



*UNDERGROUND & OVERHEAD CONSTRUCTION • HORIZONTAL DIRECTIONAL DRILLING • LINE MAINTENANCE*

# ***TOOLS & EQUIPMENT***

## **CATALOG**

# **HDD TOOLING**

## **PARTS & SUPPLIES**



# THE RIGHT PRODUCTS, THE RIGHT SERVICE

## The Biggest Range of Wire Pulling Accessories and Drilling Fluid Additives

Are you planning a building project and looking for the most amazing prices on tools and accessories? Build It Right, Inc. is your one stop shop that provides the biggest range of products for drilling, cabling, and wire pulling in the U.S. Offering the highest quality products backed by our years of knowledge and expertise in the industry, you can easily build with confidence and convenience with everything you need at your fingertips.

## Offering the Right Accessories at the Right Price for Any Building Project

Build It Right, Inc. was founded on the needs of our customers to find the most useful and appropriate building products and accessories at the most amazing prices. Our focus is on the customer experience, which is why we deliver exceptional customer service through the most knowledgeable advice and high quality products. Whether you need wire pulling tools, Cetco drilling fluids, drilling polymer products and more, our team is here to help you find exactly what you need at the lowest price.

## Are You Looking for Directional Drilling Tools or Horizontal Directional Drilling Parts?

At Build It Right, we stock the most popular brands that deliver quality no matter what you need to build. Have your Cetco and Bentonite drilling fluids shipped right to your door so that you can build with confidence. You can also order your Cetco and Bentonite drilling fluids by the pallet! Install ducts with efficiency with duct installation range of products, or work quickly when installing cables with our easy to use cable roller range that delivers affordability and speed no matter how large your project is.

## Shop for Cable Puller Products and Accessories Today!

Rather than blowing your building project budget, shop for the most affordable high quality products and accessories with Build It Right, Inc. Offering nationwide shipping and the most competitive prices in the industry, our goal is to ensure that your project is a success. The right products. The right service. Shop Online today or call our team at 1-888-206-3044 to find out more.



## **HDD Tooling, Parts & Supplies**

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## POLYMER DRILLING PRODUCTS

American HDD® polymer drilling products are a line of super concentrated drilling fluids to be used for short distance/small diameter HDD bores. This easy to use, color-coded polymer drilling system allows utility contractors to quickly and efficiently drill through various soil types. Just add the appropriate products and drill!! They can be mixed and matched even in alternating ground. Do not let the small packaging fool you, these ultra-concentrated products are designed for real drillers in all sorts of tough ground.



**American HDD® POLY-MISSILE™** is a highly concentrated, liquid polymer emulsion that serves as the base for American HDD® polymer drilling products. Used by itself, POLY MISSILE™ will produce a viscosity solutions in water which can fulfill the demands of most short bore length drilling applications. It is highly lubricating, clay inhibitive, and can help remove fine solids from the borehole.

**American HDD® CLAY-MISSILE™** is a concentrated, non-hazardous, proprietary clay inhibitor that can either be used with bentonite fluids or can be added to American HDD® polymer drilling products. CLAY MISSILE™ is an ideal additive for HDD bores in reactive clay soils. CLAY MISSILE™ is the most powerful and concentrated product of this type available.

**American HDD® SAND-MISSILE™** is a highly concentrated, liquid polymer that can either serve as a stand-alone fluid or can be added to American HDD® polymer drilling products. Use it with POLY MISSILE™ increase solids suspension. POLY MISSILE™ will produce a high viscosity solution designed to suspend sand, silt and fine gravel.

**American HDD® POLY-MISSILE™** is a concentrated liquid, surfactant/detergent that can either be used with bentonite fluids or can be added to American HDD® polymer drilling products. Used with bentonite, HOLE-SLIME™ will help prevent rod-sticking and seizing. When added to POLY MISSILE™, it can function to create an extremely high-performance slurry for clay drilling.

Unit of Measure: 64oz container  
Min. Order: 4

Unit of Measure: 32oz container  
Min. Order: 6

Unit of Measure: 64oz container  
Min. Order: 4

Unit of Measure: 8oz container  
Min. Order: 12

**Designed for Small Diameter Short Bores Only (12" and under and less than 1,000 feet.)**

**You can add these products to your bentonite slurry mix to enhance your drilling fluids.**

American HDD® polymer drilling products or any polymer products alone should never replace bentonite based drilling fluids for larger diameter, longer bore shots or exceptionally challenging and high risk projects.

American HDD® Product Applications Number of Containers per 500 Gallons Freshwater				
SOIL CONDITIONS	POLY-MISSILE™	HOLE-SLIME™	CLAY-MISSILE™	SAND-MISSILE™
UNKNOWN	1	1		
SAND	1			2
SAND & GRAVEL	1	1		3-4
SAND & CLAY	1	1	1	2
CLAY	1	1-2	1	
STICKY CLAY	1-2	2	2	



## Description

American HDD<sup>®</sup> - All Season is a all copper-based drilling compound for use in all HDD drilling applications. It is especially effective in lower temperature environments but has the versatility to be used year round. American HDD<sup>®</sup> - All Season is designed to provide galling and seizing protection and support for high bearing stress on HDD pipe joints. NSF H2 registered.

## Applications

Recommended for use on HDD drill pipe and developed for rugged conditions. Low Temperature field applications is enhanced through the use of a premium quality, low temperature base grease, making it an outstanding choice for environments reaching below 0°F. Can be brushed on threads or applied via most automated lubrication systems.

## Technical Data

- Finely powder copper, graphite and non-metallic additives absorb stresses and enhance performance properties.
- Resistant to wash-out and will not harden or bleed excessively in storage.
- All season formula allows for easier application in lower temperatures.
- Superb protection against seizing and galling.
- Brushable to: -40°F(-40°C)

### INDUSTRIAL COMPOUND - HDD Copper Based

Part No.	Container Size	Container Weight
655912	1 Gallon	10 lb
655922	2 Gallon	20 lb
655942	5 Gallon	45 lb





We stock a wide assortment of high-quality drilling fluids, polymers and additives to help maximize your drilling efficiency and meet your needs in the field. Specially designed to enhance the cost-effectiveness of drilling of operations by controlling and improving drilling fluid properties.



	Product I.D.	Description	UOM	Units/Pallet
<b>Bentonite Based Drilling Fluids</b>	HYDRAUL-EZ®	Drilling Fluid - HDD	50 lb bag	48
	SUPER GEL-X	Drilling Fluid - High Yield	50 lb bag	48

<b>Polymers &amp; Additives</b>	CLAY CUTTER™	<b>LIQUID</b> —Used to lower torque and increase flow in reactive clay	42 lb pail	32
	CLAY CUTTER™ PRO	<b>DRY</b> —Used to lower torque and increase flow in reactive clay	20 lb pail	48
	DRILL-TERGE™	<b>LIQUID</b> —Surfactant to reduce torque & sticking	45 lb pail	48
	INSTA-VIS™ DRY	<b>DRY</b> —Provides improved viscosity, fluid loss control, bit lubrication, and shale stabilization/inhibition	14 lb pail	60
	INSTA-VIS™ PLUS	<b>LIQUID</b> —Provides improved viscosity, bit lubrication, and shale stabilization/inhibition	40 lb pail	32
	REL-PAC® XTRA-LOW	<b>DRY</b> —Used to decrease filtrate and improve filter cake	25 lb pail	36
	SUSPEND-IT™	<b>DRY</b> —Used to increase gel strength	35 lb pail	36
	SODA ASH	<b>DRY</b> —Used to raise the pH of make-up water	50 lb pail	32
X-TORQUE	<b>LIQUID</b> —Provides lubrication to metal surfaces such as drill pipe and down hole tooling	36 lb pail	48	

	Product I.D.	Description	UOM	Units/Pallet
<b>Solidification</b>	Slurry Bond 2000 G	<b>DRY</b> —Used for the solidification of high drilling slurries	50 lb bag	48
	Slurry Bond 200	<b>DRY</b> —Used for the solidification of high drilling slurries	50 lb bag	48

## Quick Guide to Various Drilling Conditions

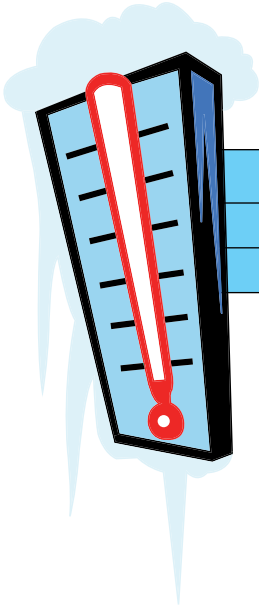
Soil Type	Minimum Mixture of Products Added to Water
Sandy (Fine)	HYDRAUL-EZ 25 lb/100 gal + 0.50 lb REL-PAC XTRA-LOW/100GAL
Sand (Coarse)	HYDRAUL-EZ 25 lb/100 gal + 0.50 lb REL-PAC XTRA-LOW/100GAL
Sand & Gravel	HYDRAUL-EZ 30 LB/100 gal + 1.5 lb REL-PAC XTRA -LOW +0.5 lb SUSPEND-IT/100 gal
Gravel	HYDRAUL-EZ 30-35 LB/100 gal + 1.5 lb REL-PAC XTRA -LOW +0.5 lb SUSPEND-IT/100 gal
Cobble	HYDRAUL-EZ 35 LB/100 gal + 1.5 lb REL-PAC XTRA-LOW +1 lb SUSPEND-IT/100 gal
Sand, Gravel, Clay or Shale	HYDRAUL-EZ 25 LB/100 gal + 0.5 - 1lb/100 gal REL-PAC XTRA-LOW + 2 qts/100 gal DRILL-TERGE
Clay	CLAY CUTTER PRO 0.25 - 1 lb/100 gal or HYDRAUL-EZ 15 LB/100 gal + CLAY CUTTER 0.5 gal/1000 gal + DRILL TERGE 2 qts/100gal
Clay (Swelling & Sticky)	INSTA-VIS PLUS 16 oz/100 gal + DRILL-TERGE 2qts/100 gal or HYDRAUL-EZ 15 lb/100 gal + CLAY CUTTER 1 gal/1000 gal + DRILL-TERGE 3 qts/100 gal <b>Note:</b> Increase DRILL-TERGE as needed

## RV & MARINE ANTI-FREEZE

The burst point of SPLASH RV/Marine Antifreeze is the temperature at which a sealed cross-linked polyethylene pipe filled with the undiluted product will burst. Burst points are a standard created by the plumbing industry in the 1930s to indicate the relative strength of antifreeze. They have since become synonymous with the name of antifreeze products used for winter storage. Burst points help consumers choose the proper product based on the lowest expected temperatures for their specific area.

### RV & MARINE ANTI-FREEZE - 55gal DRUM

- Formulated for -50 or -100 burst protection
- Ready-to-use solution
- DOW® USP propylene glycol
- DOW® corrosion inhibitors
- Proprietary plant-derived additive
- Improves user safety when compared to ethylene glycol-based products
- All ingredients are Generally Regarded As Safe (GRAS)
- Complies with the USDA and FDA regulations for use in applications where contact with food or beverage could occur
- Safe for incidental contact with people, pets and wildlife Readily biodegradable and non-toxic to aquatic life



### Available in Two Different Grades!

-50	-100
Freeze +7° F	-20° F
Burst -50° F	-100° F

- 55 gal Drum
- 1 gal jug

### RV & MARINE ANTI-FREEZE 1gal -100° Burst Protection

- Formulated for -100° F burst protection
- Convenient, ready-to-use solution
- Propylene glycol with corrosion inhibitors
- Improves user safety when compared to ethylene glycol-based products
- Safe for incidental contact with people, pets, and wildlife
- Readily biodegradable and non-toxic to aquatic life



### RV & MARINE ANTI-FREEZE 1gal -50° Burst Protection

- Formulated for -50° Burst Protection
- Convenient, Ready-to-Use Solution
- Safe for incidental contact with people, pets, and wild life
- Readily biodegradable and non-toxic to aquatic life





## HIWS1 ONE-PIECE FORGED FOR VERMEER® DRILL RIGS

- Special I-145-grade alloy material
- Steep-tapered, deep stabbing connection
- FastPitch thread for quick make up
- Double-shouldered design for added torque
- Internal and external upset to optimize strength and performance
- Conditioning of connections to assist thread compound adhesion
- Protectors applied to pin and box connections to prevent damage



Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI222394	1.315"	.179"	HIWS1-200	6'	D6x6
HI216492	1.660"	.191"	HIWS1-200	6'	D7x11, D8x12, D9x13, D9x13 S3, D10x15 S3
HI230993	1.900"	.240"	HIWS1-250	10'	D16x20, D18x22, D20x22
HI221628	2.063"	.260"	HIWS1-400	10'	D18x22, D20x22, D20x22 S3, D23x30 S3, D24x26
HI222276	2.375"	.254"	HIWS1-600	10'	D23x30 S3, D24x40
HI296309599	2.375"	.295"	HIWS1-650	10'	D36x50, D45x55
HI296323531	2.625"	.285"	HIWS1-650	15'	D36x50
HI296309521	2.625"	.400"	HIWS1-700	10'	D36x50, D40x55 S3
HI296309522	2.625"	.400"	HIWS1-700	15'	D36x50, D40x55 S3
HI222451	2.875"	.392"	HIWS1-900	10'	D60x90
HI222452	2.875"	.392"	HIWS1-900	15'	D50x100, D60x90
HI222454	3.500"	.449"	HIWS1-800	15'	D50x100, D55x100, D60x90, D75x100, D80x100
HI296337977	3.500"	.476"	HIWS1-1000	15'	D80x120, D100x120, D100x140
HI2966309520	3.500"	.476"	HIWS1-1000	20'	D80x120, D100x120, D100x140
<b>IMPORT</b>					
A216492-20	1.660"	.191"	HIWS1-200	6'	D7x11, D9x13, JT9, JT922, UNI 15x22
A221628-20	2.063"	.260"	HIWS1-400	10'	D18x22, D20x22, D23x30, JT1220, JT2020, DD2024, DD110, DD2024, DD2226
A222276-20	2.375"	.254"	HIWS1-600	10'	D23x30 S3, D24x40, JT2020, JT25, JT2720M1, JT30, JT3020, DD3238, UNI 25, UNI 30x40

## HXT® ONE-PIECE FORGED FOR VERMEER® DRILL RIGS

- 30% increase in torque
- Up to 44% increase in flow capacity
- Best choice for air hammers/mud motors

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI281600	2.063"	.260"	HXT-402	10'	D22x33, D24x33
HI294566	2.375"	.295"	HXT-602	10'	D33x44, D36x50
HI284153	2.375"	.295"	HXT-602	15'	D33x44, D36x50
HI294642	2.625"	.400"	HXT-602	15'	D33x44, D36x50
HI276307	2.875"	.440"	HXT-902	15'	D55x100, D75x100
HI3276376	3.500"	.449"	HXT-802	20'	D80x120, D100x120
HI296100215	3.500"	.449"	HXT-1002	15'	D100x140
HI296100220	3.500"	.476"	HXT-1002	20'	D100x120, D100x140





## HIWS1 THREAD ONE PIECE FOR DITCH WITCH® DRILL RIGS

- Special I-145-grade alloy material
- Steep-tapered, deep stabbing connection
- FastOpitch thread for quick make up
- Double-shouldered design for added torque
- Internal and external upset to optimize strength and performance
- Conditioning of connections to assist thread compound adhesion
- Protectors applied to pin and box connections to prevent damage

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI216490	1.660"	.191"	HIWS1-200	5'	JT5, JT520
HI216492	1.660"	.191"	HIWS1-200	6'	JT9, JT922, JT10
HI230993	1.900"	.240"	HIWS1-250	10'	JT1220
HI221628	2.063"	.260"	HIWS1-400	10'	JT1220, JT20, JT2020
HI222276	2.375"	.254"	HIWS1-600	10'	JT2-, JT2020, JT25, JT2720M1, JT3-, JT3020
HI296309522	2.625"	.400"	HIWS1-700	15'	JT40
HI222452	2.875"	.392"	HIWS1-900	15'	JT60
HI222454	3.500"	.449"	HIWS1-800	15'	JT7020, JT8020, JT100

### IMPORT

A355-1149-20	1.600"	.190"	1.30-5	6'	JT9, JT10
A355-1106-20	2.060"	.295"	.94-4	10'	JT20, JT2020
A355-1244-20	2.375"	.300"	2.11-4	9.8"	JT25, JT30, JT3020, JT2720M1
A355-1200-10	3.500"	.394"	3.27-4	14.75"	JT100

## HXT® ONE-PIECE FORGED FOR DITCH WITCH® DRILL RIGS

- 30% increase in torque
- Up to 44% increase in flow capacity
- Best choice for air hammers/mud motors

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI281600	2.063"	.260"	HXT-402	10'	JT2020
HI294566	2.375"	.295"	HXT-602	10'	JT25, JT30, JT2720M1, JT3020
HI276305	2.625"	.400"	HXT-702	14.75'	JT4020M1
HI350802015	3.500"	.449"	HXT-802	15'	HT7020, JT8020, JT100

## DITCH WITCH® THREAD ONE-PIECE FORGED

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
355-1149	1.600"	.190"	1.30-5	6'	JT9, JT10
355-1005	1.819"	.244"	1.47-4	10'	JT1220
355-1106	2.060"	.295"	1.94-4	10'	JT20, JT2020
355-1312	2.252"	.276"	1.76-4	10'	JT24
355-1244	2.375"	.300"	2.11-4	9.8'	JT25, JT30, JT3020, JT2720M1
359-1211	2.835"	.313"	2.10-4	15'	JT40
400-847	2.811"	.311"	2.59-4	14.75'	JT4020M1
355-1079	3.059"	.346"	2.46-4	15'	JT60
355-1200	3.500"	.394"	3.27-4	14.75'	JT100



## DITCH WITCH® DRILL STEM COMPONENTS

AT 2720M10 + JT3020AT + AT30

- Spacer for inner rod must be supplied OEM or reuse from existing pipe

Part No.	Description	Tube Diameter	Wall Diameter	Length (ft)
355-1351-01	Outer Pipe	2.374"	.276"	9.3"
355-1338-01	Outer Pipe Cobble	2.910"	.276"	9.3"
355-1351-02	Inner Rod	N/A	N/A	9.3"
400-234	Collar	N/A	N/A	4.7"
41LZ94	Coiled Spring Pin	N/A	N/A	1.5"

## DITCH WITCH®

AT 100 PIPE

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)
355-1050-500	3.630"	.313"	3.44-4	14.1'

## DITCH WITCH®

AT 100 PIPE Replacement Parts

Part No.	Tube Diameter	Length
355-1050-104	Collar (Internal Hex)	5.8"
355-1050-105	Inner Pipe	14.1"
H0042	Coiled Spring Pin	0.8"

## AMERICAN AUGERS®

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI206309520	3.500"	.476"	HIWS1-1000	20'	DD110
HI276376	3.500"	.449"	HXT-802	20'	DD110

## PRIME DRILLING®

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI296100215	3.500"	.476"	HXT-1002	15'	PD 50/30
HI296100220	3.500"	.476"	HXT-1002	20'	PD 50/30



Your machine may have been provided with other sized drill stem. Confirm drill stem dimensions prior to ordering.

## TORO® + ASTEC® DRILLS

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI216490	1.660"	.191"	HIWS1-200	5'	DD65
HI221628	2.063"	.260"	HIWS1-400	10'	DD2024, DD2226
HI222276	2.375"	.254"	HIWS1-600	10'	DD3238
HI296309599	2.375"	.295"	HIWS1-650	10'	DD4050

## TT TECHNOLOGIES®

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI216490	1.660"	.191"	HIWS1-200	5'	TT4X

## UNIVERSAL HDD®

Part No.	Tube Diameter	Wall Diameter	Connection	Length (ft)	Drill Rig Model
HI216492	1.660"	.191"	HIWS1-200	6'	UNI 15x22
HI222276	2.375"	.254"	HIWS1-600	10'	UNI 25, UNI 30x40
HI296309599	2.375"	.295"	HIWS1-650	10'	UNI 36x50, UNI 40x55
HI296312531	2.375"	.295"	HIWS1-650	15'	UNI 36x50, UNI 40x55
HI296309521	2.625"	.400"	HIWS1-700	10'	UNI 36x50, UNI 40x55
HI296309522	2.625"	.400"	HIWS1-700	15'	UNI 36x50, UNI 40x55
HI222451	2.875"	.392"	HIWS1-900	10'	UNI 45 x 65, UNI 70 x 90
HI222452	2.875"	.392"	HIWS1-900	15'	UNI 45 x 65, UNI 70 x 90
HI222454	3.500"	.449"	HIWS1-800	15'	UNI 80 x 120
HI296337977	3.500"	.476"	HIWS1-1000	15'	UNI 110 x 120
HI296309520	3.500"	.476"	HIWS1-1000	20'	UNI 110 x 120

## ROD WIPERS (Dual Split)

Part No.	Diameter
RW150DS	9" O.D. x 1.50 I.D.
RW175DS	9" O.D. x 1.75 I.D.
RW200DS	9" O.D. x 200 I.D.





## Side Load, Slant Face, Transmitter Housings

The side load feature provides quick and easy field installation and removal of transmitter sonde and batteries.

### All sizes feature:

- Replaceable tailpieces for long life
- Screw-in, heat treated replaceable nozzles for maximum durability and steering.
- Accepts all styles of OEM type bolt-on pilot bits (paddle bits).



