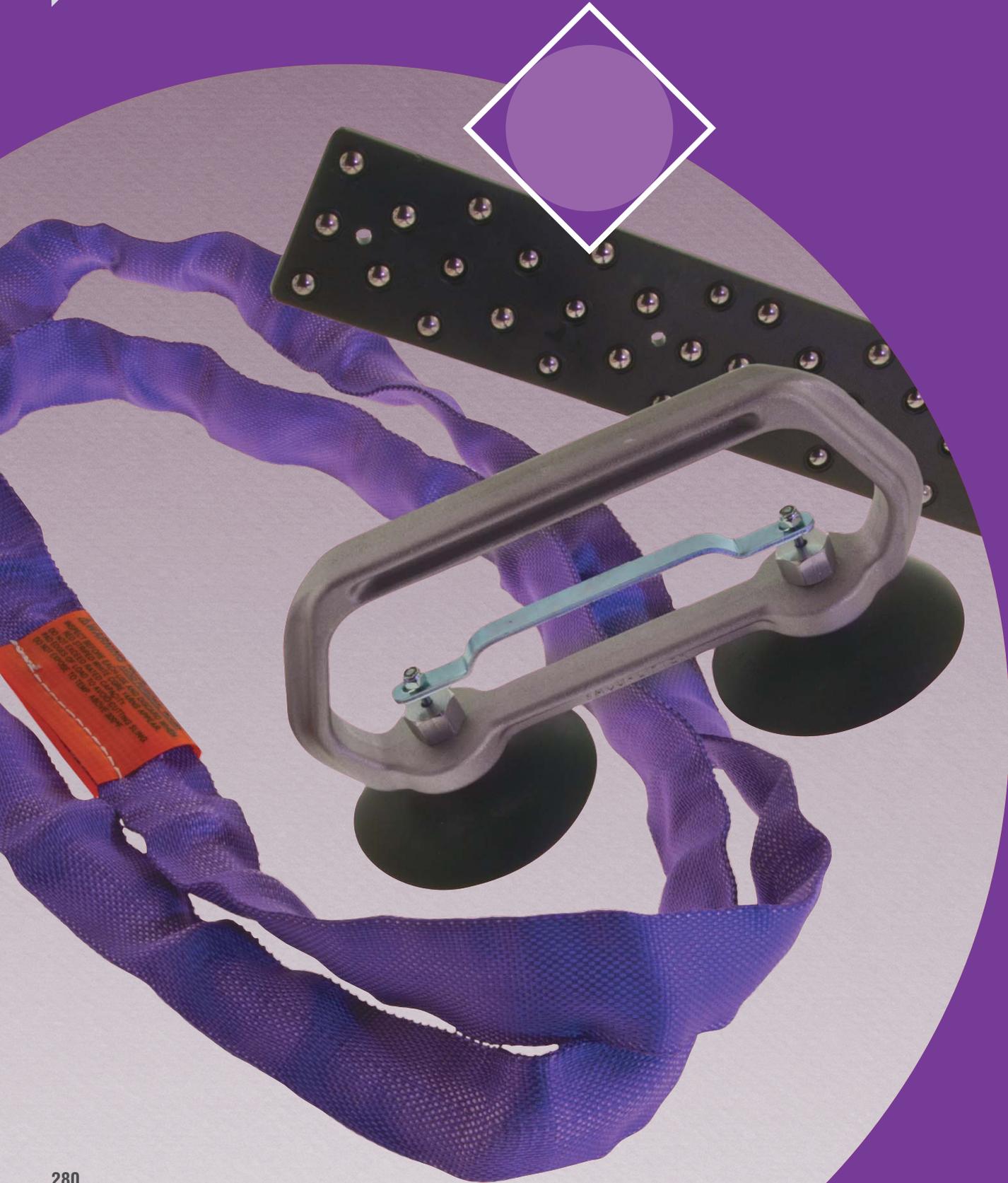
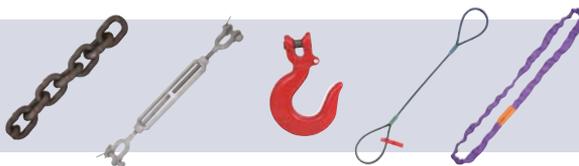


MATERIAL HANDLING



Chains, Rigging & Attachments

290 - 293, 297



Hoist Rings, Eyebolts & Anchoring Eyes

282 - 289



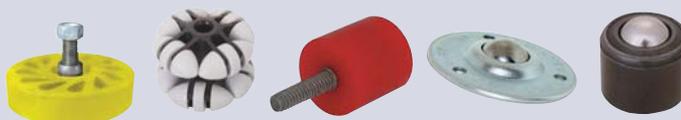
Lifters

304 - 307



Rollers, Bumpers & Ball Transfers

299 - 303



Tie Downs, Rings, Fasteners & Pulleys

294 - 296, 298



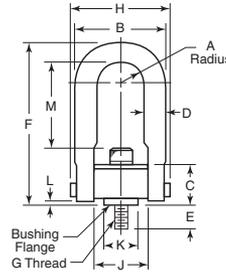
Universal Mounting Systems

308





Safety Engineered Hoist Rings



- Range of movement - 180 degree pivot, 360 degree swivel
- Safety factor = 5:1
- Meets military specification no. MIL-STD 1365 (11) or MIL-STD 209C
- 100% magnetic particle inspected
- Meets OSHA standards
- Black oxide finish

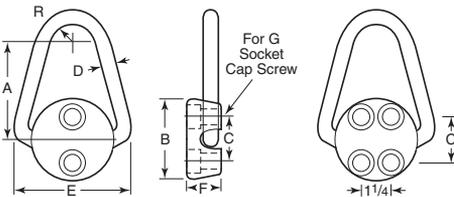
Made from alloy steel (certified heat treatment). The replacement bolt kits are designed exclusively for the corresponding American Drill Bushing hoist rings listed below. Standard tolerance for inch is +/- .030. (Load rating is 50% of steel.)

| Item No. | Rated Load Lbs. | A | B | C | D | E | +/- .060 F | G | +/- .060 H | J | K | L | M | Torque Ft./Lbs. | Pack Qty. |
|------------|-----------------|------|------|------|-------|------|------------|-----------|------------|------|------|-----|------|-----------------|-----------|
| SHR-23050 | 550 | .43 | 1.61 | .71 | 3/8 | .54 | 2.67 | 1/4-20 | 1.84 | 1.00 | .75 | .17 | 1.33 | 5 | 1 |
| SHR-23051 | 800 | .43 | 1.61 | .71 | 3/8 | .29 | 2.67 | 5/16-18 | 1.84 | 1.00 | .75 | .17 | 1.27 | 7 | 1 |
| SHR-23052 | 800 | .43 | 1.61 | .71 | 3/8 | .54 | 2.67 | 5/16-18 | 1.84 | 1.00 | .75 | .17 | 1.27 | 7 | 1 |
| SHR-23053 | 1,000 | .43 | 1.61 | .71 | 3/8 | .54 | 2.67 | 3/8-16 | 1.84 | 1.00 | .75 | .17 | 1.21 | 12 | 1 |
| SHR-23301 | 2,500 | .70 | 2.40 | .93 | 1/2 | 1.07 | 3.77 | 1/2-13 | 2.58 | 1.49 | 1.25 | .20 | 1.84 | 28 | 1 |
| SHR-23304 | 2,500 | .88 | 3.25 | 1.22 | 3/4 | .78 | 4.78 | 1/2-13 | 3.52 | 1.99 | 1.50 | .16 | 2.31 | 28 | 1 |
| SHR-23322 | 2,500 | .88 | 3.25 | 1.22 | 3/4 | .78 | 6.72 | 1/2-13 | 3.52 | 1.99 | 1.50 | .16 | 4.25 | 28 | 1 |
| SHR-23005 | 2,500 | .88 | 3.25 | 1.22 | 3/4 | 1.03 | 4.78 | 1/2-13 | 3.52 | 1.99 | 1.50 | .16 | 2.31 | 28 | 1 |
| SHR-23006 | 2,500 | .88 | 3.25 | 1.22 | 3/4 | 1.28 | 4.78 | 1/2-13 | 3.52 | 1.99 | 1.50 | .16 | 2.31 | 28 | 1 |
| SHR-23324 | 2,500 | .88 | 3.25 | 1.22 | 3/4 | 1.28 | 6.72 | 1/2-13 | 3.52 | 1.99 | 1.50 | .16 | 4.25 | 28 | 1 |
| SHR-23001 | 4,000 | .88 | 3.25 | 1.22 | 3/4 | .78 | 4.78 | 5/8-11 | 3.52 | 1.99 | 1.50 | .16 | 2.18 | 60 | 1 |
| SHR-23002 | 4,000 | .88 | 3.25 | 1.22 | 3/4 | 1.03 | 4.78 | 5/8-11 | 3.52 | 1.99 | 1.50 | .16 | 2.18 | 60 | 1 |
| SHR-23320 | 4,000 | .88 | 3.25 | 1.22 | 3/4 | 1.03 | 6.72 | 5/8-11 | 3.52 | 1.99 | 1.50 | .16 | 4.12 | 60 | 1 |
| SHR-23003 | 4,000 | .88 | 3.25 | 1.22 | 3/4 | 1.28 | 4.78 | 5/8-11 | 3.52 | 1.99 | 1.50 | .16 | 2.18 | 60 | 1 |
| SHR-23007 | 5,000 | .88 | 3.25 | 1.22 | 3/4 | 1.03 | 4.78 | 3/4-10 | 3.52 | 1.99 | 1.50 | .16 | 2.06 | 100 | 1 |
| SHR-23325 | 5,000 | .88 | 3.25 | 1.22 | 3/4 | 1.03 | 6.72 | 3/4-10 | 3.52 | 1.99 | 1.50 | .16 | 4.00 | 100 | 1 |
| SHR-23009 | 5,000 | .88 | 3.25 | 1.22 | 3/4 | 1.53 | 4.78 | 3/4-10 | 3.52 | 1.99 | 1.50 | .16 | 2.06 | 100 | 1 |
| SHR-23327 | 5,000 | .88 | 3.25 | 1.22 | 3/4 | 1.53 | 6.72 | 3/4-10 | 3.52 | 1.99 | 1.50 | .16 | 4.00 | 100 | 1 |
| SHR-23102 | 7,000 | 1.40 | 4.80 | 1.71 | 1 | 1.04 | 6.52 | 3/4-10 | 5.14 | 3.00 | 2.37 | .24 | 3.06 | 100 | 1 |
| SHR-23329 | 7,000 | 1.40 | 4.80 | 1.71 | 1 | 1.04 | 8.11 | 3/4-10 | 5.14 | 3.00 | 2.37 | .24 | 4.65 | 100 | 1 |
| SHR-23328 | 8,000 | 1.40 | 4.80 | 1.71 | 1 | 1.04 | 8.11 | 7/8-9 | 5.14 | 3.00 | 2.37 | .24 | 4.52 | 160 | 1 |
| SHR-23105 | 10,000 | 1.40 | 4.93 | 1.71 | 1 | 1.29 | 6.52 | 1-8 | 5.14 | 3.00 | 2.37 | .24 | 2.81 | 230 | 1 |
| SHR-23333 | 10,000 | 1.40 | 4.93 | 1.71 | 1 | 2.29 | 8.11 | 1-8 | 5.14 | 3.00 | 2.37 | .24 | 4.40 | 230 | 1 |
| SHR-23401 | 15,000 | 1.75 | 6.00 | 2.11 | 1 1/4 | 1.89 | 8.73 | 1 1/4-7 | 6.50 | 3.76 | 3.20 | .35 | 4.12 | 470 | 1 |
| SHR-23202 | 24,000 | 2.25 | 8.00 | 2.81 | 1 3/4 | 2.70 | 12.47 | 1 1/2-6 | 8.55 | 4.87 | 4.20 | .47 | 6.41 | 800 | 1 |
| SHR-23200* | 30,000 | 2.25 | 8.00 | 2.81 | 1 3/4 | 2.96 | 12.47 | 2 - 4 1/2 | 8.55 | 4.87 | 4.20 | .47 | 5.41 | 800 | 1 |

*Uses a manufacturers design bolt

Installation and Safety Note: To install, tap workpiece for hoist ring. Screw with axis vertical to mounting surface. Work surface should be flat and smooth to provide 360° flush seating for bushing flange. Some loosening may develop after prolonged service in a permanent installation. It is advisable to periodically retighten the mounting screw to maintain the specified torque value. The use of free fit spacers between the bushing flange and mounting surface is not recommended, as this will reduce the safe load rating on angularly applied loads. Hoist ring must be free to swivel 360° and pivot 180° at all times.

Stationary Hoist Rings



High Strength Screws



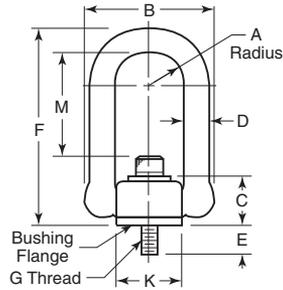
| Item No. | Thread | Lgth. | Pack Qty. |
|----------|---------|-------|-----------|
| SHRS-1 | 5/16-18 | 1 1/4 | 1 |
| SHRS-2 | 3/8-16 | 1 1/4 | 1 |
| SHRS-3 | 1/2-13 | 2 | 1 |
| SHRS-4 | 1/2-13 | 2 1/4 | 1 |

Engineered to provide maximum load capacities regardless of pull. Provides safe handling of heavy equipment and parts. The eye pivots 180 degrees and lays flat when not in use. Heat treated forged alloy steel. Black oxide finish. Safety factor = 6:1. To meet maximum load capacities, high strength screws must be used. **NEVER EXCEED MAXIMUM LOAD RATING.** SHR-34045 and SHR-34050 have four mounting holes.

| Without Screws | | With Screws | | Rated Load Lbs. | A | B | C | D | E | F | G | R | Pack Qty. |
|----------------|------------|-------------|--|-----------------|-------|-------|-------|------|--------|-------|------|-----|-----------|
| SHR-34030 | SHR-34030S | 2,000 | | | 2 | 1 1/4 | 1 | 5/16 | 2 1/2 | 3/4 | 5/16 | 1/2 | 1 |
| SHR-34035 | SHR-34035S | 2,500 | | | 2 1/2 | 2 1/4 | 1 1/8 | 3/8 | 3 3/16 | 7/8 | 3/8 | 5/8 | 1 |
| SHR-34040 | SHR-34040S | 5,000 | | | 3 | 2 5/8 | 1 1/2 | 1/2 | 3 3/8 | 1 1/8 | 3/4 | 3/4 | 1 |
| SHR-34045 | SHR-34045S | 12,000 | | | 4 | 3 1/8 | 1 5/8 | 3/4 | 5 1/4 | 1 3/8 | 1/2 | 7/8 | 1 |
| SHR-34050 | SHR-34050S | 20,000 | | | 5 | 3 3/8 | 2 1/8 | 1 | 6 3/8 | 1 7/8 | 3/4 | 1 | 1 |



Heavy Duty Style



- Range of movement - 180 degree pivot, 360 degree swivel
- Safety factor = 5:1
- Meets military specification no. MIL-STD 1365 (11) or MIL-STD 209C
- 100% magnetic particle inspected
- Meets OSHA standards
- Black oxide finish

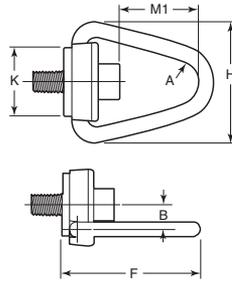
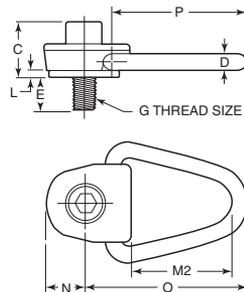
Made from alloy steel (certified heat treatment). This heavy duty style is made from forged one - piece steel. Standard tolerance for inch is +/- .030. Standard tolerance for metric is +/- 0.8mm. Metric dimensions are shown in millimeters.

| Item No. | Rated Load Lbs. | A | B | C | D | E | F | G | K | Torque Ft./Lbs. | M | Pack Qty. |
|---------------|-----------------|------|-------|------|------|------|-------|------------|------|-----------------|------|-----------|
| Inch | | | | | | | | | | | | |
| SHR-33112 | 550 | .65 | 2.29 | .96 | .44 | .56 | 3.23 | 1/4-20 | 1.25 | 5 | 1.57 | 1 |
| SHR-33212 | 800 | .65 | 2.29 | .96 | .44 | .56 | 3.23 | 5/16-18 | 1.25 | 7 | 1.51 | 1 |
| SHR-33312 | 1,000 | .65 | 2.29 | .96 | .44 | .56 | 3.23 | 3/8-16 | 1.25 | 12 | 1.45 | 1 |
| SHR-33314 | 1,000 | .65 | 2.29 | .96 | .44 | 1.06 | 3.23 | 3/8-16 | 1.25 | 12 | 1.45 | 1 |
| SHR-33316 | 2,250 | .65 | 2.29 | .96 | .44 | 1.06 | 3.23 | 1/2-13 | 1.25 | 25 | 1.45 | 1 |
| SHR-33512 | 2,500 | 1.00 | 3.50 | 1.50 | .75 | .75 | 5.31 | 1/2-13 | 1.89 | 28 | 2.56 | 1 |
| SHR-33513* | 2,500 | 1.00 | 3.50 | 1.50 | .75 | .75 | 6.87 | 1/2-13 | 1.89 | 28 | 4.12 | 1 |
| SHR-33515 | 2,500 | 1.00 | 3.50 | 1.50 | .75 | 1.00 | 5.31 | 1/2-13 | 1.89 | 60 | 2.56 | 1 |
| SHR-33516 | 2,500 | 1.00 | 3.50 | 1.50 | .75 | 1.25 | 5.31 | 1/2-13 | 1.89 | 60 | 2.56 | 1 |
| SHR-33612 | 4,000 | 1.00 | 3.50 | 1.50 | .75 | .75 | 5.31 | 5/8-11 | 1.89 | 100 | 2.44 | 1 |
| SHR-33614 | 4,000 | 1.00 | 3.50 | 1.50 | .75 | 1.00 | 5.31 | 5/8-11 | 1.89 | 100 | 2.44 | 1 |
| SHR-33615 | 4,000 | 1.00 | 3.50 | 1.50 | .75 | 1.25 | 5.31 | 5/8-11 | 1.89 | 100 | 2.44 | 1 |
| SHR-33616* | 4,000 | 1.00 | 3.50 | 1.50 | .75 | 1.25 | 6.87 | 5/8-11 | 1.89 | 100 | 4 | 1 |
| SHR-33714 | 5,000 | 1.00 | 3.50 | 1.50 | .75 | 1.00 | 5.31 | 3/4-10 | 1.89 | 230 | 2.31 | 1 |
| SHR-33715* | 5,000 | 1.00 | 3.50 | 1.50 | .75 | 1.00 | 6.87 | 3/4-10 | 1.89 | 230 | 3.87 | 1 |
| SHR-33716 | 5,000 | 1.00 | 3.50 | 1.50 | .75 | 1.50 | 5.31 | 3/4-10 | 1.89 | 230 | 2.31 | 1 |
| SHR-33717* | 5,000 | 1.00 | 3.50 | 1.50 | .75 | 1.00 | 6.87 | 3/4-10 | 1.89 | 470 | 3.87 | 1 |
| SHR-33102 | 7,000 | 1.40 | 5.10 | 2.05 | 1.00 | 1.20 | 7.37 | 3/4-10 | 2.81 | 800 | 3.57 | 1 |
| SHR-33103 | 7,000 | 1.40 | 5.10 | 2.05 | 1.00 | 1.45 | 7.37 | 3/4-10 | 2.81 | 800 | 3.57 | 1 |
| SHR-33105 | 10,000 | 1.40 | 5.10 | 2.05 | 1.00 | 1.45 | 7.37 | 1-8 | 2.81 | 28 | 3.20 | 1 |
| SHR-33106 | 10,000 | 1.40 | 5.10 | 2.05 | 1.00 | 1.20 | 7.37 | 1-8 | 2.81 | 28 | 3.20 | 1 |
| SHR-33107 | 10,000 | 1.40 | 5.10 | 2.05 | 1.00 | 2.20 | 7.37 | 1-8 | 2.81 | 60 | 3.20 | 1 |
| SHR-33402 | 15,000 | 2.00 | 6.75 | 2.87 | 1.25 | 1.88 | 9.22 | 1 1/4-7 | 3.88 | 60 | 3.74 | 1 |
| SHR-33401 | 15,000 | 2.00 | 6.75 | 2.87 | 1.25 | 2.63 | 9.22 | 1 1/4-7 | 3.88 | 100 | 3.74 | 1 |
| SHR-33424 | 24,000 | 2.00 | 6.75 | 2.87 | 1.25 | 2.63 | 9.22 | 1 1/2-6 | 3.88 | 100 | 3.49 | 1 |
| SHR-33427 | 30,000 | 2.00 | 6.75 | 2.87 | 1.25 | 2.96 | 9.22 | 2 - 4 1/2 | 3.88 | 470 | 3.49 | 1 |
| Metric | | | | | | | | | | | | |
| SHR-34212 | 800 | 16.5 | 58.2 | 24.4 | 11.1 | 16 | 82.0 | M8 x 1.25 | 31.8 | 7 | 38.5 | 1 |
| SHR-34214 | 800 | 16.5 | 58.2 | 24.4 | 11.1 | 21 | 82.0 | M8 x 1.25 | 31.8 | 7 | 38.5 | 1 |
| SHR-34312 | 990 | 16.5 | 58.2 | 24.4 | 11.1 | 16 | 82.0 | M10 x 1.50 | 31.8 | 12 | 36.5 | 1 |
| SHR-34314 | 990 | 16.5 | 58.2 | 24.4 | 11.1 | 26 | 82.0 | M10 x 1.50 | 31.8 | 12 | 36.5 | 1 |
| SHR-34515 | 2,300 | 25.4 | 88.9 | 38.1 | 19.1 | 25 | 134.9 | M12 x 1.75 | 48.0 | 28 | 65.0 | 1 |
| SHR-34516 | 2,300 | 25.4 | 88.9 | 38.1 | 19.1 | 32 | 134.9 | M12 x 1.75 | 48.0 | 28 | 65.0 | 1 |
| SHR-34614 | 4,100 | 25.4 | 88.9 | 38.1 | 19.1 | 25 | 134.9 | M16 x 2.00 | 48.0 | 60 | 62.0 | 1 |
| SHR-34615 | 4,100 | 25.4 | 88.9 | 38.1 | 19.1 | 32 | 134.9 | M16 x 2.00 | 48.0 | 60 | 62.0 | 1 |
| SHR-34714 | 4,800 | 25.4 | 88.9 | 38.1 | 19.1 | 25 | 134.9 | M20 x 2.50 | 48.0 | 100 | 58.7 | 1 |
| SHR-34716 | 4,800 | 25.4 | 88.9 | 38.1 | 19.1 | 38 | 134.9 | M20 x 2.50 | 48.0 | 100 | 58.7 | 1 |
| SHR-34103 | 4,200 | 35.6 | 129.5 | 52.1 | 25.4 | 38 | 187.2 | M24 x 3.00 | 71.4 | 229 | 85.7 | 1 |
| SHR-34401 | 7,000 | 50.8 | 171.5 | 72.9 | 31.8 | 67 | 234.1 | M30 x 3.50 | 98.5 | 470 | 95.0 | 1 |

*Long Bar Model

Installation and Safety Note: To install, tap workpiece for hoist ring. Screw with axis vertical to mounting surface. Work surface should be flat and smooth to provide 360° flush seating for bushing flange. Some loosening may develop after prolonged service in a permanent installation. It is advisable to periodically retighten the mounting screw to maintain the specified torque value. The use of free fit spacers between the bushing flange and mounting surface is not recommended, as this will reduce the safe load rating on angularly applied loads. Hoist ring must be free to swivel 360° and pivot 180° at all times.

Heavy Duty Hoist Rings



- Self-aligning in the direction of the load
- Rotates 360 degrees
- Minimum of 5:1 safety factor in any direction
- One piece construction-no lost parts
- Alloy steel with black oxide finish
- 100% magnetic particle inspected

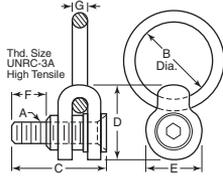
| Item No. | Rated Load | Thread Size G | A | B | C | D | E | F | H | K | L | M1 | M2 | N | O | P | Torque Ft./Lbs. | Pack Qty. |
|-----------|------------|---------------|-----|-------|---------|-----|-------|---------|-----|--------|------|---------|--------|-------|-------|-------|-----------------|-----------|
| SHR-36305 | 800 | 5/16-18 | 3/4 | 7/8 | 1 1/4 | 1/2 | .479 | 4 23/32 | 3/8 | 2 3/16 | 7/32 | 2 27/64 | 3 7/16 | 1 1/4 | 5/8 | 4 1/4 | 7 | 1 |
| SHR-36310 | 1,000 | 3/8-16 | 3/4 | 7/8 | 1 1/4 | 1/2 | .479 | 4 23/32 | 3/8 | 2 3/16 | 7/32 | 2 27/64 | 3 7/16 | 1 1/4 | 5/8 | 4 1/4 | 12 | 1 |
| SHR-36320 | 4,000 | 5/8-11 | 3/4 | 7/8 | 1 1/4 | 1/2 | .979 | 4 23/32 | 3/8 | 2 3/16 | 7/32 | 2 27/64 | 3 7/16 | 1 1/4 | 5/8 | 4 1/4 | 60 | 1 |
| SHR-36325 | 5,000 | 3/4-10 | 3/4 | 7/8 | 1 25/32 | 1/2 | 1.229 | 4 23/32 | 3/8 | 2 3/16 | 7/32 | 2 19/16 | 3 7/16 | 1 1/4 | 5/8 | 4 1/4 | 100 | 1 |
| SHR-36340 | 10,000 | 1-8 | 7/8 | 1 1/4 | 2 1/2 | 3/4 | 1 1/2 | 6 1/4 | 5/4 | 3 3/8 | 3/16 | 3 3/4 | 4 1/16 | 1 3/8 | 6 3/4 | 5 3/8 | 230 | 1 |

Note: Rated load based on specific thread torques as shown above

Note: It is recommended that this torque (lb.-ft.) be used when installing these hoist rings.



Side Pull Hoist Rings
Full Swivel
Inch and Metric



Full swivel and pivot action allows you to flip and turn parts without unhooking. Extra large diameter ring allows for large hook. Made of alloy steel, black oxide finish. Safety factor of 5:1. Individually pull tested and certified. Metric dimensions are in millimeters.

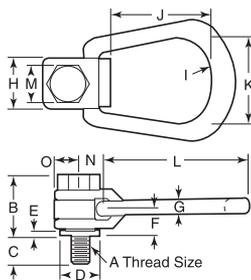
| Item No. | Rated Load | A | B | C | D | E | F | G | Thread Torque | Pack Qty. |
|---------------|------------|------------|-------|-------|--------|-------|-----|------|---------------|-----------|
| Inch | | | | | | | | | | |
| SHR-47311 | 650 | 5/16-18 | 2 | 2 1/2 | 2 | 1 1/2 | 5/8 | 3/8 | 3.5 | 1 |
| SHR-47312 | 800 | 3/8-16 | 2 | 2 3/4 | 2 | 1 1/2 | 3/4 | 3/8 | 4.5 | 1 |
| SHR-47313 | 1,800 | 1/2-13 | 3 | 3 3/8 | 3 3/16 | 2 1/2 | 1 | 5/8 | 15.0 | 1 |
| SHR-47316 | 7,100 | 1-8 | 4 | 5 3/8 | 5 | 3 3/4 | 2 | 1 | 90.0 | 1 |
| Metric | | | | | | | | | | |
| SHR-47351 | 325 | M8 x 1.25 | 50.8 | 61 | 50.8 | 38.1 | 16 | 9.5 | .43 | 1 |
| SHR-47352 | 500 | M10 x 1.50 | 50.8 | 63 | 50.8 | 38.1 | 20 | 9.5 | .60 | 1 |
| SHR-47354 | 1,400 | M16 x 2.00 | 76.2 | 94 | 81 | 60.3 | 31 | 15.9 | 3.50 | 1 |
| SHR-47355 | 2,290 | M20 x 2.50 | 101.6 | 133 | 125.4 | 95.3 | 40 | 25.4 | 7.00 | 1 |
| SHR-47356 | 3,050 | M24 x 3.00 | 101.6 | 147 | 125.4 | 95.3 | 47 | 25.4 | 12.50 | 1 |

Note: Rated load based on specific thread torques as shown above. Inch ratings are in lbs. Metric are in Kg
Note: It is recommended that this torque (lb.-ft.) be used when installing these hoist rings.

