intMPE

International Mineral Processing Equipment

A Division of Canamera Enterprises Inc.

# DRILLING TOOLS & EQUIPMENT

**Categories:** Drilling Equipment & Tools-> Drilling Equipment

**product name:** Swivel

**Description:**

**Product features**

◎Equipped with standard lifting bail and pin-to-pin alloy steel nipple.

◎Wash pipe and packing set are cabinet structure, can be replaced rapidly on the derrick floor, without dismantling rotary hose and gooseneck.

◎The blowhole at the top end of gooseneck provides the passage for wirerope when logging.

◎Bearing with 4″ API hose connection

**Parameters description**

| Type | SL135 | SL225 | SL450 | SL585 |
|---|---|---|---|---|
| Max static load (KN) | 1350 | 2250 | 4500 | 5850 |
| Max Rpm (r/min) | 300 | 300 | 300 | 300 |
| Peak working pressure (Mpa) | 35 | 35 | 35 | 35 |
| Hook clearance (mm) | 495 | 540 | 549 | 584 |
| Center tube drift diameter (mm) | 64 | 75 | 75 | 75 |
| Dimension (L×W×H) (mm) | 2505×758×840 | 2880×1046×1065 | 3015×1096×1065 | 3115×1143×990 |
| Weight (kg) | 1341 | 2570 | 3060 | 4000 |

**Categories:** Drilling Equipment & Tools-> Drilling Equipment

**product name:** Traveling Block

**Description:**

**Product features**

◎Side plate of traveling block is thick section steel and has enough quality. When lifting or landing empty elevator, wire rope is always in a tension state, which is in favor of the landing speed of drum wireline and empty hook, and of the wirerope' s life.

◎Pulley groove is quenched by medium frequency, to prolong the lifetime of wire rope.

◎Pulley is equipped with bipyramid rolling bearings, each bearing has its own lubrication Passage.

◎Pulley and bearing could be interchanged with matched crown block.

**Parameters description**

| Type | YC135 | YC170 | YC225 | YC315 | YC450 | YC585 |
|---|---|---|---|---|---|---|
| Max Hook load (KN) | 1350 | 1700 | 2250 | 3150 | 4500 | 5850 |
| Pulley number | 4 | 5 | 5 | 6 | 6 | 7 |
| Wire rope Dia. (in) | 26(1) | 29(1-1/8) | 32(1-1/4) | 35(1-3/8) | 38(1-1/2) | 42(1-5/8) |
| Dimension (L×W×H) (mm) | 1800×960×610 | 2100×960×630 | 2294×1190×630 | 2680×1350×974 | 3075×1600×800 | 3100×1600×965 |
| Weight (kg) | 2200 | 3010 | 3805 | 6842 | 8135 | 9600 |

**Categories:** Drilling Equipment & Tools-> Drilling Equipment

**product name:** Triplex Mud Pump

**Description:**

**Product features**

◎Power end: the tooth of the transmission gear is an involute shape, runs smoothly and has high efficiency and long lifetime. Crankshaft is integral hollow casting. The end is splash lubricated.

◎Fluid end: intake flange and discharge flange is in accordance with ANSI and API criterion.

◎Between piston rod and intermediate rod comes a clamp connection, speedy dismantle could be made.

◎There are ledges at the bottom of valve installation holes, to protect valve cup from going down. Piston and cylinder liner are cooled down and lubricated by an independent spilling pump.

◎Wearing parts have wide range universality.

