

## Heavy Duty® Hoist Rings (HDHR)



Heavy Duty® Hoist Rings are lifting accessories which have a forged lifting bail that pivots 180 degrees and rotates 360 degrees prior to and during loading. Heavy Duty® hoist rings are designed to interface with other lifting accessories, such as slings, hooks, and shackles, to perform safe lifting operations. Users of Heavy Duty® hoist ring manufactured by ADB Hoist Rings (ADB) shall be knowledgeable of the intended use and capabilities which each Heavy Duty® hoist ring is designed to meet. Serious injury or death may occur when Heavy Duty® hoist rings are not used for intended purposes or used incorrectly. When selecting a Heavy Duty® hoist ring, the increased force generated on the Heavy Duty® hoist ring, because of angular loaded sling angles, must be calculated and known by Heavy Duty® hoist ring users. **Angular loading only increases the force applied on the Heavy Duty® hoist ring and it is the responsibility of the user to not exceed the working load limit on the Heavy Duty® hoist ring.** Heavy Duty® hoist rings do not have reduced working load limits based on angular loading, and the marked working load limit is applicable to loads applied from 0° to 90° from the bolt axis.

No portion of the human body shall be on or near a Heavy Duty® hoist ring under tension. All personnel shall not be underneath a suspended load and shall stay a safe distance away as defined by safety personnel.

Each ADB Heavy Duty® hoist ring is supplied with a yellow safety tag attached and must be read by each user. As the tag shows, Heavy Duty® hoist rings have been proof tested to a load equal to the working load limit times the static test coefficient of 2. It is the manufacturer's intention for the warning label to stay affixed to the Heavy Duty® hoist ring during use. In the case that removal of the warning label is warranted, the label must be kept on file in the safety procedures and training records of the users of Heavy Duty® hoist rings. Acknowledgment and demonstration of applying the proper rigging practices by the user of Heavy Duty® hoist rings shall be documented prior to use.

### 1 SAFETY INSTRUCTIONS:

- Heavy Duty® hoist ring users shall have competency of ASME B30.26 and OSHA 1910.184, which should include completion of a basic rigger training course.
- Never exceed the marked working load limit. (See also installation force calculations)
- During transportation and installation, users should take note of the Heavy Duty® hoist ring weight and use proper handling equipment.
- Heavy Duty® hoist rings should be handled using the top of the bail to prevent pinching or crushing of hands.
- Users should wear gloves while handling Heavy Duty® hoist rings to protect against sharp edges, such as threads.



Figure 1 - Bushing Gap



Figure 2 - Contact Edge



Figure 3 - Spacer



Figure 4 - Oversized Hook

- Users should wear safety glasses to protect from potential ejection of material in the event of failure.
- Visually inspect the Heavy Duty® hoist ring for damage before each use. (See also inspection and maintenance)
- During installation, user should be aware of rotating components and the gap between the mating surface and bushing base of the Heavy Duty® hoist ring to prevent harm to hands.
- Apply the marked torque value prior to each installation and before each use validate torque to ensure conditions have not caused loosening.
- During preloading, ensure that each Heavy Duty® hoist ring bail has pivoted and swiveled to be in line with the sling direction to apply the proper loading direction to the Heavy Duty® hoist ring as designed.
- During preloading, ensure that load to which a Heavy Duty® hoist ring is attached is not fastened to earth.
- While under load, ensure that the load to which a Heavy Duty® hoist ring is attached does not contact any fixed obstructions.
- Apply loads gradually to avoid shock loads.
- Do not leave a gap between the bushing flange and mounting surface. (Fig. 1)
- Heavy Duty® hoist ring bail must be free to rotate and swivel, and cannot contact an edge. (Fig. 2)
- Do not use spacers between the bushing flange and the mounting surface. (Fig. 3)
- Do not use oversized hooks or attachment methods that spread the bail. (Fig. 4)
- Do not side load the bail. (Fig. 5)
- Do not attach guidelines to Heavy Duty® hoist rings.



**Figure 5 - Side Loading**



**Figure 6 - Permitted Loading Angles**

- Do not interchange Heavy Duty® hoist ring components with those from other hoist ring models or manufacturers, as ADB components are designed for use in their specific part number, and have undergone non-destructive testing for crack detection.
- Do not modify Heavy Duty® hoist rings.
- Replace fastener with only ADB manufactured and approved replacement bolt kits which have undergone non-destructive testing for crack detection.
- Do not remove the identification tag attached to Heavy Duty® hoist rings without approval and proper storage of tag.
- Do not drill any Heavy Duty® hoist ring component to attach an identification tag.
- Failure to follow these instructions could result in injury

or death and damage to property.

