



**Corrosive service series
tubing and casing**

Product Manual

**耐腐蚀系列油套管
产品手册**



www.baosteel.com



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• 公司简介 • Company profile

宝山钢铁股份有限公司(简称“宝钢股份”)是中国最大、最现代化的钢铁联合企业。宝钢股份以其诚信、人才、创新、管理、技术诸方面综合优势,奠定了在国际钢铁市场上世界级钢铁联合企业的地位。《世界钢铁业指南》评定宝钢股份在世界钢铁行业的综合竞争力为前三名,认为也是未来最具发展潜力的钢铁企业。

公司钢管产业拥有 50 年的钢管制造经验,包括中小口径热轧无缝管、特种合金无缝管、冷轧和冷拔无缝钢管、中大口径高频电阻焊管、大口径直缝埋弧焊管等产品,集科研、产品开发、加工检验、产品销售于一体,实行从炼铁、炼钢(转炉、电炉)、热轧钢卷、厚板、条钢到制管及管加工的一贯制质量管理,具有特大型钢铁联合企业综合生产的规模化优势,目前已成为中国包括无缝、焊管的大型精品钢管研发生产基地。

宝钢耐腐蚀油套管具有钢质纯净、夹杂物少且粒状化、晶粒细小、参与应力小、产品性能波动小等特点,使得这些产品具有优异的抗腐蚀等性能。目前已形成系列产品,钢级、规格和性能覆盖 API 相关规范,产品通过国内和国外权威机构的评估。高抗硫油套管,钢级包括 BG80S/BG80SS、BG90S/BG90SS、BG95S/BG95SS、BG110S/BG110SS;耐 CO₂、Cl⁻ 腐蚀 3Cr 系列油套管,钢级包括 BG80-3Cr、BG90-3Cr、BG95-3Cr、BG110-3Cr、BG125-3Cr;耐 CO₂、Cl⁻、H₂S 腐蚀油套管,钢级包括 BG80S-3Cr、BG90S-3Cr、BG95S-3Cr。

公司以其先进技术、设备、管理、良好的信誉,保证提供高质量的产品和服务,令客户满意。

公司全体员工衷心感谢您对我们产品的关注和使用,竭诚欢迎您对公司产品和服务提出宝贵意见。

如果您所需产品的品种、规格或者特殊要求在本手册中未覆盖,请与我们联系,我们将予以及时答复。

Baoshan Iron & Steel Co., Ltd. (“Baosteel Co., Ltd.” for short) is the largest and most modernized integrated steelmaker in China. Baosteel Co., Ltd. has secured its standing as a world class integrated steelmaker in the international steel market with its comprehensive strengths in credit standing, talent, innovation, management and technology, etc. World Steel Dynamics (WSD) ranks Baosteel Co., Ltd. within the top 3 places in terms of comprehensive competitiveness in the global steel industry, and also believes that Baosteel Co., Ltd. will be the most promising steelmaker in future.

The company's steel tube business has 50 years of steel tube manufacture experience. Its products include medium and small diameter hot-rolled seamless tube, specially alloyed seamless tube, cold-rolled and cold drawing seamless tube, medium and large diameter high frequency ERW pipe, large diameter SAWL pipe, etc. It integrates R&D, product development, processing and inspection, products sales, etc., implements the through-going quality control from iron-making, steel-making (BOF, EAF), hot-rolled coil, heavy plate, bar steel to tube making and processing, boasts the scale advantages due to the comprehensive production of a super-large integrated steelmaker and has become a large-sized premium tube R&D and manufacture base for both seamless tube and welded pipes.

Baosteel's anti-corrosion oil tubing and casing feature purified steel, less inclusions in granules, fine crystal grain, low stress and less fluctuation of product performance, which enable the product to possess excellent corrosion resistant property. At the moment, the products are already in series and have passed through the evaluation by authorities both at home and abroad, and the steel grade, spec and performance have already covered the relative criterions in API. For high sulfide resistant oil tubing and casing, the steel grade includes BG80S/BG80SS, BG90S/BG90SS, BG95S/BG95SS and BG110S/BG110SS; for 3Cr series oil tubing and casing with good CO₂ and Cl⁻ corrosion resistant properties, it includes BG80-3Cr, BG90-3Cr, BG95-3Cr, BG110-3Cr, BG125-3Cr; and for anti- CO₂ Cl⁻ and H₂S corrosion oil tubing and casing, it includes BG80S-3Cr, BG90S-3Cr and BG95S-3Cr.

With its leading technologies, equipment, management and favorable reputation, the company can ensure the supply of quality products and services that satisfy the customers.

The staff of the company sincerely appreciates your attention and usage of our products, and welcomes your valuable opinions to our products and services.

Please contact us if the varieties, specifications or special requirements of the products you need are not covered in this brochure, and we will reply immediately.

● 制造质量保证 ● Manufacture quality guarantee

宝钢股份采用国际先进的质量管理体系，主要产品均获得国际权威机构认可。公司获得了英国 BSI 公司颁发的质量、环保和安全综合管理体系证书 IMS(ISO 9001、ISO/TS 16949、ISO 14001、ISO 18001)、华夏认证中心 (CCCI) 颁发的 ISO14001 环境管理体系证书以及国家质量监督检验检疫总局颁发的完善计量检测体系证书。

钢管有关产品获得的认证证书主要有：

- 油管、套管、钻杆和管线管等油田用管材获得美国石油协会 API 颁发的 5CT、5D、7、5L 会标使用许可证；
- 船用管获得英国 LR、法国 BV、德国 GL、挪威 DNV、韩国的 KR 和中国 CCS 等六国船级社的认证证书；
- 锅炉管和结构管获得德国 TÜV 公司颁发的 TÜV 认证证书和 PED 认证证书；
- 结构管获得德国 TÜV 公司颁发的 Ü-Mark 证书。

Baoshan Iron & steel Co., Ltd. Baosteel Branch has been issued a registration certificate for its Integrated Management System as per TS 16949, BS EN ISO 9001:2000, BS EN ISO 14001:1996 and OHSAS 18001:1999 by British Standard Institution (BSI), a registration certificate of ISO14001 Environmental Management System by China Certification Center, Inc.(CCCI), a certificate for Perfecting the System of Inspection Measurement and Test by CSBTS.

Moreover, major tubular products of Baosteel Branch have gained certificates of registration as follows:

- Certificates of Authority to Use Official Monogram on its tubing, casing, drill pipe (with tool joint) and line pipe complying with API Specification 5CT, 5D, 7 and 5L issued by American Petroleum Institute;
- Certificates of works and material approval given to tubes & pipes for ships by Lloyd's Register of Shipping (LR), Bureau Veritas France (BV), Germanischer Lloyd(GL), DET NORSKE VERITAS(DNV), KOREAN REGISTER OF SHIPPING(KR), and China Classification Society (CCS);
- A certificate according to AD-MERKBLATT W0/TRD100 and a certificate of Quality Assurance System in accordance with the Pressure Equipment Directive 97/23/EC (PED) issued to boiler tube and tube for structural purpose by TÜV SÜDDEUTSCHLAND;
- A Testing Certificate about Initial Type Testing of Construction Products (ÜHP) issued by TÜV.



先进的试验设备 State-of-the-art testing equipment



拉伸试验机
Tensile tester



压溃试验机
Crushing tester



实体拉伸试验机
Solid tensile tester



上卸扣试验机
Makeup and breakout tester



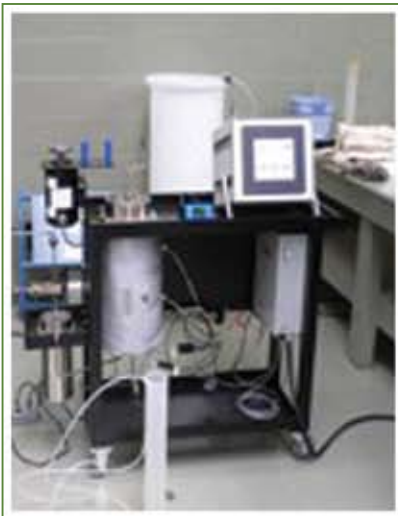
金相试验设备
Microscopic testing equipment



冲击试验机
Impact tester



慢应变速率试验机
Slow strain rate test system

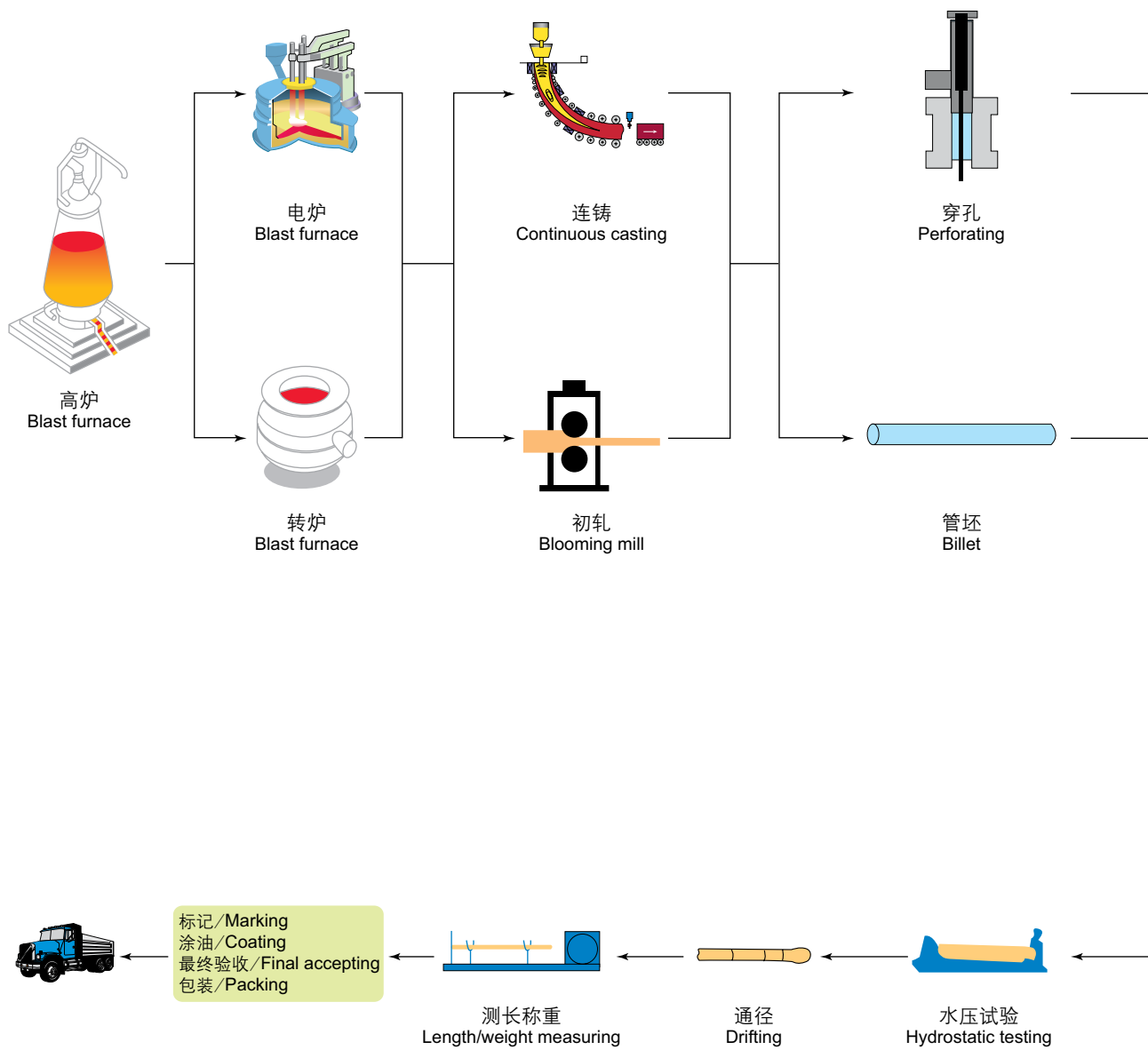


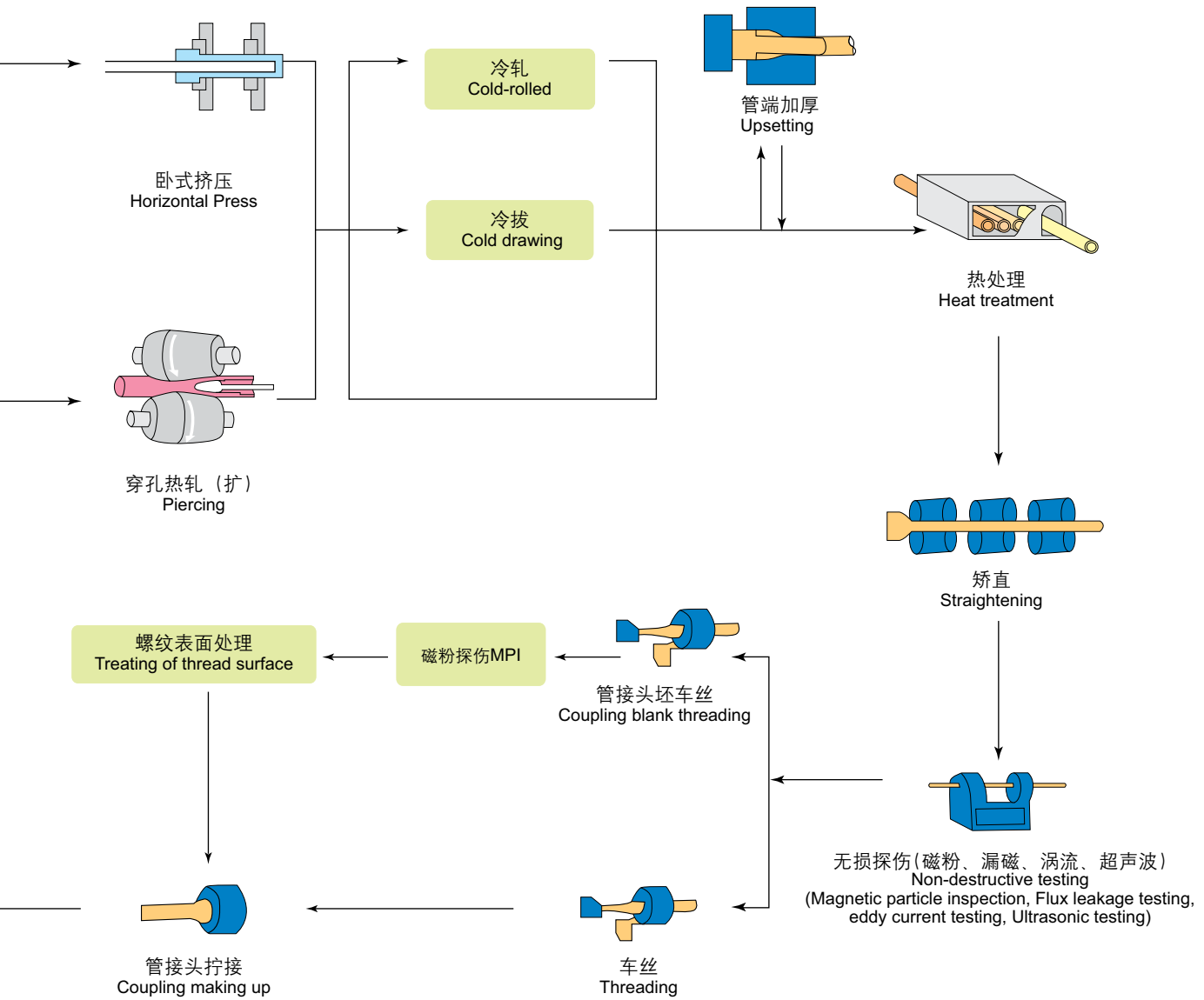
高温高压釜
Autoclave



应力环试验机
Stress ring tester

• 制造工艺流程 • Manufacture process flow





• 制造工艺特点 • Manufacture process characteristics



高性能；采用一种铬 - 钼钢系用于生产非 API 抗 H₂S 应力腐蚀油套管。这种钢具有高淬透性和回火稳定性，在一定的回火温度下回火可获得细小而均匀的回火马氏体，通过成份的微调 and 针对不同钢级的热处理，其硬度和强度完全满足相应钢级要求，同时表现出优异的抗 SSC 能力。此外，在生产此类油套管时，我们制定了一整套从炼钢到制管的生产工艺控制技术，使得产品的性能稳定，并且具有优异的抗 H₂S 性能。

低成本：宝钢经济型耐 CO₂ 和耐 CO₂+H₂S 腐蚀系列油套管有良好的抗 CO₂、H₂S 和 Cl⁻ 腐蚀性，同时由于选用低合金元素，降低了产品成本，是一种价格适中的“经济型”非 API 系列油套管产品。

High performance: the chrome - molybdenum steel is used to produce anti-H₂S stress corrosion non-API oil tubing and casing, which possess high hardness penetration and temper resistance. The fine and even tempered martensite can be gained through tempering under certain temperature, and the hardness and strength can fully satisfy with the requirement of corresponding steel grades via fine adjustment on compositions and heating treatment aiming for different steel grade, meanwhile, it has excellent anti-SSC (sulfide stress corrosion) property. Beside, we have complete production process control technique from steel making till tubing for producing such kind of oil tubing and casing, so as to stabilize the product performance and gain excellent anti-H₂S properties.

