LETONE · 利通科技

让流体技术幸福亿万大众

# 石油钻采软管

## PETROLEUM DRILLING HOSE



WWW.LETONE.CN

# 企业简介 company profile

2003年深耕至今，利通科技聚焦超高压流体创新与应用核心赛道，深耕**高分子材料、流体动力传动、装备制造、装备应用**四大核心业务板块，构建起覆盖全产业链的技术与服务体系，专业为全球用户提供**页岩油气钻采管路、液压管路、核电管路、超高压水射流管路、氢气加注管路、数据中心液冷管路、市政智慧管网、超高压食品灭菌及高分子材料共混物**九大高效解决方案。凭借稳健的经营发展，利通科技核心经营指标长期稳居行业前列，累计斩获“国家级专精特新‘小巨人’企业”“国家级绿色工厂”“国家级高新技术企业”“河南省制造业单项冠军企业”“中国胶管十强企业”等数十项权威荣誉，2021年11月15日，利通科技（股票代码：920225）成功登陆北京证券交易所，正式迈入高质量发展新阶段。

围绕四大核心业务板块，利通科技打造超高压流体全产业链布局，形成“延链、补链、强链”一体化产业优势。其中**高分子材料领域**以高性能混炼胶、改性材料及特种橡胶为主攻方向，为上下游产业提供核心材料支撑；**流体动力传动领域**重点研发生产高压及超高压软管、流体连接件与总成产品，兼具低弯曲、高压力、长寿命、耐老化等性能优势，广泛覆盖液压传动、石油钻采、工业输送、液冷系统等高端应用场景；**装备制造领域**聚焦绿色安全的超高压HPP食品灭菌装备，打造差异化核心装备产品；**装备应用领域**依托核心超高压技术，专业提供食品灭菌服务及市政管网疏通、破拆等工程服务与配套装备。凭借全链条的产品与技术能力，利通科技产品已广泛应用于工程机械、石油钻采、能源核电、轨道交通、船舶医药、绿色食品、市政工程等多个关键领域。

研发与合规能力是企业的核心竞争力，利通科技建有CNAS认证的国家级实验室，搭建起“一院四所”超高压流体创新研究院，含青岛高分子材料研究所、漯河流体研究所、郑州超高压装备研究所、漯河超高压装备应用研究所，并与中原食品实验室共建公共研发平台，全力推动超高压流体产业规模化发展。同时，利通科技构建起覆盖全业务的权威认证矩阵，以体系认证筑牢管理根基，以产品认证保障全球市场准入，为产品质量与合规运营提供全方位支撑。**体系认证**涵盖质量管理体系（GB/T 19001-2016/ISO 9001:2015）、武器装备质量管理体系（GJB 9001C-2017）、石油天然气行业制造类组织质量管理体系（API Q1）、汽车质量管理体系（IATF 16949:2016）、环境管理体系（GB/T 24001-2016/ISO 14001:2015）、职业健康安全管理体系（GB/T 45001-2020/ISO 45001:2018）、能源管理体系（GB/T 23331-2020/ISO 50001:2018/RB/T 114-2023）及邓白氏认证，实现全流程规范化管控。**产品认证**拥有矿用产品安全标志（MA·KA）、MSHA 认证、美国石油协会 API 产品认证（7K、16C、17K）、美国船级社 ABS 型式认可、挪威船级社 DNV 型式认可、劳氏防火认证、CE认证、GOST-R认证等国际主流认证，全面满足国内外高端市场与特种行业准入要求。

自成立以来，利通科技始终坚守“**以客户为中心、尊重员工、敬畏产品**”的核心价值观，坚定践行“独创引领，利他聚能”的发展战略，以打造“绿色利通、创新利通、数字利通、幸福利通”为发展目标，凭借新技术、新装备、新材料的持续创新引领行业高质量发展，致力于成为“高质量的价值创造者、有温度的幸福缔造者”，让流体技术幸福亿万大众。



Founded in 2003, Letone has been dedicated to the core track of ultra-high pressure (UHP) fluid innovation and application. We focus on four core business segments: **Polymer Materials, Fluid Power Transmission, Equipment Manufacturing**, and **Equipment Application**, and have built a comprehensive technology and service system covering the entire industrial chain. We deliver nine high-efficiency solutions to global customers, including UHP hose systems for oil & gas drilling, hydraulics, nuclear power, water jet transmission, hydrogen refueling and data center liquid cooling, municipal pipe network dredging services, UHP high-pressure processing (HPP) food sterilization services, and high-performance polymer blend material solutions.

With steady business development, Letone has maintained top-tier core operating indicators in the industry for years and won numerous authoritative honors, including the National-level "Little Giant" Enterprise (China's top specialized & innovative manufacturing enterprise), National Green Factory (China's national low-carbon manufacturing certification), National High-Tech Enterprise, Henan Provincial Manufacturing Single Champion Enterprise (Leader in China's rubber hose industry), and Top 10 China Rubber Hose Enterprises. On November 15, 2021, Letone (Stock Code: 920225) was successfully listed on the Beijing Stock Exchange (BSE) as one of its first batch of listed companies, officially entering a new stage of high-quality development.

