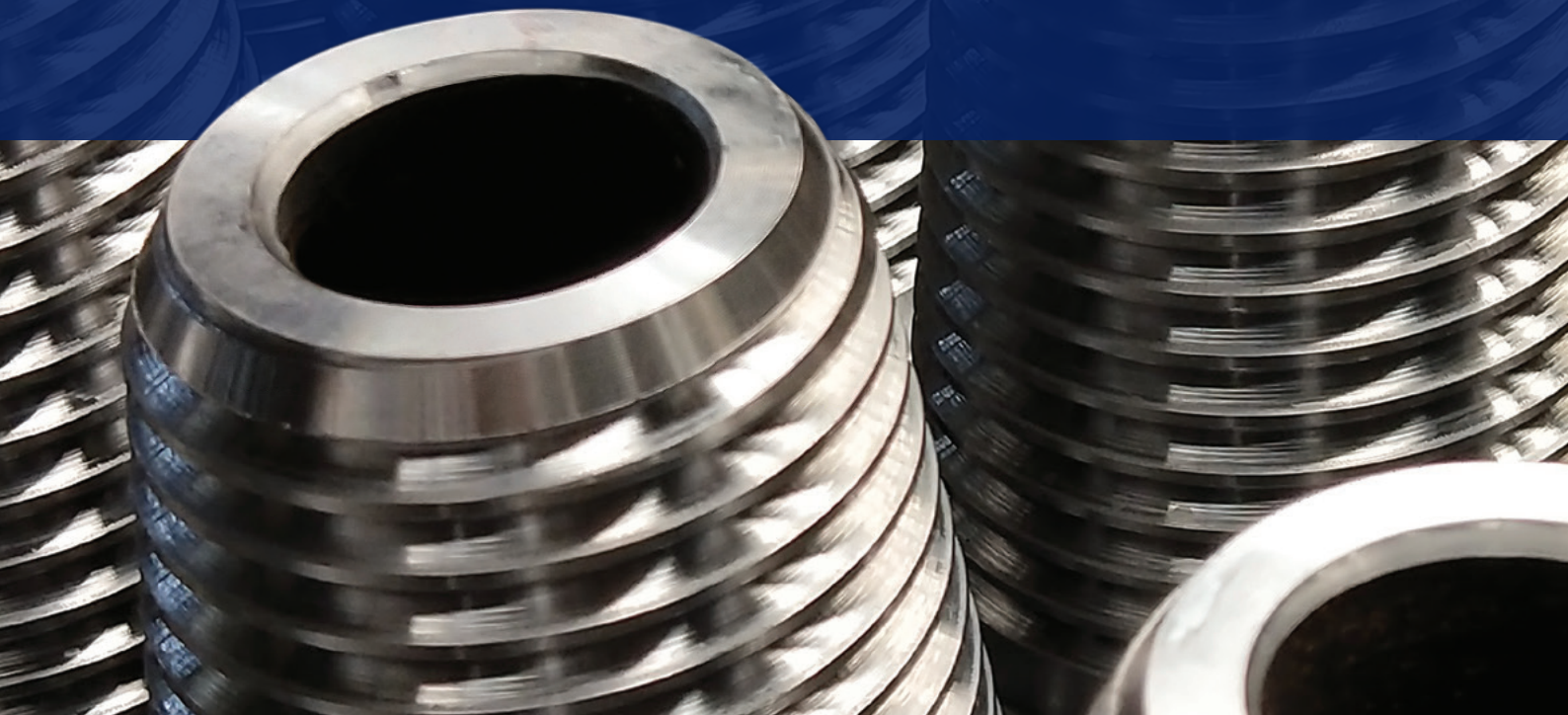




NORTHSTAR
D R I L L I N G T O O L S

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

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WHY CHOOSE NORTH STAR?

STRENGTH & EXPERIENCE

North Star has 20 years' experience in manufacturing drill pipe for the Chinese and international markets. Sales in 2018 are approaching 250,000 pipes, and we are pursuing a US\$4 million expansion and upgrading program that will lift capacity to well in excess of 300,000 pipes in 2019.

INTERNATIONAL SERVICE CULTURE & PRODUCT SUPPORT

We stand by our products. Our aim is 100% customer satisfaction and to that end we take every enquiry and every question 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. If necessary, we send staff members and engineers on site for further study and training. All our products are fully guaranteed against defects in materials or workmanship.

OUR AIM IS SIMPLE: 100% CUSTOMER SATISFACTION



Consistent raw material quality and 100% traceability



Zero-flaw visual and physical inspection standard



In-house mechanical quality testing



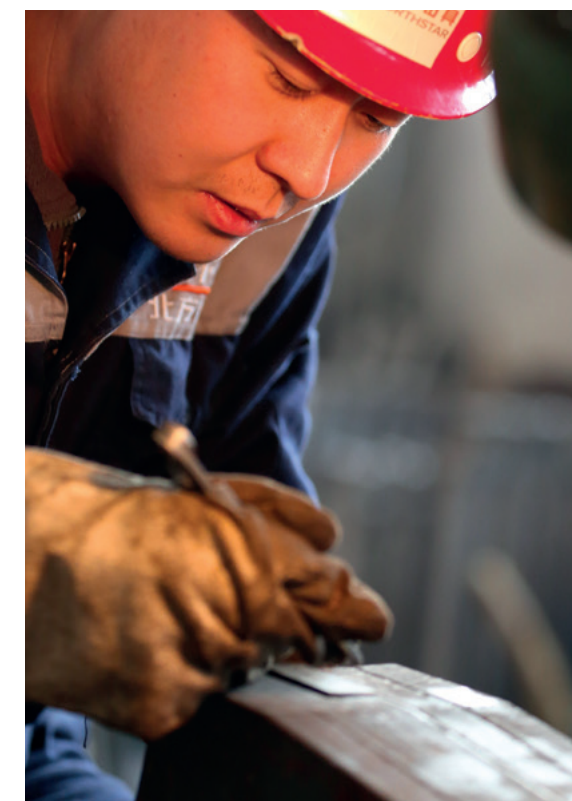
Automated systems for speed and accuracy

QUALITY MANAGEMENT

Our quality team's work begins by ensuring a consistently high standard of raw material: checking every batch on delivery against the technical team's strict criteria for dimensional accuracy and steel chemistry. Once approved for production, every item is issued a work number that allows us to track it through each subsequent step of the manufacturing process.

