

# ANCHOR TOOLS

## Warranty - Material

Hubbell Power Systems, Inc. warrants all products sold by it to be merchantable (as such term is defined in the Uniform Commercial Code) and to be free from defects in material and workmanship. Buyer must notify the Company promptly of any claim under this warranty. The Buyer's exclusive remedy for breach of this warranty shall be the repair or replacement, F.O.B. factory, at the Company's option, of any product defective under the warranty which is returned to the Company within one year from the date of shipment. NO OTHER WARRANTY, WHETHER EXPRESS OR ARISING BY OPERATION OF LAW, COURSE OF DEALING, USAGE OF TRADE OR OTHERWISE IMPLIED, SHALL EXIST IN CONNECTION WITH THE COMPANY'S PRODUCTS OR ANY SALE OR USE THEREOF. The Company shall in no event be liable for any loss of profits or any consequential or special damages incurred by Buyer. The Company's warranty shall run only to the first Buyer of a product from the Company, from the Company's distributor, or from an original equipment manufacturer reselling the Company's product, and is non-assignable and non-transferable and shall be of no force and effect if asserted by any person other than such first Buyer. This warranty applies only to the use of the product as intended by Seller and does not cover any misapplication or misuse of said product.

## Warranty - Application

Hubbell Power Systems, Inc. does not warrant the accuracy of and results from product or system performance recommendations resulting from any engineering analysis or study. This applies regardless of whether a charge is made for the recommendation, or if it is provided free of charge.

Responsibility for selection of the proper product or application rests solely with the purchaser. In the event of errors or inaccuracies determined to be caused by Hubbell Power Systems, Inc., its liability will be limited to the re-performance of any such analysis or study.



**NOTICE:** For latest revision of our Catalog and Literature, please visit our web site: [www.hubbellpowersystems.com](http://www.hubbellpowersystems.com)

NOTE: Because Hubbell has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.

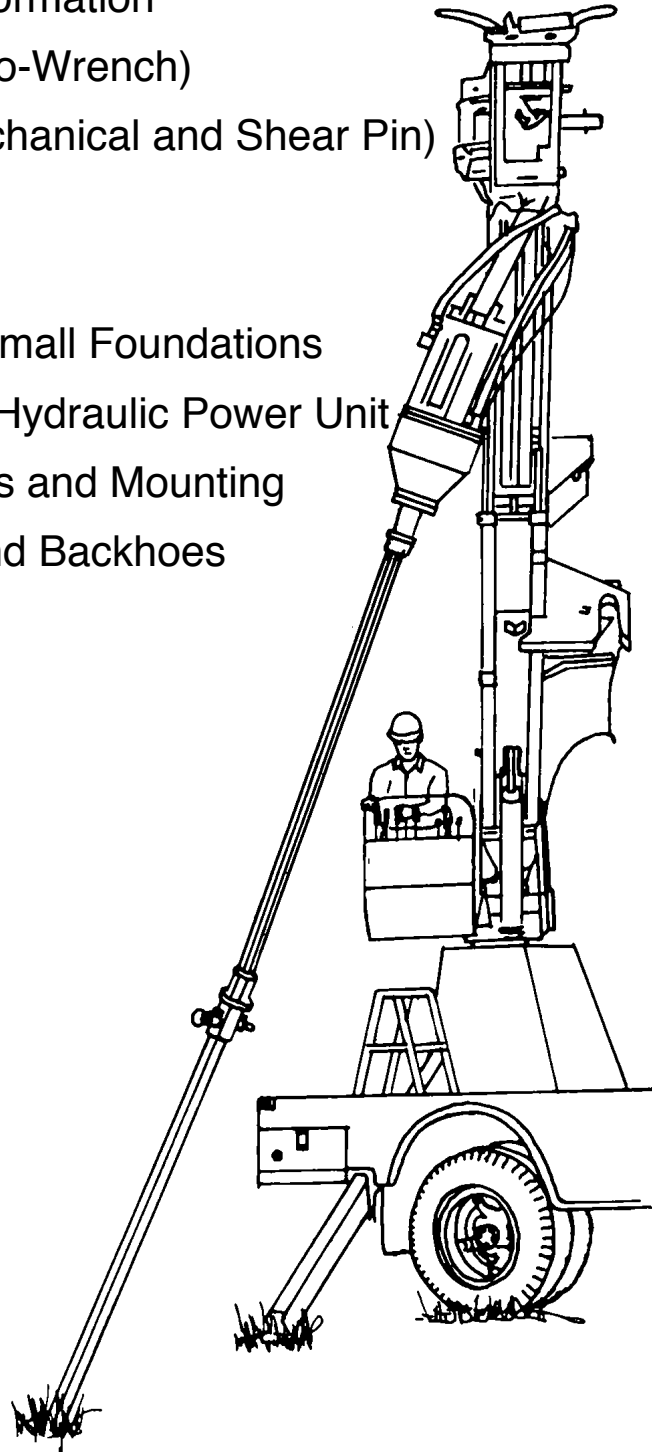
©Copyright 2011 Hubbell Incorporated • 210 North Allen Street • Centralia, MO 65240 USA

[www.hubbellpowersystems.com](http://www.hubbellpowersystems.com)

E-mail: [hpsliterature@hubbell.com](mailto:hpsliterature@hubbell.com)

# TABLE OF CONTENTS

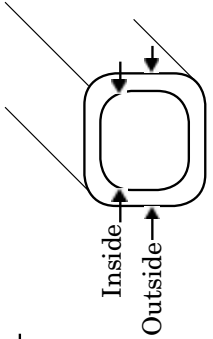
Page	Subject
4A-3	How to match Chance PISA <sup>®</sup> Anchors with Installing Wrenches
4A-4	PISA <sup>®</sup> Drive Tools (10,000 ft.-lb. System)
4A-5	Building a Drive Tool String (PISA <sup>®</sup> RR and SS Anchors)
4A-6	TOUGH ONE <sup>®</sup> Drive Tools (15,000 ft.-lb. System)
4A-7	Bent Arm Pin and Coil Lock Information
4A-8	Adapters (Reducers, SS and No-Wrench)
4A-9	Chance Torque Indicators (Mechanical and Shear Pin)
4A-10	Soil Test Probe Assemblies
4A-11	Expanding Bar and Pulling Eye
4A-12	Portable Anchor Installers for Small Foundations
4A-13	Portable Anchor Installers and Hydraulic Power Unit
4A-14	Anchor/Foundation Drive Heads and Mounting
4A-15	Components for Skid-Steers and Backhoes