- In the event of a failure, all Heavy Duty® hoist rings must be unloaded so they may be safely approached and uninstalled. All missing components must be identified and stored together for any future review.
- If a Heavy Duty® hoist ring is involved with any rigging failure, it must be thoroughly inspected before it can return to service.

## **2 INTENDED USE:**

- Heavy Duty® hoist rings are intended to be used as an attachment point for rigging hardware for the means of lifting a load.
- Heavy Duty® hoist rings are intended to be used in a variety of lifting applications via attachment to a load by means of a threaded blind hole or in a thru-hole with bottom nut and washer.
- Heavy Duty® hoist rings can be loaded from 0° to 90° from the bolt axis and can swivel to align with the load. (Fig. 6)
- Heavy Duty® hoist rings can be used as lashing points when installed directly to a fixed object, and not as linkage within a lashing means.
- Heavy Duty® hoist rings are intended to be affixed to a load and positioned on the basis of the identification of the center of gravity of the load which most symmetrically allocates the load to each Heavy Duty® hoist rings uniformly. The use of larger working load Heavy Duty® hoist rings in positions to compensate for the complete weight of the load may be required. Consult a competent person with rigger training for choosing and positioning Heavy Duty® hoist rings to loads, when the center of gravity is identified.
- Heavy Duty® hoist rings are intended to compensate for pitch and sway during loading.

## **3 UNINTENDED USE:**

- The Heavy Duty® hoist ring bail shall never make contact with the load or a fixed surface during loading.
- Heavy Duty® hoist rings shall not be used as a substitute for a barrel swivel.
- Heavy Duty® hoist rings are not intended for high frequency rotation or assembled to an object which undergoes a high frequency motion or vibration.
- Heavy Duty® hoist rings are not a shackle and components shall not be welded, modified, or disassembled for installation or use.
- The Heavy Duty® hoist ring bail shall not be held mechanically or installed in a manner to prevent the free motion of pivot and swivel.
- Heavy Duty® hoist rings shall not be used or exposed to temperatures exceeding 400°F (204°C) to -20°F (-29°C).
- Heavy Duty® hoist rings shall not be exposed to acidic or caustic solutions or fumes which may induce