We are dedicated to continuous improvement of all production and delivery processes. No pipe is released to market without a quality report verifying compliance with all destructive and non-destructive testing criteria. We aim to achieve 100% traceability to ensure our partners and customers can use North Star products with complete confidence.

Our facilities are ISO9001:2015 certified.



CONTINUOUS INVESTMENT

North Star is investing US\$4 million in 2018 and 2019 as we upgrade equipment and expand production into a new 12,000-square meter workshop, complete with a loading bay that will allow containerization of export product by our own dedicated team. In 2018 we have already installed a dedicated tool joint forge and heat treatment line, enabling both cost savings and more effective in-house quality control.

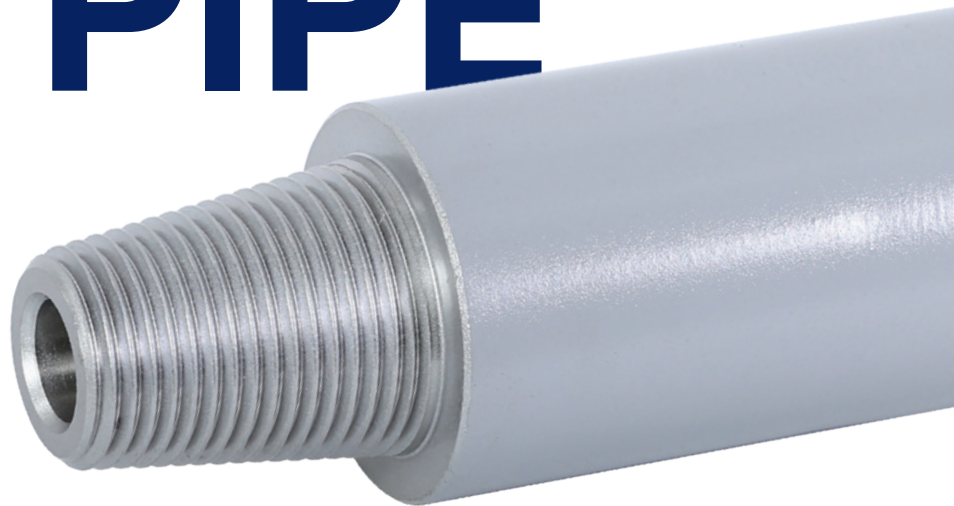
TRUST IN PARTNERSHIPS

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.

THE NORTH STAR TEAM IS AT YOUR SERVICE



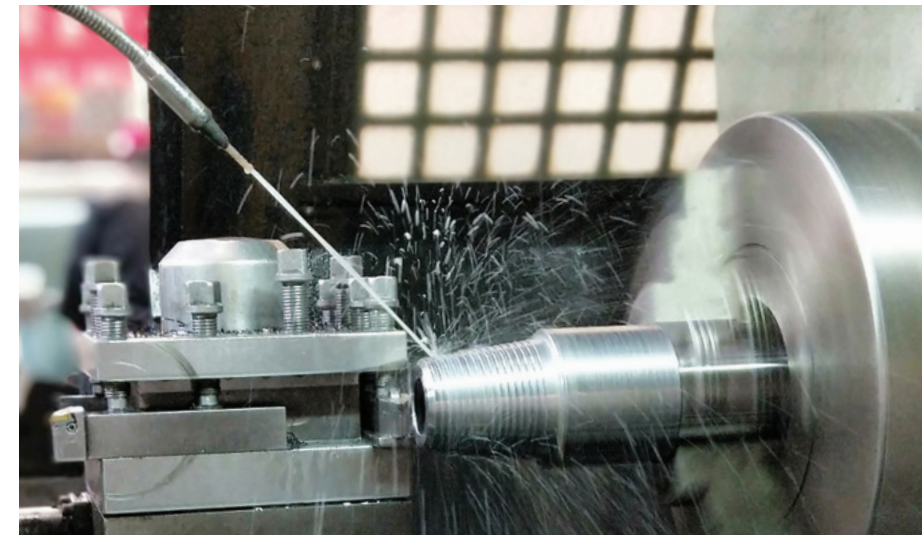
DTH DRILL PIPE



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.**



North Star's comprehensive range of threads are all CNC-machined and checked using certified hardened and ground gages.