Low cost: Baosteel's economical type anti- CO₂ and CO₂+H₂S corrosion series oil tubing and casing have good property of resisting CO₂, H₂S and Cl⁻ corrosion, meanwhile, as it has lowed the production cost as it uses low-alloyed elements. Therefore, it is an "economical" oil tubing and casing product of non-API series at reasonable price.

● 产品规格 ● Product specification

Corrosive service series tubing and casing

● 钢级 : Grade:

钢级 Grade	耐H ₂ S应力腐蚀 H ₂ S stress corrosion resistant	经济型耐CO ₂ 腐蚀 Economical CO ₂ corrosion resistant	经济型耐CO ₂ +H ₂ S腐蚀 Economical CO ₂ +H ₂ S corrosion resistant
80	BG80S BG80SS	BG80-3Cr	BG80S-3Cr BG80SS-3Cr
90	BG90S BG90SS	BG90-3Cr	BG90S-3Cr BG90SS-3Cr
95	BG95S BG95SS	BG95-3Cr	BG95S-3Cr BG95SS-3Cr
110	BG110S BG110SS	BG110-3Cr	BG110S-2Cr
125	-	BG125-3Cr	-

抗硫 - "S": 普通抗硫, "SS": 高抗硫
Sulfide resistant - "S": sulfide resistant, "SS": strong sulfide resistant

● 尺寸规格 : Dimension specification:

● 油管 : Tubing:

尺寸规格 Dimensional specification		公称重量/Nominal weight				壁厚 Wall thickness	
		不加厚带螺纹和接箍 Non-upset T&C		外加厚带螺纹和接箍 Ex-upset T&C			
in	mm	lb/ft	kg/m	lb/ft	kg/m	in	mm
2 3/8	60.32	4.00	5.95	-	-	0.167	4.24
		4.60	6.85	4.70	6.99	0.190	4.83
		5.80	8.63	5.95	8.85	0.254	6.45
2 7/8	73.02	6.40	9.52	6.50	9.67	0.217	5.51
		7.80	11.61	7.90	11.76	0.276	7.01
		8.60	12.80	8.70	12.95	0.308	7.82
		9.35	13.91	9.45	14.06	0.340	8.64
3 1/2	88.90	7.70	11.46	-	-	0.216	5.49
		9.20	13.69	9.30	13.84	0.254	6.45
		10.20	15.18	-	-	0.289	7.34
		12.70	18.90	12.95	19.27	0.375	9.52
4	101.60	9.50	14.14	-	-	0.226	5.74
		-	-	11.00	16.37	0.262	6.65
4 1/2	114.30	12.60	18.75	12.75	18.97	0.271	6.88

● 套管 :
Casing:

尺寸规格 Dimensional specification		带螺纹和接箍公称重量 Nominal weight with thread and coupling		壁厚 Wall thickness	
in	mm	lb/ft	kg/m	in	mm
4 1/2	114.30	11.60	17.26	0.250	6.35
		13.50	20.09	0.290	7.37
		15.10	22.47	0.337	8.56
5	127.00	15.00	22.32	0.296	7.52
		18.00	26.79	0.362	9.19
5 1/2	139.70	17.00	25.30	0.304	7.72
		20.00	29.76	0.361	9.17
		23.00	34.23	0.415	10.54
7	177.80	23.00	34.23	0.317	8.05
		26.00	38.69	0.362	9.19
		29.00	43.16	0.408	10.36
7 5/8	193.68	29.7	44.20	0.375	9.52
		33.70	50.15	0.430	10.92
		39.00	58.04	0.500	12.70
8 5/8	219.08	28.00	41.67	0.304	7.72
		32.00	47.62	0.352	8.94
		36.00	53.57	0.400	10.16
9 5/8	244.48	40.00	59.53	0.395	10.03
		43.50	64.73	0.435	11.05
		47.00	69.94	0.472	11.99
10 3/4	273.05	45.50	67.71	0.400	10.16
		51.00	75.90	0.450	11.43
		55.50	82.59	0.495	12.57

注：表中未覆盖的规格，请在订货前就有关这种规格的生产情况向我们询问。

Remark: Please contact us if the specification of the products you need are not covered in this table.

● 扣型：
Type of coupling:

除提供采用API SPEC 5CT和5B标准中所列的圆螺纹、
偏梯形螺纹和特殊间隙螺纹外,还提供采用以下螺纹型式连接的非API油套管:

Connected by round threads, buttress threads and threads with special clearance listed in API SPEC 5CT and 5B standards,
the non-API oil tubes and casings connected by following threads are available as well:

BGT1	宝钢特殊螺纹油管 Baosteel's oil tube with premium
BGC	宝钢特殊螺纹套管 Baosteel's oil casing with premium
BGXC	宝钢直连型螺纹套管 Baosteel's oil casing with straight threads
SMAX	代替加厚油管的不加厚SUPERMAX特殊螺纹 Non-upset SUPERMAX premium instead of upsetting oil tube
SMAX-TS	带台肩密封的不加厚SUPERMAX特殊螺纹 SUPERMAX premium with shoulder seal

注:具体扣型可参阅相关手册

Remark: Please refer to the booklets for the specific type of premium.



• 产品供货长度 • Product length under supply

	范围1/Range 1	范围2/Range 2	范围3/Range 3
油管/Tubing	6.10-7.32m	8.53-9.75m	11.58-12.80m
套管/Casing	4.88-7.62m	7.62-10.36m	10.36-14.63m



• 产品化学成分 • Product chemical composition

Corrosive service series tubing and casing

钢级 Grade	化学成分/Chemical Composition %									
	C	Mn	Mo	Cr		Ni	Cu	P	S	Si
	max	max	max	min	max	max	max	max	max	max
BG80S BG80SS	0.35	1.20	0.85	-	1.30	0.50	0.50	0.02	0.01	0.50
BG90S BG90SS	0.35	1.20	0.85	-	1.30	0.50	0.50	0.02	0.01	0.50
BG95S BG95SS	0.35	1.20	1.00	-	1.30	0.50	0.50	0.02	0.01	0.50
BG110S BG110SS	0.35	1.00	1.00	-	1.30	0.50	0.50	0.02	0.01	0.50
BG80-3Cr BG80S-3Cr	0.50	1.20	1.00	2.50	5.00	0.40	0.80	0.02	0.01	0.50
BG90-3Cr BG90S-3Cr										
BG95-3Cr BG95S-3Cr										
BG110-3Cr										
BG110S-2Cr										
BG125-3Cr										

注：由生产厂选定，可在铌、钒、钛三种元素中或添加其中一种，或添加它们的任一组合。

Remark: It is to be selected and decided by the manufacturer. One of niobium, vanadium and titanium or any of their combination will be added.

产品机械性能 • Product mechanical property

钢级 Grade	屈服强度 Yield strength (MPa)			抗拉强度 Tensile Strength (MPa)	伸长率 Elongation (%)	硬度 Hardness	
	总伸长 Total elongation %	Min	Max	Min		HRC(max)	HBW(max)
BG80S BG80SS	0.5	552	655	655	按API 5CT① As per API 5CT①	23.0	241
BG90S BG90SS	0.5	621	724	689		25.4	255
BG95S BG95SS	0.5	655	758	724		25.4	255
BG110S BG110SS	0.6	758	862	800		30.0	286
BG80-3Cr	0.5	552	758	689		—	—
BG90-3Cr	0.5	621	827	689		—	—
BG95-3Cr	0.5	655	862	724		—	—
BG110-3Cr	0.6	758	965	862		—	—
BG125-3Cr	0.65	862	1034	931		—	—
BG80S-3Cr BG80SS-3Cr	0.5	552	655	655		23.0	241
BG90S-3Cr BG90SS-3Cr	0.5	621	724	689		25.4	255
BG95S-3Cr BG95SS-3Cr	0.5	655	758	724		25.4	255
BG110S-2Cr	0.6	758	862	800		30.0	286

注:1 最小伸长率公式: $e=k\frac{A^{0.2}}{U^{0.9}}$

e- 标距为 50.8mm(2.0in) 时的最小伸长率, 以百分数表示, 小于 10% 时圆整到最近的 0.5%, 大于等于 10% 时圆整到最近的单位百分数;

k- 常数 :1944(625000);

A- 拉伸试样的横截面积, 单位为 $\text{mm}^2(\text{in}^2)$, 根据规定外径或试样的名义宽度和规定壁厚计算, 圆整到最近的 $10\text{mm}^2(0.01\text{in}^2)$ 。

A 值取计算值或 $490\text{mm}^2(0.75\text{in}^2)$ 的较小者;

U- 规定的最小抗拉强度, 单位为 MPa(psi)。

Remark: 1 Formula of min. elongation: $e=k\frac{A^{0.2}}{U^{0.9}}$

e - Min. elongation rate in percentage when gauge length is 50.8mm (2.0in). If it is <10%, round it to proximal 0.5%, while if it is $\geq 10\%$, then round it to proximal unit percent.

k - constant: 1944 (625000);

A - Cross sectional area of tensile test sample in $\text{mm}^2(\text{in}^2)$. It is calculated based on set OD or nominal width of sample and set wall thickness, and is rounded to proximal $10\text{mm}^2(0.01\text{in}^2)$. A can be the calculated figure or $490\text{mm}^2(0.75\text{in}^2)$, whichever is the smaller.

U - Stipulated min. tensile strength, in MPa (psi).

● 夏比 V 型冲击功性能 (J) :

Charpy V-notch impact energy property (J):

钢级 Grade	管体/Tube body	接箍 Coupling
	套管/Casing	
BG80S BG80SS	L-10-70-0	L-10-70-0/T-10-50-0
BG90S BG90SS		
BG95S BG95SS		
BG110S BG110SS		
BG80-3Cr	L-10-40-0	L-10-40-0/T-10-24-0
BG90-3Cr		
BG95-3Cr		
BG110-3Cr	L-10-46-0	L-10-46-0/T-10-31-0
BG125-3Cr	L-10-41-0	L-10-41-0-0/T-10-20-0
BG80S-3Cr BG80SS-3Cr	L-10-40-0	L-10-40-0/T-10-24-0
BG90S-3Cr BG90SS-3Cr		
BG95S-3Cr BG95SS-3Cr		
BG110S-2Cr	L-10-46-0	L-10-46-0/T-10-31-0

注：根据供需双方协商并在订货合同中明确，油管可选择做冲击试验。

Remark: The impact test can be conducted on oil piping as per the definition in the Contract through mutual negotiation.

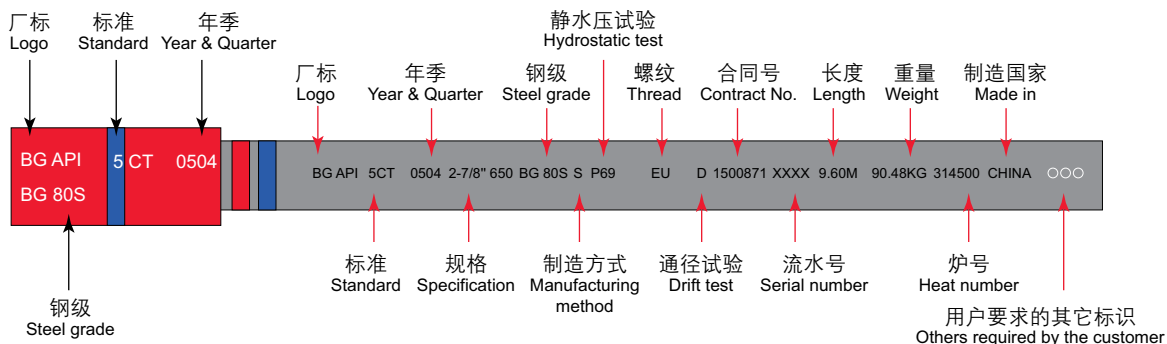
● 产品抗腐蚀性能 ● Product anti-corrosion performance

钢级 Steel grade	性能要求/Performance requirement		
	CO ₂ 高压釜模拟腐蚀实验 CO ₂ autoclave simulating corrosion test	H ₂ S应力腐蚀实验 H ₂ S stress corrosion test (SSC)	
	试验溶液：3.5%NaCl；二氧化碳分压：2.5MPa； 流速：2.5m/s；温度：60℃；时间：10天 根据上述条件分别进行动态和静态高压釜耐腐蚀性能试验。 Test solution: 3.5% NaCl; partial pressure of CO ₂ : 2.5MPa; flow rate: 2.5m/s; temperature: 60℃; duration: 10 days. Both the dynamic and static autoclave corrosion resistant test will be carried out under foresaid conditions.	按NACE TM 0177 A法 A溶液，720小时不发生开裂 Method A of NACE TM 0177, solution A, and no crack during 720 hours.	
		φ6.35	φ3.81
		加载SYMS值 Load SYMS value	
BG80S			
BG90S	-	85%	77%
BG95S			
BG110S	-	80%	72%
BG80SS			
BG90SS	-	90%	81%
BG95SS			
BG110SS	-	85%	77%
BG90-3Cr			
BG95-3Cr			
BG110-3Cr			
BG125-3Cr			
BG80S-3Cr	与现有常规API SPEC 5CT对应钢级材质相比，抗CO ₂ 腐蚀性能提高2倍以上。 Its anti-CO ₂ corrosion property has been improved by over 2 times, comparing with the corresponding steel grade in general API SPEC 5CT.		
BG90S-3Cr		80%	72%
BG95S-3Cr			
BG110S-2Cr			
BG80SS-3Cr			
BG90SS-3Cr		90%	81%
BG95SS-3Cr			

产品标识 • Product marking

● 耐腐蚀系列油套管的管体和接箍喷印要求如下：

The requirement for marking on pipe body and coupling of anti-corrosion series oil tubing and casing is as following:



● 耐腐蚀系列油套管的色标如下：

The color code for anti-corrosion series oil tubing and casing is as following:

类型 Type	钢级 Steel grade	接箍 Coupling	管体 Pipe body
非API抗H ₂ S应力腐蚀油套管 Non-API H ₂ S stress corrosion resistant oil tubing and casing	BG80S		
	BG90S		
	BG95S		
	BG110S		
	BG80SS		
	BG90SS		
	BG95SS		
	BG110SS		
经济型耐CO ₂ 腐蚀油套管 Economical CO ₂ corrosion resistant oil tubing and casing	BG80-3Cr		
	BG90-3Cr		
经济型耐CO ₂ +H ₂ S腐蚀油套管 Economical CO ₂ +H ₂ S corrosion resistant oil tubing and casing	BG95-3Cr		
	BG110-3Cr		
	BG125-3Cr		
	BG80S-3Cr		
	BG90S-3Cr		
	BG95S-3Cr		
经济型耐CO ₂ +H ₂ S腐蚀油套管 Economical CO ₂ +H ₂ S corrosion resistant oil tubing and casing	BG80SS-3Cr		
	BG90SS-3Cr		
经济型耐CO ₂ +H ₂ S腐蚀油套管 Economical CO ₂ +H ₂ S corrosion resistant oil tubing and casing	BG80SS-3Cr		
	BG95SS-3Cr		

● 产品包装 ● Product packing

● 螺纹保护器 Thread protector

根据不同用户要求和螺纹型式配以相应的螺纹保护器以保护管端和螺纹不受损伤。

According to different customers' requirement and thread type, the corresponding thread protectors will be equipped so as to protect pipe end and thread against damage.

