



NORTHSTAR

D R I L L I N G T O O L S

MINING : EXPLORATION : CONSTRUCTION

Here at North Star our aim is simple: 100% customer satisfaction.

Since our first factory's establishment in 1998, we have grown into one of the world's largest comprehensive manufacturers of drill pipe. I'm proud to lead a team whose members challenge themselves every day: continually seeking improvements to both the products and the services we offer.

We believe a quality product speaks for itself. We stand by everything that we make and sell, but more than that we stand by our partners and customers because we believe that loyalty and integrity are the foundation of strong, long-term business relationships.

We're at your service. Call us, write to us or visit our factories anytime and let's talk about how we can work together!

Michael Lyu, General Manager



北方中星

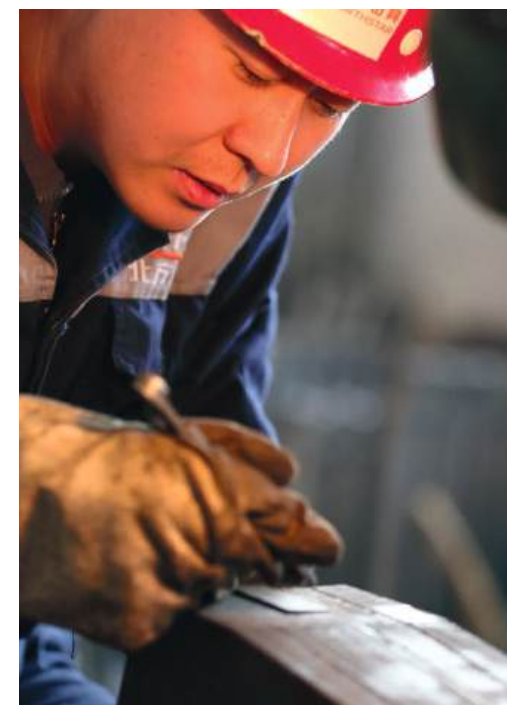
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WHY CHOOSE NORTH STAR?

STRENGTH & EXPERIENCE

North Star has 25 years' experience in manufacturing drill pipe for the Chinese and international markets. Sales in 2023 exceeded 300,000 pipes, and we are pursuing a US\$4 million expansion and upgrading program that will lift capacity to well in excess of 400,000 pipes in 2024.



INTERNATIONAL SERVICE CULTURE & PRODUCT SUPPORT

We stand by our products. Our aim is 100% customer satisfaction and to that end we take every enquiry with equal seriousness. Our multilingual, multicultural management team prioritizes smooth, effective communication.

We work together with our partners and end-users to help ensure they get maximum value from every product. All our products are fully guaranteed against defects in materials or workmanship.

TRUST IN PARTNERSHIPS

North Star believes in long-term, mutually supportive business relationships. We are totally committed to working together with our partners: making sure we match the right product with the right project — and at the right price.

OUR AIM IS SIMPLE: 100% CUSTOMER SATISFACTION



THE NORTH STAR TEAM IS AT YOUR SERVICE

ROTARY DRILL PIPE



North Star Rotary Drill Pipe is manufactured using the highest quality 4145 HT & Quenched alloy tool joints with options of HT & Quenched alloy or hot-rolled seamless carbon tube.

Mid-Body Tube options include:

4140 Alloy: This alloy tube is applied in hard abrasive formations as a solution to slow the mid-body wear that is common in these types of geological formations. The physical characteristics, yield, tensile and HRC hardness of this alloy tube deliver a more durable, wear-resistant mid-body tube than that of standard, hot-rolled, seamless carbon tube.

ST52: This mid-body tube is typically applied in less abrasive formations. This is a hot-rolled, seamless carbon tube.

Welding options include both friction- and submerged-arc processes.