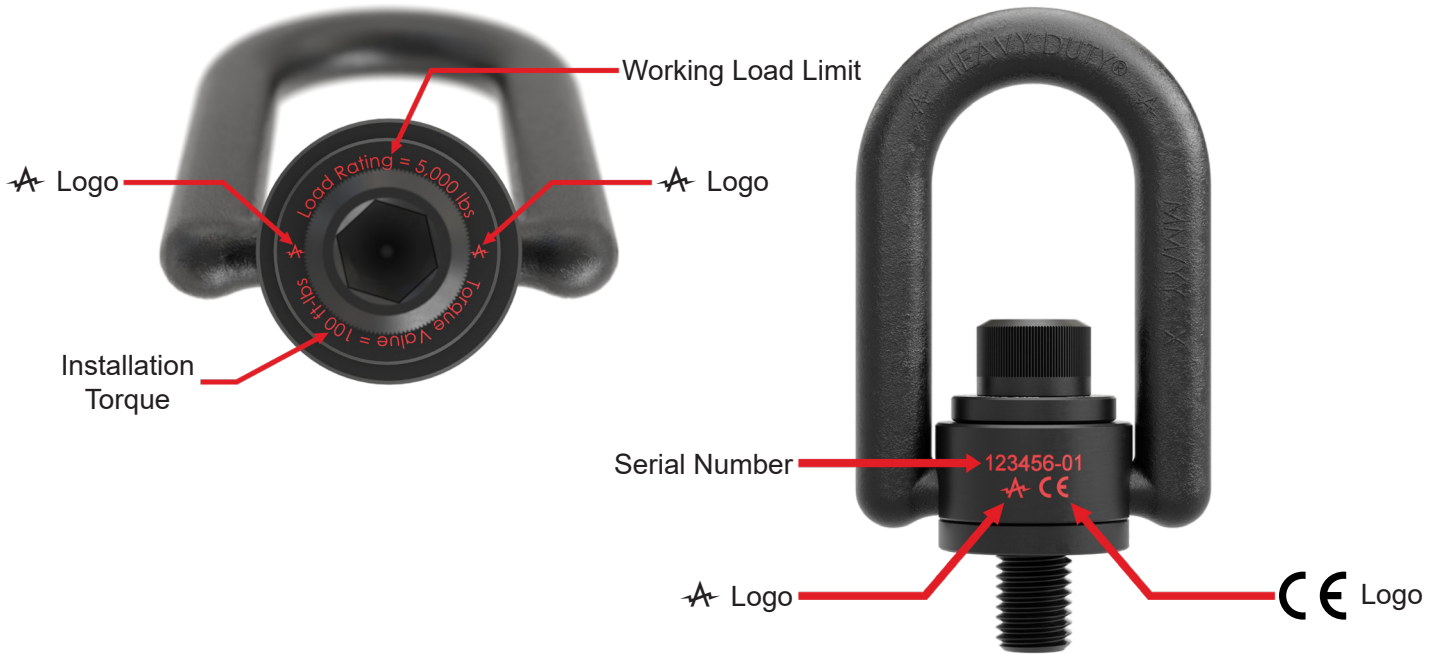


Figure 7 - Heavy Duty® Hoist Ring Markings



Figure 8 - Heavy Duty® Hoist Ring Alternate Markings

hydrogen embrittlement.

- Multiple Heavy Duty® hoist ring bails shall not be reeved with slings.
- Heavy Duty® hoist rings are not to be used to strike other objects, thrown, or handled in a manner that will cause material damage.

#### 4 INSTALLATION NOTES:

- Tap thread perpendicular to the mounting surface.
- Mounting surface should be flat to provide 360° flush seating for the Heavy Duty® hoist ring bushing base.
- It's important to pay close attention to the markings on the Heavy Duty® hoist rings to ensure that proper installation torque is applied and the working load limit is appropriate for the application. (Fig. 7 & 8)
- For installation in ferrous materials the bolt should be tightened to the full torque load (+/-10%). All torque values are based on a dry installation without the use of lubricant. If lubricant is used, contact ADB's engineering department for revised torque value.
- ADB recommends the ultimate tensile strength of the

mating material to be a minimum of 80,000 psi.

- For weaker mating material, if possible, consider using longer bolts or through-hole mounting with a nut and washer on the back side.
  - ◊ Bottom side nuts shall be SAE J995 Grade 8 or ASTM A194 Grade 2H for inch and ISO 898-2 Class 12 or ASTM A194M Grade 2H for metric.
  - ◊ Bottom washers shall be made from hardened steel.
- The applied load to each Heavy Duty® hoist ring must be calculated to ensure the load rating will not be exceeded. This formula can be used when the sling angles are the same in relation to horizontal and all loads are equally applied.

$$F = \frac{W}{N \sin \theta}$$

F = force applied to each hoist ring

W = total weight

N = number of lifting points

Θ = lifting angle in relation to horizontal

section 9.

- When using 3 or 4 leg slings, it's recommended to calculate load based on 3 legs only, as it will be very difficult to equally load all legs of the sling.
- After installation, validate that the Heavy Duty® hoist ring swivels and pivots freely in all directions.
- Heavy Duty® hoist rings subject to rotation under load must be lubricated on the internal bearing surfaces.
- Operational temperature range for Heavy Duty® hoist rings is from 400°F (204°C) to -20°F (-29°C). Consult ADB's engineering department for uses beyond these limits.
- Heavy Duty® hoist rings cannot be exposed to chemically active or acidic environments. A change in material properties, which reduce the mechanical performance of the Heavy Duty® hoist ring, can occur and can result in a failure, which can result in injury or death.

## **5 INSPECTION AND MAINTENANCE:**

- Heavy Duty® hoist rings need to be inspected visually for damage prior to use.
- Only qualified personnel should inspect and make judgment on the safe use of Heavy Duty® hoist rings.
- All new Heavy Duty® hoist rings should be inspected fully prior to first use.
- A periodic inspection schedule shall be established by a qualified person based on the frequency of use, severity of service conditions, the lifting application, and experience gained from similar applications.
- General time intervals for complete inspections:
  - ◊ Normal service – yearly
  - ◊ Severe service – monthly/quarterly
  - ◊ Special service – as recommended from a qualified person
- General guidelines for removal of Heavy Duty® hoist rings below:
  - ◊ Missing or illegible identification
  - ◊ Missing components
  - ◊ Indications of heat damage, including weld spatter or arc strikes
  - ◊ Excessive pitting or corrosion
  - ◊ Bent, twisted, distorted, stretched, elongated, cracked, or broken load-bearing components
  - ◊ Excessive nicks or gouges
  - ◊ A 10% reduction of the original or catalog dimension at any point
  - ◊ Excessive thread damage or wear
  - ◊ Evidence of unauthorized welding or modification
  - ◊ Lack of the ability to freely rotate or pivot before and after installation torque is applied
  - ◊ Other conditions, including visible damage, that cause doubt as to continued use
- Replacement bolt kits are available for all standard Heavy Duty® hoist ring part numbers.
- Assembly/disassembly instructions are detailed in