● 包装 Packing

一般情况下，油套管的包装按标准采用钢带进行捆扎包装。
每捆重量：油管不大于 2 吨，套管不大于 2.5 吨。

捆扎道次：I级长度4道/捆，II级长度8道/捆，III级长度10道/捆。

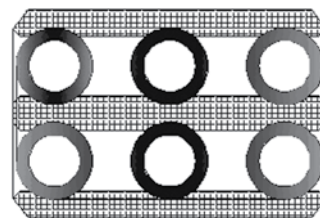
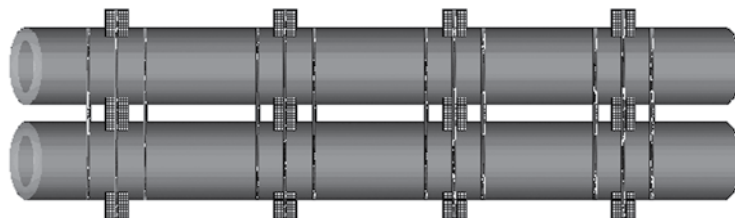
Normally, the oil tubing and casings are bundled up by straps as per the standard.

Weight of each bundle: ≤ 2 tons for oil tubing and ≤ 2.5 tons for casing.
Bundling passes: 4 passes/bundle for grade I length, 8 passes/bundle for grade II length, and 10 passes/bundle for grade III length.



对于有特殊要求的油套管，用户可选择采用宝钢木架包装方式，避免在运输和贮存中钢管之间接触，给钢管表面以最好的保护。

For the oil tubing and casing with special requirement, customer can select wooden stand packing so as to avoid contact between tubes during transportation and storage, with best protection on tube surface.



● 用户使用推荐范围 ● User's application range by recommendation

Corrosive service series tubing and casing

- 抗 H₂S 腐蚀选用技术 :
Optional anti-H₂S corrosion technology:

H ₂ S分压 Pressure		选用抗硫级别 Optional sulfide resistant grade
> 700KPa		SS
10~700KPa	爆破安全系数 Explosion safety factor < 1.35	SS
	爆破安全系数 Explosion safety factor ≥ 1.35	S
0.34~10KPa		S
< 0.34KPa		非抗硫 No resistance to sulfide



● 用户使用技术指南 ● User's application technology guide

● 油管使用性能

Pipeline performance

尺寸 外径 Size OD	名义重量 Nominal weight			钢级 Grade	壁厚 Wall thickness	内径 Internal diameter	螺纹和接箍 Thread and coupling			
	带螺纹和接箍 With thread & coupling (T&C)		直连型 Extreme-line				通径直径 Drift diameter	接箍外径 Coupling OD		
	不加厚 Non-upset	加厚 Upsetting						不加厚 Non-upset	加厚/Upsetting	
									常规 Regular	特殊间隙 Special clearance
in. D	lb/ft	lb/ft	lb/ft	in. t	in. d	in. in.	in. W	in. W	in. Wc	
2.375	4.00	-	-	BG80S	.167	2.041	1.947	2.875	-	-
2.375	4.60	4.70	-	BG80S-3Cr BG80SS	.190	1.995	1.901	2.875	3.063	2.910
2.375	5.80	5.95	-	BG80SS-3Cr	.254	1.867	1.773	2.875	3.063	2.910
2.375	4.00	-	-	BG80-3Cr	.167	2.041	1.947	2.875	-	-
2.375	4.60	4.70	-		.190	1.995	1.901	2.875	3.063	2.910
2.375	5.80	5.95	-		.254	1.867	1.773	2.875	3.063	2.910
2.375	4.00	-	-	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	.167	2.041	1.947	2.875	-	-
2.375	4.60	4.70	-		.190	1.995	1.901	2.875	3.063	2.910
2.375	5.80	5.95	-		.254	1.867	1.773	2.875	3.063	2.910
2.375	4.00	-	-	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	.167	2.041	1.947	-	-	-
2.375	4.60	4.70	-		.190	1.995	1.901	2.875	3.063	2.910
2.375	5.80	5.95	-		.254	1.867	1.773	2.875	3.063	2.910
2.375	4.60	4.70	-	BG110S BG110SS	.190	1.995	1.901	2.875	3.063	2.910
2.375	5.80	5.95	-		.254	1.867	1.773	2.875	3.063	2.910
2.375	4.60	4.70	-	BG110-3Cr	.190	1.995	1.901	2.875	3.063	2.910
2.375	5.80	5.95	-		.254	1.867	1.773	2.875	3.063	2.910
2.875	6.40	6.50	-	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	.217	2.441	2.347	3.500	3.668	3.460
2.875	7.80	7.90	-		.276	2.323	2.229	3.500	3.668	3.460
2.875	8.60	8.70	-		.308	2.259	2.165	3.500	3.668	3.460
2.875	9.35	9.45	-		.340	2.195	2.101	-	3.668	3.460
2.875	6.40	6.50	-	BG80-3Cr	.217	2.441	2.347	3.500	3.668	3.460
2.875	7.80	7.90	-		.276	2.323	2.229	3.500	3.668	3.460
2.875	8.60	8.70	-		.308	2.259	2.165	3.500	3.668	3.460

	抗压溃 Anti-collapse	内压/Inner pressure				连接强度/Joint strength			
		平端 Plain end	带螺纹和接箍 With thread & coupling (T&C)			管体屈服 Tube body yield	带螺纹和接箍 With thread & coupling (T&C)		
			不加厚 Non-upset	加厚/Upsetting			不加厚 Non-upset	加厚/Upsetting	
				常规 Regular	特殊间隙 Special clearance			常规 Regular	特殊间隙 Special clearance
psi	psi	psi	psi	psi	lb	psi	lb	lb	
	9,980	9,840	9,840	-	-	92,600	60,200	-	-
	11,780	11,200	11,200	11,200	11,200	104,300	71,800	104,300	104,300
	15,280	14,970	14,970	14,860	11,440	135,400	102,900	135,400	135,400
	9,980	9,840	9,840	-	-	92,600	60,200	-	-
	11,780	11,200	11,200	11,200	11,200	104,300	71,800	104,300	104,300
	15,280	14,970	14,970	14,860	11,440	135,400	102,900	135,400	135,400
	10,940	11,070	11,070	-	-	104,200	67,700	-	-
	13,250	12,600	12,600	12,600	12,600	117,400	80,800	117,400	117,400
	17,190	16,840	16,840	16,720	12,870	152,300	115,700	152,300	152,300
	11,410	11,690	-	-	-	110,000	-	-	-
	13,980	13,300	13,300	13,300	13,300	123,900	85,300	123,900	123,900
	18,150	17,780	17,780	17,650	13,580	160,700	122,200	160,700	160,700
	16,130	15,400	15,400	15,400	15,400	143,400	98,800	143,400	143,400
	21,010	20,590	20,590	20,430	15,730	186,100	141,500	186,100	186,100
	16,130	15,400	15,400	15,400	15,400	143,400	98,800	143,400	143,400
	21,010	20,590	20,590	20,430	15,730	186,100	141,500	186,100	186,100
	11,170	10,570	10,570	10,570	10,570	145,000	105,400	145,000	145,000
	13,890	13,440	13,440	13,440	11,030	180,300	140,700	180,300	180,300
	15,300	15,000	15,000	14,940	11,030	198,700	159,200	198,700	193,100
	16,680	16,560	-	14,940	11,030	216,600	-	216,600	193,100
	11,170	10,570	10,570	10,570	10,570	145,000	105,400	145,000	145,000
	13,890	13,440	13,440	13,440	11,030	180,300	140,700	180,300	180,300
	15,300	15,000	15,000	14,940	11,030	198,700	159,200	198,700	193,100

● 油管使用性能

Pipeline performance

尺寸 外径 Size OD	名义重量 Nominal weight			钢级 Grade	壁厚 Wall thickness	内径 Internal diameter	螺纹和接箍 Thread and coupling			
	带螺纹和接箍 With thread & coupling (T&C)		直连型 Extreme-line				通径直径 Drift diameter	接箍外径 Coupling OD		
	不加厚 Non-upset	加厚 Upsetting						加厚/Upsetting		
								常规 Regular	特殊间隙 Special clearance	
in. D	lb/ft	lb/ft	lb/ft	in. t	in. d	in. in.	in. W	in. W	in. Wc	
2.875	6.40	6.50	-	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	.217	2.441	2.347	3.500	3.668	3.460
2.875	7.80	7.90	-		.276	2.323	2.229	3.500	3.668	3.460
2.875	8.60	8.70	-		.308	2.259	2.165	3.500	3.668	3.460
2.875	9.35	9.45	-		.340	2.195	2.101	-	3.668	3.460
2.875	6.40	6.50	-	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	.217	2.441	2.347	3.500	3.668	3.460
2.875	7.80	7.90	-		.276	2.323	2.229	3.500	3.668	3.460
2.875	8.60	8.70	-		.308	2.259	2.165	3.500	3.668	3.460
2.875	9.35	9.45	-		.340	2.195	2.101	-	3.668	3.460
2.875	6.40	6.50	-	BG110S BG110SS BG110S-2Cr	.217	2.441	2.347	3.500	3.668	3.460
2.875	7.80	7.90	-		.276	2.323	2.229	3.500	3.668	3.460
2.875	8.60	8.50	-		.308	2.259	2.165	3.500	3.668	3.460
2.875	6.40	6.50	-	BG110-3Cr	.217	2.441	2.347	3.500	3.668	3.460
2.875	7.80	7.90	-		.276	2.323	2.229	3.500	3.668	3.460
2.875	8.60	8.50	-		.308	2.259	2.165	3.500	3.668	3.460
3.500	7.70	-	-	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	.216	3.068	2.943	4.250	-	-
3.500	9.20	9.30	-		.254	2.992	2.867	4.250	4.500	4.180
3.500	10.20	-	-		.289	2.922	2.797	4.250	-	-
3.500	12.70	12.95	-		.375	2.750	2.625	4.250	4.500	4.180
3.500	7.70	-	-	BG80-3Cr	.216	3.068	2.943	4.250	-	-
3.500	9.20	9.30	-		.254	2.992	2.867	4.250	4.500	4.180
3.500	10.20	-	-		.289	2.922	2.797	4.250	-	-
3.500	12.70	12.95	-		.375	2.750	2.625	4.250	4.500	4.180
3.500	7.70	-	-	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	.216	3.068	2.943	4.250	-	-
3.500	9.20	9.30	-		.254	2.992	2.867	4.250	4.500	4.180
3.500	10.20	-	-		.289	2.922	2.797	4.250	-	-
3.500	12.70	12.95	-		.375	2.750	2.625	4.250	4.500	4.180

	抗压溃 Anti-collapse	内压/Inner pressure				连接强度/Joint strength			
		平端 Plain end	带螺纹和接箍 With thread & coupling (T&C)			管体屈服 Tube body yield	带螺纹和接箍 With thread & coupling (T&C)		
			不加厚 Non-upset	加厚/Upsetting			不加厚 Non-upset	加厚/Upsetting	
				常规 Regular	特殊间隙 Special clearance			常规 Regular	特殊间隙 Special clearance
psi	psi	psi	psi	psi	lb	psi	lb	lb	
	12,380	11,890	11,890	11,890	11,890	163,100	118,600	163,100	163,100
	15,620	15,120	15,120	15,120	12,410	202,900	158,300	202,900	202,900
	17,220	16,870	16,870	16,810	12,410	223,600	179,100	223,600	217,300
	18,770	18,630	-	16,810	12,410	243,700	-	243,700	217,300
	12,940	12,550	12,550	12,550	12,550	172,100	125,200	172,100	172,100
	16,490	15,960	15,960	15,960	13,100	214,100	167,100	214,100	214,100
	18,170	17,810	17,810	17,740	13,100	236,000	189,100	236,000	229,400
	19,810	19,660	-	17,740	13,100	257,300	-	257,300	229,400
	14,550	14,530	14,530	14,530	14,530	199,300	145,000	199,300	199,300
	19,090	18,480	18,480	18,480	15,160	247,900	193,500	247,900	247,900
	21,040	20,620	20,620	20,540	15,160	273,200	218,900	273,200	265,600
	14,550	14,530	14,530	14,530	14,530	199,300	145,000	199,300	199,300
	19,090	18,480	18,480	18,480	15,160	247,900	193,500	247,900	247,900
	21,040	20,620	20,620	20,540	15,160	273,200	218,900	273,200	265,600
	7,870	8,640	8,640	-	-	178,200	130,000	-	-
	10,540	10,160	10,160	10,160	10,160	207,200	158,900	207,200	207,200
	12,120	11,560	11,560	-	-	233,200	185,000	-	-
	15,310	15,000	15,000	15,000	10,660	294,600	246,200	294,600	273,100
	7,870	8,640	8,640	-	-	178,200	130,000	-	-
	10,540	10,160	10,160	10,160	10,160	207,200	158,900	207,200	207,200
	12,120	11,560	11,560	-	-	233,200	185,000	-	-
	15,310	15,000	15,000	15,000	10,660	294,600	246,200	294,600	273,100
	8,540	9,720	9,720	-	-	200,500	146,300	-	-
	11,570	11,430	11,430	11,430	11,430	233,100	178,700	233,100	233,100
	13,640	13,010	13,010	-	-	262,400	208,100	-	-
	17,220	16,880	16,880	16,880	11,990	331,400	277,000	331,400	307,300

● 油管使用性能

Pipeline performance

尺寸 外径 Size OD	名义重量 Nominal weight			钢级 Grade	壁厚 Wall thickness	内径 Internal diameter	螺纹和接箍 Thread and coupling			
	带螺纹和接箍 With thread & coupling (T&C)		直连型 Extreme-line				通径直径 Drift diameter	接箍外径 Coupling OD		
	不加厚 Non-upset	加厚 Upsetting						不加厚 Non-upset	加厚/Upsetting	
									常规 Regular	特殊间隙 Special clearance
in. D	lb/ft	lb/ft	lb/ft	in. t	in. d	in.	in. W	in. W	in. Wc	
3.500	7.70	-	-	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	.216	3.068	2.943	4.250	-	-
3.500	9.20	9.30	-		.254	2.992	2.867	4.250	4.500	4.180
3.500	10.20	-	-		.289	2.922	2.797	4.250	-	-
3.500	12.70	12.95	-		.375	2.750	2.625	4.250	4.500	4.180
3.500	10.20	-	-	BG110S BG110SS BG110S-2Cr	.254	2.992	2.867	4.250	4.500	4.180
3.500	12.70	12.95	-		.375	2.750	2.625	4.250	4.500	4.180
3.500	9.20	9.30	-	BG110-3Cr	.254	2.992	2.867	4.250	4.500	4.180
3.500	12.70	12.95	-		.375	2.750	2.625	4.250	4.500	4.180
4.000	9.50	-	-	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	.226	3.548	3.423	4.750	-	-
4.000	-	11.00	-		.262	3.476	3.351	-	5.000	-
4.000	9.50	-	-	BG80-3Cr	.226	3.548	3.423	4.750	-	-
4.000	-	11.00	-		.262	3.476	3.351	-	5.000	-
4.000	9.50	-	-	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	.226	3.548	3.423	4.750	-	-
4.000	-	11.00	-		.262	3.476	3.351	-	5.000	-
4.000	9.50	-	-	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	.226	3.548	3.423	4.750	-	-
4.000	-	11.00	-		.262	3.476	3.351	-	5.000	-
4.500	12.60	12.75	-	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	.271	3.958	3.833	5.200	5.563	-
4.500	12.60	12.75	-	BG80-1Cr BG80-3Cr	.271	3.958	3.833	5.200	5.563	-
4.500	12.60	12.75	-	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	.271	3.958	3.833	5.200	5.563	-
4.500	12.60	12.75	-	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	.271	3.958	3.833	5.200	5.563	-