Welds are
100% inspected
using in-house
ultrasonic testing



When ordering or
requesting a quotation,
please specify:

Drill Rig Make & Model No.
Drill Pipe OD
Length
Wall Thickness
Pin Thread Size & Type
Box Thread Size & Type
Wrenching Configuration
Special Requests

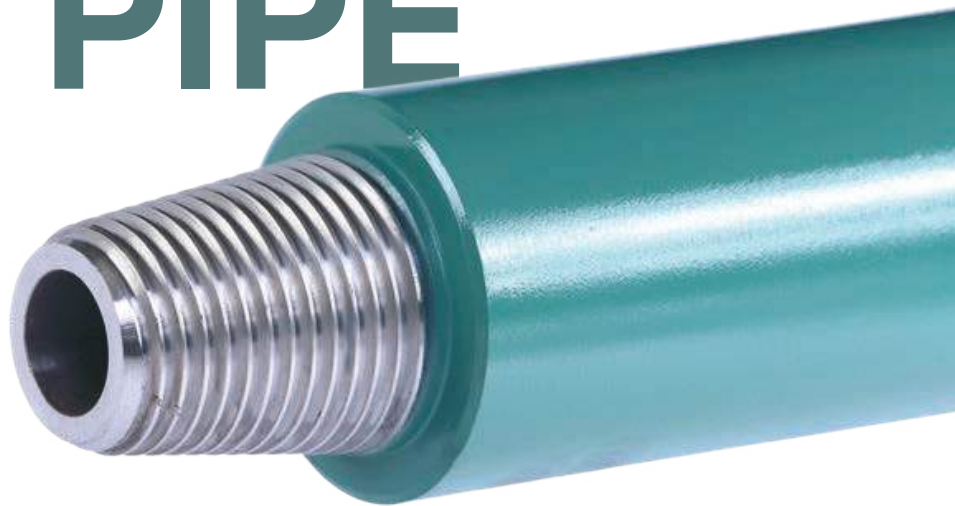
STANDARD ROTARY DRILL PIPES

DIAMETER	WALL THICKNESS	RECOMMENDED THREAD	TUBE STEEL GRADES
5"	.500- .750"	3 ½" BECO	A106B/4140 HT&Q
5 ½"	.500- .750"	3 ½" BECO	A106B/4140 HT&Q
6"	.750"	4" BECO	A106B/4140 HT&Q
6 ¼"	.750- 1.000"	4" BECO	A106B/4140 HT&Q
6 ½"	.750- 1.000"	4 ½" BECO	A106B/4140 HT&Q
6 5/8"	.862"	4 ½" BECO	A106B/4140 HT&Q
7"	.750- 1.000"	4 ½" BECO, 5 ¼" BECO	A106B/4140 HT&Q
7 5/8"	.750- 1.000"	5 ¼" BECO	A106B/4140 HT&Q
8 5/8"	.750- 1.000"	6" BECO	A106B/4140 HT&Q
9 ¼"	1.000- 1.500"	6" BECO	A106B/4140 HT&Q
9 5/8"	1.000"	7" BECO	A106B/4140 HT&Q
10 ¼"	1.000"	8" BECO	A106B/4140 HT&Q
10 ¾"	1.000- 1.500"	8" BECO	A106B/4140 HT&Q

*Additional diameters, wall thicknesses and thread types are available upon request.



DTH DRILL PIPE



North Star offers both Premium and Standard steel grades that are proven to provide the highest level of durability and wear resistance. We never vary grades based on short-term raw material cost savings.

We utilize in-house heat treatment for the hardening and tempering of all tool joints and adaptors. This allows us to achieve preferred hardness levels in the threaded areas. We go the extra mile by profiling our pins and boxes prior to heat treatment and then machining the threaded areas; ensuring superior hardness and wear resistance levels.

- **Reliable and wear-resistant.**
- **In-house heat treatment for optimum surface hardness and case depth.**
- **Customizable for steel grade, length, diameter, wall thickness and connection types.**