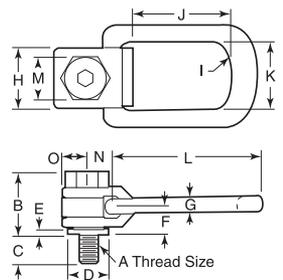
SP 2000™ Side Pull Hoist Rings



External Wrench Mounting



Internal/External Wrench Mounting

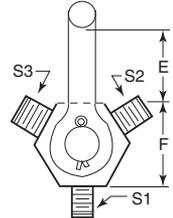
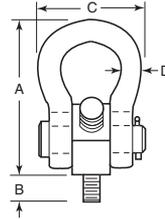


Ideal for flipping fixtures, dies and molds. The hoist ring is low profile and has a unique bolt retention design. The oversized forged bail easily adapts to larger hoist hooks. Its relatively light weight makes it easier to handle than similar hoist rings. Convenient installation with external wrenching or internal/external wrenching. Made of alloy steel with black oxide finish. Safety factor of 5:1. Proof tested to 200% of rated load capacity.

| Item No. | Rated Load | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | Pack Qty. |
|---------------------------------|------------|---------|--------|-------|--------|------|--------|------|-------|-----|---------|-------|--------|-------|-----|-------|-----------|
| External Wrench | | | | | | | | | | | | | | | | | |
| SHR-47531 | 650 | 5/16-18 | 1 1/2 | 1 5/8 | 1 3/16 | 1/2 | 9/16 | 5/16 | 1 | 1 | 2 1/16 | 1 3/4 | 3 | 3/4 | 1/2 | 1/2 | 1 |
| SHR-47532 | 800 | 3/8-16 | 1 3/16 | 5/8 | 1 3/16 | 1/2 | 9/16 | 5/16 | 1 | 1 | 2 1/16 | 1 3/4 | 3 | 3/4 | 1/2 | 1/2 | 1 |
| Internal/External Wrench | | | | | | | | | | | | | | | | | |
| SHR-47533 | 1800 | 1/2-13 | 1 7/8 | 3/4 | 1 3/8 | 5/32 | 1 9/16 | 1/2 | 1 1/4 | 1/2 | 2 15/16 | 2 | 4 5/16 | 1 1/4 | 3/4 | 7/8 | 1 |
| SHR-47534 | 2500 | 5/8-11 | 1 7/8 | 1 1/2 | 1 3/8 | 5/32 | 1 9/16 | 1/2 | 1 1/4 | 1/2 | 2 15/16 | 2 | 4 3/16 | 1 1/4 | 3/4 | 7/8 | 1 |
| SHR-47536 | 7100 | 1-8 | 2 1/16 | 1 1/2 | 1 7/8 | 1/4 | 1 1/2 | 5/8 | 2 1/4 | 2 | 4 | 2 7/8 | 5 1/16 | 1 3/4 | 1 | 1 1/8 | 1 |

Installation and Safety Note: DO NOT EXCEED WORKING LOAD LIMITS. Provide a plain fixing or surface area. The threaded bracket must be turnable by 360° in the fixed position. A hexagon head screw must be at least an ISO 898 quality (SAE-J-429) with the prescribed diameter. Thread depth 1.5 x the diameter. Standard hex head screws with small height (ANSI B18.2.1.1981) should be used. The lifting point shall be connected to transport element in a way that cannot be loosened, you can use Loctite 609. The lifting points have to be mounted in such a way that they can easily be reached for assembling and disassembling of the sling means. The number and arrangement of lifting points has to be chosen in a way that the load does not change its position during transportation. Lifting points that are used regularly have to be checked once a year.

Universal Lift Ring



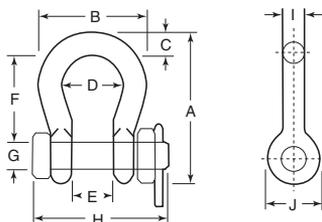
For straight lifting only. Ring offers three different thread sizes for varied use. Made of high strength steel. Do not apply side load. For straight lift only. Listed capacities are for maximum safe working load.

| Item No. | Screw Sizes | Rated Load | A | B | C | D | E | F | Pack Qty. |
|-----------|-------------|------------|-------|-----|---|-----|-------|---|-----------|
| SHR-34010 | S1 1/2-13 | 2,600 | | | | | | | |
| | S2 5/8-11 | 4,000 | 4 1/2 | 3/4 | 3 | 5/8 | 1 1/4 | 2 | 1 |
| | S3 3/4-10 | 6,000 | | | | | | | |

Note: Rated load based on specific thread torques as shown above. Inch ratings are in lbs. Metric are in kg.



Bolt Type Anchor Shackles

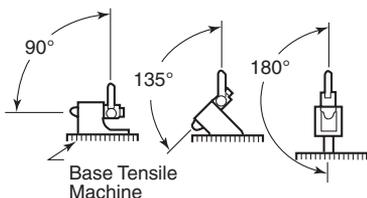
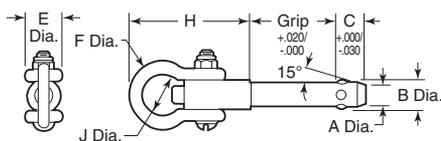


- Minimum ultimate load is 6 times the working load limit
- Bolt type anchor shackles supplied with thin head bolt and nut with cotter pin
- Meets Federal Specification RR - C, Type IVA, Grade A, Class 3

| Item No. | Nom. Shackle Size | Working Load Limit (Lbs.) | Dimensions | | | | | | | | | Pack Qty. | |
|-----------|-------------------|---------------------------|------------|------|-------|------|------|------|------|------|------|-----------|---|
| | | | A | B | C | D | E | F | G | H | I | | J |
| SHR-36511 | 3/8 | 2,000 | 2.49 | 1.78 | .375 | 1.03 | .66 | 1.44 | .44 | 2.17 | .38 | .91 | 1 |
| SHR-36521 | 7/16 | 3,000 | 2.91 | 2.03 | .438 | 1.16 | .75 | 1.69 | .50 | 2.51 | .44 | 1.06 | 1 |
| SHR-36531 | 1/2 | 4,000 | 3.28 | 2.31 | .500 | 1.31 | .81 | 1.88 | .63 | 2.81 | .50 | 1.19 | 1 |
| SHR-36541 | 5/8 | 6,500 | 4.19 | 2.94 | .625 | 1.69 | 1.06 | 2.38 | .75 | 3.53 | .63 | 1.50 | 1 |
| SHR-36551 | 3/4 | 13,000 | 5.83 | 4.03 | .875 | 2.28 | 1.44 | 3.31 | 1.00 | 4.71 | .88 | 2.09 | 1 |
| SHR-36561 | 1 1/8 | 19,000 | 7.47 | 5.15 | 1.125 | 2.91 | 1.81 | 4.25 | 1.25 | 6.00 | 1.13 | 2.69 | 1 |
| SHR-36571 | 1 1/2 | 24,000 | 8.25 | 5.96 | 1.250 | 3.25 | 2.03 | 4.69 | 1.38 | 6.51 | 1.25 | 3.00 | 1 |

Shackle Pins

Provides positive locking for all types of applications. Pins will not release until spindle is depressed. These ball lock shackle pins have four balls for high loads. Forged shackle. Body and spindle are made from 4130 alloy steel.



| Dia. | Ultimate Load (Lbs.) | | | Max Gap* | |
|------|----------------------|--------|--------|----------|------|
| | 90° | 135° | 180° | 90° | 135° |
| 1/4 | 583 | 847 | 1,054 | .037 | .031 |
| 3/8 | 1,744 | 2,622 | 2,590 | .042 | .036 |
| 1/2 | 3,857 | 4,475 | 4,906 | .042 | .036 |
| 3/4 | 9,930 | 11,350 | 11,061 | .047 | .041 |

*Maximum allowable gap between shackle pin shoulder and face of shoulder

| Item No. | Nom. Dia. | +0.000/-0.015 | Grip | Dimensions | | | | Max. H | Min. J | Pack Qty. |
|----------|-----------|---------------|-------|------------|------|-------|------|--------|--------|-----------|
| | | | | A | B | C | E | | | |
| BLS-15 | 3/8 | .3735 | 1/2 | .438 | .425 | .750 | 1/4 | 2.85 | .687 | 1 |
| BLS-30 | 3/8 | .3735 | 2 | .438 | .425 | .750 | 1/4 | 2.85 | .687 | 1 |
| BLS-40 | 1/2 | .4985 | 1/2 | .593 | .519 | .812 | 3/16 | 3.15 | .812 | 1 |
| BLS-50 | 1/2 | .4985 | 1 1/2 | .593 | .519 | .812 | 3/16 | 3.15 | .812 | 1 |
| BLS-55 | 3/4 | .7485 | 1 | .887 | .707 | 1.125 | 7/16 | 4.05 | 1.125 | 1 |



Steel



Stainless

Steel is forged from carbon steel. Suitable for welding. Type 316 stainless steel. Not recommended for lifting.

Pad Eyes Steel

| Item No. | Size | Eye ID | Dia. of Shoulder | Overall Length | Pack Qty. |
|----------|--------|--------|------------------|----------------|-----------|
| PE-5 | 7/32 | 3/4 | 17/32 | 1 13/32 | 1 |
| PE-15 | 2 1/64 | 1 | 1 1/16 | 1 69/64 | 1 |
| PE-20 | 7/16 | 1 3/16 | 7/8 | 2 15/32 | 1 |
| PE-25 | 9/16 | 1 3/8 | 1 1/16 | 2 31/32 | 1 |
| PE-30 | 2 1/32 | 1 1/2 | 1 1/4 | 3 3/16 | 1 |

Pad Eyes 316 Stainless Steel

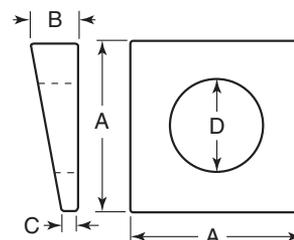


| Item No. | Size | Eye ID | Base Dia. | Overall Length | Pack Qty. |
|----------|------|--------|-----------|----------------|-----------|
| SUN-410 | 3/16 | .50 | .38 | 1.06 | 1 |
| SUN-415 | 1/4 | .63 | .56 | 1.31 | 1 |
| SUN-420 | 5/16 | .75 | .63 | 1.56 | 1 |
| SUN-425 | 3/8 | 1.00 | .86 | 2.00 | 1 |
| SUN-430 | 1/2 | 1.25 | 1.00 | 2.50 | 1 |

Note: Not recommended for lifting.

Bevel Washers

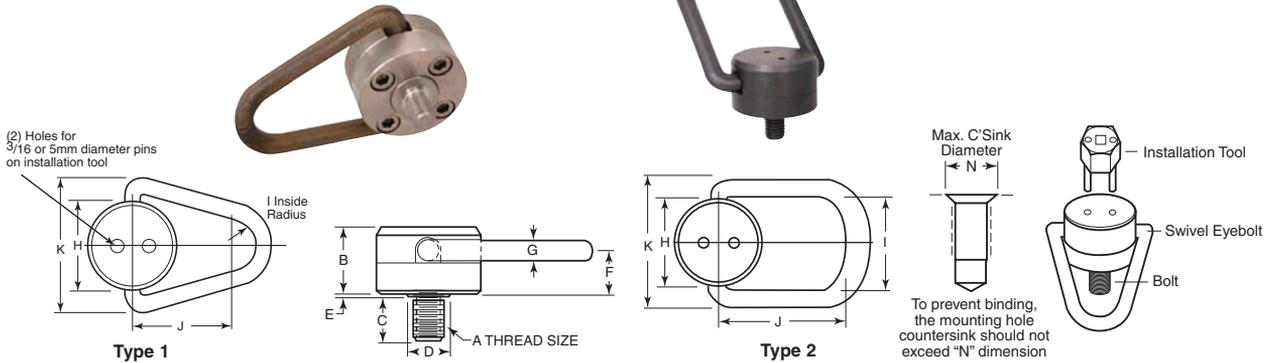
For use with eyebolts to correct taper when used on I-beams and other structural applications. Beveled 2 in 12 which is standard for flanges of I-beams and channels. Made of malleable iron with black finish.



| Item No. | For Bolt Size | A | B | C | D | Pack Qty. |
|----------|---------------|--------|--------|------|--------|-----------|
| BW-1 | 1/4 | 1 1/16 | 7/32 | 5/64 | 3/16 | 1 |
| BW-2 | 5/16 | 1 | 3/16 | 5/64 | 3/8 | 1 |
| BW-3 | 3/8 | 1 1/4 | 1 1/32 | 9/32 | 7/16 | 1 |
| BW-4 | 1/2 | 1 1/4 | 1 1/32 | 9/32 | 9/16 | 1 |
| BW-5 | 5/8 | 1 1/2 | 1 5/32 | 9/32 | 1 1/16 | 1 |
| BW-6 | 3/4 | 1 1/2 | 1 5/32 | 7/32 | 1 9/16 | 1 |
| BW-7 | 7/8 | 2 | 9/16 | 7/32 | 1 9/16 | 1 |
| BW-8 | 1 | 2 | 9/16 | 7/32 | 1 9/32 | 1 |



Tamper Resistant Swivel Eyebolts™
Inch and Metric

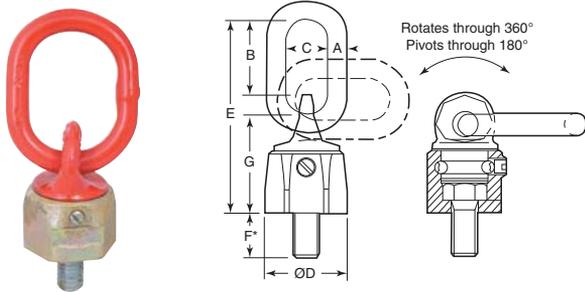


Full swivel and pivoting action allows you to flip and turn parts without unhooking. Tamper resistant design is ideal for permanent mounting on OEM applications or on molds, dies and fixtures. Forged, one piece lift ring. The steel type are made of alloy steel, black oxide finish. Stainless are made from Type 316. Safety factor of 5:1. Metric dimensions are shown in millimeters. Metric load ratings are in kilograms. Installation tool sold separately. Align installation tool pins to the holes on top of the swivel eyebolt. Turn the bolt until the pins drop into place (see drawing). Tighten to recommended torque with a ratchet or wrench. Remove installation tool.

| Item No. | Rated Load | Type | A | B | C | D | E | F | G | H | I | J | K | N | Pack Qty. | Installation Tool Item No. | Torque |
|-------------------------------|------------|------|------------|--------|-------|------|-----|-------|------|-------|-------|-------|---------|-----|-----------|----------------------------|--------|
| Inch - Steel | | | | | | | | | | | | | | | | | |
| SHR-47621 | 1,000 | 1 | 3/8-16 | 1 3/32 | 9/16 | 3/4 | 3/4 | 45/64 | 5/16 | 1 1/4 | 1/2 | 2 | 2 5/8 | 5/8 | 1 | SHR-47641 | 25N/m |
| SHR-47622 | 2,000 | 1 | 1/2-13 | 1 3/32 | 3/4 | 3/4 | 3/4 | 45/64 | 5/16 | 1 3/4 | 1/2 | 2 | 2 5/8 | 5/8 | 1 | SHR-47622 | 25N/m |
| SHR-47625 | 3,000 | 2 | 5/8-11 | 1 3/64 | 19/16 | 7/8 | 1/2 | 57/64 | 1/2 | 2 1/2 | 2 3/4 | 3 1/2 | 3 13/16 | 3/4 | 1 | SHR-47643 | 80N/m |
| SHR-47626 | 4,000 | 2 | 3/4-10 | 1 3/64 | 1 1/8 | 1 | 1/2 | 57/64 | 1/2 | 2 1/2 | 2 3/4 | 3 1/2 | 3 13/16 | 7/8 | 1 | SHR-47643 | 80N/m |
| Inch - Stainless Steel | | | | | | | | | | | | | | | | | |
| SHR-47631 | 500 | 1 | 3/8-16 | 1 3/32 | 9/16 | 3/4 | 3/4 | 45/64 | 5/16 | 1 1/4 | 1/2 | 2 | 2 5/8 | 1/2 | 1 | SHR-47641 | 25N/m |
| SHR-47633 | 1,500 | 2 | 5/8-11 | 1 3/64 | 19/16 | 7/8 | 1/2 | 57/64 | 1/2 | 2 1/2 | 2 3/4 | 3 1/2 | 3 13/16 | 3/4 | 1 | SHR-47643 | 80N/m |
| Metric - Steel | | | | | | | | | | | | | | | | | |
| SHR-47671 | 500 | 1 | M10 x 1.5 | 27.8 | 14.6 | 19.1 | 1.2 | 17.9 | 7.9 | 44.5 | 12.7 | 50.8 | 66.7 | 13 | 1 | SHR-47641 | 25N/m |
| SHR-47672 | 700 | 1 | M12 x 1.75 | 27.8 | 19.1 | 19.1 | 1.2 | 17.9 | 7.9 | 44.5 | 12.7 | 50.8 | 66.7 | 16 | 1 | SHR-47641 | 25N/m |

Note: Rated load based on specific thread torques as shown above. Inch ratings are in lbs. Metric are in kg.
Note: To prevent binding, the screw mounting hole countersink should not exceed the diameters listed above. Do not use spacers between bushing flange and workpiece mounting hole. Swivel eyebolt should be tightened down to recommended torque values listed above. Do not use on oversized hook when lifting. After installation, make sure the swivel eyebolt swivels and pivots freely in all directions. On side lifts, the side of the swivel eyebolt must not contact the workpiece. When lifting the workpiece, gradually apply force. Do not apply shock loads. If a shock load occurs, do not use swivel eyebolt. Loosening of the swivel eyebolt may occur during use. Periodically, re-tighten the swivel eyebolt to the recommended torque values.
Installation and Safety Note: Do not apply load greater than the rated capacity indicated on the top of the swivel eyebolt. Tap workpiece so that the swivel eyebolt screw is installed perpendicular to workpiece surface. Workpiece must be flat to provide complete contact with the swivel eyebolt.

Swivel Eye Bolts w/ Ball Bearings
Multi-directional Loading
Inch and Metric



- Multi-directional loading with design factor 4:1
- Adjustable under load
- Suitable for through bore-holes
- Suitable for all loads which have to be rotated 360 degrees
- High tensile suspension ring, connecting ring and bearing housing
- 100% electro magnetic crack tested

| Item No. | Bolt Size | Rated Load Lbs. | A | B | C | D | E | F | G | Pack Qty. |
|---------------|------------|-----------------|--------|--------|-------|-------|--------|-------|-------|-----------|
| Inch | | | | | | | | | | |
| VRS-11 | 3/8-16 | 990 | 5/16 | 1 1/8 | 1 1/8 | 1 1/8 | 3 1/16 | 1 1/8 | 1 1/2 | 1 |
| VRS-12 | 1/2-13 | 1,325 | 3/8 | 2 | 1 3/8 | 1 1/2 | 4 1/8 | 1 3/8 | 1 3/4 | 1 |
| VRS-14 | 5/8-10 | 4,400 | 1/2 | 2 3/16 | 1 1/4 | 2 1/8 | 5 5/16 | 1 1/8 | 2 1/2 | 1 |
| Metric | | | | | | | | | | |
| VRS-16 | M10 x 1.50 | 990 | 5/16 | 1 1/8 | 1 1/8 | 1 1/8 | 3 1/16 | 1 1/8 | 1 1/2 | 1 |
| VRS-20 | M24 x 3.00 | 7,700 | 1 1/16 | 2 5/8 | 1 3/8 | 3 1/8 | 6 3/4 | 1 3/8 | 3 3/8 | 1 |

Eye Nuts
Steel and Stainless Steel
Inch and Metric

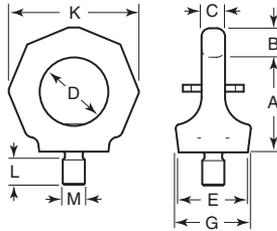


| Item No. | Thread Dia. T | A | B | C | D | E | Max. Load | Pack Qty. |
|--|---------------|-------|-----|-------|-------|-------|-----------|-----------|
| Forged Carbon Steel - Inch | | | | | | | | |
| EN-1 | 3/8-16 | 1/2 | 1/2 | 1 | 1 1/8 | 2 1/8 | 1,250 | 1 |
| EN-2 | 1/2-13 | 13/16 | 1/2 | 1 1/4 | 2 | 2 1/2 | 2,250 | 1 |
| EN-3 | 5/8-11 | 1 | 5/8 | 1 1/2 | 2 1/2 | 3 3/8 | 3,600 | 1 |
| EN-4 | 3/4-10 | 1 1/8 | 7/8 | 1 3/4 | 3 | 3 3/8 | 5,200 | 1 |
| EN-5 | 7/8-9 | 1 1/8 | 1 | 2 | 3 1/2 | 4 1/8 | 7,200 | 1 |
| EN-6 | 1-8 | 1 1/8 | 1 | 2 | 3 1/2 | 4 1/8 | 7,200 | 1 |
| Stainless Steel - Inch | | | | | | | | |
| EN-1SS | 3/8-16 | 7/8 | 5/8 | 1 1/4 | 2 | 2 1/2 | 2,700 | 1 |
| EN-2SS | 1/2-13 | 7/8 | 5/8 | 1 1/4 | 2 | 2 1/2 | 2,700 | 1 |
| EN-3SS | 5/8-11 | 1 3/8 | 3/4 | 1 1/2 | 2 1/2 | 3 | 5,000 | 1 |
| EN-4SS | 3/4-10 | 1 3/8 | 3/4 | 1 1/2 | 2 1/2 | 3 | 5,000 | 1 |
| Forged Carbon Steel - Zinc Plated - Metric - DIN582 | | | | | | | | |
| WEB-9 | M8 x 1.25 | 20 | 8.5 | 20 | 36 | 36 | 314 | 1 |
| WEB-10 | M10 x 1.5 | 25 | 10 | 25 | 45 | 45 | 517 | 1 |
| WEB-11 | M12 x 1.75 | 30 | 11 | 30 | 54 | 53 | 764 | 1 |
| WEB-12 | M16 x 2.0 | 35 | 13 | 35 | 63 | 62 | 1,573 | 1 |
| WEB-15 | M30 x 3.5 | 65 | 25 | 60 | 108 | 109 | 8,092 | 1 |
| WEB-16 | M36 x 4.0 | 75 | 30 | 70 | 126 | 128 | 11,464 | 1 |

STRESS INDICATING LIFTING DEVICES



Swiveling Eyebolts Inch and Metric

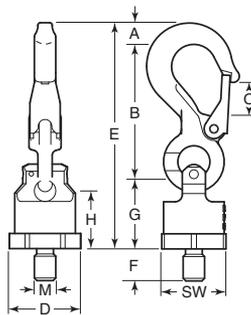


- Star shaped eye adjusts to direction of pull
- Clear indication of WLL for side load direction
- Greater capacities in vertical lift applications
- 100% electro-magnetic crack tested
- Design factor 4:1 in any direction
- Specifically engineered-Grade 10.9 captive hexagon socket screw
- Includes installation tool-just engage tool into the hexagon socket screw and tighten by hand, then disengage tool
- Starpoint then adjusts 360 degrees

| Item No. | Bolt Size | Working Load Limit (Lbs.) | A | B | C | D | E | G | K | L | M | Pack Qty. |
|---------------|------------|---------------------------|--------|--------|--------|---------|---------|--------|--------|----|-------|-----------|
| Inch | | | | | | | | | | | | |
| VRS-21 | 3/8-16 | 880 | 1 1/16 | 7/16 | 5/16 | 1 | 1 | 1 1/8 | 1 1/8 | 15 | 3/8 | 1 |
| VRS-22 | 1/2-13 | 1,650 | 1 1/8 | 1/2 | 3/8 | 1 1/4 | 1 3/16 | 1 3/16 | 2 3/16 | 18 | 1/2 | 1 |
| VRS-23 | 5/8-11 | 3,300 | 1 1/2 | 9/16 | 9/16 | 1 3/8 | 1 1/8 | 1 1/8 | 2 1/2 | 24 | 5/8 | 1 |
| VRS-24 | 3/4-10 | 5,070 | 2 1/4 | 1 1/16 | 1 1/16 | 1 1/2 | 1 1/8 | 2 | 2 1/2 | 30 | 3/4 | 1 |
| VRS-25 | 1-8 | 7,050 | 2 3/4 | 1 3/16 | 1 3/16 | 1 3/4 | 1 1/8 | 2 3/8 | 3 3/8 | 36 | 1 | 1 |
| VRS-26 | 1 1/4-7 | 9,920 | 3 3/8 | 1 | 1 | 2 3/8 | 2 3/8 | 2 1/2 | 4 1/8 | 45 | 1 1/4 | 1 |
| VRS-27 | 1 1/2-6 | 15,430 | 4 1/8 | 1 1/4 | 1 1/4 | 2 13/16 | 2 13/16 | 3 3/8 | 5 1/8 | 54 | 1 1/2 | 1 |
| Metric | | | | | | | | | | | | |
| VRS-29 | M12 x 1.75 | 1,653 | 42 | 13 | 10 | 30 | 30 | 34 | 56 | 18 | 12 | 1 |
| VRS-30 | M16 x 2.0 | 3,306 | 49 | 15 | 14 | 35 | 35 | 40 | 65 | 24 | 16 | 1 |
| VRS-31 | M20 x 2.5 | 5,070 | 57 | 17 | 16 | 40 | 40 | 50 | 75 | 30 | 20 | 1 |
| VRS-32 | M24 x 3.0 | 7,054 | 69 | 21 | 19 | 48 | 48 | 60 | 90 | 36 | 24 | 1 |

IMPORTANT NOTE: All lifting points have a proprietary fluorescent powder coat finish. By changing its color, the finish permanently shows the temperature to which the lifting point has been exposed. When this color change occurs the lifting device should be replaced immediately.

Lifting Hooks Swivel and Pivot Inch and Metric



Full swivel and 180 degree pivot with double ball bearings for smooth tilting, twisting and turning, all without jerking of the lifting point. Suitable for all sling systems, either hook, eye or loop. Has non-protruding hook tip and is extremely durable. Special design hook top. Forged safety latch which engages in the top of hook therefore, protected against lateral bending. Coiled double leg spring in stainless steel protected by latch design. Wearing edges on both sides. Gauge marks for measuring the opening (width) of hook.

| Item No. | Bolt Size | Working Load Limit (Lbs.) | A | B | C | D | E | F | G | H | M | SW | Pack Qty. |
|---------------|------------|---------------------------|-------|---------|--------|---------|---------|--------|---------|--------|-----|---------|-----------|
| Inch | | | | | | | | | | | | | |
| PPS-11 | 1/2-13 | 1,385 | 1/2 | 2 1/16 | 23/32 | 1 1/16 | 4 9/16 | 23/32 | 1 3/8 | 1 1/32 | 1/2 | 1 13/32 | 1 |
| PPS-12 | 3/8-11 | 3,300 | 13/16 | 3 1/16 | 1 | 1 13/16 | 5 3/4 | 1 | 1 3/16 | 1 1/16 | 5/8 | 1 1/8 | 1 |
| PPS-13 | 3/4-10 | 5,500 | 1 1/4 | 4 31/32 | 1 1/16 | 2 13/32 | 7 23/64 | 1 1/16 | 2 13/32 | 1 1/16 | 3/4 | 2 5/32 | 1 |
| Metric | | | | | | | | | | | | | |
| PPS-17 | M12 x 1.75 | 1,388 | 13 | 75 | 18 | 40 | 116 | 18 | 41 | 34 | 12 | 36 | 1 |
| PPS-18 | M16 x 2.0 | 3,306 | 20 | 97 | 25 | 46 | 147 | 25 | 50 | 40 | 16 | 41 | 1 |
| PPS-19 | M20 x 2.5 | 5,511 | 28 | 126 | 30 | 61 | 187 | 30 | 61 | 50 | 20 | 55 | 1 |
| PPS-20 | M24 x 3.0 | 8,818 | 36 | 150 | 35 | 78 | 227 | 36 | 77 | 62 | 24 | 70 | 1 |
| PPS-21 | M30 x 3.5 | 11,023 | 37 | 174 | 40 | 95 | 267 | 45 | 93 | 77 | 30 | 85 | 1 |

Note: Torque hand tight with spanner

IMPORTANT NOTE: All lifting points have a proprietary fluorescent powder coat finish. By changing its color, the finish permanently shows the temperature to which the lifting point has been exposed. When this color change occurs, the lifting device should be replaced immediately.