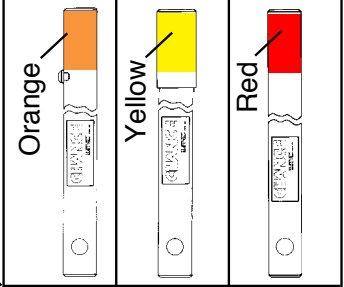


# How to Match CHANCE® Anchors and Installing Wrenches

Anchor Type	Anchor Illustration	Catalog Number	Length (ft.)	Maximum Installing Torque Rating (ft-lbs)		Inside Dim. (Inches)	Outside Dim. (Inches)
				Orange	Yellow		
PISA® 6 Anchor (formerly PISA® 5 Anchor)		*C102-1583	7'	10,000	2,16	1.46	1.46
PISA® 7 Anchor		*C102-1595	3 1/2'	10,000	2,16	1.46	1.46
Standard-Strength PISA® Anchor		*C303-1064	7'	10,000	2,44	1.54	1.54
Mid-Strength PISA® Anchor		*C303-1063	3 1/2'	10,000	2,44	1.54	1.54
Tough ONE® PISA® Anchor		**C303-0983	7'	15,000	2,44	1.54	1.54
Tough ONE® Series - Small Hub		**C303-0982	3 1/2'	15,000	2,44	1.54	1.54
Tough ONE® Series - Large Hub							
C102-52XX Series - Small Hub							
C102-52XX Series - Large Hub							
C102-50XX Series - Small Hub							
C102-50XX Series - Large Hub							
Tough ONE® Series - Small Hub							
Tough ONE® Series - Large Hub							



Inside and outside dimensions correspond to the color coded end of installing wrench.



**Maximum Installation Torque Rating (ft-lbs)**  
 \*Fits Locking Dog Assembly CC303-0069HD  
 \*\* Fits Locking Dog Assembly CC303-0981

NOTE: Hubbell has a policy of continuous product improvement. We reserve the right to change design and specifications without notice.

**Bulletin 04-9114AT**  
RGS Rev 8/11



©2006&2011 Hubbell, Incorporated • 210 N. Allen St. • Centralia, MO 65240  
 Printed in USA

**STANDARD and HYBRID PISA<sup>®</sup> Anchor Installing Tools**

(For installing torques up to 10,000 ft.-lb.)

A complete tool system consists of: Kelly bar adapter, torque indicator, locking dog assembly and drive-end assembly. For instructions for selecting the proper Kelly bar adapter, see page 4A-5.

**• Convertible to Extension Use**

Extension assemblies can be added where soil conditions

dictate that anchors be set more than one rod length deep or where digger to ground clearances are limited.

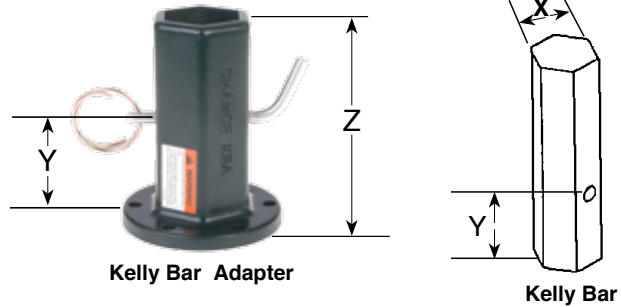
**• Transmits Torque to Anchor Core**

The wrench transmits the torque from the Kelly bar of the digger to the hub of the Power-Installed Screw Anchor so that the anchor rod need be only large enough in diameter to support the guy load.

**STANDARD Kelly Bar Adapter with Bent Arm Pin**  
(5 1/4" Bolt Circle)

Part No.	Kelly Bar Shape	Kelly Bar Dimension			Wt. ea., lb.
		X	Y	Z	
630013	Hex	2"	5"	6 1/8"	10
630011HD	Hex	2 1/2"	4 1/4"	8 1/8"	18
630012HD	Hex	2 5/8"	4 1/4"	8 1/8"	18
630014	Square	2 1/4"	5 7/8"	7"	13 1/4
630015	Square	2 1/2"	2 3/4"	7"	13 1/4
630016	Square	2 1/4"	2 1/4"	3 1/2"	10
630017	Square	2 1/2"	2 1/2"	3 1/2"	9

Each STANDARD Kelly bar adapter has six holes for 1/2" bolts on a 5 1/4" bolt circle and comes with six 1/2" Grade 5 bolts, nuts, lock washers and bent arm pin with coil lock.



P0010259P	Hex Bolt
055371P	Lockwasher
055635P	Hex Nut

**STANDARD Locking Dog Assembly**

Cat. No.	Description	Wt. ea.
C3030069HD	Complete STANDARD Locking Dog Assembly	20 lb.
C3030070	Locking Dog Replacement Kit includes parts needed to replace both locking dogs	4 lb.
P1300007P	Replacement Ring Only	0.10 lb.

STANDARD Locking Dog Assembly has six holes for 1/2" bolts on a 5 1/4" bolt circle, comes with six 1/2" Grade 5 bolts, nuts and lock washers.

**STANDARD Locking Dog Assembly**  
C3030069HD



**7-ft. Drive-End Wrench**

C1021583	STANDARD Drive-End Wrench installs 8,000 ft.-lb. (small hub) TOUGH ONE <sup>®</sup> anchors, 10,000 ft.-lb. (small hub) TOUGH ONE <sup>®</sup> anchors, 4,000 ft.-lb. Standard-Strength PISA anchors, 6,000 ft.-lb. Mid-Strength PISA anchors	57 lb.
*C3031064	HYBRID Drive-End Wrench installs 10,000 ft.-lb. (large hub) TOUGH ONE <sup>®</sup> anchors, 6,000 ft.-lb. PISA 6 anchors, 7,000 ft.-lb. PISA 7 anchors	64 lb.

**3 1/2-ft. Drive-End Wrench**

C1021595	STANDARD Drive-End Wrench installs 8,000 ft.-lb. (small hub) TOUGH ONE <sup>®</sup> anchors, 10,000 ft.-lb. (small hub) TOUGH ONE <sup>®</sup> anchors, 4,000 ft.-lb. Standard-Strength PISA anchors, 6,000 ft.-lb. Mid-Strength PISA anchors	29 lb.
*C3031063	HYBRID Drive-End Wrench installs 10,000 ft.-lb. (large hub) TOUGH ONE <sup>®</sup> anchors, 6,000 ft.-lb. PISA 6 anchors, 7,000 ft.-lb. PISA 7 anchors	28 lb.

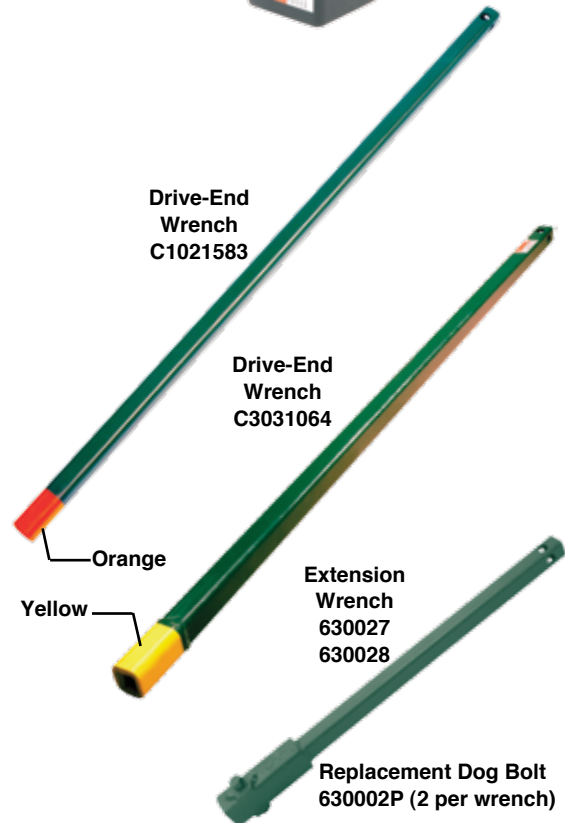
**Extension Wrench**

for above STANDARD and HYBRID Drive-End Wrenches

630027	3 1/2-ft. Extension	42 lb.
630028	7-ft. Extension	70 lb.