	抗压溃 Anti-collapse	内压 / Inner pressure				连接强度 / Joint strength			
		平端 Plain end	带螺纹和接箍 With thread & coupling (T&C)			管体屈服 Tube body yield	带螺纹和接箍 With thread & coupling (T&C)		
			不加厚 Non-upset	加厚 / Upsetting			不加厚 Non-upset	加厚 / Upsetting	
				常规 Regular	特殊间隙 Special clearance			常规 Regular	特殊间隙 Special clearance
psi	psi	psi	psi	psi	lb	psi	lb	lb	
	8,850	10,260	10,260	-	-	211,700	154,400	-	-
	12,080	12,070	12,070	12,070	12,070	246,000	188,700	246,000	246,000
	14,390	13,730	13,730	-	-	276,900	219,600	-	-
	18,180	17,810	17,810	17,810	12,660	349,800	292,400	349,800	324,300
	13,530	13,970	13,970	13,970	13,970	284,900	218,500	284,900	284,900
	21,050	20,630	20,630	20,630	14,660	405,000	338,600	405,000	375,500
	13,530	13,970	13,970	13,970	13,970	284,900	218,500	284,900	284,900
	21,050	20,630	20,630	20,630	14,660	405,000	338,600	405,000	375,500
	6,590	7,910	7,910	-	-	214,400	144,000	-	-
	8,800	9,170	-	9,170	-	246,200	-	246,200	-
	6,590	7,910	7,910	-	-	214,400	144,000	-	-
	8,800	9,170	-	9,170	-	246,200	-	246,200	-
	7,080	8,900	8,900	-	-	241,200	162,000	-	-
	9,590	10,320	-	10,320	-	276,900	-	276,900	-
	7,310	9,390	9,390	-	-	254,600	171,000	-	-
	9,980	10,890	-	10,890	-	292,300	-	292,300	-
	7,500	8,430	8,430	8,430	-	288,000	208,700	288,000	-
	7,500	8,430	8,430	8,430	-	288,000	208,700	288,000	-
	8,120	9,490	9,490	9,490	-	324,000	234,800	324,000	-
	8,410	10,010	10,010	10,010	-	342,000	237,900	342,000	-

● 套管使用性能

Casing the use of performance

尺寸 外径 Size OD	名义重量 Nominal weight	钢级 Grade	壁厚 Wall thickness	内径 Internal diameter	螺纹和接箍 Thread and coupling			抗压溃 Anti-collapse	管体屈服 Tube body yield 1000lb	平端 Plain end
	带螺纹和接箍 With thread & coupling (T&C)				通径直径 Drift diameter	接箍外径 Coupling OD				
						常规 Regular	特殊间隙 Special clearance			
in. D	lb/ft	in. t	in. d	in.	in. W	in. Wc	psi			
4.500	11.60	BG80S BG80S-3Cr	.250	4.000	3.875	5.000	4.875	6,350	267	7,780
4.500	13.50	BG80SS BG80SS-3Cr	.290	3.920	3.795	5.000	4.875	8,540	307	9,020
4.500	11.60	BG80-3Cr	.250	4.000	3.875	5.000	4.875	6,350	267	7,780
4.500	13.50		.290	3.920	3.795	5.000	4.875	8,540	307	9,020
4.500	11.60	BG90S BG90S-3Cr	.250	4.000	3.875	5.000	4.875	6,820	300	8,750
4.500	13.50	BG90SS BG90SS-3Cr	.290	3.920	3.795	5.000	4.875	9,300	345	10,150
4.500	11.60	BG95S BG95S-3Cr	.250	4.000	3.875	5.000	4.875	7,030	317	9,240
4.500	13.50	BG95SS BG95SS-3Cr	.290	3.920	3.795	5.000	4.875	9,660	364	10,710
4.500	11.60	BG110S BG110SS BG110S-2Cr	.250	4.000	3.875	5.000	4.875	7,580	367	10,690
4.500	13.50		.290	3.920	3.795	5.000	4.875	10,690	422	12,410
4.500	15.10		.337	3.826	3.701	5.000	4.875	14,340	485	14,420
4.500	11.60	BG110-3Cr	.250	4.000	3.875	5.000	4.875	7,580	367	10,690
4.500	13.50		.290	3.920	3.795	5.000	4.875	10,690	422	12,410
4.500	15.10		.337	3.826	3.701	5.000	4.875	14,340	485	14,420
4.500	15.10	BG125--3Cr	.337	3.826	3.701	5.000	-	15,830	551	16,380
5.000	15.00	BG80S BG80S-3Cr	.296	4.408	4.283	5.563	5.375	7,250	350	8,290
5.000	18.00	BG80SS BG80SS-3Cr	.362	4.276	4.151	5.563	5.375	10,490	422	10,140
5.000	15.00	BG80-3Cr	.296	4.408	4.283	5.563	5.375	7,250	350	8,290
5.000	18.00		.362	4.276	4.151	5.563	5.375	10,490	422	10,140
5.000	15.00	BG90S BG90S-3Cr	.296	4.408	4.283	5.563	5.375	7,830	394	9,320
5.000	18.00	BG90SS BG90SS-3Cr	.362	4.276	4.151	5.563	5.375	11,520	475	11,400
5.000	15.00	BG95S BG95S-3Cr	.296	4.408	4.283	5.563	5.375	8,110	416	9,840
5.000	18.00	BG95SS BG95SS-3Cr	.362	4.276	4.151	5.563	5.375	12,030	501	12,040
5.000	15.00	BG110S BG110SS BG110S-2Cr	.296	4.408	4.283	5.563	5.375	8,850	481	11,400
5.000	18.00		.362	4.276	4.151	5.563	5.375	13,470	580	13,940
5.000	15.00	BG110-3Cr	.296	4.408	4.283	5.563	5.375	8,850	481	11,400
5.000	18.00		.362	4.276	4.151	5.563	5.375	13,470	580	13,940

内压/Inner pressure psi							连接强度, 1000l b Joint strength						
圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)					圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)				
		常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling					常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling		
短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade	短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade		
-	7,780	7,780	-	7,780	-	-	211	291	-	291	-		
-	9,020	9,020	-	7,990	-	-	256	334	-	319	-		
-	7,780	7,780	7,780	7,780	7,780	-	222	304	304	304	304		
-	9,020	9,020	9,020	7,990	9,020	-	270	349	349	336	349		
-	8,750	8,750	-	8,750	-	-	222	309	-	309	-		
-	10,150	10,150	-	8,990	-	-	270	355	-	336	-		
-	9,240	9,240	-	9,240	-	-	234	325	-	325	-		
-	10,710	10,710	-	9,490	-	-	283	373	-	353	-		
-	10,690	10,690	10,690	10,690	10,690	-	259	363	-	363	-		
-	12,410	12,410	12,410	10,990	12,410	-	314	417	-	417	-		
-	14,420	13,460	14,420	10,990	12,490	-	377	479	-	438	-		
-	10,690	10,690	10,690	10,690	10,690	-	278	385	385	385	385		
-	12,410	12,410	12,410	10,990	12,410	-	337	443	443	420	443		
-	14,420	13,460	14,420	10,990	12,490	-	405	509	509	420	454		
-	16,380	15,300	-	-	-	-	405	509	509	420	454		
-	8,290	8,290	-	7,460	-	-	295	379	-	363	-		
-	10,140	9,910	-	7,460	-	-	376	457	-	363	-		
-	8,290	8,290	8,290	7,460	8,290	-	310	396	396	383	396		
-	10,140	9,910	10,140	7,460	10,140	-	396	477	477	383	477		
-	9,320	9,320	-	8,390	-	-	310	404	-	383	-		
-	11,400	11,150	-	8,390	-	-	396	487	-	383	-		
-	9,840	9,840	-	8,850	-	-	326	424	-	402	-		
-	12,040	11,770	-	8,850	-	-	416	512	-	402	-		
-	11,400	11,400	-	10,250	-	-	361	474	-	474	-		
-	13,940	13,620	13,940	10,250	11,650	-	460	572	-	497	-		
-	11,400	11,400	-	10,250	-	-	388	503	-	478	-		
-	13,940	13,620	13,940	10,250	11,650	-	495	606	606	478	517		

● 套管使用性能

Casing the use of performance

尺寸 外径 Size OD	名义重量 Nominal weight	钢级 Grade	壁厚 Wall thickness	内径 Internal diameter	螺纹和接箍 Thread and coupling			抗压溃 Anti-collapse psi	管体屈服 Tube body yield 1000lb	平端 Plain end
	带螺纹和接箍 With thread & coupling (T&C)				通径直径 Drift diameter	接箍外径 Coupling OD				
						常规 Regular	特殊间隙 Special clearance			
in. D	lb/ft	in. t	in. d	in.	in. W	in. Wc	psi			
5.000	18	BG125-3Cr	.362	4.276	4.151	5.563	-	14,820	659	15,840
5.000	21.4		.362	4.276	4.151	5.563	-	19,940	783	19,120
5.500	17.00	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	.304	4.892	4.767	6.050	5.875	6,290	397	7,740
5.500	20.00		.361	4.778	4.653	6.050	5.875	8,830	466	9,190
5.500	23.00		.415	4.670	4.545	6.050	5.875	11,160	530	10,560
5.500	17.00	BG80-3Cr	.304	4.892	4.767	6.050	5.875	6,290	397	7,740
5.500	20.00		.361	4.778	4.653	6.050	5.875	8,830	466	9,190
5.500	23.00		.415	4.670	4.545	6.050	5.875	11,160	530	10,560
5.500	17.00	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	.304	4.892	4.767	6.050	5.875	6,740	447	8,710
5.500	20.00		.361	4.778	4.653	6.050	5.875	9,630	525	10,340
5.500	23.00		.415	4.670	4.545	6.050	5.875	12,380	597	11,880
5.500	17.00	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	.304	4.892	4.767	6.050	5.875	6,940	471	9,190
5.500	20.00		.361	4.778	4.653	6.050	5.875	10,020	554	10,910
5.500	23.00		.415	4.670	4.545	6.050	5.875	12,930	630	12,540
5.500	17.00	BG110S BG110SS BG110S-2Cr	.304	4.892	4.767	6.050	5.875	7,480	546	10,640
5.500	20.00		.361	4.778	4.653	6.050	5.875	11,100	641	12,640
5.500	23.00		.415	4.670	4.545	6.050	5.875	14,540	729	14,530
5.500	17.00	BG110-3Cr	.304	4.892	4.767	6.050	5.875	7,480	546	10,640
5.500	20.00		.361	4.778	4.653	6.050	5.875	11,100	641	12,640
5.500	23.00		.415	4.670	4.545	6.050	5.875	14,540	729	14,530
5.500	23.00	BG125--3Cr	.415	4.670	4.545	6.050	5.875	16,060	829	16,510
6.625	24.00	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	.352	5.921	5.796	7.390	7.000	5,760	555	7,440
6.625	28.00		.417	5.791	5.666	7.390	7.000	8,170	651	8,810
6.625	24.00	BG80-3Cr	.352	5.921	5.796	7.390	7.000	5,760	555	7,440
6.625	28.00		.417	5.791	5.666	7.390	7.000	8,170	651	8,810

内压/Inner pressure psi							连接强度, 1000I b Joint strength						
圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)					圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)				
		常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling					常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling		
短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade	短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade		
-	15,840	15,480	-	-	-	-	534	661	-	-	-		
-	16,900	15,480	-	-	-	-	661	724	-	-	-		
-	7,740	7,740	-	6,880	-	-	338	428	-	402	-		
-	9,190	8,990	-	6,880	-	-	416	503	-	402	-		
-	9,880	8,990	-	6,880	-	-	488	550	-	402	-		
-	7,740	7,740	7,740	6,880	7,740	-	348	446	446	423	446		
-	9,190	8,990	9,190	6,880	9,190	-	428	524	524	423	524		
-	9,880	8,990	10,560	6,880	9,460	-	502	579	596	423	529		
-	8,710	8,710	-	7,740	-	-	355	456	-	423	-		
-	10,340	10,120	-	7,740	-	-	438	536	-	423	-		
-	11,110	10,120	-	7,740	-	-	514	579	-	423	-		
-	9,190	9,190	-	8,170	-	-	373	480	-	444	-		
-	10,910	10,680	-	8,170	-	-	460	563	-	444	-		
-	11,730	10,680	-	8,170	-	-	540	608	-	444	-		
-	10,640	10,640	10,640	9,460	10,640	-	413	536	-	536	-		
-	12,640	12,360	12,640	9,460	10,740	-	508	630	-	549	-		
-	13,580	12,360	14,050	9,460	10,740	-	597	716	-	549	-		
-	10,640	10,640	10,640	9,460	10,640	-	444	568	568	529	568		
-	12,640	12,360	12,640	9,460	10,740	-	547	667	667	529	571		
-	13,580	12,360	14,050	9,460	10,740	-	642	724	759	529	571		
-	10,640	10,640	10,640	9,460	10,640	-	444	568	568	529	568		
-	7,440	7,440	-	5,910	-	-	473	591	-	494	-		
-	8,810	8,810	-	5,910	-	-	576	693	-	494	-		
-	7,440	7,440	7,440	5,910	7,440	-	481	615	615	520	615		
-	8,810	8,810	8,810	5,910	8,120	-	586	721	721	520	650		

● 套管使用性能

Casing the use of performance

尺寸 外径 Size OD	名义重量 Nominal weight	钢级 Grade	壁厚 Wall thickness	内径 Internal diameter	螺纹和接箍 Thread and coupling			抗压溃 Anti-collapse	管体屈服 Tube body yield 1000lb	平端 Plain end
					带螺纹和接箍 With thread & coupling (T&C)	通径直径 Drift diameter	接箍外径 Coupling OD			
	in. D						lb/ft			
6.625	24.00	BG90S BG90S-3Cr	.352	5.921	5.796	7.390	7.000	6,140	624	8,370
6.625	28.00	BG90SS BG90SS-3Cr	.417	5.791	5.666	7.390	7.000	8,880	732	9,910
6.625	24.00	BG95S BG95S-3Cr	.352	5.921	5.796	7.390	7.000	6,310	659	8,830
6.625	28.00	BG95SS BG95SS-3Cr	.417	5.791	5.666	7.390	7.000	9,220	773	10,460
6.625	24.00	BG110S BG110SS	.352	5.921	5.796	7.390	7.000	6,730	763	10,230
6.625	28.00	BG110S-2Cr	.417	5.791	5.666	7.390	7.000	10,160	895	12,120
6.625	24.00	BG110-3Cr	.352	5.921	5.796	7.390	7.000	6,730	763	10,230
6.625	28.00		.417	5.791	5.666	7.390	7.000	10,160	895	12,120
6.625	32.00	Q125--3Cr	0.475	5.675	5.550	7.390	-	14,540	1,147	15,680
7.000	23.00	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	.317	6.366	6.241	7.656	7.375	3,830	532	6,340
7.000	26.00		.362	6.276	6.151	7.656	7.375	5,410	604	7,240
7.000	29.00		.408	6.184	6.059	7.656	7.375	7,030	676	8,160
7.000	23.00	BG80-3Cr	.317	6.366	6.241	7.656	7.375	3,830	532	6,340
7.000	26.00		.362	6.276	6.151	7.656	7.375	5,410	604	7,240
7.000	29.00		.408	6.184	6.059	7.656	7.375	7,030	676	8,160
7.000	23.00	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	.317	6.366	6.241	7.656	7.375	4,030	599	7,130
7.000	26.00		.362	6.276	6.151	7.656	7.375	5,740	679	8,140
7.000	29.00		.408	6.184	6.059	7.656	7.375	7,580	760	9,180
7.000	23.00	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	.317	6.366	6.241	7.656	7.375	4,140	632	7,530
7.000	26.00		.362	6.276	6.151	7.656	7.375	5,890	717	8,600
7.000	29.00		.408	6.184	6.059	7.656	7.375	7,840	803	9,690
7.000	26.00	BG110S BG110SS BG110S-2Cr	.362	6.276	6.151	7.656	7.375	6,230	830	9,960
7.000	29.00		.408	6.184	6.059	7.656	7.375	8,530	929	11,220
7.000	26.00	BG110-3Cr	.362	6.276	6.151	7.656	7.375	6,230	830	9,960
7.000	29.00		.408	6.184	6.059	7.656	7.375	8,530	929	11,220
7.000	35.0	BG125-3Cr	0.498	6.004	5.879	7.656	-	14,310	1,272	15,560
7.625	33.7	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	0.43	6.765	6.640	8.5	8.125	6,560	778	7,900
7.625	39.0		0.50	6.625	6.50	8.5	8.125	8,820	895	9,180