Centered on its four core business segments, Letone has built a full industrial chain layout for UHP fluid and forged integrated industrial advantages through industrial chain extension, supplementation and strengthening. In the **Polymer Materials segment**, we focus on high-performance compounded rubber, modified materials and special rubber, providing core material support for upstream and downstream industries. In the **Fluid Power Transmission segment**, we specialize in R&D and production of high and UHP hoses, fluid fittings and hose assemblies, which feature *a small bending radius, high pressure resistance, long service life and excellent anti-aging performance*, and are widely applied in high-end scenarios such as hydraulic transmission, oil drilling & production, industrial conveying and liquid cooling systems. In the **Equipment Manufacturing segment**, we focus on green and safe HPP food sterilization equipment, creating differentiated core equipment products. In the **Equipment Application segment**, leveraging our core UHP technologies, we offer professional HPP food sterilization services, as well as engineering services and supporting equipment for municipal pipe network dredging and demolition. Endowed with full-chain product and technical capabilities, Letone's products and services are widely used in key industries including engineering machinery, oil drilling & production, energy & nuclear power, rail transit, shipbuilding & pharmaceuticals, green food and municipal engineering.

R&D and compliance capabilities are Letone's core competitiveness. We own a CNAS-accredited national laboratory and established the UHP Fluid Innovation Research Institute. Meanwhile, Letone has constructed an authoritative certification matrix covering all business operations: we solidify our management foundation with system certifications and ensure global market access with product certifications, providing comprehensive support for product quality and compliant operations. Our **system certifications** include Quality Management System (GB/T 19001-2016/ISO 9001:2015), API Q1 Quality Management System for Oil & Gas Industry Manufacturing Organizations, IATF 16949:2016 Automotive Quality Management System, Environmental Management System (GB/T 24001-2016/ISO 14001:2015), Occupational Health and Safety Management System (GB/T 45001-2020/ISO 45001:2018), Energy Management System (GB/T 23331-2020/ISO 50001:2018/RB/T 114-2023), and Dun & Bradstreet D-U-N-S Certification, enabling standardized full-process management and control. Our **product certifications** cover mainstream international and China-specific credentials such as China Mining Product Safety Certification (MA·KA), MSHA Certification, API Product Certifications (7K, 16C, 17K) from the American Petroleum Institute, ABS Type Approval (American Bureau of Shipping), DNV Type Approval (DNV Group), Lloyd's Fire Certification, CE Certification and GOST-R Certification, fully meeting the access requirements of high-end domestic and international markets and special industries.

Since its establishment, Letone has always adhered to the core values of **Customer-Centric**, **Employee-Respecting** and **Product Excellence-Oriented**, and firmly implemented the development strategy of Original Innovation for Leadership and Win-Win Synergy with Partners. With the goal of building a Green Letone, Innovative Letone, Digital Letone and Happy Letone, we lead the high-quality development of the UHP fluid industry through continuous innovation in new technologies, new equipment and new materials. We are committed to becoming a high-quality value creator and a caring happiness enabler, bringing the benefits of UHP fluid technology to customers and communities worldwide.