\*NOTE: These wrenches will fit 15,000 ft.-lb. TOUGH ONE<sup>®</sup> anchors dimensionally, but . . . MUST NOT be used for TORQUES IN EXCESS of 10,000 ft.-lb.!

\*NOTE: The old-style HYBRID wrenches C3031063 and C3031064, having a collar welded around the drive end, fit only PISA 6 and PISA 7 anchors.



## SCREW ANCHOR DRIVE TOOL STRINGS

Selecting the correct Kelly Bar Adapter is key to building a successful Drive String.  
Follow these two easy steps:

- 1) Remove the auger from the digger and carefully measure the X and Y dimensions of the Kelly bar.
- 2) Match the shape of the Kelly bar and the X and Y dimensions with the Kelly bar adapter chart provided on page 4A-4 or 4A-6. The Y dimension on the Kelly bar adapter must be equal to or greater than the "Y" dimension on the Kelly bar itself.

### A Note about Bolt Circles

Chance anchor installing tools are provided with appropriate bolt circles for the expected service. The torque limitations for the three standard bolt circles are give below. **Never exceed the rated torque of any Chance installing tool.**

Bolt Circle	Use for Torque up to
(6) 1/2" Grade 5 bolts on 5 1/4" Bolt Circle	10,000 ft.-lb.
(6) 5/8" Grade 2 bolts on 7 5/8" Bolt Circle	15,000 ft.-lb.
(12) 5/8" Grade 2 bolts on 7 5/8" Bolt Circle	20,000 ft.-lb.

**Drive Strings  
for  
PISA® Anchor,  
SS Anchor  
or  
RR Anchor  
Installations:**

Locking Dog Assembly  
(can bolt directly to  
Kelly Bar Adapter)

PISA®  
Drive Wrench

Rod

PISA® Anchor

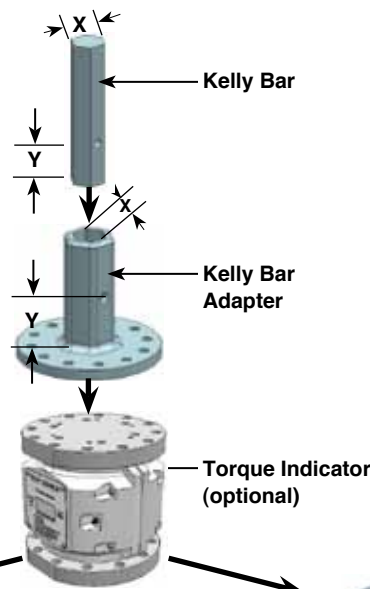
SS5,  
SS150,  
RR  
Drive Wrench

Anchor

**Drive String  
for  
SS Anchor  
or  
RR Anchor  
Installations:**

Drive Tool  
(can bolt directly to  
Kelly Bar Adapter)

Anchor



# TOUGH ONE® Anchor Installing Tools (For installing torques up to 15,000 ft.-lb.)

A complete tool system consists of: Kelly bar adapter, torque indicator, locking dog assembly and drive-end assembly. For instructions for selecting the proper Kelly bar adapter, see page 4A-5.

### TOUGH ONE Kelly Bar Adapter with Bent Arm Pin (7<sup>5</sup>/<sub>8</sub>" Bolt Circle)

Part No.	Kelly Bar Shape	Kelly Bar Dimensions			Weight, lb.	<sup>5</sup> / <sub>8</sub> " Gr. 2 Bolts Included	Bent Arm Pin Included
		X	Y	Z			
C3030936	Hex	2 <sup>1</sup> / <sub>2</sub> "	3 <sup>7</sup> / <sub>8</sub> "	8 <sup>1</sup> / <sub>4</sub> "	23	12	C3031223
C3030937	Hex	2 <sup>5</sup> / <sub>8</sub> "	3 <sup>7</sup> / <sub>8</sub> "	8 <sup>1</sup> / <sub>4</sub> "	23	12	C3031223
C3030940	Hex	3"	4 <sup>1</sup> / <sub>2</sub> "	8"	27	12	C3031222
C3030955	Square	2 <sup>1</sup> / <sub>2</sub> "	4 <sup>3</sup> / <sub>4</sub> "	7"	22	12	C3031227
C3030958	Square	3"	3 <sup>1</sup> / <sub>2</sub> " & 4 <sup>15</sup> / <sub>16</sub> "	7"	23	12	C3031227
C3031571	Square	3 <sup>1</sup> / <sub>2</sub> "	2' & 4"	6 <sup>11</sup> / <sub>16</sub> "	33	12	C3031227

Each TOUGH ONE® Kelly bar adapters has twelve holes for <sup>5</sup>/<sub>8</sub>" bolts on a 7<sup>5</sup>/<sub>8</sub>" bolt circle, comes with twelve <sup>5</sup>/<sub>8</sub>" Grade 2 bolts, nuts & lockwashers and bent arm pin with coil lock.

### \*Digital Torque Indicator

Catalog No.	Description	Wt., lb.
C3031578	Torque Indicator adaptable to 5 <sup>1</sup> / <sub>4</sub> " B.C. or 7 <sup>5</sup> / <sub>8</sub> " B.C.	65

\*See page 4A-9 for additional information on Chance Torque Indicators.

### TOUGH ONE Locking Dog Assembly

Catalog No.	Description	Wt., lb.
C3030981	Complete TOUGH ONE Locking Dog Assembly	28
C3031026	Locking Dog Replacement Kit Includes all parts less casting, bolts, nuts, washers	5

TOUGH ONE locking dog assembly has twelve holes for <sup>5</sup>/<sub>8</sub>" bolts on a 7<sup>5</sup>/<sub>8</sub>" bolt circle and comes with twelve <sup>5</sup>/<sub>8</sub>" Grade 2 bolts, nuts and lockwashers.

Hex Bolt	056653P
Lockwasher	055827P
Hex Nut	055803P

### TOUGH ONE Drive-End Wrenches

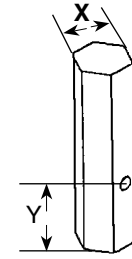
Catalog No.	Length	Description	Wt., lb.
C3030982	3 <sup>1</sup> / <sub>2</sub> ft.	Installs 15,000 ft.-lb. (large hub) TOUGH ONE® Anchors, 10,000 ft.-lb. (large hub) TOUGH ONE® and all 1 <sup>1</sup> / <sub>2</sub> " Core Anchors	36
C3030983	7 ft.		73

TOUGH ONE® drive ends are painted with a red band on the bottom.