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 DTH DRILL PIPES

NORTHSTAR PART NUMBER	DIAMETER (MM)	DIAMETER (IN)	WALL (MM)	WALL (IN)	LENGTH (MM)	LENGTH (FT)	BOX THREAD	PIN THREAD	WRENCH FLAT WIDTH (MM)	WRENCH FLAT WIDTH (IN)	UNIT WEIGHT (KG)	UNIT WEIGHT (LB)
DR030003A1F-067	76	3.00	4.0	0.157	1000	3.28	2 3/8" API	2 3/8" API	A/F65	2.50	12	26
DR030003C1F-072	76	3.00	6.3	0.248	1000	3.28	2 3/8" API	2 3/8" API	A/F65	2.50	17	37
DR030003G1F-099	76	3.00	8.8	0.346	1000	3.28	2 3/8" API	2 3/8" API	A/F65	2.50	17	37
DR030005A1F-065	76	3.00	4.0	0.157	1500	4.92	RD50-6	RD50-6	A/F65	2.50	16	35
DR030005A1F-068	76	3.00	4.0	0.157	1500	4.92	2 3/8" API	2 3/8" API	A/F65	2.50	16	35
DR030005C1F-073	76	3.00	6.3	0.248	1500	4.92	2 3/8" API	2 3/8" API	A/F65	2.50	23	51
DR030005G1F-100	76	3.00	8.8	0.346	1500	4.92	2 3/8" API	2 3/8" API	A/F65	2.50	24	53
DR030006G1F-098	76	3.00	8.8	0.346	1800	5.91	2 3/8" API	2 3/8" API	A/F65	2.50	28	62
DR030007A1F-069	76	3.00	4.0	0.157	2000	6.56	2 3/8" API	2 3/8" API	A/F65	2.50	19	42
DR030007C1F-074	76	3.00	6.3	0.248	2000	6.56	2 3/8" API	2 3/8" API	A/F65	2.50	28	62
DR030007G1F-101	76	3.00	8.8	0.346	2000	6.56	2 3/8" API	2 3/8" API	A/F65	2.50	32	71
DR030007G1F-102	76	3.00	8.8	0.346	2000	6.56	2 3/8" API	2 3/8" API	A/F65	2.50	32	71
DR030010A1F-066	76	3.00	4.0	0.157	3000	9.84	RD50-6	RD50-6	A/F65	2.50	24	53
DR030010C1F-071	76	3.00	6.3	0.248	3000	9.84	RD50-6	RD50-6	A/F65	2.50	39	86
DR030010C1F-075	76	3.00	6.3	0.248	3000	9.84	2 3/8" API	2 3/8" API	A/F65	2.50	39	86
DR030010A1F-112	76	3.00	4.0	0.157	3000	9.84	2 3/8" API	2 3/8" API	A/F65	2.50	25	55
DR030010A1F-113	76	3.00	4.0	0.157	3000	9.84	2 3/8" API	2 3/8" API	A/F65	2.50	25	55
DR030012C1F-097	76	3.00	6.3	0.248	3720	12.20	2 3/8" API	2 3/8" API	A/F65	2.50	44	97
DR030013C1F-076	76	3.00	6.3	0.248	4000	13.12	2 3/8" API	2 3/8" API	A/F65	2.50	49	108
DR030013A1F-080	76	3.00	4.0	0.157	4000	13.12	2 3/8" API	2 3/8" API	A/F65	2.50	31	68
DR030015C1F-077	76	3.00	6.3	0.248	4500	14.76	2 3/8" API	2 3/8" API	A/F65	2.50	52	115
DR030016C1F-083	76	3.00	6.3	0.248	5000	16.40	2 3/8" API	2 3/8" API	A/F65	2.50	61	134
DR030020C1F-078	76	3.00	6.3	0.248	6000	19.69	2 3/8" API	2 3/8" API	A/F65	2.50	72	159
DR030020C1F-108	76	3.00	6.3	0.248	6000	19.69	2 3/8" API	2 3/8" API	A/F65	2.50	70	154
DR035003A1F-126	89	3.50	4.0	0.157	1000	3.28	2 3/8" API	2 3/8" API	A/F65	2.50	13	29
DR035003C1F-136	89	3.50	6.3	0.248	1000	3.28	2 3/8" API	2 3/8" API	A/F65	2.50	17	37
DR035003C1F-142	89	3.50	6.3	0.248	1000	3.28	2 3/8" IF	2 3/8" IF	A/F65	2.50	17	37
DR035005A1F-127	89	3.50	4.0	0.157	1500	4.92	2 3/8" API	2 3/8" API	A/F65	2.50	18	40
DR035005A1F-132	89	3.50	4.0	0.157	1500	4.92	2 3/8" IF	2 3/8" IF	A/F65	2.50	18	40
DR035005C1F-137	89	3.50	6.3	0.248	1500	4.92	2 3/8" API	2 3/8" API	A/F65	2.50	24	53
DR035005C1F-143	89	3.50	6.3	0.248	1500	4.92	2 3/8" IF	2 3/8" IF	A/F65	2.50	24	53
DR035006C1F-155	89	3.50	6.3	0.248	1700	5.58	2 3/8" API	2 3/8" API	A/F65	2.50	28	62
DR035006A1F-128	89	3.50	4.0	0.157	1800	5.91	2 3/8" API	2 3/8" API	A/F65	2.50	20	44
DR035006C1F-146	89	3.50	6.3	0.248	1800	5.91	2 3/8" API	2 3/8" API	A/F65	2.50	29	64
DR035006G1F-180	89	3.50	8.8	0.346	1800	5.91	2 3/8" API	2 3/8" API	A/F65	2.50	33	73
DR035006G1F-185	89	3.50	8.8	0.346	1950	6.40	2 3/8" API	2 3/8" API	A/F65	2.50	34	75
DR035007A1F-129	89	3.50	4.0	0.157	2000	6.56	2 3/8" API	2 3/8" API	A/F65	2.50	22	49
DR035007A1F-133	89	3.50	4.0	0.157	2000	6.56	2 3/8" IF	2 3/8" IF	A/F65	2.50	22	49
DR035007C1F-138	89	3.50	6.3	0.248	2000	6.56	2 3/8" API	2 3/8" API	A/F65	2.50	30	66