◎ Equipped with air chamber, ensure a steady output pressure

**Parameters description**

| Type | 3NB1000 | 3NB1300 | 3NB500C | 3NB1000C | 3NB1300C | 3NB1600 |
|---|---|---|---|---|---|---|
| Power KW (PS) | 735(1000) | 956(1300) | 368(500) | 735(1000) | 956(1300) | 1176(1600) |
| Stroke (spm) | 150 | 140 | 95 | 110 | 120 | 120 |
| Stroke (mm) | 235 | 245 | 254 | 305 | 305 | 305 |
| Transmission shaft Rpm (r/min) | 400 | 402 | 363 | 423 | 457 | 457 |
| Max working pressure (Mpa) | 35 | 35 | 30 | 35 | 35 | 35 |
| Suction pipe Dia. (Mm) | 254 | 257 | 254 | 305 | 305 | 305 |
| Flow pipe Dia. (mm) | 100 | 100 | 100 | 100 | 100 | 100 |
| Dimension (L×W×H) (mm) | 4575×2600×1700 | 4900×2690×1800 | 4220×2640×2430 | 5170×2809×2530 | 5010×1942×1918 | 4450×2850×2077 |
| Weight (kg) | 17985 | 35120 | 15940 | 21450 | 23000 | 29700 |

**Categories:** Drilling Equipment & Tools-> Drilling Tools

**product name:** Air Winch

**Description:**

**Product features**

QJ series of air winches are controlled by hand and powered by air drive. It has the features of small size, lightness, high efficiency, simplify operation, safety and reliability, etc. It could be used to lift or haul heavy objects for land-based drilling site, offshore drilling platform, mine drilling, and so on.

**Parameters description**

| Type | QJ-0.5 | QJL-0.5 | QJ-1 | QJ-2 | QJ-3 | QJ-5 |
|---|---|---|---|---|---|---|
| Rated tractive force (KN) | 5 | 5 | 10 | 20 | 30 | 50 |
| Average rope speed (m/min) | 12 | 12 | 24 | 24 | 20 | 35 |
| Wire rope Dia. (mm) | 8 | 8 | 11 | 16 | 20 | 20 |
| Permissible rope length (m) | 120 | 40 | 100 | 150 | 200 | 70 |
| Air pressure (Mpa) | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| External dimension (mm) | 668×343×420 | 490×95×70 | 740×397×542 | 1000×530×765 | 1530×745×955 | 1254×900×989 |
| Weight (kg) | 117 | 45 | 162 | 440 | 685 | 418 |

**Categories:** Drilling Equipment & Tools-> Drilling Equipment

**product name:** Drawworks

**Description:**

**Product features**

◎ Shaft bearings are all roller ones. Shaft materials are all alloy steel.

◎ Roller chains are all forced lubrication.

◎ The high and low speed ends of the rolling drum are equipped with ventilated air tube clutch. Brake disc adopts forced cooling by circulating water, and is quenched by medium frequency on the surface, has a long lifetime.

◎ Tooth profile of chainwheel is quenched by medium frequency. All gearshift clutches are with involute spline tooth.

◎ Drum brake is girdle or plate type, auxiliary brake is matched with electromagnetic eddy current brake or EATON brake.

**Parameters description**

| Type | JC40 | JC40D | JC50 | JC50D | JC70 | JC70D |
|---|---|---|---|---|---|---|
| Nominal drilling depth (km) | 2.5-4.0 | 2.5-4.0 | 3.5-5.0 | 3.5-5.0 | 4.5-7.0 | 4.5-7.0 |
| Rated power (KW) | 735 | 735 | 1100 | 1100 | 1470 | 1470 |
| Max fast line pull (KN) | 275 | 275 | 340 | 340 | 485 | 485 |
| Wirerope Dia. (in) | 32 (1-1/4) | 32 (1-1/4) | 35 (1-3/8) | 35 (1-3/8) | 38 (1-1/2) | 38 (1-1/2) |
| Drum (Dia×L) (mm) | 640×1235 | 640×1235 | 685×1245 | 685×1245 | 770×1436 | 770×1436 |
| Dimension (L×W×H) (mm) | 6450×2560×2482 | 6600×5820×2918 | 7000×2955×2780 | 6800×4537×2998 | 7930×3194×2930 | 7670×4585×3197 |
| Weight (kg) | 28240 | 37500 | 45210 | 48000 | 43000 | 61000 |

**Categories:** Drilling Equipment & Tools-> Drilling Equipment

**product name:** Rotary Table

**Description:**

**Product features**

◎ Main and pinion gears are both made from alloy steel.

◎ The whole main bushing is cast steel.

