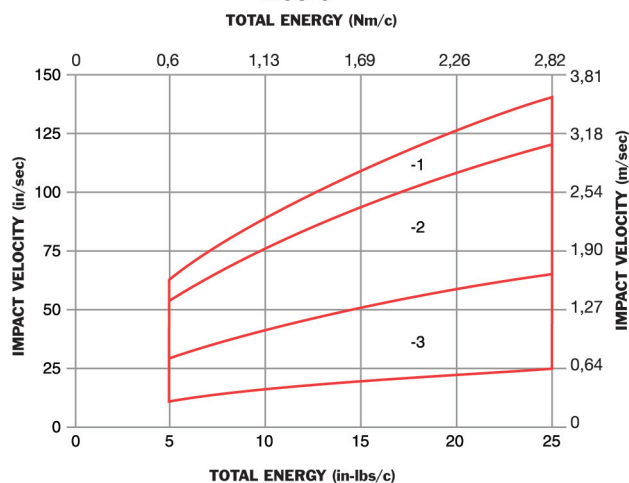
\*Note: A<sub>1</sub> and E<sub>1</sub> apply to button models and urethane striker cap accessory.

| Catalog No./Model | (S) Stroke in. (mm) | (E <sub>T</sub> ) Max. in.-lbs./cycle (Nm/cycle) | (E <sub>T</sub> C) Max. in.-lbs./hour (Nm/h) | (F <sub>P</sub> ) Max. Reaction Force lbs. (N) | Nominal Coil Spring Force |                     | (F <sub>D</sub> ) Max. Propelling Force lbs. (N) | Model Weight lbs. (Kg) |
|-------------------|---------------------|--------------------------------------------------|----------------------------------------------|------------------------------------------------|---------------------------|---------------------|--------------------------------------------------|------------------------|
|                   |                     |                                                  |                                              |                                                | Extended lbs. (N)         | Compressed lbs. (N) |                                                  |                        |
| ECO 8 (B)         | 0.25<br>(6,4)       | 25<br>(3,0)                                      | 50,000<br>(5 650)                            | 200<br>(890)                                   | 0.6<br>(2,7)              | 1.2<br>(5,6)        | 45<br>(200)                                      | .5<br>(16)             |
| ECO 10 (B)        | 0.28<br>(7,0)       | 50<br>(6,0)                                      | 110,000<br>(12 400)                          | 360<br>(1 600)                                 | 0.5<br>(2,2)              | 1.0<br>(4,5)        | 80<br>(350)                                      | 1.0<br>(28)            |
| ECO 15 (B)        | 0.41<br>(10,4)      | 90<br>(10,0)                                     | 250,000<br>(28 200)                          | 450<br>(2 000)                                 | 0.7<br>(3,0)              | 1.6<br>(7,0)        | 50<br>(220)                                      | 2.0<br>(56)            |
| ECO S 25 (B)      | 0.50<br>(12,7)      | 180<br>(20,0)                                    | 300,000<br>(34 000)                          | 625<br>(2 800)                                 | 1.0<br>(4,5)              | 2.5<br>(11,0)       | 200<br>(890)                                     | 2.4<br>(68)            |
| ECO 25 (B)        | 0.63<br>(16,0)      | 235<br>(26,0)                                    | 350,000<br>(34 000)                          | 625<br>(2 800)                                 | 1.0<br>(4,5)              | 2.5<br>(11,0)       | 200<br>(890)                                     | 2.4<br>(68)            |
| ECO S 50 (B)      | 0.50<br>(12,7)      | 250<br>(28,0)                                    | 400,000<br>(45 200)                          | 850<br>(3 750)                                 | 1.5<br>(6,0)              | 3.5<br>(15,0)       | 360<br>(1 600)                                   | 4.0<br>(123)           |
| ECO 50 (B)        | 0.88<br>(22,0)      | 485<br>(54,0)                                    | 475,000<br>(53 700)                          | 850<br>(3 750)                                 | 2.0<br>(8,9)              | 6.8<br>(30,0)       | 360<br>(1 600)                                   | 4.8<br>(136)           |
| ECO 100 (B)       | 1.00<br>(25,0)      | 800<br>(90,0)                                    | 622,000<br>(70 000)                          | 1,250<br>(5 500)                               | 3.0<br>(13,0)             | 6.0<br>(27,0)       | 500<br>(2 200)                                   | 10.5<br>(297)          |