DR035007C1F-144	89	3.50	6.3	0.248	2000	6.56	2 3/8" IF	2 3/8" IF	A/F65	2.50	30	66
DR035007G1F-172	89	3.50	8.8	0.346	2000	6.56	2 3/8" API	2 3/8" API	A/F65	2.50	38	84
DR035007C1F-154	89	3.50	6.3	0.248	2100	6.89	2 3/8" API	2 3/8" API	A/F65	2.50	31	68
DR035010A1F-130	89	3.50	4.0	0.157	3000	9.84	2 3/8" API	2 3/8" API	A/F65	2.50	28	62
DR035010A1F-134	89	3.50	4.0	0.157	3000	9.84	2 3/8" IF	2 3/8" IF	A/F65	2.50	28	62
DR035010C1F-135	89	3.50	6.3	0.248	3000	9.84	RD70-4	RD70-4	A/F65	2.50	43	95
DR035010C1F-139	89	3.50	6.3	0.248	3000	9.84	2 3/8" API	2 3/8" API	A/F65	2.50	43	95
DR035010C1F-145	89	3.50	6.3	0.248	3000	9.84	2 3/8" IF	2 3/8" IF	A/F65	2.50	43	95
DR035010G1F-159	89	3.50	8.8	0.346	3000	9.84	2 3/8" API	2 3/8" API	A/F65	2.50	52	115
DR035010C1F-181	89	3.50	6.3	0.248	3000	9.84	2 3/8" IF	2 3/8" IF	A/F65	2.50	43	95
DR035010A1F-210	89	3.50	4.0	0.157	3000	9.84	2 3/8" API	2 3/8" API	A/F65	2.50	30	66
DR035013C1F-153	89	3.50	6.3	0.248	4000	13.12	2 3/8" API	2 3/8" API	A/F65	2.50	56	123
DR035013A1F-166	89	3.50	4.0	0.157	4000	13.12	2 3/8" API	2 3/8" API	A/F65	2.50	39	86
DR035015C1F-140	89	3.50	6.3	0.248	4500	14.76	2 3/8" API	2 3/8" API	A/F65	2.50	74	163
DR035015A1F-187	89	3.50	4.0	0.157	4500	14.76	2 3/8" API	2 3/8" API	A/F65	2.50	37	82
DR035016C1F-151	89	3.50	6.3	0.248	5000	16.40	2 3/8" API	2 3/8" API	A/F65	2.50	69	152
DR035020C1F-141	89	3.50	6.3	0.248	6000	19.69	2 3/8" API	2 3/8" API	A/F65	2.50	81	179
DR035020G1F-182	89	3.50	8.8	0.346	6000	19.69	2 3/8" API	2 3/8" API	A/F65	2.50	99	218
DR040003G1F-248	102	4.00	8.8	0.346	1000	3.28	2 3/8" IF	2 3/8" IF	A/F75	3.00	28	61
DR040006C1F-255	102	4.00	6.3	0.248	1700	5.58	2 3/8" IF	2 3/8" IF	A/F75	3.00	36	79
DR040010C1F-220	102	4.00	6.3	0.248	3000	9.84	2 7/8" API	2 7/8" API	A/F75	3.00	55	121
DR040010G1F-244	102	4.00	8.8	0.346	3000	9.84	2 3/8" API	2 3/8" API	A/F75	3.00	94	206
DR040010G1F-249	102	4.00	8.8	0.346	3000	9.84	2 3/8" IF	2 3/8" IF	A/F75	3.00	94	206
DR040013C1F-221	102	4.00	6.3	0.248	4000	13.12	2 7/8" API	2 7/8" API	A/F75	3.00	70	154
DR040013C1F-228	102	4.00	6.3	0.248	4000	13.12	3 1/2" API	3 1/2" API	A/F75	3.00	70	154
DR040016C1F-213	102	4.00	6.3	0.248	5000	16.40	3 1/2" API	3 1/2" API	A/F65	3.00	85	187
DR040016C1F-217	102	4.00	6.3	0.248	5000	16.40	2 7/8" API	2 7/8" API	A/F75	3.00	85	187
DR040020C1F-222	102	4.00	6.3	0.248	6000	19.69	2 7/8" API	2 7/8" API	A/F75	3.00	100	220
DR040020C1F-246	102	4.00	6.3	0.248	6000	19.69	3 1/2" API	3 1/2" API	A/F75	3.00	100	220
DR040020C1F-263	102	4.00	6.3	0.248	6000	19.69	2 7/8" IF	2 7/8" IF	A/F75	3.00	100	220
DR045004J1F-325	114	4.50	12.7	0.500	1219	4.00	3 1/2" API	3 1/2" API	A/F75	3.00	48	105
DR045004J1F-331	114	4.50	12.7	0.500	1219	4.00	3 1/2" API	3" BECO	A/F75	3.00	48	105
DR045007J1F-326	114	4.50	12.7	0.500	2133	7.00	3 1/2" API	3 1/2" API	A/F75	3.00	61	135
DR045020K1F-350	114	4.50	17.0	0.669	6000	19.69	3" BECO	3" BECO	A/F90	3.50	266	585
DR045003C1F-269	114	4.50	6.3	0.248	1000	3.28	3 1/2" API	3 1/2" API	A/F95	3.75	26	57
DR045003G1F-278	114	4.50	8.8	0.346	1000	3.28	3 1/2" API	3 1/2" API	A/F95	3.75	31	68
DR045005C1F-268	114	4.50	6.3	0.248	1500	4.92	2 3/8" IF	2 7/8" IF	A/F95	3.75	35	77
DR045005C1F-270	114	4.50	6.3	0.248	1500	4.92	3 1/2" API	3 1/2" API	A/F95	3.75	35	77
DR045005G1F-279	114	4.50	8.8	0.346	1500	4.92	3 1/2" API	3 1/2" API	A/F95	3.75	42	93
DR045005C1F-355	114	4.50	6.3	0.248	1500	4.92	2 3/8" API	2 3/8" API	A/F95	3.75	35	77
DR045007C1F-271	114	4.50	6.3	0.248	2000	6.56	3 1/2" API	3 1/2" API	A/F95	3.75	43	95
DR045007C1F-275	114	4.50	6.3	0.248	2000	6.56	3 1/2" IF	3 1/2" IF	A/F95	3.75	43	95
DR045007G1F-280	114	4.50	8.8	0.3								