◎ Could be put into the roller bushing of API standard kelly or hexagonal kelly, long or short slips are both adaptable.

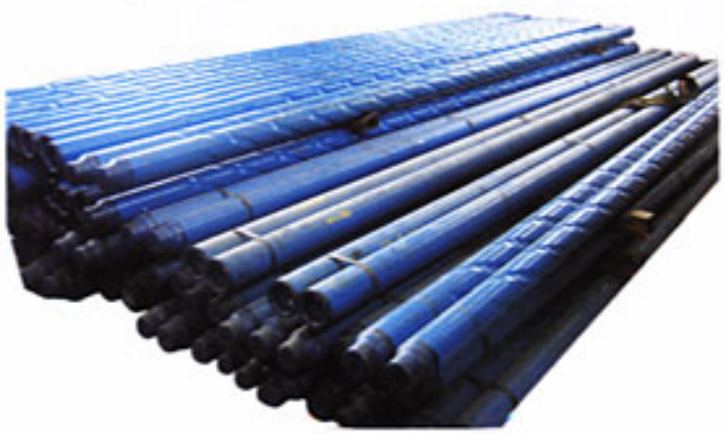
◎ Fully lubricated and safely sealed.

**Parameters description**

| Type | ZP175 | ZP205 | ZP275 | ZP375 | ZP495 |
|---|---|---|---|---|---|
| Through hole Dia. mm(in) | 444.5 (17-1/2) | 520.7 (20-1/2) | 698.5 (27-1/2) | 952.5 (37-1/2) | 1257.3 (49-1/2) |
| Center distance mm(in) | 1118 (44) | 1353 (53-1/4) | 1353 (53-1/4) | 1353 (53-1/4) | 1651 (65) |
| Max static load (KN) | 1350 | 3150 | 4500 | 5850 | 7250 |
| Max working torque (Nm) | 14000 | 23000 | 28000 | 33000 | 37000 |
| Max Rpm (r/min) | 300 | 300 | 300 | 300 | 300 |
| Dimension (L×W×H) (mm) | 1935×1280×585 | 2292×1475×668 | 2392×1670×685 | 2468×1810×718 | 2940×2184×813 |
| Weight (kg) | 3888 | 5530 | 6163 | 7548 | 11626 |

# Drill Collars

Drill collars are manufactured from AISI 4142H-4145H modified steel and are supplied in the "as rolled" surface finish condition. Alternative surface finishes can be provided. Drill collars are trepanned and drifted to API Spec. 7. Full-length heat-treatment processes ensure that mechanical properties meet or exceed API Spec. 7 requirements. A hardness range of 285-341, Brinell Hardness and Charpy "V' notch minimum impact strength of 40 ft-lb at 70 F are guaranteed one inch below the surface.