EYEBOLTS

Buy One or Buy Bulk & SAVE

Forged Eyebolts Fully Threaded Shanks



Plain Style



Shoulder Style

Drop forged carbon steel eyebolts are self-colored. Zinc plated eyebolts offer good corrosion resistance. Blank eyebolts can be welded or further modified to meet your application. Angular lifts significantly reduce eyebolt rated capacities and should not be used for angular lifts greater than 45 degrees. Blank eyebolts have no rated capacities. Metric dimensions are shown in millimeters.

Threaded Forged Carbon Steel - Self Colored

| Plain Item No. | Shoulder Item No. | Thread Size | Shank Lgth. | Eye ID | Rated Capacity (Lbs.) | Pack Qty. |
|----------------|-------------------|-------------|-------------|---------|-----------------------|-----------|
| Inch | | | | | | |
| FP-1 | FS-1 | 1/4-20 | 1 | 3/4 | 500 | 1 |
| FP-2 | FS-2 | 3/16-18 | 1 1/8 | 7/8 | 900 | 1 |
| — | FS-20 | 3/8-16 | 3/4 | 1 | 1,300 | 1 |
| FP-3 | FS-3 | 3/8-16 | 1 1/4 | 1 | 1,300 | 1 |
| — | FS-25 | 3/8-16 | 2 1/2 | 1 | 1,300 | 1 |
| FP-4 | FS-4 | 7/16-14 | 1 3/8 | 1 3/32 | 1,800 | 1 |
| — | FS-30 | 1/2-13 | 1 | 1 1/16 | 2,400 | 1 |
| FP-5 | FS-5 | 1/2-13 | 1 1/2 | 1 1/16 | 2,400 | 1 |
| FP-6 | — | 3/8-12 | 1 1/2 | 1 3/32 | 3,200 | 1 |
| — | FS-35 | 3/8-11 | 1 1/8 | 1 3/8 | 4,000 | 1 |
| FP-7 | FS-7 | 3/8-11 | 1 3/4 | 1 3/8 | 4,000 | 1 |
| — | FS-40 | 3/4-10 | 1 1/2 | 1 1/2 | 5,000 | 1 |
| FP-8 | FS-8 | 3/4-10 | 2 | 1 1/2 | 5,000 | 1 |
| FP-9 | FS-9 | 7/8-9 | 2 1/4 | 1 11/16 | 7,000 | 1 |
| FP-10 | FS-10 | 1-8 | 2 1/2 | 1 13/16 | 9,000 | 1 |
| — | FS-11 | 1 1/8-7 | 2 3/4 | 2 | 12,000 | 1 |
| — | FS-12 | 1 1/4-7 | 3 | 2 1/16 | 15,000 | 1 |
| FP-13 | FS-13 | 1 1/2-6 | 3 1/2 | 2 1/2 | 21,000 | 1 |
| — | FS-15 | 2 - 4 1/2 | 4 | 3 1/4 | 38,000 | 1 |
| Metric | | | | | | |
| — | MEB-8 | M8 x 1.25 | 13 | 20 | 300 | 1 |
| — | MEB-10 | M10 x 1.5 | 17 | 25 | 500 | 1 |
| — | MEB-12 | M12 x 1.75 | 20.5 | 30 | 720 | 1 |
| — | MEB-16 | M16 x 2.0 | 27 | 35 | 1,500 | 1 |
| — | MEB-20 | M20 x 2.5 | 30 | 40 | 2,600 | 1 |
| — | MEB-24 | M24 x 3.0 | 36 | 50 | 3,900 | 1 |
| — | MEB-30 | M30 x 3.5 | 45 | 60 | 7,900 | 1 |

Threaded Forged Carbon Steel - Zinc Plated

| Shoulder Item No. | Thread Size | Shank Lgth. | Eye ID | Rated Capacity (Lbs.) | Pack Qty. |
|-------------------|-------------|-------------|--------|-----------------------|-----------|
| Inch | | | | | |
| FP-200* | 1/4-20 | 1 | 3/4 | 500 | 1 |
| FS-200 | 1/4-20 | 1 | 3/4 | 500 | 1 |
| FS-205 | 3/8-18 | 1 1/8 | 7/8 | 900 | 1 |
| FS-210 | 3/8-16 | 1 1/4 | 1 | 1,300 | 1 |
| FS-215 | 1/2-13 | 1 1/2 | 1 1/16 | 2,400 | 1 |
| FS-220 | 3/8-11 | 1 3/4 | 1 3/8 | 4,000 | 1 |
| FS-225 | 3/4-10 | 2 | 1 1/2 | 5,000 | 1 |
| Metric | | | | | |
| WEB-1 | M8 x 1.25 | 13 | 20 | 314 | 1 |
| WEB-2 | M10 x 1.5 | 17 | 25 | 517 | 1 |
| WEB-3 | M12 x 1.75 | 20.5 | 30 | 764 | 1 |
| WEB-4 | M16 x 2.0 | 27 | 35 | 1,573 | 1 |
| WEB-5 | M20 x 2.5 | 30 | 40 | 2,697 | 1 |
| WEB-6 | M24 x 3.0 | 36 | 50 | 4,046 | 1 |
| WEB-7 | M30 x 3.5 | 45 | 60 | 8,092 | 1 |
| WEB-8 | M36 x 4.0 | 54 | 70 | 11,464 | 1 |

*Plain style

Threaded Forged 304 Stainless Steel

| Plain Item No. | Shoulder Item No. | Thread Size | Shank Lgth. | Thread Lgth. | Eye ID | Rated Capacity (Lbs.) | Pack Qty. |
|----------------|-------------------|-------------|-------------|--------------|---------|-----------------------|-----------|
| FP-50SS | FS-20SS | 3/8-16 | 1 1/4 | 1 1/4 | 1 | 1,160 | 1 |
| — | FS-3SS* | 3/8-16 | 4 1/2 | 1 1/2 | 3/4 | 1,160 | 1 |
| — | FS-25SS | 1/2-13 | 1 1/2 | 1 1/2 | 1 1/16 | 2,150 | 1 |
| FP-5SS* | — | 1/2-13 | 6 | 2 | 1 | 2,150 | 1 |
| — | FS-30SS | 3/8-11 | 1 3/4 | 1 3/4 | 1 3/8 | 3,440 | 1 |
| — | FS-35SS | 3/4-10 | 2 | 2 | 1 1/2 | 5,140 | 1 |
| — | FS-8SS* | 3/4-10 | 6 | 2 1/2 | 1 1/2 | 5,140 | 1 |
| — | FS-40SS | 1-8 | 2 1/2 | 2 1/2 | 1 13/16 | 9,370 | 1 |

*Provided with stainless steel hex nut

Bent Eyebolts Steel and Stainless Steel



- Steel are carbon steel, zinc plated
- Stainless are type 304
- Furnished with hex nut
- Rolled threads
- Not recommended for lifting

| Steel Item No. | Stainless Item No. | Thread | OAL | Shank Lgth. | Thread Lgth. | Eye ID | Pack Qty. |
|----------------|--------------------|---------|-------|-------------|--------------|--------|-----------|
| BEB-400 | BEB-1400 | 1/4-20 | 2 | 1 | 7/8 | 1/2 | 1 |
| BEB-420 | BEB-1420 | 1/4-20 | 2 1/2 | 1 1/2 | 1 1/4 | 1/2 | 1 |
| BEB-450 | BEB-1450 | 1/4-20 | 4 | 3 | 1 1/2 | 1/2 | 1 |
| BEB-500 | BEB-1500 | 5/16-18 | 3 1/2 | 2 | 1 1/4 | 5/8 | 1 |
| — | BEB-1520 | 5/16-18 | 4 1/2 | 3 | 1 1/2 | 5/8 | 1 |
| BEB-610 | — | 3/8-16 | 4 | 2 1/2 | 1 1/2 | 3/4 | 1 |
| BEB-630 | BEB-1630 | 3/8-16 | 5 1/2 | 4 | 2 1/2 | 3/4 | 1 |
| BEB-640 | BEB-1640 | 3/8-16 | 7 1/2 | 6 | 4 | 3/4 | 1 |

Forged Eyebolts Partially Threaded Shanks



Plain Style



Shoulder Style

Drop forged with machine thread. The steel have a hot galvanized finish and are threaded national coarse before galvanizing. The stainless are type 316 stainless steel. Furnished with hex nuts. Loads are based on a safety factor of 5 to 1. Any deviations such as angular lifts, shock loads, modification of the basic forging, etc. will result in drastically reduced maximum loads.

| Plain Item No. | Shoulder Item No. | Thread Size | Shank Lgth. | Eye ID | Rated Capacity (Lbs.) | Pack Qty. |
|-----------------------------------|-------------------|-------------|-------------|--------|-----------------------|-----------|
| Steel | | | | | | |
| CHE-1 | CHE-51 | 1/4-20 | 2 | 1/2 | 500 | 1 |
| — | CHE-53 | 1/4-20 | 4 | 1/2 | 500 | 1 |
| — | CHE-56 | 3/8-18 | 2 1/4 | 5/8 | 800 | 1 |
| CHE-8 | CHE-58 | 3/8-18 | 4 1/4 | 5/8 | 800 | 1 |
| CHE-11 | CHE-61 | 3/8-16 | 2 1/2 | 3/4 | 1,200 | 1 |
| CHE-12 | — | 3/8-16 | 3 | 3/4 | 1,200 | 1 |
| CHE-13 | CHE-63 | 3/8-16 | 4 1/2 | 3/4 | 1,200 | 1 |
| CHE-16 | — | 3/8-16 | 8 | 3/4 | 1,200 | 1 |
| — | CHE-67 | 1/2-13 | 2 | 1 | 2,200 | 1 |
| CHE-18 | CHE-68 | 1/2-13 | 3 1/4 | 1 | 2,200 | 1 |
| CHE-19 | — | 1/2-13 | 4 1/2 | 1 | 2,200 | 1 |
| CHE-20 | CHE-70 | 1/2-13 | 6 | 1 | 2,200 | 1 |
| CHE-21 | — | 1/2-13 | 8 | 1 | 2,200 | 1 |
| — | CHE-74 | 3/8-11 | 4 1/2 | 1 1/4 | 3,500 | 1 |
| CHE-25 | CHE-75 | 3/8-11 | 6 | 1 1/4 | 3,500 | 1 |
| CHE-27 | — | 3/8-11 | 10 | 1 1/4 | 3,500 | 1 |
| CHE-32 | CHE-82 | 3/4-10 | 4 1/2 | 1 1/2 | 5,200 | 1 |
| CHE-33 | — | 3/4-10 | 6 | 1 1/2 | 5,200 | 1 |
| CHE-45 | CHE-95 | 1-8 | 6 | 2 | 10,000 | 1 |
| Stainless Steel - Type 316 | | | | | | |
| — | CHE-109 | 1/4-20 | 2 | 1/2 | 500 | 1 |
| — | CHE-116 | 3/8-16 | 2 1/2 | 3/4 | 1,200 | 1 |
| — | CHE-117 | 1/2-13 | 3 1/4 | 1 | 2,200 | 1 |

TURNBUCKLES & ANCHOR SHACKLES



Turnbuckles Forged Carbon Steel



Jaw and Jaw



Eye and Eye

Made from forged carbon steel, hot galvanized. Meets federal specifications, FF-T-791b, type I, form 1-class 4. Coarse threads.

| Item No. | Thread | Take Up | Closed Lgth. | Pack Qty. | Item No. | Thread | Take Up | Closed Lgth. | Pack Qty. |
|----------------------|--------|---------|--------------|-----------|----------------------|--------|---------|--------------|-----------|
| Jaw & Jaw | | | | | Eye & Eye | | | | |
| DTB-108 | 5/16 | 4 1/2 | 9 1/4 | 1 | DTB-704* | 1/4 | 4 | 8 | 1 |
| DTB-112 | 3/8 | 6 | 11 1/2 | 1 | DTB-708 | 5/16 | 4 1/2 | 9 | 1 |
| DTB-116 | 1/2 | 6 | 13 1/2 | 1 | DTB-712 | 3/8 | 6 | 11 1/2 | 1 |
| DTB-124 | 1/2 | 12 | 19 1/2 | 1 | DTB-748 | 3/4 | 12 | 21 1/4 | 1 |
| DTB-128 | 3/8 | 6 | 15 1/4 | 1 | | | | | |
| DTB-132 | 5/8 | 9 | 18 3/4 | 1 | | | | | |
| DTB-148 | 3/4 | 12 | 22 1/2 | 1 | | | | | |

*1/4" size is electro-galvanized

Midget Turnbuckles Economy Style



Eye and Eye

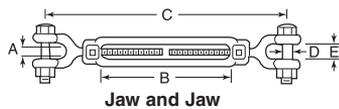


Hook and Eye

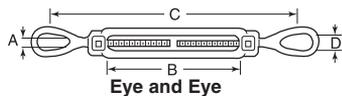
Economy turnbuckles for light duty applications. Sand cast aluminum bodies, hex heads and electro galvanized steel hooks or eyes.

| Eye & Eye | Hook & Eye | Thread Dia. | OAL Closed | OAL Open | Pack Qty. |
|-----------|------------|-------------|------------|----------|-----------|
| DTB-1 | DTB-11 | 8-32 | 3 3/8 | 4 5/8 | 1 |
| DTB-2 | — | 10-24 | 4 | 5 1/8 | 1 |
| DTB-3 | DTB-13 | 12-24 | 4 1/2 | 6 1/8 | 1 |
| DTB-4 | DTB-14 | 1/4-20 | 5 1/2 | 7 1/8 | 1 |
| — | DTB-15 | 5/16-18 | 6 1/4 | 9 1/4 | 1 |
| — | DTB-16 | 3/8-16 | 7 1/2 | 10 1/2 | 1 |

Turnbuckles 316 Stainless Steel



Jaw and Jaw

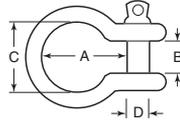


Eye and Eye

Made from 316 stainless steel. Meets dimensions of ASTM specification F1145-92 Type 1, Class D.

| Item No. | A | B | C | D | E | Rated Load Lbs. | Pack Qty. |
|----------------------|------|-----|-------|-----|-----|-----------------|-----------|
| Jaw & Jaw | | | | | | | |
| SUN-330 | 1/4 | 4.0 | 7.50 | .20 | .45 | 500 | 1 |
| SUN-335 | 5/16 | 4.5 | 8.50 | .25 | .51 | 800 | 1 |
| SUN-340 | 3/8 | 6.0 | 10.75 | .30 | .54 | 1,200 | 1 |
| SUN-345 | 1/2 | 6.0 | 12.00 | .37 | .63 | 2,200 | 1 |
| Eye & Eye | | | | | | | |
| SUN-375 | 1/4 | 4.0 | 7.50 | — | — | 500 | 1 |
| SUN-380 | 5/16 | 4.5 | 8.50 | — | — | 800 | 1 |

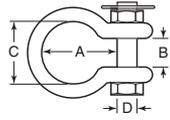
Anchor Shackles Screw Pin Steel



Steel made from forged carbon steel, self colored. Meets Federal Specifications RRC-271D, Type IV. Screw pin style has a pin that threads into one portion of the shackle.

| Item No. | Nom. Shackle Size | A | B | C | D | Rated Load (Lbs.) | Pack Qty. |
|----------|-------------------|---------|--------|--------|-------|-------------------|-----------|
| AS-05 | 1/4 | 1 1/8 | 1 5/32 | 3/4 | 5/16 | 1,000 | 1 |
| AS-10 | 5/16 | 1 1/4 | 1 7/32 | 15/16 | 3/8 | 1,500 | 1 |
| AS-15 | 3/8 | 1 7/16 | 2 1/32 | 1 1/8 | 7/16 | 2,000 | 1 |
| AS-20 | 7/16 | 1 11/16 | 2 3/32 | 1 1/16 | 1/2 | 3,000 | 1 |
| AS-25 | 1/2 | 1 15/16 | 2 1/8 | 1 1/2 | 5/8 | 4,000 | 1 |
| AS-30 | 5/8 | 2 1/2 | 2 1/4 | 1 3/4 | 3/4 | 6,500 | 1 |
| AS-35 | 3/4 | 3 | 2 1/4 | 2 | 7/8 | 9,500 | 1 |
| AS-40 | 7/8 | 3 3/4 | 2 3/4 | 2 1/2 | 1 | 13,000 | 1 |
| AS-45 | 1 | 4 1/4 | 3 1/4 | 2 3/4 | 1 1/8 | 17,000 | 1 |

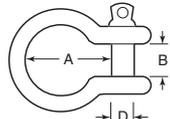
Anchor Shackles Safety Steel



Steel made from forged carbon steel, self colored. Meets Federal Specifications RRC-271D, Type IV. Safety style has a bolt that runs all the way through the shackle, secured with a nut and a cotter pin through the threaded bolt.

| Item No. | Nom. Shackle Size | A | B | C | D | Rated Load (Lbs.) | Pack Qty. |
|----------|-------------------|---------|--------|--------|-------|-------------------|-----------|
| AS-105 | 1/4 | 1 1/8 | 1 5/32 | 3/4 | 5/16 | 1,000 | 1 |
| AS-110 | 5/16 | 1 1/4 | 1 7/32 | 15/16 | 3/8 | 1,500 | 1 |
| AS-115 | 3/8 | 1 7/16 | 2 1/32 | 1 1/8 | 7/16 | 2,000 | 1 |
| AS-120 | 7/16 | 1 11/16 | 2 3/32 | 1 1/16 | 1/2 | 3,000 | 1 |
| AS-125 | 1/2 | 1 15/16 | 2 1/8 | 1 1/2 | 5/8 | 4,000 | 1 |
| AS-130 | 5/8 | 2 1/2 | 2 1/4 | 1 3/4 | 3/4 | 6,500 | 1 |
| AS-135 | 3/4 | 3 | 2 1/4 | 2 | 7/8 | 9,500 | 1 |
| AS-140 | 7/8 | 3 3/4 | 2 3/4 | 2 1/2 | 1 | 13,000 | 1 |
| AS-150 | 1 | 4 1/4 | 3 1/4 | 2 3/4 | 1 1/8 | 19,000 | 1 |

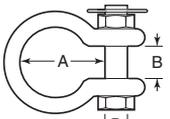
Anchor Shackles Screw Pin 316 Stainless Steel



Stainless steel made from 316 stainless. Meets Federal Specifications RRC-271D, Type IV. Screw pin style has a pin that threads into one portion of the shackle.

| Item No. | Nom. Shackle Size | A | B | D | Rated Load (Lbs.) | Pack Qty. |
|----------|-------------------|------|------|------|-------------------|-----------|
| SUN-65 | 3/16 | .83 | .41 | 1/4 | 650 | 1 |
| SUN-70 | 1/4 | 1.11 | .47 | 5/16 | 1,000 | 1 |
| SUN-75 | 5/16 | 1.20 | .53 | 3/8 | 1,300 | 1 |
| SUN-80 | 3/8 | 1.41 | .66 | 7/16 | 1,500 | 1 |
| SUN-85 | 7/16 | 1.77 | .72 | 1/2 | 2,000 | 1 |
| SUN-90 | 1/2 | 1.83 | .82 | 5/8 | 3,000 | 1 |
| SUN-95 | 5/8 | 2.41 | 1.02 | 3/4 | 4,000 | 1 |

Anchor Shackles Safety 316 Stainless Steel

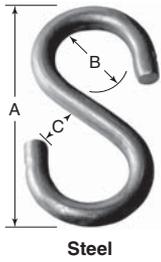


Stainless steel made from 316 stainless. Meets Federal Specifications RRC-271D, Type IV. Safety style has a bolt that runs all the way through the shackle, secured with a nut and a cotter pin through the threaded bolt.

| Item No. | Nom. Shackle Size | A | B | D | Rated Load (Lbs.) | Pack Qty. |
|----------|-------------------|------|-----|------|-------------------|-----------|
| SUN-130 | 1/4 | 1.11 | .47 | 5/16 | 1,000 | 1 |
| SUN-135 | 5/16 | 1.20 | .53 | 3/8 | 1,500 | 1 |
| SUN-140 | 3/8 | 1.41 | .66 | 7/16 | 2,000 | 1 |
| SUN-145 | 7/16 | 1.77 | .72 | 1/2 | 3,000 | 1 |



**S-Hooks
Steel and Stainless Steel**



Steel



Stainless

Steel are made of low carbon cold drawn steel wire with zinc plated finish. Stainless are made of 304 stainless steel. Any deviations such as angular lifts, shock loads, modifications of the S-hook will result in drastically reduced maximum loads.

| Steel Item No. | Stainless Item No. | Wire Dia. | A | B | C | Max Load (Lbs.) | Pack Qty. |
|----------------|--------------------|-----------|-------|------|------|-----------------|-----------|
| SH-21 | — | .105 | 1 | 5/16 | 5/32 | 16 | 1 |
| SH-22 | — | .117 | 1 1/4 | 3/8 | 9/16 | 17 | 1 |
| SH-23 | — | .148 | 1 1/2 | 7/16 | 7/32 | 26 | 1 |
| SH-24 | SH-29 | .186 | 1 3/4 | 1/2 | 1/4 | 40 | 1 |
| SH-25 | — | .220 | 2 1/8 | 5/8 | 5/16 | 58 | 1 |
| — | SH-31 | .250 | 2 1/2 | 3/4 | 7/16 | 70 | 1 |
| SH-27 | — | .312 | 3 | 7/8 | 1/2 | 132 | 1 |
| SH-28 | — | .375 | 3 1/2 | 1 | 1/2 | 170 | 1 |

**Quick Links
Steel and Stainless Steel**



Steel

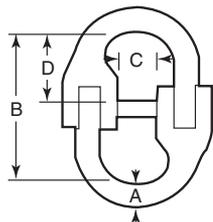


Stainless

Attaches accessories quickly without tools. Use only with chain of equal or lower load limit. Steel has bright zinc finish. Stainless is 316 stainless steel.

| Item No. | Link Size | Working Load | Pack Qty. | Item No. | Link Size | Working Load | Pack Qty. |
|--------------|-----------|--------------|-----------|------------------|-----------|--------------|-----------|
| Steel | | | | Stainless | | | |
| ACC-360 | 3/16 | 660 | 1 | SUN-175 | 1/8 | 100 | 1 |
| ACC-365 | 1/4 | 880 | 1 | SUN-180 | 5/32 | 300 | 1 |
| ACC-375 | 3/8 | 2,200 | 1 | SUN-185 | 3/16 | 800 | 1 |
| ACC-380 | 1/2 | 3,250 | 1 | SUN-190 | 1/4 | 1,200 | 1 |
| | | | | SUN-195 | 9/32 | 1,400 | 1 |
| | | | | SUN-200 | 5/16 | 2,000 | 1 |
| | | | | SUN-205 | 29/64 | 3,000 | 1 |
| | | | | SUN-210 | 3/8 | 3,500 | 1 |
| | | | | SUN-215 | 1/2 | 5,000 | 1 |

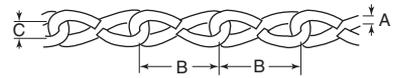
**Mechanical Coupling Links
316 Stainless Steel**



Used to assemble chain legs to the master link and/or attach eye type fittings. Forged construction.

| Item No. | A | B | C | D | Working Load Limit | Pack Qty. |
|----------|-----|------|------|------|--------------------|-----------|
| SUN-40 | 1/4 | 2.09 | .64 | .64 | 2,200 | 1 |
| SUN-55 | 1/2 | 3.62 | 1.09 | 1.09 | 7,400 | 1 |

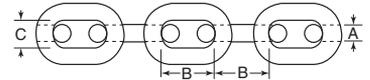
Stainless Steel Single Jack Chain



Light duty wire chain used where high strength is not required. Ideal for lighting fixtures.

| Item No. | Size | A | B | C | Working Load Limit | Standard Length Ft. |
|----------|------|-----|-----|-----|--------------------|---------------------|
| SUN-305 | #18 | .05 | .39 | .12 | 5 | 100 |
| SUN-310 | #16 | .06 | .52 | .15 | 10 | 100 |
| SUN-315 | #14 | .08 | .63 | .20 | 16 | 100 |
| SUN-320 | #12 | .10 | .75 | .23 | 29 | 100 |
| SUN-325 | #10 | .13 | .85 | .31 | 43 | 100 |

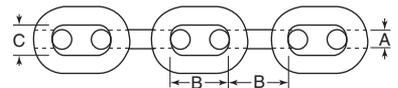
316L Stainless Steel - Grade 40 High Test Chain



Commonly used for commercial and marine applications. Made to "proof coil" dimensions.

| Item No. | Size | A | B | C | Working Load Limit | Standard Length Ft. |
|----------|------|-----|------|-----|--------------------|---------------------|
| SUN-220 | 5/32 | .16 | .77 | .28 | 500 | 10 |
| SUN-225 | 3/16 | .20 | .92 | .34 | 930 | 10 |
| SUN-230 | 1/4 | .25 | 1.00 | .43 | 1,570 | 10 |
| SUN-235 | 5/16 | .32 | 1.03 | .49 | 2,400 | 10 |

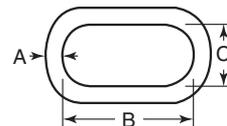
316L Stainless Steel - Grade 50 Lifting Chain



Working loads are based on gradual pull, and not shock loads. Make sure all components in your assembly are overhead lifting rated and have the same working loads.

| Item No. | Size | A | B | C | Working Load Limit | Standard Length Ft. |
|----------|------|-----|-----|-----|--------------------|---------------------|
| SUN-265 | 3/16 | .19 | .58 | .25 | 1,100 | 10 |
| SUN-270 | 5/32 | .28 | .85 | .38 | 2,200 | 10 |
| SUN-275 | 5/16 | .32 | .95 | .45 | 2,700 | 10 |

**Master Links
316 Stainless Steel**



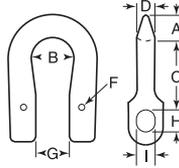
Used to assemble slings and allow safe maximum spread of sling legs without binding. Formed and welded construction. Each link is stamped with size and working load. Each link has been proof tested and passivated.

| Item No. | A | B | C | Working Load Limit | Pack Qty. |
|----------|-----|------|------|--------------------|-----------|
| SUN-5 | 3/8 | 3.00 | 1.50 | 2,000 | 1 |
| SUN-10 | 1/2 | 5.00 | 2.50 | 3,000 | 1 |



The chains and attachments shown in this catalog with the **NO LIFTING SIGNS** are designed for general purpose applications and are not to be used for lifting or hoisting purpose or where chain failure is likely to cause injury to persons or damage to property. The working limit listed below is the maximum load that should ever be applied to the chain. All ACCO chains are made in the U.S.