### Transmitter Housing with “Bolt-On Doors” Vermeer® Compatible (Slant Face)

Model No.	Diameter	Pipe Thread
<b>2012</b>	2.750” Dia. Side Load, 6-Hole, Vermeer®	2.00” API IF (Box)
<b>2016</b>	3.250” Dia. Side Load, 6-Hole, Vermeer®	2.375” API REG (Box)
<b>2018</b>	3.50” Dia. Side Load, 6-Hole (5/8”-11 Bolts) Vermeer®	2-7/8” API IF (Box)
<b>2020</b>	4.250” Dia. Side Load, 6-Hole (5/8”-11 Bolts) Vermeer®	2-7/8” API IF (Box)



### Transmitter Housing with “Bolt-On Doors” Ditch Witch® Compatible (Slant Face)

Model No.	Diameter	Pipe Thread
<b>2111</b>	2.750” Dia., 5-Hole, Ditch Witch® - 12mm, 86 Series	2.00” API IF (Box)
<b>2117</b>	3.250” Dia., 6 Hole, Ditch Witch® - 16mm	2.375” API REG (Box)
<b>2119</b>	4.250” Dia., 6-Hole, Ditch Witch® - 20mm	2-7/8” API IF (Box)



## Transmitter Housing with “Double Locking Doors” Ditch Witch® Compatible (Slant Face)

Model No.	Diameter	Pipe Thread
<b>2311</b>	2.750" Dia. Side Load, 5-Hole, Ditch Witch® - 12mm,	2.00" API IF (Box)
<b>2317</b>	3.250" Dia. Side Load, 6-Hole, Ditch Witch® - 16mm	2.375" API REG (Box)
<b>2319</b>	4.250" Dia. Side Load, 6-Hole, Ditch Witch® - 20mm	2-7/8" API IF (Box)

## Transmitter Housing with “Double Locking Doors” Ditch Witch® Compatible (Slant Face)

Model No.	Diameter	Pipe Thread
<b>2212</b>	2.750" Dia. Side Load, 6-Hole, Vermeer®	2.00" API IF (Box)
<b>2216</b>	3.250" Dia. Side Load, 6-Hole, Vermeer®	2.375" API REG (Box)
<b>2218</b>	3.50" Dia. Side Load, 6-Hole, Vermeer®	2.375" API REG (Box)
<b>2220</b>	4.250" Dia. Side Load, 6-Hole (5/8" - 11 Bolts) Vermeer®	2-7/8" API IF (Box)





## Box x Box Transmitter Housing Vermeer® Compatible

Model No.	Diameter	Pipe Thread
2610	2.750" Dia., Box x Box Side Load Housing	2" IF x 2" IF
2612	3.00" Dia., Box x Box Side Load Housing	2" IF x 2" IF
2614	3.250" Dia., Box x Box Side Load Housing	2.375" API REG x 2.375" API REG
2618	3.500" Dia., Box x Box Side Load Housing	2.375" API REG x 2.375" API REG
2620	4.250" Dia., Box x Box Side Load Housing	2.875" API REG x 2.875" API REG
2622	5.00" Dia., Box x Box Side Load Housing	3.500" API REG x 3.500" API REG

## Box x Box Transmitter Housing Ditch Witch® Compatible

Model No.	Diameter	Pipe Thread
2711	2.750" Dia., Box x Box Side Load Housing	2" IF x 2" IF
2713	3.00" Dia., Box x Box Side Load Housing	2" IF x 2" IF
2715	3.250" Dia., Box x Box Side Load Housing	2.375" API REG x 2.375" API REG
2717	3.500" Dia., Box x Box Side Load Housing	2.375" API REG x 2.375" API REG
2719	4.250" Dia., Box x Box Side Load Housing	2.875" API REG x 2.875" API REG

## Box x Box End Load Rock Housings accepts 15" or 19" Digitrak Transmitters ONE PIECE HI-FLOW DESIGN

Model No.	Description
2811	3.625" Dia., Hi-Flow, 2-3/8" API REG x 2-3/8" API REG
2815	4.25" Dia., Hi-Flow, 2-7/8" API REG x 2-7/8" API REG
2817	5.00" Dia., Hi-Flow, 3-1/2" API REG x 3-1/2" API REG
2819	6.375" Dia., Hi-Flow, 4-1/2" API REG x 4-1/2" API REG





**Dirt Subs for Box End Transmitter Housing (Blade Adapters) Ditch Witch® Compatible**

Model No.	Diameter	Pipe Thread
2751	5 bolt (12mm)	2" IF PIN
2753	5 bolt (12mm)	2-3/8" API REG PIN
2755	6 bolt (16mm)	2-3/8" API REG PIN
2757	6 bolt (16mm)	2-7/8" API REG PIN
2759	6 bolt (16mm)	3-1/2" API REG PIN



**Dirt Subs for Box End Transmitter Housing (Blade Adapters) Ditch Witch® Compatible**

Model No.	Diameter	Pipe Thread
2650	6 bolt (1/2" - 13)	2" IF PIN
2652	6 bolt (1/2" - 13)	2-3/8" API REG PIN
2654	6 bolt (5/8" - 11)	2-7/8" API REG PIN
2656	6 bolt (5/8" - 11)	3-1/2" API REG PIN
2658	6 bolt (5/8" - 11)	4-1/2" API REG PIN



## American HDD® Rock Drilling Bits

Designed for easy cutting and steering in soft and medium-hard rock. The large face aids in steering while the carbide rubble hard-facing and carbide cutters and wear buttons, insure long service life. Pick the Extreme Series for a more aggressive cut.



### Double Angle Style Cutters

Model No.	Description
5512	Sequoia Rock Drilling bit w/Angle Cutters 4" cut with 2.0" IF Pin
5514	Sequoia Rock Drilling bit w/Angle Cutters 4" cut with 2-3/8" API Reg Pin
5516	Sequoia Rock Drilling bit w/Angle Cutters 5" cut with 2-3/8" API Reg Pin
5518	Sequoia Rock Drilling bit w/Angle Cutters 5" cut with 2-7/8" API Reg Pin
5520	Sequoia Rock Drilling bit w/Angle Cutters 6" cut with 2-7/8" API Reg Pin
5522	Sequoia Rock Drilling bit w/Angle Cutters 6" cut with 3-1/2" API Reg Pin
5524	Sequoia Rock Drilling bit w/Angle Cutters 6" cut with 4-1/2" API Reg Pin
5526	Sequoia Rock Drilling bit w/Angle Cutters 7" cut with 3-1/2" API Reg Pin

### Dome Style Cutters

Model No.	Description
5551	Sequoia Rock Drilling bit w/Dome Cutters 4" cut with 2.0" IF Pin
5553	Sequoia Rock Drilling bit w/Dome Cutters 4" cut with 2-3/8" API Reg Pin
5555	Sequoia Rock Drilling bit w/Dome Cutters 5" cut with 2-3/8" API Reg Pin
5557	Sequoia Rock Drilling bit w/Dome Cutters 5" cut with 2-7/8" API Reg Pin
5559	Sequoia Rock Drilling bit w/Dome Cutters 6" cut with 2-7/8" API Reg Pin
5561	Sequoia Rock Drilling bit w/Dome Cutters 6" cut with 3-1/2" API Reg Pin
5563	Sequoia Rock Drilling bit w/Dome Cutters 6" cut with 4-1/2" API Reg Pin
5565	Sequoia Rock Drilling bit w/Dome Cutters 7" cut with 3-1/2" API Reg Pin



**Go Extreme for a More Aggressive Cut!**

### Terra-Cut Rock Bits

Model No.	Description
5011	Porcupine Rock Drilling Bit 4-1/4" Cut with 2.0" IF Pin
5012	Porcupine Rock Drilling Bit 5-1/4" Cut with 2-3/8" API Reg Pin
5013	Porcupine Rock Drilling Bit 6-1/4" Cut with 2-7/8" API Reg Pin
5014	Porcupine Rock Drilling Bit 7-1/4" Cut with 3-1/2" API Reg Pin
5015	Porcupine Rock Drilling Bit 8-1/4" Cut with 4-1/2" API Reg Pin
5016	Porcupine Rock Drilling Bit 12-1/4" Cut with 4-1/2" API Reg Pin
5117	Porcupine Extreme Rock Drilling Bit 4-1/4" Cut with 2.0" IF Pin
5118	Porcupine Extreme Rock Drilling Bit 5-1/4" Cut with 2-3/8" API Reg Pin
5119	Porcupine Extreme Rock Drilling Bit 6-1/4" Cut with 2-7/8" API Reg Pin
5120	Porcupine Extreme Rock Drilling Bit 7-1/4" Cut with 3-1/2" API Reg Pin
5121	Porcupine Extreme Rock Drilling Bit 8-1/4" Cut with 4-1/2" API Reg Pin

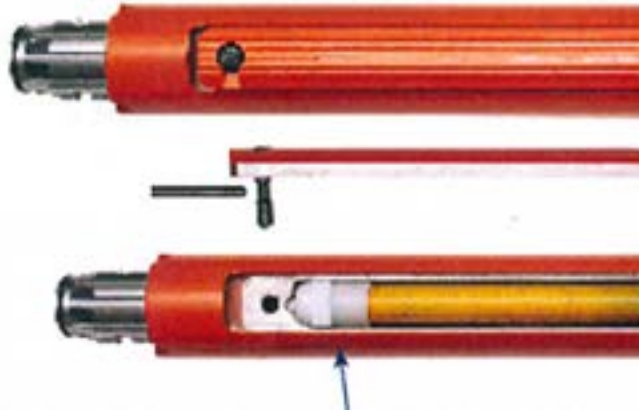
### Replacement Teeth for Porcupine Rock Bits

Model No.	Description
5055	Small 3/4" shank, Fits 4-1/4"
5056	Medium 1" shank, Fits 5-1/4"
5057	Large 1-1/8" shank, Fits 6-1/4" - 8-1/4"





### TRIHAWK Compatible 3" Diameter Housing 2.125" SPLINE (700-0300)



### Trihawk® Compatible Tooling

Accepts 15" Digitrak and 86 Series Subsite Transmitters

Model No.	Description
2721	American HDD® Transmitter Housing Trihawk® Compatible 3" Dia. 2-3/8" API REG (Box) x 2.125" Spline (Pin)
2723	American HDD® Transmitter Housing Trihawk® Compatible 3-1/2" Dia. 2-3/8" API REG (box) x 2.5" Spline (Pin)
5567	American HDD® Sequoia Rock Drilling Bit w/Dome Cutters 4" cut w/ 2.125" Spline Trihawk® Compatible
5569	American HDD® Sequoia Rock Drilling Bit w/Dome Cutters 5" cut w/2.5" Spline Trihawk® Compatible
5571	American HDD® Sequoia Rock Drilling Bit w/Dome Cutters 6" cut w/2.5" Spline Trihawk® Compatible
5528	American HDD® Sequoia Rock Drilling Bit w/Angle Cutters 4" cut w/2.125" Spline Trihawk® Compatible
5530	American HDD® Sequoia Rock Drilling Bit w/Angle Cutters 5" cut w/2.5" Spline Trihawk® Compatible
5532	American HDD® Sequoia Rock Drilling Bit w/Angle Cutters 6" cut w/2.5" Spline Trihawk® Compatible
5123	American HDD® Porcupine Extreme Rock Drilling Bit 4.4" cut with 2.125 Spline Trihawk® Compatible
5125	American HDD® Porcupine Extreme Rock Drilling Bit 5.4" cut with 2.5" Spline Trihawk® Compatible
2660	American HDD® Dirt Subs for Trihawk® Compatible Transmitter Housing (Blade Adapters) Vermeer® Compatible 6 bolt (1/2" - 13") 2.5" Spline (Box)
2662	American HDD® Dirt Subs for Trihawk® Compatible Transmitter Housing (Blade Adapters) Vermeer® Compatible 6 bolt (1/2" - 13) 2.125" Spline (Box)
2761	American HDD® Dirt Subs for Trihawk® Compatible Transmitter Housing (Blade Adapters) Ditch Witch® Compatible 5 bolt (12mm) 2.125" Spline (Box)
2763	American HDD® Dirt Subs for Trihawk® Compatible Transmitter Housing (Blade Adapters) Ditch Witch® Compatible 6 bolt (12mm) 2.5" Spline (Box)
1371	American HDD® Tail Piece (Housing Savers)/Adapter Trihawk® Compatible 2.125" Spline (B) X 2-3/8" API REG (P)
1373	American HDD® Tail Piece (Housing Savers)/Adapter Trihawk® Compatible 2.5" Spline (B) X 2-3/8" API REG (P)
200121	American HDD® Solid Body Spiral Fluted Backreamers 6" Cut x 4.5" Pack, 2.125" Spline (Box) x Pull Tab w/Rotary Teeth Trihawk® Compatible
200123	American HDD® Solid Body Spiral Fluted Backreamers 6" Cut x 4.5" Pack, 2.5" Spline (Box) x Pull Tab with Rotary Teeth Trihawk® Compatible

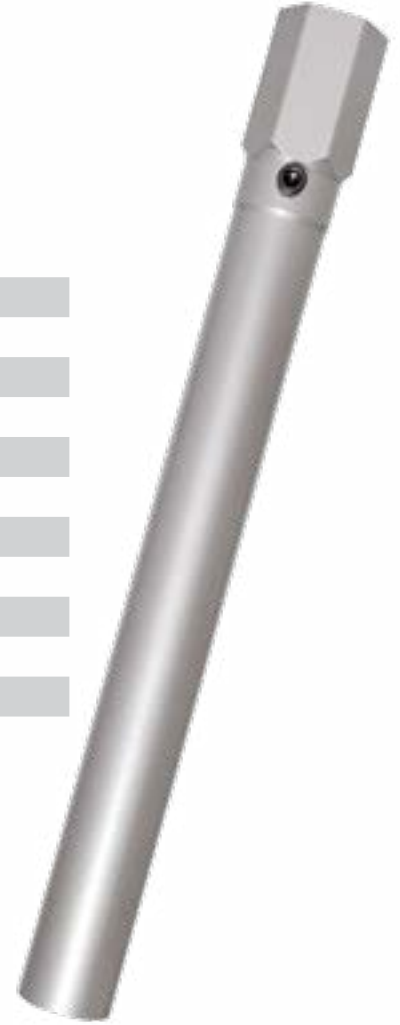
Trihawk® is a registered trademark of Charles Machine Works



### \*Starter Rod Vermeer® Compatible

Model No.	Rod Size	Connection Size
1010	FST 1 #700	2.125" LPT
1012	FST 1 #650	2.125" LPT
1014	FST 1 #600	2.125" LPT
1016	FST 1 #400	2.125" LPT
1018	FST 1 # 250	2.125" LPT
1020	FST 1 #200	1.625" LPT
1022	FST 1 #200	QF 300***
1026	FST 1 #600	QF 400***
1030	FST 1 #400	QF 400***
1038	FST 1 #700	QF 460***
1042	FST 1 #650	QF 460***
1046	FST 1 #600	QF 460***

\*\*\*QF 300, 400 & 460 are compatible with Vermeer® Quickfire 300, 400 & 460 connections.



### Starter Rod/Transition Sub Ditch Witch® "EZ Connect" Compatible

Model No.	Description	Rod Size	Connection Size
1111	Fits JT520	1.21 (Pin)	1.31 EZ-2 (Pin)
1113	Fits JT920, 920L, 921, 922, JT10	1.41 (Pin)	1.63 EZ-2 (Pin)
1115	Fits JT1220M1	1.47 (Pin)	1.88 EZ-3 (Pin)
1117	Fits JT1720, JT1720M1	1.69 (Pin)	2.0 EZ-2 (Pin)
1119	Fits JT2020M1, JT20	1.94 (Pin)	2.0 EZ-2 (Pin)
1121	Fits JT2720	1.94 (Pin)	2.0 EZ-2 (Pin)
1123	Fits JT2720M1	2.11 (Pin)	2.25 EZ-3 (Pin)
1125	Fits JT3020M1, JT25, JT30	2.11 (Pin)	2.25 EZ-3 (Pin)
1127	Fits JT4020M1	2.59 (Pin)	2.63 EZ-2 (Pin)





## Vermeer® Tail Piece (Housing Savers)/Adapter\*

Model No.	Diameter	Pipe Thread
1210	1.625" LPT Hex (Pin)	2.00" IF (Pin)
1212	1.625" LPT Hex (Pin)	2.375" API REG (Pin)
1214	2.125" LPT Hex (Pin)	2.00" IF (Pin)
1216	2.125" LPT Hex (Pin)	2.375" API REG (Pin)
1226	QF 300 (Pin)***	2.00" IF (Pin)
1228	QF 300 (Pin)***	2.375" API REG (Pin)
1230	QF 400 (Pin)***	2.00" IF (Pin)
1232	QF 400 (Pin)***	2.00" IF (Pin) w/HD Bolt
1234	QF 400 (Pin)***	2.375" API REG (Pin)
1236	QF 400 (Pin)***	2.375" API REG (Pin) w/HD Bolt
1238	QF 460 (Pin)***	2.375" API REG (Pin)
1240	QF 460 (Pin)***	2.375" API REG (Pin) w/HD Bolt
1242	QF 460 (Pin)***	2.875" API REG (Pin)
1244	QF 460 (Pin)***	2.875" API REG (Pin) w/HD B



\*\*\*QF 300, 400 & 460 are compatible with Vermeer® Quickfire 300, 400 & 460 connections.

\*Note: Other configurations available to order.

## Ditch Witch® Tail Piece (Housing Savers)/Adapter\*

Model No.	Drill Rig	Diameter	Pipe Thread
1311	Fits 920, 920L, 921, 922, JT10	EZ-2 (Box) 1.63	2.00" IF (Pin)
1313	Fits 920, 920L, 921, 922, JT10	EZ-2 (Box) 1.63	2.375" API REG (Pin)
1315	Fits 1220M1	EZ-3 (Box) 1.88	2.00" IF (Pin)
1317	Fits 1220M1	EZ-3 (Box) 1.88	2.375" API REG (Pin)
1319	Fits 1720, 1720M1, 2020M1, 2720, JT20	EZ-2 (Box) 2.00	2.00" IF (Pin)
1321	Fits 1720, 1720M1, 2020M1, 2720, JT20	EZ-2 (Box) 2.00	2.375" API REG (Pin)
1323	Fits 2720M1	EZ-3 (Box) 2.25	2.00" IF (Pin)
1325	Fits 2720M1	EZ-3 (Box) 2.25	2.375" API REG (Pin)
1327	Fits 3020M1, JT25, JT30	EZ-3 (Box) 2.25	2.0" IF (Pin)
1329	Fits 3020M1, JT25, JT30	EZ-3 (Box) 2.25	2.375" API REG (Pin)
1331	Fits 3020M1, JT25, JT30	EZ-3 (Box) 2.25	2.875" IF (Pin)
1333	Fits 4020M1	EZ-2 (Box) 2.63	2.375" API REG (Pin)
1335	Fits 4020M1	EZ-2 (Box) 2.63	2.875" IF (Pin)

\*Note: Other configurations available to order.





## Replacement Drive Collars for Vermeer® Rigs

Model No.	ID Size	Description
1410	2.00"	Hex Collar Vermeer® Compatible Hard-faced for 1.625" LPT
1414	2.00"	Hex Collar Vermeer® Compatible w/Shark Teeth & Hard-faced for 1.625" LPT
1416	2.50"	Hex Collar Vermeer® Compatible Hard-Faced for 2.125" LPT
1420	2.50"	Hex Collar Vermeer® Compatible w/Shark Teeth & Hard-Faced for 2.125" LPT
1422	2.15"	Octagon Collar Vermeer® Compatible Hard-Faced for QF 300***
1424	2.15"	Octagon Collar Vermeer® Compatible w/Shark Teeth & Hard-Faced for QF 300***
1426	2.625"	Octagon Collar Vermeer® Compatible Hard-Faced for QF 400***
1428	2.625"	Octagon Collar Vermeer® Compatible w/Shark Teeth & Hard-Faced for QF 400***
1430	3.00"	Octagon Collar Vermeer® Compatible Hard-Faced for QF 460***
1432	3.00"	Octagon Collar Vermeer® Compatible w/Shark Teeth & Hard-Faced for QF 460***

\*\*\*QF 300, 400 & 460 are compatible with Vermeer® Quickfire 300, 400 & 460 connections.