ROTARY DRILL PIPE



Welds are
100% inspected
using in-house
ultrasonic testing



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.



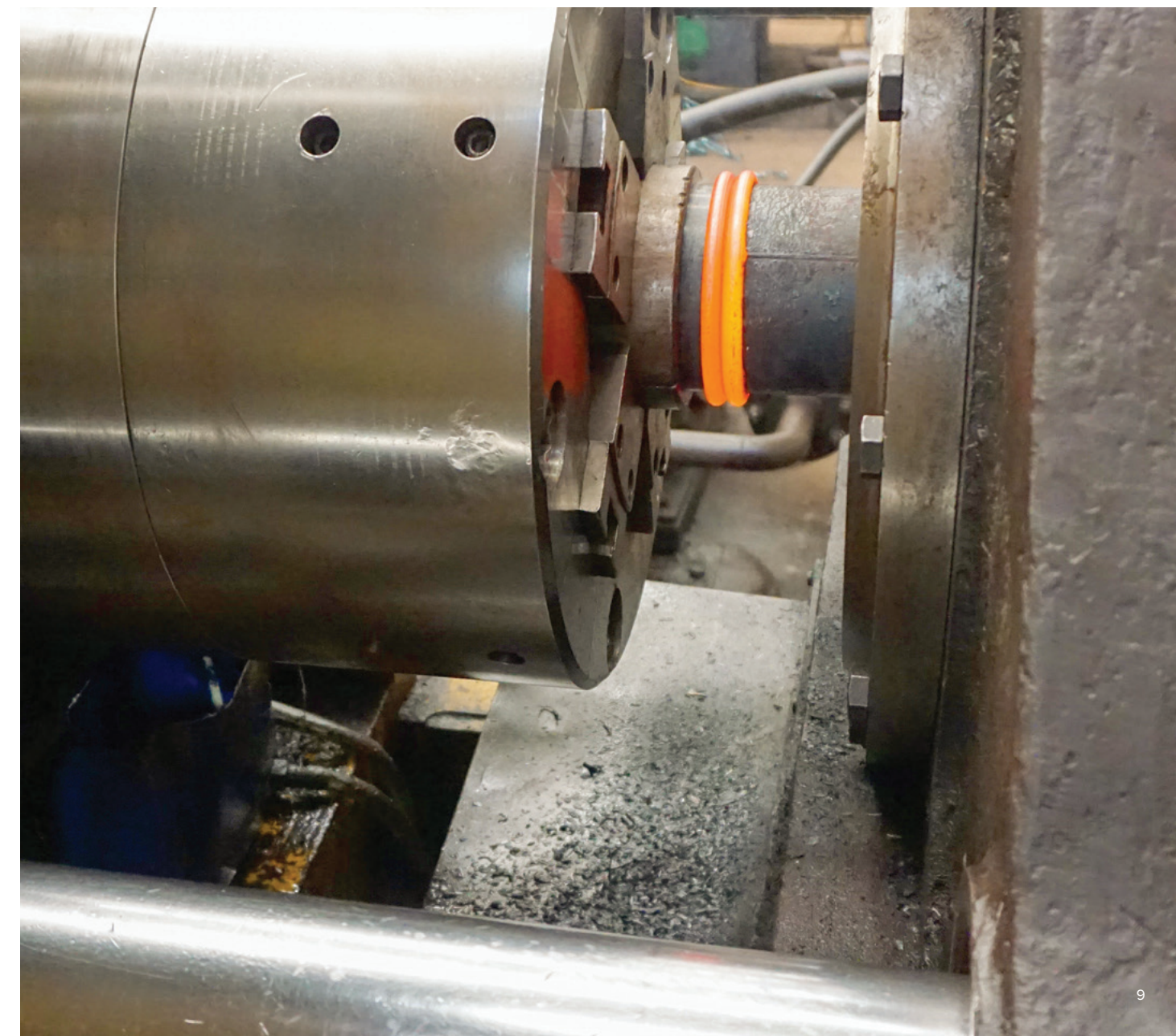
When ordering or
requesting a quotation,
please specify:

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.



WATER WELL DRILL PIPE



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



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.