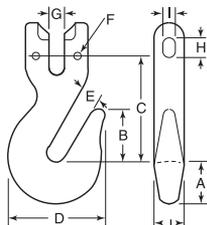
Kuplex® II Kuplers®



Kuplers® act as a connection device between Master Links and Chain on all multiple leg Kuplex® II Chain Slings. On single leg assemblies they can be used in lieu of the popular Kuplex® II Kuplink. Resembling a shackle in appearance the Kuplers® provide a high strength, high integrity connection when used to connect a special attachment to the alloy chain assembly. Red color.

| Item No. | Chain Size | Load Limit | A | B | C | D | F | G | H | I | Pack Qty. |
|----------|------------|------------|-------|-------|-------|------|-----|-------|-------|-------|-----------|
| ACC-585 | 9/32 | 4,300 | 7/16 | 19/16 | 15/16 | 5/16 | 1/8 | 23/32 | 13/32 | 11/32 | 1 |
| ACC-590 | 3/8 | 8,800 | 19/32 | 17/16 | 17/16 | 7/16 | 3/8 | 19/16 | 9/16 | 13/32 | 1 |
| ACC-595 | 1/2 | 15,000 | 3/4 | 17/16 | 27/16 | 9/16 | 3/8 | 13/32 | 3/4 | 21/32 | 1 |

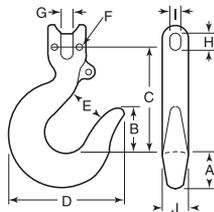
Kuplex® II Clevis Type Grab Hooks



Provides a chain to grab hook connection method that completely eliminates mechanical connection devices. Red color.

| Item No. | Chain Size | Load Limit | A | B | C | D | E | F | G | H | I | J | Pack Qty. |
|----------|------------|------------|--------|-------|-------|--------|-------|------|-----|-------|-------|-------|-----------|
| ACC-730 | 9/32 | 4,300 | 11/16 | 1 1/8 | 2 1/8 | 2 1/8 | 13/32 | 1/8 | 3/8 | 13/32 | 11/32 | 5/8 | 1 |
| ACC-735 | 3/8 | 8,800 | 1 1/32 | 1 1/2 | 2 7/8 | 2 5/8 | 1/2 | 5/32 | 1/2 | 9/16 | 13/32 | 7/8 | 1 |
| ACC-740 | 1/2 | 15,000 | 1 1/4 | 2 | 3 1/2 | 3 1/32 | 5/8 | 3/16 | 5/8 | 3/4 | 21/32 | 1 1/8 | 1 |

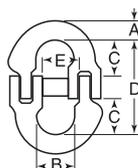
Kuplex® II Clevis Type Sling Hooks



Engineered to make rapid, high integrity chain-to-hook connections. No bulky connection link is required. Drop forged, rated at grade 80. Red color.

| Item No. | Chain Size | Load Limit | A | B | C | D | E | F | G | H | I | J | Pack Qty. |
|----------|------------|------------|--------|--------|-------|---------|-------|------|-----|-------|-------|-----|-----------|
| ACC-705 | 9/32 | 4,300 | 1 | 1 1/2 | 3 3/8 | 3 3/8 | 17/32 | 1/8 | 3/8 | 13/32 | 11/32 | 5/8 | 1 |
| ACC-710 | 3/8 | 8,800 | 1 1/32 | 2 1/32 | 5 7/8 | 4 13/16 | 1 1/8 | 9/32 | 1/2 | 9/16 | 13/32 | 7/8 | 1 |

Kuplex® II Kuplok®



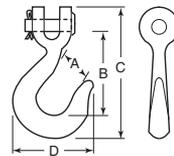
Straight Link Machine Chain



Straight link machine chain is a welded chain noted for its flexibility. Used for overhead doors, tailgates and agricultural implements. Made from low carbon steel with zinc plated finish.

| Item No. | Trade Size | Wire Dia. | Inside Dimensions | | Load Limit | Standard Length Ft. |
|----------|------------|-----------|-------------------|-------|------------|---------------------|
| | | | Lgth. | Width | | |
| ACC-70 | 3 | .135 | .60 | .25 | 270 | 100 |
| ACC-80 | 1 / 0 | .177 | .74 | .32 | 465 | 100 |
| ACC-90 | 4 / 0 | .218 | .96 | .40 | 700 | 100 |

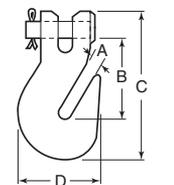
Clevis Slip Hooks



Wide throat for shackles, chain tied loads, etc. For use with grade 30 proof coil or grade 43 high test chain. Zinc finish.

| Item No. | Chain Size | A | B | C | D | Working Load | Pack Qty. |
|----------|------------|--------|-------|---------|---------|--------------|-----------|
| ACC-335 | 1/4 | 15/16 | 2 1/4 | 3 11/16 | 2 5/8 | 2,600 | 1 |
| ACC-340 | 5/16 | 1 1/16 | 2 5/8 | 4 1/4 | 3 3/8 | 3,900 | 1 |
| ACC-345 | 3/8 | 1 1/4 | 3 | 4 7/8 | 3 1/2 | 5,400 | 1 |
| ACC-350 | 1/2 | 1 3/4 | 3 3/8 | 6 13/32 | 4 29/32 | 9,200 | 1 |

Clevis Grab Hooks



Deep narrow hook for engaging between chain links for secure holding. For use with grade 70 transport chain or grade 43 high test. Bright zinc finish.

| Item No. | Chain Size | A | B | C | D | Working Load | Pack Qty. |
|----------|------------|-----|------|-------|--------|--------------|-----------|
| ACC-300 | 1/4 - 5/16 | .44 | 2.32 | 4 | 2 1/16 | 4,700 | 1 |
| ACC-305 | 3/8 | 1/2 | 2.70 | 4 1/2 | 2 5/8 | 6,600 | 1 |



Kuplok® mechanical coupling links, an essential component of mechanically coupled slings, are used to assemble chain legs to the master link and/or attach eye type fittings. Red color.

| Item No. | Chain Size | Load Limit | Max. Width of Link | Hole Dia. | A | B | C | D | E | Pack Qty. |
|----------|------------|------------|--------------------|-----------|-----|-----|-----|---------|-----|-----------|
| ACC-560 | 9/32 | 3,500 | 1 1/16 | 39/64 | 3/8 | 5/8 | 5/8 | 2 13/16 | 1/2 | 1 |
| ACC-565 | 3/8 | 7,100 | 2 1/4 | 41/64 | 1/2 | 1 | 3/4 | 2 1/2 | 3/4 | 1 |



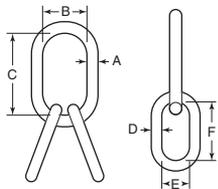
**Alloy Grade 80 Chain
25 Foot Sections**



Rugged, versatile, high strength, low weight chain manufactured from a special analysis alloy steel. Peer-Alloy has a comparatively high carbon content as well as containing various other alloying elements. The chain is quenched and tempered before proof testing. The ultimate tensile strength of alloy chain is over twice that of ordinary steel chain. The chain is marked to identify grade and manufacturer. These are the only chains recommended for use in overhead lifting applications. Minimum elongation at break test 20%. Tensile strength following heat treatment meets or exceeds all existing OSHA, Government, NACM and ASTM specification requirements. Black protective finish. Sold in 25 foot sections only.

| Item No. | Chain Size | Load Limit | Inside Lgth. | Inside Width | Standard Length Ft. |
|------------|------------|------------|--------------|--------------|---------------------|
| ACC-505-25 | 5/32 | 3,500 | .846 | .405 | 25 |
| ACC-510-25 | 3/8 | 7,100 | 1.209 | .567 | 25 |
| ACC-515-25 | 1/2 | 12,000 | 1.571 | .736 | 25 |

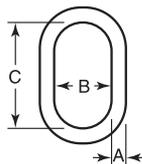
Accoloy® Kuplex® Oblong Sub - Assemblies



A quadruple Master Assembly was designed to construct a triple or quadruple chain sling leg assembly by attaching three or four single leg assemblies eliminating the cumbersome connections created by attaching all to a common Master Link.

| Item No. | Chain Size | Load Limit | A | B | C | D | E | F | Pack Qty. |
|----------|------------|------------|-----|---|---|-----|-------|-------|-----------|
| ACC-650 | 5/32 | 11,200 | 3/4 | 3 | 6 | 5/8 | 1 1/2 | 2 1/8 | 1 |

Accoloy® Kuplex® Oblong Master Links



For use assembling slings to allow maximum safe spread of sling legs without binding. Red color.

| Item No. | A | Link Size B | C | Load Limit | Sling Chain Size | | | | Pack Qty. |
|----------|-----|-------------|---|------------|------------------|--------|--------|------|-----------|
| | | | | | Single | Double | Triple | Quad | |
| ACC-530 | 5/8 | 3 | 6 | 6,100 | 5/32 | 5/32 | — | — | 1 |
| ACC-535 | 3/4 | 3 | 6 | 12,300 | 3/8 | 3/8 | 5/32 | 5/32 | 1 |

**Adjust-A-Link™
Adjustable Chain Slings**



The most easily adjustable and versatile chain sling available. Ideal for machine shop or maintenance departments. Made with grade 80 alloy chain. Proof tested and certified to comply with OSHA.

| Item No. | Chain Size | Rate Capacities (Lbs.) | | Length (Ft.) | Pack Qty. |
|----------|------------|------------------------|------------------|--------------|-----------|
| | | Single @ 90 Deg. | Double @ 60 Deg. | | |
| LIF-95 | 7/32 | 2,700 | 4,700 | 6 | 1 |
| LIF-96 | 7/32 | 2,700 | 4,700 | 10 | 1 |
| LIF-97 | 5/32 | 4,300 | 7,400 | 6 | 1 |
| LIF-98 | 5/32 | 4,300 | 7,400 | 10 | 1 |
| LIF-99 | 3/8 | 8,800 | 15,200 | 10 | 1 |
| LIF-100 | 3/8 | 8,800 | 15,200 | 14 | 1 |
| LIF-101 | 1/2 | 12,000 | 20,800 | 10 | 1 |
| LIF-102 | 1/2 | 12,000 | 20,800 | 14 | 1 |

MASKING SOLUTIONS

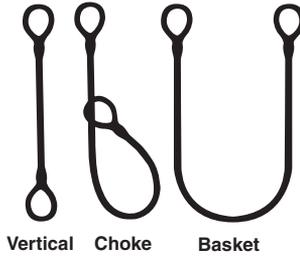
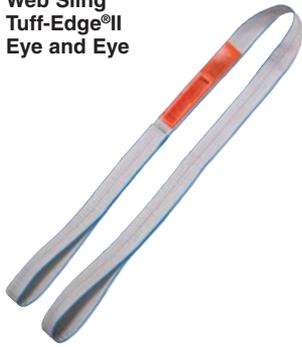
ESSENTRA has THOUSANDS of masking products!

Pages 978 - 1040

Masking Caps • Masking Plugs • Silicone Tubing • Discs • Tape • Hooks



**Web Sling
Tuff-Edge®II
Eye and Eye**



Blue polymer edge yarns designed to resist abuse and extend sling life. Silver color body yarns are treated to also resist abrasion. Tuff-Tag provides required OSHA information for the life of the sling. Proven sling web construction with red core warning yarns. Webbing is approximately 3/16" thick.

| Item No. | Width | Ply. | Rate Capacities (Lbs.) | | | Length (Ft.) | Pack Qty. |
|----------|-------|------|------------------------|-------|--------|--------------|-----------|
| | | | Vertical | Choke | Basket | | |
| LIF-01 | 1 | 1 | 1,600 | 1,250 | 3,200 | 4 | 1 |
| LIF-02 | 1 | 1 | 1,600 | 1,250 | 3,200 | 6 | 1 |
| LIF-03 | 1 | 1 | 1,600 | 1,250 | 3,200 | 8 | 1 |
| LIF-04 | 1 | 1 | 1,600 | 1,250 | 3,200 | 10 | 1 |
| LIF-05 | 1 | 1 | 1,600 | 1,250 | 3,200 | 12 | 1 |
| LIF-06 | 2 | 1 | 3,200 | 2,500 | 6,400 | 4 | 1 |
| LIF-07 | 2 | 1 | 3,200 | 2,500 | 6,400 | 6 | 1 |
| LIF-08 | 2 | 1 | 3,200 | 2,500 | 6,400 | 8 | 1 |
| LIF-09 | 2 | 1 | 3,200 | 2,500 | 6,400 | 10 | 1 |
| LIF-10 | 2 | 1 | 3,200 | 2,500 | 6,400 | 12 | 1 |
| LIF-11 | 3 | 1 | 4,800 | 3,800 | 9,600 | 4 | 1 |
| LIF-12 | 3 | 1 | 4,800 | 3,800 | 9,600 | 6 | 1 |
| LIF-13 | 3 | 1 | 4,800 | 3,800 | 9,600 | 8 | 1 |
| LIF-14 | 3 | 1 | 4,800 | 3,800 | 9,600 | 10 | 1 |
| LIF-15 | 3 | 1 | 4,800 | 3,800 | 9,600 | 12 | 1 |
| LIF-16 | 4 | 1 | 6,400 | 5,000 | 12,800 | 4 | 1 |
| LIF-17 | 4 | 1 | 6,400 | 5,000 | 12,800 | 6 | 1 |
| LIF-18 | 4 | 1 | 6,400 | 5,000 | 12,800 | 8 | 1 |
| LIF-19 | 4 | 1 | 6,400 | 5,000 | 12,800 | 10 | 1 |
| LIF-20 | 4 | 1 | 6,400 | 5,000 | 12,800 | 12 | 1 |
| LIF-21 | 1 | 2 | 3,200 | 2,500 | 6,400 | 4 | 1 |
| LIF-22 | 1 | 2 | 3,200 | 2,500 | 6,400 | 6 | 1 |
| LIF-23 | 1 | 2 | 3,200 | 2,500 | 6,400 | 8 | 1 |
| LIF-24 | 1 | 2 | 3,200 | 2,500 | 6,400 | 10 | 1 |
| LIF-25 | 1 | 2 | 3,200 | 2,500 | 6,400 | 12 | 1 |
| LIF-26 | 2 | 2 | 6,400 | 5,000 | 12,800 | 4 | 1 |
| LIF-27 | 2 | 2 | 6,400 | 5,000 | 12,800 | 6 | 1 |
| LIF-28 | 2 | 2 | 6,400 | 5,000 | 12,800 | 8 | 1 |
| LIF-29 | 2 | 2 | 6,400 | 5,000 | 12,800 | 10 | 1 |
| LIF-30 | 2 | 2 | 6,400 | 5,000 | 12,800 | 12 | 1 |
| LIF-31 | 3 | 2 | 8,800 | 7,040 | 17,600 | 4 | 1 |
| LIF-32 | 3 | 2 | 8,800 | 7,040 | 17,600 | 6 | 1 |
| LIF-33 | 3 | 2 | 8,800 | 7,040 | 17,600 | 8 | 1 |
| LIF-34 | 3 | 2 | 8,800 | 7,040 | 17,600 | 10 | 1 |
| LIF-35 | 3 | 2 | 8,800 | 7,040 | 17,600 | 12 | 1 |
| LIF-36 | 4 | 2 | 11,500 | 9,200 | 23,000 | 4 | 1 |
| LIF-37 | 4 | 2 | 11,500 | 9,200 | 23,000 | 6 | 1 |
| LIF-38 | 4 | 2 | 11,500 | 9,200 | 23,000 | 8 | 1 |
| LIF-39 | 4 | 2 | 11,500 | 9,200 | 23,000 | 10 | 1 |
| LIF-40 | 4 | 2 | 11,500 | 9,200 | 23,000 | 12 | 1 |

**Tuflex®
Endless Round Slings**



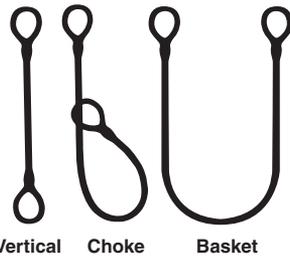
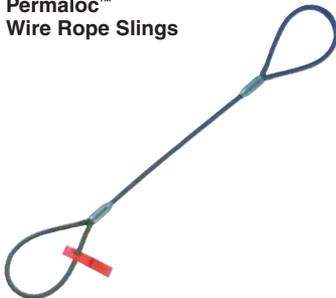
Vertical Choke Basket



Round slings have a double wall cover for greater life and added protection. Wear points can be shifted to extend life of the sling. Chokes tighter and releases easier than other slings. Color coded for rated capacity. Has red core warning yarn inspection system.

| Item No. | Color | Rate Capacities (Lbs.) | | | Length (Ft.) | Pack Qty. |
|----------|--------|------------------------|--------|--------|--------------|-----------|
| | | Vertical | Choke | Basket | | |
| LIF-41 | Purple | 2,600 | 2,100 | 5,200 | 4 | 1 |
| LIF-42 | Purple | 2,600 | 2,100 | 5,200 | 6 | 1 |
| LIF-43 | Purple | 2,600 | 2,100 | 5,200 | 8 | 1 |
| LIF-44 | Purple | 2,600 | 2,100 | 5,200 | 10 | 1 |
| LIF-45 | Purple | 2,600 | 2,100 | 5,200 | 12 | 1 |
| LIF-46 | Green | 5,300 | 4,200 | 10,600 | 4 | 1 |
| LIF-47 | Green | 5,300 | 4,200 | 10,600 | 6 | 1 |
| LIF-48 | Green | 5,300 | 4,200 | 10,600 | 8 | 1 |
| LIF-49 | Green | 5,300 | 4,200 | 10,600 | 10 | 1 |
| LIF-50 | Green | 5,300 | 4,200 | 10,600 | 12 | 1 |
| LIF-51 | Yellow | 8,400 | 6,700 | 16,800 | 4 | 1 |
| LIF-52 | Yellow | 8,400 | 6,700 | 16,800 | 6 | 1 |
| LIF-53 | Yellow | 8,400 | 6,700 | 16,800 | 8 | 1 |
| LIF-54 | Yellow | 8,400 | 6,700 | 16,800 | 10 | 1 |
| LIF-55 | Yellow | 8,400 | 6,700 | 16,800 | 12 | 1 |
| LIF-56 | Red | 13,200 | 10,600 | 26,400 | 4 | 1 |
| LIF-57 | Red | 13,200 | 10,600 | 26,400 | 6 | 1 |
| LIF-58 | Red | 13,200 | 10,600 | 26,400 | 8 | 1 |
| LIF-59 | Red | 13,200 | 10,600 | 26,400 | 10 | 1 |
| LIF-60 | Red | 13,200 | 10,600 | 26,400 | 12 | 1 |
| LIF-61 | Blue | 21,200 | 17,000 | 42,400 | 4 | 1 |
| LIF-62 | Blue | 21,200 | 17,000 | 42,400 | 6 | 1 |
| LIF-63 | Blue | 21,200 | 17,000 | 42,400 | 8 | 1 |
| LIF-64 | Blue | 21,200 | 17,000 | 42,400 | 10 | 1 |
| LIF-65 | Blue | 21,200 | 17,000 | 42,400 | 12 | 1 |

**Permaloc™
Wire Rope Slings**



Vertical Choke Basket

| Item No. | Rope Dia. | Rate Capacities (tons) | | | Length (Ft.) | Pack Qty. |
|----------|-----------|------------------------|-------|--------|--------------|-----------|
| | | Vertical | Choke | Basket | | |
| LIF-66 | 1/4 | .65 | .48 | 1.3 | 4 | 1 |
| LIF-67 | 1/4 | .65 | .48 | 1.3 | 6 | 1 |
| LIF-68 | 1/4 | .65 | .48 | 1.3 | 8 | 1 |
| LIF-69 | 1/4 | .65 | .48 | 1.3 | 10 | 1 |
| LIF-70 | 1/4 | .65 | .48 | 1.3 | 12 | 1 |
| LIF-71 | 3/8 | 1.4 | 1.1 | 2.9 | 4 | 1 |
| LIF-72 | 3/8 | 1.4 | 1.1 | 2.9 | 6 | 1 |
| LIF-73 | 3/8 | 1.4 | 1.1 | 2.9 | 8 | 1 |
| LIF-74 | 3/8 | 1.4 | 1.1 | 2.9 | 10 | 1 |
| LIF-75 | 3/8 | 1.4 | 1.1 | 2.9 | 12 | 1 |
| LIF-76 | 1/2 | 2.5 | 1.9 | 5.1 | 4 | 1 |
| LIF-77 | 1/2 | 2.5 | 1.9 | 5.1 | 6 | 1 |
| LIF-78 | 1/2 | 2.5 | 1.9 | 5.1 | 8 | 1 |
| LIF-79 | 1/2 | 2.5 | 1.9 | 5.1 | 10 | 1 |
| LIF-80 | 1/2 | 2.5 | 1.9 | 5.1 | 12 | 1 |

Good choice for general purpose lifting in environments too rugged for synthetic slings. Tuff-Tag identification on every sling shows rated capacities.

| Item No. | Rope Dia. | Rate Capacities (tons) | | | Length (Ft.) | Pack Qty. |
|----------|-----------|------------------------|-------|--------|--------------|-----------|
| | | Vertical | Choke | Basket | | |
| LIF-81 | 3/8 | 3.9 | 2.9 | 7.8 | 4 | 1 |
| LIF-82 | 3/8 | 3.9 | 2.9 | 7.8 | 6 | 1 |
| LIF-83 | 3/8 | 3.9 | 2.9 | 7.8 | 8 | 1 |
| LIF-84 | 3/8 | 3.9 | 2.9 | 7.8 | 10 | 1 |
| LIF-85 | 3/8 | 3.9 | 2.9 | 7.8 | 12 | 1 |
| LIF-86 | 1/2 | 5.6 | 4.1 | 11 | 4 | 1 |
| LIF-87 | 1/2 | 5.6 | 4.1 | 11 | 6 | 1 |
| LIF-88 | 1/2 | 5.6 | 4.1 | 11 | 8 | 1 |
| LIF-89 | 1/2 | 5.6 | 4.1 | 11 | 10 | 1 |
| LIF-90 | 1/2 | 5.6 | 4.1 | 11 | 12 | 1 |
| LIF-91 | 1 | 9.8 | 7.2 | 20 | 6 | 1 |
| LIF-92 | 1 | 9.8 | 7.2 | 20 | 8 | 1 |
| LIF-93 | 1 | 9.8 | 7.2 | 20 | 10 | 1 |
| LIF-94 | 1 | 9.8 | 7.2 | 20 | 12 | 1 |

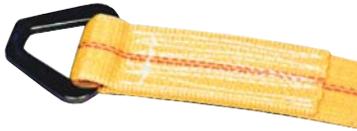




**LoadHugger™
Ratchet Tie Down Assemblies**



Flat Hook



Triangle



Stamped Snap Hook



Endless



Secure loads and protect them against damage from shifting while in transit. Meets all DOT, CHP and CVSA requirements. Ratchet assembly allows fast and easy adjustment.

| Item No. | Ultimate Strength (Lbs.) | Working Load Limit (Lbs.) | End Fitting | Length (Ft.) | Pack Qty. |
|----------|--------------------------|---------------------------|-------------------|--------------|-----------|
| LIF-103 | 5,000 | 1,600 | Flat Hook | 27 | 1 |
| LIF-104 | 5,000 | 1,600 | Flat Hook | 30 | 1 |
| LIF-105 | 5,000 | 1,600 | Triangle | 27 | 1 |
| LIF-106 | 5,000 | 1,600 | Triangle | 30 | 1 |
| LIF-107 | 5,000 | 1,600 | Stamped Snap Hook | 27 | 1 |
| LIF-108 | 5,000 | 1,600 | Stamped Snap Hook | 30 | 1 |
| LIF-109 | 5,000 | 1,600 | Endless | 27 | 1 |
| LIF-110 | 5,000 | 1,600 | Endless | 30 | 1 |
| LIF-111 | 10,000 | 3,300 | Flat Hook | 27 | 1 |
| LIF-112 | 10,000 | 3,300 | Flat Hook | 30 | 1 |
| LIF-113 | 10,000 | 3,300 | Triangle | 27 | 1 |
| LIF-114 | 10,000 | 3,300 | Triangle | 30 | 1 |
| LIF-115 | 10,000 | 3,300 | Stamped Snap Hook | 27 | 1 |
| LIF-116 | 10,000 | 3,300 | Stamped Snap Hook | 30 | 1 |
| LIF-117 | 10,000 | 3,300 | Endless | 27 | 1 |
| LIF-118 | 10,000 | 3,300 | Endless | 30 | 1 |

**LoadHugger™
Winch Straps**



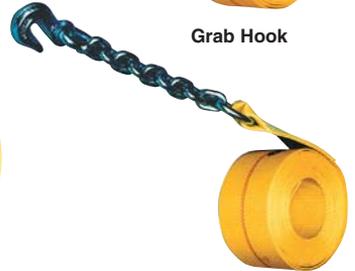
Flat Hook



Triangle



Grab Hook



Chain Anchor

- Series 12,000 Load Huggers are made for securely mounted winches on flat bed trucks and trailers.
- Wear pads extend the life of the Load Hugger
- 4 inch wide polyester winch assemblies

Secure loads and protect them against damage from shifting while in transit. Meets all DOT, CHP and CVSA requirements. Ratchet assembly allows fast and easy adjustment.

| Item No. | Ultimate Strength (Lbs.) | Working Load Limit (Lbs.) | End Fitting | Length (Ft.) | Pack Qty. |
|----------|--------------------------|---------------------------|--------------|--------------|-----------|
| LIF-119 | 15,000 | 5,000 | Flat Hook | 27 | 1 |
| LIF-120 | 15,000 | 5,000 | Flat Hook | 30 | 1 |
| LIF-121 | 15,000 | 5,000 | Triangle | 27 | 1 |
| LIF-122 | 15,000 | 5,000 | Triangle | 30 | 1 |
| LIF-123 | 15,000 | 5,000 | Grab Hook | 27 | 1 |
| LIF-124 | 15,000 | 5,000 | Grab Hook | 30 | 1 |
| LIF-125 | 15,000 | 5,000 | Chain Anchor | 27 | 1 |
| LIF-126 | 15,000 | 5,000 | Chain Anchor | 30 | 1 |

**LoadHugger™
Components**



Portable Winch



Weld-on Winch



Winch Bar

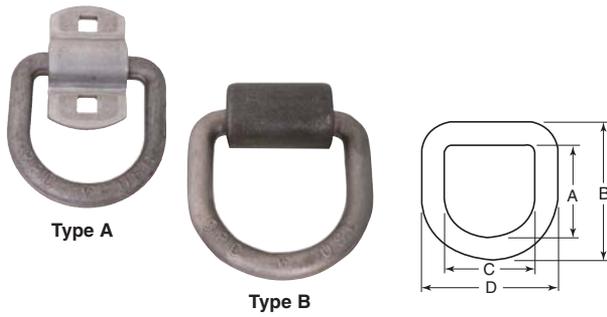


Wear Pad

| Item No. | Description | Pack Qty. |
|----------|-----------------|-----------|
| LIF-127 | Portable Winch | 1 |
| LIF-128 | Weld-On Winch | 1 |
| LIF-129 | Winch Bar | 1 |
| LIF-130 | Wear Pad 4 x 12 | 1 |
| LIF-131 | Wear Pad 6 x 18 | 1 |
| LIF-132 | Wear Pad 8 x 18 | 1 |



Heavy Duty Forged D Rings

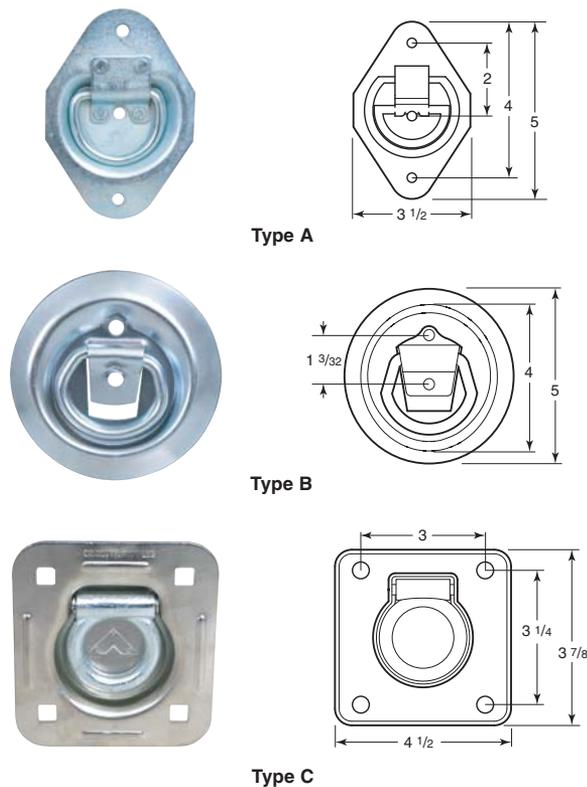


Made from C-1045 steel. All come with a weld-on mounting bracket except BY-38 which has a bracket with mounting holes to accept two 3/8" carriage bolts.

| Item No. | Type | Dia. Ring | A | B | C | D | Ultimate Breaking Load (Lbs.) | Bracket Width | Bracket Thickness | Pack Qty. |
|----------|------|-----------|-----|------|-------|-------|-------------------------------|---------------|-------------------|-----------|
| BY-38* | A | 1/2 | 2.5 | 3.50 | 2.375 | 3.375 | 11,781 | 1 1/8 | 3/16 | 1 |
| BY-40 | B | 3/8 | 3.0 | 4.25 | 3.000 | 4.250 | 18,390 | 1 1/8 | 3/8 | 1 |
| BY-46 | B | 3/4 | 3.0 | 4.50 | 3.000 | 4.500 | 26,500 | 1 1/8 | 3/8 | 1 |
| BY-48 | B | 1 | 3.0 | 5.00 | 3.000 | 5.000 | 46,760 | 2 | 3/8 | 1 |
| BY-50 | B | 1 | 4.0 | 6.00 | 3.000 | 5.000 | 46,760 | 2 | 3/8 | 1 |

*Bracket has square mounting holes for two 3/8" carriage bolts, holes are on 2" center

Recessed Rope Rings



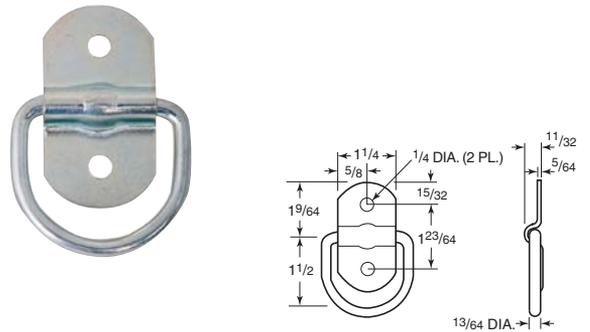
Steel rings recessed into mounting plates. Zinc plated. BY-601 and BY-801 require round installation holes. BY-701 is surface mounted.

| Item No. | Type | Dia. Ring | Installation Hole Dia. | Ultimate Breaking Load (Lbs.) | Pack Qty. |
|----------|------|-----------|------------------------|-------------------------------|-----------|
| BY-601* | A | 1/4 | 3 | 500 | 1 |
| BY-701 | B | 1/4 | — | 500 | 1 |
| BY-801** | C | 5/16 | 3 3/8 | 5,000 | 1 |

*Minimum material thickness is 3/8"

**1/8" steel pan requires 3/8" clearance below surface

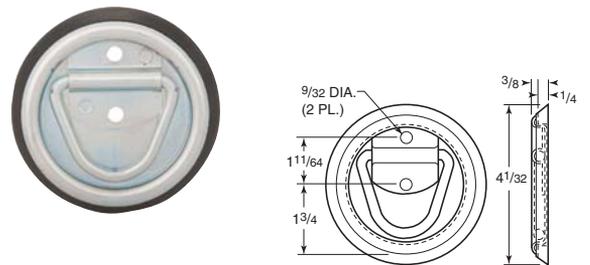
D-Ring Tie Down



Zinc plated steel. 1/4" mounting holes. Ultimate load 1,500 lbs.

| Item No. | Description | Pack Qty. |
|----------|-----------------|-----------|
| HH-117 | Tie-Down D-Ring | 1 |

Round Tie Down with Spacer



Zinc plated steel with plastic spacer. Ultimate load 1,200 lbs.

| Item No. | Description | Pack Qty. |
|----------|------------------------------|-----------|
| HH-116 | Round Tie-Down Ring w/Spacer | 1 |

Steel D Rings Nickel Plated



| Item No. | Inside Width | Dia. Stock | Pack Qty. |
|----------|--------------|------------|-----------|
| BA-745 | 3/4 | .115 | 1 |
| BA-755 | 1 | .137 | 1 |
| BA-760 | 1 | .196 | 1 |
| BA-765 | 1 1/8 | .208 | 1 |
| BA-770 | 1 1/4 | .236 | 1 |
| BA-775 | 1 1/2 | .256 | 1 |
| BA-780 | 1 3/4 | .237 | 1 |
| BA-785 | 2 | .237 | 1 |

Steel Round Rings Nickel Plated



| Item No. | Inside Dia. | Dia. Stock | Pack Qty. |
|----------|-------------|------------|-----------|
| BA-600 | 1/2 | .100 | 1 |
| BA-610 | 3/4 | .134 | 1 |
| BA-620 | 1 | .172 | 1 |
| BA-625 | 1 1/4 | .215 | 1 |
| BA-630 | 1 1/2 | .250 | 1 |
| BA-635 | 1 3/4 | .237 | 1 |
| BA-640 | 2 | .237 | 1 |



Nickel plated rust proof metal snaps are manufactured of the finest quality zinc aluminum alloy. Movable parts will not rust or freeze to fittings. Some items available in polished solid bronze as indicated below.