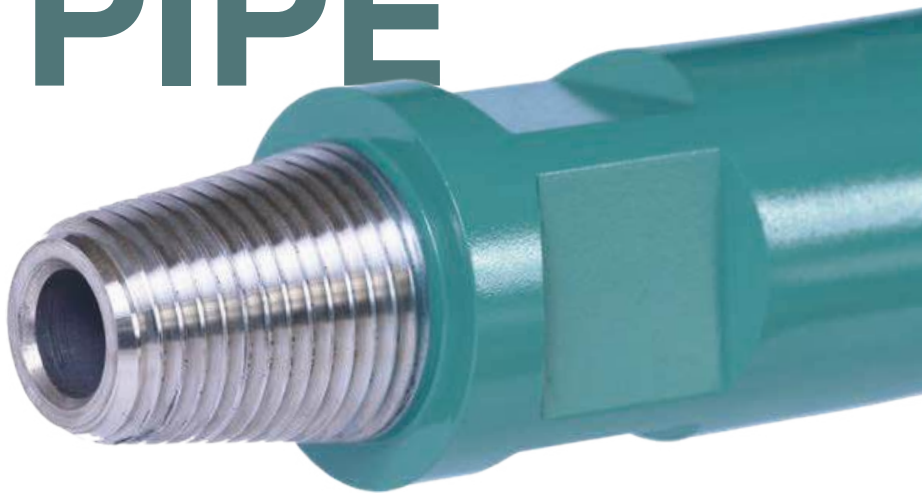
Ion nitriding process ensures industry-leading surface hardness and hardness depth.
Surface Hardness:
650-750 HV
Depth: 0.1-0.2 mm



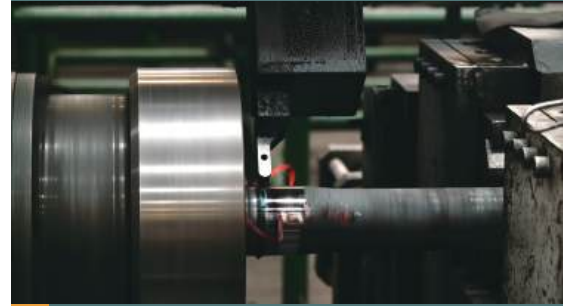
When ordering or requesting a quotation, please specify:

Drill Rig Make & Model No.
Drill Pipe OD
Length
Wall Thickness
Pin Thread Size & Type
Box Thread Size & Type
Wrenching Configuration
Special Requests

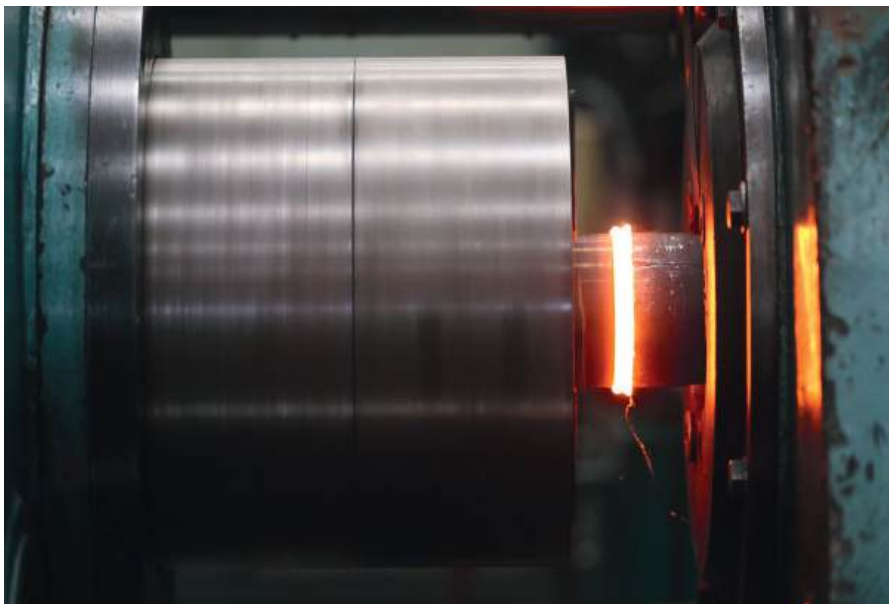
WATER WELL DRILL PIPE



North Star Water Well Drill Pipe is manufactured using the highest quality 4145 HT & Quenched alloy tool joints with options of HT & Quenched alloy or hot-rolled seamless carbon tube.



In-house heat treatment ensures optimum surface hardness and case depth.



When ordering or requesting a quotation, please specify:

Drill Rig Make & Model No.
Drill Pipe OD
Length
Wall Thickness
Pin Thread Size & Type
Box Thread Size & Type
Wrenching Configuration
Special Requests

ADAPTOR SUBS



Drill String Adaptor Subs are available in a wide range of diameters, lengths, wrenching, and thread size/types.

North Star understands the need to have a versatile range of configurations to connect your drill rods together. We have a wide range of certified thread gages available to accommodate all your configuration needs.