## Replacement Drive Collars for Ditch Witch® Rigs

Model No.	ID Size	Description
1511	1.56"	Octagon Collar w/Hard-Facing for EZ-2 - JT520
1513	2.00"	Octagon collar w/Hard-Facing for EZ-2 - JT920, JT920L, JT921, JT922
1515	2.25"	Octagon Collar w/Hard-Facing for EZ-3 - JT1220M1
1519	2.50"	Octagon Collar w/Hard-Facing EZ-2 - JT1720, JT720M2, JT2020M1, JT2720, JT2720M1
1525	2.75"	Octagon Collar w/Hard-Facing for EZ-3 0 - JT2720AT, JT3020AT, JT3020M1, JT25
1527	3.15"	Octagon Collar w/Hard-Facing for EZ-2 - JT4020M1, JT2720AT, JT3020AT





## Sub-Saver Vermeer® Compatible

Model No.	Drill Rig	Pipe Thread
3120	7x11, 7x11A, 10x14, 10x15	1.66" pipe - #200
3212	7x11 Series II	1.66" pipe - #200
3214	16x20, 18x22, 20x22	1.90" pipe - #250
3216	16x20, 18x22, 20x22	2.06" pipe - #400
3222	24x40, Series II - 12.0" OAL	2.375" pipe - #600
3224	24x40 Series III - 12.5" OAL	2.375" pipe - #600
3226	33x44, 36x50	2.375" pipe - #650
3228	36x50, 40x55	2.625" pipe - #700
3230	50x100, 80x100	2.875" pipe - #900
3232	50x100, 80x100	3.50" pipe - #800
3234	100x120	3.50" pipe - #1000
3436	40x55 Series III	2.625" pipe #700



## Drive Chuck for Vermeer® Rigs

Model No.	Drill Rig	Diameter	Pipe Thread
3010	7x11, 7x11A	1.66"	pipe - #200
3012	10x14, 10x15	1.66"	pipe - #200
3014	16x20, 18x22, 20x22	1.9"	pipe - #250
3016	16x20, 18x22, 20x22	2.06"	pipe - #400
3018	24x40, 40x40	2.375"	pipe - #600
3020	50x100, 80x100	2.875"	pipe - #900
3022	50x100, 80x100	3.500"	pipe - #800
3028	36x50, 40x55	2.625"	pipe - #700



## Drive Chuck for Ditch Witch® Rigs

Model No.	Drill Rig	Pipe Thread
3111	JT1220M1	1.47-4 THD
3113	JT2020M1	1.94-4 THD
3115	JT2720	1.94-4 THD
3117	JT1720, JT1720M1	1.69-6 THD
3119	JT920, JT920L	1.41-6 THD





**Baseball Button Bit (Pull Back Hole Std.) For Rocky & Abrasive Soil**

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	9901	5 Hole - 12mm	3.5"	3/4"
	9903	5 Hole - 12mm	4.0"	3/4"
	9905	5 Hole - 12mm	4.5"	3/4"
	9907	5 Hole - 12mm	5.0"	3/4"
	9909	6 Hole - 16mm	4.0"	3/4"
	9911	6 Hole - 16mm	4.5"	3/4"
	9913	6 Hole - 16mm	5.0"	3/4"
	9915	6 Hole - 16mm	6.0"	3/4"
	9917	6 Hole - 16mm	5.0"	1.0"
	9919	6 Hole - 16mm	6.0"	1.0"
	9921	6 Hole - 20mm	5.0"	1.0"
	9923	6 Hole - 20mm	6.0"	1.0"
	Vermeer®	9802	5 Hole - 3/8" - 16	4.0"
9804		7 Hole - 1/2" - 13	3.5"	3/4"
9806		7 Hole - 1/2" - 13	4.0"	3/4"
9808		7 Hole - 1/2" - 13	4.5"	3/4"
9810		7 Hole - 1/2" - 13	5.0"	3/4"
9812		7 Hole - 1/2" - 13	6.0"	3/4"
9814		7 Hole - 1/2" - 13	8.0"	3/4"
9816		7 Hole - 1/2" - 13	5.0"	1.0"
9818		7 Hole - 1/2" - 13	6.0"	1.0"
9820		7 Hole - 5/8" - 11	5.0"	1.0"
9822		7 Hole - 5/8" - 11	6.0"	1.0"
9824	7 Hole - 5/8" - 11	8.0"	1.0"	





## Gila Monster Bit (Pull Back Hole Std.) For Rocky & Abrasive Soil

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	8701	3 Hole - 12mm	2.5"	1/2"
	8703	3 Hole - 12mm	3.0"	1/2"
	8705	3 Hole - 12mm	3.5"	1/2"
	8707	5 Hole - 12mm	3.5"	3/4"
	8709	5 Hole - 12mm	4.0"	3/4"
	8711	5 Hole - 12mm	5.0"	3/4"
	8713	6 Hole - 16mm	4.0"	3/4"
	8715	6 Hole - 16mm	5.0"	3/4"
	8717	6 Hole - 16mm	6.0"	3/4"
	8719	6 Hole - 16mm	4.0"	1.0"
	8721	6 Hole - 16mm	5.0"	1.0"
	8723	6 Hole - 20mm	5.0"	1.0"
	8725	6 Hole - 20mm	6.0"	1.0"
	Vermeer®	8602	5 Hole - 3/8" - 16	4.0"
8604		7 Hole - 1/2" - 13	3.5"	3/4"
8606		7 Hole - 1/2" - 13	4.0"	3/4"
8610		7 Hole - 1/2" - 13	5.0"	3/4"
8612		7 Hole - 1/2" - 13	6.0"	3/4"
8614		7 Hole - 1/2" - 13	4.0"	1.0"
8616		7 Hole - 1/2" - 13	4.5"	1.0"
8618		7 Hole - 1/2" - 13	5.0"	1.0"
8620		7 Hole - 1/2" - 13	6.0"	1.0"
8622		7 Hole - 5/8" - 11	5.0"	1.0"
8624		7 Hole - 5/8" - 11	6.0"	1.0"
8626		7 Hole - 5/8" - 11	8.0"	1.0"





**Rattlesnake Bit (Pull Back Hole Std.)**

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	8501	5 Hole - 12mm	4.0"	3/4"
	8505	6 Hole - 16mm	4.0"	3/4"
	8507	6 Hole - 16mm	5.0"	3/4"
Vermeer®	8404	7 Hole - 1/2" - 13	4.0"	3/4"
	8408	7 Hole - 1/2" - 13	5.0"	3/4"



**Black Widow Bit (Pull Back Hole Std.) For Rocky & Abrasive Soil**

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	7101	5 Hole - 12mm	4.0"	3/4"
	7103	5 Hole - 12mm	5.0"	3/4"
	7105	6 Hole - 16mm	4.0"	3/4"
	7107	6 Hole - 16mm	5.0"	3/4"
	7109	6 Hole - 16mm	6.0"	3/4"
	7111	6 Hole - 16mm	5.0"	1"
	7113	6 Hole - 16mm	6.0"	1"
Vermeer®	7002	7 Hole - 1/2" - 13	3.5"	3/4"
	7004	7 Hole - 1/2" - 13	4.0"	3/4"
	7006	7 Hole - 1/2" - 13	4.5"	3/4"
	7008	7 Hole - 1/2" - 13	5.0"	3/4"
	7010	7 Hole - 1/2" - 13	5.5"	3/4"
	7012	7 Hole - 1/2" - 13	8.0"	3/4"
	7014	7 Hole - 5/8" - 11	5.0"	1"
	7016	7 Hole - 5/8" - 11	6.5"	1"







## Big Foot Bit (Pull Back Hole Std.) For Sedimentary Rock, Hardpan, Dry Clay & Compacted Soil

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	9701	3 Hole - 12mm	2.5"	1/2"
	9703	3 Hole - 12mm	3.0"	1/2"
	9705	3 Hole - 12mm	3.5"	1/2"
	9707	5 Hole - 12mm	4.0"	3/4"
	9709	5 Hole - 12mm	4.5"	3/4"
	9711	5 Hole - 12mm	5.0"	3/4"
	9713	6 Hole - 16mm	4.5"	3/4"
	9715	6 Hole - 16mm	5.0"	3/4"
	9717	6 Hole - 16mm	6.0"	3/4"
	9719	6 Hole - 20mm	5.0"	1.0"
	9721	6 Hole - 20mm	6.0"	1.0"
	9723	6 Hole - 20mm	8.0"	1.0"
	9725	6 Hole - 20mm	10.0"	1.0"
Vermeer®	9602	7 Hole - 1/2" - 13	4.0"	3/4"
	9604	7 Hole - 1/2" - 13	5.0"	3/4"
	9606	7 Hole - 1/2" - 13	6.0"	3/4"
	9608	7 Hole - 1/2" - 13	5.0"	1.0"
	9610	7 Hole - 1/2" - 13	6.0"	1.0"
	9612	7 Hole - 5/8" - 11	5.0"	1.0"
	9614	7 Hole - 5/8" - 11	6.0"	1.0"
	9616	7 Hole - 5/8" - 11	8.0"	1.0"



## Bass Bit (Pull Back Hole Std.) For Sedimentary Rock, Hardpan, Dry Clay & Compacted Soil

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	7901	5 Hole - 12mm	4.0"	3/4"
	7903	5 Hole - 12mm	4.5"	3/4"
	7905	5 Hole - 12mm	5.0"	3/4"
	7907	6 Hole - 16mm	4.0"	3/4"
	7909	6 Hole - 16mm	5.0"	3/4"
	7911	6 Hole - 20mm	5.0"	1.0"
	7913	6 Hole - 20mm	6.0"	1.0"
	7915	6 Hole - 20mm	8.0"	1.0"
	Vermeer®	7802	7 Hole - 1/2" - 13	4.0"
7804		7 Hole - 1/2" - 13	4.5"	3/4"
7806		7 Hole - 1/2" - 13	5.0"	3/4"
7808		7 Hole - 1/2" - 13	6.0"	3/4"
7810		7 Hole - 5/8" - 11	10.0"	1.0"
7812		7 Hole - 5/8" - 11	4.0"	1.0"
7814		7 Hole - 5/8" - 11	5.0"	1.0"
7816		7 Hole - 5/8" - 11	6.0"	1.0"



**BBQ Bit (Pull Back Hole Std.) For Hard, Rocky Soil**

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	8101	5 Hole - 12mm	3.5"	3/4"
	8103	5 Hole - 12mm	4.0"	3/4"
	8105	5 Hole - 12mm	4.5"	3/4"
	8107	5 Hole - 12mm	5.0"	3/4"
	8109	6 Hole - 16mm	4.0"	3/4"
	8111	6 Hole - 16mm	4.5"	1.0"
	8113	6 Hole - 16mm	5.0"	1.0"
Vermeer®	8002	7 Hole - 1/2" - 13	3.5"	3/4"
	8004	7 Hole - 1/2" - 13	4.0"	3/4"
	8006	7 Hole - 1/2" - 13	4.5"	3/4"
	8008	7 Hole - 1/2" - 13	5.0"	3/4"
	8010	7 Hole - 5/8" - 11	5.0"	1.0"



**Apple Pie Bit (Pull Back Hole Std.) For Hard, Rocky Soil**

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	8301	5 Hole - 12mm	3.5"	3/4"
	8303	5 Hole - 12mm	4.0"	3/4"
	8305	5 Hole - 12mm	4.5"	3/4"
	8307	5 Hole - 12mm	5.0"	3/4"
	8309	6 Hole - 16mm	4.0"	3/4"
	8311	6 Hole - 16mm	4.5"	1.0"
	8313	6 Hole - 16mm	5.0"	1.0"
	8315	6 Hole - 16mm	6.0"	1.0"
Vermeer®	8202	7 Hole - 1/2" - 13	3.5"	3/4"
	8204	7 Hole - 1/2" - 13	4.0"	3/4"
	8206	7 Hole - 1/2" - 13	4.5"	3/4"
	8208	7 Hole - 1/2" - 13	5.0"	3/4"
	8210	7 Hole - 5/8" - 11	6.0"	1.0"
	8212	7 Hole - 5/8" - 11	7.0"	1.0"





## ACE of Diamonds Bit (Pull Back Hole Std.) For Sand, Wet Clay w/Cobble

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	9301	5 Hole - 12mm	2.5"	1/2"
	9303	5 Hole - 12mm	3.0"	1/2"
	9305	5 Hole - 12mm	3.5"	1/2"
	9307	5 Hole - 12mm	3.5"	3/4"
	9309	5 Hole - 12mm	4.0"	3/4"
	9311	5 Hole - 12mm	4.5"	3/4"
	9313	5 Hole - 12mm	5.0"	3/4"
	9315	6 Hole - 16mm	4.0"	3/4"
	9317	6 Hole - 16mm	4.5"	3/4"
	9319	6 Hole - 16mm	5.0"	3/4"
	9321	6 Hole - 16mm	6.0"	3/4"
	9323	6 Hole - 20mm	5.0"	1.0"
	9325	6 Hole - 20mm	6.0"	1.0"
	9327	6 Hole - 20mm	8.0"	1.0"
Vermeer®	9202	7 Hole - 1/2" - 13	3.5"	3/4"
	9204	7 Hole - 1/2" - 13	4.0"	3/4"
	9206	7 Hole - 1/2" - 13	4.5"	3/4"
	9208	7 Hole - 1/2" - 13	5.0"	3/4"
	9210	7 Hole - 1/2" - 13	6.0"	3/4"
	9212	7 Hole - 5/8" - 11	5.0"	1.0"
	9214	7 Hole - 5/8" - 11	6.0"	1.0"
	9216	7 Hole - 5/8" - 11	8.0"	1.0"



### Bald Eagle Bit (Pull Back Hole Std.) For Normal Soil Conditions

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	9101	3 Hole - 12mm	2.5"	1/2"
	9103	3 Hole - 12mm	3.0"	1/2"
	9105	3 Hole - 12mm	3.5"	1/2"
	9107	5 Hole - 12mm	3.5"	3/4"
	9109	5 Hole - 12mm	4.0"	3/4"
	9111	5 Hole - 12mm	4.5"	3/4"
	9113	5 Hole - 12mm	5.0"	3/4"
	9115	6 Hole - 16mm	4.0"	3/4"
	9117	6 Hole - 16mm	4.5"	3/4"
	9119	6 Hole - 16mm	5.0"	3/4"
	9121	6 Hole - 16mm	6.0"	3/4"
Vermeer®	9002	5 Hole - 3/8" - 16	2.5"	1/2"
	9004	5 Hole - 3/8" - 16	3.0"	1/2"
	9006	5 Hole - 3/8" - 16	3.5"	1/2"
	9008	5 Hole - 3/8" - 16	4.0"	1/2"
	9010	7 Hole - 1/2" - 13	3.5"	3/4"
	9012	7 Hole - 1/2" - 13	4.0"	3/4"
	9014	7 Hole - 1/2" - 13	4.5"	3/4"
	9016	7 Hole - 1/2" - 13	5.0"	3/4"
	9018	7 Hole - 5/8" - 11	6.0"	3/4"





## Rifle Bit (Pull Back Hole Std.) For Sand & Sandy Loom

	Model No.	Hole Pattern	Width	Thickness	
Ditch Witch®	7501	3 Hole - 12mm	2.5"	1/2"	
	7503	3 Hole - 12mm	3.0"	1/2"	
	7505	3 Hole - 12mm	3.5"	1/2"	
	7507	5 Hole - 12mm	3.5"	3/4"	
	7509	5 Hole - 12mm	4.0"	3/4"	
	7511	5 Hole - 12mm	4.5"	3/4"	
	7513	5 Hole - 12mm	5.0"	3/4"	
	7515	6 Hole - 16mm	4.0"	3/4"	
	7517	6 Hole - 16mm	4.5"	3/4"	
	7519	6 Hole - 16mm	5.0"	3/4"	
	7521	6 Hole - 16mm	6.0"	3/4"	
	7523	6 Hole - 20mm	5.0"	1.0"	
	7525	6 Hole - 20mm	6.0"	1.0"	
	Vermeer®	7402	5 Hole - 3/8 - 16	2.5"	1/2"
		7404	5 Hole - 3/8 - 16	3.0"	1/2"
7406		5 Hole - 3/8 - 16	3.5"	1/2"	
7408		5 Hole - 3/8 - 16	4.0"	1/2"	
7410		7 Hole - 1/2" - 13	3.5"	3/4"	
7412		7 Hole - 1/2" - 13	4.0"	3/4"	
7414		7 Hole - 1/2" - 13	4.5"	3/4"	
7416		7 Hole - 1/2" - 13	5.0"	3/4"	
7418		7 Hole - 1/2" - 13	5.0"	3/4"	
7420		7 Hole - 1/2" - 13	4.0"	1.0"	
7422		7 Hole - 1/2" - 13	4.5"	1.0"	
7424		7 Hole - 1/2" - 13	5.0"	1.0"	
7426		7 Hole - 1/2" - 13	6.0"	1.0"	
7428		7 Hole - 5/8" - 11	5.0"	1.0"	
7430		7 Hole - 5/8" - 11	6.0"	1.0"	



**Redwood Bit (Pull Back Hole Std.) For Sand & Sandy Loom**

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	7301	5 Hole - 12mm	4.0"	3/4"
	7303	5 Hole - 12mm	5.0"	3/4"
	7305	6 Hole - 16mm	5.0"	3/4"
	7309	6 Hole - 16mm	6.0"	3/4"
Vermeer®	7202	7 Hole - 1/2" - 13	4.0"	3/4"
	7204	7 Hole - 1/2" - 13	5.0"	3/4"
	7206	7 Hole - 1/2" - 13	6.0"	3/4"



Same design as Rifle, with a bigger bend for better steering.



**The Claw Bit (Pull Back Hole Std.) For Hardpan, Dry Clay & Compacted Soil**

	Model No.	Hole Pattern	Width	Thickness
Ditch Witch®	7701	5 Hole - 12mm	4.0"	3/4"
	7703	5 Hole - 12mm	5.0"	3/4"
	7705	6 Hole - 16mm	5.0"	3/4"
Vermeer®	7602	7 Hole - 1/2" - 13	3.0"	3/4"
	7604	7 Hole - 1/2" - 13	4.0"	3/4"
	7606	7 Hole - 1/2" - 13	4.5"	3/4"
	7608	7 Hole - 1/2" - 13	5.0"	3/4"
	7610	7 Hole - 1/2" - 13	6.0"	3/4"





## Solid Body Spiral Fluted Backreamers

(Replaceable Fluid Jets in 12" Model)

Model No.	Cut Diameter	Pack Diameter	Description
200111	4.5"	4.0"	2" IF (Box x Box) w/Conical Teeth
200112	6"	4.5"	2" IF (Box x Box) w/Shark Teeth
200113	6"	4.5"	2" IF (Box x Box) w/Rotary Teeth
200114	8"	6.0"	2-3/8" REG (Box x Box) w/Shark Teeth
200115	8"	6.0"	2-3/8" REG (Box x Box) w/Rotary Teeth
200116	10"	8.0"	2-3/8" REG (Box x Box) w/Shark Teeth
200117	10"	8.0"	2-3/8" REG (Box x Box) w/Rotary Teeth
200118	12"	10.0"	2-3/8" REG (Box x Box) w/Shark Teeth
200119	12"	10.0"	2-3/8" REG (Box x Box) w/Rotary Teeth



## Solid Body Spiral Fluted Backreamers w/Swivel

(Replaceable Fluid Jets in 12" Model)

Model No.	Cut Diameter	Pack Diameter	Description
200222	6"	4.5"	2" IF (Box x Swivel) w/Shark Teeth and 15K Swivel
200223	6"	4.5"	2" IF (Box x Swivel) w/Shark Teeth and 15K Swivel
200224	8"	6.0"	2-3/8" REG (Box x Swivel) w/Shark Teeth and 15K Swivel
200225	8"	6.0"	2-3/8" REG (Box x Swivel) w/Rotary Teeth and 15K Swivel
200226	10"	8.0"	2-3/8" REG (Box x Swivel) w/Shark Teeth and 20K Swivel
200227	10"	8.0"	2-3/8" REG (Box x Swivel) w/Rotary Teeth and 20K Swivel
200228	10"	8.0"	2-3/8" REG (Box x Swivel) w/Shark Teeth and 30K Swivel
200229	10"	8.0"	2-3/8" REG (Box x Swivel) w/Rotary Teeth and 30K Swivel
200230	12"	10.0"	2-3/8" REG (Box x Swivel) w/Shark Teeth and 20K Swivel
200231	12"	10.0"	2-3/8" REG (Box x Swivel) w/Rotary Teeth and 20K Swivel
200232	12"	10.0"	2-3/8" REG (Box x Swivel) w/Shark Teeth and 30K Swivel
200233	12"	10.0"	2-3/8" REG (Box x Swivel) w/Rotary Teeth and 30K Swivel



Shark Tooth



Conical Tooth

## Replacement Carbide Reamer Cutters

Model Number	Description
90101	# 1 ST, Small Shark Tooth - 1.250"ht.
90102	#2 ST, Medium Shark Tooth - 1.50"ht.
90201	# 1 C, Small Conical Tooth - .840"ht.
90202	#2 C, Medium Conical Tooth - 1.26"ht.



## Stacked Spiral Fluted Backreamers (Stacked Plate Reamer w/Shark Teeth - API (Box x Box))

Size Range: 10.0" - 54.0" Dia. Shaft Dia.: 3.25"

Model Number	Cut Diameter	Pack Diameter	Shaft Diameter	Description
350111	10"	8"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
350112	12"	10"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
350113	12"	10"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350114	14"	12"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
350115	14"	12"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350116	16"	14"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
350117	16"	14"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350118	18"	16"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
350119	18"	16"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350120	20"	18"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
350121	20"	18"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350122	22"	20"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
350123	22"	20"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350124	24"	22"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
350125	24"	22"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350126	26"	24"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350127	28"	26"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350128	30"	28"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350129	30"	28"	4.75"	3-1/2" IF (Box x Box) w/Shark Teeth
350130	32"	30"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350131	32"	30"	4.75"	3-1/2" IF (Box x Box) w/Shark Teeth
350132	34"	32"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
350133	34"	32"	4.75"	3-1/2" IF (Box x Box) w/Shark Teeth
350134	36"	34"	4.75"	2-7/8" IF (Box x Box) w/Shark Teeth
350135	36"	34"	4.75"	3-1/2" IF (Box x Box) w/Shark Teeth

## Stacked Spiral Fluted Backreamers (Stacked Plate Reamer w/Rotary Teeth - API (Box x Box))

Size Range: 10.0" - 54.0" Dia. Shaft Dia.: 3.25"

Model Number	Cut Diameter	Pack Diameter	Shaft Diameter	Description
350111-2	10"	8"	3.25"	2-3/8" REG (Box x Box) w/Rotary Teeth
350112-2	12"	10"	3.25"	2-3/8" REG (Box x Box) w/Rotary Teeth
350113-3	12"	10"	4.25"	2-7/8" IF (Box x Box) w/Rotary Teeth



Shark Tooth



Conical Tooth

### Replacement Carbide Reamer Cutters

Model Number	Description
90101	# 1 ST, Small Shark Tooth - 1.250"ht.
90102	#2 ST, Medium Shark Tooth - 1.50"ht.
90201	# 1 C, Small Conical Tooth - .840"ht.
90202	#2 C, Medium Conical Tooth - 1.26"ht.