### Extension Assemblies for TOUGH ONE Drive-End Wrench

Catalog No.	Length	Description	Wt., lb.
C3030987	3 <sup>1</sup> / <sub>2</sub> ft.	Extension attaches to drive-end wrench	53
C3030988	7 ft.	when additional depth is required.	89

For SS and RR Anchor Tool options when using the TOUGH ONE® Drive String System, see page 4A-8.



Kelly Bar

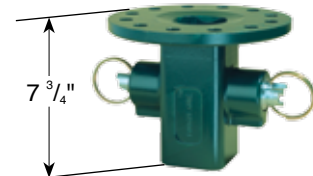


Kelly Bar Adapter

Hex Bolt	056653P
Lockwasher	055827P
Hex Nut	450314P



\*Torque Indicator



Locking Dog Assembly



Drive Wrench

Red →



# ANCHOR INSTALLING TOOL BENT ARM PIN WITH COIL LOCK

Use with STANDARD and TOUGH ONE<sup>®</sup> Kelly bar adapters, SS, RR and bumper post installing tools

Each Chance plated-steel Bent Arm pin is designed to attach a Kelly bar adapter to a Kelly bar. Also used to secure SS, RR and bumper post anchors to anchor drive tools.

Bent Arm Pins with Coil Locks are included with new tools as required. Order Pins and Coil Locks for existing tools as shown below.

### ORDERING INFORMATION

Kelly Bar Adapter	Bent Arm Pin and Coil Lock Assembly	SS/RR Tools	Bent Arm Pin and Coil Lock Assembly
*630010	C3031227	639001	C3031226
*630011	C3031223	C3030195	C3031225
630011HD	C3031223	C3030201	C3031224
*630012	C3031223	C3030202	C3031224
630012HD	C3031223	C3030020	C3031226
630013	C3031223		
630013A	C3031223		
630014	C3031222		
630015	C3031222		
630016	C3031227		
630017	C3031227		
C3030936	C3031223		
C3030937	C3031223		
C3030940	C3031222		
C3030955	C3031227		
C3030958	C3031227		
C3031571	C3031227		

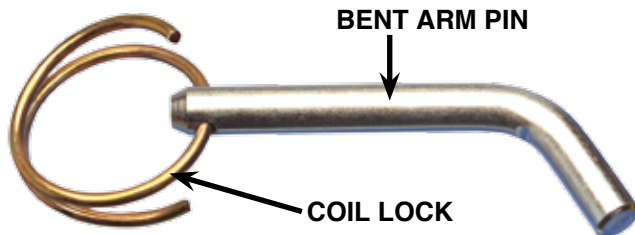
Bumper Post Tools	Bent Arm Pin and Coil Lock Assembly
C3030737	C3031227
C3030739	C3031227



**! WARNING**

**Chance Bent Arm Pins with Coil Locks are the only tested and approved means for through-pin attachment of drive tools. Do not attempt to use any other means of attachment.**

\*Old-style Kelly Bar Adapters, no longer available.



To order Coil Lock only, order Part No. P3031215P.

Bent Arm Pin and Coil Lock Assembly	Size
C3031226	3" x 5/8"
C3031225	3 1/2" x 3/4"
C3031224	4 1/2" x 1"
C3031227	5" x 3/4"
C3031223	4 1/2" x 1 1/2"
C3031222	5" x 5/8"

**! WARNING**

**Always use the approved combination of Coil Locks and Bent Arm Pins. Never attempt to use any other combinations, such as hair pins, cotter keys, etc., with Bent Arm Pins.**

## ADAPTERS

### BOLT CIRCLE ADAPTERS

(For torques up to 10,000 ft.-lb.)

These adapters are used to connect two tools having incompatible bolt circles. The C3030115 is for use between two tools having tapped  $5\frac{1}{4}$ " bolt circles.

The T3030166 is for use between a tool having a  $5\frac{1}{4}$ " bolt circle and one having a  $7\frac{5}{8}$ " bolt circle.

Both are limited to 10,000 ft.-lb.



C3030115



T3030166



639001



C3030020



E3030255

Cat. No.	Description	Wt., lb.
C3030115	Bolt circle adapter with two $\frac{1}{2}$ " x $5\frac{1}{4}$ " bolt circles	11
T3030166	Bolt circle adapter with one $\frac{1}{2}$ " x $5\frac{1}{4}$ " bolt circle and one $\frac{5}{8}$ " x $7\frac{5}{8}$ " bolt circle	18

### FOR INSTALLING SS OR RR ANCHORS

These Drive tools require the appropriate Kelly bar adapter, sold separately. Each comes with bolts, nuts and lockwashers.

Cat. No.	Description	Bolt Circle	Approx. Wt., lb.
639001	SS5/SS150/RR Drive Tool	(6) $\frac{1}{2}$ " holes on $5\frac{1}{4}$ " B.C.	7
C3030195*	SS175 Drive Tool	(12) $\frac{5}{8}$ " holes on $7\frac{5}{8}$ " B.C.	18
C3030201*	SS200 Drive Tool	(12) $\frac{5}{8}$ " holes on $7\frac{5}{8}$ " B.C.	30
C3030202*	SS225 Drive Tool	(12) $\frac{5}{8}$ " holes on $7\frac{5}{8}$ " B.C.	30

\*Requires use of T3030166 adapter, and limited to 10,000 ft.-lb., when used with STANDARD Kelly bar adapter (with a  $5\frac{1}{4}$ " bolt circle).

Cat. No.	Description	Unit fits:	Approx. Wt., lb.
C3030020	SS5/SS150/RR Drive Tool	STANDARD Locking Dog Assembly	8
C3031035	SS175 Drive Tool	TOUGH ONE® Locking Dog Assembly	11
T3031403	SS200 Drive Tool	TOUGH ONE® Locking Dog Assembly	26
C3031077	SS225 Drive Tool	TOUGH ONE® Locking Dog Assembly	23

These tools slide into locking dog adapter and are retained by spring loaded dogs.

### FOR INSTALLING NO-WRENCH ANCHOR & MANUAL FOUNDATION TOOL

Especially designed for use with the Chance portable anchor installer. This tool bolts directly to the installer's output flange or Kelly bar adapter having six  $\frac{1}{2}$ " dia. holes on a  $5\frac{1}{4}$ " bolt circle. Adjustable pivoting plates accept rods from  $\frac{3}{4}$ " to  $1\frac{1}{4}$ " diameter.

For manually-installed foundations, eyenut must be temporarily installed for installation. Has four holes on  $5\frac{1}{4}$ " bolt circle for attachment. Includes four  $\frac{1}{2}$ " x  $1\frac{1}{2}$ " bolts, nuts and lockwashers.

Cat. No.	Weight, lb.
E3030255	9



# CHANCE TORQUE INDICATORS

Using a Chance Torque Indicator, you can install screw anchors to a pre-determined torque value which gives a positive indication of anchor holding capacity in any type soil. These tools also help your crew avoid excessive torsional loading which could cause damage to the anchor and/or other anchor tools during installation.