内压/Inner pressure psi							连接强度, 1000l b Joint strength					
圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)				圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)				
		常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling				常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling		
短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade	短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade	
-	8,370	8,370	-	6,650	-	-	519	633	-	520	-	
-	9,910	9,910	-	6,650	-	-	633	742	-	520	-	
-	8,830	8,830	-	7,020	-	-	545	665	-	546	-	
-	10,460	10,460	-	7,020	-	-	664	780	-	546	-	
-	10,230	10,230	10,230	8,120	9,230	-	603	745	-	673	-	
-	12,120	12,120	12,120	8,120	9,230	-	735	874	-	673	-	
-	10,230	10,230	10,230	8,120	9,230	-	641	786	786	650	702	
-	12,120	12,120	12,120	8,120	9,230	-	781	922	922	650	702	
-	15,680	15,340	-	-	-	-	988	1,138	-	-	-	
-	6,340	6,340	-	5,740	-	-	435	565	-	533	-	
-	7,240	7,240	-	5,740	-	-	511	641	-	533	-	
-	8,160	8,160	-	5,740	-	-	587	718	-	533	-	
-	6,340	6,340	6,340	5,740	6,340	-	442	588	588	561	588	
-	7,240	7,240	7,240	5,740	7,240	-	519	667	667	561	667	
-	8,160	8,160	8,160	5,740	7,890	-	597	746	746	561	701	
-	7,130	7,130	-	6,460	-	-	479	605	-	561	-	
-	8,140	8,140	-	6,460	-	-	563	687	-	561	-	
-	9,180	9,180	-	6,460	-	-	648	768	-	561	-	
-	7,530	7,530	-	6,810	-	-	505	636	-	589	-	
-	8,600	8,600	-	6,810	-	-	593	722	-	589	-	
-	9,690	9,690	-	6,810	-	-	683	808	-	589	-	
-	9,960	9,960	9,960	7,890	8,970	-	661	810	-	701	-	
-	11,220	11,220	11,220	7,890	8,970	-	760	906	-	701	-	
-	9,960	9,960	9,960	7,890	8,970	-	693	853	853	701	757	
-	11,220	11,220	11,220	7,890	8,970	-	797	955	955	701	757	
-	14,430	13,220	-	-	-	-	1,105	1,183	-	-	-	
-	7,900	7,900	-	6,550	-	-	664	820	-	734	-	
-	9,180	9,180	-	6,550	-	-	786	945	-	734	-	

● 套管使用性能

Casing the use of performance

尺寸 外径 Size OD	名义重量 Nominal weight	钢级 Grade	壁厚 Wall thickness	内径 Internal diameter	螺纹和接箍 Thread and coupling			抗压溃 Anti-collapse psi	管体屈服 Tube body yield 1000lb	平端 Plain end
	带螺纹和接箍 With thread & coupling (T&C)				通径直径 Drift diameter	接箍外径 Coupling OD				
						常规 Regular	特殊间隙 Special clearance			
in. D	lb/ft	in. t	in. d	in.	in. W	in. Wc	psi			
7.625	33.7	BG80-3Cr	0.43	6.765	6.640	8.5	8.125	6,560	778	7,900
7.625	39.0		0.50	6.625	6.50	8.5	8.125	8,820	895	9,180
7.625	33.7	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	0.43	6.765	6.640	8.5	8.125	7,050	875	8,880
7.625	39.0		0.50	6.625	6.50	8.5	8.125	9,620	1,007	10,330
7.625	33.7	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	0.43	6.765	6.640	8.5	8.125	7,280	923	9,380
7.625	39.0		0.50	6.625	6.50	8.5	8.125	10,000	1,063	10,900
7.625	33.7	BG110S BG110SS BG110S-2Cr	0.43	6.765	6.640	8.5	8.125	7,870	1,069	10,860
7.625	39.0		0.50	6.625	6.50	8.5	8.125	11,080	1,231	12,620
7.625	33.7	BG110-3Cr	0.43	6.765	6.640	8.5	8.125	7,870	1,069	10,860
7.625	39.0		0.50	6.625	6.50	8.5	8.125	11,080	1,231	12,620
7.625	39.0	Q125--3Cr	0.50	6.625	6.50	8.5	—	12,060	1,399	14,340
7.625	42.8		0.562	6.501	6.376	8.5	—	15,350	1,599	16,120
8.625	36	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	0.400	7.825	7.70	9.625	9.125	4,100	827	6,490
8.625	40		0.450	7.725	7.60	9.625	9.125	5,520	925	7,300
8.625	36	BG80-3Cr	0.400	7.825	7.70	9.625	9.125	4,100	827	6,490
8.625	40		0.450	7.725	7.60	9.625	9.125	5,520	925	7,300
8.625	36	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	0.400	7.825	7.70	9.625	9.125	4,250	930	7,300
8.625	40		0.450	7.725	7.60	9.625	9.125	5,870	1,040	8,200
8.625	36	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	0.400	7.825	7.70	9.625	9.125	4,350	982	7,710
8.625	40		0.450	7.725	7.60	9.625	9.125	6,020	1,098	8,670
8.625	40	BG110S BG110SS BG110S-2Cr	0.450	7.725	7.60	9.625	9.125	6,390	1,271	10,040
8.625	44		0.50	7.625	7.5	9.625	9.125	8,420	1,404	11,160
8.625	40	BG110-3Cr	0.450	7.725	7.60	9.625	9.125	6,390	1,271	10,040
8.625	44		0.50	7.625	7.5	9.625	9.125	8,420	1,404	11,160
8.625	49.0	Q125--3Cr	0.557	7.511	7.386	9.625	—	11,660	1,765	14,130
9.625	40	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	0.395	8.835	8.679	10.625	10.125	3,090	916	5,750
9.625	43.5		0.435	8.755	8.599	10.625	10.125	3,810	1,005	6,330
9.625	47		0.472	8.681	8.525	10.625	10.125	4,750	1,086	6,870

内压/Inner pressure psi							连接强度, 1000l b Joint strength						
圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)					圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)				
		常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling					常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling		
短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade	短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade		
-	7,900	7,900	7,900	6,550	7,900	-	674	852	852	773	852		
-	9,180	9,180	9,180	6,550	9,000	-	798	981	981	773	966		
-	8,880	8,880	-	7,370	-	-	733	880	-	773	-		
-	10,330	10,330	-	7,370	-	-	867	1,013	-	773	-		
-	9,380	9,380	-	7,780	-	-	772	925	-	811	-		
-	10,900	11,620	-	7,780	-	-	1,037	1,187	-	811	-		
-	10,860	10,860	10,860	9,000	10,230	-	882	1,039	-	978	-		
-	12,620	12,620	12,620	9,000	10,230	-	1,044	1,196	-	978	-		
-	10,860	10,860	10,860	9,000	10,230	-	901	1,093	1,093	966	1,043		
-	12,620	12,620	12,620	9,000	10,230	-	1,066	1,258	1,258	966	1,043		
-	14,340	14,340	-	-	-	-	1,194	1,379	-	-	-		
-	16,120	15,290	-	-	-	-	1,355	1,536	-	-	-		
-	6,490	6,490	-	5,900	-	-	678	863	-	838	-		
-	7,300	7,300	-	5,900	-	-	776	966	-	838	-		
-	6,490	6,490	6,490	5,900	6,490	-	688	895	895	882	895		
-	7,300	7,300	7,300	5,900	7,300	-	788	1,001	1,001	882	1,001		
-	7,300	7,300	-	6,640	-	-	749	928	-	882	-		
-	8,200	8,200	-	6,640	-	-	858	1,038	-	882	-		
-	7,710	7,710	-	7,010	-	-	789	976	-	926	-		
-	8,670	8,670	-	7,010	-	-	904	1,092	-	926	-		
-	10,040	10,040	10,040	8,110	9,220	-	1,034	1,229	-	1,115	-		
-	11,160	11,160	11,160	8,110	9,220	-	1,163	1,357	-	1,115	-		
-	10,040	10,040	10,040	8,110	9,220	-	1,055	1,288	1,288	1,103	1,191		
-	11,160	11,160	11,160	8,110	9,220	-	1,186	1,423	1,423	1,103	1,191		
-	14,130	14,130	-	-	-	-	1,496	1,728	-	-	-		
-	5,750	5,750	-	5,320	-	-	727	947	-	933	-		
-	6,330	6,330	-	5,320	-	-	813	1,038	-	933	-		
-	6,870	6,870	-	5,320	-	-	893	1,122	-	933	-		

● 套管使用性能

Casing the use of performance

尺寸 外径 Size OD	名义重量 Nominal weight	钢级 Grade	壁厚 Wall thickness	内径 Internal diameter	螺纹和接箍 Thread and coupling			抗压溃 Anti-collapse	管体屈服 Tube body yield 1000lb	平端 Plain end
					带螺纹和接箍 With thread & coupling (T&C)	通径直径 Drift diameter	接箍外径 Coupling OD			
	in. D						lb/ft			
9.625	40	BG80-3Cr	0.395	8.835	8.679	10.625	10.125	3,090	916	5,750
9.625	43.5		0.435	8.755	8.599	10.625	10.125	3,810	1,005	6,330
9.625	47		0.472	8.681	8.525	10.625	10.125	4,750	1,086	6,870
9.625	40	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	0.395	8.835	8.679	10.625	10.125	3,260	1,031	6,460
9.625	43.5		0.435	8.755	8.599	10.625	10.125	4,010	1,130	7,120
9.625	47		0.472	8.681	8.525	10.625	10.125	4,990	1,222	7,720
9.625	40	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	0.395	8.835	8.679	10.625	10.125	3,330	1,088	6,280
9.625	43.5		0.435	8.755	8.599	10.625	10.125	4,130	1,193	7,510
9.625	47.0		0.472	8.681	8.525	10.625	10.125	5,090	1,289	8,150
9.625	43.5	BG110S BG110SS BG110S-2Cr	0.435	8.755	8.599	10.625	10.125	4,420	1,381	8,700
9.625	47		0.472	8.681	8.525	10.625	10.125	5,300	1,493	9,440
9.625	43.5	BG110-3Cr	0.435	8.755	8.599	10.625	10.125	4,420	1,381	8,700
9.625	47.0		0.472	8.681	8.525	10.625	10.125	5,300	1,493	9,440
9.625	47.0	Q125--3Cr	0.472	8.681	8.525	10.625	-	5,630	1,697	10,730
9.625	53.5		0.545	8.535	8.379	10.625	-	8,440	1,943	12,390
10.75	51.0	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	0.45	9.850	9.694	11.750	11.250	3,220	1,165	5,860
10.75	55.5		0.495	9.760	9.604	11.750	11.250	4,020	1,276	6,450
10.75	51.0	BG80-3Cr	0.45	9.850	9.694	11.750	11.250	3,220	1,165	5,860
10.75	55.5		0.495	9.760	9.604	11.750	11.250	4,020	1,276	6,450
10.75	51.0	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	0.45	9.850	9.694	11.750	11.250	3,400	1,311	6,590
10.75	55.5		0.495	9.760	9.604	11.750	11.250	4,160	1,435	7,250
10.75	51.0	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	0.45	9.850	9.694	11.750	11.250	3,480	1,383	6,960
10.75	55.5		0.495	9.760	9.604	11.750	11.250	4,290	1,515	7,660
10.75	51.0	BG110S BG110SS BG110S-2Cr	0.45	9.850	9.694	11.750	11.250	3,660	1,602	8,060
10.75	55.5		0.495	9.760	9.604	11.750	11.250	4,610	1,754	8,860
10.75	51.0	BG110-3Cr	0.45	9.850	9.694	11.750	11.250	3,660	1,602	8,060
10.75	55.5		0.495	9.760	9.604	11.750	11.250	4,610	1,754	8,860
10.75	60.7	Q125--3Cr	0.545	9.660	9.504	11.750	-	6,070	2,184	11,090
10.75	65.7		0.595	9.560	9.504	11.750	-	7,920	2,373	12,110

内压/Inner pressure psi							连接强度, 1000l b Joint strength					
圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)				圆螺纹 Round thread		带螺纹和接箍 With thread & coupling (T&C)				
		常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling				常规接箍 Regular coupling		特殊间隙接箍 Special clearance coupling		
短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade	短 Short	长 Long	同钢级 Same steel grade	高钢级 High steel grade	同钢级 Same steel grade	高钢级 High steel grade	
-	5,750	5,750	-	5,320	-	-	737	979	979	979	979	
-	6,330	6,330	-	5,320	-	-	825	1,074	1,074	983	983	
-	6,870	6,870	-	5,320	-	-	905	1,161	1,161	983	983	
-	6,460	6,460	-	5,980	-	-	804	1,021	-	983	-	
-	7,120	7,120	-	5,980	-	-	899	1,119	-	983	-	
-	7,720	7,720	-	5,980	-	-	987	1,210	-	983	-	
-	6,280	6,280	-	6,310	-	-	847	1,074	-	1,032	-	
-	7,510	7,510	-	6,310	-	-	948	1,178	-	1,032	-	
-	8,150	8,150	-	6,310	-	-	1,040	1,273	-	1,032	-	
-	8,700	8,700	8,700	7,310	8,310	-	1,149	1,329	-	1,242	-	
-	9,440	9,440	9,440	7,310	8,310	-	1,190	1,436	-	1,242	-	
-	8,700	8,700	8,700	7,310	8,310	-	1,105	1,388	1,388	1,228	1,327	
-	9,440	9,440	9,440	7,310	8,310	-	1,213	1,500	1,500	1,228	1,327	
-	10,730	10,730	-	-	-	-	1,365	1,650	-	-	-	
-	12,390	12,390	-	-	-	-	1,595	1,890	-	-	-	
5,860	-	5,860	-	4,790	-	794	-	1,190	-	1,041	-	
6,450	-	6,450	-	4,790	-	884	-	1,303	-	1,041	-	
5,860	-	5,860	5,860	4,790	5,860	804	-	1,228	1,228	1,096	1,228	
6,450	-	6,450	6,450	4,790	6,450	895	-	1,345	1,345	1,096	1,345	
6,590	-	6,590	-	5,380	-	879	-	1,287	-	1,096	-	
7,250	-	7,250	-	5,380	-	979	-	1,409	-	1,096	-	
6,960	-	6,960	-	5,680	-	927	-	1,354	-	1,150	-	
7,660	-	7,660	-	5,680	-	1,032	-	1,483	-	1,150	-	
8,060	-	8,060	8,060	6,580	7,480	1,061	-	1,532	-	1,331	-	
8,860	-	8,860	8,860	6,580	7,480	1,182	-	1,677	-	1,331	-	
8,060	-	8,060	8,060	6,580	7,480	1,079	-	1,594	1,594	1,370	1,479	
8,860	-	8,860	8,860	6,580	7,480	1,202	-	1,745	1,745	1,370	1,479	
11,090	-	11,090	-	-	-	1,502	-	2,109	-	-	-	
12,110	-	12,110	-	-	-	1,652	-	2,291	-	-	-	

● 用户使用作业指南 ● User's application operation guide

● 油套管推荐操作方式 Recommended oil tubing and casing operation



下管准备作业

- 1 所有油管,不论是新的、使用过的、修复的,在移动或放置时,要随时装上护丝,应轻拿轻放。
- 2 任何时候,油管应放在无石头、砂子、污泥(正常钻井泥浆除外)的台架上,或木板面上、或金属面上,摆放的油管不得超过五层,在摆放的每一层油管之间应放置木条。如果不慎把油管拖入泥土中,应重新清洗螺纹,并按 6、7 要求处理后才能使用。
- 3 确认下油管用的各种工具装置齐备并处于良好状态,包括:吊卡、卡瓦、吊环、大钳等工具。应检查卡盘和吊卡上的卡瓦,使用不挤坏油管的卡盘和卡瓦,并注意使它们一起下放。应检查吊卡,注意门合件是否完好。两个吊环长度应相等。游动滑车是否对准。当使用特殊间隙接箍,尤其是那些下端开坡口的接箍时,推荐使用卡瓦式吊卡。

Preparation before running

- 1 For all oil tubes whether they are brand-new, used or repaired, please handle with thread protector while moving or placing the casing, and the tube should be lifted and lowered with care.
- 2 The oil tubes should always be put on the rack, board or metal surface without any stone, sand or sludge (except for the sludge generated by normal drilling). The maximum amount of tubes on the rack shall not exceed 5 layers, and wooden strips should be laid between layers. Should the tube is drawn into the mud inadvertent, it cannot be used only when the thread is re-cleaned and handled as per the requirement in clause 6) and 7).
- 3 Make sure that various tools for running are ready in place and in good condition, including elevator, slips, links, tongs and so on. Check the slips on the spider and elevator which should not crush the oil tubing and lower them together. Check the elevator, and ensure the latch is in good condition. Length of the two links should be equal. Align the traveling block. When using the coupling with special gap, especially the coupling with grooves on the lower end, the slip type elevator is recommended.