**\*Note:** A “Spider” center support and stabilizer ring are standard on 18” and larger reamers. Additional sizes and configurations (extra wings, cutters, wide stabilizer rings, etc.) are available upon request.



## Winged Backreamers

3-Winged Reamer (Fly-Cutter) - API (Box x Box)				
Model No.	Cut Diameter	Pack Diameter	Shaft Diameter	Description
450111	8”	N/A	2.75”	2” IF (Box x Box) w/Shark Teeth
450112	10”	N/A	2.75”	2” IF (Box x Box) w/Shark Teeth
450113	12”	N/A	2.75”	2” IF (Box x Box) w/Shark Teeth
450114	12”	N/A	3.25”	2-3/8” REG (Box x Box) w/Shark Teeth
450115	14”	N/A	2.75”	2” IF (Box x Box) w/Shark Teeth
450116	14”	N/A	3.25”	2-3/8” REG (Box x Box) w/Shark Teeth
450117	16”	N/A	2.75”	2” IF (Box x Box) w/Shark Teeth
450118	16”	N/A	3.25”	2-3/8” REG (Box x Box) w/Shark Teeth
450119	18”	16.5”	2.75”	2” IF (Box x Box) w/Shark Teeth
450120	18”	16.5”	3.25”	2-3/8” REG (Box x Box) w/Shark Teeth
450121	20”	18.5”	3.25”	2-3/8” REG (Box x Box) w/Shark Teeth
450122	20”	18.5”	4.25”	2-3/8” REG (Box x Box) w/Shark Teeth
450123	22”	20.5”	3.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450124	22”	20.5”	4.25”	2-3/8” REG (Box x Box) w/Shark Teeth
450125	24”	22.5”	3.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450126	24”	22.5”	4.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450127	26”	24.5”	3.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450128	26”	24.5”	4.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450129	26”	24.5”	4.75”	2-7/8” IF (Box x Box) w/Shark Teeth
450130	28”	26.5”	3.25”	2-3/8” REG (Box x Box) w/Shark Teeth
450131	28”	26.5”	4.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450132	38”	26.5”	4.75”	3-1/2” IF (Box x Box) w/Shark Teeth
450133	30”	28.5”	4.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450134	30”	28.5”	4.75”	3-1/2” IF (Box x Box) w/Shark Teeth
450135	32”	30.5”	4.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450136	32”	30.5”	4.75”	3-1/2” IF (Box x Box) w/Shark Teeth
450137	34”	32.5”	4.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450138	34”	32.5”	4.75”	3-1/2” IF (Box x Box) w/Shark Teeth
450139	36”	34.5”	4.25”	2-7/8” IF (Box x Box) w/Shark Teeth
450140	36”	34.5”	4.75”	3-1/2” IF (Box x Box) w/Shark Teeth



## Sand Backreamers

### 3-Winged Reamer (Fly-Cutter) - API (Box x Box)

Model No.	Cut Diameter	Pack Diameter	Shaft Diameter	Description
500111	6"	4.5"	2.75"	2" IF (Box x Box) w/Conical Carbide Blocks
500112	8"	6.6"	2.75"	2" IF (Box x Box) w/Conical Carbide Blocks
500113	10"	8.6"	2.75"	2" IF (Box x Box) w/Conical Carbide Blocks
500114	10"	10.8"	3.25"	2-3/8" REG (Box x Box) w/Conical Carbide Blocks
500115	12"	10.8"	2.75"	2" IF (Box x Box) w/Conical Carbide Blocks
500116	12"	12.8"	3.25"	2-3/8" REG (Box x Box) w/Conical Carbide Blocks
500117	14"	12.8"	2.75"	2" IF (Box x Box) w/Conical Carbide Blocks
500118	14"	14"	3.25"	2-3/8" REG (Box x Box) w/Conical Carbide Blocks
500119	16"	14"	2.75"	2" IF (Box x Box) w/Conical Carbide Blocks
500120	16"	16"	3.25"	2-3/8" REG (Box x Box) w/Conical Carbide Blocks
500121	18"	16"	2.75"	2" IF (Box x Box) w/Conical Carbide Blocks
500122	18"	16"	3.25"	2-3/8" REG (Box x Box) w/Conical Carbide Blocks
500123	18"	16"	4.25"	2-7/8" IF (Box x Box) w/Conical Carbide Blocks
500124	20"	18"	3.25"	2-3/8" REG (Box x Box) w/Conical Carbide Blocks
500125	20"	18.5"	4.25"	2-7/8" IF (Box x Box) w/Conical Carbide Blocks
500126	24"	20"	3.25"	2-3/8" REG (Box x Box) w/Conical Carbide Blocks
500127	24"	20"	4.25"	2-7/8" IF (Box x Box) w/Conical Carbide Blocks
500128	24"	20"	4.75"	3-1/2" IF (Box x Box) w/Conical Carbide Blocks
500129	28"	24"	4.25"	2-7/8" IF (Box x Box) w/Conical Carbide Blocks
500130	28"	24"	4.75"	3-1/2" IF (Box x Box) w/Conical Carbide Blocks
500131	32"	28"	4.25"	2-7/8" IF (Box x Box) w/Conical Carbide Blocks
500132	32"	28"	4.75"	3-1/2" IF (Box x Box) w/Conical Carbide Blocks
500133	36"	30"	4.25"	2-7/8" IF (Box x Box) w/Conical Carbide Blocks
500134	36"	30"	4.75"	3-1/2" IF (Box x Box) w/Conical Carbide Blocks



## Clay Reamers W/ Conical Teeth - API (Box x Box)

Size Range: 6.0" - 60.0" Dia. Shaft Dia.: 2.75" - 6.75"

Model No.	Cut Diameter	Shaft Diameter	Description
300111	6"	2.75"	2" IF (Box x Box) w/Conical Teeth
300112	8"	2.75"	2" IF (Box x Box) w/Conical Teeth
300113	8"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300114	10"	2.75"	2" IF (Box x Box) w/Conical Teeth
300115	10"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300116	10"	2.75"	2" IF (Box x Box) w/Conical Teeth
300117	12"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300118	14"	2.75"	2" IF (Box x Box) w/Conical Teeth
300119	14"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300120	16"	2.75"	2" IF (Box x Box) w/Conical Teeth
300121	16"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300122	18"	2.75"	2" IF (Box x Box) w/Conical Teeth
300123	18"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300124	20"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300125	20"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300126	22"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300127	22"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300128	24"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300129	24"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300130	26"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300131	26"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300132	28"	3.25"	2-3/8" REG (Box x Box) w/Conical Teeth
300133	28"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300134	30"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300135	32"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300136	32"	4.75"	3-1/2" IF (Box x Box) w/Conical Teeth
300137	34"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300138	34"	4.75"	3-1/2" IF (Box x Box) w/Conical Teeth
300139	36"	4.25"	2-7/8" IF (Box x Box) w/Conical Teeth
300140	36"	4.75"	3-1/2" IF (Box x Box) w/Conical Teeth



### Tapered Barrel Backreamers

Tapered Barrel Backreamer w/Shark Teeth - API (Box x Box)				
Model No.	Cut Diameter	Pack Diameter	Shaft Diameter	Description
550111	6"	4.5"	2.75"	2" IF (Box x Box) w/Shark Teeth
550112	8"	6.6"	2.75"	2" IF (Box x Box) w/Shark Teeth
550113	10"	8.6"	2.75"	2" IF (Box x Box) w/Shark Teeth
550114	10"	8.6"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550115	12"	10.8"	2.75"	2" IF (Box x Box) w/Shark Teeth
550116	12"	10.8"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550117	14"	12.8"	2.75"	2" IF (Box x Box) w/Shark Teeth
550118	14"	12.8"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550119	16"	14"	2.75"	2" IF (Box x Box) w/Shark Teeth
550120	16"	14"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550121	18"	16"	2.75"	2" IF (Box x Box) w/Shark Teeth
550122	18"	16"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550123	18"	16"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
550124	20"	18"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550125	20"	18"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
550126	24"	22"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550127	24"	22"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
550128	28"	26"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550129	28"	26"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth
550130	32"	30"	3.25"	2-3/8" REG (Box x Box) w/Shark Teeth
550131	32"	30"	4.25"	2-7/8" IF (Box x Box) w/Shark Teeth

## Tapered Barrel Backreamers

Model No.			Cut Diameter	Pack Diameter	Shaft Diameter	Description
Standard	Mid-Grade	Premium				
700111	700222	700333	11.5'	10.8"	2.75"	2" IF (Box x Box)
700112	700223	700334	11.5"	10.8"	3.25"	2-3/8" REG (Box x Box)
700113	700224	700335	13.5"	12.8"	2.75"	2" IF (Box x Box)
700114	700225	700336	13.5"	12.8"	3.25"	2-3/8" REG (Box x Box)
700115	700226	700337	14.5"	14"	2.75"	2" IF (Box x Box)
700116	700227	700338	14.5"	14"	3.25"	2-3/8" REG (Box x Box)
7050117	700228	700339	16.5"	16"	2.75"	2" IF (Box x Box)
700118	700229	700340	16.5"	16"	3.25"	2-3/8" REG (Box x Box)
700119	700230	700341	16.5"	16"	4.25"	2-7/8" IF (Box x Box)
700120	700231	700342	18.5"	18"	3.25"	2-3/8" REG (Box x Box)
700121	700232	700343	18.5"	18"	4.25"	2-7/8" IF (Box x Box)
700122	700233	700344	20.5"	20"	3.25"	2-3/8" REG (Box x Box)
700123	700234	700345	20.5"	20"	4.25"	2-7/8" IF (Box x Box)
700124	700235	700346	24.5"	24"	3.25"	2-3/8" REG (Box x Box)
700125	700236	700347	24.5"	24"	4.25"	2-7/8" IF (Box x Box)
700126	700237	700348	30.5"	30"	3.25"	2-3/8" REG (Box x Box)
700127	700238	700349	30.5"	30"	4.25"	2-7/8" IF (Box x Box)
700128	700239	700350	30.5"	30"	3.25"	3-1/2" IF (Box x Box)
700129	700240	700351	36.5"	36"	4.25"	2-7/8" IF (Box x Box)
700130	700242	700352	36.5"	36"	4.75"	3-1/2" IF (Box x Box)
700131	700241	700353	42.5"	42"	4.25"	2-7/8" IF (Box x Box)
700132	700243	700354	42.5"	42"	4.75"	3-1/2" IF (Box x Box)
700133	700244	700355	48"	48"	4.25"	2-7/8" IF (Box x Box)
700134	700245	700356	48"	48"	4.75"	3-1/2" IF (Box x Box)



**Standard**



**Mid-Grade**



**Premium**

**Standard** - Hard-Facing on high wear areas, internal baffles for strength and air tight float chamber and front and rear facing fluid jets.

**Mid-Grade** - All of the STANDARD styles feature PLUS front and rear carbide conical cutters.

**Premium** - All of the STANDARD styles feature PLUS front and rear abrasive resistant steel mixing blades fitted with outboard mounted carbide cutting bars, and basket-weave pattern of Hard-Facing the entire circumference of the barrel.



## PDC Large Body Fluted Reamers “Hole Opener”

Model No.	Cut Diameter	Pack Diameter	Description
600222	14" x 4"	5	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600223	14" x 4"	6	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600224	14" x 4"	7	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600225	16" x 4"	5	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600226	16" x 4"	6	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600227	16" x 4"	7	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600228	18" x 4"	5	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600229	18" x 4"	6	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600230	18" x 4"	7	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600231	20" x 5"	5	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600232	20" x 5"	6	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600233	20" x 5"	7	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600234	20" x 5"	8	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600235	22" x 5"	5	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600236	22" x 5"	6	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600237	22" x 5"	7	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600238	22" x 5"	8	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600239	24" x 5"	6	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600240	24" x 5"	7	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600241	24" x 5"	8	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600242	26" x 5"	6	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600243	26" x 5"	7	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600244	26" x 5"	8	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600245	28" x 5"	6	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600246	28" x 5"	7	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600247	28" x 5"	8	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600248	30" x 5"	6	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600249	30" x 5"	7	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.
600250	30" x 5"	8	3-1/2" IF (Box x Box) w/Screw-in Jets. No pilot.

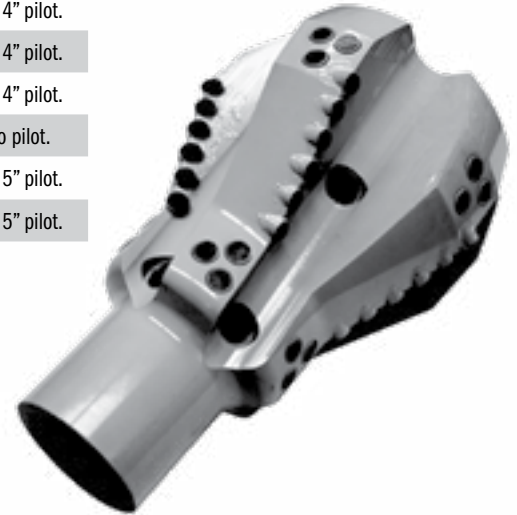
\* Other configurations, shaft diameters and pilots are available upon request.

\*Note: All above Hole Openers will cut to the shaft and can be fitted with a built-in swivel or pull back lug.

## PDC Solid Body Spiral Fluted Reamers “Hole Opener”



Model Number	Cut Diameter	Number of Wings	Description
600111	6" x 3"	4	2-3/8" REG (Box x Box) w/Screw-in Jets. No pilot.
600112	6" x 3"	5	2-3/8" REG (Box x Box) w/Screw-in Jets. No pilot.
600113	7" x 4"	4	2-3/8" REG (Box x Box) w/Screw-in Jets.& 4" pilot.
600114	8" x 4"	4	2-3/8" REG (Box x Box) w/Screw-in Jets.& 4" pilot.
600115	8" x 4"	5	2-3/8" REG (Box x Box) w/Screw-in Jets.& 4" pilot.
600116	10" x 4"	5	2-3/8" REG (Box x Box) w/Screw-in Jets.& 4" pilot.
600117	12" x 4"	5	2-7/8" IF (Box x Box) w/Screw-in Jets. No pilot.
600118	4" x 5"	6	2-7/8" REG (Box x Box) w/Screw-in Jets & 5" pilot.
600119	15" x 5"	7	2-7/8" REG (Box x Box) w/Screw-in Jets & 5" pilot.



## Solid Body Reamers - LPT/HEX (Pin w/Drawbar) w/Shark Teeth

Model No.	Cut Diameter	Pack Diameter	Description
650111	6"	3.5"	2.125" LPT/Hex Pin w/Shark Teeth
650112	6"	3.5"	1.625" LPT/Hex Pin w/Shark Teeth

## Solid Body Reamers - LPT/HEX (Pin w/Drawbar) w/Rotary Teeth

Model No.	Cut Diameter	Pack Diameter	Description
650113	6"	3.5"	2.125" LPT/Hex Pin w/Rotary Teeth
650114	6"	3.5"	1.625" LPT/Hex Pin w/Rotary Teeth



Shark Tooth



Conical Tooth

## Replacement Carbide Reamer Cutters

MODEL NUMBER	Description
90101	# 1 ST, Small Shark Tooth - 1.250"ht.
90102	#2 ST, Medium Shark Tooth - 1.50"ht.
90201	# 1 C, Small Conical Tooth - .840"ht.
90202	#2 C, Medium Conical Tooth - 1.26"ht.

# HDD PULL-BACK SWIVELS

These Pullback Swivels are designed specifically for small bore Directional Drilling applications. The swivels feature a multiple sealing system which is progressive in design and application. This swivel includes a side mounted grease nipple for easy access without having to remove the clevis pin. Greasing should be done after each use.

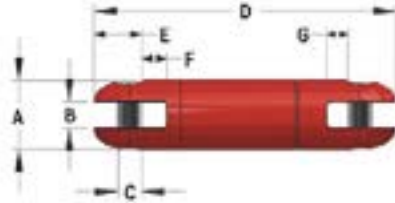
## TYPE 2 - CLEVIS/CLEVIS

### SERIES 503

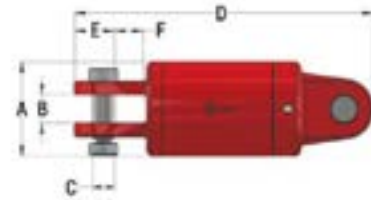
**DCD** Design & Manufacturing Ltd.



00503-202 TO 00503-215



00503-202 TO 00503-215



Part No.	3:1 Safe Working Load	Ultimate Load	A	B	C	D	E	F	G	Weight (lb)	Clevis Pin Kit	Rebuild Kit
00503-202	5,000 lb	15,000 lb	1-1/4"	1/2"	13/32"	4-31/32"	3/4"	1/2"	9/16"	1.08 lb	00020-HEX	-
00503-204	8,500 lb	25,500 lb	2"	3/4"	11/16"	8-3/4"	1-3/8"	5/8"	3/4"	5.00 lb	00035-HEX	00503-K04
00503-205	10,000 lb	30,000 lb	2-1/4"	7/8"	3/4"	9-5/8"	1-1/2"	3/4"	7/8"	7.00 lb	00037-HEX	00503-K05
00503-208	15,000 lb	45,000 lb	2-1/2"	1"	7/8"	11-1/4"	1-3/4"	7/8"	1"	10.1 lb	00040-HEX	00503-K08
00503-210	20,000 lb	60,000 lb	2-1/2"	1"	7/8"	11-7/8"	1-3/4"	7/8"	1"	10.7 lb	00040-HEX	00503-K10
00503-215	30,000 lb	90,000 lb	3"	1-5/16"	1-1/8"	14"	2-1/4"	1-1/8"	1-1/4"	17.3 lb	00045-HEX	00503-K15
00503-220	40,000 lb	120,000 lb	4-3/4"	1-3/4"	1-1/8"	16-1/2"	2-1/16"	1-7/16"	-	49.0 lb	00508-015	00503-K20
00503-230	60,000 lb	180,000 lb	5-3/4"	1-3/4"	1-3/8"	18-1/4"	2-1/2"	1-7/16"	-	76.0 lb	00508-020	00503-K30
00503-245	90,000 lb	270,000 lb	6"	1-3/4"	1-3/8"	19-3/8"	2-1/2"	1-7/16"	-	88.0 lb	00508-020	00503-K45

Type 7 swivels offer a pin connection to the reamer or hole-opener ahead of the swivel. There are several different types and sizes of threaded connections. The rigid connection allows more straightforward push-back, but it also places a greater side load on the swivel.

## TYPE 7 - CLEVIS/PIN

### SERIES 503

**DCD** Design & Manufacturing Ltd.



Part No.	3:1 Safe Working Load	Ultimate Load	Male Pin Thread	A	B	C	D	E	F	Weight (lb)
00503-705-21M	10,000 lb	30,000 lb	2" IF API	2-1/2"	7/8"	3/4"	11-5/16"	1-1/2"	3/4"	9.9 lb
00503-710-21M	20,000 lb	60,000 lb	2" IF API	2-1/2"	1"	7/8"	12-11/16"	1-3/4"	7/8"	12.6 lb
00503-710-23M	20,000 lb	60,000 lb	2-3/8" Reg API	3-1/4"	1"	7/8"	13-7/8"	1-3/4"	7/8"	13.0 lb
00503-715-23M	30,000 lb	90,000 lb	2-3/8" Reg API	3-1/4"	1-5/16"	1-1/8"	15"	2-1/4"	1-1/8"	20.8 lb
00503-720-23M	40,000 lb	120,000 lb	2-3/8" Reg API	4-3/4"	1-3/4"	1-1/8"	17-1/2"	2-1/16"	1-7/16"	55.0 lb
00503-730-27M	60,000 lb	180,000 lb	2-7/8" IF API	5-3/4"	1-3/4"	1-3/8"	19-9/16"	2-1/2"	1-7/16"	88.0 lb
00503-745-27M	90,000 lb	270,000 lb	2-7/8" IF API	6"	1-3/4"	1-3/8"	20-3/4"	2-1/2"	1-7/16"	100.0 lb
*00503-715V	30,000 lb	90,000 lb	2.06-8 Vermeer® Starter Rod	3"	1-5/16"	1-1/8"	15-3/8"	2-1/4"	1-1/8"	19.4 lb

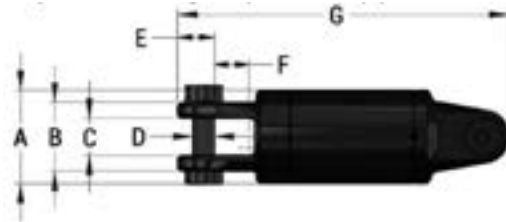


## TYPE 2 - CLEVIS/CLEVIS

### SERIES 508

Type 2 swivels offer a Clevis connection at both ends with hardened, lockable Clevis pins. This style of swivel is the most common type and is the best for distributing side loads applied on the swivel due to its ability to pivot at either end.