# QUALIFICATION & CERTIFICATE
# 企业资质











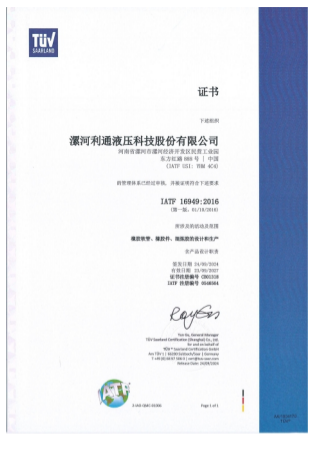
















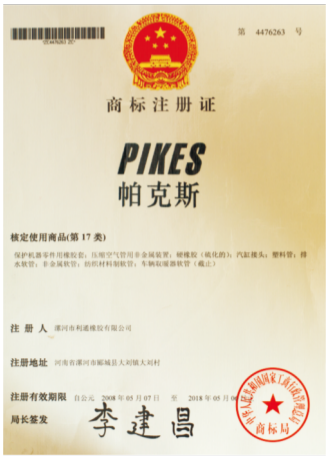






# COMPANY HONOR
# 企业荣誉



























工业软管生产车间
Industrial Hose Workshop



工业软管生产线
Industrial Hose Production Line



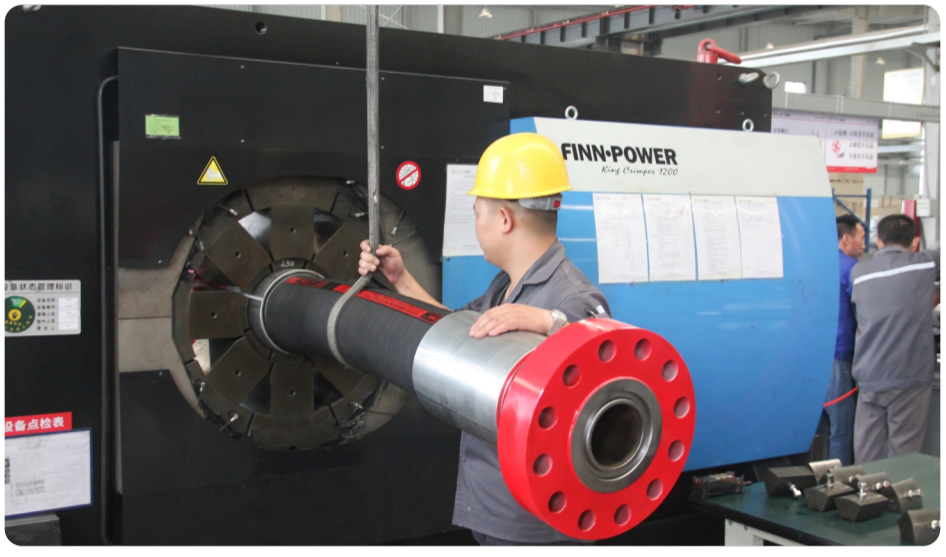
工业软管生产线
Industrial Hose Production Line




VP 钢丝缠绕生产线
VP Steel Wire Spiral Production Line




大口径钢丝缠绕生产线
Big Diameter Steel Wire Spiral Production Line



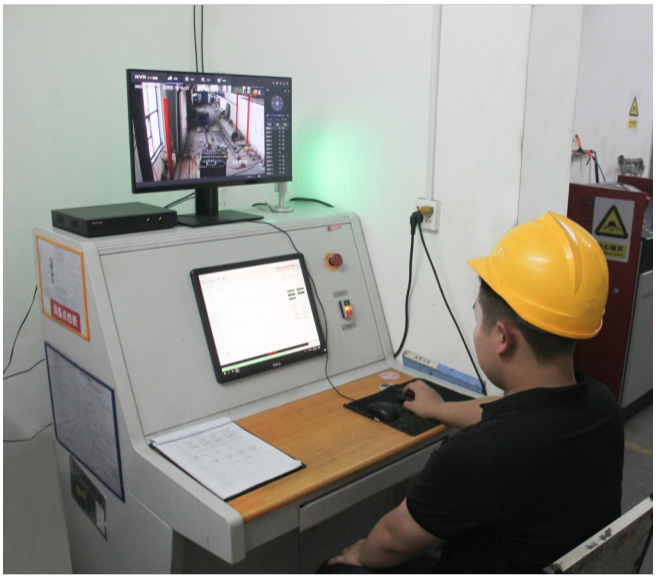

工业软管总成扣压工序
Assembly Process



利通科技检测中心对利通科技所使用及生产的原材料、半成品及成品的质量检验负责，力求从各个环节杜绝质量问题，为用户提供优质产品。另一方面，利通科技检测中心完善的硬件设施也为产品研发迭代提供了有利的条件。利通科技检测中心目前设有：原材料分析室、半成品检测试验室、成品检测试验室、脉冲试验室、爆破试验室、总成拔脱试验室、化学分析室、物理性能试验室、盐雾试验室、耐火试验室、低温试验室、耐磨试验室、阻燃试验室、原子吸收试验室、影像测量室等多个高水准试验室，可实现对混炼胶、钢丝、橡胶软管、连接件、总成等的全方位检测试验，为产品制造与技术创新成果转化提供了保障。

The main function of Letone Testing Center is to ensure the raw materials, semi-finished products and finished products used and produced by Letone are qualified. The hardware facilities of Letone Testing Center provides favorable conditions for its product development. At present, Letone Testing Center has laboratories for raw materials test, semi-finished product & finished product test, impulse test, blasting test, assembly extraction test, chemical analysis, physical performance test, salt spray test, fire-resistant test, low-temperature test, abrasion-resistant test, flame retardant test, atomic absorption, image measuring, etc., which can make comprehensive tests on rubber compound, steel wire, rubber hose, hose connection, assembly and so on.