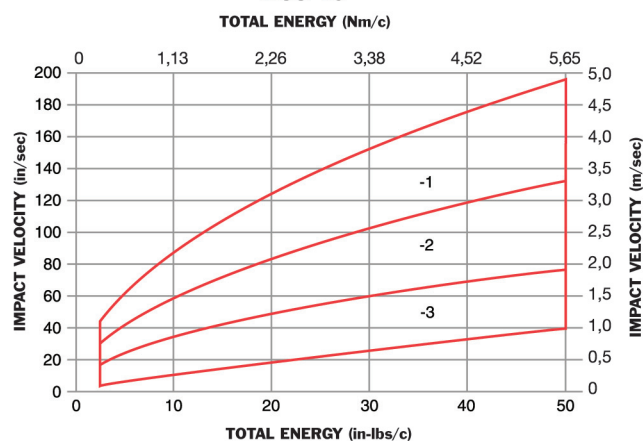
| Catalog No./Model | Damping Constant | A in. (mm)      | A <sub>1</sub> in. (mm) | C in. (mm)                  | D in. (mm)   | E <sub>1</sub> in. (mm) | F in. (mm)      | G in. (mm)    | H in. (mm)    | J in. (mm)   | WF in. (mm)   | WL in. (mm)   |
|-------------------|------------------|-----------------|-------------------------|-----------------------------|--------------|-------------------------|-----------------|---------------|---------------|--------------|---------------|---------------|
| ECO 8 IF (B)      | -1,-2,-3         | 1.86<br>(47,0)  | 2.25<br>(57,0)          | 3/8 - 32 UNEF<br>M8 x 0,75  | .10<br>(2,5) | 0.27<br>(6,8)           | 1.61<br>(40,9)  | .26<br>(6,6)  | .18<br>(4,6)  | .10<br>(2,5) | —             | —             |
| ECO 8 MF (B)      | -1,-2,-3         | —               | —                       | M8 x 1,0                    | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 8 MC (B)      | -1,-2,-3         | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 10 IF (B)     | -1,-2,-3         | 2.12<br>(54,0)  | 2.51<br>(64,0)          | 7/16 - 28 UNEF<br>M10 x 1,0 | .12<br>(3,0) | 0.34<br>(8,6)           | 1.83<br>(46,5)  | .34<br>(8,6)  | .18<br>(4,6)  | .13<br>(3,3) | —             | —             |
| ECO 10 MF (B)     | -1,-2,-3         | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 15 IF (B)     | -1,-2,-3,-4      | 2.45<br>(62,2)  | 2.85<br>(72,4)          | 7/16 - 28 UNEF<br>M12 x 1,0 | .12<br>(3,0) | .40<br>(10,2)           | 2.10<br>(52,1)  | .39<br>(9,9)  | .27<br>(6,9)  | .10<br>(2,5) | .39<br>(11,0) | .38<br>(9,5)  |
| ECO 15 MF (B)     | -1,-2,-3,-4      | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 15 IC (B)     | -1,-2,-3,-4      | —               | —                       | 1/2 - 20 UNEF               | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO S 25 IF (B)   | -1,-2,-3         | 3.25<br>(82,7)  | 3.63<br>(92,2)          | 1/2 - 20 UNF<br>M14 x 1,0   | .16<br>(4,0) | 0.44<br>(11,2)          | 2.74<br>(69,5)  | .43<br>(10,9) | .20<br>(5,1)  | .04<br>(1,0) | .50<br>(12,7) | .44<br>(11,2) |
| ECO S 25 MF (B)   | -1,-2,-3         | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO S 25 IC (B)   | -1,-2,-3         | —               | —                       | 9/16 - 18 UNF<br>M14 x 1,5  | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO S 25 MC (B)   | -1,-2,-3         | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 25 IF (B)     | -1,-2,-3,-4      | 3.84<br>(97,5)  | 4.22<br>(107,2)         | 1/2 - 20 UNF<br>M14 x 1,0   | .16<br>(4,0) | .44<br>(11,2)           | 3.20<br>(81,3)  | .43<br>(10,9) | .30<br>(7,6)  | .04<br>(1,0) | .50<br>(12,7) | .44<br>(11,2) |
| ECO 25 MF (B)     | -1,-2,-3,-4      | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 25 IC (B)     | -1,-2,-3,-4      | —               | —                       | 9/16 - 18 UNF<br>M14 x 1,5  | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 25 MC (B)     | -1,-2,-3,-4      | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO S 50 IF (B)   | -1,-2,-3         | 3.46<br>(87,9)  | 3.93<br>(99,9)          | 3/4 - 16 UNF<br>M20 x 1,5   | .19<br>(4,8) | 0.50<br>(12,7)          | 2.93<br>(74,4)  | .64<br>(16,3) | .30<br>(7,6)  | .04<br>(1,0) | .68<br>(18,0) | .50<br>(12,7) |
| ECO S 50 MC (B)   | -1,-2,-3         | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 50 IF (B)     | -1,-2,-3,-4      | 4.66<br>(118,4) | 5.13<br>(130,3)         | 3/4 - 16 UNF<br>M20 x 1,5   | .19<br>(4,8) | 0.50<br>(12,7)          | 3.76<br>(95,5)  | .64<br>(16,3) | .30<br>(7,6)  | .04<br>(1,0) | .68<br>(18,0) | .50<br>(12,7) |
| ECO 50 MC (B)     | -1,-2,-3,-4      | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 100 IF (B)    | -1,-2,-3,-4      | 5.07<br>(128,8) | 5.57<br>(141,5)         | 1-12 UNF<br>M25 x 1,5       | .25<br>(6,4) | 0.62<br>(15,7)          | 4.04<br>(102,6) | .87<br>(22,0) | .50<br>(12,7) | .18<br>(4,6) | .88<br>(23,0) | .50<br>(12,7) |
| ECO 100 MF (B)    | -1,-2,-3,-4      | —               | —                       | —                           | —            | —                       | —               | —             | —             | —            | —             | —             |
| ECO 100 MC (B)    | -1,-2,-3,-4      | —               | —                       | M27 x 3,0                   | —            | —                       | —               | —             | —             | —            | —             | —             |

Notes: 1. Dash numbers in page color are non-standard lead time items, contact Enidine.  
2. See page 57 for constant damping curves.