When ordering or requesting a quotation, please specify:

- Outside Diameter or Diameters
- Length (Shoulder to Shoulder)
- Advise Top, Bottom or Crossover Sub
- Upper Thread Connection Size and Type (API Reg, API IF or BECO)
- Lower Thread Connection Size and Type (API Reg, API IF or BECO)
- Wrenching Details (Dimensions and Location)
- Hard Facing Requirements
- Special Requests



Our machining equipment utilizes the latest CNC tooling and technology for optimum specification accuracy.



ROTARY DECK BUSHINGS



This is a rotating bushing assembly that has 3 bearing races that allow for the inner sleeve to rotate within the outer body. North Star uses 4140 HT & Quenched alloy raw material in the manufacturing of our rotary deck bushing, which provides high performance combined with longer service life.

An independent OQC team performs final inspections and document checks before shipment.

When ordering or requesting a quotation, please specify:

Drill Rig Make & Model No.
Drill Pipe Diameter (new)
Deck Hole Diameter
Flange Plate Thickness
Flange Plate Configuration (lugs, squares, flats dimensions and location)
Lifting Eyes Required?
Special Requests

DRILL PIPE OD (IN)	DRILL PIPE OD (MM)	DECK BUSHING OD (IN)	DECK BUSHING OD (MM)	FLANGE DIAMETER IN/ TYPE	FLANGE DIAMETER MM/ TYPE
4.000	102	10	254	12" w/ 2 x Slots	305mm w/ 2 x Slots
4.500	114	10	254	12" w/ 2 x Slots	305mm w/ 2 x Slots
4.500	114	10	254	14" w/ 1 x Flat	356mm w/ 1 x Flat
5.000	127	10	254	12" w/ 2 x Slots	305mm w/ 2 x Slots
5.000	127	10	254	14" w/ 1 x Flat	356mm w/ 1 x Flat
5.500	140	10-13	254-330	12-16" w/ 2 x Slots	305-406mm w/ 2 x Slots
6.000	152	10	254	14" w/ 1 x Flat	356mm w/ 1 x Flat
6.250	159	10-13	254-330	12-16" w/ 2 x Slots	305-406mm w/ 2 x Slots
6.500	165	10-13	254-330	12-16" w/ 2 x Slots	305-406mm w/ 2 x Slots
7.000	178	11.25-13	286-330	12-16" w/ 1 or 2 x Slots/ 1 x Flat	305-406mm w/ 1 or 2 x Slots or 1 x Flat
7.625	194	11.25-13	286-330	12-16" w/ 1 or 2 x Slots/ 1 x Flat	305-406mm w/ 1 or 2 x Slots or 1 x Flat
8.625	219	11.25-16	286-406	12-19" w/ 1 or 2 x Slots/ 1 x Flat	305-482mm w/ 1 or 2 x Slots or 1 x Flat
9.250	235	13-16	330-406	16-19" w/ Slots or Flat	406-482mm w/ Slots or Flat
10.750	273	15-16	381-406	15.750-17" w/ Flat only	400-432mm w/ Flat only
13.375	340	17	432	21.65" w/ 2 x Slots	550mm w/ 2 x Slots

STABILIZERS

Welded Blade Stabilizers are available in a wide range of diameters, lengths, wrenching, and thread size/types.



Lab testing of all heat-treated products is conducted by individual batch to confirm that our stringent product specifications are met.

When ordering or requesting a quotation, please specify:

Diameter of Drill Pipe and/or DTH Hammer
Drill hole size
Preferred Shoulder to Shoulder length
Blade count (3, 4, 5 or 6)
Blade length
Upper Thread Connection Size and Type (API Reg, API IF or BECO)
Lower Thread Connection Size and Type (API Reg, API IF or BECO)
Wrenching details (Dimensions and Location)
As we custom manufacture our stabilizers, please advise as much specification detail as possible.



CASING



North Star offers both Pin-Box Casing and Box-Box Casing with Pin-Pin Nipple to match.

We also manufacture a comprehensive range of API Inner Rods, plus Flushing Heads, Saver Subs and Casing Bits.



Rigorous control of the key processes of forging and heat treatment ensures consistent high performance.