**Snap Body
Nickel Plated Steel**



| Item No. | Lgth. | Snap Opening | Pack Qty. |
|----------|-----------------|----------------|-----------|
| BA-530 | 1 $\frac{1}{2}$ | $\frac{5}{32}$ | 1 |

**Bit Snap
Zinc Plated Steel**



| Item No. | Lgth. | Snap Opening | Pack Qty. |
|----------|-----------------|----------------|-----------|
| BA-424 | 2 $\frac{1}{2}$ | $\frac{5}{16}$ | 1 |

**Swivel Eye Snap
Nickel Plated Steel**



| Item No. | Size Eye | Lgth. | Snap Opening | Pack Qty. |
|----------|---------------|-----------------|---------------|-----------|
| BA-435 | $\frac{1}{2}$ | 2 $\frac{5}{8}$ | $\frac{1}{4}$ | 1 |

**Line Cleat
Nickel Plated Malleable Iron**



| Item No. | Lgth. | For Screw | Pack Qty. |
|----------|-------|-----------|-----------|
| BA-810 | 6 | #10 | 1 |

**Swivel Eye Snap
Solid Bronze**



| Item No. | Size Eye | Lgth. | Snap Opening | Pack Qty. |
|----------|---------------|------------------|---------------|-----------|
| BA-345 | $\frac{3}{4}$ | 4 $\frac{1}{16}$ | $\frac{1}{2}$ | 1 |

**Swivel Eye Bolt Snaps
Solid Bronze**



| Item No. | Size Eye | Lgth. | Snap Opening | Pack Qty. |
|----------|-----------------|-----------------|----------------|-----------|
| BA-320 | 1 | 3 $\frac{3}{8}$ | $\frac{7}{16}$ | 1 |
| BA-330 | 1 $\frac{1}{4}$ | 4 $\frac{1}{8}$ | $\frac{1}{2}$ | 1 |

**Double Pattern Chain Snaps
Aluminum Alloy**



| Item No. | Lgth. | Snap Opening | Pack Qty. |
|----------|-----------------|---------------|-----------|
| BA-161 | 3 $\frac{1}{2}$ | $\frac{1}{4}$ | 1 |

**Swivel Trigger Snaps
Aluminum Alloy**



| Item No. | Size Eye | Lgth. | Snap Opening | Pack Qty. |
|----------|---------------|-----------------|---------------|-----------|
| BA-215 | $\frac{3}{8}$ | 2 $\frac{1}{2}$ | $\frac{3}{8}$ | 1 |
| BA-220 | $\frac{1}{2}$ | 2 $\frac{1}{2}$ | $\frac{3}{8}$ | 1 |

**Swivel Eye Snap
Aluminum Alloy**



| Item No. | Size Eye | Lgth. | Snap Opening | Pack Qty. |
|----------|---------------|-------|----------------|-----------|
| BA-285 | $\frac{3}{8}$ | 2 | $\frac{3}{16}$ | 1 |

**Swivel Eye Leash Snaps
Aluminum Alloy**



| Item No. | Size Eye | Lgth. | Snap Opening | Pack Qty. |
|----------|---------------|-------|---------------|-----------|
| BA-265 | $\frac{3}{8}$ | 3 | $\frac{1}{4}$ | 1 |

**Swivel Body Decoy Snaps
Aluminum Alloy**



| Item No. | Size Eye | Lgth. | Snap Opening | Pack Qty. |
|----------|---------------|-----------------|----------------|-----------|
| BA-200 | $\frac{1}{4}$ | 1 $\frac{1}{8}$ | $\frac{3}{16}$ | 1 |

Spring loaded interlocking snaps for quick connecting and disconnecting of chain, cable and rope assemblies.

Spring Hooks



| Item No. | Dia. Stock | Lgth. | Snap Opening | Working Load Lbs. | Pack Qty. |
|----------|----------------|-----------------|----------------|-------------------|-----------|
| BA-450 | $\frac{3}{16}$ | 2 $\frac{1}{8}$ | $\frac{1}{4}$ | 100 | 1 |
| BA-455 | $\frac{1}{4}$ | 2 $\frac{1}{2}$ | $\frac{5}{16}$ | 140 | 1 |
| BA-460 | $\frac{5}{16}$ | 3 $\frac{1}{2}$ | $\frac{3}{8}$ | 280 | 1 |
| BA-465 | $\frac{3}{8}$ | 4 | $\frac{1}{2}$ | 400 | 1 |
| BA-470 | $\frac{7}{16}$ | 4 $\frac{3}{4}$ | $\frac{5}{8}$ | 500 | 1 |
| BA-480 | $\frac{1}{2}$ | 6 $\frac{3}{8}$ | 1 | 700 | 1 |

Spring Hooks



| Item No. | Dia. Stock | Lgth. | Snap Opening | Tensile Lbs. | Pack Qty. |
|----------|----------------|-----------------|----------------|--------------|-----------|
| BA-485 | $\frac{1}{4}$ | 2 $\frac{1}{2}$ | $\frac{3}{8}$ | 700 | 1 |
| BA-490 | $\frac{5}{16}$ | 3 $\frac{1}{8}$ | $\frac{7}{16}$ | 1,400 | 1 |
| BA-495 | $\frac{3}{8}$ | 4 | $\frac{1}{2}$ | 2,000 | 1 |

Spring Hooks



| Item No. | Dia. Stock | Lgth. | Snap Opening | Tensile Lbs. | Pack Qty. |
|----------|----------------|-----------------|---------------|--------------|-----------|
| BA-440 | $\frac{3}{8}$ | 4 | $\frac{5}{8}$ | 2,000 | 1 |
| BA-445 | $\frac{7}{16}$ | 4 $\frac{3}{4}$ | $\frac{7}{8}$ | 2,500 | 1 |

**Safety Snap Hook
Galvanized Drop Forged Steel with Stainless Steel Spring**



| Item No. | Size Hook | Size Eye | Lgth. | Snap Opening | Tensile Lbs. | Work Load | Pack Qty. |
|----------|----------------|---------------|-------|---------------|--------------|-----------|-----------|
| BA-365 | $\frac{7}{16}$ | $\frac{3}{4}$ | 4 | $\frac{3}{4}$ | 3,750 | 750 | 1 |

**Open Eye Chain Snap
Electro Galvanized**



| Item No. | Size Eye | Lgth. | Snap Opening | Pack Qty. |
|----------|---------------|-----------------|----------------|-----------|
| BA-230 | $\frac{3}{8}$ | 3 $\frac{1}{4}$ | $\frac{5}{16}$ | 1 |
| BA-232 | $\frac{1}{2}$ | 4 | $\frac{3}{8}$ | 1 |

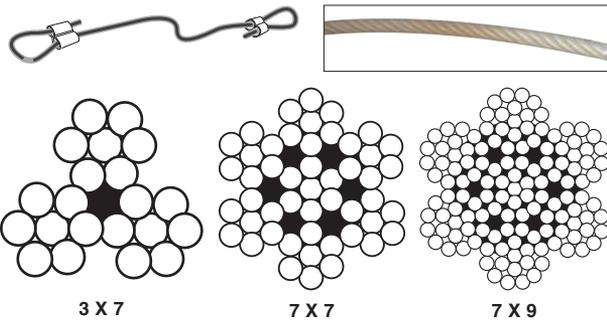
**Fast Eye Snap
Plated Drop Forged Alloy Steel**



| Item No. | Size Eye | Lgth. | Snap Opening | Tensile Lbs. | Pack Qty. |
|----------|---------------|-----------------|---------------|--------------|-----------|
| BA-360 | $\frac{5}{8}$ | 4 $\frac{1}{4}$ | $\frac{7}{8}$ | 9,200 | 1 |



Coated & Uncoated Cable



Offered in a wide variety of materials, coating, diameters and strand styles. Sold in 100 foot coils.

See page 748 for lanyard assemblies.

Clear Nylon Coated - 304 Stainless

| Item No. | Wire Dia. | Coating OD | Strand | Breaking Strength | Coil Length Ft. | Item No. | Wire Dia. | Coating OD | Strand | Breaking Strength | Coil Length Ft. |
|----------|-----------|------------|--------|-------------------|-----------------|----------|-----------|------------|--------|-------------------|-----------------|
| CBL-15 | .009 | .014 | 3 x 7 | 10 | 100 | CBL-130 | 1/16 | 3/32 | 7 x 7 | 480 | 100 |
| CBL-17 | .018 | .024 | 7 x 7 | 40 | 100 | CBL-330 | 1/16 | 3/32 | 7 x 19 | 480 | 100 |
| CBL-110 | .032 | .037 | 7 x 7 | 120 | 100 | CBL-140 | 3/32 | 1/8 | 7 x 7 | 920 | 100 |
| CBL-310 | .032 | .037 | 7 x 19 | 120 | 100 | CBL-340 | 3/32 | 1/8 | 7 x 19 | 920 | 100 |
| CBL-1210 | .036 | .046 | 7 x 7 | 150 | 100 | CBL-150 | 1/8 | 3/16 | 7 x 7 | 1,700 | 100 |
| CBL-1212 | .036 | .046 | 7 x 19 | 160 | 100 | CBL-350 | 1/8 | 3/16 | 7 x 19 | 1,760 | 100 |
| CBL-120 | 3/64 | 1/16 | 7 x 7 | 270 | 100 | CBL-1215 | 3/16 | 1/4 | 7 x 19 | 3,700 | 100 |
| CBL-320 | 3/64 | 1/16 | 7 x 19 | 270 | 100 | CBL-1220 | 1/4 | 3/8 | 7 x 19 | 6,400 | 100 |

Uncoated Cable - 304 Stainless

| Item No. | Wire Dia. | Strand | Breaking Strength | Coil Length Ft. | Item No. | Wire Dia. | Strand | Breaking Strength | Coil Length Ft. |
|----------|-----------|--------|-------------------|-----------------|----------|-----------|--------|-------------------|-----------------|
| CBL-7 | .018 | 7 x 7 | 40 | 100 | CBL-40 | 3/32 | 7 x 7 | 920 | 100 |
| CBL-210 | .032 | 7 x 19 | 120 | 100 | CBL-240 | 3/32 | 7 x 19 | 920 | 100 |
| CBL-1010 | .036 | 7 x 7 | 150 | 100 | CBL-50 | 1/8 | 7 x 7 | 1,700 | 100 |
| CBL-212 | .036 | 7 x 19 | 160 | 100 | CBL-250 | 1/8 | 7 x 19 | 1,760 | 100 |
| CBL-20 | 3/64 | 7 x 7 | 270 | 100 | CBL-1015 | 3/16 | 7 x 19 | 3,700 | 100 |
| CBL-220 | 3/64 | 7 x 19 | 270 | 100 | CBL-1020 | 1/4 | 7 x 19 | 6,400 | 100 |
| CBL-30 | 1/16 | 7 x 7 | 480 | 100 | CBL-1025 | 3/16 | 7 x 19 | 9,000 | 100 |
| CBL-230 | 1/16 | 7 x 19 | 480 | 100 | CBL-1030 | 1/8 | 7 x 19 | 12,200 | 100 |

Clear PTFE Coated - 304 Stainless

| Item No. | Wire Dia. | Coating OD | Strand | Breaking Strength | Coil Length Ft. | Item No. | Wire Dia. | Coating OD | Strand | Breaking Strength | Coil Length Ft. |
|----------|-----------|------------|--------|-------------------|-----------------|----------|-----------|------------|--------|-------------------|-----------------|
| CBL-357 | .018 | .026 | 7 x 7 | 40 | 100 | CBL-367 | .036 | .049 | 7 x 19 | 160 | 100 |
| CBL-359 | .027 | .036 | 7 x 7 | 90 | 100 | CBL-369 | 3/64 | .062 | 7 x 7 | 270 | 100 |
| CBL-361 | .040 | .040 | 7 x 7 | 120 | 100 | CBL-371 | 3/64 | .062 | 7 x 19 | 270 | 100 |
| CBL-363 | .036 | .040 | 7 x 19 | 120 | 100 | CBL-375 | 1/16 | .084 | 7 x 19 | 480 | 100 |

Uncoated - 316 Stainless

| Item No. | Wire Dia. | Strand | Breaking Strength | Coil Length Ft. | Item No. | Wire Dia. | Strand | Breaking Strength | Coil Length Ft. |
|----------|-----------|--------|-------------------|-----------------|----------|-----------|--------|-------------------|-----------------|
| CBL-1035 | 3/64 | 7 x 7 | 240 | 100 | CBL-1050 | 1/8 | 7 x 19 | 1,300 | 100 |
| CBL-1040 | 1/16 | 7 x 7 | 360 | 100 | CBL-1055 | 3/16 | 7 x 19 | 2,900 | 100 |
| CBL-1045 | 3/32 | 7 x 7 | 700 | 100 | | | | | |

Clear Nylon Coated - Galvanized Steel

| Item No. | Wire Dia. | Coating OD | Strand | Breaking Strength | Coil Length Ft. | Item No. | Wire Dia. | Coating OD | Strand | Breaking Strength | Coil Length Ft. |
|----------|-----------|------------|--------|-------------------|-----------------|----------|-----------|------------|--------|-------------------|-----------------|
| CBL-1235 | 3/64 | 1/16 | 7 x 7 | 270 | 100 | CBL-1250 | 1/8 | 3/16 | 7 x 19 | 2,000 | 100 |
| CBL-1240 | 1/16 | 3/32 | 7 x 7 | 480 | 100 | CBL-1260 | 1/4 | 3/16 | 7 x 19 | 7,000 | 100 |
| CBL-1245 | 3/32 | 1/8 | 7 x 7 | 920 | 100 | | | | | | |

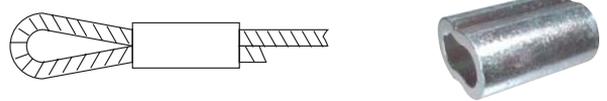
Uncoated - Galvanized Steel

| Item No. | Wire Dia. | Strand | Breaking Strength | Coil Length Ft. | Item No. | Wire Dia. | Strand | Breaking Strength | Coil Length Ft. |
|----------|-----------|--------|-------------------|-----------------|----------|-----------|--------|-------------------|-----------------|
| CBL-1080 | 1/16 | 7 x 7 | 480 | 100 | CBL-1095 | 3/16 | 7 x 19 | 4,200 | 100 |
| CBL-1085 | 3/32 | 7 x 7 | 920 | 100 | CBL-1100 | 1/4 | 7 x 19 | 7,000 | 100 |
| CBL-1090 | 1/8 | 7 x 19 | 2,000 | 100 | CBL-1105 | 3/16 | 7 x 19 | 9,800 | 100 |

Color Vinyl Coated - Galvanized Steel

| Item No. | Wire Dia. | Coating OD | Strand | Breaking Strength | Color | Coil Length Ft. |
|----------|-----------|------------|--------|-------------------|--------|-----------------|
| CBL-1310 | 1/16 | 1/8 | 7 x 7 | 480 | Red | 100 |
| CBL-1340 | 3/32 | 3/16 | 7 x 7 | 920 | Red | 100 |
| CBL-1350 | 3/32 | 3/16 | 7 x 7 | 920 | Yellow | 100 |
| CBL-1370 | 1/8 | 3/16 | 7 x 7 | 1,700 | Red | 100 |

Loop Sleeves



Used for eye and lap splicing. Made from zinc plated copper, except for CBL-440 and CBL-442 which are brass. When crimped over bare cable, loop sleeves generate full rated breaking strength of cable. Whenever possible, thimbles should be used to protect the cable.

| Item No. | For Cable Dia. | Use Clamping Tool | Pack Qty. | Item No. | For Cable Dia. | Use Clamping Tool | Pack Qty. |
|----------|----------------|-------------------|-----------|----------|----------------|-------------------|-----------|
| CBL-440 | .006 - .014 | Pliers | 1 | CBL-470 | 1/8 | CBL-705 | 1 |
| CBL-442 | .016 - .022 | CBL-700 | 1 | CBL-475 | 3/16 | CBL-705 | 1 |
| CBL-450 | .027 - .038 | CBL-700 | 1 | CBL-476 | 1/4 | — | 1 |
| CBL-455 | .039 - .054 | CBL-700 | 1 | CBL-477 | 3/8 | — | 1 |
| CBL-460 | 1/16 | CBL-700 | 1 | CBL-478 | 3/8 | — | 1 |
| CBL-465 | 3/32 | CBL-705 | 1 | | | | |

Wire Rope Clips

- Steel are hot galvanized carbon steel
- Stainless are type 304
- Furnished with hex nuts
- Meet Fed. Spec. FF-C-450c, Type I, Class 1



| Steel Item No. | Stainless Item No. | For Cable Dia. | Min. No. of Clips | Pack Qty. |
|----------------|--------------------|----------------|-------------------|-----------|
| CBL-550 | CBL-555 | 1/16 | 2 | 1 |
| CBL-560 | CBL-565 | 3/32 - 1/8 | 2 | 1 |
| CBL-570 | CBL-575 | 3/16 | 3 | 1 |
| WRC-10 | WRC-510 | 1/4 | 2 | 1 |
| WRC-20 | — | 3/8 | 2 | 1 |
| WRC-30 | — | 1/2 | 3 | 1 |

Thimbles

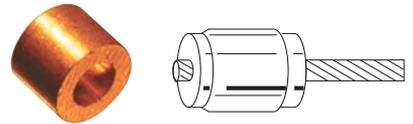
- Steel is carbon, hot galvanized
- Stainless is type 316
- Meets Fed. Spec. FF-T-276b for Type III thimbles



Used with loop sleeves or wire clips to protect cable from wear.

| Steel Item No. | Stainless Item No. | For Cable Dia. | OAL | Inside Width | Pack Qty. |
|----------------|--------------------|------------------|---------|--------------|-----------|
| — | CBL-505 | .015 - 3/64 | 27/64 | .188 | 1 |
| — | CBL-510 | 3/64, 1/16, 3/64 | 15/16 | .339 | 1 |
| — | CBL-515 | 3/32, 3/64, 1/8 | 1 | .339 | 1 |
| — | CBL-520 | 3/16 | 1 21/64 | 1/2 | 1 |
| WRT-00 | WRT-300 | 1/4 | 1 1/8 | 11/16 | 1 |
| WRT-10 | — | 3/8 | 2 3/8 | 7/8 | 1 |

Stop Sleeves



Used to terminate wire rope. Made of copper. Use crimping tool CBL-705 below. Holding strength is over bare cable.

| Item No. | For Cable Dia. | Holding Strength | Pack Qty. | Item No. | For Cable Dia. | Holding Strength | Pack Qty. |
|----------|----------------|------------------|-----------|----------|----------------|------------------|-----------|
| CBL-405 | 1/32 | 110 | 1 | CBL-420 | 3/32 | 600 | 1 |
| CBL-410 | 3/64 | 240 | 1 | CBL-425 | 1/8 | 900 | 1 |
| CBL-415 | 1/16 | 325 | 1 | CBL-430 | 3/16 | 1,600 | 1 |

Crimping Tools and Cutters

Crimping tools are for use on aluminum and copper loop and stop sleeves. For maximum bond, strip nylon before crimping.



| Item No. | Description | For Sizes | Pack Qty. |
|----------|---------------|-------------|-----------|
| CBL-700 | Crimping Tool | .027 - 1/16 | 1 |
| CBL-705 | Crimping Tool | 3/64 - 3/16 | 1 |
| CBL-710 | Cutter | Up to 1/8 | 1 |
| CBL-711 | Cutter | Up to 3/16 | 1 |



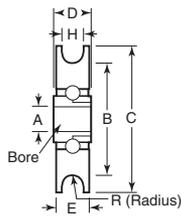
Pulleys Steel



Unshielded



Shielded

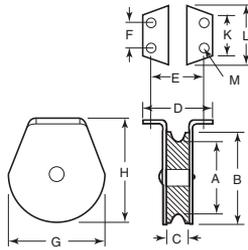


Grooved for small cables. They offer precision steel balls, case-hardened steel races, light lube, machined raceways, and are zinc plated. Available with shielded and unshielded ball bearings. Shield pulleys are internally lubricated.

| Item No. | For Cable Sizes To: | | B | C | D | E | H | R | Pack Qty. |
|-------------------|---------------------|-------|-----|-------|------|------|------|------|-----------|
| | +.004 | -.000 | | | | | | | |
| Unshielded | | | | | | | | | |
| CBL-910 | 3/64 | 1/8 | 3/8 | 1/2 | 3/16 | 5/32 | .096 | .025 | 1 |
| CBL-920 | 1/8 | 3/16 | 3/4 | 1 | 3/8 | 5/16 | .165 | .062 | 1 |
| CBL-940 | 3/16 | 1/4 | 7/8 | 1 1/4 | 7/16 | 3/8 | .250 | .093 | 1 |
| Shielded | | | | | | | | | |
| CBL-960 | 3/64 | 1/8 | 3/8 | 1/2 | 3/16 | 5/32 | .096 | .025 | 1 |
| CBL-970 | 1/8 | 3/16 | 3/4 | 1 | 3/8 | 5/16 | .165 | .062 | 1 |
| CBL-980 | 3/32 | 3/16 | 7/8 | 1 1/4 | 7/16 | 3/8 | .190 | .052 | 1 |
| CBL-990 | 3/16 | 1/4 | 7/8 | 1 1/4 | 7/16 | 3/8 | .250 | .093 | 1 |

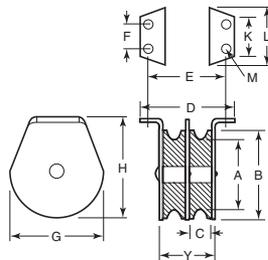
Side plates are made from steel and hooks are drop forged. Electro plated sheaves are turned down from cold-rolled bar stock. Bearings are made from bronze and steel, oil impregnated for self lubrication. Designed for high load and medium speed applications.