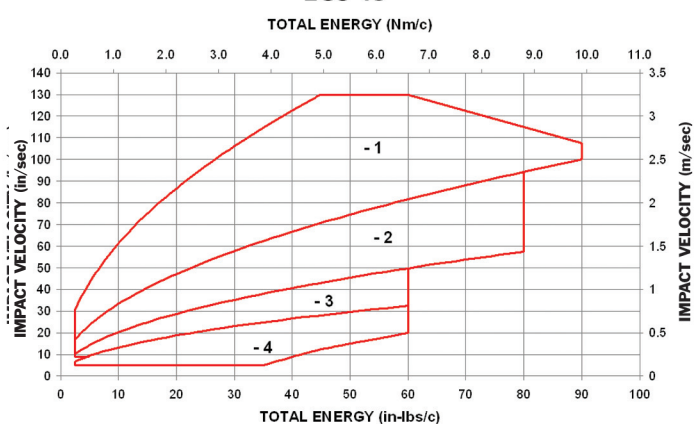
## ECO 8



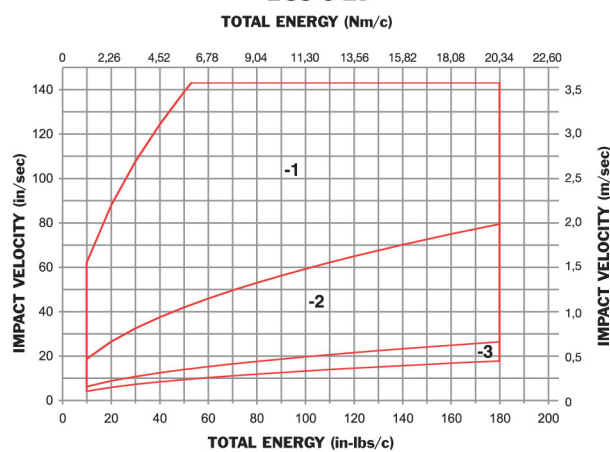
## ECO 10



## ECO 15



## ECO S 25

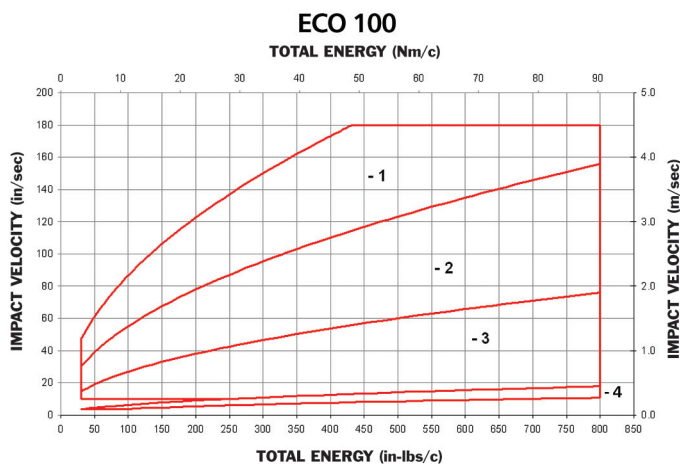
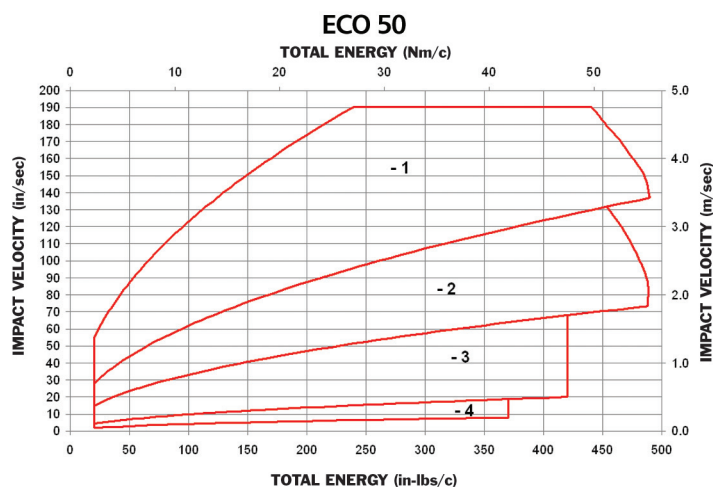
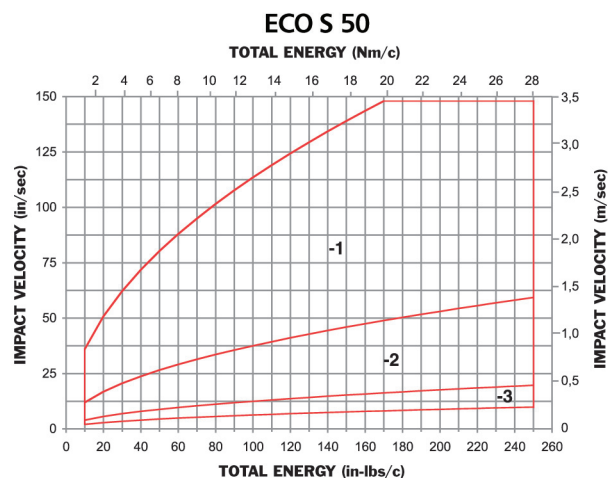
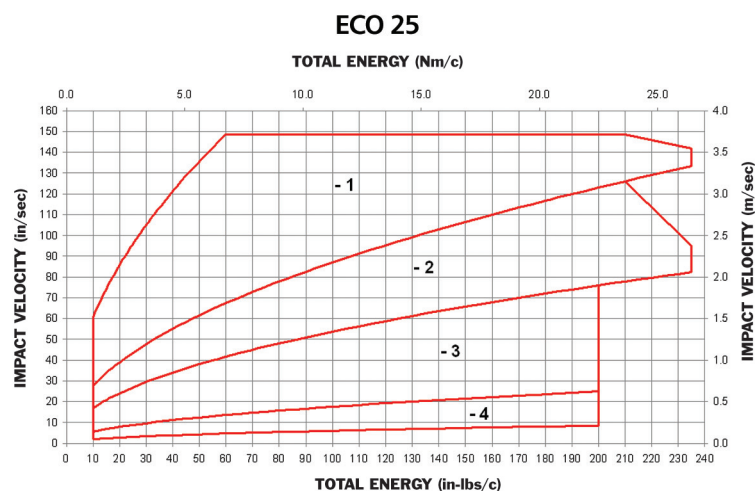