## **6 TRANSPORT AND STORAGE:**

- During transportation, users should take note of the Heavy Duty® hoist ring weight and use proper handling equipment.
- Heavy Duty® hoist rings should be handled using the top of the bail to prevent pinching or crushing of hands.
- Users should wear gloves while handling Heavy Duty® hoist rings to protect against sharp edges, such as threads.
- Appropriate precautions should be taken to prevent damage to Heavy Duty® hoist rings during transport and storage.
- Contact to threads must be prevented to ensure damage does not occur.
- Metal to metal contact should be avoided to prevent any nicks and gouges.
- If Heavy Duty® hoist ring identification tags are at risk of being lost or damaged, serial numbers should be noted and tags stored in a designated location along with safety and training records.
- Heavy Duty® hoist rings must be stored in a dry environment to prevent any corrosion.

## **7 PRODUCT VERSIONS:**

- ADB variations to the standard Heavy Duty® hoist ring product design are made to the same requirements as identified in this document and oftentimes have the following changes to standard processes not requiring additional design testing.
  - ◊ Thread projections
  - ◊ Larger thread diameters
  - ◊ Thread pitches
  - ◊ Plating
  - ◊ Non-destructive
  - ◊ Proof testing

## **8 PRODUCT TABLE NOTES:**

- The intention of the product table is to identify the capacities and other specifications required for the selection of a Heavy Duty® hoist ring.
- The table is a reference for a competent rigging person for the selection of the lifting point once all known lift variables are identified. (i.e. center of gravity, number of slings, force applied to each lifting point with sling angles considered during loading, vertical or horizontal positions of the load during loading, and environmental conditions)

## 9 ASSEMBLY INSTRUCTIONS:

These instructions are to be followed in the event that the Heavy Duty® hoist ring must be disassembled and reassembled due to maintenance, inspection, or replacement of component.

### HEAVY DUTY® HOIST RING WITH RETAINING RINGS (Fig. 9)

#### DISASSEMBLE:

1. For Heavy Duty® hoist rings containing a retaining ring (1), remove the retaining ring from the groove in the mounting screw (2).
2. Remove the bushing (3) from the body (5).
3. Remove the bail (4) from the body (5).
4. Remove the body (5) and washer (6) from the screw (2).

#### ASSEMBLE:

1. Place the washer (6) on the screw (2) with the markings facing the head of screw.
2. Place the body (5) on the screw (2) with the flat side facing the washer (6).
3. Place the bail (4) into the pockets of the body (5).
4. Slide the sleeve of the bushing (3) into the inner diameter of the body (5).
5. Install the retaining ring (1) into the groove on the screw (2) within the recess of the bushing (3).

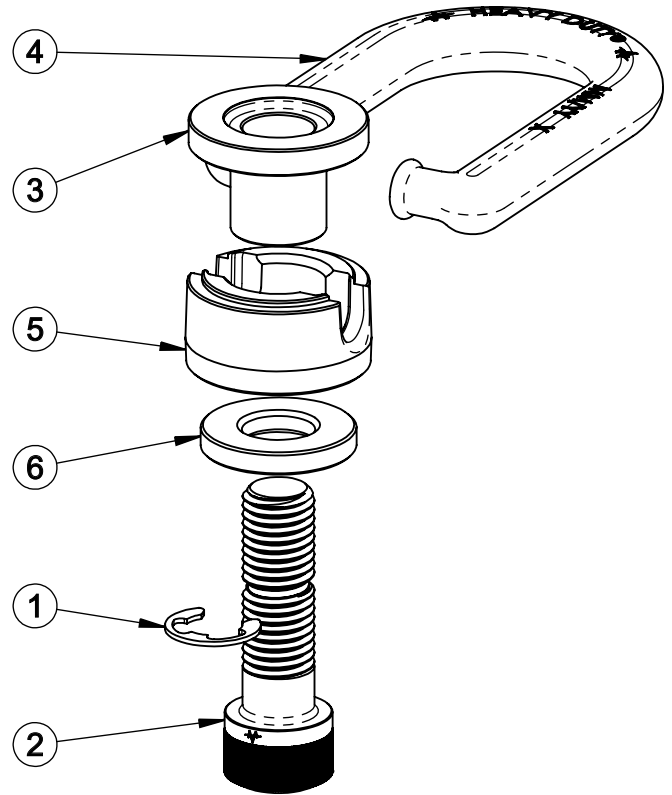


Figure 9 - Heavy Duty® Hoist Ring With Retaining Ring

### HEAVY DUTY® HOIST RING WITH STUD AND NUT ASSEMBLY (Fig. 10)

#### DISASSEMBLE:

1. For Heavy Duty® hoist rings containing a stud (7), remove the dowel pin (2) from the nut (1) by hammering from the opposite side of the knurl.
2. Unthread the nut (1) from the stud (7).
3. Remove the stud (7) from the assembly.
4. The remaining components are free to be separated.