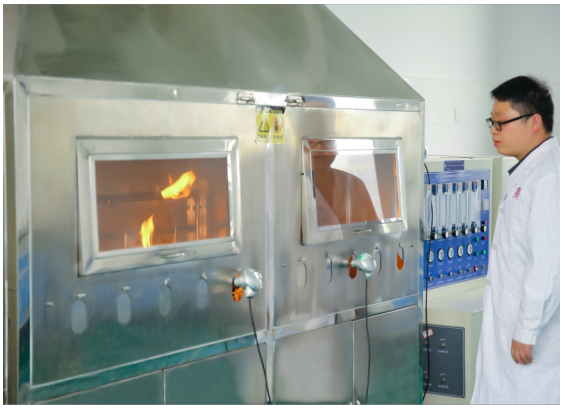


超高压工业软管总成试压工序
Pressure Test for Industrial Hose Assemblies




脉冲试验
Impulse Test



耐火试验
Fire Test

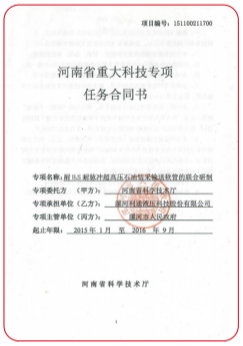


化学分析室
Chemical Analysis Laboratory



橡胶物理性能试验室
Physical Performance Laboratory





项目编号：151100211700

河南省重大科技专项
任务合同书

专项名称：耐H2S耐脉冲超高压石油钻采输送软管的联合研制
专项委托方 （甲方）：河南省科学技术厅
专项承担单位（乙方）：耐时利通酒店科技股份有限公司
专项主管单位（丙方）：漯河市人民政府
起止年限：2015年1月 至 2018年9月

河南省科学技术厅


验收意见

2018年12月12日，河南省科技厅组织专家对利通科技承担的河南省重大科技专项“耐$H_2S$耐脉冲超高压石油钻采输送软管的联合研制项目”完成情况进行了考察并以高度评价完成了验收。通过与青岛科技大学的合作，利通科技完成了API 7K高压水泥软管、API 16C柔性节流和压井管汇、API 16D BOP井控软管三个系列石油钻采输送软管的研制。具体内容包括钢丝增强层及软管整体结构设计、石油钻采软管接头设计、软管内衬层、缓冲层及外保护层的研制、大口径软管成型装备开发等。经过“机械工业仪器仪表元器件质量检验所”检测，产品技术指标均符合API 7K、API 16C、API 16D标准要求。

On December 12, 2018, the Department of Science and Technology of Henan Province organized an expert team investigation on the completion of the provincial level major science and technology special project “Joint Development Project of $H_2S$ and Pulse Resistant Ultra-High Pressure Oil Drilling Hose” undertaken by Letone and gave the approval of it. Through the cooperation with Qingdao University of Science and Technology, Letone has completed the development of three series of oil drilling hoses, namely, API 7K high-pressure cementing hose, API 16C flexible choke and kill line and API 16D BOP control hose. The specific contents include the design of steel wire reinforced layer and hose overall structure, the design of oil drilling hose connectors, the R&D of hose inner liner, buffer layer and outer protective layer, and the development of large diameter hose forming equipment. According to the testing report issued by the “Quality Inspection Institute of Mechanical Industry Instruments and Components", the technical indicators of the products meet the requirements of API 7K, API 16C and API 16D, and the main technical indicators cut the edge in China.

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# LT 301 D | API Spec. 7K FSL 1 FSL 2 | ABS

## 旋转钻井和减震软管

ROTARY DRILLING AND VIBRATOR HOSE




**应用范围：**钻井、固井、修井作业中立管上端与顶部驱动器/旋转装置之间和泵与立管下端之间的柔性连接，在石油钻探和勘探工作中以高压泵送泥浆。

**软管结构**

**内层：** 合成橡胶/HNBR/UPE/PTFE
**增强层：** 多层缠绕的高强超柔钢丝
**外胶层：** 耐磨、耐天候合成橡胶
**温度范围：** -20°C~+121°C（-4°F~+250°F）
**接头类型：** 整体由壬或整体法兰或其他形式
**可定制等通径软管内层**

**Application:** Flexible connection between the upper end of the standpipe and the top drive/swivel and between the pump and the lower end of the standpipe for pumping mud at high pressure in oil drilling, cementing, and well workover operations .

**Hose Construction**

**Inner Tube:** sythentic rubber/HNBR/UPE/PTFE
**Reinforcement:** multi-spiraled high tensile super flexible steel wire
**Outer Layer:** abrasion and weather resistant synthetic rubber
**Temperature Range:** -20°C~+121°C（-4°F~+250°F）
**Connector:** integral union, integral flange, or other connector types
**Full bore can be customized based on the requirements**