Note: Minimum impact velocity for ECO models is 4 in./sec. (0,1 m/sec).

ECO 25 → ECO 100 Series

### Sizing Curves

Non-Adjustable Series

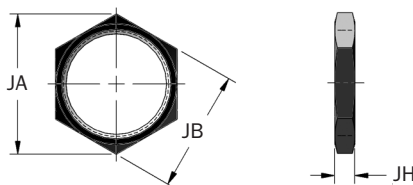


Note: Minimum impact velocity for ECO models is 4 in./sec. (0,1 m/sec).

ECO 8 → ECO 100 Series

## Jam Nut (JN)

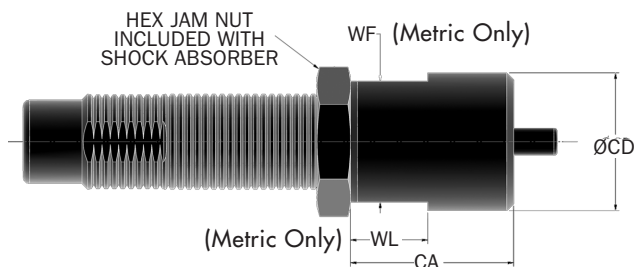
\*Note: One Hex Jam Nut included with every shock absorber.



| Catalog No./Model | ECO Series Part Number | Model (Ref)              | JA in. (mm) | JB in. (mm) | JH in. (mm) | Weight (mass) oz. (g) |
|-------------------|------------------------|--------------------------|-------------|-------------|-------------|-----------------------|
| JN 3/8 - 32       | J123839034             | ECO 8 (B)                | 0.58        | 0.50        | .09         | 0.1                   |
| JN M8 x 0,75      | J223839185             | ECO 8 MF (B)             | (14,0)      | (12,0)      | (4,0)       | (2)                   |
| JN M8 x 1         | J223839035             | ECO 8 MC (B)             | (14,0)      | (12,0)      | (4,0)       | (2)                   |
| JN 7/16 - 28      | J123840034             | ECO 10 IF (B)/ECO 15 (B) | 0.65        | 0.56        | .16         | 0.1                   |
| JN M10 x 1        | J223840167             | ECO 10 MF (B)            | (17,3)      | (15,0)      | (4,0)       | (2)                   |
| JN M12 x 1        | J223841035             | ECO 15 M (B)             | (15,0)      | (13,0)      | (3,2)       | (2)                   |
| JN 1/2 - 20       | J123842166             | ECO S/ECO 25 IF (B)      | 0.72        | 0.63        | .12         | 0.1                   |
| JN M14 x 1        | J223842035             | ECO S/ECO 25 MF (B)      | (19,7)      | (17,0)      | (4,0)       | (3)                   |
| JN 9/16 - 18      | J123842034             | ECO S/ECO 25 IC (B)      | 1.01        | 0.88        | .31         | 0.6                   |
| JN M14 x 1,5      | J223842165             | ECO S/ECO 25 MC (B)      | (19,7)      | (17,0)      | (4,0)       | (3)                   |
| JN 3/4 - 16       | J123844034             | ECO S/ECO 50 IC (B)      | 1.08        | 0.94        | .18         | 0.3                   |
| JN M20 x 1,5      | J223844035             | ECO S/ECO 50 MC (B)      | (27,7)      | (24,0)      | (4,6)       | (9)                   |
| JN 1-12           | J123846034             | ECO 100 (B)              | 1.30        | 1.13        | .18         | 0.5                   |
| JN M25 x 1,5      | J223846035             | ECO 100 MF (B)           | (37,0)      | (32,0)      | (4,6)       | (15)                  |