#### ASSEMBLE:

1. Place the bushing (6) on the stud (7) with the larger flange diameter facing the mating threads.
2. Place the bail (5) into the pockets of the body (4).
3. Place the bail (5) and body (4) onto the bushing sleeve (6) with the flat side of the body facing away from the bushing.
4. Place the washer (3) on the stud (7) with the markings facing away from the body (4).
5. Thread the nut (1) on the stud (7) with the grade markings on the nut facing away from the washer (3) until the predrilled holes are fully aligned.
6. Insert the non-knurled end of the dowel pin (2) into the nut (1) and stud (7). Dowel pin must be replaced with a new one available from ADB.
7. Hammer the dowel pin (2) flush with the flats of the nut (1).

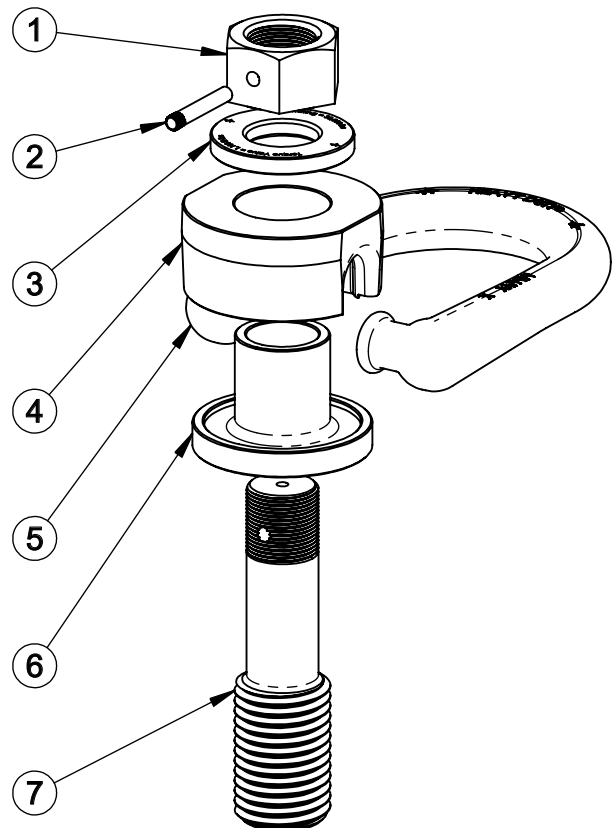
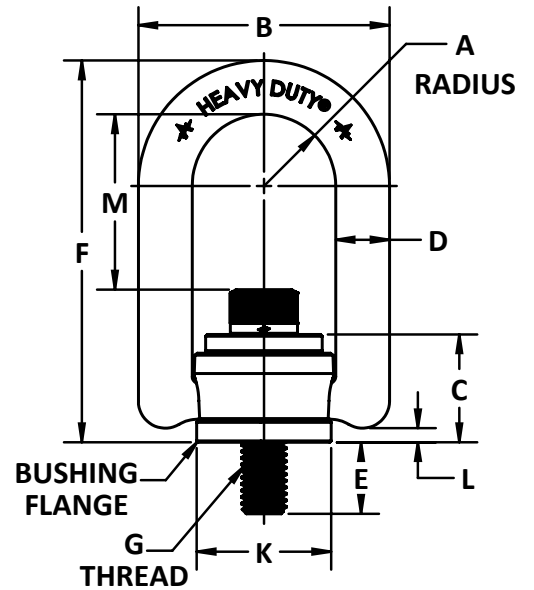