PIN-BOX CASING

CASING OD (MM)	CASING ID (MM)	PIN JOINT ID (MM)	LENGTH (MM, S/S)	CONNECTION TYPE
133	115	106	1500	Pin-Box Left Hand
133	115	106	2000	Pin-Box Left Hand
146	128	122.5	1500	Pin-Box Left Hand
146	128	122.5	2000	Pin-Box Left Hand

BOX-BOX CASING

CASING OD (MM)	CASING ID (MM)	PIN JOINT ID (MM)	LENGTH (MM, S/S)	CONNECTION TYPE
102	82	72	1500	Box-Box Left Hand
102	82	72	2000	Box-Box Left Hand
114	92	84	1500	Box-Box Left Hand
114	92	84	2000	Box-Box Left Hand
136	114	105	1500	Box-Box Left Hand
136	114	105	2000	Box-Box Left Hand
146	126	115	1500	Box-Box Left Hand
146	126	115	2000	Box-Box Left Hand
168	146	136	1500	Box-Box Left Hand
168	146	136	2000	Box-Box Left Hand

When ordering or requesting a quotation, please specify:

Drill Rig Make & Model No.
Casing OD
Length
Casing ID
Pin Thread Size & Type
Box Thread Size & Type
Special Requests

REVERSE CIRCULATION DRILL PIPE

Reverse circulation drill pipe consists of two main components, an inner tube and an outer tube. This drill pipe is a dual wall pipe capable of being pressurized without pressure loss between the drill pipe joints. This is achieved by coupling the drill pipe outer tube threaded tool joints together to create a sealed area that does not leak the pressurized media. When the outer tube of the drill pipe is coupled together the inner tube components couple with a precise fit to seal tightly together. North Star Reverse Circulation drill pipe is designed and engineered utilizing our in-house engineering resources that take into consideration the extreme wear that this product is subjected to.

As the drill pipe is subjected to high wear in the drilling process, we use only the highest quality alloy steel for the both the mid-body outer tube and tool joints. Our mid-body tube is a P-110 grade steel and the tool joints are 4145 alloy. All components are heat treated in house. The tool joint and thread surfaces are nitrided to insure optimum product life cycles.



REVERSE CIRCULATION DRILL PIPE

REVERSE CIRCULATION THREAD CSR1	DIAMETER	LENGTH	PART NUMBER
REVERSE CIRCULATION DRILL PIPE CSR1 6M	4"	20'	RCD40060C1A-01
REVERSE CIRCULATION DRILL PIPE CSR1 3M	4"	10'	RCD40030C1A-01
REVERSE CIRCULATION DRILL PIPE CSR1 6M	4 1/2"	20'	RCD41260C1A-01
REVERSE CIRCULATION DRILL PIPE CSR1 3M	4 1/2"	10'	RCD41230C1A-01
REVERSE CIRCULATION THREAD MATRIX	DIAMETER	LENGTH	PART NUMBER
REVERSE CIRCULATION DRILL PIPE MATRIX 6M	4"	20'	RCD40060MAA-01
REVERSE CIRCULATION DRILL PIPE MATRIX 3M	4"	10'	RCD40030MAA-01
REVERSE CIRCULATION DRILL PIPE MATRIX 6M	4 1/2"	20'	RCD41260MAA-01
REVERSE CIRCULATION DRILL PIPE MATRIX 3M	4 1/2"	10'	RCD41230MAA-01
REVERSE CIRCULATION THREAD METZKE	DIAMETER	LENGTH	PART NUMBER
REVERSE CIRCULATION DRILL PIPE METZKE 6M	4"	20'	RCD40060MEA-01
REVERSE CIRCULATION DRILL PIPE METZKE 3M	4"	10'	RCD40030MEA-01
REVERSE CIRCULATION DRILL PIPE METZKE 6M	4 1/2"	20'	RCD41260MEA-01
REVERSE CIRCULATION DRILL PIPE METZKE 3M	4 1/2"	10'	RCD41230MEA-01
REVERSE CIRCULATION THREAD REMET	DIAMETER	LENGTH	PART NUMBER
REVERSE CIRCULATION DRILL PIPE REMET 6M	4"	20'	RCD40060REA-01
REVERSE CIRCULATION DRILL PIPE REMET 3M	4"	10'	RCD40030REA-01
REVERSE CIRCULATION DRILL PIPE REMET 6M	4 1/2"	20'	RCD41260REA-01
REVERSE CIRCULATION DRILL PIPE REMET 3M	4 1/2"	10'	RCD41230REA-01