Satand size ,bores and connection for drill collar

| Style of connection | OD | | ID | | Length | Bevel diameter | Bending strengthratio |
|---|---|---|---|---|---|---|---|
| | mm | in | mm | in | mm | mm | |
| NC23-31 | 79.4 | 3 1/8 | 31.8 | 1 1/4 | 9150 | 76.2 | 2.57:1 |
| NC26-35(23/8IF) | 88.9 | 3 1/2 | 38.1 | 1 1/2 | 9150 | 82.9 | 2.42:1 |
| NC31-41(27/8IF) | 104.8 | 4 1/8 | 50.8 | 2 | 9150 | 100.4 | 2.43:1 |
| NC35-47 | 120.7 | 4 3/4 | 50.8 | 2 | 9150 | 114.7 | 2.58:1 |
| NC3850(31/2IF) | 127.0 | 5 | 57.2 | 2 1/4 | 9150 | 121.0 | 2.38:1 |
| NC44-60 | 152.4 | 6 | 57.2 | 2 1/4 | 9150or9450 | 144.5 | 2.49:1 |
| NC44-62 | 158.8 | 6 1/4 | 57.2 | 2 1/4 | 9150or9450 | 149.2 | 2.91:1 |
| NC46-62(4IF) | 158.8 | 6 1/4 | 71.4 | 2 13/16 | 9150or9450 | 150.0 | 2.63:1 |
| NC46-65(4IF) | 165.1 | 6 1/2 | 57.2 | 2 1/4 | 9150or9450 | 154.8 | 2.76:1 |
| NC46-65(4IF) | 165.1 | 6 1/2 | 71.4 | 2 13/16 | 9150or9450 | 154.8 | 3.05:1 |
| NC46-67(4IF) | 171.4 | 6 3/4 | 57.2 | 2 1/4 | 9150or9450 | 159.5 | 3.18:1 |
| NC50-67(41/2IF) | 171.4 | 6 3/4 | 71.4 | 2 13/16 | 9150or9450 | 159.5 | 2.37:1 |
| NC50-70(41/2IF) | 177.8 | 7 | 57.2 | 2 1/4 | 9150or9450 | 164.7 | 2.54:1 |
| NC50-70(41/2IF) | 177.8 | 7 | 71.4 | 2 13/16 | 9150or9450 | 164.7 | 2.73:1 |
| NC50-72(41/2IF) | 184.2 | 7 1/4 | 71.4 | 2 13/16 | 9150or9450 | 169.5 | 3.12:1 |
| NC50-77 | 196.8 | 7 3/4 | 71.4 | 2 13/16 | 9150or9450 | 185.3 | 2.70:1 |
| NC50-80 | 203.2 | 8 | 71.4 | 2 13/16 | 9150or9450 | 190.1 | 3.02:1 |
| 6 5/8REG | 209.6 | 8 1/4 | 71.4 | 2 13/16 | 9150or9450 | 195.7 | 2.93:1 |
| NC61-90 | 228.6 | 9 | 71.4 | 2 13/16 | 9150or9450 | 212.7 | 3.17:1 |
| 7 5/8REG | 241.3 | 9 1/2 | 76.2 | 3 | 9150or9450 | 223.8 | 2.81:1 |
| NC70-97 | 247.6 | 9 3/4 | 76.2 | 3 | 9150or9450 | 232.6 | 2.57:1 |
| NC70-100 | 254.0 | 10 | 76.2 | 3 | 9150or9450 | 237.3 | 2.81:1 |
| 8 5/8REG | 279.4 | 11 | 76.2 | 3 | 9150or9450 | 266.7 | 2.84:1 |

**Mechanical Property**

| TTT | | Yield strength 0.2 Mpa | Tensile strength bMpa | Elongation 4% | Hardness (Brinell) | IMPACT VALUE(CHAPPY-V) |
|---|---|---|---|---|---|---|
| mm | Inch | | | | | |
| 79.4-171.4 | 3 1/8-6 3/4 | ≥758 | ≥965 | ≥13 | 285-341 | ≥54 |
| 177.8-279.4 | 7-11 | ≥689 | ≥930 | | | |

# Drill pipe >>

In accordance with API SPEC 5D, it can be divided into two groups:

Group 1--Grade E drill pipe

Group 3--All high strength grades of drill pipe .(Grades X-95, G-105, S-135)

