

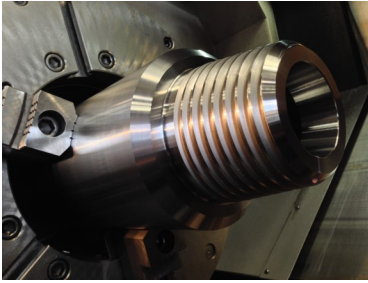


**SPARTAN**  
DRILL TOOLS

Look anywhere hard rock used to be, and you'll find us. At over three hundred worksites worldwide, our drill steel, subs, and stabilizers are driving drill bits and bottom lines.

**STRONG TO THE  
BOTTOM.**

# CONNECTIONS & THREADS



**First Source in:**

**Drill Pipe**

**Drill Tools**

**Bits**

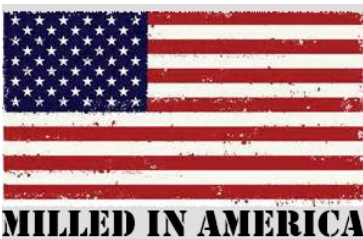
**Deck Bushings**

**Repair**

**Fabrication**

**and**

**Manufacturing**



Connection Size	Thread Profile	Outside Diameter (in)	Inside Diameter (in)
2 3/8	API REGULAR	3.250-3.500	1
2 7/8	API REGULAR	3.875	1.5
3 1/2	API REGULAR	4.500	2
4 1/2	API REGULAR	5.625-6.000	2.25
5 1/2	API REGULAR	6.652-7.500	2.75
6 5/8	API REGULAR	7.5-8.25	3.5
7 5/8	API REGULAR	8.625-9.5	4
8 5/8	API REGULAR	9.625-12	4.75
2 3/8	API INTERNAL FLUSH	3.375-3.875	1.5
2 7/8	API INTERNAL FLUSH	4.125-4.375	2
3 1/2	API INTERNAL FLUSH	4.750-5.250	2.5
4	API INTERNAL FLUSH	6-6.75	3
4 1/2	API INTERNAL FLUSH	6.250-7.250	3.75
5 1/2	API INTERNAL FLUSH	7.500-9.000	4.5
6 5/8	API INTERNAL FLUSH	9.000-10.500	4.75
6 5/8	API IF MODIFIED.	9.000-10.000	5.75
6 5/8	SMOOTH FLOW	9.000-10.000	5.75
3 1/2	API FULL HOLE	4.875-5.250	2.25
4	API FULL HOLE	5.250-5750	2.5
4 1/2	API FULL HOLE	5.750-6.250	3
5 1/2	API FULL HOLE	6.875-8.00	4
6 5/8	API FULL HOLE	8.000-9.250	5
3	BECO	4.500-5.500	1.5
3 1/2	BECO	5.000-6.000	1.5
4	BECO	6.000-6.625	2
4 1/2	BECO	6.625-7.000	2.5
5 1/4	BECO	7.000-7.625	2.75
6	BECO	7.625-9.250	3
8	BECO	10.000-12.250	4.5
10	BECO	12.000-13.375	5.5
11	BECO	13.000-15.000	6
8 1/4	DI-22	10.000	5.5
9 3/4	DI-22	11.25	6.5
2 7/8	HUGHES XTRA HOLE	4.125-4.375	2
3 1/2	HUGHES XTRA HOLE	4.750-5.000	2.25
4 1/2	HUGHES XTRA HOLE	6.000-6.750	3
5	HUGHES XTRA HOLE	6.250-7.250	3.25
3 1/2	HUGHES H-90	5.000-5.500	2.5
4	HUGHES H-91	5.500-6.000	2.75
4 1/2	HUGHES H-92	6.00-6.500	3
5	HUGHES H-93	6.500-7.000	3.25