Figure 10 - Heavy Duty® Hoist Ring With Stud



Inch														
Part No.	Rated Load (lbs)	A	B	C	D	E +/- .12	F	G	K	L	M	Hex Size	Torque (ft-lbs)	Weight (lbs)
33112	550	.65	2.29	.96	.44	.56	3.23	1/4-20	1.25	.15	1.57	3/16	5	.55
33113	550	.65	2.29	.96	.44	.56	3.23	1/4-28	1.25	.15	1.57	3/16	5	.55
33212	800	.65	2.29	.96	.44	.56	3.23	5/16-18	1.25	.15	1.51	1/4	7	.52
33213	800	.65	2.29	.96	.44	.56	3.23	5/16-24	1.25	.15	1.51	1/4	7	.52
33214	800	.65	2.29	.96	.44	1.06	3.23	5/16-18	1.25	.15	1.51	1/4	7	.54
33312	1,000	.65	2.29	.96	.44	.56	3.23	3/8-16	1.25	.15	1.45	5/16	12	.56
33313	1,000	.65	2.29	.96	.44	.56	3.23	3/8-24	1.25	.15	1.45	5/16	12	.56
33314	1,000	.65	2.29	.96	.44	1.06	3.23	3/8-16	1.25	.15	1.45	5/16	12	.58
33316	2,250	.65	2.29	.96	.44	1.06	3.23	1/2-13	1.25	.15	1.45	3/8	26	.60
33317	2,250	.65	2.29	.96	.44	1.06	3.23	1/2-20	1.25	.15	1.45	3/8	26	.60
33512	2,500	1.00	3.50	1.50	.75	.75	5.31	1/2-13	1.89	.17	2.56	3/8	28	1.71
*33513	2,500	1.00	3.50	1.50	.75	.75	6.87	1/2-13	1.89	.17	4.12	3/8	28	2.04
33515	2,500	1.00	3.50	1.50	.75	1.00	5.31	1/2-13	1.89	.17	2.56	3/8	28	1.72
*33505	2,500	1.00	3.50	1.50	.75	1.00	6.87	1/2-13	1.89	.17	4.12	3/8	28	2.05
33516	2,500	1.00	3.50	1.50	.75	1.25	5.31	1/2-13	1.89	.17	2.56	3/8	28	1.82
*33517	2,500	1.00	3.50	1.50	.75	1.25	6.87	1/2-13	1.89	.17	4.12	3/8	28	2.15
33612	4,000	1.00	3.50	1.50	.75	.75	5.31	5/8-11	1.89	.17	2.44	1/2	60	1.76
*33613	4,000	1.00	3.50	1.50	.75	.75	6.87	5/8-11	1.89	.17	4.00	1/2	60	2.09
33614	4,000	1.00	3.50	1.50	.75	1.00	5.31	5/8-11	1.89	.17	2.44	1/2	60	1.78
*33604	4,000	1.00	3.50	1.50	.75	1.00	6.87	5/8-11	1.89	.17	4.00	1/2	60	2.11
33615	4,000	1.00	3.50	1.50	.75	1.25	5.31	5/8-11	1.89	.17	2.44	1/2	60	1.88
*33616	4,000	1.00	3.50	1.50	.75	1.25	6.87	5/8-11	1.89	.17	4.00	1/2	60	2.21
33714	5,000	1.00	3.50	1.50	.75	1.00	5.31	3/4-10	1.89	.17	2.31	5/8	100	1.89
*33715	5,000	1.00	3.50	1.50	.75	1.00	6.87	3/4-10	1.89	.17	3.87	5/8	100	2.22
33716	5,000	1.00	3.50	1.50	.75	1.50	5.31	3/4-10	1.89	.17	2.31	5/8	100	2.02
*33717	5,000	1.00	3.50	1.50	.75	1.50	6.87	3/4-10	1.89	.17	3.87	5/8	100	2.35
33110	6,300	1.50	5.10	2.05	1.00	1.20	7.37	3/4-10	2.81	.18	3.57	5/8	100	7.23
33108	7,000 <sup>A</sup>	1.50	5.10	2.05	1.00	.95	7.37	3/4-10	2.81	.18	3.57	5/8	100	7.20
*33168	7,000 <sup>A</sup>	1.50	5.10	2.05	1.00	.95	9.00	3/4-10	2.81	.18	5.20	5/8	100	7.93
33102	7,000 <sup>A</sup>	1.50	5.10	2.05	1.00	1.20	7.37	3/4-10	2.81	.18	3.57	5/8	100	7.23
*33162	7,000 <sup>A</sup>	1.50	5.10	2.05	1.00	1.20	9.00	3/4-10	2.81	.18	5.20	5/8	100	7.96
33103	7,000 <sup>A</sup>	1.50	5.10	2.05	1.00	1.45	7.37	3/4-10	2.81	.18	3.57	5/8	100	7.25