## Stop Collar (SC)

ECO8 → ECO100

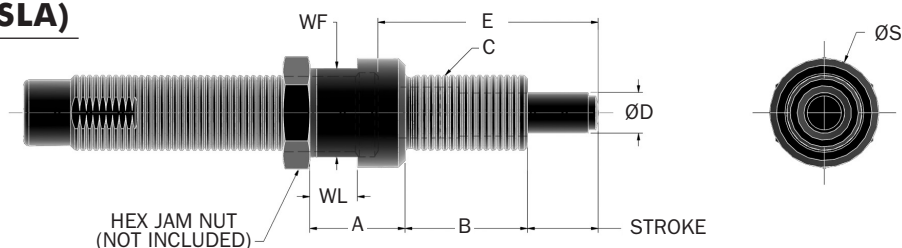


| Catalog No./Model | ECO Series Part Number | Model (Ref)         | CA in. (mm) | CB in. (mm) | CD in. (mm) | WF in. (mm) | WL in. (mm) | Weight (mass) oz. (g) |
|-------------------|------------------------|---------------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| SC 3/8 - 32       | M923839057             | ECO 8 (B)           | 0.75        | .50         | 0.58        | —           | —           | .5                    |
| SC M8 x 0,75      | M923839175             | ECO 8 MF (B)        | (19,0)      | (12,0)      | (14,0)      | —           | —           | (23)                  |
| SC M8 x 1         | M923839058             | ECO 8 MC (B)        | (19,0)      | (12,0)      | (14,0)      | —           | —           | (23)                  |
| SC 7/16 - 28      | M923841057             | ECO 10 IF (B)       | 0.75        | —           | 0.63        | —           | —           | .5                    |
| SC M10 x 1        | M923840171             | ECO 10 MF (B)       | (19,0)      | —           | (14,3)      | —           | —           | (11)                  |
| SC 9/16 - 28      | M923841057             | ECO 15 (B)          | 0.75        | —           | 0.63        | —           | —           | .5                    |
| SC M12 x 1        | M923841058             | ECO 15 M (B)        | (19,0)      | —           | (16,0)      | (14,0)      | (9,0)       | (14)                  |
| SC 1/2 - 20       | M923842057             | ECO S/ECO 25 IF (B) | 1.00        | —           | 0.75        | —           | —           | 1.0                   |
| SC M14 x 1,5      | M923842171             | ECO S/ECO 25 MF (B) | (25,4)      | —           | (21,0)      | (19,0)      | (12,0)      | (38)                  |
| SC 9/16 - 18      | M923842199             | ECO S/ECO 25 IC (B) | 1.00        | —           | 0.69        | —           | —           | 1.0                   |
| SC M14 x 1        | M923842058             | ECO S/ECO 25 MF (B) | (25,4)      | —           | (18,0)      | (17,0)      | (12,0)      | (20)                  |
| SC 3/4 - 16       | M923844057             | ECO S/ECO 50 (B)    | 1.50        | —           | 1.00        | —           | —           | 2.0                   |
| SC M20 x 1,5      | M924057058             | ECO S/ECO 50 M (B)  | (38,0)      | —           | (25,0)      | (22,0)      | (12,0)      | (63)                  |
| SC 1-12 x 1       | M923846057             | ECO 100 (B)         | 1.75        | —           | 1.50        | —           | —           | 8.0                   |
| SC M25 x 1,5      | M923846171             | ECO 100 MF (B)      | (44,5)      | —           | (38,0)      | (32,0)      | (15,0)      | (215)                 |