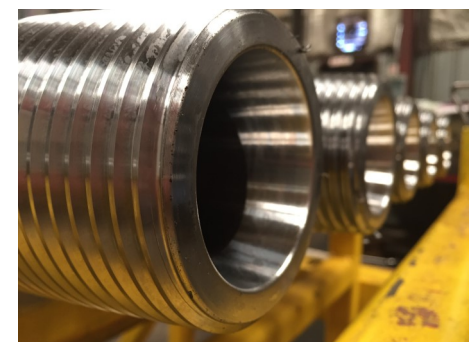
Connection Size	Thread Profile	Outside Diameter (in)	Inside Diameter (in)
5 1/2	HUGHES H-94	6.750-7.50	3.25
6 5/8	HUGHES H-95	7.625-8.250	3.5
7	HUGHES H-96	8.250-8.500	3.75
7 5/8	HUGHES H-97	9.750-10.250	4.25
8 5/8	HUGHES H-98	10.75-11.500	4.75
2 3/8	EXTERNAL FLUSH	3.000-3.500	1
2 7/8	EXTERNAL FLUSH	3.500-4.000	1
3 1/2	EXTERNAL FLUSH	4.00-4.750	1.5
4 1/2	EXTERNAL FLUSH	4.75-5.250	2
2 3/8	HUGHES SLIM HOLE	3.125	1
2 7/8	HUGHES SLIM HOLE	3.375-3.875	1.5
3 1/2	HUGHES SLIM HOLE	4.125-4.375	2
4	HUGHES SLIM HOLE	4.750-5.000	2.25
4 1/2	HUGHES SLIM HOLE	4.750-5.250	2.5
3 1/2	Hughes Double Streamline	4.125-4.375	1.5
4	Hughes Double Streamline	4.625-4.5	2.25
4 1/2	Hughes Double Streamline	5.250-5.750	2.5
5 1/2	Hughes Double Streamline	6.250-7.250	3
2 3/8	HUGHES ACME REGULAR	3.25	1
2 7/8	HUGHES ACME REGULAR	3.75	1.5
3 1/2	HUGHES ACME REGULAR	4.375	1.5
4 1/2	HUGHES ACME REGULAR	5.500-5.750	2.25
5 1/2	HUGHES ACME REGULAR	6.625-7.375	3
6 5/8	HUGHES ACME REGULAR	7.625-8.500	3.5
2 3/8	HUGHES ACME STREAMLINE	3.375	1
2 7/8	HUGHES ACME STREAMLINE	4.125	1.5
3 1/2	HUGHES ACME STREAMLINE	4.75	2
4 1/2	HUGHES ACME STREAMLINE	5.750-6.125	2.75
5 1/2	HUGHES ACME STREAMLINE	6.875-7.875	3
2 3/8	HUGHES SLIMLINE H-90	3.25	1.5
2 7/8	HUGHES SLIMLINE H-91	4.125-4.250	2
3 1/2	HUGHES SLIMLINE H-92	4.875-5.000	2.75
2 3/8	AMERICAN P.A.C.	2.750-3.000	1
2 7/8	AMERICAN P.A.C.	3.125	1.5
2 3/8	AMERICAN OPEN HOLE	3.125	1.5
2 7/8	AMERICAN OPEN HOLE	3.750-4.250	2
23	API NUMBERED CONNECTIONS	3.125	1
26	API NUMBERED CONNECTIONS	3.375-3.875	1.5
31	API NUMBERED CONNECTIONS	4.125-4.375	2
35	API NUMBERED CONNECTIONS	4.375	2.25
38	API NUMBERED CONNECTIONS	4.375-5.250	2.5
40	API NUMBERED CONNECTIONS	5.250-5.750	2.5
44	API NUMBERED CONNECTIONS	5.750-6.250	2.75
46	API NUMBERED CONNECTIONS	6.00-6.750	3
50	API NUMBERED CONNECTIONS	6.250-7.250	3.25
56	API NUMBERED CONNECTIONS	7.500-8.000	3.25
61	API NUMBERED CONNECTIONS	8.250-9.000	3.5
70	API NUMBERED CONNECTIONS	9.50-10.000	4.125
77	API NUMBERED CONNECTIONS	11	4.25