**DCD** Design & Manufacturing Ltd.



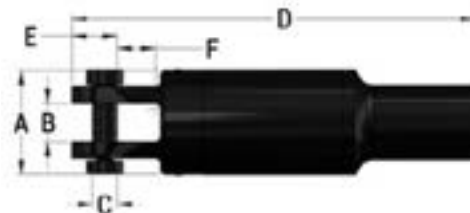
Part No.	5:1 Safe Working Load	Ultimate Load	A	B	C	D	E	F	G	Weight (lb)	Clevis Pin Kit
00508-202	5,000 lb	25,000 lb	2"	2"	1"	11/16"	1-13/16"	13/16"	7-1/2"	3.8 lb	00508-002
00508-205	10,000 lb	50,000 lb	3-1/8"	2-1/4"	1-1/4"	3/4"	1-1/4"	1-1/4"	11-1/16"	15 lb	00508-005
00508-210	20,000 lb	100,000 lb	3-3/4"	2-3/4"	1-1/2"	1"	1-5/8"	1-1/16"	13-9/16"	27 lb	00508-010
00508-215	30,000 lb	150,000 lb	4-3/4"	3-1/4"	1-3/4"	1-1/8"	2-1/16"	1-7/16"	17-3/8"	57 lb	00508-015
00508-220	40,000 lb	200,000 lb	5-3/4"	3-1/2"	1-3/4"	1-3/8"	2-1/2"	1-9/16"	18-1/2"	83 lb	00508-020
00508-230	60,000 lb	300,000 lb	6"	3-1/2"	1-3/4"	1-3/8"	2-1/2"	1-9/16"	18-1/2"	85 lb	00508-030
00508-240	80,000 lb	400,000 lb	6-1/2"	4-5/8"	2-1/8"	1-3/4"	3-1/4"	2-1/4"	24-11/16"	150 lb	00508-040
00508-250	100,000 lb	500,000 lb	7-1/2"	5-1/2"	2-3/4"	2-1/8"	3-5/8"	2-5/8"	26-3/8"	230 lb	00508-060
00508-260	120,000 lb	600,000 lb	7-1/2"	5-1/2"	2-3/4"	2-1/8"	3-9/16"	2-1/4"	28-1/2"	250 lb	00508-060
00508-280	160,000 lb	800,000 lb	9"	6"	3-1/4"	2-1/2"	4-13/16"	2-7/8"	33-7/8"	380 lb	00508-080

## TYPE 1 - API BOX/CLEVIS

### SERIES 508

Type 1 swivels offer an API box connection at the leading end and a Clevis connection at the trailing end. The rigid connection allows more straight forward push-back, but it also places a more severe side loading on the swivel.

**DCD** Design & Manufacturing Ltd.



Part No.	5:1 Safe Working Load	Ultimate Load	Box Thread	A	B	C	D	E	F	Weight (lb)	Pin Kit
00508-115C	30,000 lb	150,000 lb	2-3/8" IF API	4-3/4"	1-3/4"	1-1/8"	17-7/8"	2-7/16"	1-9/16"	61 lb	00508-P015
00508-120C	40,000 lb	200,000 lb	2-3/8" IF API	5-3/4"	1-3/4"	1-3/8"	19-3/8"	2-7/16"	1-9/16"	79 lb	00508-P020
00508-120D	40,000 lb	200,000 lb	2-7/8" IF API	5-3/4"	1-3/4"	1-3/8"	19-1/2"	2-7/16"	1-9/16"	90 lb	00508-P020
00508-130D	60,000 lb	300,000 lb	2-7/8" IF API	6"	1-3/4"	1-3/8"	19-1/2"	2-7/16"	1-9/16"	94 lb	00508-P020
00508-130E	60,000 lb	300,000 lb	3-1/2" IF API	6"	1-3/4"	1-3/8"	20"	2-7/16"	1-9/16"	90 lb	00508-P020
00508-140E	80,000 lb	400,000 lb	3-1/2" IF API	6-1/2"	2-1/8"	1-3/4"	24-7/8"	3-1/4"	2"	144 lb	00508-P040
00508-140F	80,000 lb	400,000 lb	4-1/2" IF API	6-1/2"	2-1/8"	1-3/4"	26"	3-1/4"	2"	168 lb	00508-P040
00508-160F	120,000 lb	600,000 lb	4-1/2" IF API	7-1/2"	2-3/4"	2-1/8"	30-7/8"	3-9/16"	2-3/16"	257 lb	00508-P060
00508-180F	120,000 lb	800,000 lb	4-1/2" IF API	9"	3-1/4"	2-1/2"	32-5/8"	4-13/16"	2-13/16"	368 lb	00508-P080

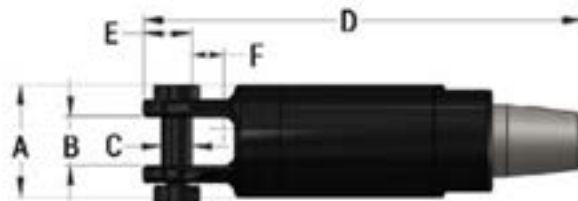
US Patent # 5,529,421 | Canadian Patent # 2,109,041 | Maxi DUB-Swivel is a Registered Trade Mark

## TYPE 7 - CLEVIS/PIN

### SERIES 508

Type 7 swivels offer a pin connection to the reamer or hole opener ahead of the swivel. There are several different types and sizes of threaded connections. The rigid connection allows more straight forward push-back, but it also places a more severe side loading on the swivel.

**DCD** Design & Manufacturing Ltd.



Part No.	5:1 Safe Working Load	Ultimate Load	Male Pin Thread	A	B	C	D	E	F	Weight (lb)	Pin Kit
00508-710-23M	20,000 lb	100,000 lb	2-3/8" Reg API	3-3/4"	1-1/2"	1"	14-5/8"	1-9/16"	1-1/16"	29 lb	00508-P010
00508-715-23M	30,000 lb	150,000 lb	2-3/8" Reg API	4-3/4"	1-3/4"	1-1/8"	17-1/16"	2"	1-9/16"	55 lb	00508-P015
00508-715-27M	30,000 lb	150,000 lb	2-7/8" IF API	4-3/4"	1-3/4"	1-1/8"	17-3/4"	2"	1-9/16"	76 lb	00508-P015
00508-720-27M	40,000 lb	200,000 lb	2-7/8" IF API	5-3/4"	1-3/4"	1-3/8"	19-1/8"	2-7/16"	1-9/16"	84 lb	00508-P020
00508-730-27M	60,000 lb	300,000 lb	2-7/8" IF API	6"	1-3/4"	1-3/8"	19-1/8"	2-7/16"	1-9/16"	87 lb	00508-P020
00508-740-27M	80,000 lb	400,000 lb	2-7/8" IF API	6-1/2"	2-1/8"	1-3/4"	23-11/16"	3-1/4"	2"	142 lb	00508-P040
00508-710V	20,000 lb	100,000 lb	2.06-8" Starter Rod	3-3/4"	1-1/2"	1"	16"	1-9/16"	1-1/16"	29 lb	00508-P010
00508-710V	30,000 lb	150,000 lb	2.06-8" Starter Rod	4-3/4"	1-3/4"	1-1/8"	18-1/2"	2"	1-9/16"	55 lb	00508-P015

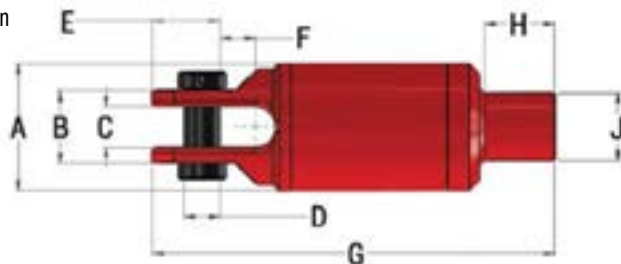
US Patent # 5,529,421 | Canadian Patent # 2,109,041 | Maxi DUB-Swivel is a Registered Trade Mark

## TYPE 1 - API BOX/CLEVIS FOR MAXI RIGS

### SERIES 508

Type 1 swivels offer an API box connection at the leading end and a clevis connection at the trailing end. The rigid connection allows more straight forward push-back, but it also places a greater side load on the swivel. Type 7 (API Pin/Clevis) and Type 8 (API Box/Lug) are available as special order options.

**DCD** Design & Manufacturing Ltd.



Part No.	Safe Working Limit	Ultimate Load	Box Thread	A	B	C	D	E	F	G	H	J	Weight (lb)
*00508-1110	110 ton 100 tonne	400 ton 360 tonne	4-1/2" IF API	10-3/4" 273 mm	6" 152 mm	3-1/4" 83 mm	2-1/2" 64 mm	4-3/4" 121 mm	2-7/8" 72 mm	35" 889 mm	7-1/2" 190 mm	6-5/8" 169 mm	420 lb 190 kg
*00508-1165	165 ton 150 tonne	600 ton 540 tonne	4-1/2" IF API	10-3/4" 273 mm	6-1/2" 165 mm	3-1/2" 89 mm	3" 76 mm	5-1/2" 140 mm	3" 76 mm	38" 965 mm	7-1/2" 190 mm	6-5/8" 169 mm	570 lb 258 kg
*00508-1220	220 ton 200 tonne	750 ton 680 tonne	6-5/8" Reg API	12-1/2" 318 mm	7" 178 mm	4" 102 mm	3-1/2" 89 mm	6-1/2" 165 mm	4" 102 mm	41-7/8" 1,064 mm	8-1/4" 209 mm	7-3/4" 196 mm	846 lb 383 kg
**00508-1275	275 ton 250 tonne	1,000 ton 907 tonne	6-5/8" FH API	14-1/2" 368 mm	8-9/16" 217 mm	4-1/2" 114 mm	4" 102 mm	7" 178 mm	3-1/2" 89 mm	42-7/16" 1,078 mm	8-7/16" 214 mm	8-1/2" 216 mm	1,500 lb 681 kg
00508-1351	350 ton 320 tonne	1,250 ton 1,130 tonne	6-5/8" FH API	16" 406 mm	9" 229 mm	5" 127 mm	4-1/2" 114 mm	8-1/2" 216 mm	4-1/2" 114 mm	50-11/16" 1,287 mm	8-7/8" 225 mm	8-7/8" 225 mm	1,690 lb 770 kg
00508-1501	500 ton 450 tonne	1,750 ton 1,580 tonne	6-5/8" FH API	23" 584 mm	10-1/2" 267 mm	5-1/2" 140 mm	5-1/2" 140 mm	9-3/4" 248 mm	5-1/4" 133 mm	55-9/16" 1,411 mm	8-7/8" 225 mm	8-7/8" 225 mm	2,540 lb 1,150 kg
**00508-1700	700 ton 640 tonne	2,500 ton 2,270 tonne	7-5/8" Reg API	23" 584 mm	12-1/2" 318 mm	6-1/2" 165 mm	6-1/2" 165 mm	11-1/2" 292 mm	5-1/2" 140 mm	65-7/16" 1,663 mm	9-1/2" 241 mm	9-1/4" 234 mm	4,120 lb 1,880 kg

\*Also available in a high pressure version: made to order.

\*\*Sizes made to order.

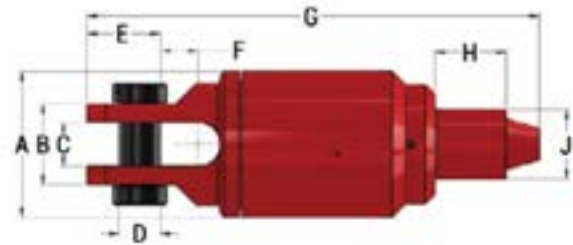
US Patent # 5,529,421 | Canadian Patent # 2,109,041 | Maxi DUB-Swivel is a Registered Trade Mark

**DCD** Design & Manufacturing Ltd.

## TYPE 7 - API PIN/CLEVIS FOR MAXI RIGS

### SERIES 508

Type 7 Maxi-DUB Swivels® with an API pin connection (to the reamer or hole-opener ahead of the swivel) are a special-order option. The specifications are identical to the standard Type 1 Maxi-DUB Swivels®. Custom threads are available: Contact Sales for more details.



Part No.	Safe Working Limit	Ultimate Load	Pin Thread	A	B	C	D	E	F	G	H	J	Weight (lb)
<b>00508-7500</b>	500 ton 450 tonne	1,750 ton 1,580 tonne	6-5/8" FH API	19-1/2" 495 mm	10-1/2" 267 mm	5-1/2" 140 mm	5-1/2" 140 mm	9-3/4" 248 mm	5-1/4" 133 mm	64-3/4" 1,645 mm	12-1/8" 308 mm	9-1/4" 235 mm	2,700 lb 1,230 kg
<b>00508-7700</b>	700 ton 640 tonne	2,500 ton 2,270 tonne	6-5/8" FH API	23" 584 mm	12-1/2" 318 mm	6-1/2" 165 mm	6-1/2" 165 mm	11-1/2" 292 mm	5-1/2" 140 mm	72-11/16" 1,847 mm	12-1/8" 308 mm	9-1/4" 235 mm	4,120 lb 1,880 kg

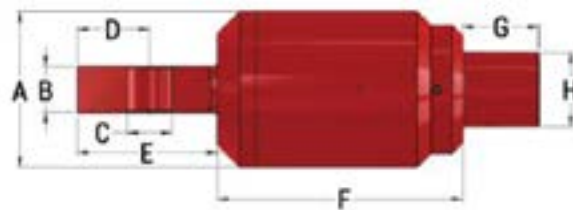
Note: Sizes made to order.

**DCD** Design & Manufacturing Ltd.

## TYPE 8 - API BOX/LUG FOR MAXI RIGS

### SERIES 508

Special applications call for special solutions: Type 8 Maxi-DUB Swivels® have been built to customer specifications to fit shackle connections. Otherwise specifications are identical to the standard Type 1 Maxi-DUB Swivels®. Contact Customer Service for more details.



Part No.	Safe Working Limit	Ultimate Load	Box Thread	A	B	C	D	E	F	G	H	Weight (lb)
<b>00508-8500</b>	500 ton 450 tonne	1,750 ton 1,580 tonne	7-5/8" Reg API	19-1/3" 495 mm	5-3/4" 146 mm	5-1/2" 140 mm	9" 229 mm	17-7/16" 444 mm	57-9/16" 1,461 mm	9-1/4" 234 mm	9-1/4" 234 mm	2,700 lb 1,230 kg
<b>00508-8501</b>	500 ton 450 tonne	1,750 ton 1,580 tonne	7-5/8" Reg API	19-1/2" 495 mm	6-7/8" 175 mm	5-7/16" 138 mm	9" 229 mm	16-3/16" 412 mm	56-5/16" 1,430 mm	9-1/4" 234 mm	9-1/4" 234 mm	2,700 lb 1,230 kg

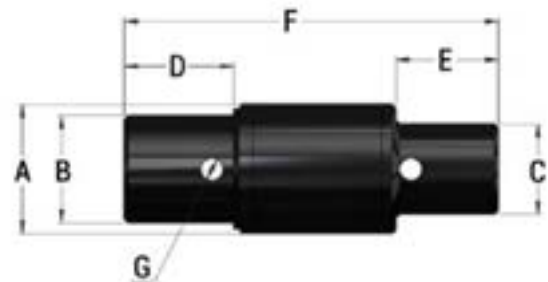
Note: Sizes made to order.

**DCD** Design & Manufacturing Ltd.

## TYPE 9 - DUB-SWIVEL® (HEX AUGER BORING)

### SERIES 508

The 00508-940 Type 9 DUB-Swivel® is an auger boring swivel, used in the guided auger boring process and installed in compression between the pilot rods and auger casing to prevent the rods from rotating as they enter the pit. The unit has a maximum compression safe working load of 80,000 lb (5:1), maximum tension of 20,000 lb, a maximum rotation speed of 90 RPM, and external fluid pressure



Part No.	Safe Working Limit (Compression)	Ultimate Load (Compression)	Maximum Rotational Speed	Box Thread	A	B	C	D	E	F	G	Weight (lb)
<b>00508-940</b>	80,000 lb 356 kN	400,000 lb 1,779 kN	90 RPM	3-1/2" Custom	6-15/32" 164 mm	5-3/8" 137 mm	4-1/2" 114 mm	5-15/32" 139 mm	5-1/8" 130 mm	18-11/16" 475 mm	1-1/8" 29 mm	96 lb 44 kg

## CLUTCH DUB-SWIVEL®

**DCD** Design & Manufacturing Ltd.

This DUB-Swivel has the same 40,000 lb safe working load as its standard 00508-120D version, but unlike that version, the 00508-120L has a pin connection at the leading end, a box connection at the trailing end, a locking sleeve, and a 1-1/8" bore through the swivel. The locking sleeve can be secured in or out of position, allowing free rotation or the transfer of torque up to 2,000 ft-lb and a maximum inner bore fluid pressure of 300 psi to allow the passage of drilling fluid.

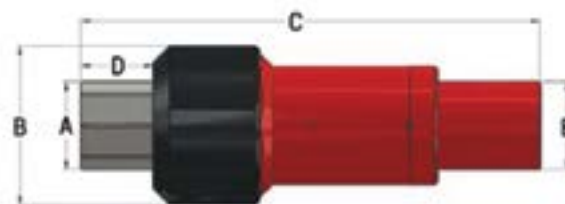


Part No.	Safe Working Limit	Ultimate Load	Maximum Locking Torque	Drilling Fluid Pressure Rating	Box Thread	Pin Thread	A	B	C	D	E	Weight (lb)
00508-120L	40,000 lb 178 kN	200,000 lb 890 kN	2,000 ft-lb 2,712 Nm	300 psi 2.068 MPa	3-1/2" Custom	3-1/2" Custom	5-3/4" 146 mm	6-1/2" 165 mm	18-15/16" 481 mm	3-7/8" 98 mm	3-3/4" 95 mm	96 lb 44 kg
00508-180L	160,000 lb 712 kN	800,000 3,560 kN	32,000 ft-lb 43,386 Nm	580 psi 3.999 MPa	4-1/2" IF API	4-1/2" IF API	8-31/32" 228 mm	9-3/4" 248 mm	34-1/8" 867 mm	7-1/2" 191 mm	6-5/8" 168 mm	368 lb 167 kg

## CLUTCH MAXI DUB-SWIVEL®

**DCD** Design & Manufacturing Ltd.

The locking Flow-Thru Swivel is a 220T Maxi DUB-Swivel® specifically intended for coupling with the drill string. It is designed with a 6-5/8" API connection on each end, a locking sleeve, and a clear 3" bore through the center of the swivel. The swivel locking sleeve can be unbolted to allow rotation or bolted to transmit up to 180,000 ft-lb of torque. The locking sleeve can be engaged or disengaged without removing the swivel from the drill string. The thru-bore will allow the passage of drilling fluid through the swivel at pressures up to 1500 psi.



Part No.	Safe Working Limit	Safe Working Limit (Compression)	Ultimate Load (Tension)	Maximum Locking Torque	Box Thread (Free End)	Box Thread (Fixed End)	Drilling Fluid Pressure Rating	External Pressure Rating	Weight (lb)
00508-1110L	110 ton 100 tonne	58 ton 52.6 tonne	400 ton 360 tonne	27,500 ft-lb 37,285 Nm	4-1/2" IF API	4-1/2" IF API	-	25 psi 0.172 MPa	420 lb 190 kg
00508-1220L	220 ton 200 tonne	66 ton 59.8 tonne	750 ton 680 tonne	180,000 ft-lb 244,047 Nm	5-1/2" FH API	5-1/2" FH API	300 psi 2.064 MPa	25 psi 0.172 MPa	766 lb 348 kg

Part No.	A	B	C	D	E
00508-1110L	6-5/8" 168 mm	12" 305 mm	34-5/8" 880 mm	5-7/16" 138 mm	6-21/32" 169 mm
00508-1220L	7-3/4" 197 mm	14" 356 mm	37" 940 mm	5-5/8" 143 mm	7" 178 mm

## SWIVEL GREASE

### SERIES 90030

**DCD** Design & Manufacturing Ltd.



Part No.	Description	Size	Weight
90030-001	Fuchs Renolit S2 TX Grease Tube	1 x 411 g	1 lb
90030-003	Fuchs Renolit S2 TX Grease Drum	1 x 54.4 kg	124 lb
90030-010	Fuchs Renolit S2 TX Grease Case	10 x 411 g	10 lb
90030-023	Grease Fitting Needle For 00505 Line Swivels	3" Length	0.05 lb

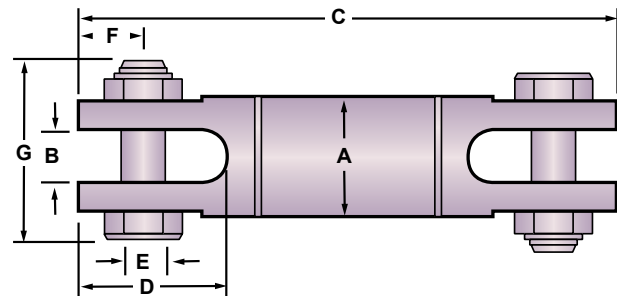
	Compatible	Incompatible	Borderline
DCD Lithium Complex	Aluminum Complex Calcium Stearate Calcium 12 Hydroxy Calcium Complex	Calcium Sulfonate Lithium Stearate Lithium 12 Hydroxy Silica Gel	Barium Complex Bentone (Clay) Polyurea Sodium Soap Barium Soap

Designed specifically for directional drilling, the Condux 819 D.Drill Swivels prevent boring equipments' rotational torque from interfering with the product (cable or conduit) being pulled. The D.Drill Swivels are greasable and double sealed to keep contaminants out. Clevis pins with hex nuts allow for installation and removal from either side of the swivel. Condux Directional Drilling Swivels feature a 90 day warranty.

