

CHANCE[®]

Civil Construction

Installing Tools

for

Screw Anchors

and Piles

WARNING

Do not weld, cut, alter or modify any of the equipment shown in this Bulletin. Doing so will void all warranties and could create hazardous conditions for anyone in the vicinity of the equipment when in use.

CHANCE
Civil Construction

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Bulletin 01-0203

Rev. 12/06

Portable Anchor Installers for small foundations

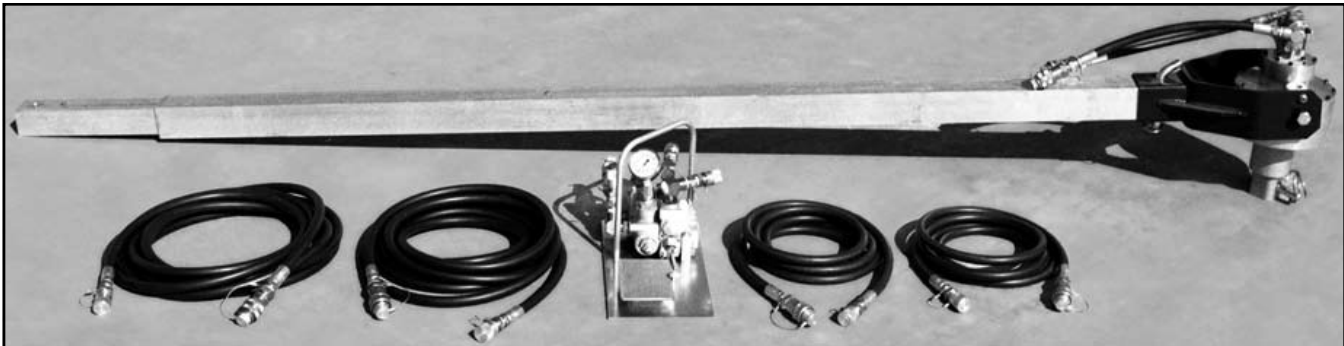
2,500 ft.-lb. torque capacity hydraulic power drive

**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.

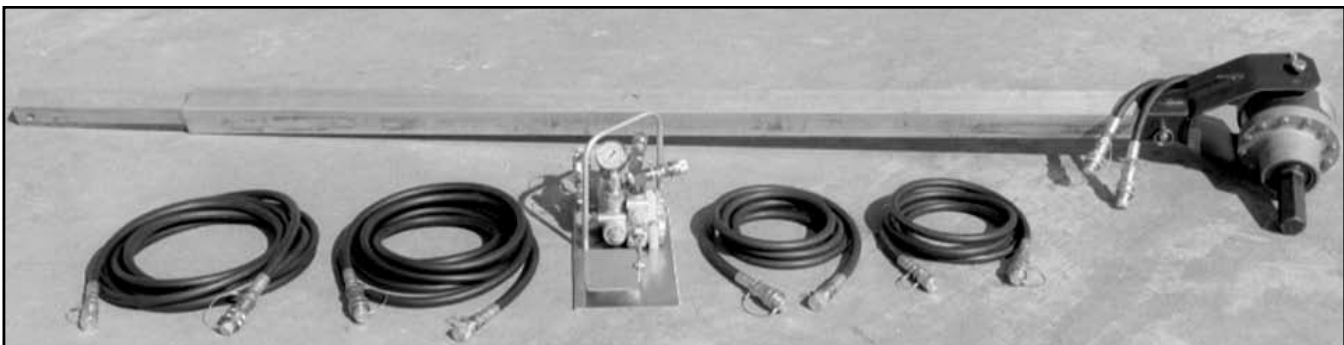
Built-in bypass valve limits output to 2,500-ft.-lb.

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.



Catalog No. C303-1032

Medium-Duty Installer requires 1550 psi at 8 gpm flow rate to deliver 2,500 ft.-lb. maximum torque.



Catalog No. C303-1244

Heavy-Duty Installer requires 1,900 psi at 8 gpm flow rate to deliver 2,500 ft.-lb. maximum torque.

2,500 ft-lb Portable Anchor Installers Ordering Information

†Medium Duty — Catalog No. C303-1032

Grease filled gear case. Single Catalog Number above includes all items below. Each item also may be ordered by separate number.