The Indicators are mounted between the Kelly bar adapter and drive wrench or locking dog assembly.

## DIGITAL TORQUE INDICATOR

Catalog No. C3031578

For Installing torques up to 30,000 ft.-lb.

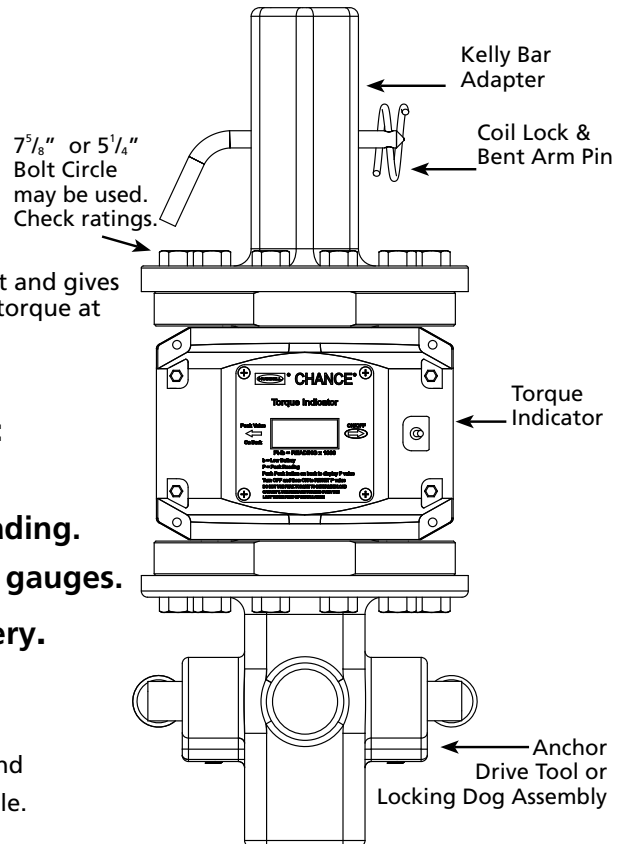


The LED display is easy to read in full daylight and gives the operator a direct readout of installation torque at all times.

- No Shear pins to replace.
- Operational temperature range: -40° to 80°C (-40° to 175° F).
- Accuracy: ±500 ft.-lb. at any reading.
- Torque is measured using strain gauges.
- Powered by a standard 9V battery.

Top and bottom flange, each provides:

Six holes tapped 1/2"-13 on a 5 1/4" bolt circle and Twelve holes tapped 5/8"-11 on a 7 5/8" bolt circle.



- Digital Torque Indicator is not recommended in heavy, rocky soil applications.

Catalog Number	Description	Weight, lb.
C3031578	Digital Torque Indicator • Twelve 1/2" Grade 5 bolts and lockwashers for use on 5 1/4" Bolt Circle tools • Twenty-four 5/8" Grade 2 bolts and lockwashers for use on 7 5/8" Bolt Circle tools • Standard 9V battery	65



## SHEAR PIN TORQUE LIMITER

Catalog No. C3030044

For Installing torques up to 10,000 ft.-lb.

Offers: Protection for anchors and installing tools by disconnecting the power when the installing torque reaches a preselected level.

Useable in very rocky soil.

Durable — does not require special storage or handling.

Top and bottom each has six holes tapped 1/2" - 13 on a 5 1/4" bolt circle.

Catalog Number	Description	Wt., lb.
C3030044	Shear Pin Torque Indicator	54
*C3030045	One Carton of Shear Pins (Approx. 1700 pins)	50
*T3031420	One Box of Shear Pins (Approx. 510 pins)	15

\*Each Shear Pin provides 500 ft.-lb. of torque.

# SOIL TEST PROBE



- Determine soil conditions without taking core samples

The Chance Soil Test Probe is a mechanical instrument which enables the operator to determine the condition of the sub-soil without core samples. A ratchet-handle torque wrench which slides up and down on the shaft is used to install or retract the probe. Torque wrench readings, in inch-pounds, provide a way to measure the consistency of the sub-soil. The torque values obtained are translated into soil classifications using the copyrighted Chance Soil Classification Table (see below) located on the inside flap of the carrying case.

Torque readings are taken at the depth to which an anchor is to be installed, and at least 2 feet above this depth because the average earth consistency 2 to 3 feet above the anchor determines the anchor holding capacity. The probe shaft is marked at 1-foot intervals permitting soil evaluation at every foot of depth.

The length of the Soil Test Probe (including helix) is 5 feet. Each shaft coupled to the probe provides an additional 5 feet. A durable carrying case protects the equipment when not in use.

## ORDERING INFORMATION

### Soil Test Probe 1800 in.-lb. Capacity

Cat. No.	Description	Length	Weight
C3090032	Probe w/3 5-ft. extensions	20'	21½ lb.

### Accessories

Catalog No.	Description	Weight
C3090033	5-ft. extension only	3 lb.

## SOIL CLASSIFICATION DATA

Class	Common Soil-Type Description	Geological Soil Classification	Probe Values ft.-lb. (NM)	Typical Blow Count "N" per ASTM-D1586
N.A.	Sound hard rock, unweathered (bedrock)	Granite, Basalt, Massive Limestone	N.A.	N.A.
1	Very dense and/or cemented sands; coarse gravel and cobbles	Caliche, (Nitrate-bearing gravel/rock),	over 60 (85 - 181)	60-100+
2	Dense fine sands; very hard silts and clays (may be preloaded)	Basal till; boulder clay; caliche; weathered laminated rock	over 50 (68 - 85)	45-60
3	Dense sands and gravel; hard silts and clays	Glacial till; weathered shales, schist, gneiss and siltstone	42 - 50 56 - 68	35-50
4	Medium dense sand and gravel; very stiff to hard silts and clays	Glacial till; hardpan; marls	33 - 42 (45 - 56)	24-40
5	Medium dense coarse sands and sandy gravels; stiff to very stiff silts and clays	Saprolites, residual soils	25 - 33 (34 - 45)	14-25
6	Loose to medium dense fine to coarse sands to stiff clays and silts	Dense hydraulic fill; compacted fill; residual soils	17 - 25 (23 - 34)	7-14
**7	Loose fine sands; Alluvium; loess; medium - stiff and varied clays; fill	Flood plain soils; lake clays; adobe; gumbo, fill	8 - 17 (11 - 23)	4-8
**8	Peat, organic silts; inundated silts, fly ash very loose sands, very soft to soft clays	Miscellaneous fill, swamp marsh	under 8 (0 - 11)	0-5

Class 1 soils are difficult to probe consistently and the ASTM blow count may be of questionable value.

\*\*It is advisable to install anchors deep enough, by the use of extensions, to penetrate a Class 5 or 6, underlying the Class 7 or 8 Soils.

# EXPANDING & TAMPING BAR

The Chance fiberglass handle Expanding and Tamping Bar simplifies the job of expanding anchors. The curved Expander and Tamper Head distributes the weight of the bar evenly around the anchor rod to reduce handle vibration. The hook of the Expanding and Tamping Bar wraps around the anchor rod to keep the expanding head from slipping off the anchor top plate. This tool is also effectively used for tamping in soil above the installed anchor. The base casting is attached directly to the fiberglass handle.