**CAUTION:** To be used for directional drilling only.

**CAUTION:** Condux requires the use of a calcium based lubricant only. Other lubricants may have adverse reactions when exposed to bentonite products. Condux requires that the swivels be greased after each use to purge any contaminants that may have penetrated past the seals into the swivel while boring.

## 819 D.DRILL® DIRECTIONAL DRILLING SWIVELS



Swivel Size	Clevis Pin	Locking Nut
1-5/8"	08190104	02250500
2"	08190114	02250600
2-1/2"	08190124	02250700
3"	08190134	02250800
4"	08190154	02263000
4-5/8"	08190144	02250900
6"	08190164	02251000
8"	08190167	02279000

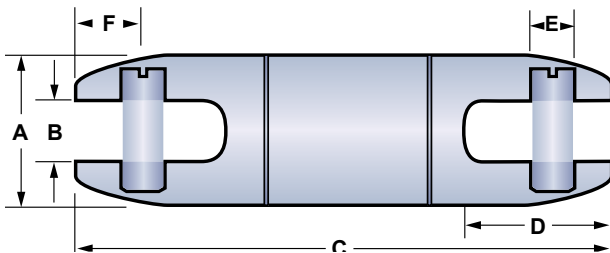
Part No.	Working Load				A	B	C	D	E	F	G							
	Tension		Compression															
	(lb)	(N)	(lb)	(N)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)						
08190016	8,500	37,808	2,800	12,454	1-5/8"	41	.63"	16	6.85"	174	1.59"	40	.56"	14	.78"	20	2.36"	60
08190020	10,000	44,480	3,300	14,678	2"	51	.75"	19	7.83"	199	1.81"	46	.63"	16	.75"	19	2.89"	73
08190025	20,000	88,960	6,600	29,357	2-1/2"	64	1.00"	25	10.93"	278	2.84"	72	.88"	22	1.25"	32	3.67"	93
08190030	30,000	133,440	10,000	44,480	3"	76	1.31"	33	12.75"	324	3.56"	90	1.13"	29	1.37"	36	4.50"	114
08190040	45,000	200,160	15,000	66,720	4"	102	1.63"	41	15.25"	387	4.00"	102	1.25"	32	1.84"	47	5.58"	142
08190045	60,000	266,880	20,000	88,960	4-5/8"	117	1.75"	44	17.48"	444	4.62"	117	1.50"	38	2.13"	54	6.31"	160
08190060	90,000	400,320	30,000	133,440	6"	152	2.00"	51	18.27"	464	4.50"	114	1.75"	44	2.18"	56	6.59"	167
08190080	120,000	533,760	40,000	177,920	8"	203	2.25"	57	21.71"	552	5.25"	133	2.00"	51	2.50"	64	8.25"	210

# DIRECTIONAL DRILLING SWIVELS

Designed specifically for directional drilling, the Condux 400 D.Drill Swivels prevent boring equipments' rotational torque from interfering with the product (cable or conduit) being pulled. The D.Drill Swivels are greasable and double sealed to keep contaminants out. Condux Directional Drilling Swivels feature a 90 day warranty.

**CAUTION:** To be used for directional drilling and underground cable installation only.

**CAUTION:** Condux requires the use of a calcium based lubricant only. Other lubricants may have adverse reactions when exposed to bentonite products. Condux requires that the swivels be greased after each use to purge any contaminants that may have penetrated past the seals into the swivel while boring.



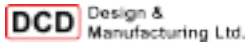
Part No.	Clevis Pin
08190408	08081065
08190412	08081042
08190416	21000381
08190420	21000391
08190425	21000401
08190430	08190529



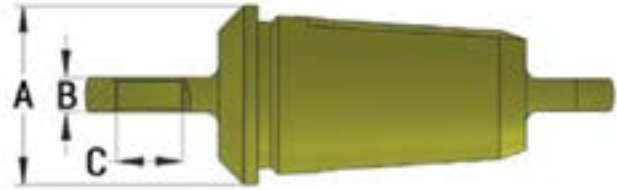
Part No.	Working Load				A	B	C	D	E	F						
	Tension		Compression													
	(lb)	(N)	(lb)	(N)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)		
08190408	1,800	6,588	595	2,177	7/8"	22	.38"	9	4.83"	122	1.03"	26	.31"	8	.53"	13
08190412	4,000	14,641	1,300	4,758	1-1/4"	32	.56"	14	6.57"	166	1.34"	34	.37"	9	.59"	15
08190416	8,500	37,808	2,800	12,454	1-5/8"	41	.63"	16	7.22"	183	1.59"	40	.56"	14	.78"	19
08190420	10,000	44,480	3,300	14,678	2"	51	.75"	19	8.29"	210	1.77"	45	.63"	16	.71"	18
08190425	20,000	88,960	6,600	29,357	2-1/2"	64	1.00"	25	11.44"	290	2.79"	71	.88"	22	1.23"	31
08190430	30,000	133,440	10,000	44,480	3"	76	1.31"	33	13.27"	337	3.56"	90	1.13"	28	1.37"	34

## LUG STYLE PULLING EYE

### SERIES 604



These products are designed to install polyethylene ducting using a screw-in tapered thread to grip the inside diameter of the duct. The pulling eyes are typically used to install innerduct inside a larger duct. However, the 00604 and 00605 series may also be used for directional drilling applications and because there are no moving parts, they are reliable and maintenance free.

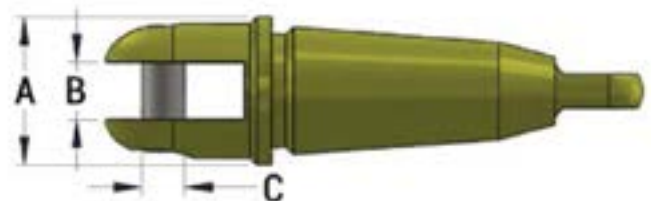
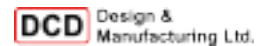


The lug style is recommended when attaching directly to a Line Swivel (00505 series) or other clevis type connector.

Part No.	Nominal Duct Size (in)	Minimum Duct Inside Diameter (in)	Maximum Duct Inside Diameter (in)	A	B	C	Weight (lb)
00604-050	1/2"	0.47"	0.65"	7/8"	5/16"	7/16"	0.23 lb
00604-075	3/4"	0.72"	0.93"	1-1/8"	11/32"	17/32"	0.51 lb
00604-100	1"	0.94"	1.15"	1-3/8"	11/32"	21/32"	0.79 lb
00604-113	1-1/4"	1.15"	1.34"	1-1/2"	11/32"	21/32"	1.16 lb
00604-125	1-1/4"	1.26"	1.44"	1-3/4"	11/32"	21/32"	1.40 lb
00604-150	1-1/2"	1.48"	1.66"	2"	1/2"	15/16"	2.03 lb
00604-175	1-3/4"	1.66"	1.81"	2-1/4"	1/2"	15/16"	2.48 lb
00604-200	2"	1.91"	2.08"	2-1/2"	1/2"	15/16"	3.20 lb
00604-250	2-1/2"	2.41"	2.58"	3"	1/2"	15/16"	5.66 lb
00604-010	Driving Tool for Lug Style Pulling Eyes (with 1/2" square drive)						

## CLEVIS STYLE PULLING EYE

### SERIES 605



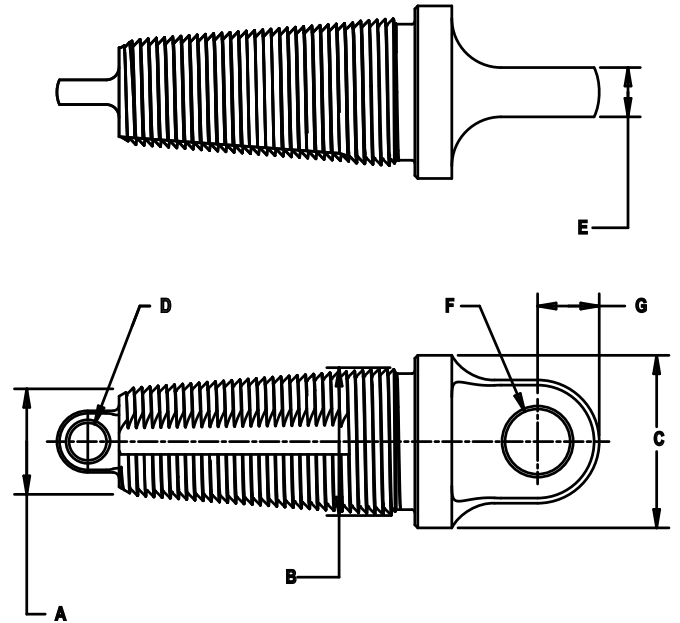
The clevis style pulling eyes are better if attaching to a pulling rope or wire with an eye that can be slotted into the clevis and simply attached with the pin provided.

Part No.	Nominal Duct Size (in)	Minimum Duct Inside Diameter (in)	Maximum Duct Inside Diameter (in)	A	B	C	Weight (lb)
00605-100	1"	0.94"	1.15"	1-3/8"	17/32"	13/32"	0.90 lb
00605-125	1-1/4"	1.26"	1.44"	1-3/4"	13/32"	13/32"	1.48 lb
00605-150	1-1/2"	1.48"	1.66"	2"	5/8"	5/8"	2.20 lb
00605-200	2"	1.91"	2.08"	2-1/2"	5/8"	5/8"	3.35 lb

## FIXED HEAD INNERDUCT PULLING EYE

Tapered buttress threads thread into the innerduct for maximum pulling strength. These eyes connect directly to a Condux swivel. When properly sized and installed, these eyes will not pull out of the innerduct until the pulling tensions have greatly exceeded the maximum pulling tensions recommended by the innerduct manufacturers.

**NOTE:** To determine correct pulling eye size, obtain the actual innerduct inside diameter (I.D.). The I.D. measurement must be greater than dimension A and smaller than dimension B.



Part No.	Nominal Duct Size		Innerduct I.D range		Max O.D.		Hole Dia.		Tang Thickness		Tang Hole Diameter		Tang Hole Location	
	(in)	(mm)	A-B (in)	A-B (mm)	C (in)	C (mm)	D (in)	D (mm)	E (in)	E (mm)	F (in)	F (mm)	G (in)	G (mm)
08914110	3/4"	19	.71-.87	18-22	1.25"	32	.25"	6	.38"	10	.50"	13	.50"	13
08914120	1"	25	.93-1.06	24-27	1.38"	35	.25"	6	.38"	10	.50"	13	.50"	13
08914130	1-1/4"	32	1.06-1.43	27-37	1.75"	44	.38"	10	.50"	13	.66"	17	.63"	16
08914140	1-1/2"	38	1.37-1.68	35-43	2.00"	51	.38"	10	.50"	13	.66"	17	.63"	16
08914150	1-3/4"	44	1.68-1.81	43-46	2.25"	57	.38"	10	.50"	13	.66"	17	.75"	19
08914160	2"	51	1.93-2.12	49-54	2.50"	62	.38"	10	.50"	13	.81"	21	.75"	19



## INNERDUCT PULLEY EYE INSTALLATION TOOL

Fits on a 1/2" Drive Wrench to facilitate insertion of the eye into the innerduct.

Part No.	Description
08913335	Installation Tool



## SWIVEL HEAD INNERDUCT PULLING EYE

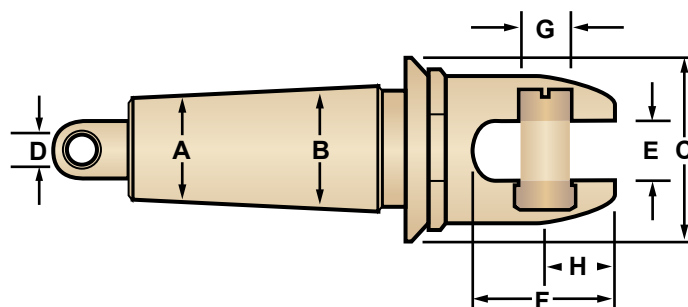
The Innerduct Pulling Eye is a hybrid tool that combines features from standard innerduct pulling eyes and Condux swivels. A swivel head prevents twisting and binding of the innerduct as it is installed. It eliminates the need for a separate swivel on each pulling eye when installing single innerducts into individual conduits or multiple innerducts into a single conduit. Its short length is an advantage on tight bends compared to using a separate swivel and pulling eye. Easily installed using a 3/8" deep socket or adjustable wrench.

**NOTE:** To determine correct pulling eye size, obtain the actual innerduct inside diameter (I.D.). The I.D. measurement must be greater than dimension A and smaller than dimension B.



## REPLACEMENT CLEVIS PINS

Part No.	Replacement Part No.
08960712	08081036
08960715	08081036
08960720	08081036



Part No.	Nominal Duct Size		Innerduct I.D range		Max O.D.		Hole Dia.		Slot Width		Slot Depth		Pin Dia.		Pin Center	
	(in)	(mm)	A-B (in)	A-B (mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)
*08960712	1-1/4"	25-32	1.06-1.43	27-37	1.75"	44	.44"	11	.56"	14	1.31"	33	.44"	11	.56"	14
*08960715	1-1/2"	38	1.37-1.68	35-43	2.00"	51	.44"	11	.56"	14	1.31"	33	.44"	11	.56"	14
*08960720	2"	51	1.93-2.12	49-54	2.44"	62	.44"	11	.56"	14	1.31"	33	.44"	11	.56"	14

\*Will fit all Condux pulling harnesses

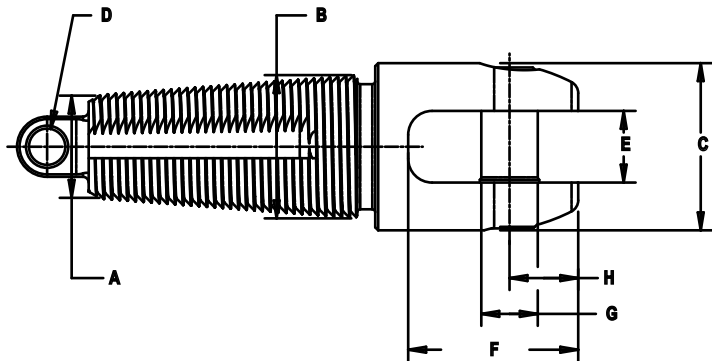
## CLEVIS HEAD INNERDUCT PULLING EYE

With the same tapered threads as the fixed head innerduct pulling eyes, these pulling eyes feature a slotted head with clevis pin to permit direct attachment to any Condux multiple pulling harness leg ends. When properly sized and installed, these eyes will not pull out of the innerduct until the pulling tensions have greatly exceeded the maximum pulling tensions recommended by the innerduct manufacturers.

**NOTE:** To determine correct pulling eye size, obtain the actual innerduct inside diameter (I.D.). The I.D. measurement must be greater than dimension A and smaller than dimension B.

## REPLACEMENT CLEVIS PINS

Part No.	Replacement Part No.
08914310	08081046
08914320	08081036
08914330	08210135
08914340	08081016
08914350	08081016
08914360	08081006

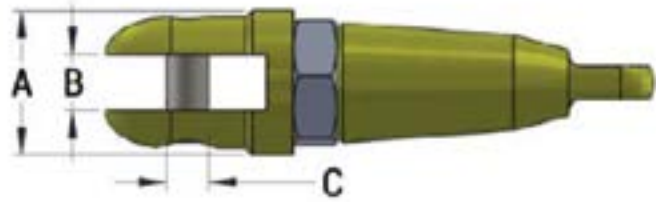


Part No.	Nominal Duct Size		Innerduct I.D. range		Max O.D.		Hole Dia.		Slot Width		Slot Depth		Pin Dia.		Pin Center	
	(in)	(mm)	A-B (in)	A-B (mm)	C (in)	C (mm)	D (in)	D (mm)	E (in)	E (mm)	F (in)	F (mm)	G (in)	G (mm)	H (in)	H (mm)
*08914310	3/4"	19	.71-86	18-22	1.25"	32	.25"	6	.56"	14	1.34"	34	.38"	10	.59"	15
*08914320	1"	25	.93-1.06	24-27	1.38"	35	.25"	6	.56"	14	1.34"	34	.44"	11	.56"	14
*08914330	1-1/4"	32	1.06-1.43	27-37	1.75"	44	.38"	10	.75"	19	1.78"	45	.63"	16	.81"	21
*08914340	1-1/2"	38	1.37-1.68	35-43	2.00"	51	.38"	10	.75"	19	1.78"	45	.63"	16	.72"	18
*08914350	1-3/4"	44	1.68-1.81	43-46	2.25"	57	.38"	10	.75"	19	1.78"	45	.63"	16	.72"	18
**08914360	2"	51	1.93-2.12	49-54	2.50"	62	.38"	10	.75"	19	2.50"	62	.88"	22	1.23"	31

## CLEVIS SWIVEL STYLE PULLING EYE

### SERIES 615

**DCD** Design & Manufacturing Ltd.



These products are similar to the 00604 and 00605 series, but incorporate a built-in swivel head. They should only be used to install innerduct and are not suitable for use in any kind of directional drilling application.

Part No.	Nominal Duct Size (in)	Minimum Duct Inside Diameter (in)	Maximum Duct Inside Diameter (in)	A	B	C	Weight (lb)
00615-100	1"	0.94"	1.15"	1-1/4"	17/32"	13/32"	0.99 lb
00615-125	1-1/4"	1.26"	1.44"	1-5/8"	17/32"	13/32"	1.57 lb
00615-150	1-1/2"	1.48"	1.66"	1-3/4"	11/16"	5/8"	2.23 lb
00615-200	2"	1.91"	2.08"	2-1/4"	11/16"	5/8"	3.51 lb

## MICRO DUCT PULLING EYES & HARNESSSES

### MICRO DUCT

Made from Zinc coated Carbon steel, Micro Duct Pulling Eyes facilitate the quick placement of Micro Ducts. The hex head design allows for faster and safer installation and removal from the duct. The Pulling Harnesses can accommodate up to 4 Micro Pulling Eyes at a time and have staggered eyelets every 4 inches.

#### FEATURES

- Micro Duct Pulling Eyes are available in 4 sizes to cover full range of Micro Ducts I.D's
- Pulling Harnesses are made from stainless steel and are available in 2 sizes:
- 2mm Harnesses support a 1,600 lb total pull strength
- 4mm Harnesses support a 3,200 lb total pull strength



Part No.	Description	Packaging
20005772	MicroDuct Pulling Eye 4mm-8mm ID	EA
20005773	MicroDuct Pulling Eye 8mm-13mm ID	EA
20005773	MicroDuct Pulling Eye 12mm-15mm ID	EA
20005775	MicroDuct Pulling Eye 14mm-20mm ID	EA
20005776	MicroDuct Pulling Harness - 4mm cable	EA
20005777	MicroDuct Pulling Harness - 2mm cable	EA

\*Will fit all Condux pulling harnesses

\*\*Will fit the Condux 3/8" and 1/2" cable pulling harnesses

# DIRECTIONAL DRILLING SWIVELS

Avoid overstressing cable or conduit being pulled in during directional drilling operations. The Condux 7/8" (22 mm) Break-Away Swivel for directional drilling is designed exclusively to provide both the swivel and the break link for product pull-back. Eliminate the use of two or more components and shorten the gap between the reamer and pulling eye. No need to use "weak link" pipe sections or wire when using the 7/8" (22 mm) Condux Break-Away Swivel.

**NOTE:** D.Drill Swivels come with a 90 day limited warranty.

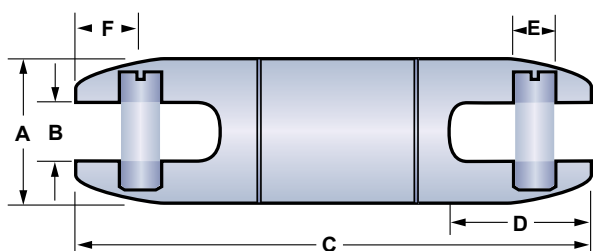
**WARNING:** This swivel is to be used while Directional Drilling only— Severe personal injury could result if used with rope or steel winch lines in cable pulling applications.