*Hydraulic Control Valve	C303-1031
Two 25-ft. Hydraulic Hoses	C417-6121 (each)
*Hydraulic Drive Head	C303-1180
Yoke Assembly	E303-0680
*Two 12-ft. Hydraulic Hoses	E303-0876 (pair)
Square Torque Bar Assembly	E303-1041

Output shaft is 1½" square socket. Requires C303-1230 and flanged drive tool (order separately) to install anchors other than 1½" square 1¼" round shaft.

* Note: Hydraulic components are not interchangeable between C303-1032 and C303-1244.

Heavy Duty — Catalog No. C303-1244

Sealed oil-filled gear case. Single Catalog Number above includes all items below. Each item also may be ordered by separate number.

*Hydraulic Control Valve	C303-1247
Two 25-ft. Hydraulic Hoses	C417-6121 (each)
*Hydraulic Drive Head	C303-1233
Yoke Assembly	E303-0680
*Two 12-ft. Hydraulic Hoses	E303-1253 (pair)
Square Torque Bar Assembly	E303-1041

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 C303-1032 and C303-1244.

Anchor Drive Tools

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



†Adapter Tool
Catalog
No. C303-1230

†Note that all 5¼" bolt-circle tools may be connected directly to Heavy Duty Portable Anchor Installer Cat. No. C303-1244. †Adapter Tool Cat. No. C303-1230 is required to connect 5¼" bolt-circle tools to Medium Duty Portable Anchor Installer Cat. No. C303-1032. If needed, order Adapter C303-1230 as a separate item.

Optional Hydraulic Power Unit Catalog No. C303-1201

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.

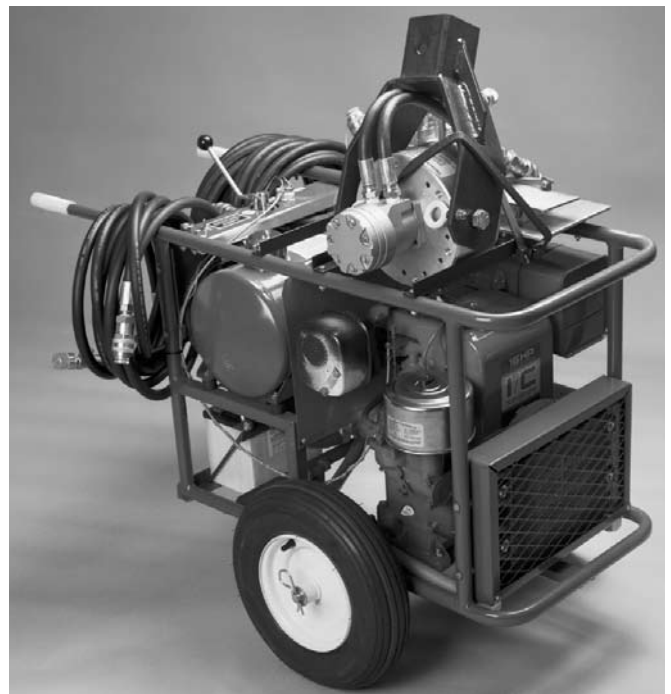
Hydraulic Pump with fan cooling system:

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
- 3,500, 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

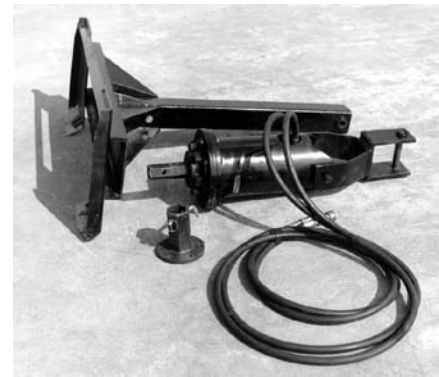
To order, refer to information below and on next page. Specify one each: Drive Head, Utility Plate, Bail & Jib Assembly, and Kelly Bar Adapter.