STANDARD WATER WELL DRILL PIPE

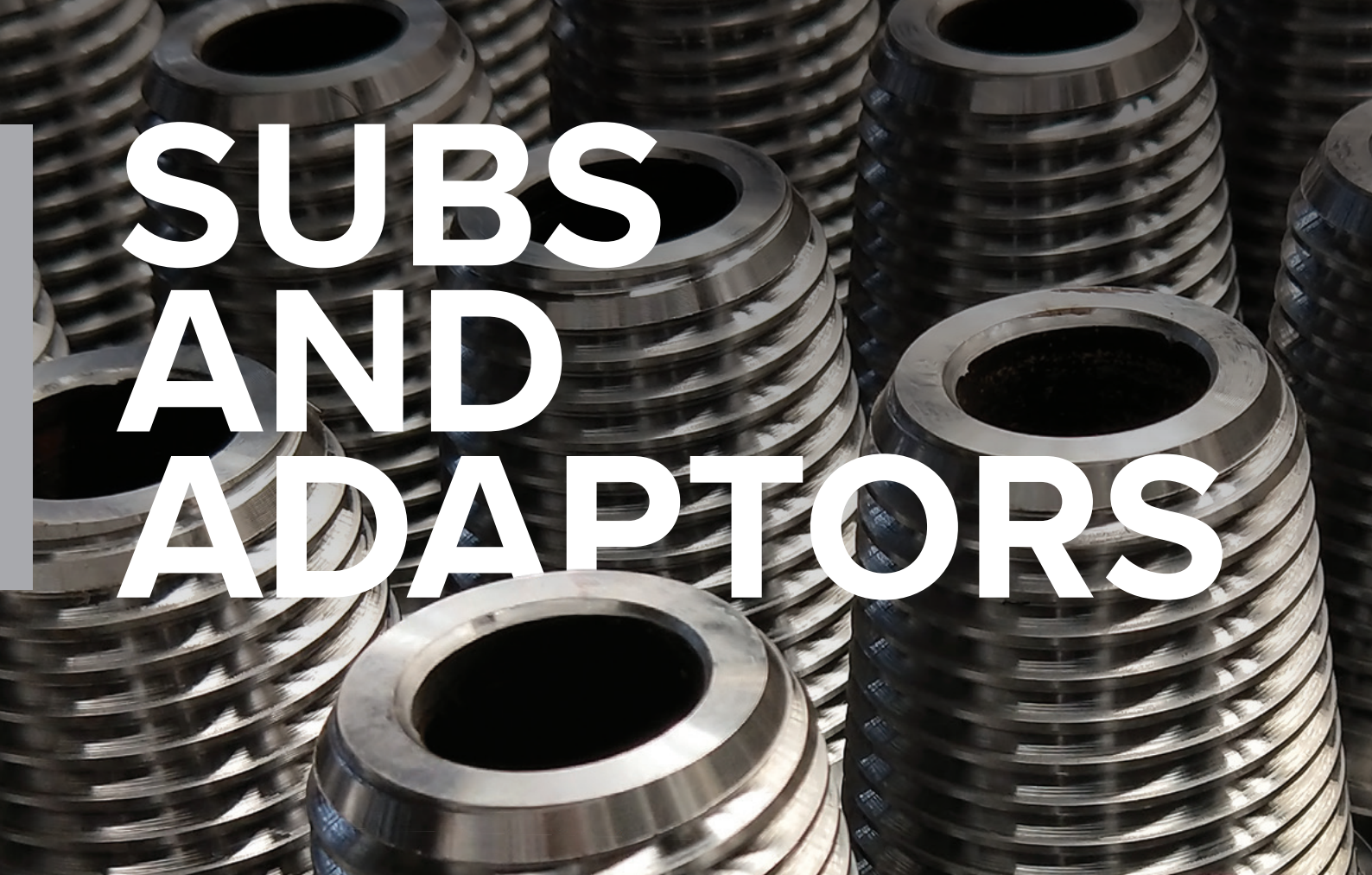
OUTSIDE DIAMETER		WALL THICKNESS		LENGTH		WRENCHING
IN	MM	IN	MM	FT	MM	
3	76	0.197	5	3.28-19.69	1000-6000	SQUARE 57 OR 64.5MM
3	76	0.236	6	3.28-19.69	1000-6000	SQUARE 57 OR 64.5MM
3	76	0.315	8	3.28-29.53	1000-9000	SQUARE 57 OR 64.5MM
3.5	89	0.236	6	3.28-19.69	1000-6000	SQUARE 70 OR 64 MM
3.5	89	0.236	6	3.28-19.69	1000-6000	SQUARE 70 OR 64 MM
3.5	89	0.315	8	3.28-31.5	1000-9600	SQUARE 70 OR 64 MM
3.5	89	0.315	8	3.28-31.5	1000-9600	SQUARE 70 OR 64 MM
4	102	0.315	8	3.28-29.53	1000-9000	SQUARE 76 OR 89 MM
4	102	0.394	10	3.28-29.53	1000-9000	SQUARE 76 OR 89 MM
4.5	114	0.236	6	4.92-25	1500-7620	89/95
4.5	114	0.315	8	4.92-30	1500-9140	89/95
4.5	114	0.315	8	4.92-30	1500-9140	89/95
4.5	114	0.394	10	4.92-30	1500-9140	89/95
4.5	114	0.709	18	4.92-30	1500-9140	89/95
5	127	0.394	10	4.94-31.2	1500-9500	89
5	127	0.472	12	4.94-31.2	1500-9500	89
5	127	0.551	14	4.94-31.2	1500-9500	89
5	127	0.709	18	4.94-31.2	1500-9500	89
5.5	140	0.354	9	4.94-31.2	1500-9500	114
5.5	140	0.394	10	4.94-31.2	1500-9500	114
5.5	140	0.472	12	4.94-31.2	1500-9500	114
6	152	0.472	12	9.84	3000	114
6	152	0.472	12	19.69	6000	114
6	152	0.472	12	30	9144	114
6.25	159	0.472	12	9.84	3000	127
6.25	159	0.472	12	19.69	6000	127
6.25	159	0.472	12	30	9144	127
7	178	0.551	14	9.84	3000	127
7	178	0.551	14	19.69	6000	127
7	178	0.551	14	30	9144	127
7.625	194	0.551	14	9.84	3000	152
7.625	194	0.551	14	19.69	6000	152
7.625	194	0.551	14	30	9144	152

*Thread options include all standard API REG, IF and FH profiles

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





SUBS AND ADAPTORS



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

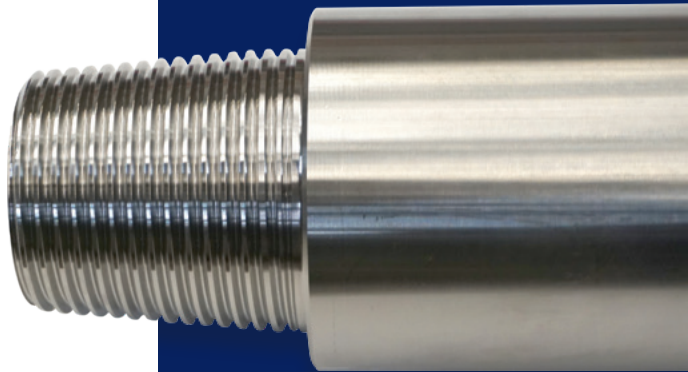
North Star understands the need to have a versatile range of configurations to connect your drill rods together. We have a wide range of certified thread gages available to accommodate all your configuration needs.

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.