**Drill Pipe Size**

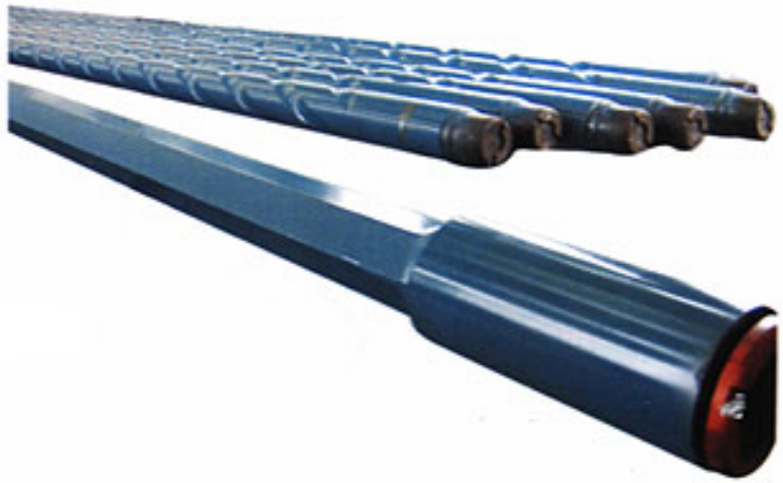
| Size | Weight Designation | Calculated Plain-End Weight | | Outside Diameter | | Grade | Wall Thickness | | Upset Ends For Weld-on Tools Joint |
|---|---|---|---|---|---|---|---|---|---|
| | | Lb/ft | kg/m | in | mm | | in | mm | |
| 2 3/8 | 6.65 | 6.26 | 9.32 | 2.375 | 60.3 | E,X,G,S | 0.280 | 7.11 | EU |
| 2 7/8 | 10.40 | 9.72 | 14.48 | 2.875 | 73.0 | E,X,G,S | 0.362 | 9.19 | IU or EU |
| 3 1/2 | 9.50 | 8.81 | 13.12 | 3.500 | 88.9 | E | 0.254 | 6.45 | IU or EU |
| 3 1/2 | 13.30 | 12.31 | 18.34 | 3.500 | 88.9 | E,X,G,S | 0.368 | 9.35 | IU or EU |
| 3 1/2 | 15.50 | 14.63 | 21.79 | 3.500 | 88.9 | E | 0.449 | 11.40 | IU or EU |
| 3 1/2 | 15.50 | 14.63 | 21.79 | 3.500 | 88.9 | X,G,S | 0.449 | 11.40 | EU or IEU |
| 4 | 14.00 | 12.93 | 19.26 | 4.000 | 101.6 | E,X,G,S | 0.330 | 8.38 | IU or EU |
| 4 1/2 | 13.75 | 12.24 | 18.23 | 4.500 | 114.3 | E | 0.271 | 6.88 | IU or EU |
| 4 1/2 | 16.60 | 14.98 | 22.31 | 4.500 | 114.3 | E,X,G,S | 0.337 | 8.56 | EU or IEU |
| 4 1/2 | 20.00 | 18.69 | 27.84 | 4.500 | 114.3 | E,X,G,S | 0.430 | 10.92 | EU or IEU |
| 5 | 16.25 | 14.87 | 22.15 | 5.000 | 127.0 | X,G,S | 0.296 | 7.52 | IU |
| 5 | 19.50 | 17.93 | 26.71 | 5.000 | 127.0 | E | 0.362 | 9.19 | IEU |
| 5 | 19.50 | 17.93 | 26.71 | 5.000 | 127.0 | X,G,S | 0.362 | 9.19 | EU or IEU |
| 5 | 25.60 | 24.03 | 35.79 | 5.000 | 127.0 | E | 0.500 | 12.70 | IEU |
| 5 | 25.60 | 24.03 | 35.79 | 5.000 | 127.0 | X,G,S | 0.500 | 12.70 | EU or IEU |
| 5 1/2 | 21.90 | 19.81 | 29.51 | 5.500 | 139.7 | E,X,G,S | 0.361 | 9.17 | IEU |
| 5 1/2 | 24.70 | 22.54 | 33.57 | 5.500 | 139.7 | E,X,G,S | 0.415 | 10.54 | IEU |
| 6 5/8 | 25.20 | 22.19 | 33.05 | 6.625 | 168.3 | E,X,G,S | 0.330 | 8.38 | IEU |
| 6 5/8 | 27.70 | 24.21 | 36.06 | 6.625 | 168.3 | E,X,G,S | 0.362 | 9.19 | IEU |

**Tensile**

| Group | Grade | Yield Strength | | | | Tensile Strength | | Elongation, Min.Percent in 2 in. (50.80mm)% |
|---|---|---|---|---|---|---|---|---|
| | | Minimum | | Maximum | | Minimum | | |
| | | psi | Mpa | psi | Mpa | psi | Mpa | |
| 1 | E-75 | 75000 | 517 | 105000 | 724 | 100000 | 689 | See footnotea |
| 3 | X-95 | 95000 | 655 | 125000 | 862 | 105000 | 724 | See footnotea |
| | G-105 | 105000 | 724 | 135000 | 931 | 115000 | 793 | See footnotea |
| | S-135 | 135000 | 931 | 165000 | 1138 | 145000 | 1000 | See footnotea |