| 压力等级 PRESSURE LEVEL Psi | 内径 I.D. in | 外径 O.D. mm | 工作压力 W.P. Psi | 试验压力 P.P. Psi | 最小爆破压力 Min.B.P. Psi | 最小弯曲半径 Min.B.R. mm | 重量 W.T kg/m |
|---|---|---|---|---|---|---|---|
| 1500 A级Grade A | 2 | 68 | 1500 | 2250 | 3750 | 800 | 4.3 |
| | 2 1/2 | 84 | 1500 | 2250 | 3750 | 800 | 5.6 |
| 2000 B级Grade B | 2 | 68 | 2000 | 3000 | 5000 | 800 | 4.3 |
| | 2 1/2 | 84 | 2000 | 3000 | 5000 | 800 | 5.6 |
| | 3 | 97 | 2000 | 3000 | 5000 | 950 | 6.5 |
| | 3 1/2 | 113 | 2000 | 3000 | 5000 | 1000 | 8.5 |
| | 4 | 127 | 2000 | 3000 | 5000 | 1000 | 10.4 |
| | 5 | 157 | 2000 | 3000 | 5000 | 1200 | 14.0 |
| | 6 | 183 | 2000 | 3000 | 5000 | 1300 | 18.0 |
| 4000 C级Grade C | 2 | 72 | 4000 | 6000 | 10000 | 800 | 6.4 |
| | 2 1/2 | 87 | 4000 | 6000 | 10000 | 800 | 8.7 |
| | 3 | 102 | 4000 | 6000 | 10000 | 1000 | 11.1 |
| | 3 1/2 | 119 | 4000 | 6000 | 10000 | 1200 | 14.4 |
| | 4 | 132 | 4000 | 6000 | 10000 | 1200 | 16.0 |
| | 5 | 162 | 4000 | 6000 | 10000 | 1400 | 24.5 |
| | 6 | 194 | 4000 | 6000 | 10000 | 1500 | 33 |
| 5000 D级Grade D | 2 | 75 | 5000 | 7500 | 12500 | 800 | 6.4 |
| | 2 1/2 | 90 | 5000 | 7500 | 12500 | 800 | 8.7 |
| | 3 | 104 | 5000 | 7500 | 12500 | 1000 | 11.1 |
| | 3 1/2 | 121 | 5000 | 7500 | 12500 | 1200 | 14.4 |
| | 4 | 134 | 5000 | 7500 | 12500 | 1200 | 16.0 |
| | 5 | 164 | 5000 | 7500 | 12500 | 1400 | 24.5 |
| | 6 | 196 | 5000 | 7500 | 12500 | 1600 | 33 |
| 7500 E级Grade E | 2 | 77 | 7500 | 11250 | 18750 | 900 | 8.5 |
| | 2 1/2 | 94 | 7500 | 11250 | 18750 | 1000 | 10.5 |
| | 3 | 110 | 7500 | 11250 | 18750 | 1000 | 18.5 |
| | 3 1/2 | 128 | 7500 | 11250 | 18750 | 1200 | 20 |
| | 4 | 150 | 7500 | 11250 | 18750 | 1400 | 30 |
| | 5 | 185 | 7500 | 11250 | 18750 | 1600 | 49 |
| | 6 | 212 | 7500 | 11250 | 18750 | 1600 | 60 |

# LT 301 F

## 超耐磨酸化压裂软管

SUPER ABRASION RESISTANT FRAC HOSE




**软管结构**

**内层:** UPE和合成橡胶

**增强层:** 多层缠绕的高强超柔钢丝

**外胶层:** 耐磨、耐天候合成橡胶

**温度范围:** -29°C~+100°C (-20°F~+212 °F)

**接头类型:** 整体由壬或整体法兰或其他形式

**Hose Construction**

**Inner Tube:** UPE and sythentic rubber

**Reinforcement:** multi-spiraled high tensile super flexible steel wire

**Outer Layer:** abrasion and weather resistant synthetic rubber

**Temperature Range:** -29°C~+100°C (-20°F~+212°F)

**Connector:** integral union , integral flange, or other connector types

**应用范围:** 完井作业中的酸化压裂、加砂压裂、水力压裂管线，在高压下输送水基、油基、泡沫、酸基等压裂液。

**Application:** Flexible line using for delivery water-based, oil-based, acid-based and foam fracturing fluids under high pressure in acid, sand and hydraulic fracturing works.