REVERSE CIRCULATION INNER TUBES

REVERSE CIRCULATION INNER TUBE THREAD CSR1	DIAMETER	LENGTH	PART NUMBER
REVERSE CIRCULATION INNER TUBE CSR1 6M	4"	20'	RCD40060C1A-T1
REVERSE CIRCULATION INNER TUBE CSR1 3M	4"	10'	RCD40030C1A-T1
REVERSE CIRCULATION INNER TUBE CSR1 6M	4 1/2"	20'	RCD41260C1A-T1
REVERSE CIRCULATION INNER TUBE CSR1 3M	4 1/2"	10'	RCD41230C1A-T1
REVERSE CIRCULATION INNER TUBE THREAD MATRIX	DIAMETER	LENGTH	PART NUMBER
REVERSE CIRCULATION INNER TUBE MATRIX 6M	4"	20'	RCD40060MAA-T1
REVERSE CIRCULATION INNER TUBE MATRIX 3M	4"	10'	RCD40030MAA-T1
REVERSE CIRCULATION INNER TUBE MATRIX 6M	4 1/2"	20'	RCD41260MAA-T1
REVERSE CIRCULATION INNER TUBE MATRIX 3M	4 1/2"	10'	RCD41230MAA-T1
REVERSE CIRCULATION INNER TUBE THREAD METZKE	DIAMETER	LENGTH	PART NUMBER
REVERSE CIRCULATION INNER TUBE METZKE 6M	4"	20'	RCD40060MEA-T1
REVERSE CIRCULATION INNER TUBE METZKE 3M	4"	10'	RCD40030MEA-T1
REVERSE CIRCULATION INNER TUBE METZKE 6M	4 1/2"	20'	RCD41260MEA-T1
REVERSE CIRCULATION INNER TUBE METZKE 3M	4 1/2"	10'	RCD41230MEA-T1
REVERSE CIRCULATION INNER TUBE THREAD REMET	DIAMETER	LENGTH	PART NUMBER
REVERSE CIRCULATION INNER TUBE REMET 6M	4"	20'	RCD40060REA-T1
REVERSE CIRCULATION INNER TUBE REMET 3M	4"	10'	RCD40030REA-T1
REVERSE CIRCULATION INNER TUBE REMET 6M	4 1/2"	20'	RCD41260REA-T1
REVERSE CIRCULATION INNER TUBE REMET 3M	4 1/2"	10'	RCD41230REA-T1

ADAPTER SUBS AND ACCESSORIES

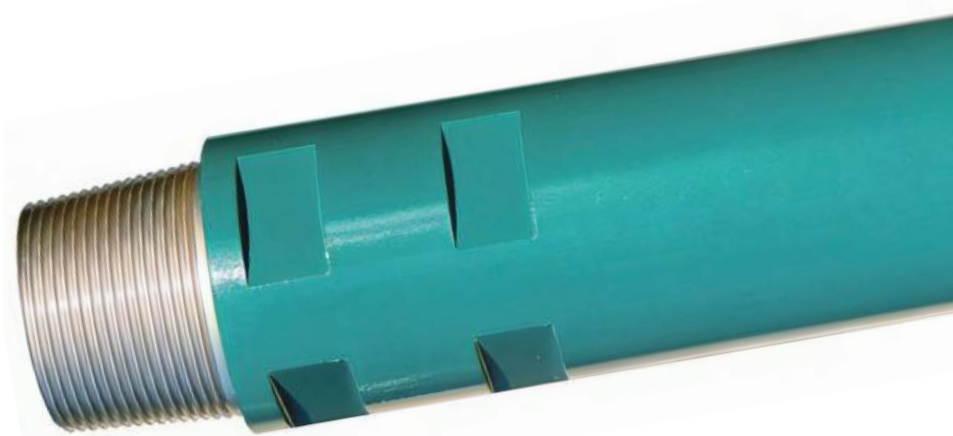


North Star manufactures a complete range of reverse circulation accessories: replacement inner tubes, saver subs, bit subs, interchanges, wear sleeves, blow-down/blow-back subs and DTH Hammers/ Bits and Rotary open center bits.

Part Numbers and pricing available upon request.