**Need More**  
**Connections?**

**We add new threads  
more often than we  
update  
this catalog.**

**Spartandrilltools.com**

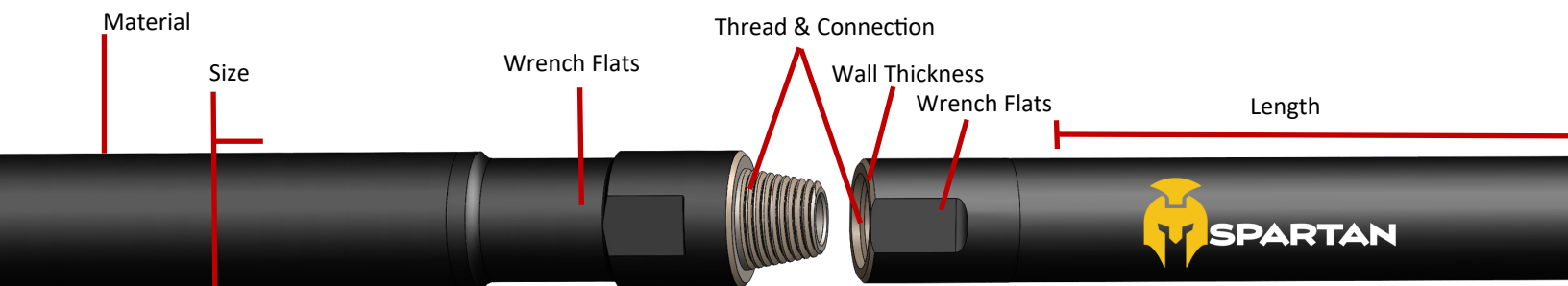


## DRILL PIPE

From mining and top hole to water well and oil and gas. Spartan Drill Tools offer a full range of fully customizable drill pipe for any industry and terrain. Our new **SPARTAN** Drill Pipe and connections are made of high grade, heat treated alloy, giving you consistency and strength.

### Fully Customizable Drill Pipe

- ⇒ Size
- ⇒ Material
- ⇒ Wall Thickness
- ⇒ Threads
- ⇒ Connection Size,
- ⇒ Tong & Wrench
- ⇒ Box & Pin Configuration
- ⇒ Hard Banding
- ⇒ Carbide



Outside Diameter (in)	Wall Thickness (in)	Lengths (ft)	Elevator and Slip Recess	Hard-banding Application
3.5	0.300 - 0.75	20	OPTIONAL	OPTIONAL
4.5	0.337 - 1.000	20-35	OPTIONAL	OPTIONAL
5	0.362 - 1.125	20-35	OPTIONAL	OPTIONAL
5.5	0.360 - 1.250	20-35	OPTIONAL	OPTIONAL
6	0.750 - 1.250	20-35	OPTIONAL	OPTIONAL
6.25	0.750 - 1.250	20-35	OPTIONAL	OPTIONAL
6.5	0.750 - 1.250	20-35	OPTIONAL	OPTIONAL
6.75	0.750 - 1.250	20-35	OPTIONAL	OPTIONAL
7	0.750 - 1.500	20-35	OPTIONAL	OPTIONAL
7.625	0.750 - 1.500	20-40	OPTIONAL	OPTIONAL
8.625	0.750 - 1.500	20-40	OPTIONAL	OPTIONAL
9.25	0.750 - 2.000	20-35	OPTIONAL	OPTIONAL
10.75	0.750 - 2.000	20-35	OPTIONAL	OPTIONAL

Spartan Drill Tools has been building Alloy Drill Pipe since the mid 90's. Built to withstand the hardest rock formations in North America. SPARTAN Alloy provides a heat treated and hardened tube and tool joint, along with custom Tungsten Carbide hard-bands and a specialized welding process. Making it the most wear resistant type of drill pipe on the market. From the Iron Ore Range, to the largest copper mine on earth you'll find SPARTAN Alloy Drill Pipe beating the odds on footage.

### Advantages of SPARTAN ALLOY:

- Provides superior down hole wear life.
- Requires less change outs.
- Alloy is 3 times harder than your typical mild steel.
- Rockwell hardness increases from 8 HRC to upwards of 34 HRC.
- Tungsten Carbide impregnated hard-bands extend tool joint life.
- Hard-bands can be custom configured and Increase hardness to 74 HRC.
- Harder to bend or twist due to overall strength.



#### ROCKWELL HARDNESS TEST

Mild Steel	Alloy Steel	Tungsten Carbide
8-11	28-34	66-74



## SUB ADAPTORS

**SPARTAN** Subs are made of solid 4140, our integral design eliminates tool failures and reinforces the heat treated alloy. Heat Treating ensures strength and durability in every sub. Our extensive stock of gages allows prompt customization of any sub adapters connections (see pages 2-3).