3,500 and 6,000 ft.-lb. maximum torque

For Bobcat Skid-Steers ONLY:

Catalog No.	Description
C303-0999	3,500 ft.-lb. Utility Plate, Bail & Jib Assembly
C303-1014	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)

C303-1015	3,500 ft.-lb. Bail & Jib Assembly less Utility Plate
C303-1016	6,000 ft.-lb. Bail & Jib Assembly less Utility Plate

Backhoe Mounting Components

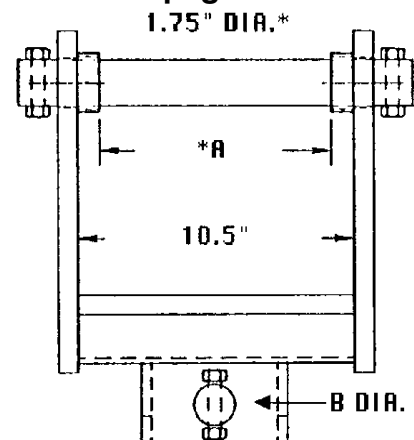
To order, specify components in Typical Tool-String Assemblies on next page.

3,500, 6,000 and 11,500 ft.-lb. maximum torque

†Backhoe Mounting Brackets

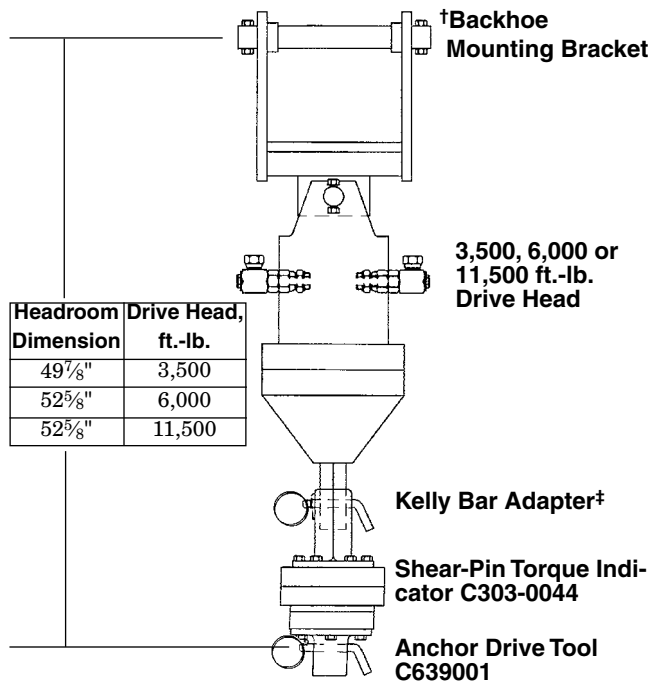
Dimensions, inches		Backhoe Brand Name	Catalog Number	Bracket Description
*A	B			
10.1	1.5	Case	C303-0969	6K & 11.5K ft.-lb. Eskridge
10.1	1.0	Case	C303-0970	3.5K ft.-lb. Eskridge
7.00	1.5	JCB	C303-0971	6K & 11.5K ft.-lb. Eskridge
7.00	1.0	JCB	C303-0972	3.5K ft.-lb. Eskridge
8.18	1.5	John Deere	C303-0973	6K & 11.5K ft.-lb. Eskridge
8.18	1.0	John Deere	C303-0974	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.