RAISE BORING SERIES

Customized R&D:
Offers bespoke product development tailored to specific operating conditions and equipment requirements, fostering collaborative engineering with clients.



Material Selection: Utilizes American standard AISI 4145H and 4330V alloy steels, selected in strict accordance with international mature product specifications.

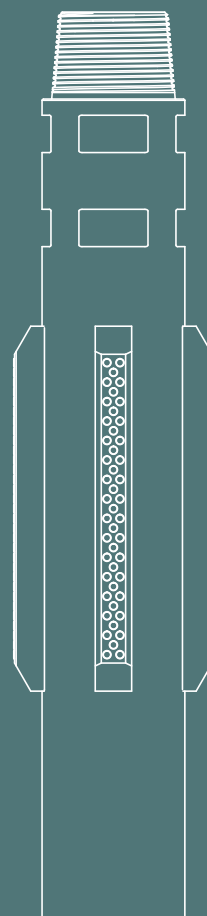
Grain Refinement: Employs forging processes to ensure a uniform microstructure and refined grain size, significantly enhancing the mechanical properties of the product.

Precision Threading: Utilizes imported thread gauges to strictly control machining accuracy, ensuring the design strength and fatigue life of the connections.

Surface Treatment: Features specialized thread surface treatments to improve wear resistance and minimize the risk of galling.

RAISE BORING SERIES

SPECS	THREAD	MATERIAL	LENGTH (mm)
176	6 5/8 REG	4145H/4330V	1000
182	6 5/8 REG	4145H/4330V	1000
203	6 3/4 DI22	4145H/4330V	1000-1500
254	8 1/4 DI22	4145H/4330V	1000-1500
286	9 1/4 DI22	4145H/4330V	1000-1500
327	10 1/2 DI22	4145H/4330V	1000-1500



RIBBED STABILIZERS

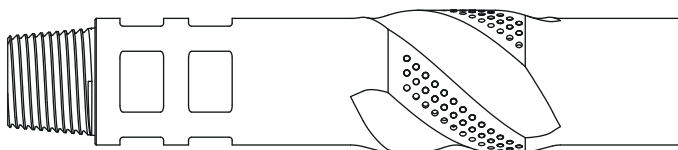


Material Selection: Utilizes American standard AISI 4145H and 4330V alloy steels, selected in strict accordance with international mature product specifications.

Grain Refinement: Employs forging processes to ensure a uniform microstructure and refined grain size, significantly enhancing the mechanical properties of the product.

Precision Threading: Utilizes imported thread gauges to strictly control machining accuracy, ensuring the design strength and fatigue life of the connections.

Surface Treatment: Features specialized thread surface treatments to improve wear resistance and minimize the risk of galling.



Hardfacing:
The stabilizer's working surfaces are integrated with hard-alloy (carbide) to effectively extend product service life.

Versatile Configurations:
A wide range of designs is available to meet the requirements of various operating conditions.

RIBBED STABILIZERS

SPECS	OUTER DIAMETER (mm)	THREAD	MATERIAL	LENGTH (mm)
176	229-251	6 5/8 REG	4145H/4330V	1000
182	229-251	6 5/8 REG	4145H/4330V	1000
203	229-251	6 3/4 DI22	4145H/4330V	1000-1500
254	279	8 1/4 DI22	4145H/4330V	1000-1500
286	311	9 1/4 DI22	4145H/4330V	1000-1500
327	349-381	10 1/2 DI22	4145H/4330V	1000-1500

ABOUT NORTH STAR

Our first factory was established in 1998 in the city of Zhangjiakou, three hours north of Beijing. Among our earliest partners was Ingersoll Rand, also based in Zhangjiakou at the time.

The manufacturing base developed rapidly to cover a wide range of drilling equipment including DTH pipes for mining, water well and exploration drilling, plus HDD pipes and tools such as reamers and swivels. In 2012 HDD drill pipe production expanded to a new facility south of Beijing.

Today more than 400 people work in our two facilities, whose annual production capacity has grown to exceed 400,000 drill pipes.

The North Star company and brand were established in 2012 to unify sales and marketing of our factories' products, and to strengthen standardization and internationalization across all our product lines.

North Star's head office remains in Beijing. President and General Manager Michael Lyu is concurrently head of both our manufacturing facilities.





Write

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