| 规格型号 Size | 内径 I.D. | 外径 O.D. | 工作压力 W.P. | 试验压力 P.P. | 最小弯曲半径 Min.B.R. | | 重量 W.T | | 流量 Volume | | 接头重量 Connector W.T | | 连接形式 Connection Type |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Inch | mm | mm | Psi | Psi | m | ft | kg/m | lb/ft | bbl/min | $m^3$/min | kg | lb/set | |
| 2" | 32 | 81 | 15000 | 22500 | 1.2 | 3.94 | 11.5 | 7.7 | 4.5 | 0.72 | 25 | 55 | 2"FIG1502锤击由壬或2 1/16"15K API法兰连接 2" FIG 1502 Hammer Union or 2 1/16"15K API flange |
| | 44 | 95 | 15000 | 22500 | 1.4 | 4.59 | 18 | 12 | 9 | 1.46 | 45 | 99 | 3"FIG1502锤击由壬或3 1/16"15K API法兰连接 3" FIG 1502 Hammer Union or 3 1/16"15K API flange" |
| | 51 | 107 | 15000 | 22500 | 1.4 | 4.59 | 20 | 13 | 12 | 1.91 | 59 | 130 | |
| 2.5" | 58 | 122 | 15000 | 22500 | 1.5 | 4.92 | 24 | 16 | 15 | 2.39 | 61 | 134 | |
| | 64 | 126 | 15000 | 22500 | 1.5 | 4.92 | 27 | 18 | 18.5 | 2.90 | 75 | 165 | |
| 3" | 69 | 135 | 15000 | 22500 | 1.6 | 5.25 | 30 | 20 | 21.5 | 3.42 | 91 | 201 | |
| | 76 | 145 | 15000 | 22500 | 1.6 | 5.25 | 35 | 24 | 26 | 4.13 | 102 | 225 | |
| 4" | 89 | 164 | 15000 | 22500 | 2.0 | 6.56 | 52 | 35 | 36 | 5.72 | 132 | 291 | 4"FIG1502锤击由壬或4 1/16"15K API法兰连接 4" FIG 1502 Hammer Union or 4 1/16" 15K API flange |
| | 102 | 179 | 15000 | 22500 | 2.0 | 6.56 | 60 | 40 | 47 | 7.47 | 154 | 340 | |
| 5" | 120 | 208 | 15000 | 22500 | 2.1 | 6.89 | 80 | 54 | 65 | 10.34 | 402 | 886 | 5 1/8"15K API法兰连接 5 1/8"15K API flange |
| | 127 | 216 | 15000 | 22500 | 2.1 | 6.89 | 86 | 58 | 73 | 11.61 | 407 | 897 | |
| 5.5" | 140 | 243 | 15000 | 22500 | 2.2 | 7.22 | 110 | 74 | 88.5 | 14.07 | 653 | 1440 | 7 1/16"15K API法兰连接 7 1/16"15K API flange |
| 6" | 152 | 255 | 15000 | 22500 | 2.3 | 7.54 | 125 | 84 | 104.5 | 16.62 | 703 | 1550 | |
| 2" | 51 | 112 | 20000 | 30000 | 1.5 | 4.92 | 26 | 17 | 12 | 1.91 | 78 | 172 | 2"FIG2002锤击由壬或3 1/16"20K API法兰连接 2"FIG 2002 Hammer Union or 3 1/16" 20K API flange |
| 2.5" | 64 | 133 | 20000 | 30000 | 1.6 | 5.25 | 36 | 24 | 18.5 | 2.90 | 103 | 227 | 3"FIG2002锤击由壬或3 1/16"20K API法兰连接 3"FIG 2002 Hammer Union or 3 1/16"20K API flange |
| 3" | 76 | 159 | 20000 | 30000 | 1.9 | 6.23 | 57 | 38 | 26 | 4.13 | 135 | 298 | |
| 4" | 102 | 202 | 20000 | 30000 | 2.1 | 6.89 | 94 | 63 | 47 | 7.47 | 400 | 882 | 4 1/16"20K API法兰连接 4 1/16" 20K API flange |
| 5" | 127 | 230 | 20000 | 30000 | 2.3 | 7.54 | 111 | 75 | 73 | 11.61 | 850 | 1874 | 7 1/16"20K API法兰连接 7 1/16" 20K API flange |

备注:以上规格均可根据客户要求定制等通径与不通径软管总成，流量是在流速为50ft/s时计算所得;利通公司推荐工作流速不大于40ft/s。

Remark: According to the cuslomers' requriements, the I.D. of all the above sizes of hose assemblies can be made into full bore I.D., or non-full bore I.D. (A full bore hose assembly's effective flow I.D. is at least 95 % of its nominal I.D.) The flow rate is calculated at a flow velocity of 50ft/s;LETONE recommends that the working flow velocity should not exceed 40ft/s.

# LT 301 C | API Spec. 7K FSL0 | ABS

## 高压水泥软管
HIGH PRESSURE CEMENTING HOSE

**应用范围：**作为固井管汇的柔性连接件，在高压下输送水基泥浆、油基泥浆、水泥等。




**软管结构**
**内胶层：**UPE和合成橡胶或HNBR
**增强层：**多层缠绕的高强超柔钢丝
**外胶层：**耐磨、耐天候合成橡胶
**温度范围：**-20°C~+121°C (-4°F~+250°F)
**接头类型：**整体由壬或整体法兰

**Application:** Flexible connection in the manifold for delivery water-based and oil-based cement slurries under high pressure.