Inch														
Part No.	Rated Load (lbs)	A	B	C	D	E +/- .12	F	G	K	L	M	Hex Size	Torque (ft-lbs)	Weight (lbs)
•33163	7,000 <sup>^</sup>	1.50	5.10	2.05	1.00	1.45	9.00	3/4-10	2.81	.18	5.20	5/8	100	7.98
33104	8,000	1.50	5.10	2.05	1.00	.95	7.37	7/8-9	2.81	.18	3.32	3/4	160	7.33
•33164	8,000	1.50	5.10	2.05	1.00	.95	9.00	7/8-9	2.81	.18	4.95	3/4	160	8.06
33101	8,000	1.50	5.10	2.05	1.00	1.20	7.37	7/8-9	2.81	.18	3.32	3/4	160	7.33
•33161	8,000	1.50	5.10	2.05	1.00	1.20	9.00	7/8-9	2.81	.18	4.82	3/4	160	8.06
33109	8,000	1.50	5.10	2.05	1.00	1.45	7.37	7/8-9	2.81	.18	3.32	3/4	160	7.33
•33169	8,000	1.50	5.10	2.05	1.00	1.45	9.00	7/8-9	2.81	.18	4.82	3/4	160	8.06
33105	10,000	1.50	5.10	2.05	1.00	1.45	7.37	1"-8	2.81	.18	3.20	3/4	230	7.57
•33165	10,000	1.50	5.10	2.05	1.00	1.45	9.00	1"-8	2.81	.18	4.82	3/4	230	8.30
33106	10,000	1.50	5.10	2.05	1.00	1.20	7.37	1"-8	2.81	.18	3.20	3/4	230	7.63
•33166	10,000	1.50	5.10	2.05	1.00	1.20	9.00	1"-8	2.81	.18	4.82	3/4	230	8.36
33107	10,000	1.50	5.10	2.05	1.00	2.20	7.37	1"-8	2.81	.18	3.20	3/4	230	7.81
•33167	10,000	1.50	5.10	2.05	1.00	2.20	9.00	1"-8	2.81	.18	4.82	3/4	230	8.54
33402	15,000	2.00	6.75	2.89	1.25	1.88	9.22	1 1/4"-7	3.75	.40	3.76	7/8	470	15.7
33401	15,000	2.00	6.75	2.89	1.25	2.63	9.22	1 1/4"-7	3.75	.40	3.76	7/8	470	16.0
33420	20,000	2.00	6.75	2.89	1.25	2.63	9.22	1 3/8"-6	3.75	.40	3.64	1	670	17.2
33424	24,000	2.00	6.75	2.89	1.25	2.63	9.22	1 1/2"-6	3.75	.40	3.51	1	800	18.1
†33436	24,000	2.00	6.75	2.89	1.25	2.63	9.22	1 3/4"-5	3.75	.40	3.51	2 1/4	800	20.2
†33438	24,000	2.00	6.75	2.89	1.25	2.63	9.22	1 3/4"-8	3.75	.40	3.51	2 1/4	800	20.2
†33427	30,000	2.00	6.75	2.89	1.25	2.96	9.22	2"-4 1/2	3.75	.40	3.51	2 1/4	1,100	22.9
†33432	30,000	2.00	6.75	2.89	1.25	2.96	9.22	2"-8	3.75	.40	3.51	2 1/4	1,100	22.9

NOTE: Hex size for stud and nut part numbers refers to the external hex size of the nut. All other part numbers refer the internal hex size of the socket.

• Long Bar Models

† Supplied with stud and nut

<sup>^</sup> The 7,000 lb. WLL when loaded at 90 degrees to the bolt axis, is established with a 4.5 design factor