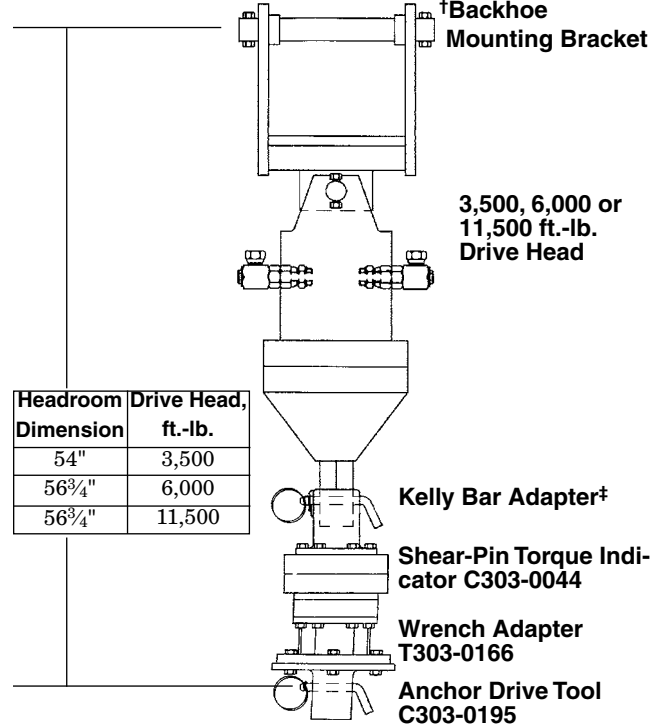
Typical Backhoe Tool-Strings

For SS5 and SS150 (1½" Square Shaft) Series Anchors



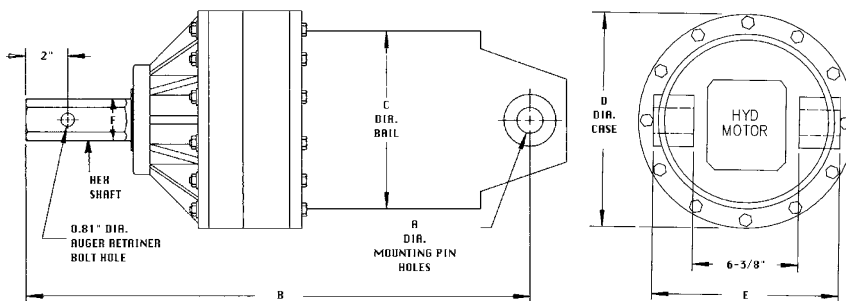
Headroom Dimension	Drive Head, ft.-lb.
49 7/8"	3,500
52 5/8"	6,000
52 5/8"	11,500

For SS175 (1¾" Square Shaft) Series Anchors



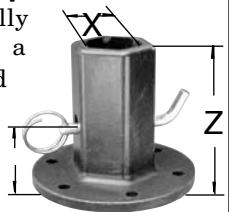
Headroom Dimension	Drive Head, ft.-lb.
54"	3,500
56 3/4"	6,000
56 3/4"	11,500

Anchor/Foundation Drive Heads



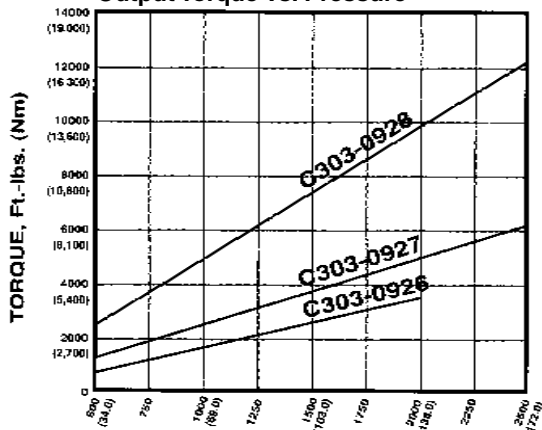
#Kelly Bar Adapters

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



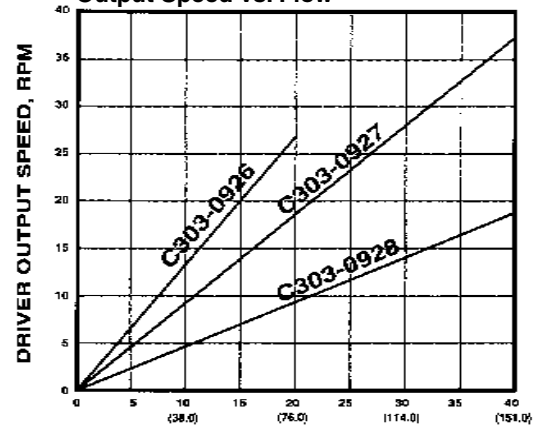
Part No.	X	Y	Z
630013	2" Hex	5"	6 1/8"
630011HD	2 1/2" Hex	4 1/4"	8 1/8"

Output Torque vs. Pressure



PRESSURE, psi (BARS)-Drop Across Motor

Output Speed vs. Flow



FLOW RATE, gpm (lpm)

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						
C303-0926	3,500 @ 2,000 psi	4,700 @ 140 BARS	20	28	151	69	1.0	2.54	26	66.0	8.5	21.6	11	27.9	8.75	22.2	2	5.1
C303-0927	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
C303-0928	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

Torque Indicators

MECHANICAL TORQUE INDICATOR

Catalog No. C303-1340

For installing torques up to 20,000 ft.-lb.