下管准备作业

Preparation before running

- 4 油管第一次下井之前,应该使用 API 通径规进行通径检验,以保证抽油泵、抽油活塞和封隔器通过。
- 5 为了避免不必要的管壁刮削,在油管管体上应使用不挤坏油管的油管钳,并使其配合适当。油管钳板牙装配合适,与油管曲率一致,并有扭矩控制显示,不推荐使用手管钳和扭矩过大,上扣速度过快的液压钳。
- 6 下油管前,从管端和接箍端卸下护丝,彻底清洗内、外螺纹表面,直到全部螺纹和密封面裸露为止,最好在溶剂洗净后,再用压缩气吹干。
- 7 仔细检查每根油管螺纹,若发现螺纹有损伤,哪怕是一点儿损伤,也应挑出,并可采取有效措施进行修补。
- 8 下油管前,应测量每根管子的长度,测量采用毫米精度的钢卷尺,从接箍(或内螺纹接头)最外端面测量到外螺纹指定位置,该位置是机紧时接箍(或内螺纹接头)终止位置。这样,测量的油管总长度代表了油套管柱的自然长度(无载荷伸长)。
- 9 确认是否备有充足的螺纹脂。全部内、外螺纹表面应充分涂上符合 API RP 5A3 标准的螺纹密封脂。
- 10 用于提升的连接管和短节,应认真检查其螺纹质量,保证其安全地承受载荷,且与油管螺纹的互换性。
- 11 应检查每个接箍是否上紧。如果紧密距异常大,则应检查接箍是否装紧。在管子提升到井架上以前,所有的接箍应上紧。
- 12 油管端部应戴上干净护丝,以免管子在管架上滚动和提升到井架上时螺纹受损伤。采用准备几个干净护丝,反复使用的方法提升。
- 13 油管提上井架时应小心操作,不要将其弄弯,不要碰伤接箍或护丝,要确保大钩与井口处于同一垂直线上。

- 4 Before running in the hole for the first time, tubing should be drifted with an API drift mandrel to ensure passage of pumps, swabs, and packers.
- 5 Tubing tongs that will not crush the tubing should be used on the tubing body and should fit properly to avoid unnecessary cutting of the pipe wall. Tong dies should fit properly and conform to the curvature of the tubing with display of torque control as well. The use of hand pipe wrenches or hydraulic wrench with too large torque or too fast makeup speed is not recommended.
- 6 Shortly before running, remove thread protectors from both field end and coupling end, and clean the threads thoroughly with solvent until all the threads and sealing face become uncovered which then should be dried with compressed air.
- 7 Carefully inspect the threads for each tubing. Those found damaged, even slightly, should be laid aside unless satisfactory means are available for correction.
- 8 Length of each piece of tubing shall be measured prior to running, with a steel tape calibrated in millimeters. The measurement should be made from the outermost face of the coupling (or internal-thread joint) to the position on the externally threaded end where the coupling or the box stops when the joint is made up power tight. The measured length of the entire tubing stands for the natural length of the casing string (no load elongation).
- 9 Check whether there is sufficient thread compound. Thread compound for seal that meets the performance objectives of API RP 5A3 should be well applied to all of the internal and external threads.
- 10 Carefully check the quality of the threads of the connectors and pup joints for lifting, and ensure being loaded safely and their exchangeability with that of oil tubing.
- 11 Check whether each coupling is well made up. If the standoff is abnormally great, check the coupling for tightness. Tighten any loose couplings before pulling the tube into the derrick.
- 12 The tubing ends should be fixed with clean thread protectors to avoid any damage to the thread when the tube rolls on the rack and is lifted to the derrick. Prepare couple of clean thread protectors to be repeated during lifting.
- 13 When oil tubing is pulled into the derrick, care should be taken that the tube is not bent, couplings or protectors not bumped, and the hook stays at the same plumb line with the hole.

下管作业

Running Operation

- 1 应将油管吊索从管架吊至钻机的坡板，吊油管时应把母扣部位吊起，使用吊卡或提升缆把油管吊至井架上。
- 2 在准备对扣之前，油管的护丝不得卸下。如有必要，对扣前，可对螺纹表面涂抹螺纹脂。用于涂抹螺纹脂的刷子或用具不得有异物，同时螺纹脂不得稀释。
- 3 对扣时，应小心下放管子，以免损伤螺纹，应垂直对扣，并有人站在扶正台上帮助进行。对扣后，若管柱往一侧倾斜，应立即提起，重新卸扣、清洗，并用三角锉刀修理损伤的螺纹面，然后仔细清除任何挫屑，并在螺纹表面重新涂上螺纹脂。
- 4 下双根或三根油管时，应小心操作，以避免油管过重而引起弯曲和对中误差，为了防止油管弯曲，可以在井架上安置中间支架。
- 5 螺纹对好后，开始用手或油管钳缓慢上扣，在井场上紧接头时，为防止粘扣，任何时候上扣速度都不得超过 25r/min，最后拧紧时要放低速度，最好是 10r/min 以下，而且按规定扭矩上扣。要注意，固定大钳应置于加厚部位或接箍之下。紧扣时不使用管板手。
- 6 现场上扣应按工厂给定的上扣位置和扭矩进行操作。
- 7 在现场反复上紧的情况下，油管接头的使用寿命与上紧扭矩成反比。因此，对防漏要求不很严的油井，可采用最小现场上紧扭矩值，以延长接头寿命。
- 8 在上紧时，若油管摆动，可降低上紧速度，以免损伤螺纹。如果降低上紧速度后，油管仍摆动，需卸下检查。
- 9 在现场上紧时，可能会发现由工厂机紧的接箍端仍转动上紧，这并不表明工厂机紧的接箍太松，而只说明接箍的现场上紧端已达到工厂上紧端的程度。
- 10 应很慎重地搞清楚井底工况，油管下放时不能太猛。
- 11 卡盘的卡瓦和吊卡应经常清洗，卡瓦应没有损伤。

- 1 Lift the tube with a sling rope from the rack to the slope board of the drill, box upward, and then lift the tube with elevator or hanger rope to the derrick.
- 2 Do not remove thread protector from field end of tubing until ready to stab. If necessary, apply thread compound over the entire surface of threads just before stabbing. The brush or utensil used in applying thread compound shall be free of impurity or foreign matter, and the compound shall not be diluted.
- 3 When stabbing, lower the tube carefully to avoid injuring the threads. Stab vertically, with assistance of a person on the stabbing board. If the tubing stands tilt to one side after stabbing, lift up immediately, breakout, clean, and correct any damaged thread with a triangular file. Then carefully get rid of any filings, and reapply thread compound to the threads.
- 4 When running doubles or triples, care should be taken to prevent bowing and errors in alignment when the tubing is allowed to rest too heavily on the coupling threads. Intermediate supports may be placed in the derrick to limit bowing of the tubing.
- 5 After stabbing, start screwing slowly by hand or tubing tongs. To prevent galling during making up the joint in the field, the making up speed shall not exceed 25r/min at any time. The final tightening must be done with the stipulated torque, and the speed should be lower, not exceeding 10r/min. Attention should be paid to that the fixing tongs stay underneath the thickened position or the couplings. Pipe wrench shall not be applied for tightening.
- 6 Field makeup should be carried out according to specified torque and made-up position given by the manufacturer.
- 7 Joint life of tubing under repeated field makeup is inversely proportional to the field makeup torque applied. Therefore, in wells where leak resistance is not a great factor, minimum field makeup torque values should be used to prolong joint life.
- 8 If the tube is swinging during makeup, the speed should be decelerated to avoid damage to the thread. The tube should be removed for further examination if there is still swing after that.
- 9 During field makeup, it is possible for the coupling to make up slightly on the mill end. This does not indicate that the coupling on the mill end is too loose but simply that the field end has reached the tightness with which the coupling was screwed on at the manufacturer's facility.
- 10 Finding bottom should be accomplished with extreme caution. Do not set tubing down heavily.
- 11 Spider slips and elevators should be cleaned frequently, and slips should be kept sharp.

提管准备作业	Preparation for tube pulling:
<ol style="list-style-type: none"> 1 建议使用卡瓦式吊卡。 2 使用动力大钳和固定大钳。 3 准备立管用的木板和清洁的公扣护丝。 	<ol style="list-style-type: none"> 1 Application of slip elevator is recommended. 2 Apply power tongs and fixing tongs. 3 Prepare wooden boards for standpipe and clean protectors of pin thread.

提管作业	Recommended oil tubing and casing operation
<ol style="list-style-type: none"> 1 卸扣动力大钳应位于靠近接箍但不很近的地方，固定大钳要装在接箍上，以确保在接箍的上端脱扣。油管松扣后，用手或动力大钳低速卸扣。接头脱扣后，避免螺纹弄脏或损伤，应立即将其公扣装上护丝。 2 在油管从接箍中提出以前，应格外小心地松开全部螺纹，不能让油管从接箍中突然跳出。 3 排放在井架上的油管应适当支撑，以避免过度的弯曲，最好连接成长度约为 18.3 米的立柱或相当于两根 2 级油管长度的立柱提升。在离开位置以前，油管应一直稳固地栓在油管立柱盒内。 4 为使油管和接头磨损均匀，每次起出油管后，都要将上部管段与下部管段相互调换。 5 当油管被卡时，应使用有测重表，不要把管柱伸长误认为是解卡。强拉使油管柱松开后，拉出的全部接头应重新上紧。 6 管子在存放，应检查管体、螺纹。所有螺纹应清洗，加润滑油或涂上防腐材料，使其尽可能减少腐蚀，并应戴上干净护丝。对有缺陷的接头应作上标记，以便交付检修并重新测量 7 再下管重新使用前，应确保螺纹干净、无损伤，并涂好螺纹脂。 	<ol style="list-style-type: none"> 1 Breakout tongs should be positioned close to the coupling but not too close, while fixing tongs should be placed on the coupling to breakout above the coupling. After the coupling is loosened, disengage the coupling with hand or breakout tongs. Place the protector to the pin immediately after coupling is disengaged to avoid dirty or damage to the threads. 2 Great care should be exercised to disengage all of the threads before lifting the tube out of the coupling. Do not let the tube jump out of the coupling suddenly. 3 Tubing set back in the derrick should be properly supported to prevent undue bending. Tubing should be pulled in stands approximately 18.3m long or in doubles of range 2. Before leaving a location, always firmly tie a setback of tubing in place. 4 Distribute joint and tubing wear equally by moving a length from the top of the string to the bottom each time the tubing is pulled. 5 When the tube is blocked, the weighing gauge should be used. Do not take the elongation of strike as releasing. After a hard pull to loosen a string of tubing, all joints pulled on should be retightened. 6 Check the body and thread of the tube before storage. All threads should be cleaned and lubricated or coated with such material as to minimize corrosion. Clean protectors should be placed on the tubing. Mark those couplings with defect for repairing and re-measuring. 7 Make sure threads are undamaged, clean, and well coated with compound before re-running.

● 套管推荐操作方式

Recommended oil casing operation



下管准备作业

- 1 所有套管，不论是新的、使用过的、修复的，在移动或放置时，要随时装上护丝，应轻拿轻放。
- 2 任何时候，套管应放在无石头、砂子、污泥（正常钻井泥浆除外）的台架上，或木板面上、或金属面上，在摆放的每一层套管之间应放置木条。如果不慎把油管拖入泥土中，应重新清洗螺纹，并按6)、7)要求处理后才能使用。
- 3 确认下套管用的各种工具装置齐备并处于良好状态，包括：吊卡、卡瓦、吊环、大钳等工具。对长套管柱，推荐使用卡瓦式吊卡，卡盘和卡瓦应保持洁净且没有损伤。对重套管柱，应使用超长卡瓦，卡盘必须保持水平。应检查卡盘和吊卡上的卡瓦，并注意使它们一起下放，避免管子压凹或滑脱。如果使用挂接箍吊卡，应仔细检查支承面是否有不均匀磨损和作用于支承面的载荷是否均匀分布，以防止接箍脱出。

Recommended oil tubing and casing operation

- 1 For all oil casings whether they are brand-new, used or repaired, please handle with thread protector while moving or placing the casing, and the casing should be lifted and lowered with care.
- 2 The oil casing should always be put on the rack, board or metal surface without any stone, sand or sludge (except for the sludge generated by normal drilling). The wooden strips should be laid between layers. Should the casing is drawn into the mud inadvertent, it cannot be used only when the thread is re-cleaned and handled as per the requirement in clause 6) and 7).
- 3 Make sure that various tools for running are ready in place and in good condition, including elevator, slips, links, tongs and so on. Slip elevators are recommended for long strings. Both spider and elevator should be kept clean without damage. Slips should be extra long for heavy casing strings. The spider must be level. Check the slips on the spider and elevator and lower them together to avoid shallow recessing or slipping of tubes. If the elevator with coupling is used, please check carefully whether the bearing surface is worn evenly or the load on the bearing surface is uniformly distributed, so as to avoid coupling escaping.