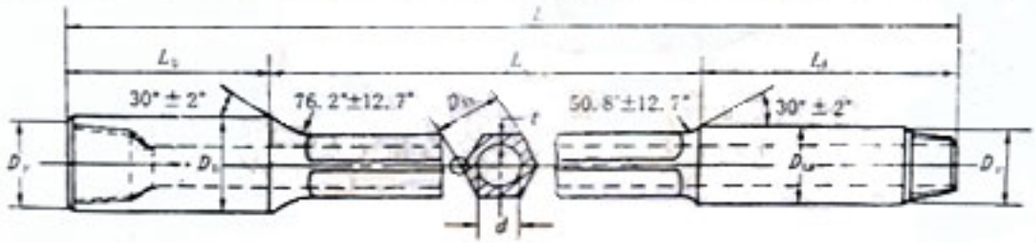
# Kelly >>

Made from AISI 4142H-4145H modified alloy bars that are quenched and tempered full length,which up to 46 feet long.. A hardness range of 285 to 341 BHN and a minimum impact value of 40ft-lbs are maintained one inch below the surface at room temperature. All ends and center drive sections-trepanned to provide true bores. They are drifted to API specifications, and all connections are machined.



## Size and type of square kelly (in)

| Kelly Size | | Length of Drive Section m m | | Length Overall m m | | Drive Section | | | | | | Upper Box Connection | | | | | | | Lower Pin Connection | | | | Inside Diameterd |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | Size and style LH | | Outside Diameter | | Bevel Diameter | | | | | | | |
| | | Standard $L_D$ | Optional $L_D$ | Standard L | Optional L | Across Flats $D_{FL}$ | Across Corners EC | Across Corners DCC | Radius RC | Radius RC | Min. Wall ECC. Boret | Standard | Optional | Standard $D_U$ | Optional $D_U$ | $L_U$ | $D_F$ | $D_F$ | Size and Style | Outside Diameter $D_{LB}$ | Length $L_L$ | Bevel Diameter $D_T$ | |
| **63.5** | (2 1/2) | 11280 | | 12190 | | 63.5 | 83.3 | 82.55 | 7.9 | 41.3 | 11.43 | (6 5/8) REG | (41/2) REG | 196.9 | 146.1 | 406.4 | 186.1 | 134.5 | NC26 (23/8IF) | 85.7 | 508 | 82.9 | 31.8 |
| **76.2** | (3) | 11280 | | 12190 | | 76.2 | 100.0 | 98.43 | 9.5 | 49.2 | 11.43 | (6 5/8) REG | (41/2) REG | 196.9 | 146.1 | 406.4 | 186.1 | 134.5 | NC31 (27/8IF) | 104.8 | 508 | 100.4 | 44.5 |
| **88.9** | (3 1/2) | 11280 | | 12190 | | 88.9 | 115.1 | 112.70 | 12.7 | 56.4 | 11.43 | (6 5/8) REG | (41/2) REG | 196.9 | 146.1 | 406.4 | 186.1 | 134.5 | NC38 (31/2IF) | 120.7 | 508 | 116.3 | 57.2 |
| **108.0** | (4 1/4) | 11280 | 15540 | 12190 | 16460 | 108.0 | 141.3 | 139.70 | 12.7 | 69.9 | 12.07 | (6 5/8) REG | (41/2) REG | 196.9 | 146.1 | 406.4 | 186.1 | 134.5 | NC46 (4IF) | 158.8 | 508 | 145.3 | 71.4 |
| **108.0** | (4 1/4) | 11280 | 15540 | 12190 | 16460 | 108.0 | 141.3 | 139.70 | 12.7 | 69.9 | 12.07 | (6 5/8) REG | (41/2) REG | 196.9 | 146.1 | 406.4 | 186.1 | 134.5 | NC50 (41/2IF) | 161.9 | 508 | 154.0 | 71.4 |
| **133.4** | (5 1/4) | 11280 | 15540 | 12190 | 16460 | 133.4 | 175.4 | 171.45 | 15.9 | 85.7 | 15.88 | (6 5/8) REG | | 196.9 | | 406.4 | 186.1 | | 5 1/2FH | 177.8 | 508 | 170.7 | 82.6 |
| **133.4** | (5 1/4) | 11280 | 15540 | 12190 | 16460 | 133.4 | 175.4 | 171.45 | 15.9 | 85.7 | 15.88 | (6 5/8) REG | | 196.9 | | 406.4 | 186.1 | | Nc56 | 177.8 | 508 | 171.1 | 82.6 |