Crossover Sub



Top Saver Sub



Tool Type	Outside Diameter (in)	Inside Diameter (in)	Style and Options
SWIVEL SUB	3.500-9.250	1.000-6.000	LEFT-HAND THREADS
TOP SUB	3.500-13.375	1.000-6.000	NECKDOWN
BIT SUB	3.500-9.250	1.000-6.000	FLUSH
SAVER SUB	3.500-9.250	1.000-6.000	FLUSH
CROSSOVER SUB	3.500-9.250	1.000-6.000	FLUSH
CROSSOVER SUB	3.500-9.250	1.000-6.000	NECKDOWN
FLOAT SUB	3.500-9.250	1.000-6.000	BORED FOR FLOAT
JET SUB	3.500-9.250	1.000-6.000	PORTED FOR JET
STABILIZER SUB	3.500-9.250	1.000-6.000	STRAIT RIBS CARBIDE INSERTS
STABILIZER SUB	3.500-9.250	1.000-6.000	SPIRAL RIBS CARBIDE INSERTS
LIFTING BAIL	3.500-9.250	N/A	ELEVATOR OR EYELET LIFTING
LIFTING PLUG	3.500-9.250	N/A	ELEVATOR OR EYELET LIFTING
REAMER SUB	3.500-9.250	1.000-6.000	HARDBANDING RIBS

Bit Sub with Hard Banding

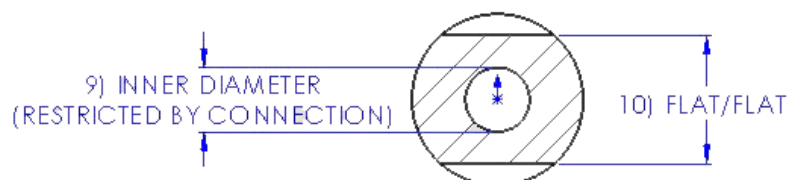
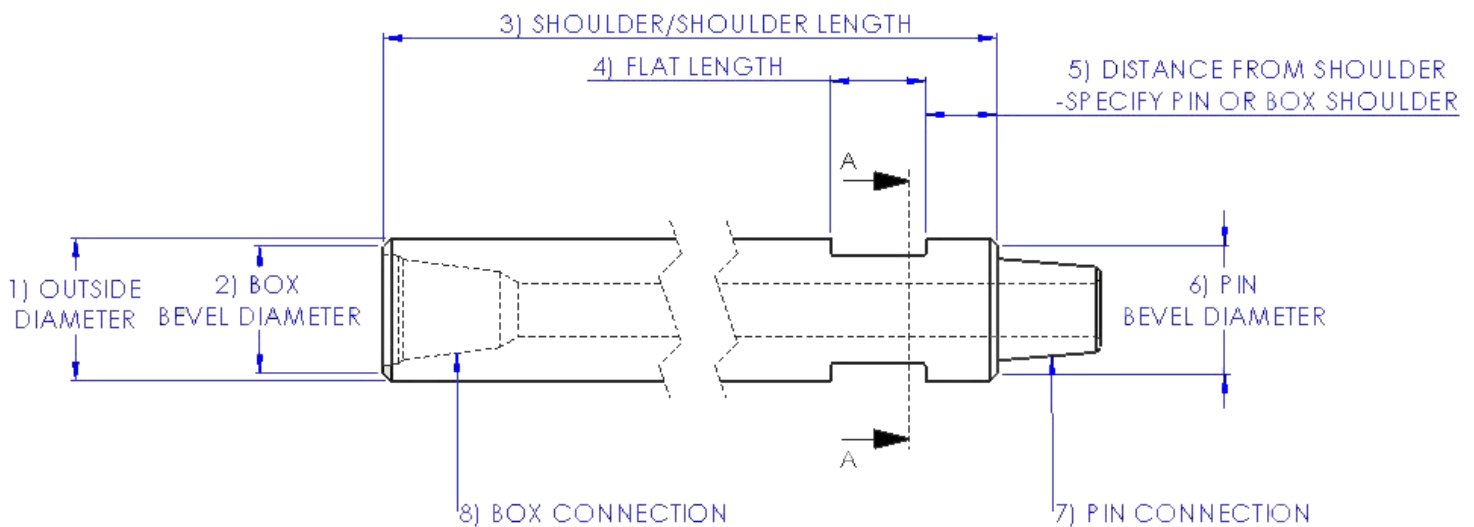


**SPARTAN** Sub Adaptors are all fully customizable, to meet the needs of the driller. We strive to making the ordering process as easy as possible. Complete the sheet below and have your Spartan products built to your exact specification.