下管准备作业	Recommended oil tubing and casing operation
<p>4 应注意，特别是在下长套管柱时，应保证卡瓦补心与卡瓦座保持良好状态。应检查大钳铰链销和铰链表面有无损伤。为避免大钳与套管咬合面上产生不均匀的载荷，应调整大钳位置，使其与猫头在同一水平面上。旋绳的长度应适当，以保证施加在套管上的弯曲应力最低，并能使大钳进行全摆程移动。</p> <p>5 建议每根套管下井前，用 API 通径规进行全长通径检验，通径不合格的套管不得使用。</p> <p>6 下套管前，应卸下管端和接箍端护丝，彻底清洗内、外螺纹表面，直到全部螺纹和密封面裸露为止，最好在溶剂洗净后，再用压缩气吹干。</p> <p>7 仔细检查每根套管螺纹，若发现螺纹有损伤，哪怕是一点儿损伤，也应挑出，并可采取有效措施进行修补。</p> <p>8 下套管前，应测量每根管子的长度，测量采用毫米精度的钢卷尺，从接箍（或内螺纹接头）最外端面测量到外螺纹指定位置，该位置是机紧时接箍（或内螺纹接头）终止位置。这样，测量的套管总长度代表了油套管柱的自然长度（无载荷伸长）。</p> <p>9 确认是否备有充足的螺纹脂。全部内、外螺纹表面应充分涂上符合 API RP 5A3 标准的螺纹密封脂。</p> <p>10 用于提升的连接管和短节，应认真检查其螺纹质量，保证其安全地承受载荷，且与套管螺纹的互换性。</p> <p>11 应检查每个接箍是否上紧。如果紧密距异常大，则应检查接箍是否装紧。在管子提升到井架上以前，所有的接箍应上紧。</p> <p>12 套管端部应戴上干净护丝，以免管子在管架上滚动和提升到井架上时螺纹受损伤。采用准备几个干净护丝，反复使用的方法提升。</p> <p>13 套管提上井架时应小心操作，不得抛掷。必要时可使用钢丝绳下钻器。要避免套管碰撞井架或其它设备的任何部位。在井架大门处应备有缓冲绳。</p>	<p>4 Make sure that both the slip bushing and slip holder are in good condition especially for running the long casing strings. Check the tong butt pin and butt surface. To avoid uneven load on the connection face between tongs and casing, adjust the position of tongs and make it and cathead on the same level. The length of rotating rope should be proper to guarantee min. bending stress on casing as well as enable the tongs full swing movement.</p> <p>5 It is suggested that each casing, prior to running in the hole, should be drifted for its entire length with a API drift mandrel, and the casing that fail the drifting shall not be applied.</p> <p>6 Shortly before running, remove thread protectors from both field end and coupling end, and clean the threads thoroughly with solvent until all the threads and sealing face become uncovered which then should be dried with compressed air.</p> <p>7 Carefully inspect the threads for each casing. Those found damaged, even slightly, should be laid aside unless satisfactory means are available for correction.</p> <p>8 Length of each piece of casing shall be measured prior to running, with a steel tape calibrated in millimeters. The measurement should be made from the outermost face of the coupling (or internal-thread joint) to the position on the externally threaded end where the coupling or the box stops when the joint is made up power tight. The measured length of the entire casing stands for the natural length of the casing string (no load elongation).</p> <p>9 Check whether there is sufficient thread compound. Thread compound for seal that meets the performance objectives of API RP 5A3 should be well applied to all of the internal and external threads.</p> <p>10 Carefully check the quality of the threads of the connectors and pup joints for lifting, and ensure being loaded safely and their exchangeability with that of oil tubing.</p> <p>11 Check whether each coupling is well made up. If the standoff is abnormally great, check the coupling for tightness. Tighten any loose couplings before pulling the tube into the derrick.</p> <p>12 The casing ends should be fixed with clean thread protectors to avoid any damage to the thread when the tube rolls on the rack and is lifted to the derrick. Prepare couple of clean thread protectors to be repeated during lifting.</p> <p>13 Be careful when lift the casing to the derrick, and throwing or tossing is forbidden. The wire rope drill can be used if necessary. Be careful to avoid the casing to collide with the derrick or other machines. The buffering rope should be prepared at the gate of derrick.</p>

下管作业

Running Operation:

- 1 在准备对扣之前，油管的护丝不得卸下。如有必要，对扣前，可对螺纹表面涂抹螺纹脂。用于涂抹螺纹脂的刷子或用具不得有异物，同时螺纹脂不得稀释。
- 2 对扣时，应小心下放管子，以免损伤螺纹，应垂直对扣，并有人站在扶正台上帮助进行。对扣后，若管柱往一侧倾斜，应立即提起，重新卸扣、清洗，并用三角锉刀修理损伤的螺纹面，然后仔细清除任何挫屑，并在螺纹表面重新涂上螺纹脂。
- 3 在对好扣后，应首先很缓慢地转动套管，以保证螺纹正常啮合，不发生错扣。如使用长猫头绳套，则应紧靠接箍提拉。
- 4 使用动力大钳上紧套管时，动力大钳上应装配一个已知精度的可靠扭矩表。在上紧的初始阶段，应注意任何不正规的上紧或上紧速度，因为这些情况会导致螺纹错扣、污染或损伤等不利情况。为防止螺纹损伤，任何时候上扣速度都不得超过 25r/min。继续上紧并观察扭矩表示值和接箍端面相对于套管螺纹消失点的大体位置。现场上扣应按工厂给定的上扣位置和扭矩进行操作，具体详见附表“推荐拧接力矩(圆螺纹)”
- 5 当使用普通大钳上紧套管时，应上紧到适当程度。对于 4 1/2 in 到 7 in 的套管，接箍上紧位置应至少超过手紧位置 3 圈。当使用长猫头绳套时，有必要比较手工上紧程度与自转上紧程度，可将一两个接箍上紧到手紧位置后卸开，再自转上紧到自转上紧位置，比较两种上紧的相对位置，并利用该数据确定接箍上紧时超过手紧位置的推荐圈数。
- 6 在上紧时，若套管上部过分摆动，可降低上紧速度，以免损伤螺纹。如果降低上紧速度后，套管仍摆动，需卸下检查。
- 7 在现场上紧时，可能会发现由工厂机紧的接箍端仍转动上紧，这并不表明工厂机紧的接箍太松，而只说明接箍的现场上紧端已达到工厂上紧端的程度。

- 1 Do not remove thread protector from field end of tubing until ready to stab. If necessary, apply thread compound over the entire surface of threads just before stabbing. The brush or utensil used in applying thread compound shall be free of impurity or foreign matter, and the compound shall not be diluted.
- 2 When stabbing, lower the tube carefully to avoid injuring the threads. Stab vertically, with assistance of a person on the stabbing board. If the tubing stands tilt to one side after stabbing, lift up immediately, breakout, clean, and correct any damaged thread with a triangular file. Then carefully get rid of any filings, and reapply thread compound to the threads.
- 3 After stabbing, at first, rotate the casing slowly to guarantee normal engagement of thread and avoid cross threading. If the long catline loop is used, please lift by keeping to the coupling closely.
- 4 When it is used to tighten the casing, the power tongs should be equipped with a reliable torque meter with accuracy known. At the initial period of tightening, pay attention to any abnormal tightening or tightening speed, as they will cause threads alternating, being polluted or damaged. To prevent damages to threads, the making up speed shall not exceed 25r/min at any time. Continue tightening and observe the display on the torque meter and the approx. position of couple end relative to vanishing point of casing threads. Field makeup should be carried out according to specified torque and made-up position given by the manufacturer, and the details are shown in the attached table "Recommended Tightening Torque (Round Thread)".
- 5 When the common tongs is used to tighten the casing, the casing should be tightened properly. For 4 1/2 in to 7 in casing, the coupling should be tightened at least 3 turns more than that by hand tight. When the long catline loop is used, it is necessary to compare the hand tightening and autorotation tightening. Disassemble one or two couplings when they are tightened by hand, then tighten them by autorotation tightening. Compare the relative positions between them, through which, it can also define recommended turns that are to be tightened more by coupling than that by hand.
- 6 If the casing is swinging during makeup, the speed should be decelerated to avoid damage to the thread. The casing should be removed for further examination if there is still swing after that.
- 7 During field makeup, it is possible for the coupling to make up slightly on the mill end. This does not indicate that the coupling on the mill end is too loose but simply that the field end has reached the tightness with which the coupling was screwed on at the manufacturer's facility.

下管作业	Running Operation:
<p>8 套管柱应小心提升和放下，放置卡瓦时应小心操作，以避免突变载荷。管柱坠落，即使是很短距离也可能使管柱底部的接箍松开。下放套管柱时应小心，避免下到井底，也避免受压，否则套管柱在井内有压弯的危险，特别是在井眼扩大部位。</p>	<p>8 Casing strings should be picked up and lowered carefully and set slips with care to avoid mutant loads and dropping of strings. The dropping of string, even at short distance, can loosen the coupling at the bottom of string. Lower the string with care to avoid contacting the bottom of hole or being pressed, otherwise, there will be risk for the string to be bent in the hole, especially at where the hole gets enlarged.</p>

套管回收作业	Recovering of casing:
<p>1 卸扣大钳应位于靠近接箍但不很近的地方，因为若套管连接较紧或套管较轻或两者都存在时，在大钳牙板接触管子表面处将不可避免地出现轻微压扁现象。在接箍和大钳之间若保持相当于管径的 1/3 到 1/4 的距离，通常可避免不必要的螺纹磨损。</p> <p>2 在将套管从接箍中提出前，应格外小心地松开合部螺纹，不能使套管从接箍中突然跳出。</p> <p>3 回收的套管全部螺纹应清洗，并加润滑油或涂上防腐材料，使其减少腐蚀。管子下井前，应戴上干净的护丝。</p> <p>4 套管在存放或重新使用前，应检查管体和螺纹，对有缺陷的接箍应作出标记，以便交付检修并重新测量。</p>	<p>1 Breakout tongs should be positioned close to the coupling but not too close, because there will be inevitable slight collapsing on the surface where the tongs die contact the tube, if the casings are connected closely or the casing is too slight or both of foresaid exist. Please keep the distance equivalent to 1/3 to 1/4 of pipe diameter between the coupling the tongs, then normally the unnecessary threads wearing can be avoided.</p> <p>2 Great care should be exercised to disengage all of the threads before lifting the casing out of the coupling. Do not let the casing jump out of the coupling suddenly.</p> <p>3 All threads of recovered casing should be cleaned and lubricated or coated with such material as to minimize corrosion. Before running down hole, the clean thread protectors should be placed.</p> <p>4 Check the body and thread of the casing before storage or re-use. Mark those couplings with defect for repairing and re-measuring.</p>

● 附表：推荐拧接力矩
Attached table: Recommended tightening torque

● 耐腐蚀系列油管
Corrosive service series tubing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)		钢级 Grade	扭矩/Torque (ft-lb) ①②									
					不加厚 Non-upset			加厚 ① Upsetting			BGT1			
in	mm	NU	EU		最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	
2 3/8	60.32	4.00		BG80S	830	620	1040	-	-	-	-	-	-	
		4.60	4.70	BG80S-3Cr BG80SS	990	740	1240	1760	1320	2200	1660	1530	1790	
		5.80	5.95	BG80SS-3Cr	1420	1070	1780	2190	1640	2740	1840	1690	1990	
		4.00		BG80-3Cr	850	640	1060	-	-	-	-	-	-	-
		4.60	4.70		1020	770	1280	1800	1350	2250	1660	1530	1790	
		5.80	5.95		1460	1100	1830	2240	1680	2800	1840	1690	1990	
		4.00		BG90S BG90S-3Cr BG90SS BG90SS-3Cr	910	680	1140	-	-	-	-	-	-	-
		4.60	4.70		1080	810	1350	1920	1440	2400	1690	1550	1820	
		5.80	5.95		1550	1160	1940	2390	1790	2990	1940	1780	2090	
		4.00		BG95S BG95S-3Cr BG95SS BG95SS-3Cr	960	720	1200	-	-	-	-	-	-	-
		4.60	4.70		1140	860	1430	2030	1520	2540	1690	1550	1820	
		5.80	5.95		1640	1230	2050	2520	1890	3150	1940	1780	2090	
		4.00		BG110S BG110SS BG110-2Cr	1090	820	1360	-	-	-	-	-	-	-
		4.60	4.70		1300	980	1630	2300	1730	2880	1950	1790	2100	
		5.80	5.95		1860	1400	2330	2860	2150	3580	2340	2150	2520	
		4.00		BG110-3Cr	1120	840	1400	-	-	-	-	-	-	-
		4.60	4.70		1340	1010	1680	2380	1790	2980	2980	1790	2100	
		5.80	5.95		1920	1440	2400	2950	2210	3690	3690	2150	2520	
2 7/8	73.02	6.40	6.50	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	1430	1070	1790	2250	1690	2180	2070	1900	2240	
		7.80	7.90		1910	1430	2390	2710	2030	3390	2390	2200	2580	
		8.60	8.70		2160	1620	2700	2950	2210	3690	2660	2450	2870	
		6.40	6.50	BG80-3Cr	1470	1100	1840	2300	1730	2880	2070	1900	2240	
		7.80	7.90		1960	1470	2450	2770	2080	3460	2390	2200	2580	
		8.60	8.70		2210	1660	2760	3020	2270	3780	2660	2450	2870	
		6.40	6.50	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	1570	1180	1960	2460	1850	3080	2190	2010	2370	
		7.80	7.90		2090	1570	2610	2970	2230	3710	2580	2370	2790	
		8.60	8.70		2370	1780	2960	3230	2420	4040	2900	2670	3130	
		-	9.45		-	-	-	3480	2610	4350	-	-	-	

● 耐腐蚀系列油管

Corrosive service series tubing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)		钢级 Grade	扭矩/Torque (ft-lb) ①②								
					不加厚 Non-upset			加厚 ① Upsetting			BGT1		
in	mm	NU	EU		最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum
2 7/8	73.02	6.40	6.50	BG95S BG95S-3Cr BG95SS BG95SS-3C	1650	1240	2060	2600	1950	3250	2190	2010	2370
		7.80	7.90		2200	1650	2750	3120	2340	3900	2580	2370	2790
		8.60	8.70		2490	1870	3110	3400	2550	4250	2900	2670	3130
		-	9.45		-	-	-	3670	2750	4590	-	-	-
		6.40	6.50	BG110S BG110SS BG110-2Cr	1870	1400	2340	2950	2210	3690	2660	2440	2870
		7.80	7.90		2500	1880	3130	3550	2660	4440	3010	2770	3250
		8.60	8.70		2830	2120	3540	3860	2900	4830	3300	3030	3560
		6.40	6.50	BG110-3Cr	1930	1450	2410	3040	2280	3800	2660	2440	2870
		7.80	7.90		2580	1940	3230	3660	2750	4580	3010	2770	3250
		8.60	8.70		2920	2190	3650	3980	2990	4980	3300	3030	3560
3 1/2	88.90	7.70	-	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	1660	1250	2080	-	-	-	-	-	-
		9.20	9.30		2030	1520	2540	3130	2350	3910	3150	2900	3400
		10.20	-		2360	1770	2950	-	-	-	3390	3120	3660
		12.70	12.95		3140	2360	3930	4200	3150	5250	3790	3490	4090
		7.70	-	BG80-3Cr	1700	1280	2130	-	-	-	-	-	-
		9.20	9.30		2070	1550	2590	3200	2400	4000	3150	2900	3400
		10.20	-		2410	1810	3010	-	-	-	3390	3120	3660
		12.70	12.95		3210	2410	4010	4290	3220	5360	3790	3490	4090
		7.70	-	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	1820	1370	2280	-	-	-	-	-	-
		9.20	9.30		2220	1670	2780	3430	2570	4290	3240	2980	3500
		10.20	-		2590	1940	3240	-	-	-	3490	3210	3770
		12.70	12.95		3440	2580	4300	4610	3460	5760	4380	4030	4730
		7.70	-	BG95S BG95S-3C BG95SS BG95SS-3Cr	1920	1440	2400	-	-	-	-	-	-
		9.20	9.30		2340	1760	2930	3620	2720	4530	3240	2980	3500
		10.20	-		2720	2040	3400	-	-	-	3490	3210	3770
		12.70	12.95		3630	2720	4540	4850	3640	6060	4380	4030	4730

● 耐腐蚀系列油管

Corrosive service series tubing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)		钢级 Grade	扭矩/Torque (ft-lb) ①②								
					不加厚 Non-upset			加厚 ① Upsetting			BGT1		
in	mm	NU	EU		最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum
3 1/2	88.90	9.20	9.30	BG110S BG110SS BG110-2Cr	2660	2000	3330	4110	3080	5140	3940	3620	4250
		12.70	12.95		4120	3090	5150	5520	4140	6900	5610	5160	6060
		9.20	9.30	BG110-3Cr	2740	2060	3430	4230	3170	5290	3940	3620	4250
		12.70	12.95		4240	3180	5300	5680	4260	7100	5610	5160	6060
4	101.6	9.50	-	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	1710	1280	2140	-	-	-	3300	3040	3560
		-	11.00		-	-	-	3530	2650	4410	-	-	-
		9.50	-	BG80-3Cr	1740	1310	2180	-	-	-	3300	3040	3560
		-	11.00		-	-	-	3600	2700	4500	-	-	-
		9.50	-	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	1870	1400	2340	-	-	-	3640	3350	3930
		-	11.00		-	-	-	3870	2900	4840	-	-	-
		9.50	-	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	1970	1480	2460	-	-	-	3640	3350	3930
		-	11.00		-	-	-	4080	3060	5100	-	-	-
		9.50	-	BG110S BG110SS BG110-2Cr	2250	1690	2810	-	-	-	4170	3840	4500
		-	11.00		-	-	-	4640	3480	5800	-	-	-
		9.50	-	BG110-3Cr	2310	1730	2890	-	-	-	4170	3840	4500
		-	11.00		-	-	-	4770	3580	5960	-	-	-
4 1/2	114.30	12.60	12.75	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	2400	1800	3000	3940	2960	4930	4010	3690	4330
		12.60	12.75		BG80-3Cr	2400	1830	3050	4020	3020	5030	4010	3690
		12.60	12.75	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	2630	1970	3290	4330	3250	5410	4200	3860	4540
		12.60	12.75		BG95S BG95S-3Cr BG95SS BG95SS-3Cr	2780	2090	3480	4560	3420	5700	4200	3860
		12.60	12.75	BG110S BG110SS BG110-2Cr	3160	2370	3950	5200	3900	6500	5040	4630	5440
		12.60	12.75		BG110-3Cr	3250	2440	4060	5340	4010	6680	5040	4630

力矩换算: 1ft-lb=1.355818N-M。

拧接力矩应按最佳力矩控制, 当按最佳力矩按接后出现外露扣或 J 值超差, 可适当调整拧接力矩, 但调整后的拧接力矩应在所列的最大、最小力矩范围内

Conversion of torque: 1ft-lb=1.355818N-M.