Metric														
Part No.	Rated Load (kg)	A	B	C	D	E +/- 3.0	F	G	K	L	M	Hex Size	Torque (Nm)	Weight (kg)
34212	400	16.5	58.2	24.4	11.1	16	82.0	M8x1.25	31.8	4.0	38.5	6	9	.24
34214	400	16.5	58.2	24.4	11.1	21	82.0	M8x1.25	31.8	4.0	38.5	6	9	.25
34312	450	16.5	58.2	24.4	11.1	16	82.0	M10x1.5	31.8	4.0	36.5	8	16	.25
34314	450	16.5	58.2	24.4	11.1	26	82.0	M10x1.5	31.8	4.0	36.5	8	16	.26
34515	1,050	25.4	88.9	38.1	19.1	25	134.9	M12x1.75	48.0	4.4	65.0	10	37	.78
•34505	1,050	25.4	88.9	38.1	19.1	25	174.6	M12x1.75	48.0	4.4	104.7	10	37	.93
34516	1,050	25.4	88.9	38.1	19.1	32	134.9	M12x1.75	48.0	4.4	65.0	10	37	.83
•34517	1,050	25.4	88.9	38.1	19.1	32	174.6	M12x1.75	48.0	4.4	101.7	10	37	.98
34518	1,500	25.4	88.9	38.1	19.1	25	135.2	M14x2.0	48.0	4.4	65.3	12	45	.79
•34519	1,500	25.4	88.9	38.1	19.1	25	174.9	M14x2.0	48.0	4.4	105.0	12	45	.95
34520	1,500	25.4	88.9	38.1	19.1	32	135.2	M14x2.0	48.0	4.4	65.3	12	45	.84
•34521	1,500	25.4	88.9	38.1	19.1	32	174.9	M14x2.0	48.0	4.4	105.0	12	45	.98
34614	1,900	25.4	88.9	38.1	19.1	25	134.9	M16x2.0	48.0	4.4	62.0	14	80	.81
•34604	1,900	25.4	88.9	38.1	19.1	25	174.6	M16x2.0	48.0	4.4	101.7	14	80	.96
34615	1,900	25.4	88.9	38.1	19.1	32	134.9	M16x2.0	48.0	4.4	62.0	14	80	.85
•34616	1,900	25.4	88.9	38.1	19.1	32	174.6	M16x2.0	48.0	4.4	101.7	14	80	1.00
34714	2,200	25.4	88.9	38.1	19.1	25	134.6	M20x2.5	48.0	4.4	58.7	17	135	.86
•34715	2,200	25.4	88.9	38.1	19.1	25	174.6	M20x2.5	48.0	4.4	98.4	17	135	1.01
34716	2,200	25.4	88.9	38.1	19.1	38	134.6	M20x2.5	48.0	4.4	58.7	17	135	.92
•34717	2,200	25.4	88.9	38.1	19.1	38	174.6	M20x2.5	48.0	4.4	98.4	17	135	1.07

Metric														
Part No.	Rated Load (kg)	A	B	C	D	E +/- 3.0	F	G	K	L	M	Hex Size	Torque (Nm)	Weight (kg)
34101	3,000	35.6	129.5	52.1	25.4	28	187.2	M20x2.5	71.4	4.6	89.7	17	135	3.14
•34161	3,000	35.6	129.5	52.1	25.4	28	228.6	M20x2.5	71.4	4.6	131.1	17	135	3.47
34102	4,200	35.6	129.5	52.1	25.4	28	187.2	M24x3.0	71.4	4.6	85.7	19	310	3.29
•34162	4,200	35.6	129.5	52.1	25.4	28	228.6	M24x3.0	71.4	4.6	127.1	19	310	3.62
34103	4,200	35.6	129.5	52.1	25.4	38	187.2	M24x3.0	71.4	4.6	85.7	19	310	3.30
•34163	4,200	35.6	129.5	52.1	25.4	38	228.6	M24x3.0	71.4	4.6	127.1	19	310	3.63
34105	4,500	35.6	129.5	52.1	25.4	38	187.2	M30x3.5	71.4	4.6	79.7	22	310	3.44
•34165	4,500	35.6	129.5	52.1	25.4	38	228.6	M30x3.5	71.4	4.6	121.1	22	310	3.55
34107	4,500	35.6	129.5	52.1	25.4	48	187.2	M30x3.5	71.4	4.6	79.7	22	310	3.55
•33167	4,500	35.6	129.5	52.1	25.4	48	228.6	M30x3.5	71.4	4.6	121.1	22	310	3.88
34401	7,000	50.8	171.5	72.9	31.8	67	234.2	M30x3.5	98.5	8.2	95.0	22	635	7.26
34402	11,000	50.8	171.5	72.9	31.8	67	234.2	M36x4.0	98.5	8.2	88.6	27	1,085	8.21
†34403	12,500	50.8	171.5	72.9	31.8	80	234.2	M42x4.5	98.5	8.2	88.6	2 1/4"	1,085	10.14
†34404	13,500	50.8	171.5	72.9	31.8	80	234.2	M48x5.0	98.5	8.2	88.6	2 1/4"	1,085	10.59
†34406	13,500	50.8	171.5	72.9	31.8	88	234.2	M56x5.5	98.5	8.2	88.6	2 1/4"	1,085	11.03

NOTE: Hex size for stud and nut part numbers refers to the external hex size of the nut. All other part numbers refer the internal hex size of the socket.

• Long Bar Models

† Supplied with stud and nut