Using the 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.

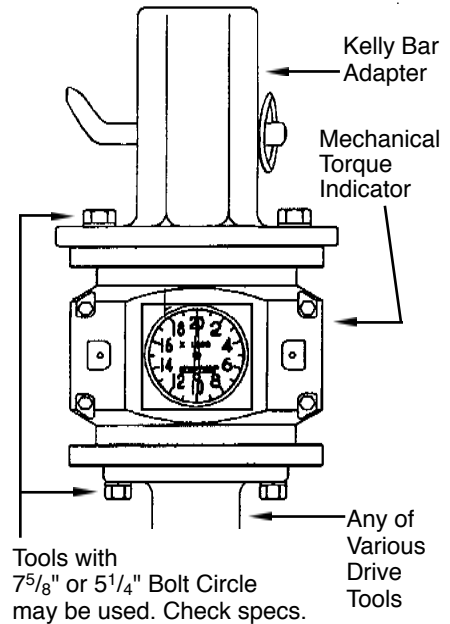
The Indicators are mounted between the Kelly bar adapter and drive tool or locking dog assembly.

Advantages:

- Easy-to-read dial gives the operator a direct readout of installation torque at all times.
- No Shear pins to replace.



NOTE: Mechanical Torque Indicator is not recommended in heavy, rocky soil applications or horizontal installations.



Top and bottom each has six holes tapped $\frac{1}{2}$ " - 13 on a $5\frac{1}{4}$ " bolt circle and twelve holes tapped $\frac{5}{8}$ " - 11 on a $7\frac{5}{8}$ " bolt circle.

SHEAR PIN TORQUE LIMITER Catalog No. C303-0044



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

Advantages:

- 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 $\frac{1}{2}$ " - 13 on a $5\frac{1}{4}$ " bolt circle.

Ordering Information

Catalog No.	Description	Weight, lb.
C303-0044	Shear Pin Torque Limiter	54
*C303-0045	Carton of Shear Pins (Approx. 1700 pins)	50
*T303-1420	Box of Shear Pins (Approx. 510 pins)	15

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

$5\frac{1}{4}$ " to $7\frac{5}{8}$ " Bolt Circle Adapter

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



This adapter is used to connect two tools having incompatible bolt circles: One with a $5\frac{1}{4}$ " bolt circle and one with a $7\frac{5}{8}$ " bolt circle.

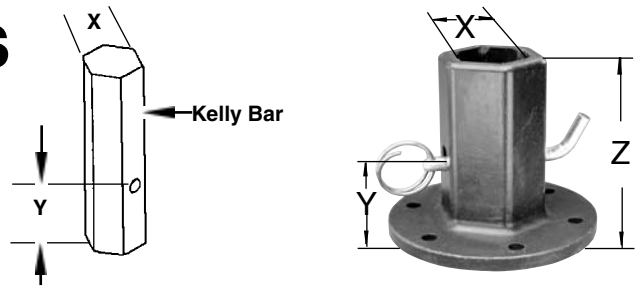
Catalog No.	Description	Weight, lb.
T303-0166	Bolt circle adapter with one $\frac{1}{2}$ " x $5\frac{1}{4}$ " bolt circle and one $\frac{5}{8}$ " x $7\frac{5}{8}$ " bolt circle	18

Kelly Bar Adapters

Selecting the correct Kelly Bar Adapter is key to building a proper Drive String.

Follow these two easy steps:

- 1) Remove the auger from the driver 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 charts below. The Y dimension on the Kelly Bar Adapter must be equal to or greater than the Y dimension on the intended Kelly Bar.



A Note about Bolt Circles

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

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

5 1/4"-Bolt-Circle Kelly Bar Adapters for 10,000 ft.-lb. Maximum Installing Torque

Each of these Kelly Bar Adapters has six holes for 1/2" bolts on a 5 1/4" bolt circle and comes with six 1/2" Grade 5 bolts, nuts & lockwashers, Bent-Arm Pin with Coil Lock.