ECO 8 → ECO 100 Series

Accessories

### Side Load Adaptor (SLA)



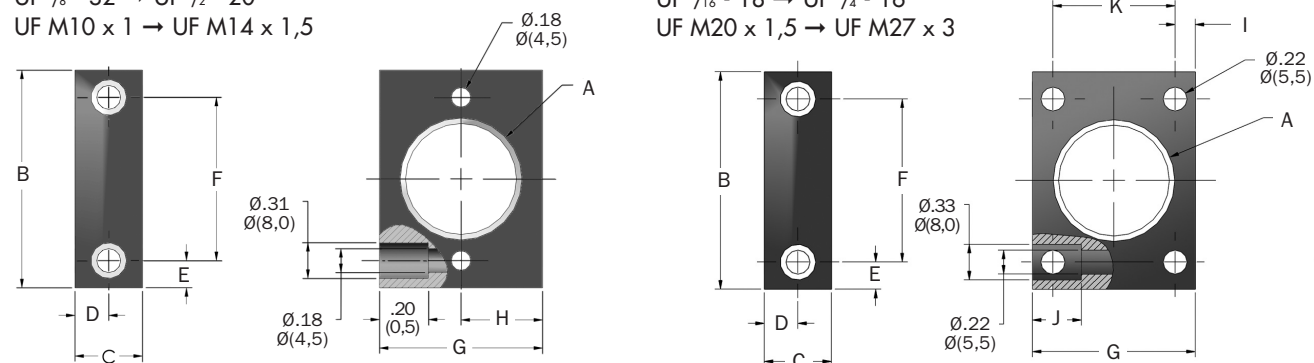
| Catalog No./Model   | ECO Series Part Number | Model (Ref) | Stroke in. (mm) | A in. (mm) | B in. (mm) | C in. (mm)   | D in. (mm) | E in. (mm) | S in. (mm) | WF in. (mm) | WL in. (mm) |
|---------------------|------------------------|-------------|-----------------|------------|------------|--------------|------------|------------|------------|-------------|-------------|
| SLA 7/16 - 28 x .28 | SLA 33974              | ECO 10      | .28             | .47        | .43        | 7/16-28 UNEF | .20        | .87        | .63        | .56         | .16         |
| SLA 10 MF           | SLA 33457              | ECO 10 MF   | (6,4)           | (12)       | (11)       | M10 x 1      | (5,0)      | (21,9)     | (13,0)     | (11,0)      | (4,0)       |
| SLA 7/16 - 28 x .41 | SLA 33844              | ECO 15 IF   | .41             | .71        | .55        | 7/16-28 UNEF | .24        | 1.28       | .63        | .56         | .28         |
| SLA 12 MF           | SLA 33299              | ECO 15 MF   | (10,0)          | (18)       | (14)       | M12 x 1      | (6,0)      | (32,4)     | (14,0)     | (13,0)      | (7,0)       |
| SLA 1/2 - 20 x .41  | SLA 71146              | ECO 15 IC   | .41             | .71        | .55        | 1/2-20 UNF   | .24        | 1.28       | .63        | .56         | .28         |
| SLA 1/2 - 20 x .63  | SLA 33849              | ECO 25 IF   | .63             | 1.02       | .51        | 1/2-20 UNF   | .31        | 1.62       | .71        | .63         | .28         |
| SLA 14 MF           | SLA 33297              | ECO 25 MF   | (16,0)          | (26)       | (13)       | M14 x 1      | (8,0)      | (45,2)     | (18,0)     | (15,0)      | (7,0)       |
| SLA 9/16 - 18 x .63 | SLA 33850              | ECO 25 IC   | .63             | 1.02       | .51        | 9/16-18 UNF  | .31        | 1.62       | .71        | .63         | .28         |
| SLA 14 MC           | SLA 33298              | ECO 25 MC   | (12,7)          | (20)       | (16)       | M14 x 1,5    | (8,0)      | (39,2)     | (18,0)     | (15,0)      | (7,0)       |
| SLA 1/2 - 20 x .50  | SLA 33845              | ECO S 25 IF | .5              | .79        | .63        | 1/2-20 UNF   | .31        | 1.55       | .71        | .63         | .28         |
| SLA 14 MFS          | SLA 33306              | ECO S 25 MF | (12,7)          | (20)       | (16)       | M14 x 1      | (8,0)      | (39,2)     | (18,0)     | (15,0)      | (7,0)       |
| SLA 7/16 - 18 x .50 | SLA 33846              | ECO S 25 IC | .5              | .79        | .63        | 7/16-18 UNF  | .31        | 1.55       | .71        | .63         | .28         |
| SLA 14 MCS          | SLA 33301              | ECO S 25 MC | (12,7)          | (20)       | (16)       | M14 x 1,5    | (8,0)      | (39,2)     | (18,0)     | (15,0)      | (7,0)       |
| SLA 3/4 - 16 x .88  | SLA 33851              | ECO 50      | .88             | 1.26       | .67        | 3/4-16 UNF   | .43        | 2.44       | .98        | .88         | .28         |
| SLA 20 MC           | SLA 33302              | ECO 50 M    | (22,0)          | (32)       | (17)       | M20 x 1,5    | (11,0)     | (62,0)     | (25,0)     | (22,0)      | (7,0)       |
| SLA 3/4 - 16 x .50  | SLA 33847              | ECO S 50    | .5              | .94        | .55        | 3/4-16 UNF   | .43        | 1.64       | .98        | .88         | .28         |
| SLA 20 MCS          | SLA 33262              | ECO S 50 M  | (12,7)          | (24)       | (14)       | M20 x 1,5    | (11,0)     | (41,5)     | (25,0)     | (22,0)      | (7,0)       |
| SLA 1-12 x 1        | SLA 33848              | ECO 100     | 1.00            | 1.50       | 1.18       | 1-12 UNF     | .59        | 2.88       | 1.42       | 1.25        | .39         |
| SLA 25 MF           | SLA 33263              | ECO 100 MF  | (25,4)          | (38)       | (30)       | M25 x 1,5    | (15,0)     | (73,2)     | (36,0)     | (32,0)      | (7,0)       |
| SLA 25 MC           | SLA 33296              | ECO 100 MC  | (25,4)          | (38)       | (30)       | M27 x 3      | (15,0)     | (73,2)     | (36,0)     | (32,0)      | (10,0)      |

Notes: 1. Maximum sideload angle is 30°. 2. Part numbers in page color are non-standard lead time items, contact Enidine.