# Non-magnetic drill collars

Materials of the Non-magnetic drill collars are from chrome manganese, low carbon alloy obtained by combining a proprietary chemical analysis and a rotary hammer process. The material is resistant to stress corrosion cracking, with high machine ability and no tendency to galling.

magnetic permeability (when MPS=$110^5$/4Nm)
relative max:1.010 average: $U_r$ >=1.005

magnetic field gradient (hot spots)
max: B 0.05micro tesla/100mm

The non-magnetic drill collars exhibit the mechanical properties indicated below along their entire length. The table is derived from test samples of steel taken from a point 1□ below the surface.

| Mechanical Property | | | | |
|---|---|---|---|---|
| OD | | Yield strength σ 0.2 | Tensile strength σ b | Elongation4(%) |
| mm | in | | | |
| 79.4--171.4 | 3 1/8--6 3/4 | ≥758 | ≥827 | ≥18 |
| 177.8--279.4 | 7--11 | ≥689 | ≥758 | ≥20 |

# Spiral drill collars

Spiral drill collars are complete product line. Spiral grooves let mud circulate freely around the drill collar to equalize pressure and prevent a seal from forming. The reduces the occurrence of differential pressure sticking,Spiral prevents differential sticking without spiral.
Spiral collars are wide used because of their maintenance features.The special grooves decrease the volume of the contact between the well side and the pipe, it leads to the decrease of the "tack" of the pipe and to turning of the drill pipe string.
The weight of round drill collars will be reduced approximately 4-6% by spiral conversion.

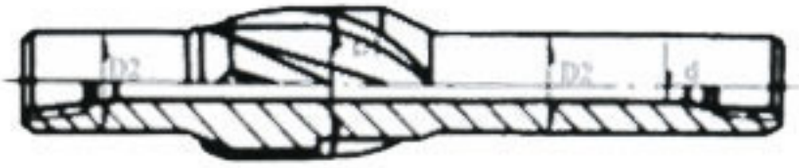
# Stabilizer >>

Made from premium chrome molybdenese alloy steel (except for non-magnetic style), heat treated by special procedure and obtain expected hardness, strength and impact value properties, all threads are made strictly in accordance with API specification. The hardbanding of stabilizers employ "pressed in" Tungsten Carbide alloy buttons or other anti-wear materials. All stabilizers should be ultrasonic tested.WL also provides non-magnetic stabilizers.


## Integral spiral stabilizer

(premium chrome molybdenum alloy steel andnon-magnetic low carbin chrome manganesealloy steel)

Made from AISI 4145H Modified alloy steel or Non-magnetic alloy steel, the pressed button type or applied Tungsten Carbide hardbanding on the blade facing are available. The Non-magnetic stabilizers have special hardbanding on the spiraled blade surface that the magnetic properties has been eliminated.



## Interchangeable sleeve stabilizers

WL interchangeable sleeve stabilizers are made of 4145H alloy steel, Heat treated to 285-341 Brinell Hardness and 54 Joules minimum impact value, All physical properties would be guaranteed 1" below the surface. The kind of stabilizer is constructed of two pieces which are jointed by the center connection and one sleeve. Every stabilizer is equipped with a certain size of sleeve.