STANDARD ADAPTOR SUBS

DIAMETER (MM)	DIAMETER (IN)	LENGTH (MM)	LENGTH (IN/S)	BOX THREAD	PIN THREAD	WRENCH FLAT WIDTH (MM)	WRENCH FLAT WIDTH (IN)
76	3	100	3.94	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	130	5.12	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	160	6.30	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	180	7.09	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	200	7.87	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	220	8.66	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	250	9.84	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	260	10.24	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	280	11.02	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	300	11.81	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	320	12.60	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	340	13.39	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	360	14.17	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	380	14.96	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	400	15.75	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	420	16.54	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	440	17.32	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	460	18.11	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	500	19.68	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	520	20.47	2 3/8" API	2 3/8" API	A/F65	2.50
76	3	540	21.26	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	100	3.94	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	130	5.12	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	170	6.69	2 3/8" IF	2 3/8" IF	A/F65	2.50
89	3.50	200	7.87	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	220	8.66	2 3/8" IF	2 3/8" IF	A/F65	2.50
89	3.50	250	9.84	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	270	10.63	2 3/8" IF	2 3/8" IF	A/F65	2.50
89	3.50	300	11.81	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	320	12.60	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	350	13.78	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	380	14.96	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	400	15.75	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	430	16.93	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	450	17.72	2 3/8" IF	2 3/8" IF	A/F65	2.50
89	3.50	480	18.90	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	500	19.68	2 3/8" IF	2 3/8" IF	A/F65	2.50
89	3.50	530	20.87	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	550	21.65	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	580	22.83	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	600	23.62	2 3/8" IF	2 3/8" IF	A/F65	2.50
89	3.50	650	25.59	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	680	26.77	2 3/8" IF	2 3/8" IF	A/F65	2.50
89	3.50	700	27.56	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	730	28.74	2 3/8" IF	2 3/8" IF	A/F65	2.50
89	3.50	750	29.53	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	780	30.71	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	810	31.89	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	830	32.68	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	860	33.86	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	880	34.65	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	910	35.83	2 3/8" API	2 3/8" API	A/F65	2.50
89	3.50	930	36.61	2 3/8" API	2 3/8" API	A/F65	2.50
102	4	120	4.72	2 3/8" IF	2 3/8" IF	A/F75	3.00
102	4	140	5.51	2 3/8" IF	2 3/8" IF	A/F75	3.00
102	4	180	7.09	2 7/8" API	2 7/8" API	A/F75	3.00
102	4	210	8.27	2 3/8" API	2 3/8" API	A/F75	3.00
102	4	300	11.81	2 3/8" IF	2 3/8" IF	A/F75	3.00
102	4	360	14.17	2 7/8" API	2 7/8" API	A/F75	3.00
102	4	410	16.14	3 1/2" API	3 1/2" API	A/F75	3.00
102	4	480	18.90	3 1/2" API	3 1/2" API	A/F65	3.00
102	4	520	20.47	2 7/8" API	2 7/8" API	A/F75	3.00
102	4	600	23.62	2 7/8" API	2 7/8" API	A/F75	3.00
102	4	660	25.98	3 1/2" API	3 1/2" API	A/F75	3.00
102	4	700	27.56	2 7/8" IF	2 7/8" IF	A/F75	3.00
114	4.50	120	4.72	3 1/2" API	3 1/2" API	A/F75	3.00
114	4.50	140	5.51	3 1/2" API	3" BECO	A/F75	3.00
114	4.50	180	7.09	3 1/2" API	3 1/2" API	A/F75	3.00
114	4.50	210	8.27	3" BECO	3" BECO	A/F90	3.50
114	4.50	300	11.81	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	360	14.17	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	410	16.14	2 3/8" IF	2 7/8" IF	A/F95	3.75
114	4.50	480	18.90	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	520	20.47	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	600	23.62	2 3/8" API	2 3/8" API	A/F95	3.75
114	4.50	660	25.98	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	700	27.56	3 1/2" IF	3 1/2" IF	A/F95	3.75
114	4.50	740	29.13	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	790	31.10	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	820	32.38	3 1/2" IF	3 1/2" IF	A/F95	3.75
114	4.50	850	33.46	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	880	34.65	3 1/2" API	3 1/2" API	A/F95	3.75
114	4.50	910	35.83	3 1/2" IF	3 1/2" IF	A/F95	3.75
114	4.50	940	37.01	2 7/8" API	2 7/8" API	A/F95	3.75
114	4.50	970	38.19	NC35	NC35	A/F95	3.75
127	5	300	11.81	3 1/2" API	3 1/2" API	A/F95	3.75
127	5	360	14.17	3 1/2" API	3 1/2" API	A/F95	3.75
127	5	410	16.14	3 1/2" API	3 1/2" API	A/F95	3.75
127	5	480	18.90	3 1/2" API	3 1/2" API	A/F95	3.75
127	5	520	20.47	3 1/2" API	3 1/2" API	A/F95	3.75
127	5	600	23.62	3 1/2" API	3 1/2" API	A/F95	4.75
127	5	700	27.56	3 1/2" API	3 1/2" API	A/F95	5.75
127	5	820	32.28	3 1/2" API	3 1/2" API	A/F95	6.75
127	5	910	35.83	3 1/2" API	3 1/2" API	A/F95	7.75
140	5.50	300	11.81	4 1/2" API	4 1/2" API	A/F120	4.75
140	5.50	360	14.17	4 1/2" API	4 1/2" API	A/F120	4.75
140	5.50	410	16.14	4 1/2" API	4 1/2" API	A/F120	4.75
140	5.50	460	18.11	3 1/2" API	3 1/2" API	A/F120	4.75
140	5.50	520	20.47	3 1/2" API	3 1/2" API	A/F120	4.75
140	5.50	600	23.62	3 1/2" IF	3 1/2" IF	A/F120	4.75
140	5.50	700	27.56	4 1/2" API	4 1/2" API	A/F120	4.75
140	5.50	730	28.74	3 1/2" API	3 1/2" API	A/F120	4.75
140	5.50	750	29.53	4 1/2" API	4 1/2" API	A/F120	4.75
140	5.50	780	30.71	4 1/2" API	4 1/2" API	A/F120	4.75
140	5.50	820	32.28	3 1/2" API	3 1/2" API	A/F120	4.75
140	5.50	850	33.46	3 1/2" API	3 1/2" API	A/F120	4.75
140	5.50	870	34.25	4 1/2" API	4 1/2" API	A/F120	4.75
140	5.50	900	35.43	4 1/2" API	4 1/2" API	A/F120	4.75
140	5.50	920	36.22	3 1/2" API	3 1/2" API	A/F120	4.75

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.