Flat Block Single Sheave



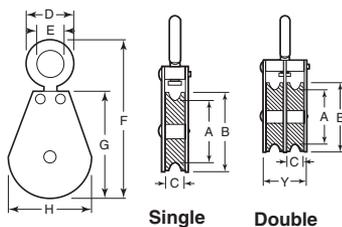
| Item No. | Max. Cable Size | +/- .005 | | | | | | | | | | | Max. Load Lbs. | Pack Qty. |
|----------|-----------------|----------|-------|------|--------|--------|--------|-------|--------|-------|-------|------|----------------|-----------|
| | | A | B | C | D | E | F | G | H | K | L | M | | |
| BDI-50 | 3/16 | 1 | 1 1/2 | 7/16 | 2 | 1 1/16 | 1 1/16 | 1 5/8 | 1 1/8 | 1 1/8 | 1 3/8 | 3/16 | 420 | 1 |
| BDI-55 | 3/16 | 1 1/2 | 2 | 7/16 | 2 | 1 7/16 | 1 1/16 | 2 1/2 | 2 3/8 | 1 1/8 | 1 1/2 | 3/16 | 480 | 1 |
| BDI-60 | 1/4 | 2 | 2 1/2 | 7/16 | 2 | 1 7/16 | 1 1/16 | 2 5/8 | 2 1/16 | 1 1/8 | 1 5/8 | 3/16 | 550 | 1 |
| BDI-65 | 1/4 | 2 1/2 | 3 | 7/16 | 2 | 1 7/16 | 1 1/16 | 3 1/8 | 3 1/16 | 1 1/8 | 1 3/4 | 3/16 | 640 | 1 |
| BDI-70 | 3/16 | 3 | 3 1/2 | 3/8 | 3 1/16 | 2 3/8 | 1 | 3 3/4 | 4 3/8 | 1 1/2 | 2 1/4 | 1/4 | 1,240 | 1 |

Flat Block Double Sheave



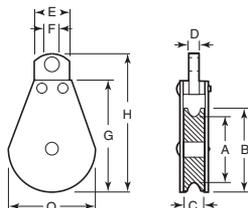
| Item No. | Max. Cable Size | +/- .005 | | | | | | | | | | | Max. Load Lbs. | Pack Qty. |
|----------|-----------------|----------|-------|------|-------|-------|--------|-------|-------|------|--------|-----|----------------|-----------|
| | | A | B | C | D | E | F | G | H | K | L | M | | |
| BDI-150 | 3/16 | 1 | 1 1/2 | 7/16 | 2 3/4 | 1 5/8 | 1 7/8 | 1 1/8 | 1 3/8 | 3/16 | 1 7/32 | 525 | 1 | |
| BDI-155 | 3/16 | 1 1/2 | 2 | 7/16 | 2 3/4 | 2 3/4 | 2 3/8 | 1 1/8 | 1 1/2 | 3/16 | 1 7/32 | 600 | 1 | |
| BDI-165 | 1/4 | 2 1/2 | 3 | 7/16 | 2 3/4 | 3 3/8 | 3 1/16 | 1 1/8 | 1 3/4 | 3/16 | 1 1/32 | 800 | 1 | |

Swivel Eye Block Single or Double Sheave



| Item No. | Max. Cable Size | +/- .005 | | | | | | | | | | | Max. Load Lbs. | Pack Qty. |
|----------------------|-----------------|----------|-------|------|--------|--------|--------|--------|-------|--------|-------|---|----------------|-----------|
| | | A | B | C | D | E | F | G | H | Y | | | | |
| Single Sheave | | | | | | | | | | | | | | |
| BDI-10 | 3/16 | 1 | 1 1/2 | 7/16 | 1 1/4 | 5/8 | 3 3/16 | 2 7/16 | 1 5/8 | — | 420 | 1 | | |
| BDI-15 | 3/16 | 1 1/2 | 2 | 7/16 | 1 1/4 | 5/8 | 4 1/4 | 2 5/16 | 2 1/8 | — | 480 | 1 | | |
| BDI-20 | 1/4 | 2 | 2 1/2 | 7/16 | 1 1/2 | 7/8 | 5 | 3 1/16 | 2 3/8 | — | 550 | 1 | | |
| BDI-25 | 1/4 | 2 1/2 | 3 | 7/16 | 1 1/2 | 7/8 | 5 5/8 | 4 1/16 | 3 3/8 | — | 640 | 1 | | |
| BDI-30 | 3/16 | 3 | 3 1/2 | 3/8 | 2 1/16 | 1 3/16 | 7 5/8 | 5 3/8 | 3 1/4 | — | 1,240 | 1 | | |
| Double Sheave | | | | | | | | | | | | | | |
| BDI-110 | 3/16 | 1 | 1 1/2 | 7/16 | 1 1/4 | 5/8 | 3 3/16 | 2 7/16 | 1 5/8 | 1 7/32 | 525 | 1 | | |

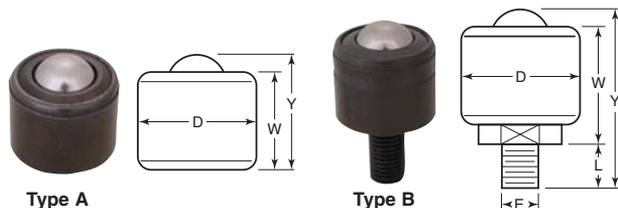
Fixed Eye Block Single Sheave



| Item No. | Max. Cable Size | +/- .005 | | | | | | | | | | | Max. Load Lbs. | Pack Qty. |
|----------|-----------------|----------|-------|------|-------|-------|-----|---------|---------|-------|-----|---|----------------|-----------|
| | | A | B | C | D | E | F | G | H | O | | | | |
| BDI-80 | 3/16 | 1 | 1 1/2 | 7/16 | 1 1/4 | 1 1/8 | 3/8 | 2 7/16 | 3 1/4 | 1 5/8 | 420 | 1 | | |
| BDI-85 | 3/16 | 1 1/2 | 2 | 7/16 | 1 1/4 | 1 1/8 | 3/8 | 2 15/16 | 3 3/4 | 2 1/8 | 480 | 1 | | |
| BDI-90 | 1/4 | 2 | 2 1/2 | 7/16 | 1 1/4 | 1 1/8 | 3/8 | 3 1/16 | 4 1/4 | 2 5/8 | 550 | 1 | | |
| BDI-95 | 1/4 | 2 1/2 | 3 | 7/16 | 1 1/4 | 1 1/8 | 3/8 | 4 1/16 | 4 13/16 | 3 1/8 | 640 | 1 | | |



**Hevi-Load™
Inch**



Type A

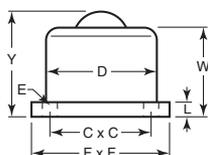
Type B



Type C



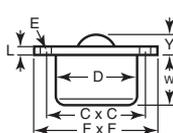
Type C - round



Type D



Type D - round

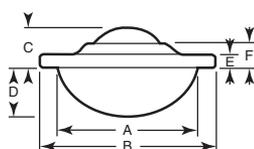


Used for heavier loads than ball casters. Ball transfers use a recirculating ball system to support and facilitate the rotation of the primary ball. The small balls travel on a hardened steel, precision machined track that resists wear and damage. Runs equally well in any position. Ideal where damage and impact protection is essential. Ball units provide instantaneous change of direction not possible with wheel casters.

| Item No. | Type | Ball Dia. | Y | W | D | L | E | FxF | CxC | Capacity (Lbs.) | Pack Qty. |
|-----------|------|-----------|------|------|------|------|---------|------|------|-----------------|-----------|
| SKF-7101 | A | .5 | .77 | .63 | .81 | — | — | — | — | 75 | 1 |
| SKF-7121 | A | 1.0 | 1.76 | 1.52 | 2 | — | — | — | — | 700 | 1 |
| SKF-7110 | B | .5 | 1.41 | .63 | .81 | .64 | 5/16-24 | — | — | 75 | 1 |
| SKF-7127 | B | 1.0 | 2.85 | 1.68 | 1.75 | .95 | 1/2-20 | — | — | 300 | 1 |
| SKF-7131 | B | 1.0 | 3.03 | 1.78 | 2 | 1 | 1/2-20 | — | — | 700 | 1 |
| SKF-7154 | B | 1.5 | 4.50 | 2.38 | 2.38 | 1.60 | 3/4-16 | — | — | 2,204 | 1 |
| SKF-7103* | C | .5 | .89 | .75 | .94 | .13 | .14 | 1.75 | 1.37 | 75 | 1 |
| SKF-7122 | C | 1.0 | 1.63 | 1.41 | 1.75 | .19 | .22 | 2.25 | 1.75 | 300 | 1 |
| SKF-7123 | C | 1.0 | 1.79 | 1.54 | 2 | .25 | .28 | 3 | 2.28 | 700 | 1 |
| SKF-7104* | D | .5 | .88 | .44 | .94 | .13 | .14 | 1.75 | 1.37 | 75 | 1 |
| SKF-7152 | D | 1.5 | 2.41 | 1.41 | 2.38 | .50 | .28 | 3 | 2.28 | 2,204 | 1 |

*Diameter - round

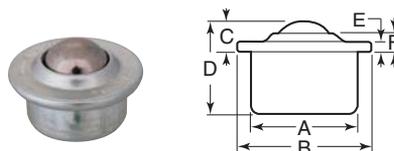
**Low Profile
Metric**



Flange mounted ball transfers offer a low profile, multi-directional solution to various material handling, positioning, and/or conveyance applications. All units, except the stainless steel model, come complete with a felt seal. The stainless steel unit is made from 420 stainless steel and has a unique multi-hole filtration system designed to purge out contamination and is provided with no oil/no seal, which allows the unit to operate in harsh conditions by efficiently filtering out debris through the base. Metric dimensions are in millimeters.

| Item No. | Ball Dia. | Load Up Cap. Lbs. | Load Down Cap. Lbs. | Fixing Holes | A | B | C | D | E | F | Pack Qty. |
|------------------------|-----------|-------------------|---------------------|--------------|------|------|------|------|-----|-----|-----------|
| Carbon Steel | | | | | | | | | | | |
| SKF-3016 | 15.8 | 26 | 13 | 2 | 22.2 | 41.3 | 10.2 | 8.3 | 3.2 | 6 | 1 |
| SKF-1008 | 25.4 | 121 | 55 | 3 | 37.2 | 73 | 14.2 | 15.8 | 3.5 | 6.3 | 1 |
| SKF-2002 | 39.7 | 496 | 220 | 3 | 62 | 94.6 | 21.2 | 27.3 | 6.3 | 14 | 1 |
| Stainless Steel | | | | | | | | | | | |
| SKF-3274 | 31.7 | 276 | 121 | 3 | 45.5 | 73.7 | 16.2 | 19.9 | 4.2 | 8 | 1 |

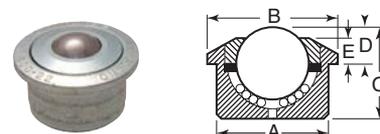
**Medium Duty
Metric**



Zinc plated housing with Type 420 stainless balls. A felt seal is included on all but SKF-701. Maximum temperature is 212 degree Fahrenheit. Dimensions are in millimeters.

| Item No. | Ball Dia. | Capacity (Lbs.) | A | B | C | D | E | F | Pack Qty. |
|----------|-----------|-----------------|----|----|------|------|-----|------|-----------|
| SKF-701 | 15 | 132 | 24 | 31 | 9.5 | 21.0 | 2.8 | 6.3 | 1 |
| SKF-702 | 22 | 352 | 36 | 45 | 9.8 | 30.0 | 2.8 | 5.5 | 1 |
| SKF-703 | 30 | 661 | 45 | 55 | 13.8 | 37.0 | 4.0 | 8.3 | 1 |
| SKF-704 | 45 | 1,344 | 62 | 75 | 19.0 | 53.5 | 4.0 | 10.0 | 1 |

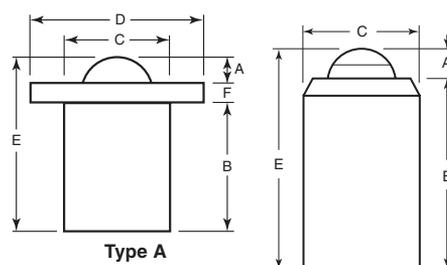
**Heavy Duty
Metric**



Solid body steel ball transfers were designed for heavy and impact load applications. The units incorporate a seal and self cleaning hole for maximum efficiency and smooth running. They are machined with solid steel bodies and hardened work surfaces. Steel models are steel bodies with chrome seal. Hardness 60-66 HRC, zinc plated finish. Stainless models have stainless bodies A1S1 303 and stainless bearings A1S1 420 or 440, bright machined. All dimensions are in millimeters.

| Item No. | Ball Dia. | Capacity (Lbs.) | A mm | B mm | C mm | D mm | E mm | Pack Qty. |
|------------------|-----------|-----------------|------|------|------|------|------|-----------|
| Steel | | | | | | | | |
| SKF-2213 | 22 | 397 | 36 | 45 | 30.5 | 9.8 | 6 | 1 |
| SKF-3013 | 30 | 770 | 45 | 55 | 36.8 | 13.8 | 8.3 | 1 |
| Stainless | | | | | | | | |
| SKF-2215 | 22 | 264 | 36 | 45 | 30.5 | 9.8 | 6 | 1 |

**Spring Loaded
Inch**



Type A

Type B

Shears, presses and molding machines are just a few of the many applications where open loaded ball transfers can be used. A press for example may have spring loaded ball units set in the platen to facilitate the on and off loading of the workpiece. When the press operates the springs compress and the ball units sink below the surface-leaving the workpiece on a firm base. When pressure is released the ball units rise allowing the ball to roll, enabling the workpiece to be removed easily. Steel bodies with hardened carbon steel balls. "A" style flanges have three equally spaced holes on bolt center diameters (BCD) listed below.

| Item No. | Type | Ball Dia. Inch | Support Load to Fully Depress (Lbs.) | Load (Lbs.) | A | B | C | D | E | F | Mounting Hole Size | BCD | Pack Qty. |
|----------|------|----------------|--------------------------------------|-------------|-----|------|------|------|------|-----|--------------------|------|-----------|
| SKF-3011 | A | 3/4 | 22 | 66 | .14 | 2.03 | 1.44 | 2.62 | 2.48 | .31 | .27 | 2.00 | 1 |
| SKF-3009 | B | 3/4 | 22 | 77 | .37 | 2.19 | 1.44 | — | 2.56 | — | — | — | 1 |
| SKF-1018 | A | 1 | 77 | 220 | .23 | 2.10 | 1.75 | 3.00 | 2.64 | .31 | .27 | 2.37 | 1 |
| SKF-1016 | B | 1 | 77 | 309 | .47 | 2.31 | 1.75 | — | 2.78 | — | — | — | 1 |
| SKF-1028 | A | 1 1/4 | 220 | 397 | .30 | 3.05 | 2.31 | 3.50 | 3.73 | .37 | .27 | 2.87 | 1 |
| SKF-1026 | B | 1 1/4 | 220 | 441 | .41 | 3.34 | 2.31 | — | 3.75 | — | — | — | 1 |



**Ball Bearing Parallels
Finger Tip Control**

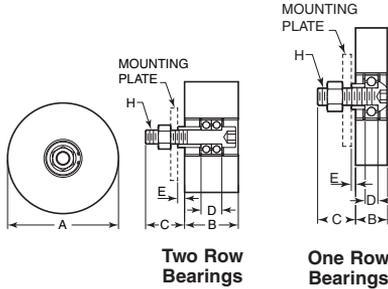


Used for handling large work in drill presses or band saw machines. Placed between work and the machine so that the work can easily be moved. All are black oxide finish with 3/8" diameter hardened steel balls. Balls are exposed on both sides of parallel. Parallel is 1/4". Load capacity is 3,000 lbs. per ball.

| Item No. | Description | Pack Qty. |
|----------|-----------------|-----------|
| BBP-1 | Size 2 1/2 x 6 | 1 |
| BBP-2 | Size 2 1/2 x 12 | 1 |
| BBP-3 | Size 2 1/2 x 18 | 1 |

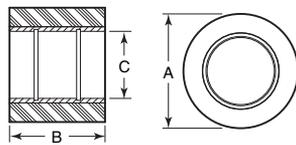
Rollers are used on conveyors, belt idlers, shock cushioners, stamping die part guides, supports, etc. Designed for use in machines and assembly operations where part movement and protection is needed. Available with a stud mount or with a bushing for shaft drive mounting. Stud mount rollers have a stud, spacer, lock-nut and ball bearings. Shaft mount rollers include two set screws.

Stud Mount Rollers

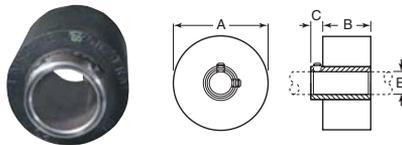


Molded from black neoprene or colored urethane. The urethane rollers are color coded by durometer: Yellow = 35 dur., blue = 60 dur., red = 80 dur. Durometer reading is based on Shore A scale. Blue color may turn to shade of green when exposed to UV lighting.

Solid Rollers Bonded to Steel Insert



Shaft Mount Rollers



Shaft mount rollers include two set screws.

| Neoprene Item No. | Urethane Item No. | Durometer | A | B | C | E | Pack Qty. |
|-------------------|-------------------|-----------|-------|-------|-----|---------------|-----------|
| RR-150 | — | 20 | 1 1/2 | 1 1/4 | 3/8 | .376 - .380 | 1 |
| RR-152 | RR-185 | 60 | 1 1/2 | 1 1/4 | 3/8 | .376 - .380 | 1 |
| — | RR-187 | 80 | 1 1/2 | 1 1/4 | 3/8 | .376 - .380 | 1 |
| RR-154 | — | 20 | 1 1/2 | 1 1/4 | 1/2 | .501 - .505 | 1 |
| — | RR-190 | 60 | 1 1/2 | 1 1/4 | 1/2 | .501 - .505 | 1 |
| — | RR-191 | 80 | 1 1/2 | 1 1/4 | 1/2 | .501 - .505 | 1 |
| — | RR-193 | 60 | 2 | .92 | 5/8 | .626 - .631 | 1 |
| — | RR-194 | 80 | 2 | .92 | 5/8 | .626 - .631 | 1 |
| — | RR-196 | 60 | 2 | 1.94 | 5/8 | .626 - .631 | 1 |
| — | RR-203 | 80 | 2 | 1.94 | 3/4 | .751 - .756 | 1 |
| — | RR-205 | 60 | 2 | .92 | 1 | 1.001 - 1.006 | 1 |

**Roll Flex™ Roller Rails
Multi-Directional**



Suitable for all applications when material or packages need to be transferred, sorted or turned in any direction. Roller design is based on the use of four free-turning barrel shaped rollers mounted in a 90 degree staggered pattern around the perimeter of a main core wheel, thus allowing for a multi-directional roller function. Rollers are available in three diameters mounted on either five or ten foot U-shaped rails. Rollers are made of corrosion resistant polyacetal with stainless steel axles. U-shaped rails are made of 14 gauge galvanized steel. Each five foot section has 15 rollers. Each ten foot section has 30 rollers. All have internal diameter of .330 inch.

| Five Ft. Item No. | Ten Ft. Item No. | Roller Only Item No. | Wheel Dia. | Wheel Width | Capacity/Wheel Lbs. | Rail Width | Pack Qty. |
|-------------------|------------------|----------------------|------------|-------------|---------------------|------------|-----------|
| ET-051 | ET-101 | ET-001 | 1.97 | 1 1/2 | 25 | 2 1/4 | 1 |

Note: Ten Ft. must be shipped truck

| Neoprene | | Urethane | | Durometer | A | B | C | D | E | H | Pack Qty. |
|----------|---------|----------|-------|-----------|------|-----|-----|---------|---|---|-----------|
| RR-24 | — | 20 | 1 1/2 | 1.25 | 3/8 | 1/2 | 1/8 | 5/16-18 | 1 | 1 | |
| RR-26 | RR-40 | 35 | 1 1/2 | 1.25 | 3/8 | 1/2 | 1/8 | 5/16-18 | 1 | 1 | |
| RR-28 | RR-42 | 60 | 1 1/2 | 1.25 | 3/8 | 1/2 | 1/8 | 5/16-18 | 1 | 1 | |
| RR-30 | RR-44 | 80 | 1 1/2 | 1.25 | 3/8 | 1/2 | 1/8 | 5/16-18 | 1 | 1 | |
| RR-118* | — | 35 | 2 | .92 | 1.10 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-120* | RR-136* | 60 | 2 | .92 | 1.10 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-122* | RR-138* | 80 | 2 | .92 | 1.10 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-124 | — | 20 | 2 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-126 | RR-140 | 35 | 2 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-128 | RR-142 | 60 | 2 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-130 | RR-144 | 80 | 2 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-220* | RR-236* | 60 | 2 1/2 | .92 | 1.10 | 3/8 | 1/4 | 1/2-13 | 1 | 1 | |
| — | RR-240 | 35 | 2 1/2 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-228 | RR-242 | 60 | 2 1/2 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-230 | RR-244 | 80 | 2 1/2 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| — | RR-334* | 35 | 4 | .92 | 1.10 | 3/8 | 1/4 | 1/2-13 | 1 | 1 | |
| — | RR-336* | 60 | 4 | .92 | 1.10 | 3/8 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-328 | RR-342 | 60 | 4 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |
| RR-330 | RR-344 | 80 | 4 | 1.94 | 1.41 | 3/4 | 1/4 | 1/2-13 | 1 | 1 | |

*One row bearings

| Urethane | | Neoprene | | Durometer | A | B | C | Pack Qty. |
|----------|---------|----------|-------|-----------|---------------|---|---|-----------|
| RR-1170 | — | 35 | 1 1/2 | 1 1/4 | .877 - .880 | 1 | 1 | |
| RR-1171 | RR-1142 | 60 | 1 1/2 | 1 1/4 | .877 - .880 | 1 | 1 | |
| RR-1172 | RR-1143 | 80 | 1 1/2 | 1 1/4 | .877 - .880 | 1 | 1 | |
| — | RR-1144 | 20 | 2 | .92 | 1.252 - 1.256 | 1 | 1 | |
| — | RR-1145 | 35 | 2 | .92 | 1.252 - 1.256 | 1 | 1 | |
| RR-1175 | — | 80 | 2 | .92 | 1.252 - 1.256 | 1 | 1 | |
| RR-1177 | RR-1150 | 60 | 2 | 1.94 | 1.252 - 1.256 | 1 | 1 | |
| RR-1178 | RR-1151 | 80 | 2 | 1.94 | 1.252 - 1.256 | 1 | 1 | |
| — | RR-1155 | 80 | 2 1/2 | .92 | 1.252 - 1.256 | 1 | 1 | |
| RR-1185 | — | 35 | 4 | .92 | 1.252 - 1.256 | 1 | 1 | |
| RR-1187 | — | 80 | 4 | .92 | 1.252 - 1.256 | 1 | 1 | |
| RR-1189 | — | 60 | 4 | 1.94 | 1.252 - 1.256 | 1 | 1 | |
| — | RR-1167 | 80 | 4 | 1.94 | 1.252 - 1.256 | 1 | 1 | |

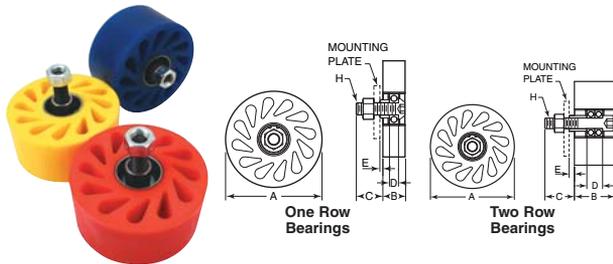
| Neoprene | | Urethane | | Durometer | A | B | C | E | Pack Qty. |
|----------|--------|----------|-------|-----------|-----|---------------|---|---|-----------|
| RR-170 | RR-184 | 35 | 2 | 1.94 | 1 | 1.001 - 1.006 | 1 | 1 | |
| — | RR-186 | 60 | 2 | 1.94 | 1 | 1.001 - 1.006 | 1 | 1 | |
| RR-174 | RR-188 | 80 | 2 | 1.94 | 1 | 1.001 - 1.006 | 1 | 1 | |
| RR-250 | — | 20 | 2 1/2 | .92 | 3/4 | .751 - .756 | 1 | 1 | |
| — | RR-282 | 80 | 2 1/2 | .92 | 3/4 | .751 - .756 | 1 | 1 | |
| RR-260 | RR-283 | 35 | 2 1/2 | 1.94 | 3/4 | .751 - .756 | 1 | 1 | |
| — | RR-287 | 80 | 2 1/2 | 1.94 | 3/4 | .751 - .756 | 1 | 1 | |
| RR-271 | — | 60 | 2 1/2 | .92 | 1 | 1.001 - 1.006 | 1 | 1 | |
| — | RR-284 | 35 | 2 1/2 | 1.94 | 1 | 1.001 - 1.006 | 1 | 1 | |
| RR-272 | — | 60 | 2 1/2 | 1.94 | 1 | 1.001 - 1.006 | 1 | 1 | |
| RR-274 | RR-288 | 80 | 2 1/2 | 1.94 | 1 | 1.001 - 1.006 | 1 | 1 | |
| RR-349 | — | 35 | 4 | .92 | 3/4 | .626 - .631 | 1 | 1 | |
| RR-351 | RR-382 | 80 | 4 | .92 | 3/4 | .626 - .631 | 1 | 1 | |
| — | RR-385 | 60 | 4 | 1.94 | 3/4 | .626 - .631 | 1 | 1 | |
| — | RR-387 | 80 | 4 | 1.94 | 3/4 | .626 - .631 | 1 | 1 | |
| RR-357 | — | 35 | 4 | .92 | 3/4 | .751 - .756 | 1 | 1 | |
| — | RR-391 | 80 | 4 | .92 | 3/4 | .751 - .756 | 1 | 1 | |
| RR-360 | — | 20 | 4 | 1.94 | 3/4 | .751 - .756 | 1 | 1 | |
| RR-361 | RR-392 | 35 | 4 | 1.94 | 3/4 | .751 - .756 | 1 | 1 | |
| RR-362 | — | 60 | 4 | 1.94 | 3/4 | .751 - .756 | 1 | 1 | |
| — | RR-394 | 80 | 4 | 1.94 | 3/4 | .751 - .756 | 1 | 1 | |
| RR-372 | RR-386 | 60 | 4 | 1.94 | 1 | 1.001 - 1.006 | 1 | 1 | |
| RR-374 | RR-388 | 80 | 4 | 1.94 | 1 | 1.001 - 1.006 | 1 | 1 | |



Rollers are used on conveyors, belt idlers, shock cushioners, stamping die part guides, supports, etc. Designed for use in machines and assembly operations where part movement and protection is needed. Available with a stud mount or with a bushing for shaft drive mounting. Stud mount rollers have a stud, spacer, lock-nut and ball bearings. Shaft mount rollers include two set screws.

Ideal for production and assembly applications which require a gentle, but firm touch. Unique shape of holes also adds to their soft, but resilient nature. Molded from black neoprene or colored urethane. The urethane rollers are color coded by durometer: Yellow = 35 dur., blue = 60 dur., red = 80 dur. Durometer reading is based on Shore A scale. Blue color may turn to shade of green when exposed to UV lighting.

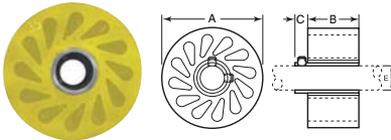
Durasoft Stud Mount Rollers



| Neoprene | | Urethane | | Durometer | A | B | C | D | E | H | Pack Qty. |
|----------|----------|----------|----|-----------|------|---|---|---|------|---|-----------|
| Item No. | Item No. | | | | | | | | | | |
| — | RR-440* | 35 | 2½ | .92 | 1.10 | ¾ | ¼ | ½ | 13 | 1 | |
| — | RR-443 | 35 | 2½ | 1.94 | 1.41 | ¾ | ¼ | ¼ | ½-13 | 1 | |
| — | RR-444 | 60 | 2½ | 1.94 | 1.41 | ¾ | ¼ | ¼ | ½-13 | 1 | |
| — | RR-445 | 80 | 2½ | 1.94 | 1.41 | ¾ | ¼ | ¼ | ½-13 | 1 | |
| RR-408* | RR-446* | 35 | 4 | .92 | 1.10 | ¾ | ¼ | ½ | ½-13 | 1 | |
| — | RR-447* | 60 | 4 | .92 | 1.10 | ¾ | ¼ | ½ | ½-13 | 1 | |
| RR-410 | — | 20 | 4 | 1.94 | 1.41 | ¾ | ¼ | ¼ | ½-13 | 1 | |
| RR-412 | RR-449 | 35 | 4 | 1.94 | 1.41 | ¾ | ¼ | ¼ | ½-13 | 1 | |
| — | RR-450 | 60 | 4 | 1.94 | 1.41 | ¾ | ¼ | ¼ | ½-13 | 1 | |
| — | RR-451 | 80 | 4 | 1.94 | 1.41 | ¾ | ¼ | ¼ | ½-13 | 1 | |

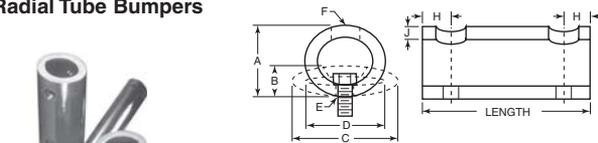
*One row bearings

Durasoft Shaft Mount Rollers



| Neoprene | | Urethane | | Durometer | A | B | C | E | Pack Qty. |
|----------|----------|----------|----|-----------|---|---------------|---|---|-----------|
| Item No. | Item No. | | | | | | | | |
| — | RR-461 | 60 | 2½ | .92 | ½ | .626 - .631 | 1 | | |
| — | RR-462 | 35 | 2½ | 1.94 | ½ | .626 - .631 | 1 | | |
| — | RR-466 | 35 | 2½ | 1.94 | ½ | .751 - .756 | 1 | | |
| — | RR-463 | 60 | 2½ | 1.94 | ½ | .626 - .631 | 1 | | |
| RR-420 | — | 20 | 4 | .92 | ½ | .626 - .631 | 1 | | |
| RR-421 | RR-472 | 35 | 4 | .92 | ½ | .626 - .631 | 1 | | |
| — | RR-473 | 60 | 4 | .92 | ½ | .626 - .631 | 1 | | |
| — | RR-481 | 60 | 4 | .92 | ½ | 1.001 - 1.006 | 1 | | |
| RR-427 | — | 20 | 4 | 1.94 | ½ | .751 - .756 | 1 | | |
| RR-426 | — | 20 | 4 | 1.94 | ½ | 1.001 - 1.006 | 1 | | |
| RR-423 | RR-474 | 35 | 4 | 1.94 | ½ | .626 - .631 | 1 | | |
| RR-429 | — | 35 | 4 | 1.94 | ½ | .751 - .756 | 1 | | |
| RR-428 | — | 35 | 4 | 1.94 | ½ | 1.001 - 1.006 | 1 | | |
| — | RR-479 | 60 | 4 | 1.94 | ½ | .751 - .756 | 1 | | |
| — | RR-475 | 60 | 4 | 1.94 | ½ | .626 - .631 | 1 | | |
| — | RR-483 | 60 | 4 | 1.94 | ½ | 1.001 - 1.006 | 1 | | |

Radial Tube Bumpers



These bumpers are designed for applications involving shock and collision protection along a straight line. They are oval in shape and made from TecPak's patented elastomer. The durometer for the bumper below is 40D. Mounting bolt not included.

| Item No. | Lgth. | End Loads | A | B | C | D | E | F | H | J | Pack Qty. |
|----------|-------|-----------|------|-----|------|------|-------|-------|---|-----|-----------|
| TEB-5 | 6 | 1,600 | 2.67 | .88 | 3.94 | 2.98 | 1½/32 | 1½/16 | 1 | .42 | 1 |

Note: End Load Rating based on uniform loading.