Cat. No.	Description	Length	Weight
C3020003	Expanding & Tamping Bar	10'	22 lb.
C3020004	Expanding & Tamping Bar	12'	24 lb.
*E3020001P	Fiberglass Handle	10'	7 lb.
*E3020006P	Fiberglass Handle	12'	8 lb.
P3020002P	Expander and Tamper Head	N/A	14 lb.

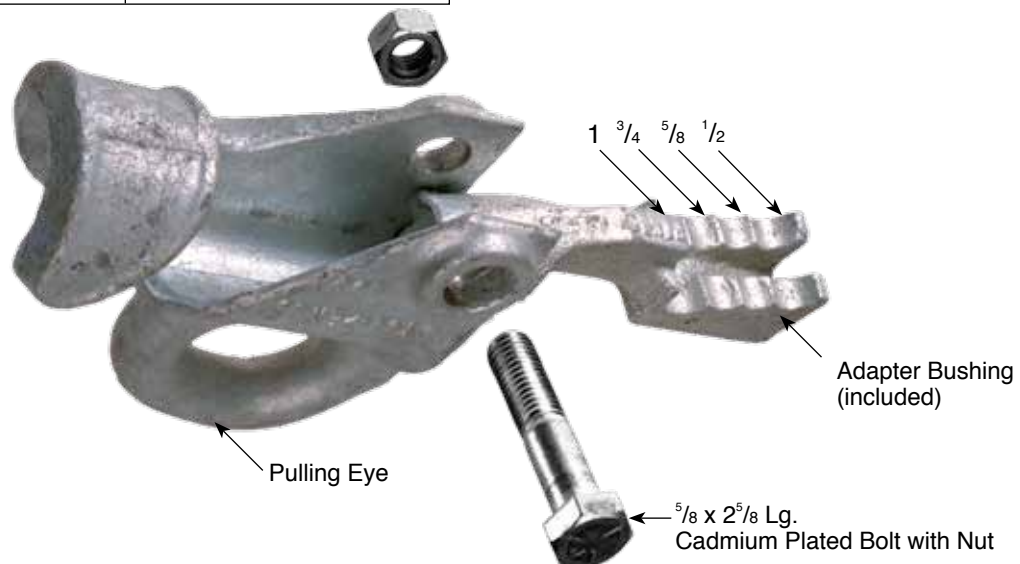
\*Includes plug mix to reset handle.



# STANDARD PULLING EYE

This inexpensive cost-cutter provides a large offset eye to accommodate three-ton chain hoist hooks, and leaves the anchor eye free with plenty of clearances for attaching formed wire grips. By removing the Adapter Bushing, the E96 Pulling Eye fits 1 1/4" rods. The E96 Pulling Eye is inexpensive and easy to use. One person can assemble and hook up in minutes. For working loads to approximately 6,000 pounds (ultimate strength — 18,000 pounds).

Catalog No.	Weight
E96	5 lb.



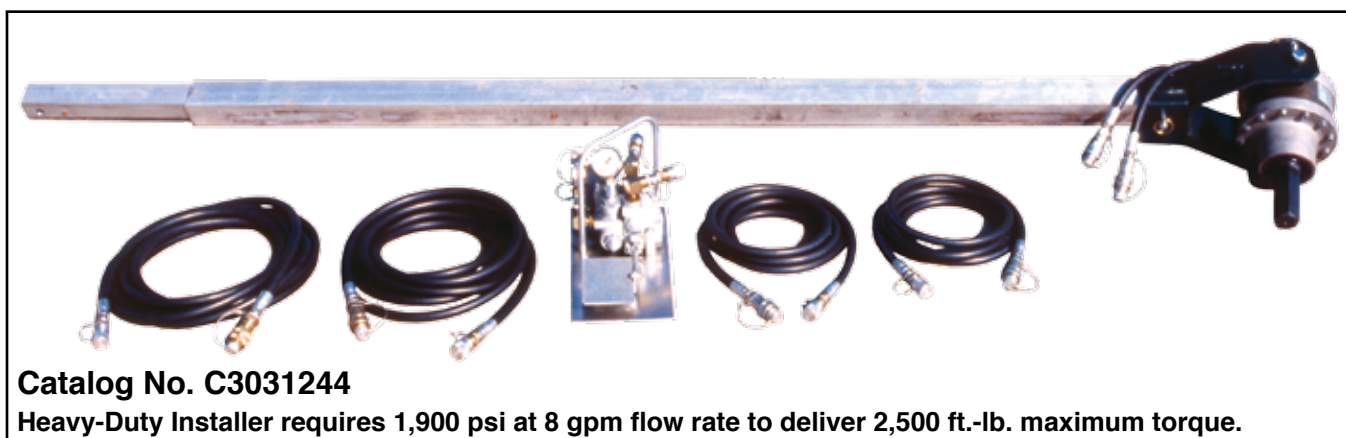
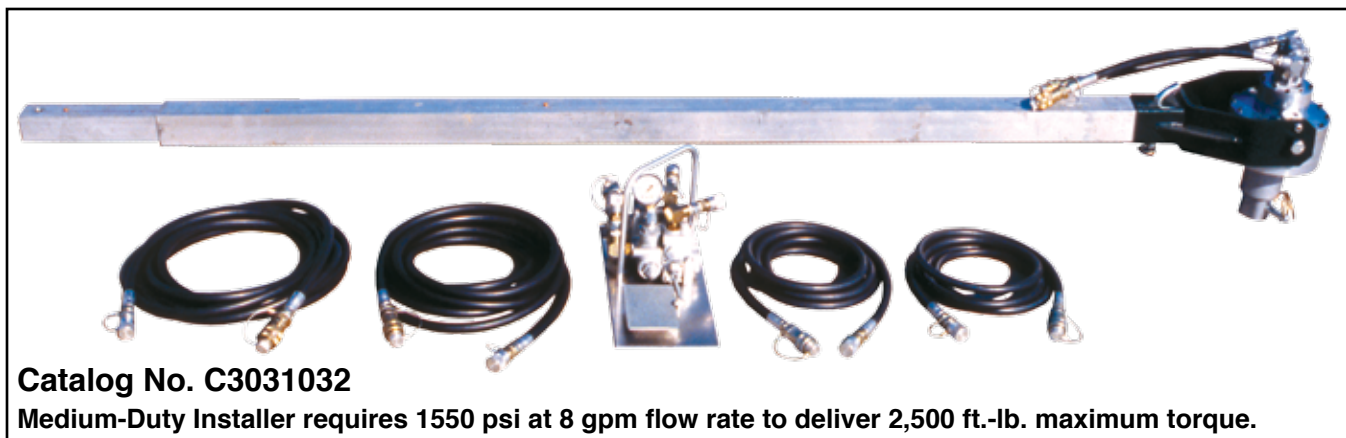
# Portable Anchor Installers for small foundations

**2,500 ft.-lb. torque capacity hydraulic power drive**

**Economical manual operation and portability  
for remote sites, common anchor installations**

For most shaft-driven guy anchors and smaller screw foundations, these compact drivers get into areas where large equipment cannot go or is impractical. Operator does not need to resist the torque generated by anchor installation. Countertorque transmits through a torque bar from the drive head to the earth or other restraint. This frees the operator for the task of guiding the anchor path.