Catalog Number	Kelly Bar Shape	Kelly Bar Dimension			Weight, lb.
		X	Y	Z	
630016	Square	2 1/4"	2 1/4"	3 1/2"	10
630017	Square	2 1/2"	2 1/4"	3 1/2"	10
630013	Hex	2"	5"	6 1/8"	10
630013A	Hex	2"	3 1/4"	6 1/8"	10
630012HD	Hex	2 5/8"	4 1/4"	8 1/8"	12
630011HD	Hex	2 1/2"	4 1/4"	8 1/8"	12

7 5/8"-Bolt-Circle Kelly Bar Adapters for 20,000 ft.-lb. Maximum Installing Torque

Each of these Kelly Bar Adapters has twelve holes for 5/8" bolts on a 7 5/8" bolt circle and comes with twelve 5/8" Grade 2 bolts, nuts & lockwashers, Bent-Arm Pin with Coil Lock.

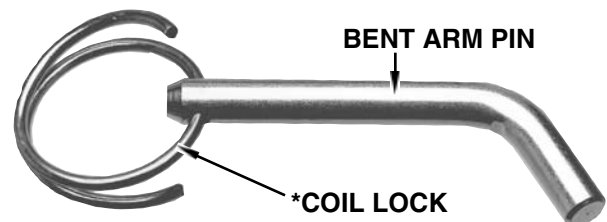
Catalog Number	Kelly Bar Shape	Kelly Bar Dimension			Weight, lb.
		X	Y	Z	
C303-0936	Hex	2 1/2"	4 3/8"	8 1/4"	23
C303-0937	Hex	2 5/8"	4 3/8"	8 1/4"	23
C303-0940	Hex	3"	3 1/2"	8"	27
C303-0955	Square	2 1/2"	2 1/4"	7"	22
C303-0958	Square	3"	3 1/2" & 2 1/16"	7"	23

Bent-Arm Pins

To retain Kelly Bar Adapters and drive tools for Bumper Posts and SS Anchors

Each Chance plated-steel Bent Arm Pin is designed to attach a Kelly bar adapter to a Kelly bar. The pin also is used to secure SS Anchors and Bumper Posts to their drive tools.

Bent Arm pins are included with new tools as required. Order replacement pins for existing tools as listed at right.



WARNING:

The Chance Bent Arm Pin and Coil Lock are the only tested and approved means for through-pin attachment of drive tools. Do not use any other means of attachment.

Dimensions

Bent Arm Pin and Coil Lock Assembly	Size
C303-1226	3" x 5/8"
C303-1225	3 1/2" x 3/4"
C303-1227	5" x 3/4"
C303-1223	4 1/2" x 1/2"
C303-1222	5" x 5/8"



Shown here as used with a Kelly Bar Adapter.

Kelly Bar Adapter	Bent Arm Pin and Coil Lock Assembly
630011HD	C303-1223
630012HD	C303-1223
630013	C303-1223
630013A	C303-1223
630016	C303-1223
630017	C303-1227
C303-0936	C303-1223
C303-0937	C303-1223
C303-0940	C303-1222
C303-0955	C303-1227
C303-0958	C303-1227

SS Anchor Series Tool	Bent Arm Pin and Coil Lock Assembly
639001	C303-1226
C303-0195	C303-1225
C303-0020	C303-1226

Bumper Post Tool	Bent Arm Pin and Coil Lock Assembly
C303-0737	C303-1227

*Each new Kelly Bar Adapter or Anchor Drive Tool listed above includes a bent-arm pin with coil lock. For Coil Lock only, order Part No. P303-1215P.

Anchor Drive Tools

For SS Helical Pier Anchors

These drive tools require the appropriate Kelly bar adapter (see page 7). Each comes with bolts, nuts and lockwashers and a bent-arm retaining pin with coil lock.



Catalog Number	SS Anchor Series Tool	Bolt Circle, Holes	Approx. Weight, lb.
639001	SS5/SS150	5 1/4", (6) 1/2" holes	7
C303-0195*	SS175	7 5/8", (12) 5/8" holes	18
C303-0201*	SS200	7 5/8", (12) 5/8" holes	30
C303-0202*	SS225	7 5/8", (12) 5/8" holes	30

*Coupling to a Kelly bar adapter with a 5 1/4" bolt circle requires use of T303-0166 adapter and limits tool's maximum torque rating to 10,000 ft.-lb. (see page 6).