**Hose Construction**
**Inner Tube:** UPE and sythentic rubber or HNBR
**Reinforcement:** multi-spiraled high tensile super flexible steel wire
**Outer Layer:** abrasion and weather resistant synthetic rubber
**Temperature Range:** -20°C~+121°C (-4°F~+250°F)
**Connector:** integral union or integral flange

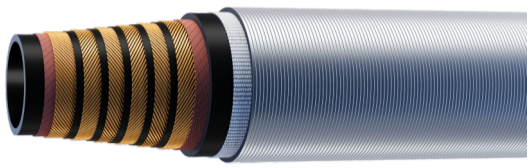
| 压力等级 PRESSURE LEVEL Psi | 内径 I.D. in | 外径 O.D. mm | 工作压力 W.P. Psi | 试验压力 P.P. Psi | 最小爆破压力 Min.B.P. Psi | 最小弯曲半径 Min.B.R. mm | 重量 W.T kg/m |
|---|---|---|---|---|---|---|---|
| 10000 | 2 | 83 | 10000 | 15000 | 22500 | 1000 | 10.8 |
| | 2 1/2 | 98 | 10000 | 15000 | 22500 | 1000 | 19.4 |
| | 3 | 129 | 10000 | 15000 | 22500 | 1400 | 28 |
| | 3 1/2 | 137 | 10000 | 15000 | 22500 | 1400 | 33 |
| | 4 | 154 | 10000 | 15000 | 22500 | 1600 | 38.5 |
| | 5 | 154 | 10000 | 15000 | 22500 | 1800 | 56.5 |
| 15000 | 2 | 101 | 15000 | 22500 | 33750 | 1200 | 20.5 |
| | 3 | 125 | 15000 | 22500 | 33750 | 1500 | 36 |
| 20000 | 2 | 106 | 20000 | 30000 | 45000 | 1500 | 24 |
| | 3 | 142 | 20000 | 30000 | 45000 | 1700 | 44 |

# LT 302 | API Spec. 16C FSL0 FSL1 FSL2 FSL3 | ABS

## 柔性节流和压井管线

FLEXIBLE CHOKE AND KILL LINE

**应用范围：**节流压井管汇等的柔性连接管线，在高压下输送含有硫化氢（$H_2S$）及其他危险气体的油气混合物及各种水基、油基、泡沫压井液等。



**软管结构**
**内层：** HNBR/UPE
**内径类型：** 等通径
**增强层：** 多层缠绕的高强超柔钢丝
**外胶层：** 耐高温、耐火合成橡胶（耐+704°C明火30分钟）
**外保护层：** 不锈钢铠装
**温度范围：** -29°C~+121°C（-20°F~+250°F）
**接头类型：** 整体由壬或整体法兰

**Application:** Flexible connection in the chock and kill manifolds for delivery oil-gas mixture that containing hydrogen sulfide ($H_2S$) and other dangerous gases and various water-based, oil-based and foam killing fluids under high pressure.

**Hose Construction**
**Inner Tube:** HNBR/UPE
**Bore Type:** full bore
**Reinforcement:** multi-spiraled high tensile super flexible steel wire
**Outer Layer:** high temperature and fire resistant synthetic rubber (resistant to 704 °C open fire for 30 minutes)
**Protective Layer:** stainless steel armor
**Temperature Range:** -29°C~+121°C（-20°F~+250°F）
**Connector:** integral union or integral flange

| 压力等级 PRESSURE LEVEL | 内径 I.D. | 外径 O.D. | 工作压力 W.P. | 试验压力 P.P. | 最小爆破压力 Min. B.P. | 最小弯曲半径 Min.B.R. | 重量 W.T |
|---|---|---|---|---|---|---|---|
| Psi | in | mm | Psi | Psi | Psi | mm | kg/m |
| 5000 | 2 | 89 | 5000 | 7500 | 11250 | 1000 | 9.5 |
| | 3 | 115 | 5000 | 7500 | 11250 | 1200 | 14.8 |
| | 3 1/2 | 133 | 5000 | 7500 | 11250 | 1400 | 20 |
| | 4 | 147 | 5000 | 7500 | 11250 | 1600 | 30 |
| 10000 | 2 | 96 | 10000 | 15000 | 22500 | 1200 | 15 |
| | 2 1/2 | 126 | 10000 | 15000 | 22500 | 1600 | 25 |
| | 3 | 140 | 10000 | 15000 | 22500 | 1600 | 33 |
| | 4 | 167 | 10000 | 15000 | 22500 | 1800 | 52 |
| 15000 | 2 | 101 | 15000 | 22500 | 33750 | 1400 | 21 |
| | 3 | 141 | 15000 | 22500 | 33750 | 1600 | 33 |
| | 4 | 171 | 15000 | 22500 | 33750 | 2000 | 56 |