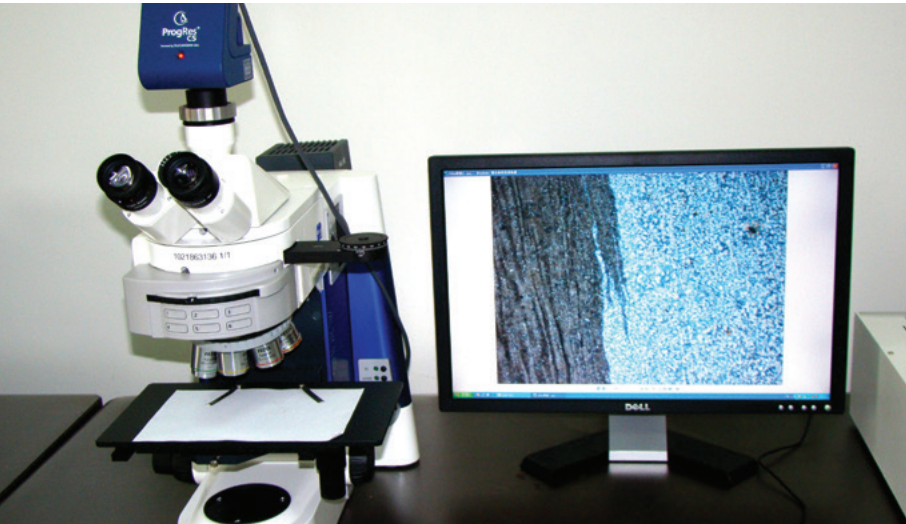
When ordering or requesting a quotation, please specify:

- 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

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.

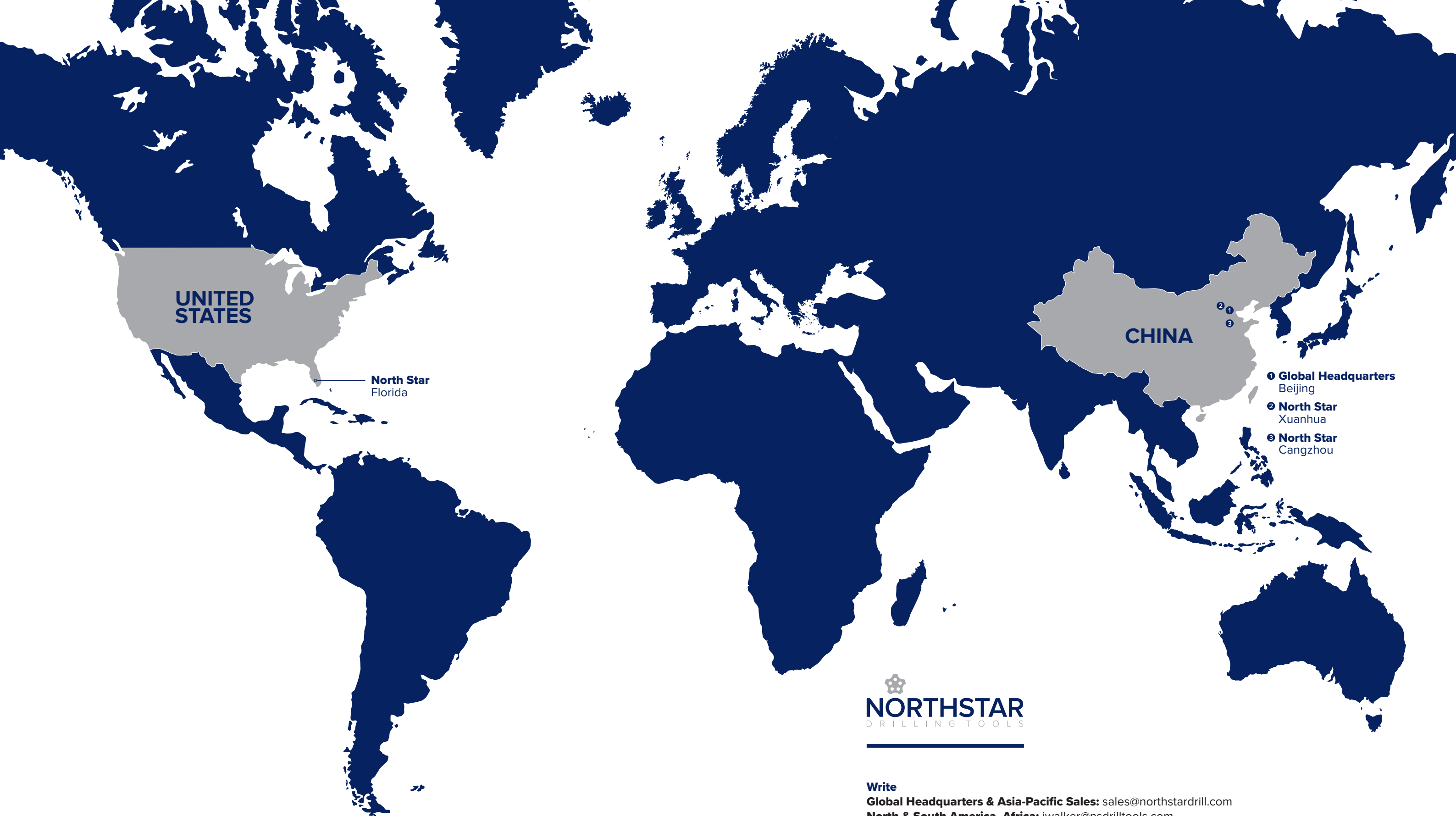
The manufacturing base developed rapidly to cover a wide range of drilling equipment including DTH pipes for mining, water well and exploration drilling, plus HDD pipes and tools such as reamers and swivels. In 2012 HDD drill pipe production expanded to a new facility south of Beijing, which was co-invested by Petromaterials China, an API-certified manufacturer of drill pipe and drill collars for the oil and gas industry.

Today more than 300 people work in our two facilities, whose annual production capacity has grown to exceed 300,000 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. A North American affiliate company, North Star International, was established in Fort Myers, Florida in 2018.

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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