## 7/8" BREAK-AWAY SWIVEL FOR DIRECTIONAL DRILLING



7/8" Swivel (22mm)		Break Load		Replacement Pin	
Part No.	(lb)	(N)	Part No.	Color	
08021015	150	667	08018106	White	
08021020	200	890	08018306	Green	
08021025	250	1,112	08018006	Blue	
08021030	300	1,334	08017606	Brown	
08021035	350	1,557	08018405	Black/Green	
08021040	400	1,779	08075305	Blue/Black	
08021045	450	2,002	08015805	Blue/Yellow	
08021050	500	2,224	08076505	Orange/Red	
08021055	550	2,446	08018505	Blue/Green	
08021060	600	2,669	08015005	Orange/Black	
08021065	650	2,891	08018605	Slate/Green	
08021070	700	3,114	08076005	Orange/White	
08021075	750	3,336	08075505	Orange/Violet	
08021080	800	3,559	08018705	Red/Yellow	
08021085	850	3,781	08018805	Black/Yellow	
08021090	900	4,003	08076605	Orange/Yellow	
08021110	1,000	4,448	08015705	Green/White	
08021120	1,100	4,893	08018905	White/Yellow	
08021130	1,200	5,338	08015205	Brown/White	
08021130	1,300	5,782	08019105	Brown/Yellow	
08021140	1,400	6,227	08074605	Green/Red	
08021150	1,500	6,672	08076905	Green/Yellow	
08021160	1,600	7,117	08019205	Black/White	
08021170	1,700	7,562	08019305	Red/White	
08021180	1,800	8,006	08017705	Brown/Black	

Replacement Pins		Break Load		Color	
Part No.	(lb)	(N)	Color		
08018105	150	667	Slate/Violet		
08018305	200	890	Green/Orange		
08018005	250	1,112	Blue/White		
08017605	300	1,334	Brown/Red		
08018405	350	1,557	Black/Green		
08075305	400	1,779	Blue/Black		
08015805	450	2,002	Blue/Yellow		
08076505	500	2,224	Orange/Red		
08018505	550	2,446	Blue/Green		
08015005	600	2,669	Orange/Black		
08018605	650	2,891	Slate/Green		
08076005	700	3,114	Orange/White		
08075505	750	3,336	Orange/Violet		
08018705	800	3,559	Red/Yellow		
08018805	850	3,781	Black/Yellow		
08076605	900	4,003	Orange/Yellow		
08015705	1,000	4,448	Green/White		
08018905	1,100	4,893	White/Yellow		
08015205	1,200	5,338	Brown/White		
08019105	1,300	5,782	Brown/Yellow		
08074605	1,400	6,227	Green/Red		
08076905	1,500	6,672	Green/Yellow		
08019205	1,600	7,117	Black/White		
08019305	1,700	7,562	Red/White		
08017705	1,800	8,006	Brown/Black		



## 7/8" BREAK-AWAY SWIVEL DIMENSIONS

	A	B	C	D	E	F
	(in)	(mm)	(in)	(mm)	(in)	(mm)
7/8"	22	.38"	10	4.83"	123	1.03"
					26	.31"
					8	.53"
						13

# HDD BREAK-AWAY SWIVELS



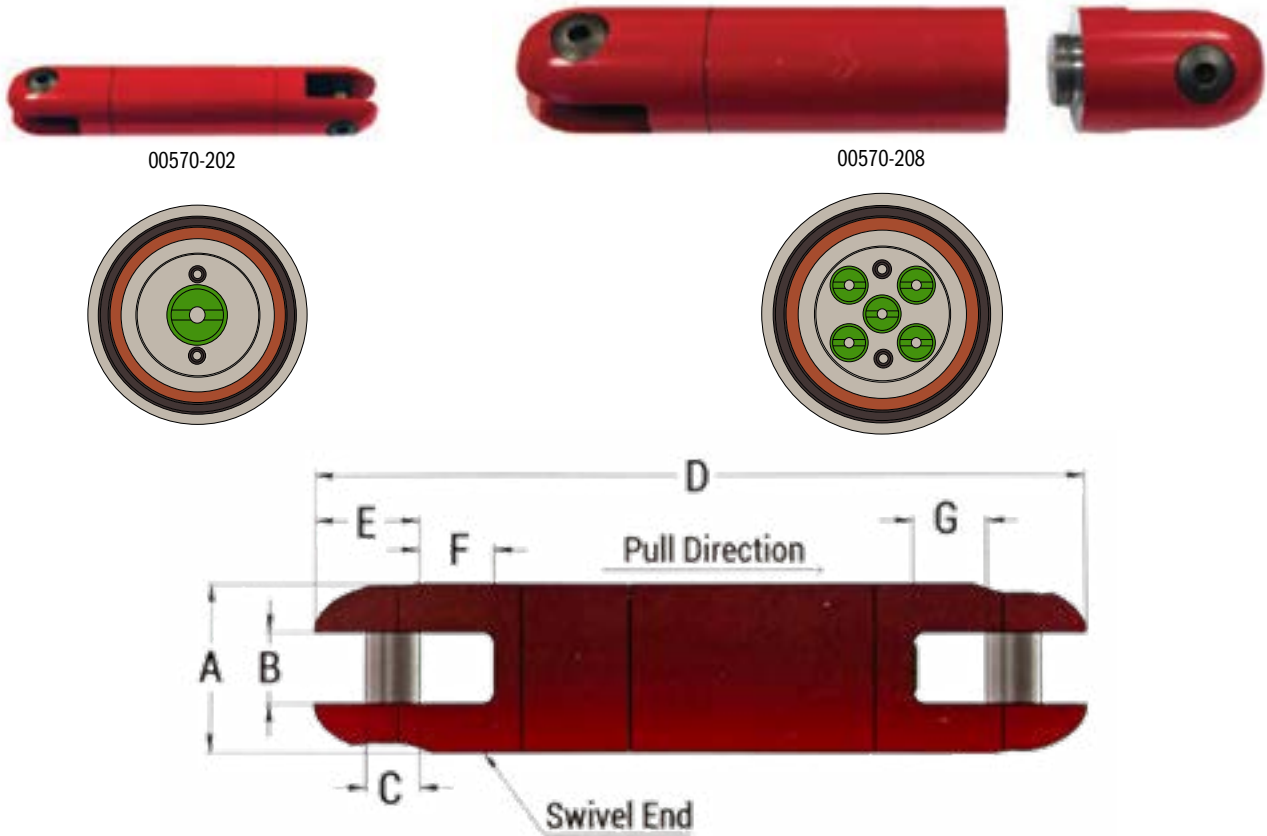
The HDD Breakaway Swivel is similar to our Heavy Duty Breakaway Connector (00560 series), but with a swivel included. Saving you space in your pullback assembly, the HDD Breakaway Swivel is only 1.5" longer than the 00503-208 Dub-Lite, meaning it's 5" shorter than the alternative of using both the DUB-Lite and a Breakaway Connector together.

**DCD** Design & Manufacturing Ltd.

It will accept the same range of 00565 and 00566 breakaway pins that we offer, which gives the HDD Breakaway Swivel a break load range from 750 lb to 12,500 lb.

## HDD BREAK-AWAY SWIVELS

### SERIES 00570



Part No.	Pin Capacity	A	B	C	D	E	F	G	Net Weight	Clevis Pin Kit
00570-202	1 pin	1-1/4"	1/2"	13/32"	5-3/4"	3/4"	1/2"	9/16"	1.1 lb	00020-HEX
00570-208	5 pin	2-1/2"	1"	7/8"	12-3/16"	1-3/4"	7/8"	1"	12.0 lb	00040-HEX

## HDD BREAK-AWAY PIN KIT

Part No. (5 pin/kit)	Breaking Point (+/- 5%)	Color Code	Maximum Torque	Preload
00565-075	750 lb	Yellow	2 ft-lb	540 lb
00565-100	1,000 lb	Orange	3 ft-lb	720 lb
00565-150	1,500 lb	Red	4 ft-lb	980 lb
00565-200	2,000 lb	Blue	6 ft-lb	1,360 lb
00565-250	2,500 lb	Green	7 ft-lb	1,700 lb

# HDD BREAK-AWAY CONNECTORS

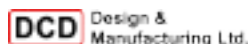
These products are designed to protect polyethylene ducting from overload during installation by directional drilling and are used between the pullback swivel and the duct puller. The connectors are a three part product, held together by a group of pins. The pins are designed to break in tension at a specific load.

The assembly of the connector is completed by using one or more of the breakaway pins. The sum of the values of the pins is the value at which the connector will come apart. If a single 1,000 lb pin is used, the connector will come apart at 1,000 lb. If three pins of the same value were used, the connector would come apart at 3,000 lb. Different pin values can be mixed and matched to create a number of different values, all in the same connector. Metric pins are also available. See following pages for pin combinations.

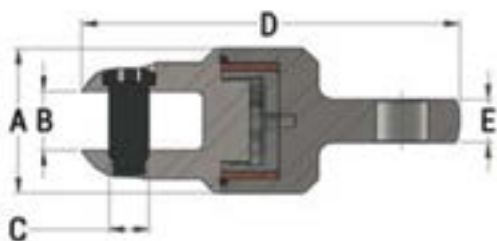
The connectors are available in two sizes. The smaller unit covers values from 750 lb up to 12,500 lb (300 kg-6,000 kg) and the larger unit covers values from 3,000 lb up to 45,000 lb (2,000 kg-20,000 kg).

## HEAVY DUTY BREAK-AWAY CONNECTORS

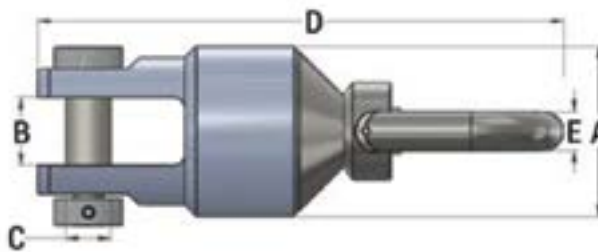
### SERIES 00560



00560-010



00560-020



Part No.	A	B	C	D	E	Weight (lb)	Clevis Pin Kit
00560-010	2-1/2"	1"	11/16"	6-1/2"	3/4"	4 lb	00035-HEX
00560-020	3-3/4"	1-1/2"	1"	12"	7/8"	15 lb	00508-P010



### 00560-010 BREAK-AWAY PIN KIT

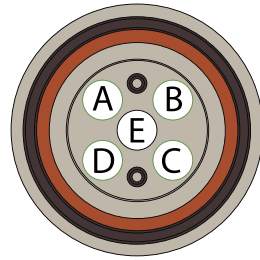
Part No. (5 pin/kit)	Breaking Point (+/- 5%)	Color Code	Maximum Torque	Preload
00565-075	750 lb	Yellow	2 ft-lb	540 lb
00565-100	1,000 lb	Orange	3 ft-lb	720 lb
00565-150	1,500 lb	Red	4 ft-lb	980 lb
00565-200	2,000 lb	Blue	6 ft-lb	1,360 lb
00565-250	2,500 lb	Green	7 ft-lb	1,700 lb



### 00560-020 BREAK-AWAY PIN KIT

Part No. (5 pin/kit)	Breaking Point (+/- 5%)	Color Code	Maximum Torque	Preload
00565-300	3,000 lb	Yellow	12 ft-lb	1,853 lb
00565-600	6,000 lb	Orange	23 ft-lb	3,680 lb
00565-700	7,000 lb	Red	26 ft-lb	4,160 lb
00565-800	8,000 lb	Blue	30 ft-lb	4,800 lb
00565-900	9,000 lb	Green	33 ft-lb	5,280 lb

# HDD BREAK-AWAY CONNECTORS



**DCD** Design & Manufacturing Ltd.

## BREAKAWAY PIN CONFIGURATION OPTIONS

The following tables are suggested ways of arriving at required load values. Other combinations are also possible, depending on the connector and pins.

The 00560-010 and 00570-208 have 5 pin locations designated as A to E (see diagram).

### FOR 00560-010 & 00570-208

Pin Location (See Diagram)

A	B	C	D	E	Break Value
-	-	-	-	750 lb	<b>750 lb</b>
-	-	-	-	1,000 lb	<b>1,000 lb</b>
-	-	-	-	1,500 lb	<b>1,500 lb</b>
1,000 lb	-	750 lb	-	-	<b>1,750 lb</b>
-	-	-	-	2,000 lb	<b>2,000 lb</b>
750 lb	-	750 lb	-	750 lb	<b>2,250 lb</b>
750 lb	-	750 lb	-	1,000 lb	<b>2,500 lb</b>
1,000 lb	-	1,000 lb	-	750 lb	<b>2,750 lb</b>
750 lb	750 lb	750 lb	750 lb	-	<b>3,000 lb</b>
750 lb	750 lb	750 lb	1,000 lb	-	<b>3,250 lb</b>
750 lb	1,000 lb	750 lb	1,000 lb	-	<b>3,500 lb</b>
1,500 lb	-	1,500 lb	-	750 lb	<b>3,750 lb</b>
1,000 lb	1,000 lb	1,000 lb	1,000 lb	-	<b>4,000 lb</b>
1,000 lb	750 lb	1,000 lb	750 lb	750 lb	<b>4,250 lb</b>
1,500 lb	-	1,500 lb	-	1,500 lb	<b>4,500 lb</b>
2,000 lb	-	2,000 lb	-	750 lb	<b>4,750 lb</b>
-	2,500 lb	-	2,500 lb	-	<b>5,000 lb</b>
1,500 lb	750 lb	1,500 lb	750 lb	750 lb	<b>5,250 lb</b>
2,000 lb	-	2,000 lb	-	1,500 lb	<b>5,500 lb</b>
1,000 lb	1,500 lb	1,000 lb	1,500 lb	750 lb	<b>5,750 lb</b>
1,500 lb	1,500 lb	1,500 lb	1,500 lb	-	<b>6,000 lb</b>
2,000 lb	750 lb	2,000 lb	750 lb	750 lb	<b>6,250 lb</b>
1,500 lb	750 lb	1,500 lb	750 lb	2,000 lb	<b>6,500 lb</b>
1,500 lb	1,500 lb	1,500 lb	1,500 lb	750 lb	<b>6,750 lb</b>
1,500 lb	2,000 lb	1,500 lb	2,000 lb	-	<b>7,000 lb</b>
2,000 lb	1,000 lb	2,000 lb	1,500 lb	750 lb	<b>7,250 lb</b>
-	2,500 lb	-	2,500 lb	2,500 lb	<b>7,500 lb</b>
2,000 lb	1,500 lb	2,000 lb	1,500 lb	750 lb	<b>7,750 lb</b>
2,000 lb	2,000 lb	2,000 lb	2,000 lb	-	<b>8,000 lb</b>
2,000 lb	1,500 lb	2,000 lb	1,500 lb	1,500 lb	<b>8,500 lb</b>
1,500 lb	2,000 lb	1,500 lb	2,000 lb	2,000 lb	<b>9,000 lb</b>
2,000 lb	2,000 lb	2,000 lb	2,000 lb	1,500 lb	<b>9,500 lb</b>
2,500 lb	2,500 lb	2,500 lb	2,500 lb	-	<b>10,000 lb</b>
2,500 lb	2,000 lb	2,500 lb	2,000 lb	1,500 lb	<b>10,500 lb</b>
2,500 lb	2,500 lb	2,500 lb	2,500 lb	1,000 lb	<b>11,000 lb</b>
2,500 lb	2,500 lb	2,500 lb	2,500 lb	1,500 lb	<b>11,500 lb</b>
2,500 lb	2,500 lb	2,500 lb	2,500 lb	2,000 lb	<b>12,000 lb</b>
2,500 lb	2,500 lb	2,500 lb	2,500 lb	2,500 lb	<b>12,500 lb</b>

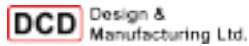
### FOR 00560-020

Pin Location (See Diagram)

A	B	C	D	E	Break Value
-	-	-	-	3,000 lb	<b>3,000 lb</b>
3,000 lb	-	3,000 lb	-	-	<b>6,000 lb</b>
3,000 lb	-	3,000 lb	-	3,000 lb	<b>9,000 lb</b>
6,000 lb	-	6,000 lb	-	-	<b>12,000 lb</b>
3,000 lb	-	3,000 lb	-	7,000 lb	<b>13,000 lb</b>
7,000 lb	-	7,000 lb	-	-	<b>14,000 lb</b>
3,000 lb	-	3,000 lb	-	9,000 lb	<b>15,000 lb</b>
8,000 lb	-	8,000 lb	-	-	<b>16,000 lb</b>
7,000 lb	-	7,000 lb	-	3,000 lb	<b>17,000 lb</b>
9,000 lb	-	9,000 lb	-	-	<b>18,000 lb</b>
8,000 lb	-	8,000 lb	-	3,000 lb	<b>19,000 lb</b>
7,000 lb	-	7,000 lb	-	6,000 lb	<b>20,000 lb</b>
7,000 lb	-	7,000 lb	-	7,000 lb	<b>21,000 lb</b>
7,000 lb	-	7,000 lb	-	8,000 lb	<b>22,000 lb</b>
7,000 lb	-	7,000 lb	-	9,000 lb	<b>23,000 lb</b>
8,000 lb	-	8,000 lb	-	8,000 lb	<b>24,000 lb</b>
8,000 lb	-	8,000 lb	-	9,000 lb	<b>25,000 lb</b>
9,000 lb	-	9,000 lb	-	8,000 lb	<b>26,000 lb</b>
9,000 lb	-	9,000 lb	-	9,000 lb	<b>27,000 lb</b>
7,000 lb	7,000 lb	7,000 lb	7,000 lb	-	<b>28,000 lb</b>
3,000 lb	7,000 lb	3,000 lb	7,000 lb	9,000 lb	<b>29,000 lb</b>
6,000 lb	6,000 lb	6,000 lb	6,000 lb	6,000 lb	<b>30,000 lb</b>
6,000 lb	6,000 lb	6,000 lb	6,000 lb	7,000 lb	<b>31,000 lb</b>
6,000 lb	6,000 lb	6,000 lb	6,000 lb	8,000 lb	<b>32,000 lb</b>
6,000 lb	6,000 lb	6,000 lb	6,000 lb	9,000 lb	<b>33,000 lb</b>
7,000 lb	7,000 lb	7,000 lb	7,000 lb	6,000 lb	<b>34,000 lb</b>
7,000 lb	7,000 lb	7,000 lb	7,000 lb	7,000 lb	<b>35,000 lb</b>
7,000 lb	7,000 lb	7,000 lb	7,000 lb	8,000 lb	<b>36,000 lb</b>
7,000 lb	7,000 lb	7,000 lb	7,000 lb	9,000 lb	<b>37,000 lb</b>
8,000 lb	7,000 lb	8,000 lb	7,000 lb	8,000 lb	<b>38,000 lb</b>
8,000 lb	7,000 lb	8,000 lb	7,000 lb	9,000 lb	<b>39,000 lb</b>
8,000 lb	8,000 lb	8,000 lb	8,000 lb	8,000 lb	<b>40,000 lb</b>
8,000 lb	8,000 lb	8,000 lb	8,000 lb	9,000 lb	<b>41,000 lb</b>
9,000 lb	9,000 lb	9,000 lb	9,000 lb	6,000 lb	<b>42,000 lb</b>
9,000 lb	9,000 lb	9,000 lb	9,000 lb	7,000 lb	<b>43,000 lb</b>
9,000 lb	9,000 lb	9,000 lb	9,000 lb	8,000 lb	<b>44,000 lb</b>
9,000 lb	9,000 lb	9,000 lb	9,000 lb	9,000 lb	<b>45,000 lb</b>

## SEALED DUCT PULLER

### SERIES-00650



These pullers have an outer sleeve that provides a complete seal around the ducting, preventing any fluids or contaminants from entering either the duct or the pulling eye. The pulling head is manufactured from alloy steel and is designed to protect the mechanism from heavy knocks or side loads. It is also fully sealed to prevent any fluid entry.



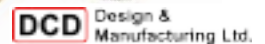
Part No.	Nominal Duct Size (in)	3:1 Safe Working Load	Rear Eye Capacity (3:1 SWL)	Minimum Inside Duct Diameter	Maximum Inside Duct Diameter	Maximum Outside Duct Diameter	Weight (lb)
00650-100	1"	3,100 lb	1,000 lb	1.000" / 25.4 mm	1.250" / 31.8 mm	1.350" / 76.2 mm	1.5 lb
00650-125	1-1/4"	3,100 lb	1,000 lb	1.250" / 31.8 mm	1.500" / 38.1 mm	1.656" / 42.1 mm	1.9 lb
00650-150	1-1/2"	3,600 lb	1,000 lb	1.438" / 36.5 mm	1.688" / 42.9 mm	1.906" / 48.4 mm	2.2 lb
00650-200	2"	5,600 lb	1,000 lb	1.813" / 42.9 mm	2.188" / 55.6 mm	2.375" / 60.3 mm	3.9 lb
00650-250	2-1/2"	8,200 lb	1,000 lb	2.188" / 55.6 mm	2.563" / 77.8 mm	2.875" / 73.0 mm	5.6 lb
00650-300	3"	12,200 lb	1,000 lb	2.688" / 68.3 mm	3.063" / 77.8 mm	3.500" / 88.9 mm	7.33 lb
00650-400	4"	20,100 lb	1,500 lb	3.438" / 87.3 mm	4.250" / 108.0 mm	4.500" / 114.3 mm	17.3 lb
00650-500	5"	30,700 lb	1,500 lb	4.313" / 109.5 mm	5.125" / 130.2 mm	5.563" / 141.3 mm	26.5 lb
00650-600	6"	43,600 lb	2,500 lb	5.063" / 128.6 mm	6.063" / 154.0 mm	6.625" / 168.3 mm	48.0 lb

**Note:** Safe Working Load is based on the duct yield strength to protect from creep failure.

## EXPANDING DUCT PULLER

### SERIES-00616

This Duct Puller is nearly identical to the 00619 Series, except for the front face plate. The 00616 puller is made from zinc dichromate coated steel. This puller will also cover a larger range of bore sizes compared to the 00620 series and is made of fewer moving parts so maintenance and repair is easy.



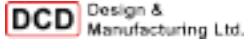
**Note:** Safe Working Load is based on the duct yield strength to protect from creep failure.