Built-in bypass valve limits output to 2,500-ft.-lb. maximum, two-way foot pedal gives operator direct control over drive and reverse directions, hoses (two 12-ft. and two 25-ft.) come with quick couplers for all connections from power supply to foot control to drive head. Pivoting drive-head yoke connects with bent-arm pin to square-tubular torque bar which telescopes from 8 feet to 10 feet as needed.



# 2,500 ft-lb Portable Anchor Installers

## †Medium Duty — Catalog No. C3031032

<b>Grease filled gear case. Single Catalog Number above includes all items below. Each item also may be ordered by separate number.</b>	
* Hydraulic Control Valve	C3031031
Two 25-ft. Hydraulic Hoses	C4176121 (each)
* Hydraulic Drive Head	C3031180
Yoke Assembly	E3030680
* Two 12-ft. Hydraulic Hoses	E3030876 (pair)
Square Torque Bar Assembly	E3031041

Output shaft is 1½" square socket. Requires C3031230 and flanged drive tool (order separately) to install anchors other than 1½" square 1¼" round shaft.

\* Note: Hydraulic components are not interchangeable between C3031032 and C3031244.

## Heavy Duty — Catalog No. C3031244

<b>Sealed oil-filled gear case. Single Catalog Number above includes all items below. Each item also may be ordered by separate number.</b>	
* Hydraulic Control Valve	C3031247
Two 25-ft. Hydraulic Hoses	C4176121 (each)
* Hydraulic Drive Head	C3031233
Yoke Assembly	E3030680
* Two 12-ft. Hydraulic Hoses	E3031253 (pair)
Square Torque Bar Assembly	E3031041

Output Shaft is 2" Hex. - Requires Kelly Bar Adapter P630013 and flanged drive tool (order separately) to install all anchors.

\* Note: Hydraulic components are not interchangeable between C3031032 and C3031244.

### Anchor Drive Tools

See page 8 for details on tools to drive specific anchor types.



†Adapter Tool  
Catalog  
No. C3031230

†Note that all 5¼" bolt-circle tools may be connected directly to Heavy Duty Portable Anchor Installer Cat. No. C3031244. †Adapter Tool Cat. No. C3031230 is required to connect 5¼" bolt-circle tools to Medium Duty Portable Anchor Installer Cat. No. C3031032. If needed, order Adapter C3031230 as a separate item.

## Optional Hydraulic Power Unit Catalog No. C3031201

For easy wheeling to worksite, hydraulic drive head and foot control secure by rubber strap included to angle braces atop the cart frame and hoses ride on handles.

Cart-mounted on 5/8"-diameter axle with two 4.80 x 8 inflatable (30psi) tires; 27¼" wide x 34½" high x 36" long; shipping weight with oil: 275 lb.

Hydraulic Pump with fan cooling system:

Typical output pressure 2500psi  
Pump displacement 8 gpm @ 3400rpm  
Reservoir capacity 5 gallons US  
(shipping cap and vented fill cap provided)

Gasoline Engine System:

16hp Briggs & Stratton  
Industrial/Commercial Model 326437, Type 2527  
12-Volt pushbutton start, 3600rpm (maximum)

Operating instructions are included with anchor installer and hydraulic power unit.



# Anchor/Foundation Drive Heads

- Vehicle Mounted      • Hydraulic Powered
- 6,000 & 11,500 ft.-lb. Torque Ratings

Specially suited for vertical installations of screw-type anchors, foundations, and bumper posts.

The drive head comes in two torque-rating ranges. The design also delivers other features for rugged field conditions.

- Precision planetary gears and bearings in oil-filled, sealed gearcase
- Heavy-duty output housing and bearings
- Heavy-duty bail flange mounted to gearcase housing provides balanced load-sharing torque restraint
- Dual-pin mounting provides drive-head positioning for controlled installations
- Drive-head also readily accepts earth augers for hole digging

Hose assemblies are not furnished with drive heads. For hydraulic flow more than 20 gpm, 3/4"-diameter hose is recommended. For flow rates of 20 gpm and below, 1/2" hose may be used. Swivel joint and swivel joint adapter are furnished. Thread size is 1"-11 1/2" NPSM (National Pipe Straight Mechanical).



## Skid-Steer Utility Plate, Bail and Jib Components

To order, refer to information below and on next page. Specify one each: Drive Head, Utility Plate, Bail & Jib Assembly, and Kelly Bar Adapter.

6,000 ft.-lb. maximum torque

For **Bobcat Skid-Steers ONLY**:

Catalog No.	Description
C3031014	6,000 ft.-lb. Utility Plate, Bail & Jib Assembly

Catalog Numbers at left do not include drive head, hoses or Kelly bar adapter as shown at right.



For Skid-Steers *other than Bobcat*:

(for field welding to utility plates on skid-steers)

C3031016	3,500 ft.-lb. Bail & Jib Assembly less Utility Plate
----------	--

## Backhoe Mounting Components

To order, specify components in Typical Tool-String Assemblies on next page.