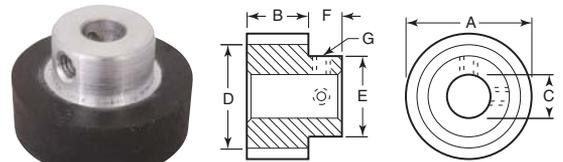
Versa-Roll™ Urethane



Made from K-prene™ urethane. Low cost alternative for wheels, casters, rollers, sheaves, etc. Blue outer tire (90A durometer) is bonded to a brown hub (75D durometer), resulting in a hard anti-friction bearing with a softer outer tire. Can serve as a bearing in some applications. Comes in 12" and 24" lengths. Cut to fit your application.

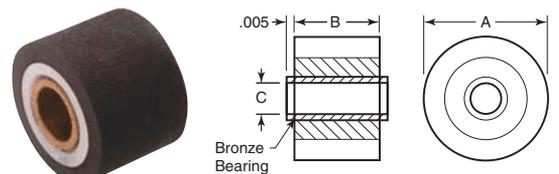
| 12" | | 24" | | OD | Hub OD | ID | Pack Qty. |
|----------|----------|-----|----|---------|--------|----|-----------|
| Item No. | Item No. | | | | | | |
| AU-60 | — | 1½ | 1 | No Bore | 1 | | |
| AU-61 | — | 1½ | 1 | ¾ | 1 | | |
| AU-62 | — | 1½ | 1 | ½ | 1 | | |
| AU-63 | — | 2 | 1½ | ¾ | 1 | | |
| AU-64 | — | 2 | 1½ | ½ | 1 | | |
| AU-65 | AU-85 | 2 | 1½ | ¾ | 1 | | |
| AU-68 | — | 2½ | 1½ | ½ | 1 | | |
| AU-70 | — | 2½ | 1½ | ¾ | 1 | | |
| AU-71 | — | 3 | 1½ | ¾ | 1 | | |
| AU-72 | — | 3 | 1½ | ½ | 1 | | |
| — | AU-93 | 3 | 1½ | ¾ | 1 | | |
| AU-74 | AU-94 | 3 | 1½ | ¾ | 1 | | |
| AU-78 | — | 3½ | 1½ | ¾ | 1 | | |

Drive Rollers



| Item No. | Durometer | +000 | +/-003 | +001 | D | E | F | Set Screw G | Pack Qty. |
|----------|-----------|------|--------|------|----|---|------|-------------|-----------|
| | | -002 | A | B | | | | | |
| RR-1100 | 70 | 5/8 | ¼ | .188 | ½ | ½ | ¼ | (1) #8-32 | 1 |
| RR-1105 | 70 | ¾ | ¾ | .251 | ½ | ½ | ¼ | (1) #8-32 | 1 |
| RR-1110 | 70 | ¾ | ¾ | .251 | ½ | ½ | ¼ | (1) #8-32 | 1 |
| RR-1115 | 70 | 1 | ¾ | .188 | ½ | ½ | ¼ | (1) #8-32 | 1 |
| RR-1120 | 70 | 1 | ¾ | .251 | ½ | ½ | ¼ | (1) #8-32 | 1 |
| RR-1125 | 70 | 1½ | ¾ | .251 | ¾ | ¾ | 5/16 | (2) #8-32 | 1 |
| RR-1130 | 70 | 1½ | ¾ | .376 | 1½ | ¾ | ¾ | (2) #10-32 | 1 |
| RR-1135 | 70 | 2 | ¾ | .376 | 1½ | 1 | ¾ | (2) #10-32 | 1 |

Idler Rollers

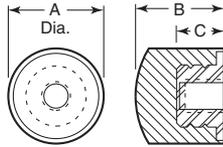


| Item No. | Durometer | +000 | +/-003 | +001 | Pack Qty. |
|----------|-----------|------|--------|------|-----------|
| | | -002 | A | B | |
| RR-1000 | 55 | ½ | ¾ | .188 | 1 |
| RR-1005 | 55 | ¾ | ¾ | .188 | 1 |
| RR-1010 | 55 | ¾ | ¾ | .251 | 1 |
| RR-1015 | 55 | ¾ | ¾ | .251 | 1 |
| RR-1020 | 55 | 1 | ½ | .251 | 1 |
| RR-1025 | 55 | 1½ | ½ | .251 | 1 |
| RR-1030 | 55 | 1½ | ½ | .376 | 1 |
| RR-1035 | 55 | 2 | ¾ | .376 | 1 |



Bumpers are used to guard, stop, align, position or protect parts through each step of manufacturing. Available in rugged black neoprene or urethane rubber molded around a steel core. Durometer reading based on Shore A scale.

Round with Female Thread



Black neoprene has durometer hardness of 40-45 Shore A and urethane has durometer hardness of 80-90 Shore A, except as noted below.

| Neoprene | | Urethane | | A | B | C | Thread | Pack Qty. |
|----------|----------|----------|-------|-------|---------------|---|--------|-----------|
| Item No. | Item No. | A | B | | | | | |
| FRB-0* | FRB-200 | 3/4 | 5/8 | 3/8 | 10-24 x 1/4 | 1 | | |
| FRB-1* | FRB-201 | 3/4 | 5/8 | 3/8 | 10-32 x 1/4 | 1 | | |
| FRB-3* | FRB-203 | 3/4 | 5/8 | 3/8 | 1/4-20 x 1/4 | 1 | | |
| FRB-4* | FRB-204 | 3/4 | 5/8 | 3/8 | 1/4-28 x 1/4 | 1 | | |
| FRB-2 | FRB-202 | 3/4 | 5/8 | 3/8 | 5/16-18 x 1/4 | 1 | | |
| FRB-5* | FRB-205 | 3/4 | 5/8 | 3/8 | 5/16-24 x 1/4 | 1 | | |
| FRB-6 | FRB-206 | 1 1/4 | 1 1/4 | 3/4 | 3/8-16 x 1/2 | 1 | | |
| FRB-8 | FRB-208 | 1 1/4 | 1 1/4 | 3/4 | 3/8-24 x 1/2 | 1 | | |
| FRB-10 | FRB-210 | 1 1/4 | 1 1/4 | 3/4 | 1/2-13 x 1/2 | 1 | | |
| FRB-12 | FRB-212 | 1 1/4 | 1 1/4 | 3/4 | 1/2-20 x 1/2 | 1 | | |
| FRB-14 | FRB-214 | 1 1/4 | 1 1/4 | 3/4 | 7/16-20 x 1/2 | 1 | | |
| FRB-16 | FRB-216 | 1 1/4 | 1 1/4 | 3/4 | 5/8-18 x 1/2 | 1 | | |
| FRB-18 | FRB-218 | 1 3/4 | 1 5/8 | 7/8 | 5/8-11 x 5/8 | 1 | | |
| FRB-20 | FRB-220 | 1 3/4 | 1 5/8 | 7/8 | 5/8-18 x 5/8 | 1 | | |
| FRB-22 | FRB-222 | 2 1/4 | 2 1/4 | 1 3/8 | 3/4-10 x 1 | 1 | | |
| FRB-24 | FRB-224 | 2 1/4 | 2 1/4 | 1 3/8 | 3/4-16 x 1 | 1 | | |
| — | FRB-226 | 2 1/4 | 2 1/4 | 1 3/8 | 1-8 x 1 | 1 | | |

*Durometer hardness of 70 Shore A

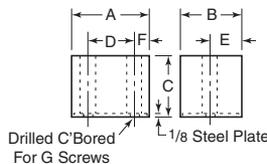
Thermoplastic Rubber



Constructed of resilient, high quality thermoplastic rubber. These bumpers are impervious to atmospheric deterioration and won't crack like extruded bumpers. Easily attached with 1/4" screw or adhesive (not included).

| Item No. | Description | Pack Qty. |
|----------|-----------------------------|-----------|
| WEI-5 | 4" Straight Bumper - White | 1 |
| WEI-10 | 12" Straight Bumper - White | 1 |
| WEI-15 | 12" Straight Bumper - Black | 1 |
| WEI-20 | 15" Corner Bumper - White | 1 |
| WEI-25 | 15" Corner Bumper - Black | 1 |

Square and Rectangle with Steel Plate

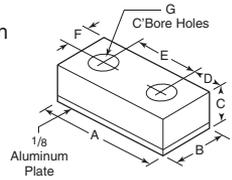


With drilled and counterbored holes for mounting. Bonded to steel plate. Both neoprene and urethane have durometer hardness of 80 A except for FRB-52 which has durometer hardness of 35 A.

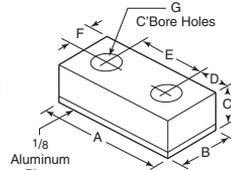
| Neoprene | | Urethane | | A | B | C | D | E | F | G | No. of Holes | Pack Qty. |
|----------|----------|----------|-----|-----|-------|------|-----|------|---|---|--------------|-----------|
| Item No. | Item No. | A | B | | | | | | | | | |
| FRB-60 | FRB-560 | 3/4 | 3/4 | 5/8 | — | 3/8 | 3/8 | 1/4 | 1 | 1 | | |
| FRB-50 | FRB-550 | 1 1/4 | 1 | 3/4 | 1 | 1/2 | 3/8 | 1/4 | 2 | 1 | | |
| FRB-52 | — | 1 1/4 | 1 | 3/4 | 1 | 1/2 | 3/8 | 1/4 | 2 | 1 | | |
| FRB-58 | FRB-558 | 2 1/2 | 3/8 | 5/8 | 1 1/2 | 5/16 | 1/2 | 1/4 | 2 | 1 | | |
| FRB-54 | FRB-554 | 2 1/2 | 2 | 2 | 1 1/2 | 1 | 1/2 | 3/16 | 2 | 1 | | |

Custom Bumpers

Custom cut bumpers are available in various durometers, optional aluminum back and a choice of drilled, tapped or counterbored holes. Call for price and delivery; specify length, width, height, hole size, center distance, backing, durometer and material. See line drawings above to reference specifications.



Rectangle



With drilled and counterbored holes for mounting. Aluminum plate.

| Neoprene Item No. | A | B | C | D | E | F | G | No. of Holes | Pack Qty. |
|-------------------|-------|-------|-------|-------|-------|-----|------|--------------|-----------|
| FRB-100 | 1 1/2 | 1 | 3/4 | 3/8 | 3/4 | 1/2 | 1/4 | 2 | 1 |
| FRB-102 | 1 3/4 | 1 | 1 1/4 | 3/8 | 1 | 1/2 | 1/4 | 2 | 1 |
| FRB-104 | 3 | 1 | 1 1/4 | 5/8 | 1 3/4 | 1/2 | 3/8 | 2 | 1 |
| FRB-106 | 3 | 1 1/2 | 1 | 1/2 | 2 | 3/4 | 3/16 | 2 | 1 |
| FRB-108 | 4 | 1 | 3/4 | 1 1/2 | 1 | 1/2 | 1/4 | 2 | 1 |

Square and Rectangle



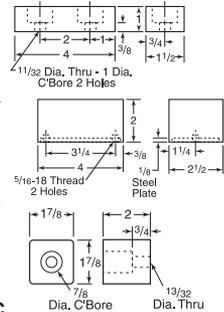
Type A



Type B



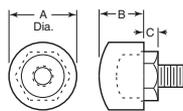
Type C



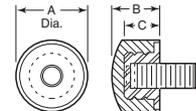
With drilled and counterbored holes for mounting. No steel plate. Neoprene only.

| Item No. | Type | Durometer | Pack Qty. |
|----------|------|-----------|-----------|
| FRB-80 | A | 60A | 1 |
| FRB-85 | B | 80A | 1 |
| FRB-90 | C | 80A | 1 |

Round with Male Thread



w/ Hex Shoulder



w/o Hex Shoulder

| Neoprene | | Urethane | | A | B | C | Thread | Pack Qty. |
|-----------------------------|----------|----------|-------|------|-----------------|---|--------|-----------|
| Item No. | Item No. | A | B | | | | | |
| With Hex Shoulder | | | | | | | | |
| FRB-27* | FRB-327 | 3/4 | 5/8 | 3/16 | 10-24 x 1/2 | 1 | | |
| — | FRB-328 | 3/4 | 5/8 | 3/16 | 10-24 x 1 1/4 | 1 | | |
| FRB-29 | FRB-329 | 3/4 | 5/8 | 3/16 | 10-32 x 1 1/2 | 1 | | |
| FRB-31* | — | 3/4 | 5/8 | 3/16 | 10-32 x 1 1/4 | 1 | | |
| FRB-33* | FRB-333 | 3/4 | 5/8 | 3/16 | 1/4-20 x 1/2 | 1 | | |
| FRB-35* | FRB-335 | 3/4 | 5/8 | 3/16 | 1/4-20 x 1 1/4 | 1 | | |
| FRB-37* | FRB-337 | 3/4 | 5/8 | 3/16 | 1/4-28 x 1/2 | 1 | | |
| FRB-39* | FRB-339 | 3/4 | 5/8 | 3/16 | 1/4-28 x 1 1/4 | 1 | | |
| FRB-30 | FRB-330 | 3/4 | 5/8 | 3/16 | 5/16-18 x 1/2 | 1 | | |
| FRB-32 | FRB-332 | 3/4 | 5/8 | 3/16 | 5/16-18 x 1 1/4 | 1 | | |
| FRB-41* | FRB-341 | 3/4 | 5/8 | 3/16 | 5/16-24 x 1/2 | 1 | | |
| FRB-43* | FRB-343 | 3/4 | 5/8 | 3/16 | 5/16-24 x 1 1/4 | 1 | | |
| Without Hex Shoulder | | | | | | | | |
| FRB-34 | FRB-334 | 1 1/4 | 1 1/4 | 3/4 | 3/8-16 x 5/8 | 1 | | |
| FRB-36 | FRB-336 | 1 1/4 | 1 1/4 | 3/4 | 3/8-16 x 1 1/4 | 1 | | |
| FRB-40 | FRB-340 | 1 1/4 | 1 1/4 | 3/4 | 1/2-13 x 3/4 | 1 | | |
| FRB-42 | FRB-342 | 1 1/2 | 1 1/2 | 3/8 | 3/8-16 x 3/4 | 1 | | |

*Durometer hardness of 70 Shore A



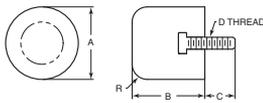
Urethane Bumpers



These bumpers feature steel cores with male or female threads. Washers have counterbored holes to accept socket head cap screws and a flat washer molded inside.

| 40A Yellow | 60A Black | 80A Orange | 90A Blue | 95A Red | | | Thread or Screw Size | Pack Qty. |
|----------------------|-----------|------------|----------|---------|-------|-------|----------------------|-----------|
| Male Thread | | | | | | | | |
| AU-400 | AU-600 | AU-800 | AU-900 | AU-950 | 1 | 1 | 1/4-20 | 1 |
| AU-401 | AU-601 | AU-801 | AU-901 | AU-951 | 1 1/4 | 1 | 1/4-20 | 1 |
| AU-402 | AU-602 | AU-802 | AU-902 | AU-952 | 1 1/2 | 1 1/4 | 3/8-16 | 1 |
| AU-403 | AU-603 | AU-803 | AU-903 | AU-953 | 2 | 1 1/4 | 3/8-16 | 1 |
| Female Thread | | | | | | | | |
| AU-410 | AU-610 | AU-810 | AU-910 | AU-960 | 1 | 1 | 1/4-20 | 1 |
| AU-411 | AU-611 | AU-811 | AU-911 | AU-961 | 1 1/4 | 1 | 1/4-20 | 1 |
| AU-412 | AU-612 | AU-812 | AU-912 | AU-962 | 1 1/2 | 1 1/4 | 3/8-16 | 1 |
| AU-413 | AU-613 | AU-813 | AU-913 | AU-963 | 2 | 1 1/4 | 3/8-16 | 1 |
| Female Washer | | | | | | | | |
| AU-420 | AU-620 | AU-820 | AU-920 | AU-970 | 3/4 | 3/4 | 1/4 | 1 |
| AU-421 | AU-621 | AU-821 | AU-921 | AU-971 | 1 | 1 | 1/4 | 1 |
| AU-422 | AU-622 | AU-822 | AU-922 | AU-972 | 1 1/4 | 1 | 3/8 | 1 |
| AU-423 | AU-623 | AU-823 | AU-923 | AU-973 | 1 1/2 | 1 1/4 | 3/8 | 1 |
| AU-424 | AU-624 | AU-824 | AU-924 | — | 2 | 1 1/4 | 1/2 | 1 |

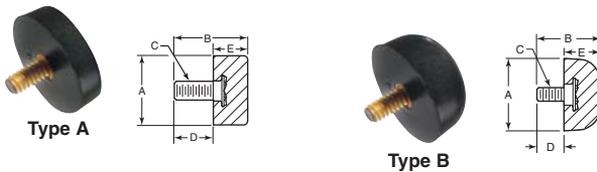
Round Bumper with Male Stud Urethane



Bumpers are used to guard, stop, align, position or protect parts through each step of manufacturing. Available in rugged black neoprene or urethane rubber molded around a steel core. Durometer reading based on Shore A scale.

| Item No. | Durometer | A | B | C | D | R | Pack Qty. |
|----------|-----------|-------|-------|--------|---------|------|-----------|
| RR-1500 | 60 | 1 | 1 | 7/8 | 5/16-18 | 1/4 | 1 |
| RR-1501 | 80 | 1 | 1 | 7/8 | 5/16-18 | 3/4 | 1 |
| RR-1502 | 60 | 1 1/2 | 1 1/2 | 7/8 | 5/16-18 | 5/16 | 1 |
| RR-1503 | 80 | 1 1/2 | 1 1/2 | 7/8 | 5/16-18 | 5/16 | 1 |
| RR-1504 | 60 | 2 | 2 | 7/8 | 5/16-18 | 3/8 | 1 |
| RR-1505 | 80 | 2 | 2 | 7/8 | 5/16-18 | 3/8 | 1 |
| RR-1506 | 60 | 2 1/2 | 2 1/2 | 7/8 | 3/8-16 | 1/2 | 1 |
| RR-1507 | 80 | 2 1/2 | 2 1/2 | 7/8 | 3/8-16 | 1/2 | 1 |
| RR-1508 | 60 | 3 | 3 | 1 1/4 | 1/2-13 | 3/8 | 1 |
| RR-1509 | 80 | 3 | 3 | 1 1/4 | 1/2-13 | 3/8 | 1 |
| RR-1510 | 60 | 4 | 4 | 1 1/16 | 1/2-13 | 3/4 | 1 |
| RR-1511 | 80 | 4 | 4 | 1 1/16 | 1/2-13 | 3/4 | 1 |

Threaded Rubber Bumper

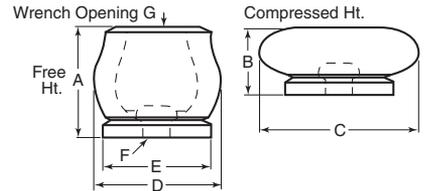


Bumpers have built-in steel screw for easy installation. They are manufactured with abrasion-resistant SBR rubber creating a bumper that is resistant to abrasion and oxidation, while offering excellent cushioning, and vibration control. They have a durometer of 70 (Shore A).

| Item No. | A | B | C | D | E | Pack Qty. |
|----------|---|------|------|---------|------|-----------|
| LVL-5 | A | .50 | .50 | 6-32MS | .25 | .25 |
| LVL-10 | B | .75 | .812 | 8-32MS | .375 | .437 |
| LVL-15 | B | 1.00 | .875 | 10-24MS | .375 | .500 |

Elastomer Bumpers

Elastomer bumpers provide excellent resistance to chemicals and humidity. Durability is 20 times greater than urethane, 10 times greater than rubber and 500 times greater than coiled steel springs. Maintains excellent resilience at extreme temperatures and remains flexible with no material degradation between -80 and +300 degree Fahrenheit. Mounting screws not included.



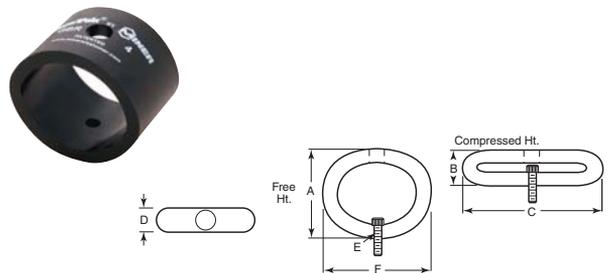
High Energy Absorption Compact Size, Short Stroke

| Item No. | Max. Comp. In. Lbs. | Peak Dynamic Force | A | B | C | D | E | Mounting Hole F | Wrench Opening G | Pack Qty. |
|----------|---------------------|--------------------|-------|--------|--------|--------|--------|-----------------|------------------|-----------|
| GBA-1 | 100 | 700 | 3/4 | 7/16 | 1 1/8 | 7/8 | 3/4 | 5/16 | 7/16 | 1 |
| GBA-2 | 250 | 1,200 | 1 | 9/16 | 1 1/2 | 1 1/8 | 1 | 3/8 | 9/16 | 1 |
| GBA-3 | 400 | 2,000 | 1 1/8 | 1 1/16 | 1 3/4 | 1 1/8 | 1 1/16 | 3/8 | 1 1/16 | 1 |
| GBA-4 | 550 | 2,400 | 1 1/8 | 1 1/16 | 1 3/4 | 1 1/8 | 1 1/16 | 3/8 | 1 1/16 | 1 |
| GBA-5 | 700 | 2,500 | 1 1/8 | 1 3/16 | 2 | 1 1/8 | 1 1/8 | 3/8 | 1 3/16 | 1 |
| GBA-6 | 900 | 3,600 | 1 1/2 | 1 3/16 | 2 1/8 | 1 1/16 | 1 1/2 | 3/8 | 1 3/16 | 1 |
| GBA-7 | 1,100 | 3,300 | 1 1/2 | 1 3/16 | 2 1/8 | 1 1/8 | 1 1/8 | 3/8 | 1 5/16 | 1 |
| GBA-8 | 1,400 | 3,800 | 1 3/4 | 1 | 2 1/2 | 2 | 1 3/4 | 3/8 | 1 | 1 |
| GBA-9 | 1,700 | 6,000 | 1 7/8 | 1 | 2 1/16 | 2 1/8 | 1 7/8 | 3/8 | 1 1/16 | 1 |
| GBA-10 | 2,000 | 5,000 | 2 1/8 | 1 1/8 | 2 3/8 | 2 1/8 | 2 | 3/8 | 1 1/16 | 1 |
| GBA-11 | 2,500 | 5,300 | 2 1/8 | 1 3/16 | 3 1/8 | 2 1/8 | 2 1/8 | 3/8 | 1 1/4 | 1 |
| GBA-12 | 3,000 | 6,100 | 2 1/8 | 1 3/16 | 3 1/8 | 2 1/8 | 2 1/4 | 3/8 | 1 1/16 | 1 |
| GBA-13 | 3,600 | 6,600 | 2 3/8 | 1 1/4 | 3 1/8 | 2 1/16 | 2 3/8 | 3/8 | 1 1/8 | 1 |
| GBA-14 | 4,000 | 7,500 | 2 3/8 | 1 1/2 | 3 3/8 | 2 1/8 | 2 1/2 | 3/8 | 1 1/16 | 1 |
| GBA-16 | 6,000 | 8,700 | 2 3/8 | 1 3/8 | 4 3/8 | 3 1/8 | 2 3/8 | 3/8 | 1 1/16 | 1 |
| GBA-19 | 10,000 | 14,000 | 3 1/8 | 1 3/8 | 4 3/8 | 3 3/8 | 3 3/8 | 3/8 | 1 1/16 | 1 |
| GBA-20 | 17,000 | 18,500 | 3 3/8 | 2 3/8 | 5 3/4 | 4 3/8 | 3 3/8 | 3/8 | 2 1/4 | 1 |

Medium Energy Absorption Low Reaction Force

| Item No. | Max. Comp. In. Lbs. | Peak Dynamic Force | A | B | C | D | E | Mounting Hole F | Wrench Opening G | Pack Qty. |
|----------|---------------------|--------------------|--------|--------|-------|--------|--------|-----------------|------------------|-----------|
| GBA-101S | 50 | 300 | 1 3/16 | 7/16 | 1 1/8 | 1 3/16 | 3/4 | 5/16 | 1 1/2 | 1 |
| GBA-102S | 100 | 400 | 1 1/16 | 9/16 | 1 1/2 | 1 1/16 | 1 | 5/16 | 5/8 | 1 |
| GBA-103S | 200 | 600 | 1 1/4 | 1 1/16 | 1 3/4 | 1 1/4 | 1 3/16 | 5/16 | 3/4 | 1 |
| GBA-104S | 250 | 700 | 1 1/16 | 1 1/16 | 1 3/4 | 1 1/8 | 1 3/16 | 5/16 | 7/8 | 1 |
| GBA-105S | 300 | 900 | 1 1/2 | 1 3/16 | 2 | 1 1/2 | 1 3/8 | 7/16 | 1 3/16 | 1 |
| GBA-107S | 550 | 1,300 | 1 3/8 | 1 3/16 | 2 3/8 | 1 3/8 | 1 3/8 | 3/8 | 1 1/8 | 1 |
| GBA-108S | 700 | 1,600 | 1 7/8 | 1 | 2 1/8 | 1 7/8 | 1 3/4 | 3/8 | 1 1/16 | 1 |

Low Energy Absorption Longer Stroke, Soft Stop



| Item No. | Max. Comp. In. Lbs. | Peak Dynamic Force | A | B | C | D | E | Mounting Hole F | Pack Qty. |
|----------|---------------------|--------------------|---------|--------|---------|---------|------|-----------------|-----------|
| GBR-1 | 10 | 75 | 1 | 3/8 | 1 1/16 | 1/2 | 7/32 | 1 1/8 | 1 |
| GBR-2 | 20 | 100 | 1 1/4 | 1/2 | 1 1/8 | 3/4 | 7/32 | 1 1/16 | 1 |
| GBR-3 | 30 | 150 | 1 1/2 | 9/16 | 2 1/4 | 1 3/16 | 7/32 | 1 1/16 | 1 |
| GBR-4 | 50 | 200 | 1 11/16 | 7/16 | 2 11/16 | 1 3/8 | 7/32 | 1 1/16 | 1 |
| GBR-5 | 100 | 300 | 2 1/8 | 9/16 | 3 3/8 | 1 3/4 | 7/32 | 2 1/2 | 1 |
| GBR-6 | 200 | 475 | 2 1/4 | 1 3/16 | 3 1/16 | 1 13/16 | 7/32 | 2 5/8 | 1 |
| GBR-7 | 300 | 600 | 2 3/8 | 1 1/8 | 3 13/16 | 1 13/16 | 9/32 | 3 | 1 |
| GBR-8 | 400 | 725 | 2 13/16 | 1 1/8 | 4 1/4 | 2 | 9/32 | 3 1/4 | 1 |



Powerlift Magnets



MAG-MATE

- On/Off rare earth design
- Lifts flat or round loads over 1" thick
- Easy manual release does not contact the load
- 3:1 design factor
- ASME B30.20 standard
- Heat resistant up to 200 degree Fahrenheit (94 degree Celsius)

These compact, yet powerful rare earth lift magnets can be used on flat or round surfaces and contain an internal release device that does not contact or damage the surface of the part being lifted. Permanent magnetic lifts eliminate the fear of dropping the load being lifted due to power failure.

| Item No. | Height | Width | Length | Weight | Lifting Capacity | | | | | |
|----------|--------|-------|--------|--------|------------------|----------|---------------|---------------|------|------|
| | | | | | Flat Section | | | Round Section | | |
| | | | | | Thickness Size | | Dia. Min (In) | Pack Qty. | | |
| | | | | | Min. (In) | Max (Ft) | | | Lbs. | Lbs. |
| IM-323 | 2.63 | 2.44 | 3.62 | 7 | 220 | 3/16 | 4 x 4 | 110 | 2 | 1 |
| IM-324 | 3.58 | 3.62 | 6.38 | 22 | 660 | 3/16 | 4 x 6 | 330 | 3 | 1 |
| IM-325 | 4.6 | 4.8 | 9.03 | 53 | 1,600 | 1/2 | 4 x 8 | 660 | 4 | 1 |
| IM-326 | 6.41 | 6.93 | 9.13 | 110 | 2,500 | 3/4 | 4 x 8 | 1100 | 5 | 1 |

Creative Lift® Magnets

MAG-MATE

- Non marring roller cam release
- Less torque required to release load
- Jack-screw secondary release
- Durable stainless steel case
- 3:1 design factor
- Conforms to ASME B30.20 standards
- Heat resistant up to 300 degree Fahrenheit (148 degree Celsius)
- These magnets cannot be shipped via air freight.