### Universal Retaining Flange (UF)

UF 3/8 - 32 → UF 1/2 - 20  
UF M10 x 1 → UF M14 x 1,5

UF 7/16 - 18 → UF 3/4 - 16  
UF M20 x 1,5 → UF M27 x 3

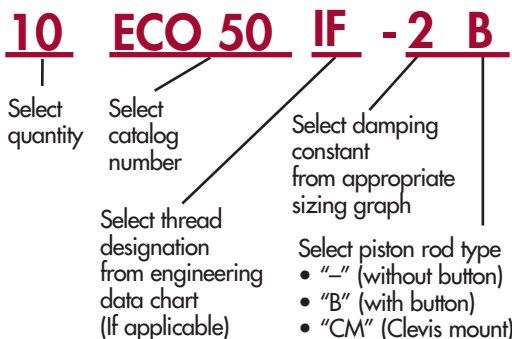


| Catalog No./Model | ECO Series Part Number | Model (Ref)           | A in. (mm)    | B in. (mm) | C in. (mm) | D in. (mm) | E in. (mm) | F in. (mm) | G in. (mm) | H in. (mm) | I in. (mm) | J in. (mm) | K in. (mm) |
|-------------------|------------------------|-----------------------|---------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| UF 3/8 - 32       | U19070095              | ECO 8                 | 3/8 - 32 UNF  | 1.50       | .56        | .28        | .25        | 1.00       | 1.00       | 0.50       | —          | .20        | —          |
| UF M10 x 1        | U16363189              | ECO 10M               | M10 x 1       | (38,0)     | (12,0)     | (6,0)      | (6,25)     | (25,5)     | (25,0)     | (12,5)     | —          | (5,0)      | —          |
| UF 7/16 - 28      | U15588095              | ECO 15 (B)/ECO 10 (B) | 7/16 - 28 UNF | 1.50       | .56        | .28        | .25        | 1.00       | 1.00       | 0.50       | —          | .20        | —          |
| UF M12 x 1        | U15588189              | ECO 15 M (B)          | M12 x 1       | (38,0)     | (12,0)     | (6,0)      | (6,25)     | (25,5)     | (25,0)     | (12,5)     | —          | (5,0)      | —          |
| UF 1/2 - 20       | U13935095              | ECO/ECO S 25 IF (B)   | 1/2 - 20 UNF  | 1.50       | .56        | .28        | .25        | 1.00       | 1.00       | 0.50       | —          | .20        | —          |
| UF M14 x 1        | U14950189              | ECO/ECO S 25 MF (B)   | M14 x 1,5     | (45,0)     | (16,0)     | (8,0)      | (5,0)      | (35,0)     | (30,0)     | (15,0)     | —          | (5,0)      | —          |
| UF 9/16 - 18      | U19018095              | ECO/ECO S 25 IC (B)   | 9/16 - 18 UNF | 1.81       | .62        | .31        | .22        | 1.38       | 1.38       | —          | .19        | .32        | 1.00       |
| UF M14 x 1,5      | U13935143              | ECO/ECO S 25 MC (B)   | M14 x 1,5     | (45,0)     | (16,0)     | (8,0)      | (5,0)      | (35,0)     | (30,0)     | (15,0)     | —          | (5,0)      | —          |
| UF 3/4 - 16       | U120275095             | ECO/ECO S 50 (B)      | 3/4 - 16 UNF  | 2.00       | .62        | .31        | .25        | 1.50       | 1.50       | —          | .19        | .45        | 1.12       |
| UF M20x 1,5       | U12646143              | ECO/ECO S 50 MC (B)   | M20 x 1,5     | (48,0)     | (16,0)     | (8,0)      | (6,5)      | (35,0)     | (35,0)     | —          | (4,75)     | (10,0)     | (25,5)     |
| UF 1-12           | U19599095              | ECO 100               | 1-12 UNF      | 2.00       | .62        | .31        | .25        | 1.50       | 1.50       | —          | .19        | .39        | (25,5)     |
| UF M25 x 1,5      | U13004143              | ECO 100/110M          | M25 x 1,5     | (48,0)     | (16,0)     | (8,0)      | (6,5)      | (35,0)     | (35,0)     | —          | (4,75)     | (10,0)     | (25,5)     |
| UF M27 x 3        | U12587143              | ECO 100 MC            | M27 x 3       | (48,0)     | (16,0)     | (8,0)      | (6,5)      | (35,0)     | (35,0)     | —          | (4,75)     | (10,0)     | (25,5)     |

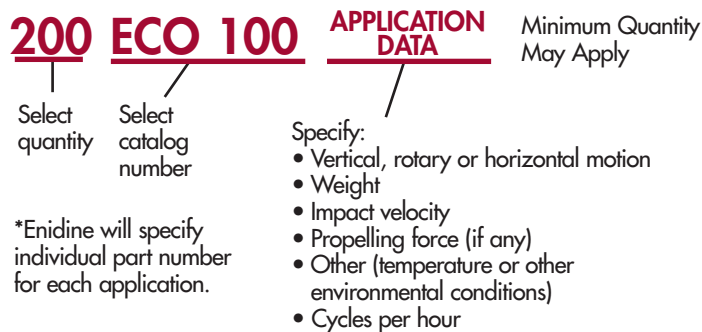
Notes: 1. Part numbers in page color are non-standard lead time items, contact Enidine.

**Shock Absorbers**

Example 1: Standard Products

**Ordering Information/Application Worksheet**

Example 2: Custom Orifice Products

**Accessories**

Example 1



Example 2

**Application Worksheet**

FAX NO.: \_\_\_\_\_

DATE: \_\_\_\_\_

ATTN: \_\_\_\_\_

COMPANY: \_\_\_\_\_

The Enidine Application Worksheet makes shock absorber sizing and selection easier.