For Flange-Drive Foundation Anchors

C130-0010 drive tool has a (6) 1/2" tapped holes on a 5 1/4" bolt circle, (6) 1/2" Grade 5 bolts and requires a Kelly bar adapter (see page 7).



C130-0010

Catalog Number	Description	Approx. Weight, lb.
C130-0010	Kelly Bar Adapter Drive Tool	10



For 2" Square LD Foundation Anchors

Connects direct to a Kelly bar adapter with bolts, lockwashers and nuts furnished with Kelly bar adapter (see page 7). Maximum torque rating: 10,000 ft.-lb.

Catalog No.	Bolt Circle, Holes	Weight, lb.
639000	5 1/4", (6) 1/2" holes	10

For Bumper Posts

Each comes with (6) 5/8" bolts and a bent-arm retaining pin with coil lock (see page 7).



Catalog Number	Bolt Circle, Tapped Holes	Approx. Weight, lb.
C303-0737*	5 1/4", (6) 1/2" holes	11

*Coupling to a Kelly bar adapter with a 5 1/4" bolt circle requires use of T303-0166 adapter and limits tool's maximum torque rating to 10,000 ft.-lb. (see page 6).

For Decorative Lighting Foundation Anchors



This 10"-diameter drive plate fits the 8" bolt circle of decorative lighting foundations. Connects direct to a Kelly bar adapter with (6) 1/2" furnished bolts. Maximum torque rating: 10,000 ft.-lb.

Catalog Number	Bolt Circle, Tapped Holes	Approx. Weight, lb.
C303-0247	5 1/4", (6) 1/2" holes	16

For HS Helical Pier Anchors

Each comes with bolts, nuts and lockwashers.



Catalog Number	Bolt Circle, Holes	Approx. Weight, lb.
C303-0754*	7 5/8", (6) 5/8" holes	27

*Coupling to a Kelly bar adapter with a 5 1/4" bolt circle requires use of T303-0166 adapter and limits tool's maximum torque rating to 10,000 ft.-lb. (see page 6).

For 278 Helical Pile Anchors

Each comes with bolts, nuts and lockwashers.



Catalog Number	Bolt Circle, Holes	Approx. Weight, lb.
C303-1490*	5 1/4", (6) 1/2" holes	19

*Maximum torque rating: 10,000 ft.-lb.

For T/C (Tension/Compression) Helical Pier Anchors

This drive tool has both 5 1/4" and 7 5/8" bolt circles and comes with (6) 5/8" bolts, nuts and lockwashers.

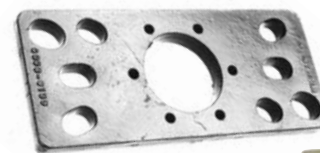


Catalog Number	Bolt Circle, Holes	Approx. Weight, lb.
C303-0594*	5 1/4", (6) 1/2" holes and 7 5/8", (12) 5/8" holes	38

*Coupling to a Kelly bar adapter with a 5 1/4" bolt circle limits tool's maximum torque rating to 10,000 ft.-lb.

Universal Tools for STL Foundations

These tools fit STL Foundation Anchors with 9" to 13 1/2" bolt circles.



C303-0139



C303-0684

C303-0139 connects direct to a Kelly bar adapter with (6) 1/2" furnished bolts. C303-0684 includes (12) 5/8" bolts.

Catalog Number	Bolt Circle, Holes	Approx. Weight, lb.
C303-0139*	5 1/4", (6) 1/2" tapped holes	18
C303-0684†	7 5/8", (6) 5/8" drilled holes	49

*Maximum torque rating for C303-0139: 10,000 ft.-lb.

†Maximum torque rating for C303-0684: 20,000 ft.-lb. Coupling C303-0684 to a Kelly bar adapter with a 5 1/4" bolt circle requires use of T303-0166 adapter and limits tool's maximum torque rating to 10,000 ft.-lb. (see page 6).