Ideal for handling steel plates, forgings, die castings. **Should only be used for thick, non-flexing ferrous materials.** Eliminates need for slings, clamping devices or chains. Lifting magnets offer the safety of a permanent lift. Strong eye bolt for lifting, quick cam action release handle for on/off.

| HOLDING VALUE & MAXIMUM SHEET LENGTH** (Due to Sag for Material Thickness for Single Magnet Use) | | | | | | |
|---|------------|-----------|-----------|-----------|-----------|----------|
| Pull (lbs.) | 3/16" (6') | 1/4" (6') | 3/8" (8') | 1/2" (8') | 3/4" (8') | 1" (10') |
| IM-60 | 400 | 400 | 400 | 400 | 400 | 400 |
| IM-62 | 600 | 900 | 1000 | 1000 | 1000 | 1000 |
| IM-327 | 800 | 1000 | 1500 | 1500 | 1500 | 1500 |
| IM-429 | 800 | 1064 | 1725 | 2000 | 2200 | 2200 |
| IM-68 | 800 | 1100 | 1800 | 2700 | 3000 | 3000 |

** Maximum sheet lengths are selected due to the sag characteristics of the specified sheet.

Note: Never stand under load being lifted. Always use extra caution. Only use lifting magnets on material that does not flex or bend. The surface of the lift, and the load being lifted, need to be clean and free of chips, oil, slag, dirt, etc. Lifting magnets must be centered on load. Not recommended for painted or finish coated surfaces. We recommend when lifting sheets over 8', to use 2 or more lifts on a spreader bar to prevent sheet flexing, sagging or peel-off.

| Item No. | Height | Width | Length | Pick-Up Working | Pack Qty. |
|----------|--------|--------|---------|-----------------|-----------|
| IM-60 | 6 1/2" | 3 1/2" | 6 1/2" | 400 | 1 |
| IM-62 | 6 1/2" | 5" | 8 1/2" | 1,000 | 1 |
| IM-327 | 6 1/2" | 7" | 10 1/2" | 1,500 | 1 |
| IM-429 | 7" | 10" | 11 1/2" | 2,200 | 1 |

Basic Lift Magnets

MAG-MATE



- Full width cam release
- Large lift lug
- Light weight design
- Durable stainless steel casing
- 2:1 design factor
- Heat resistant up to 300 degree Fahrenheit (148 degree Celsius)

Permanent lift magnet for a broad range of lifting applications. The basic lift magnet has a full width cam release and a tall lift lug for easy use with crane hooks and sling.

| Item No. | Lifting Capacity | Overall Size (W x L x H) | Magnet Size (W x L x H) | Weight (Lbs.) | Pack Qty. |
|----------|------------------|--------------------------|-------------------------|---------------|-----------|
| IM-491 | 400 | 6 1/2 x 6 1/2 x 5 | 6 x 3 3/4 x 1 1/2 | 13 | 1 |
| IM-492 | 1,000 | 6 1/2 x 9 1/2 x 5 | 6 x 6 1/2 x 1 1/2 | 18 | 1 |
| IM-493 | 1,500 | 6 1/2 x 13 3/4 x 5 | 6 x 10 1/4 x 1 1/2 | 28 | 1 |

Magnetic Parts Retriever w/Trigger Lift

MAG-MATE



Hand held lift allows strong grip of steel sheets or parts with an easy to use trigger release. Lightweight aluminum housing with permanent ceramic magnet. Heat resistant up to 300 degree Fahrenheit (148 degree Celsius).

| Item No. | Length | Width | Height | Holding Value (Lbs.) | Pack Qty. |
|----------|--------|--------|---------|----------------------|-----------|
| IM-158 | 3 3/8" | 2 1/2" | 4 1/16" | 55 | 1 |

Power Grip Burn Table Retrievers

MAG-MATE



IM-347



IM-348



IM-349

- Effective holding against shear force
- Securely grips heavy parts
- High heat epoxy encapsulated
- Aluminum insulated
- Ceramic
- Heat resistant up to 300 degree Fahrenheit (148 degree Celsius)

| Item No. | Lifting Capacity | Length | Width | Height | Number of Poles | Pack Qty. |
|----------|------------------|--------|--------|--------|-----------------|-----------|
| IM-347 | 25 | 4 1/2" | 1" | 2 1/8" | 2 | 1 |
| IM-348 | 57.5 | 4 1/2" | 1" | 2 1/8" | 3 | 1 |
| IM-349 | 92.5 | 4 1/2" | 1 1/4" | 2 1/8" | 3 | 1 |



Grip Stick Retrievers

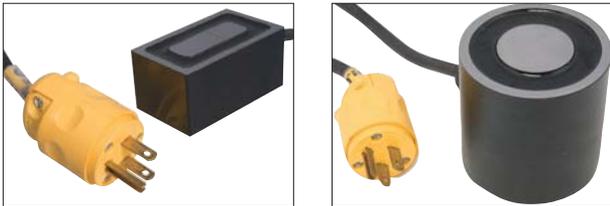


- Retrieve hot parts
- Keep hands out of press
- Reduce employee injury
- 10 degree angled handle
- Ceramic is heat resistant up to 300 degree Fahrenheit (148 degree Celsius). Rare earth is heat resistant up to 200 degree Fahrenheit (94 degree Celsius)

Pick your lift lbs. Magnet and grip are interchangeable.

| Item No. | Type | Lifting Capacity | Length (In.) | Width (In.) | Height (In.) | Pack Qty. |
|----------|------------|------------------|--------------|-------------|--------------|-----------|
| IM-489 | Ceramic | 12.5 | 14 | 1 3/8 | 7/8 | 1 |
| IM-490 | Rare Earth | 43.5 | 14 | 1 3/8 | 7/8 | 1 |

**Electromagnets
120 Vac**



Plugs into standard 120 VAC, three hole socket. No additional power source needed for operation. Magnets are encased in potting material inside a steel enclosure with tapped mounting holes. Furnished with a 36" cord and three prong plug. Three prong plug cannot be removed.

| Item No. | Dia. | Length | Width | Height | Mount Hole Size | Max. Pull Lbs. | Watts | Pack Qty. |
|--------------------|------|--------|-------|--------|-----------------|----------------|-------|-----------|
| Round | | | | | | | | |
| IM-200 | 2 | 1 1/2 | — | — | 1/4-20 | 75 | 5.2 | 1 |
| IM-204 | 3 | 3 | — | — | 3/16-18 | 185 | 29 | 1 |
| Rectangular | | | | | | | | |
| IM-206 | — | 2 1/2 | 1 1/2 | 1 1/4 | 10-32 | 70 | 14 | 1 |
| IM-208 | — | 4 1/2 | 2 1/2 | 1 1/2 | 1/4-20 | 455 | 26 | 1 |

**Rare Earth Magnets
ON/OFF Squares and Hooks**

Switchable ON/OFF rare earth magnets are extremely powerful. ON/OFF magnets easily allows debris to fall away. Can be used on flat or round steel or cast iron. Non-marring hold. Featuring magswitch technology.

MagSquares

Simple, fast work-holding on multiple sides. Eliminates the need for tedious clamping. Pre-tapped holes on all sides for mounting jigs, fixtures, forms, etc.

Magnetic Hanging Hooks

Perfect for temporary holding of lines, hoses, lights, tools and more. Quickly secure and hold to just about anything, anywhere.

| Item No. | Hold (Lbs.) | Ht. (In.) | Width (In.) | Length (In.) | Pack Qty. |
|-----------------------------------|-------------|-----------|-------------|--------------|-----------|
| On/Off-Switch Square | | | | | |
| IM-510 | 150 | 2 1/2 | 1 1/2 | 8 | 1 |
| IM-511 | 550 | 4 | 2 1/2 | 8 | 1 |
| IM-512 | 550 | 4 | 3 1/4 | 12 | 1 |
| On/Off-Switch Hanging Hook | | | | | |
| IM-513 | 25 | 4 | 1 1/2 | — | 1 |
| IM-514 | 40 | 4 | 2 3/4 | — | 1 |

Short Handle Magnets

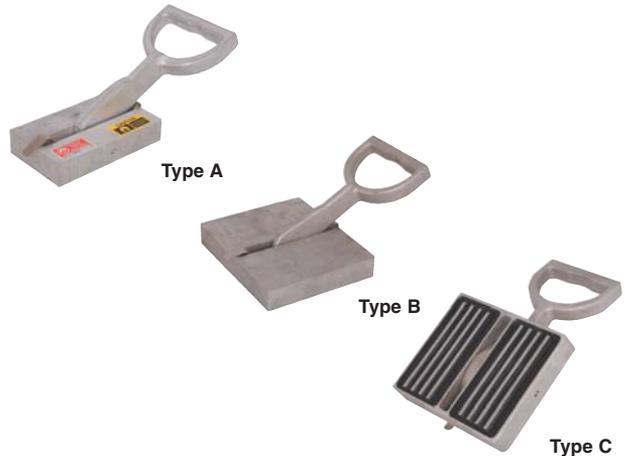


- Powerful lightweight magnet
- Durable aluminum housing
- Comfortable non-slip handle
- Easy release of collected parts or scrap

Remove steel parts from bins, boxes, kegs, tables or floors.

| Item No. | Length | Width | Height | Weight | Pick-up Lbs. | Pack Qty. |
|----------|--------|-------|--------|--------|--------------|-----------|
| IM-310 | 4 1/2 | 2 3/4 | 7 1/2 | 1.7 | 7 | 1 |
| IM-311 | 4 1/2 | 2 3/4 | 7 1/2 | 1.8 | 11 | 1 |

Magnetic Sheet Handlers



Used for handling steel sheets, plates, hot or oily parts. Handle sheets stacked horizontally or vertically. Engage handle to lift or pull part. Disengage handle to release part. Use hand or hook to lift parts.

| Item No. | Type | Width | Height | Magnet Length | Holding Value Lbs. | Pack Qty. |
|----------|------|-------|--------|---------------|--------------------|-----------|
| IM-150 | A | 3 3/4 | 1 3/4 | 6 1/2 | 50 | 1 |
| IM-152 | B | 7 1/4 | 1 3/4 | 6 1/2 | 125 | 1 |
| IM-154 | C | 7 1/4 | 1 3/4 | 6 1/2 | 200 | 1 |



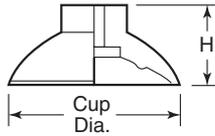
On/Off Switch Square



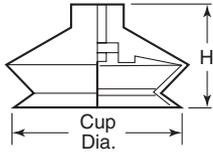
On/Off Switch Hanging Hook



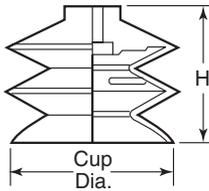
Flat Cup



1.5 Bellows



2.5 Bellows



Flat cup is excellent for holding flat, flexible materials without deformation. Bellows cup is excellent for concave and convex shapes such as balls, bottles, or pipe. Evens out variances of machinery and height of objects. Can attach to surfaces which are non-perpendicular. Flat cups are neoprene-chloroprene. Bellows cups are nitrile, which have good oil and abrasion resistance and is good for general purpose use. Use in temperatures to 275 degree Fahrenheit.

| Item No. | Fitting | Cup Material | Cup Dia. | H | Vacuum Hole | Capacity Lbs. | Pack Qty. |
|--------------------|----------|--------------|----------|------|-------------|---------------|-----------|
| Flat Cup | | | | | | | |
| VC-1002 | 10-32 M | Neoprene | .39 | .43 | .20 | .5 | 1 |
| VC-1003 | 1/8 M | Neoprene | .39 | .43 | .20 | .5 | 1 |
| VC-1009 | Cup Only | Neoprene | .60 | .43 | .20 | 1 | 1 |
| VC-1010 | 10-32 M | Neoprene | .60 | .43 | .20 | 1 | 1 |
| VC-1011 | 1/8 M | Neoprene | .60 | .43 | .20 | 1 | 1 |
| VC-1019 | 1/8 M | Neoprene | .79 | .46 | .20 | 1.8 | 1 |
| VC-1027 | 1/8 M | Neoprene | 1.00 | .49 | .15 | 3.5 | 1 |
| VC-1028 | 1/8 F | Neoprene | 1.00 | .49 | .15 | 3.5 | 1 |
| VC-1034 | 1/8 M | Neoprene | 1.42 | .78 | .31 | 7 | 1 |
| VC-1035 | 1/8 F | Neoprene | 1.42 | .78 | .31 | 7 | 1 |
| VC-1037 | 1/4 F | Neoprene | 1.42 | .78 | .31 | 7 | 1 |
| VC-1043 | Cup Only | Neoprene | 2.05 | .91 | .31 | 13 | 1 |
| VC-1044 | 1/8 M | Neoprene | 2.05 | .91 | .31 | 13 | 1 |
| VC-1047 | 1/4 F | Neoprene | 2.05 | .91 | .31 | 13 | 1 |
| 1.5 Bellows | | | | | | | |
| VC-1509 | Cup Only | Nitrile | .43 | .63 | .20 | .6 | 1 |
| VC-1510 | 10-32 M | Nitrile | .43 | .63 | .20 | .6 | 1 |
| VC-1511 | 1/8 M | Nitrile | .43 | .63 | .20 | .6 | 1 |
| VC-1517 | Cup Only | Nitrile | .57 | .75 | .20 | .8 | 1 |
| VC-1525 | Cup Only | Nitrile | .63 | .75 | .20 | 1 | 1 |
| VC-1526 | 10-32 M | Nitrile | .63 | .75 | .20 | 1 | 1 |
| VC-1535 | 1/8 M | Nitrile | .79 | .75 | .20 | 1.8 | 1 |
| VC-1549 | Cup Only | Nitrile | 1 | .85 | .20 | 3 | 1 |
| VC-1551 | 1/8 M | Nitrile | 1 | .85 | .20 | 3 | 1 |
| VC-1552 | 1/8 F | Nitrile | 1 | .85 | .20 | 3 | 1 |
| VC-1557 | Cup Only | Nitrile | 1.30 | 1.06 | .31 | 6 | 1 |
| VC-1558 | 1/8 M | Nitrile | 1.30 | 1.06 | .31 | 6 | 1 |
| VC-1559 | 1/8 F | Nitrile | 1.30 | 1.06 | .31 | 6 | 1 |
| VC-1560 | 1/4 M | Nitrile | 1.30 | 1.06 | .31 | 6 | 1 |
| VC-1568 | 1/8 M | Nitrile | 1.69 | 1.10 | .31 | 9 | 1 |
| VC-1571 | 1/4 F | Nitrile | 1.69 | 1.10 | .31 | 9 | 1 |
| VC-1577 | Cup Only | Nitrile | 2.09 | 1.34 | .31 | 13 | 1 |
| VC-1578 | 1/8 M | Nitrile | 2.09 | 1.34 | .31 | 13 | 1 |
| VC-1580 | 1/4 M | Nitrile | 2.09 | 1.34 | .31 | 13 | 1 |
| VC-1588 | 1/8 M | Nitrile | 3.07 | 1.89 | .47 | 26 | 1 |
| VC-1590 | 1/4 M | Nitrile | 3.07 | 1.89 | .47 | 26 | 1 |
| VC-1593 | 3/8 F | Nitrile | 3.07 | 1.89 | .47 | 26 | 1 |
| 2.5 Bellows | | | | | | | |
| VC-2502 | 10-32 M | Nitrile | .20 | .59 | .15 | .1 | 1 |
| VC-2517 | Cup Only | Nitrile | .35 | .59 | .20 | .3 | 1 |
| VC-2518 | 10-32 M | Nitrile | .35 | .59 | .20 | .3 | 1 |
| VC-2525 | Cup Only | Nitrile | .55 | .90 | .20 | .6 | 1 |
| VC-2526 | 10-32 M | Nitrile | .55 | .90 | .20 | .6 | 1 |
| VC-2557 | Cup Only | Nitrile | 1.26 | 1.43 | .31 | 3 | 1 |
| VC-2567 | Cup Only | Nitrile | 1.66 | 1.81 | .31 | 5 | 1 |

Hand Operated Vacuum-Lifters



Style A



Style B



Style C



Style D



Style E



Style F

Non-porous materials are easily handled with these vacuum lifters. Styles A, B and C have valve releases to break vacuum. Styles D, E and F are constructed without metal parts and have tabs on the cups to break the vacuum, except A1230-1 which has no tabs.

| Item No. | Style | Description | Max Load Cap. Lbs. | Cup Dia. | Pack Qty. |
|----------|-------|-------------------------|--------------------|----------|-----------|
| A1839 | A | Single w/Release | 15 | 3 | 1 |
| A1859 | A | Single w/Release | 25 | 4 | 1 |
| A1912 | A | Single w/Release | 35 | 5 | 1 |
| A6520 | B | Double w/7" Handle | 30 | 3 | 1 |
| A6540 | B | Double w/10" Handle | 50 | 4 | 1 |
| A6541 | B | Double w/10" Handle | 75 | 5 | 1 |
| A2260 | C | Single w/Release | 20 | 3/4 | 1 |
| A609 | D | Single | 25 | 3/4 | 1 |
| A3825 | E | Double Finger Hole | 10 | 3/4 | 1 |
| A1230 | F | 1" Dia. Finger Hole | 6 | 2 1/8 | 1 |
| A1230-1 | F | 1" Dia. Finger Hole | 6 | 2 1/8 | 1 |
| A5157 | F | 1-1/4" Dia. Finger Hole | 7 | 2 1/8 | 1 |

Extended Reach Grippers

Hand Operated - Holds Non-Porous Materials



Designed and built to speed punch press work. Keeps operator's hands safely away from dangerous areas. Meets OSHA safety regulations which require that punch press operators use a hand tool when feeding or removing work from the die, to avoid placing hands within the point of operation. These tools are manufactured of strengthened steel rods and oil resistant, flexible rubber compound vacuum cups. Positive pushbutton valve assures instant release. Textured, contoured pistol-grip for non-slip firm holding. Real time savers on the production line, ideal for handling plastic, metal, glass or any other material with a smooth non-porous surface.

| Item No. | Load Capacity Lbs. | Cup Type | Cup Dia. | Handle Lgth. | Pack Qty. |
|----------|--------------------|----------|----------|--------------|-----------|
| A6465 | 5 | Single | 2 1/8 | 15 | 1 |
| A6467 | 10 | Single | 3 1/4 | 12 | 1 |
| A6469 | 10 | Single | 3 1/4 | 18 | 1 |
| A6472 | 13 | Single | 4 | 18 | 1 |

Replacement Vacuum Cups



Type A



Type B



Type C



Type D

| Item No. | Type | Load Capacity Lbs. | Dia. | Description | Used in Models | Pack Qty. |
|----------|------|--------------------|-------|----------------|---------------------|-----------|
| A3671 | A | 5 | 2 1/8 | 3/16-18 Insert | A6465 | 1 |
| A2293 | B | 10 | 3 1/4 | 3/16-16 Insert | A2260, A6467, A6469 | 1 |
| A959 | C | 40 | 4 | 3/8-18 Stud | A6472, A6540, A1859 | 1 |
| A1867 | D | 65 | 5 | 3/8-18 Stud | A1912, A6541 | 1 |



Suction Cups



VIBRATION CONTROL

Pages
220 - 223, 245 - 248

Rubber suction cups keep equipment steady. Used for feet on desk top equipment, office machines and cabinets. Can also be used for suction for hanging signs and other stick on applications. Will adhere to any smooth surface. Made of molded rubber with durometer hardness of 50. Available in several different sizes and configurations - with hollow stem, with stud, or with insert. Color is black except A-40, A-45, A-50 and A-70 which is gray.

| Item No. | Style | Dia. | Height | Description | Pack Qty. |
|----------|-------|-------|--------|-----------------------------|-----------|
| A-10 | A | 1 | 5/16 | 8-32 x 1/4" Stud | 1 |
| A-15 | A | 1 | 7/16 | 8-32 x 3/8" Stud | 1 |
| A-30 | A | 1 1/8 | 1/2 | 8-32 x 3/8" Stud | 1 |
| A-35 | B | 1 1/2 | 5/8 | Hollow Neck w/8-32 Insert | 1 |
| A-65 | C | 1 1/2 | 5/8 | 8-32 x 3/8" Stud | 1 |
| A-75 | C | 1 3/4 | 3/4 | 8-32 x 3/8" Stud | 1 |
| A-40 | D | 3/8 | 1 1/8 | 1/4-20 x 3/8" Stud | 1 |
| A-45 | E | 3/8 | 1 1/8 | Hollow Neck w/1/4-20 Insert | 1 |
| A-50 | F | 3/8 | 1 1/8 | Hollow Neck w/1/4-20 Insert | 1 |
| A-55 | G | 3/4 | 1 1/8 | 7/16-18 x 3/8" Stud | 1 |
| A-70 | G | 3/4 | 1 1/8 | 7/16-18 x 3/8" Stud | 1 |

The following vacuum cups employ the force of atmospheric pressure to grip any smooth, nonporous surface. To attach, repeatedly pump the plunger until it no longer springs back and the red line is not visible. The red line serves as a vacuum indicator. If the red line appears while the cup is attached, pump the plunger until it is hidden again. Depending on the model, to release simply depress the valve opposite the plunger or lift the tab near the edge of the pad.

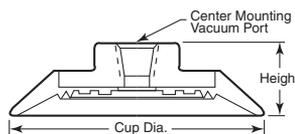
**Heavy Duty Vacuum Cups
Rigid Handle Hand Cups**



Rigid handles put a handle where you want it on awkward bulky items, such as windows, machines, files, appliances. The WV-320 is designed for gripping curved surfaces, the WV-330 is for flat surfaces. 6" pad holds up to 70 lbs. Pad protector included.

| Item No. | Description | Pack Qty. |
|----------|---------------------------------|-----------|
| WV-320 | Rigid Handle Hand Cups / Curved | 1 |
| WV-330 | Rigid Handle Hand Cups / Flat | 1 |

**Heavy Duty Suction Cups
Center Mount**



Production quality construction with universal design, suitable for most applications. Thick neoprene rubber bonded to a machined aluminum base.

| Item No. | Cup Dia. | Cup Height | Vacuum Port | Center Mounting | Capacity Lbs. | Pack Qty. |
|----------|----------|------------|-------------|-----------------|---------------|-----------|
| VC-501 | 2 1/2 | 1 1/8 | 1/4 NPT | 1/4 NPT | 37 | 1 |
| VC-503 | 4 1/2 | 1 5/8 | 3/8 NPT | 3/8 NPT | 37 | 1 |

Note: Center Suspension and Vacuum Ports

**Heavy Weight
Hand Cups**



Used for moving heavy items such as appliances, large glass doors, machines etc.

| Item No. | Handle | Pad Size | Cap. Lbs. | Pack Qty. |
|----------|--------|----------|-----------|-----------|
| WV-400 | ABS | 8 | 125 | 1 |
| WV-500 | Metal | 8 | 125 | 1 |
| WV-700* | Metal | 9 | 150 | 1 |
| WV-800** | Metal | 10 | 175 | 1 |

*Extra flexibility to handle materials that bend when lifted

**Concave pad face to handle curved surfaces. Not for use on thin, fragile materials

**Heavy Duty
Vacuum Mounts**



Mounts provide a strong, reliable temporary fastener on any relatively smooth, nonporous surface, such as vehicles, filing cabinets, desks, etc. Available in a range of styles to cover most applications and capacity requirements. Mounts attach to either flat or curved surfaces. Mounts use a 1/4-20 threaded stud except WV-240 which has a female insert to attach accessories and equipment. Use them for mounting cameras, scopes, testing equipment, lights, signs, etc. Pad protectors included with all, except WV-150.

| Item No. | Mount | Pad Size | Cap. Lbs. | Pack Qty. |
|----------|---------|----------|-----------|-----------|
| WV-150* | Metal | 3 | 15 | 1 |
| WV-240** | Plastic | 4 1/2 | 40 | 1 |
| WV-207 | Metal | 4 1/2 | 40 | 1 |
| WV-350 | Metal | 6 | 70 | 1 |

*Pad protector not included

**Insert instead of stud



Universal ball and socket mounting system allows you to mount practically anything anywhere. The unique design provides easy installation, mobility, strength, versatility, vibration protection and durability. It is the only ball and socket system that holds tremendous amounts of weight in high vibration applications for military, commercial or private use. Create your own system with a mounting ball, socket connecting components and an equipment holder or use the pre-assembled mounts (RAM-101 and RAM-111). Mounting screws not included.

Mount on bench top or any horizontal flat surface. Both top and bottom mounting plates swivel 360 degrees and can be tilted at various angles. Adjust and tighten mounting plates with the plastic hand knob.

Round Plates

RAM-101 Top and bottom mounting plates are 2⁷/₁₆" diameter each with seven 7³²/₃₂" mounting holes. Ball mount is 1¹/₂" diameter. Overall height is 7¹/₄".



| Item No. | Description | Pack Qty. |
|----------|----------------------------------|-----------|
| RAM-101 | Round Plates Pre-Assembled Mount | 1 |

Rectangular/Round Plates

RAM-111 Top mounting plate is 6¹/₄" long by 2" wide and has 24 -7³²/₃₂" mounting holes. Bottom plate is 2⁷/₁₆" diameter with seven 7³²/₃₂" mounting holes. Ball mount is 1¹/₂" diameter. Overall height is 7¹/₄".



| Item No. | Description | Pack Qty. |
|----------|---|-----------|
| RAM-111 | Rectangular/Round Plate Pre-Assembled Mount | 1 |

Choose swing arms with top mounting plates in horizontal or vertical mount styles. Horizontal mount arms attach to any flat surface. Vertical mount arms attach to a wall or any pipe or tube from 1" to 3" OD.

**Swing Arms
Horizontal Mount**

RAM-109 Mounts horizontally. Base is 3¹/₄" square with four 1/4" mounting holes. Top mounting plate is 6¹/₄" long by 2" wide and has 20⁷/₃₂" mounting holes. Swing arm and top mounting plate each rotate 360 degrees and can be tightened in any position with the plastic hand knob. Overall length is 8¹/₂" and overall height is 5".



| Item No. | Description | Pack Qty. |
|----------|----------------------------|-----------|
| RAM-109 | Horizontal Mount Swing Arm | 1 |

Vertical Mount

RAM-1092 Mounts vertically. Base is 3¹/₄" wide by 4" high and has six 1/4" mounting holes. For mounting to a pipe or a tube base, it also has four 5/8" slots for banding. (Banding is not included). Top mounting plate is 6¹/₄" long by 2" wide and has 20⁷/₃₂" mounting holes. Swing arm and top mounting plate each rotate 360 degrees and can be tightened in any position with the plastic hand knob. Overall length is 9¹/₂". Overall height is 7".



| Item No. | Description | Pack Qty. |
|----------|--------------------------|-----------|
| RAM-1092 | Vertical Mount Swing Arm | 1 |

Extension Arm

RAM-1091 This 6" swing arm extension works with both arms listed above. Arm adjusts with black plastic knob.



| Item No. | Description | Pack Qty. |
|----------|------------------------------|-----------|
| RAM-1091 | Six Inch Swing Arm Extension | 1 |

The ball of the following components is 1¹/₂" diameter. All balls are compatible with the double ball socket connector (RAM-201) in next column.

Ball with Plate



RAM-202 Mounts on a bench or any flat surface. Round mounting plate is 2⁷/₁₆" diameter and has seven 7³²/₃₂" mounting holes. Ball mount is 1¹/₂" diameter. Overall height is 2¹/₄".

| Item No. | Description | Pack Qty. |
|----------|--------------------------------|-----------|
| RAM-202 | Round Mounting Plate with Ball | 1 |

U-Bolt



RAM-231 Has a U-bolt mount which mounts to any pipe or tube from 1/2" to 1" OD. U-bolt is stainless steel. Ball mount is 1¹/₂" diameter. Overall length, with U-bolt fully extended, is 4¹/₄".

| Item No. | Description | Pack Qty. |
|----------|------------------------|-----------|
| RAM-231 | U-Bolt Mount with Ball | 1 |

Worm Drive Clamp



RAM-108 Has a stainless steel worm drive clamp mount which mounts to any pipe or tube from 1/2" to 2" OD. Ball mount is 1¹/₂" diameter.

| Item No. | Description | Pack Qty. |
|----------|----------------------------------|-----------|
| RAM-108 | Worm Drive Clamp Mount with Ball | 1 |

Double Ball Socket Connector



RAM-201 Compatible with all balls of mounts, swing arms and equipment holder listed on this page. Fits 1¹/₂" diameter balls. Overall length 5³/₄".

| Item No. | Description | Pack Qty. |
|----------|------------------------------|-----------|
| RAM-201 | Double Ball Socket Connector | 1 |



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