Fax, phone, or mail worksheet data to Enidine headquarters or your nearest Enidine subsidiary/affiliate or distributor. (See catalog back cover for Enidine locations, or visit [www.enidine.com](http://www.enidine.com) for a list of Enidine distributors.)

Upon Enidine's receipt of this worksheet, you will receive a detailed analysis of your application and product recommendations. (For custom design projects, Enidine representatives will consult with you for specification requirements.)

**GENERAL INFORMATION**

CONTACT: \_\_\_\_\_

DEPT/TITLE: \_\_\_\_\_

COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TEL: \_\_\_\_\_ FAX: \_\_\_\_\_

EMAIL: \_\_\_\_\_

PRODUCTS MANUFACTURED: \_\_\_\_\_

**APPLICATION DESCRIPTION**

Motion Direction (Check One):

☐ Horizontal ☐ Vertical ☐ Up ☐ Incline Angle \_\_\_\_\_  
☐ Down ☐ Down Height \_\_\_\_\_

☐ Rotary Horizontal ☐ Rotary Vertical ☐ Up

☐ Down Weight (Min./Max.): \_\_\_\_\_ (lbs.)(Kg)

Cycle Rate: \_\_\_\_\_ (cycles/hour)

Additional Propelling Force (If Known): \_\_\_\_\_ (lbs.)(N)

☐ Air Cyl: Bore \_\_\_\_\_ (in.)(mm) Max. Pressure \_\_\_\_\_ (psi)(bar) Rod Dia. \_\_\_\_\_ (in.)(mm)

☐ Hydraulic Cyl: Bore \_\_\_\_\_ (in.)(mm) Max. Pressure \_\_\_\_\_ (psi)(bar)  
 Rod Dia. \_\_\_\_\_ (in.)(mm)

☐ Motor \_\_\_\_\_ (hp)(kW) Torque \_\_\_\_\_ (in-lbs.)(Nm)

Ambient Temp.: \_\_\_\_\_ °F (°C)

Environmental Considerations: \_\_\_\_\_

**SHOCK ABSORBER APPLICATION**

(All Data Taken at Shock Absorber)

Number Shock Absorbers to Stop Load

Impact Velocity (min./max.): \_\_\_\_\_ (in./sec.)(m/sec.)

Shock Absorber Stroke Requirements: \_\_\_\_\_ (in.)(mm)

G Load Requirements: \_\_\_\_\_ (G)(m/sec<sup>2</sup>)**RATE CONTROL APPLICATION**

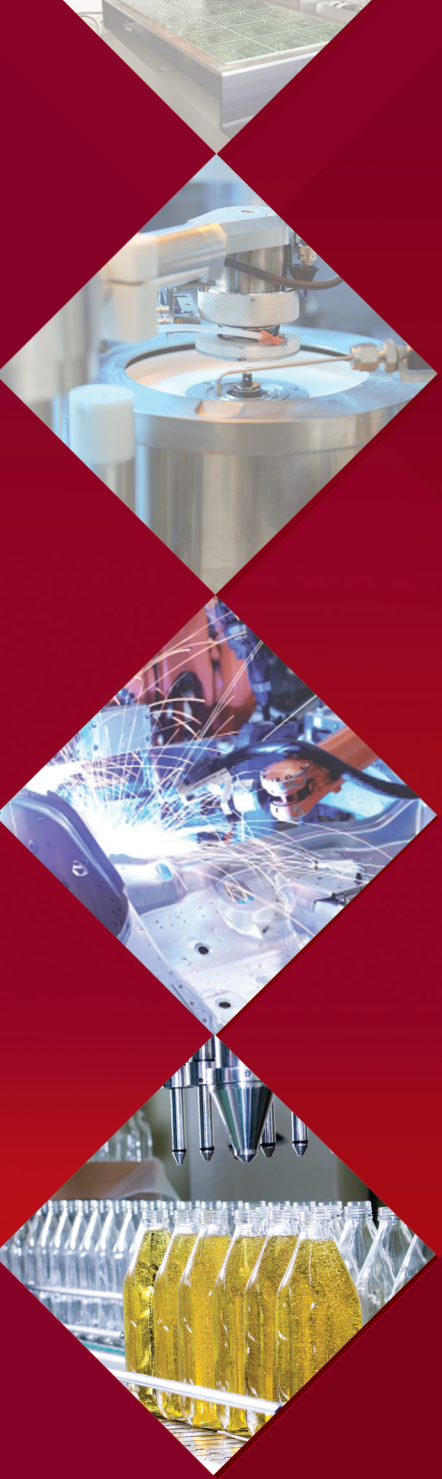
(All Data Taken at Shock Absorber)

Number of Rate Controls to Control the Load: \_\_\_\_\_

Control Direction: ☐ Tension (T) ☐ Compression (C)

Required Stroke: \_\_\_\_\_ (in.)(mm) Est. Stroke Time: \_\_\_\_\_ (sec.)

Estimated Velocity at the Rate Control: \_\_\_\_\_ (in./sec.)(m/sec)



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**ITT Enidine Inc.**  
7 Centre Drive  
Orchard Park, NY 14127  
Tel.: 716-662-1900  
Fax: 716-662-1909  
[industrialsales@enidine.com](mailto:industrialsales@enidine.com)  
[www.enidine.com](http://www.enidine.com)