Part No.	Nominal Duct Size (in)	3:1 Safe Working Load	Rear Eye Capacity (3:1 SWL)	Minimum Inside Duct Diameter	Maximum Inside Duct Diameter	Weight (lb)	Duct Sleeve Part No.
00616-125	1-1/4"	4,300 lb	1,100 lb	1.280" / 32.5 mm	1.610" / 40.9 mm	1.3 lb	00625-125
00616-150	1-1/2"	4,300 lb	1,100 lb	1.437" / 36.5 mm	1.812" / 46.0 mm	1.5 lb	00625-150
00616-200	2"	8,600 lb	1,300 lb	1.813" / 46.0 mm	2.188" / 55.6 mm	3.2 lb	00625-200
00616-250	2-1/2"	8,600 lb	1,300 lb	2.188" / 55.6 mm	2.625" / 66.7 mm	4.5 lb	00625-250
00616-300	3"	8,600 lb	3,750 lb	2.688" / 68.3 mm	3.125" / 79.4 mm	5.7 lb	00625-300
00616-400	4"	12,000 lb	3,750 lb	3.313" / 84.1 mm	4.063" / 103.2 mm	14.6 lb	00625-400
00616-500	5"	12,000 lb	3,750 lb	4.250" / 108.0 mm	5.063" / 128.6 mm	24.5 lb	00625-500
00616-600	6"	22,100 lb	5,100 lb	4.875" / 123.8 mm	6.187" / 157.1 mm	47.9 lb	00625-600



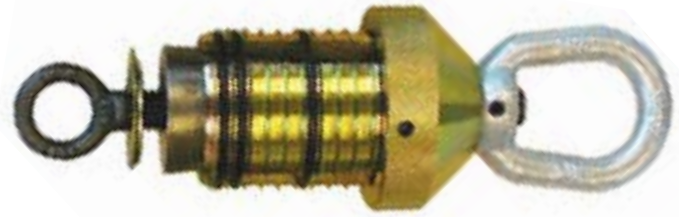
## EXPANDING DUCT PULLER

### SERIES 00620



These products are designed to grip polyethylene ducting using expanding jaws to grip the inside wall of the duct. This causes the pulling load to be spread around the circumference of the duct and allows a maximum load to be applied without damage to the ducting.

**Note:** Safe Working Load is based on the duct yield strength to protect from creep failure.



Part No.	Nominal Duct Size (in)	3:1 Safe Working Load	Rear Eye Capacity (3:1 SWL)	Minimum Inside Duct Diameter	Maximum Inside Duct Diameter	Weight (lb)	Duct Sleeve Part No.	Duct Plugger Part No.	Jaws Set Part No.
00620-125	1-1/4"	3,750 lb	1,000 lb	1.281"/32.5 mm	1.500" / 38.1 mm	1.5 lb	00625-125	00630-125	-
00620-150	1-1/2"	3,750 lb	1,000 lb	1.469"/36.5 mm	1.688" / 42.9 mm	1.7 lb	00625-150	00630-150	-
00620-200	2"	6,000 lb	1,500 lb	1.875" / 47.6 mm	2.125" / 54.0 mm	3.0 lb	00625-200	00630-200	-
00620-250	2-1/2"	6,000 lb	1,500 lb	2.250" / 57.2 mm	2.500" / 63.5 mm	5.0 lb	00625-250	00630-250	-
00620-300	3"	12,000 lb	2,500 lb	2.750" / 69.9 mm	3.063" / 77.8 mm	8.5 lb	00625-300	00630-300	-
00620-400	4"	12,000 lb	2,500 lb	3.500" / 88.9 mm	4.063" / 103.2 mm	15.0 lb	00625-400	00630-400	-
00620-500	5"	25,500 lb	4,250 lb	4.500" / 114.3 mm	5.000" / 127.0 mm	32.0 lb	00625-500	00630-500	-
00620-600	6"	25,500 lb	4,250 lb	5.438" / 138.1 mm	6.125" / 155.6 mm	48.0 lb	00625-600	00630-600	-
00620-800	8"	37,000 lb	12,000 lb	6.708" / 170.4 mm	7.875" / 200.0 mm	88.9 lb	-	00630-800	-
*00620-1009	10" SDR 9	42,000 lb	12,000 lb	7.938" / 201.6 mm	8.625" / 219.1 mm	135.0 lb	-	-	00622-1009
*00620-1011	10" SDR 11	30,000 lb	12,000 lb	8.375" / 212.7 mm	9.063" / 230.2 mm	137.0 lb	-	-	00622-1011
*00620-1017	10" SDR 17	42,000 lb	12,000 lb	9.063" / 230.2 mm	9.750" / 247.7 mm	142.0 lb	-	-	00622-1017
*00620-1209	12" SDR 9	30,000 lb	12,000 lb	9.563" / 242.9 mm	10.250" / 260.4 mm	190.0 lb	-	-	00622-1209
*00620-1211	12" SDR 11	42,000 lb	12,000 lb	10.063" / 255.6 mm	10.750" / 273.1 mm	203.0 lb	-	-	00622-1211
*00620-1217	12" SDR 17	125,000 lb	12,000 lb	10.938" / 277.8 mm	11.563" / 293.7 mm	223.0 lb	-	-	00622-1217

## REINFORCED EYE UNDERGROUND CABLE SOCKS



This line of cable socks is specially designed for underground applications. The eye is enclosed in an aluminum tube which provides added support when running within conduit and trenches. Plus these underground pulling socks are made from coated airline wire for added strength and flexibility.



Slingco Part No.	Range		Weave	Lattice Length		Eye Opening		Approximate Breaking Load (lb)
	(in)	(mm)		(in)	(mm)	(in)	(mm)	
<b>Triple Weave PVC Coated Galvanized</b>								
ZCS6363	0.50-0.75	13 - 19	Triple	12	305	0.87	22	5,200
ZCS6364	0.50-0.75	13 - 19	Triple	18	457	0.87	22	5,200
ZCS6365	0.50-0.75	13 - 19	Triple	24	610	0.87	22	5,200
ZCS6366	0.50-0.75	13 - 19	Triple	36	914	0.87	22	5,200
ZCS6371	0.75-1.25	19 - 32	Triple	18	457	0.87	22	7,500
ZCS6372	0.75-1.25	19 - 32	Triple	24	610	0.87	22	10,000
ZCS6373	1.25-2.0	32 - 51	Triple	26	660	1.42	36	7,500
ZCS6374	1.25-2.0	32 - 51	Triple	32	813	1.42	36	10,500
ZCS6375	2.0-2.75	51 - 70	Triple	32	813	1.91	48.5	10,500
ZCS6376	2.0-2.75	51 - 70	Triple	38	965	1.91	48.5	13,500
ZCS6377	2.75-3.5	70 - 89	Triple	38	965	1.91	48.5	13,500
ZCS6378	2.75-3.5	70 - 89	Triple	46	1,168	1.91	48.5	16,500
ZCS6379	3.5-4.25	89 - 108	Triple	46	914	1.91	48.5	16,500
ZCS6380	3.5-4.25	89 - 108	Triple	52	1,321	1.91	48.5	19,500
ZCS6381	4.25-4.87	108 - 124	Triple	52	1,321	1.91	48.5	18,000
ZCS6382	4.25-4.87	108 - 124	Triple	58	1,473	1.91	48.5	19,500

The Condux PE & PVC Pulling Eyes feature three designs to suit your needs. The non-sleeved design provides optimum gripping power, an extremely rigid center rod to prevent bending, and a steel tapered lead cone with the same O.D. as the conduit. The sleeved versions are water tight eyes that feature a multiple O-Ring configuration. These also have an extremely rigid center rod and sleeves designed to protect the outer leading edge of the conduit to form a water tight seal. Both the sleeved and non-sleeved designs feature split gripping segments with aggressive gripping threads, coupled with a steel expansion plug that grips the full range of conduit I.D.'s.

**NOTE:** PE & PVC Pulling Eyes come with a 90 day limited warranty. Installation of the PE & PVC Pulling Eyes simply requires the leading eye to be tightened. The pulling eyes come standard with attachment eyes at both ends for connecting rope or steel lines. Pull-out strengths generally exceed the tensile capacity of the conduit.

## PE & PVC PULLING EYES

### NON-SLEEVED, SHORT SLEEVED & LONG SLEEVED



Non-Sleeved



Short-Sleeved



Long-Sleeved

### SHORT SLEEVED PART NUMBERS

Part No.	Nominal Size (in)	Length		Conduit ID				Lead Cone O.D.		Duct Type	Nominal Duct ID	
		(in)	(mm)	Minimum (in)	Maximum (mm)	(in)	(mm)	(in)	(mm)		(in)	(mm)
08220220	1.5"	8.33"	211	1.51"	38	1.80	46	2.375"	60	1.5 SDR 11.0-17.0	1.53"-1.66"	39-42
										1.5 SCH 40	1.59"	40
										1.5 SIDR	1.61"	41
08220030	2"	8.18"	206	1.88"	48	2.15"	55	2.375"	60	2.0 SDR 11.0-17.0	1.92" - 2.08"	49-53
										2.0 SCH 80	1.91"	49
										2.0 SCH 40	2.05"	52
										2.0 SIDR	2.07"	53
08220030	3"	11.89"	302	2.69"	68	3.13"	79	4.00"	102"	3.0 SDR 11.0-17.0	2.83"-3.06"	72-78
										3.0 SCH 80	2.83"	72
										3.0 SCH 40	3.04"	77
										3.0 SIDR	3.07"	78
08220611	4"	14.11"	358	3.50"	89	4.20"	106	4.81"	122	4.0 SDR 11.0-17.0	3.63"-3.94"	91-100
										4.0 SCH 80	3.79"	96
										4.0 SCH 40	4.00"	102
										4.0 SIDR	4.03"	102
08220050	5"	18.45"	469	4.25"	108	5.06"	129	5.56"	1.41	5.0 SDR 11.0-21.0	4.49"-5.03"	114-118
										5.0 SCH 80	4.77"	121
										5.0 SCH 40	5.02"	128
08220060	6"	19.6"	498	5.06"	129	6.00"	152	7.00"	178	6.0 SDR 11.0-21.0	5.35"-5.96"	136-151
										6.0 SCH 80	5.71"	145



## SHORT SLEEVED & LONG SLEEVED PART NUMBERS

Short Sleeved Part No.	Long Sleeved Part No.	Nominal Size (in)	Length		Conduit I.D.				Sleeve ID		Duct Type	Nominal Duct ID	
			(in)	(mm)	Minimum (in)	Maximum (in)	Minimum (mm)	Maximum (mm)	(in)	(mm)		(in)	(mm)
08220612	08220620	1.0"	6.23"	158	1.00"	25	1.25"	32	1.415"	36	1.0 SDR 11.0	1.06"	27
											1.0 SDR 13.5	1.10"	28
											1.25 SDR 11.0	1.33"	34
											1.25 SCH 40	1.34"	34
											1.25 SDR 13.5	1.39"	35
											1.25 SDR 15.5	1.43"	36
08220600	08220621	1.25"	6.23"	158	1.25"	32	1.50"	38	1.76"	48	1.25 SDR 17.0	1.44"	37
											1.25 SDR 21.0	1.50"	38
											1.50 SDR 11.0	1.53"	39
											1.50 SDR 13.5	1.60"	41
											1.50 SCH 40	1.59"	40
											1.50 SDR 15.5	1.63"	41
08220601	08220622	1.5"	6.23"	158	1.50"	38	1.75"	44	2.01"	51	1.50 SDR 17.0	1.66"	42
											1.50 SDR 21.0	1.72"	44
											2.0 SDR 11.0	1.92"	49
											2.0 SDR 13.5	2.00"	51
											2.0 SDR 15.5	2.05"	52
											2.0 SCH 40	2.05"	52
08220602	08220623	2.0"	8.18"	208	1.88"	48	2.15"	55	2.45"	62	2.0 SDR 17.0	2.08"	53
											2.0 SDR 21.0	2.15"	55
											2.5 SDR 11.0	2.32"	59
											2.5 SDR 13.5	2.42"	61
											2.5 SCH 40	2.45"	62
											2.5 SDR 15.5	2.48"	63
08220609	08220624	2.5"	8.80"	224	2.31"	59	2.56"	65	3.01"	76	2.5 SDR 17.0	2.52"	64
											3.0 SDR 11.0	2.83"	72
											3.0 SDR 13.5	2.95"	75
											3.0 SDR 15.5	3.02"	77
											3.0 SDR 17.0	3.06"	78
											3.0 SCH 40	3.04"	77
08220603	08220625	3"	11.89"	302	2.69"	68	3.13"	79	3.63"	92	4.0 SDR 11.0	3.63"	92
											4.0 SDR 13.5	3.79"	96
											4.0 SCH 80	3.79"	96
											4.0 SDR 15.5	3.89"	99
											4.0 SDR 17.0	3.94"	100
											4.0 SCH 40	4.00"	102
08220604	08220626	4"	14.11"	358	3.50"	89	4.06"	103	4.63"	118	4.0 SDR 21.0	4.05"	103
											5.0 SDR 11.0	4.49"	114
											5.0 SDR 13.5	4.69"	119
											5.0 SDR 15.5	4.80"	122
											5.0 SDR 17.0	4.87"	124
											5.0 SDR 21.0	5.00"	127
08220605	08220627	5"	18.45"	469	4.25"	108	5.06"	129	5.63"	143	5.0 SCH 40	5.05"	128
											6.0 SDR 11.0	5.35"	136
											6.0 SDR 13.5	5.58"	142
											6.0 SDR 15.5	5.72"	145
											6.0 SDR 17.0	5.80"	147
											6.0 SDR 21.0	5.96"	151
08220606	08220628	6"	19.60"	498	5.06"	129	6.00"	152	6.76"	172	8.0 SDR 11.0	6.96"	177
											8.0 SDR 13.5	7.27"	185
											8.0 SDR 15.5	7.45"	189
											8.0 SDR 17.0	7.55"	192
											Bore-Gard	7.981	203
											Heavy Wall SCH 40	7.891	203
08220608	08220629	8"	21.53"	547	6.63"	168	7.69"	195	8.84"	224			
08220613	08220630	8"	21.53"	547	7.63"	194	8.25"	209	8.84"	224			

## MULTIPLE PULLING HARNESS

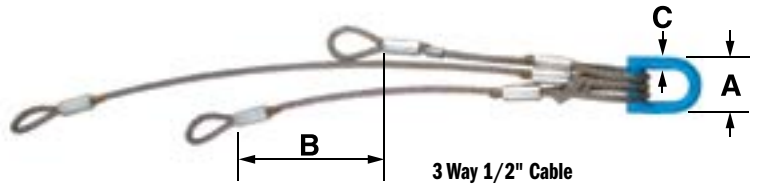


Allows staggered attachment to cable or innerduct when pulling through conduit systems or during directional drilling pull-back operations.

**Note:** 10 & 12 Way 3/8" harnesses only have a single stagger. All other harnesses are sequentially staggered.



3 Way 1/4" Cable



3 Way 1/2" Cable



4 Way 3/8" Cable

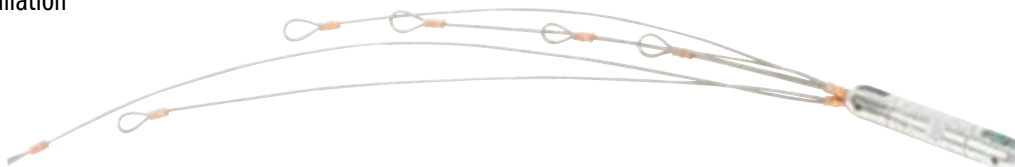


10 Way 3/8" Cable

Part No.	Description	Working Load Per Leg		Working Load Limit		Max Width A		Separation Between Legs B		Lead Ring Diameter C	
		(lb)	(N)	(lb)	(N)	(in)	(mm)	(in)	(mm)	(in)	(mm)
08549200	3 Way 1/8" Cable	550	10,230	1,600	7,117	2.25"	57	14"	356	.37"	10
08549230	3 Way 1/4" Cable	2,300	10,230	2,900	12,899	2.00"	51	14"	356	.37"	13
08549325	4 Way 1/4" Cable	2,300	10,230	4,200	18,682	2.00"	51	14"	356	.37"	10
08569910	5 Way 1/4" Cable	2,300	10,230	4,200	18,682	2.00"	51	14"	356	.37"	10
08549326	6 Way 1/4" Cable	2,300	21,351	4,200	18,682	2.00"	51	14"	356	.37"	10
08549333	3 Way 3/8" Cable	4,800	21,351	9,000	40,032	2.63"	67	10"	254	.62"	16
08549329	4 Way 3/8" Cable	4,800	21,351	9,000	40,032	2.63"	67	10"	254	.62"	16
08549330	10 Way 3/8" Cable	4,800	21,351	6,000	26,689	4.50"	114	6"	152	.75"	19
08549334	12 Way 3/8" Cable	4,800	21,351	6,000	26,689	4.50"	114	6"	152	.75"	19
08549342	16 Way 3/8" Cable	4,800	21,351	6,000	26,689	4.50"	114	6"	152	1.00"	25
08549331	2 Way 1/2" Cable	7,000	31,136	10,000	44,480	2.50"	64	12"	305	.50"	13
08549332	3 Way 1/2" Cable	7,000	31,136	10,000	66,720	3.75"	95	12"	305	.87"	22
08549340	4 Way 1/2" Cable	7,000	31,136	10,000	66,720	3.75"	95	12"	305	.87"	22

## MULTIPLE PULLING HARNESS

For Micro Duct Installation

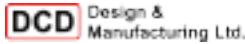


Part No.	Description	Load Rating (lb)(N)
08549350	Multiple Pulling Harness	550 lb (2,446 N)

Six leg harness with swivel and 3-inch separation between legs for installing Micro Duct into existing innerduct.

## WIRE ROPE BRIDLE SLING

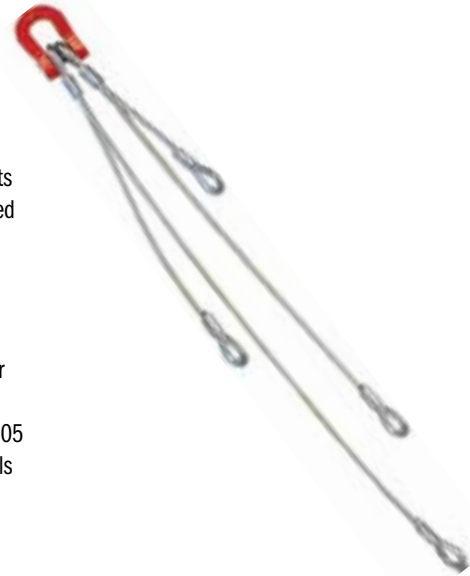
### SERIES 23000



The purpose of this product is to allow multiple pulls at one time by attaching two, three, or four cables or ducts to the puller. The slings are manufactured from aircraft quality wire rope with thimble eyes for durability (tapered swages are also available). The various "legs" are staggered in length so the individual connections are not interfering with each other. The lead coupler can be easily dismantled to change out a leg or to add another leg.

Each leg is marked with load capacity and they have a three times safety factor on that rating. The safety factor is based on equal pull on all cables (horizontal pull only). Couplers and wire rope sling legs may be ordered separately. Other sling configurations are available upon request. DUB-Lite (00503 series) or Line Swivels (00505 series) are recommended to permit free rotation of the bridle at the legs and coupler. The recommended swivels are sized to suit the load and connection: smaller swivels over the leg loop, a larger swivel to fit the shackle.

**Note:** 5 & 6-leg slings are available in 1/4" and 3/8" slings upon request.



Part No.	Wire Diameter	No. of Legs	Leg Capacity	3:1 Safe Working Load		Recommended DUB-Lite		Recommended Line Swivel	
				Sling Capacity	Weight	Over Shackle	Over Leg Loop	Over Shackle	Over Leg Loop
23125-020	1/8"	2	650 lb	1,300 lb	0.5 lb				
23125-030	1/8"	3	650 lb	1,960 lb	0.6 lb	00503-202		00505-020	00505-005
23125-040	1/8"	4	650 lb	2,600 lb	0.6 lb	00503-204	00503-202	00505-025	00505-010
23250-020	1/4"	2	2,300 lb	4,600 lb	1.2 lb	00503-205		00505-027	00505-015
23250-030	1/4"	3	2,300 lb	6,900 lb	1.6 lb	00503-205	00503-202	00505-030	00505-020
23250-040	1/4"	4	2,300 lb	7,100 lb	2.0 lb	00503-208		00505-035	00505-025
23375-020	3/8"	2	4,800 lb	9,600 lb	2.9 lb	00503-210			
23375-030	3/8"	3	4,800 lb	12,00 lb	3.7 lb	*00503-208	00503-204	00505-035	00505-020
23375-040	3/8"	4	4,800 lb	18,00 lb	5.9 lb	*00503-205	00503-205	00505-040	00505-025
23500-020	1/2"	2	6,900 lb	13,800 lb	6.7 lb	00503-215	00503-208	00505-041	00505-027
23500-030	1/2"	3	6,900 lb	20,700 lb	8.6 lb		**00503-215	00505-045	00505-030
23500-040	1/2"	4	6,900 lb	28,300 lb	12.7 lb		00503-210	00505-050	00505-035

\* These DUB-Lites do not fit the 23375-040.

\*\* These DUB-Lites do not fit the 23500-040.

† These Line Swivels do not fit the 23375-040.

## TRI & QUAD PULLING SLING



This staggered pulling sling is designed to allow the pulling of multiple conductors at the same time while minimizing the overall diameter of your pulling bundle. These pulling slings come in a three leg or four leg versions. One should use a swivel for each leg and at the head of the sling to release torsion and allow the conductors to rotate freely. The suggested swivels are listed with each model



Slingco Part No.	Leg 1 Length		Leg 2 Length		Leg 3 Length		Leg 4 Length		Minimum Break Load	Head of Sling Swivel Suggestion	Leg Swivel Suggestion
	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)			
ZSH2264	20.5"	520	34.65"	880	52.75"	1340	N/A	N/A	5,000 lb	ZSW2092	ZSW2091
ZSH2265	20.5"	520	34.65"	880	52.75"	1340	69.3"	1760	5,000 lb	ZSW2092	ZSW2092



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