### SUB ADAPTOR CUSTOM SPEC SHEET

- |                                  |                              |
|----------------------------------|------------------------------|
| 1.) OUTSIDE DIAMETER _____       | 6.) PIN BEVEL DIAMETER _____ |
| 2.) BOX BEVEL DIAMETER _____     | 7.) PIN CONNECTION _____     |
| 3.) SHOULDER / SHOULDER _____    | 8.) BOX CONNECTION _____     |
| 4.) FLAT LENGTH _____            | 9.) INNER DIAMETER _____     |
| 5.) DISTANCE FROM SHOULDER _____ | 10.) FLAT / FLAT _____       |

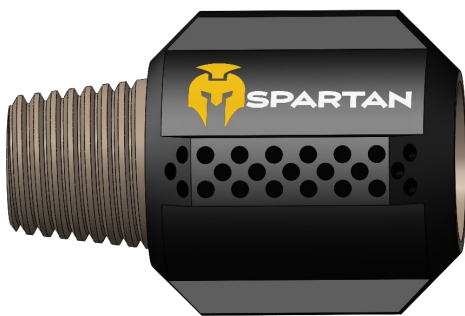
\* PIN OR BOX (CIRCLE ONE)





## REAMERS

**SPARTAN** Stabilizers and Reamers are manufactured to customer specifications. We offer welded and Integral tools. Our stabilizers and reamers can be fitted with hard banded pads and/or carbide buttons to ensure strength and durability. Spartan stabilizers and reamers are inspected and follow strict quality control measures to insure size and angular alignment are exact. Custom threads and connections available (see page 3).



Straight Blade



Spiral Blade

The **SPARTAN** Stabilizer is designed to provide optimal lateral stability to the drill bit. Lateral stability ensures limited movement and peak performance of the drill bit.

Sizes Available: 4.5"-9.25"OD | 1"-6"ID



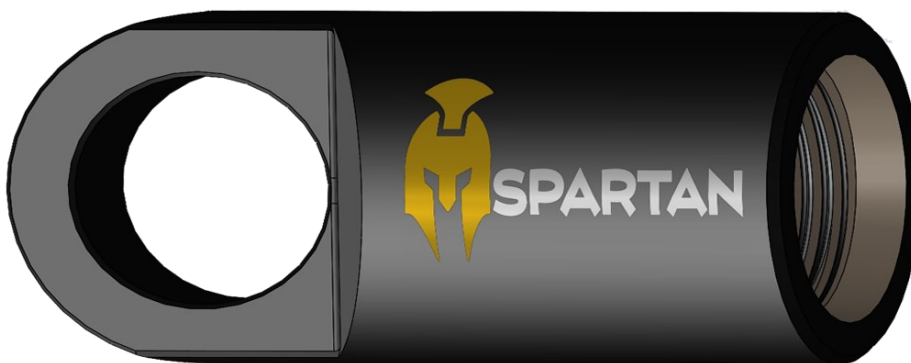


## SWIVELS, HOISTS & LIFTING BAILS

**SPARTAN** Lifting Bails/Hoist Plugs make removing bits and easy operation. Our integral design makes our bails and plugs some of the strongest in the industry. Spartan lifting bails, are built to meet your specifications.



**Spartan Male Lifting Bail**



**Spartan Female Lifting Bail**



**Spartan Male Swivel**

## ACCESSORIES

COPPER BASED  
**INDUSTRIAL COMPOUND**



**BESTOLIFE COPR 99 PUMPABLE:** is a pumpable lead-free, zinc-free thread compound for rotary shouldered connections. It provides galling and seizing protection and support for high bearing stress. It applies easily in a wide range of temperatures and conditions, resists washout, and will not harden or bleed excessively in storage.

**APPLICATIONS:**

Economical copper/PTFE pumpable compound for rotary-shouldered connections. Recommended for all drilling applications (rotary shouldered connections).

COPPER BASED  
**INDUSTRIAL COMPOUND**



**BESTOLIFE COPPER ROCK:** is a lead-free, zinc-free thread compound for rock drill steel joints, couplings, and bits. It provides galling and seizing resistance and surface-active extreme pressure protection.

**APPLICATIONS:**

Non-lead rock drill thread compound. Recommended for coal drilling, percussion rock drilling, blast hole drilling, all rotary joints, road construction, logging, mining, pneumatic drilling and track drills.

Product Characteristics	Copr 99	Copper Rock
Color	Copper	Copper
Penetration	340-370 (ASTM D-217)	275-295 (ASTM D 217)
Weight/Gallon	9.9 pounds/gallon	10.9 pounds/gallon
Dropping Point	≥350°F/≥177°C (typ)	≥500°F/≥260°C (typ)
Flash Point	>430°F/>220°C (min)	>399.2°F/>204°C (min)
Brushable	0°F/-18°C	15°F/-9°C
Friction Factor	1.0 (per API RP 7A1)*	
Contains	Copper, amorphous and synthetic graphite and proprietary additive package	Copper, graphite and other non-metallic additives