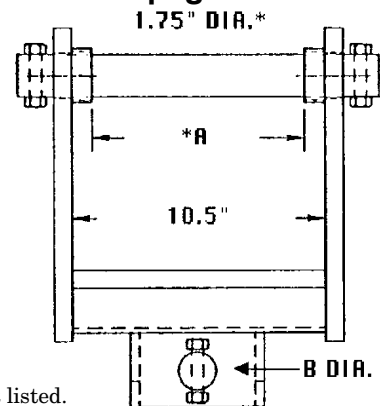
6,000 and 11,500 ft.-lb. maximum torque

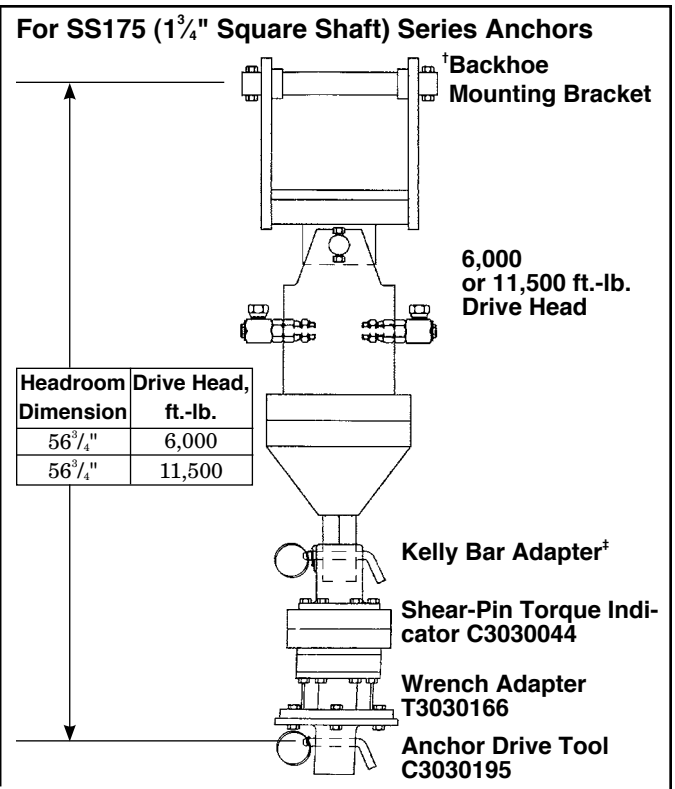
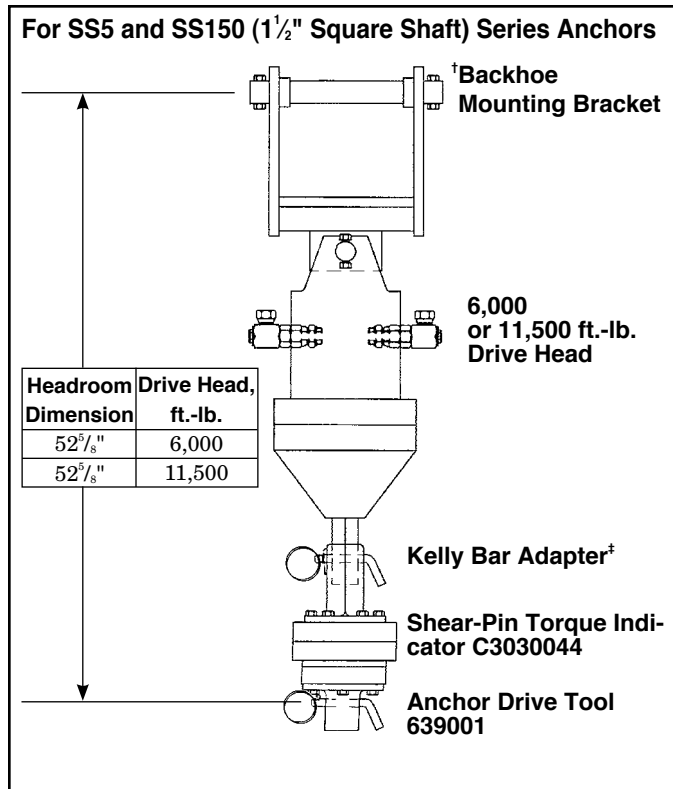
†Backhoe Mounting Brackets

Dimensions, inches		Backhoe Brand Name	Catalog Number	Bracket Description
*A	B			
10.1	1.5	Case	C3030969	6K & 11.5K ft.-lb. Eskridge
10.1	1.0	Case	C3030970	3.5K ft.-lb. Eskridge
7.00	1.5	JCB	C3030971	6K & 11.5K ft.-lb. Eskridge
7.00	1.0	JCB	C3030972	3.5K ft.-lb. Eskridge
8.18	1.5	John Deere	C3030973	6K & 11.5K ft.-lb. Eskridge
8.18	1.0	John Deere	C3030974	3.5K ft.-lb. Eskridge

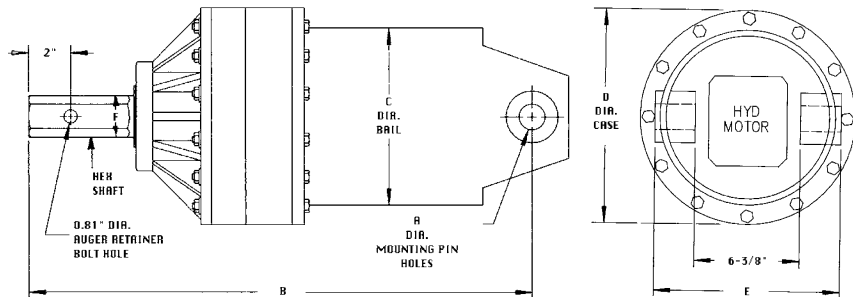
\*Bracket accepts boom up to 10.2" wide (1.75" dia. pin).

For booms 7" & 8.18" wide, 2 spacer bushings supplied. Other bushings available for backhoes not listed.



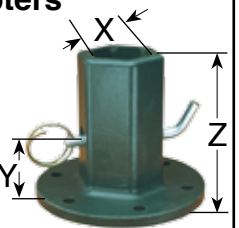


## Anchor/Foundation Drive Heads



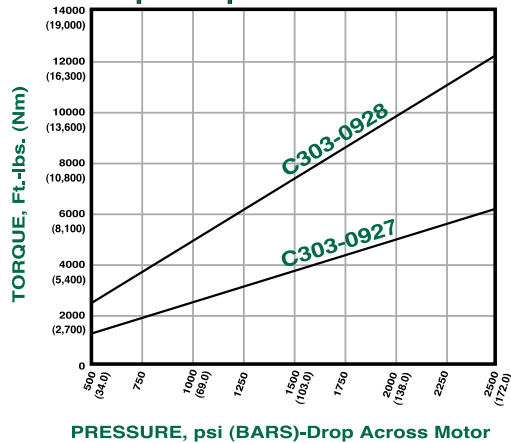
### †Kelly Bar Adapters

Each of these Kelly Bar Adapters has a 5¼" bolt circle and comes with (6) ½" bolts, nuts and lock-washers and a Bent-Arm Pin with Coil Lock (see page 4A-7).

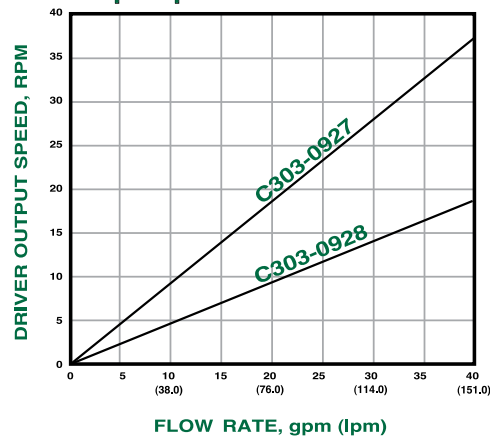


Part No.	X	Y	Z
630013	2" Hex	5"	6 <sup>1</sup> / <sub>8</sub> "
630011HD	2½" Hex	4 <sup>1</sup> / <sub>4</sub> "	8 <sup>1</sup> / <sub>8</sub> "

**Output Torque vs. Pressure**



**Output Speed vs. Flow**



Catalog Number	Running Torque ft.-lb.	Running Torque Nm	Flow gpm	Speed rpm	Wt. lb.	Wt. kg	Dimensions (in., cm)											
							A	B	C	D	E	F						
C3030927	6,000 @ 2,400 psi	8,100 @ 165 BARS	40	39	246	112	1.5	3.81	29.5	74.9	10.7	27.2	13	33.0	11.4	28.9	2.5	6.4
C3030928	11,500 @ 2,400 psi	15,600 @ 165 BARS	40	20	246	112	1.5	3.81	29.5	74.9	10.7	27.2	13	33.0	11.4	28.9	2.5	6.4