The tightening torque shall be controlled according to optimal torque. If the thread is uncovered or J value is out of tolerance when it is tightened by optimal torque, the tightening torque can be adjusted adequately, however, the adjusted tightening torque shall be in range of max. and min torques.

● 耐腐蚀系列套管

Corrosive service series casing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)	钢级 Grade	扭矩/Torque (ft-lb) ①②										
				短圆螺纹 Short round thread			长圆螺纹 Long round thread			BGC				
in	mm			最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum		
4 1/2	114.30	11.60	BG80S	2120	1590	2650	2230	1670	2790					
		13.50	BG80S-3Cr BG80SS	2570	1930	3210	2710	2030	3390					
		15.10	BG80SS-3Cr	3090	2320	3860	4800	3600	6000					
		11.60	BG80-3Cr	2160	1620	2700	2280	1710	2850					
		13.50		2620	1970	3280	2760	2070	3450					
		15.10		3150	2360	3940	4890	3670	6110					
		11.60	BG90S BG90S-3Cr BG90SS	2330	1750	2910	2450	1840	3060					
		13.50		2830	2120	3540	2970	2230	3710					
		15.10		BG90SS-3Cr	3390	2540	4240	5270	3950	6590				
		11.60	13.50	15.10	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	2460	1850	3080	2580	1940	3230			
						2980	2240	3730	3130	2350	3910			
						3580	2690	4480	5550	4160	6940			
		11.60	13.50	15.10	BG110S BG110SS BG110-2Cr	2800	2100	3500	2940	2210	3680			
						3390	2540	4240	3570	2680	4460			
						4070	3050	5090	6330	4750	7910			
		11.60	13.50	15.10	BG110-3Cr	2870	2150	3590	3020	2270	3780			
3480	2610					4350	3660	2750	4580					
4180	3140					5230	6490	4870	8110					
15.10	BG125-3Cr	-	-	-	4910	3680	6140							
5	127.00	15.10	BG80S BG80S-3Cr BG80SS	2860	2150	3580	3080	2310	3850	3590	3380	3810		
		18.00	BG80SS-3Cr	3640	2730	4550	3930	2950	4910	4620	4340	4890		
		15.00	BG80-3Cr	2910	2180	3640	3140	2360	3930	3590	3380	3810		
		18.00		3710	2780	4640	4000	3000	5000	4620	4340	4890		

● 耐腐蚀系列套管

Corrosive service series casing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)	钢级 Grade	扭矩/Torque (ft-lb) ①②								
				短圆螺纹 Short round thread			长圆螺纹 Long round thread			BGC		
in	mm			最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum
5	127.00	15.00	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	3140	2360	3930	3380	2540	4230	4230	3970	4480
		18.00		4000	3000	5000	4310	3230	5390	5100	4800	5410
		15.00	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	3310	2480	4140	3560	2670	4450	4230	3970	4480
		18.00		4220	3170	5280	4550	3410	5690	5100	4800	5410
		15.00	BG110S BG110SS BG110-2Cr	3770	2830	4710	4060	3050	5080	4620	4340	4890
		18.00		4810	3610	6010	5180	3890	6480	5750	5410	6100
		15.00	BG110-3Cr	3870	2900	4840	4170	3130	5210	4620	4340	4890
		18.00		4930	3700	6160	5310	3980	6640	5750	5410	6100
		18.00	BG125-3Cr	-	-	-	5930	4450	7410	6390	6000	6770
5 1/2	139.70	17.00	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	3170	2380	3960	3410	2560	4260	4330	4070	4590
		20.00		3910	2930	4890	4200	3150	5250	5580	5250	5920
		23.00		4590	3440	5740	4930	3700	6160	6070	5710	6430
		17.00	BG80-3Cr	3230	2420	4040	3480	2610	4350	4330	4070	4590
		20.00		3980	2990	4980	4280	3210	5350	5580	5250	5920
		23.00		4670	3500	5840	5020	3770	6280	6070	5710	6430
		17.00	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	3490	2620	4360	3750	2810	4690	4960	4670	5260
		20.00		4300	3230	5380	4620	3470	5780	6390	6000	6770
		23.00		5050	3790	6310	5430	4070	6790	7030	6610	7450
		17.00	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	3680	2760	4600	3960	2970	4950	4960	4670	5260
		20.00		4530	3400	5660	4870	3650	6090	6390	6000	6770
		23.00		5320	3990	6650	5720	4290	7150	7030	6610	7450
		17.00	BG110S BG110SS BG110-2Cr	4200	3150	5250	4510	3380	5640	5360	5040	5680
		20.00		5170	3880	6460	5550	4160	6940	6800	6390	7210
		23.00		6070	4550	7590	6520	4890	8150	7450	7000	7900

● 耐腐蚀系列套管

Corrosive service series casing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)	钢级 Grade	扭矩/Torque (ft-1b) ①②								
				短圆螺纹 Short round thread			长圆螺纹 Long round thread			BGC		
in	mm			最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum
5 1/2	139.70	17.00	BG110-3Cr	4300	3230	5380	4620	3470	5780	5360	5040	5680
		20.00		5290	3970	6610	5690	4270	7110	6800	6390	7210
		23.00		6210	4660	7760	6680	5010	8350	7450	7000	7900
		23.00	BG125-3Cr	—	—	—	7470	5600	9340	7840	7370	8310
7	177.80	23.00	BG80S BG80S-3Cr BG80SS BG80SS-3Cr	3960	2970	4950	4350	3260	5440	6390	6000	6770
		26.00		4650	3490	5810	5110	3830	6390	7670	7210	8130
		29.00		5350	4010	6690	5870	4400	7340	9590	9010	10160
		23.00	BG80-3Cr	4020	3020	5030	4420	3320	5530	6390	6000	6770
		26.00		4720	3540	5900	5190	3890	6490	7670	7210	8130
		29.00		5430	4070	6790	5970	4480	7460	9590	9010	10160
		23.00	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	4370	3280	5460	4790	3590	5990	7030	6610	7450
		26.00		5130	3850	6410	5630	4220	7040	8850	8320	9380
		29.00		5900	4430	7380	6480	4860	8100	11060	10400	11730
		23.00	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	4600	3450	5750	5050	3790	6310	7030	6610	7450
		26.00		5410	4060	6760	5930	4450	7410	8850	8320	9380
		29.00		6220	4670	7780	6830	5120	8540	11060	10400	11730
		23.00	BG110S BG110SS BG110-2Cr	5260	3950	6580	5770	4330	7210	7400	6950	7840
		26.00		6180	4640	7730	6780	5090	8480	10330	9710	10950
		29.00		7100	5330	8880	7800	5850	9750	11800	11090	12510
		23.00	BG110-3Cr	5370	4030	6710	5900	4430	7380	7400	6950	7840
		26.00		6310	4730	7890	6930	5200	8660	10330	9710	10950
		29.00		7260	5450	9080	7970	5980	9960	11800	11090	12510
		35.00	BG125-3Cr	—	—	—	11150	8363	13938	13650	12830	14470
38.00	—	—		—	12160	9120	15200	14010	13170	14850		

● 耐腐蚀系列套管

Corrosive service series casing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)	钢级 Grade	扭矩/Torque (ft-lb) ①②								
				短圆螺纹 Short round thread			长圆螺纹 Long round thread			BGC		
in	mm			最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum
7 5/8	193.68	29.70	BG80S	-	-	-	5670	4250	7090	-	-	-
		33.70	BG80S-3Cr				6640	4980	8300			
		39.00	BG80SS BG80SS-3Cr				7860	5895	9825			
		29.70	BG80-3Cr	5750	4310	7190						
		33.70		6740	5055	8425						
		39.00		7980	5985	9975						
		29.70	BG90S BG90S-3Cr BG90SS BG90SS-3Cr	6250	4690	7810						
		33.70		7330	5500	9160						
		39.00		8670	6500	10840						
		29.70	BG95S BG95S-3Cr BG95SS BG95SS-3Cr	6590	4940	8240						
		33.70		7720	5790	9650						
		39.00		9140	6855	11425						
		29.70	BG110S BG110SS BG110-2Cr	7530	5647	9412						
		33.70		8824	6618	11030						
		39.00		10442	7832	13053						
		29.70	BG110-3Cr	7690	5770	9610						
33.70	9010	6760		11260								
39.00	10660	7995		13325								
39.00	BG125-3Cr	11940	8955	14925								
42.80		13550	10163	16938								
8 5/8	219.08	36.00	BG80S	-	-	-	6780	5085	8475	-	-	-
		40.00	BG80S-3Cr BG80SS BG80SS-3Cr				7760	5820	9700			
		36.00	BG80-3Cr				6880	5160	8600			
		40.00					7880	5910	9850			

● 耐腐蚀系列套管

Corrosive service series casing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)	钢级 Grade	扭矩/Torque (ft-lb) ①②								
				短圆螺纹 Short round thread			长圆螺纹 Long round thread			BGC		
in	mm			最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum
8 5/8	219.08	36.00	BG90S BG90S-3Cr BG90SS				7490	5620	9360			
		40.00	BG90SS-3Cr				8580	6435	10725			
		36.00	BG95S BG95S-3Cr				7890	5920	9860			
		40.00	BG95SS BG95SS-3Cr				9040	6780	11300			
		40.00	BG110S BG110SS				10338	7754	12923			
		44.00	BG110-2Cr				11630	8723	14538			
		40.00	BG110-3Cr				10550	7913	13188			
		44.00					11860	8895	14825			
		49.00	BG125-3Cr				14960	11220	18700			
9 5/8	244.48	40.00	BG80S BG80S-3Cr BG80SS				7270	5450	9090			
		43.50	BG80SS-3Cr				8130	6100	10160			
		47.00					8930	6700	11160			
		40.00	BG80-3Cr				7370	5530	9210			
		43.50					8250	6190	10310			
		47.00					9050	6790	11310			
		40.00	BG90S BG90S-3Cr BG90SS				8040	6030	10050			
		43.50	BG90SS-3Cr				8990	6740	11240			
		47.00					9870	7400	12340			
		40.00	BG95S BG95S-3Cr BG95SS				8470	6350	10590			
		43.50	BG95SS-3Cr				9480	7110	11850			
		47.00					10400	7800	13000			
		43.50	BG110S BG110SS				10847	8135	13559			
		47.00	BG110-2Cr				11902	8927	14878			

● 耐腐蚀系列套管

Corrosive service series casing

规格 Size		公称重量 (1b/ft带螺纹和接箍) Nominal weight (1b/ft with threads and coupling)	钢级 Grade	扭矩/Torque (ft-1b) ①②								
				短圆螺纹 Short round thread			长圆螺纹 Long round thread			BGC		
in	mm			最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum	最佳 Optimal	最小 Minimum	最大 Maximum
9 5/8	244.48	43.50	BG110-3Cr	-			11050	8290	13810	-		
		47.00					12130	9100	15160			
		47.00	BG125-3Cr				13600	10200	17000			
		53.50					15950	11963	19938			
10 3/4	273.05	51.00	BG80S BG80S-3Cr	7940	5955	9925	-			-		
		55.50	BG80SS BG80SS-3Cr	8840	6630	11050						
		51.00	BG80SS-3Cr BG80-3Cr	8040	6030	10050						
		55.50		8950	6710	11190						
		51.00	BG90S BG90S-3Cr	8790	6590	10990						
		55.50	BG90SS BG90SS-3Cr	9790	7340	12240						
		51.00	BG95S BG95S-3Cr	9270	6950	11590						
		55.50		BG95SS BG95SS-3Cr	10320	7740						
		51.00	BG110S BG110SS	10610	7958	13262						
		55.50		BG110-2Cr	11818	8864						
		51.00	BG110-3Cr	10790	8090	13490						
		55.50		12020	9015	15025						
		60.70	BG125-3Cr	15020	11265	18775						
		65.70		16520	12390	20250						

力矩换算 :1ft-1b=1.355818N-M。

拧接力矩应按最佳力矩控制,当按最佳力矩按接后出现外露扣或J值超差,可适当调整拧接力矩,但调整后的拧接力矩应在所列的最大、最小力矩范围内

Conversion of torque: 1ft-1b=1.355818N-M.

The tightening torque shall be controlled according to optimal torque. If the thread is uncovered or J value is out of tolerance when it is tightened by optimal torque, the tightening torque can be adjusted adequately, however, the adjusted tightening torque shall be in range of max. and min torques.

• 用户使用业绩及评估报告 • References

Corrosive service series tubing and casing

宝钢的耐腐蚀系列油套管均通过中国国家权威机构的评估和中国主要油田的实际使用认可。

Baosteel's anti-corrosion series oil tubing and casing have passed through the evaluation of Chinese national authoritative institutions and the actual application approval of main Chinese oil field customers.



钢级 Grade	规格 Specification	用户 Customer
BG80S	139.70×9.17	长庆油田 Changqing Oilfield
	73.02×5.51	延长油田 Yanchang Oilfield
	139.70×9.17	
	73.02×5.51	四川油田 Sichuan Oilfield
BG90S	88.90×6.45	胜利油田 Shengli Oilfield
	177.80×12.65	
	73.02×5.51	四川油田 Sichuan Oilfield
	177.80×11.51	
	114.30×6.88	
BG95SS	60.32×4.83	四川油田 Sichuan Oilfield
	73.02×5.51	
	88.90×9.52/12.95	
BG110S	73.02×5.51	塔里木 Talimu
	88.90×6.45/7.34	
	73.02×5.51	中石化西北分公司 Sinopec Northwest Branch
	88.90×6.45	
	177.80×11.51/12.65	

钢级 Grade	规格 Specification	用户 Customer
BG110S	88.90×6.45	胜利油田 Shengli Oilfield
	73.02×5.51	
	88.90×6.45	大港油田 Dagang Oilfield
BG110SS	88.90×12.09	四川油田 Sichuan Oilfield
	177.80×10.36	塔里木 Talimu
L80-3Cr	139.70×9.17	东北局 Sinopec Northwest Branch
BG80-3Cr	73.02×5.51	江汉油田 Jianghan Oilfield
	139.70×7.72	中海油 CNOOC
	177.80×10.36	
	73.02×5.51	
BG90S-3Cr	73.02×5.51	胜利油田 Shengli Oilfield
	114.30×6.88	
BG110-3Cr	114.30×6.35	塔里木 Talimu
	127.00×9.19	
	139.7×9.17	
	177.8×10.36	江汉油田 Jianghan Oilfield
	73.02×5.51/7.01	
	139.70×9.17	大庆 Daqing
小计	38242吨/38242 tons	

注：2008年1月~11月

在文中有些数据采用了英制单位。英制与米制单位的换算系数如下：

1 in=25.4 mm (准确值)

1 in²=645.16 mm² (准确值)

1 ft=0.3048 m (准确值)

1 lb=0.454 kg

1 lb/ft= 1.4895 kg/m

1 psi=0.0703kg/cm²=0.006895MPa (应力)

1 ft-lb=1.355818 J (冲击功)

=1.355818 N·m (扭矩)

British system is applied to some of the data in the text.

Conversion between the British system and the Metric system are as follows:

1 in=25.4 mm (accurate value)

1 in²=645.16 mm² (accurate value)

1 ft=0.3048 m (accuracy)

1 lb=0.454 kg

1 lb/ft= 1.4895 kg/m

1 psi=0.0703kg/cm²=0.006895MPa (stress)

1 ft-lb =1.355818 J (ballistic work)

=1.355818 N·m (torque)

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