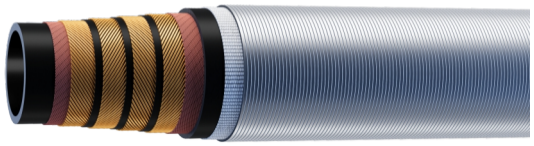
# LT 303 | API Spec. 16D | Lloyds

# BOP 井控软管

BOP CONTROL HOSE

**应用范围：**在井控系统中用于远程控制防喷器开合。

**软管结构**
**内胶层：** NBR
**内管类型：** 等通径
**增强层：** 4层缠绕的高强超柔钢丝
**外胶层：** 耐高温、耐火合成橡胶
**外保护层：** 不锈钢铠装
**温度范围：** -40°C~+100°C（-40°F~+212°F）
耐火符合API Spec. 16D, 704°C×5分钟耐火测试无泄漏。



**Application:** Hydraulic control line for remotely control the blowout preventer (BOP) at high pressure.

**Hose Construction**
**Inner Tube:** NBR
**Bore Type:** full bore
**Reinforcement:** 4 plies of spiraled high tensile super flexible steel wire
**Outer Layer:** high temperature and fire resistant synthetic rubber
**Protective Layer:** stainless steel armor
**Temperature Range:** -40°C~+100°C（-40°F~+212°F）
Fire resistance meets API Spec. 16D, 704°C×5min

| 软管内径<br>I.D. | 工作压力<br>W.P. | 试验压力<br>P.P. | 最小爆破压力<br>Min.B.P. | 最小弯曲半径<br>Min.B.R. | 重量<br>W.T |
|---|---|---|---|---|---|
| in | Psi | Psi | Psi | mm | kg/m |
| 1/2 | 5000 | 7500 | 15000 | 300 | 1.9 |
| 3/4 | 5000 | 7500 | 15000 | 400 | 2.7 |
| 1 | 5000 | 7500 | 15000 | 500 | 3.6 |
| 1 1/2 | 5000 | 7500 | 15000 | 700 | 5.3 |
| 2 | 5000 | 7500 | 15000 | 800 | 7.2 |

# LT 304

## 多功能原油输送软管

MULTI - PURPOSE CRUDE OIL HOSE

**应用范围：**适用于输送燃油、原油、汽油等石油产品，高分子复合材料内附层使该软管具有强大的耐腐蚀、高润滑等特性，其极佳的化学稳定性使其不与石油产品中的化学物质发生反应，保证流体介质安全高效的运输。




**软管结构**
**内胶层：** 高分子复合材料
**增强层：** 多层帘子布缠绕及高灵活度螺旋钢丝
**外胶层：** 合成橡胶
**温度范围：** -40°C~+180°C（-40°F~+356°F）；
**压力与尺寸均可定制**

**Application:** The hose is suitable for delivering petroleum products such as fuel oil, crude oil, gasoline, etc. The hose inner layer is made of polymer composites, which makes the hose with strong corrosion resistance and high lubrication characteristics. Its excellent chemical stability prevents it from reacting with chemical substances in petroleum products, ensuring safe and efficient transportation of the medium.

**Hose Construction**
**Inner Tube:** polymer composites
**Reinforcement:** multi-spiraled high tensile texile cords and highly flexible steel helix wire
**Outer Layer:** sythentic rubber
**Temperature Range:** -40°C~+180°C（-40°F~+356°F）；
**The hose pressure and inner diameter can be customized based on the requirements**

| 软管内径 I.D. | | 工作压力 W.P. | 安全系数 Safety Factor |
|---|---|---|---|
| in | mm | MPa | |
| 2 | 51 | 2~35 | 2.5倍 |
| 2 1/2 | 63 | 2~35 | 2.5倍 |
| 3 | 76 | 2~35 | 2.5倍 |
| 3 1/2 | 90 | 2~35 | 2.5倍 |
| 4 | 102 | 2~35 | 2.5倍 |
| 5 | 127 | 2~35 | 2.5倍 |
| 6 | 152 | 2~35 | 2.5倍 |

# LT 1202L

## UPE低压多功能软管

UPE LOW PRESSURE MULTIPURPOSE HOSE

**应用范围:**此产品广泛应用于化工、钢铁、建筑、食品、医药等领域,其具有超耐磨、耐腐蚀的产品特性与高饱和度内衬层,几乎不与任何物质(油脂、腐蚀性化学物等)起反应,绝对中性的气味也决定着其适用于食品饮料及医药行业。

**Application:** widely apply to industries like chemical, iron and steel smelting, construction, F&B, and medication etc. It is rarely reacting with any substance (oil, fats, corrosion chemicals etc.) because of its highly saturation materials. Its neutral taste and odor illustrates that it is safe to use in the F&B and medication industries.




**软管结构**

**内胶层:**UPE及EPDM合成橡胶

**增强层:**高张力合成纤维缠绕及高灵活度螺旋钢丝缠绕

**外胶层:**黑色或蓝色EPDM合成橡胶(可外覆UPE耐磨层)

**温度范围:**-30°C～82°C(-22°F~180°F)

**压力与尺寸均可定制**

**Hose Construction**

**Inner Tube:** UPE and EPDM synthetic rubber

**Reinforcement:** multi-spiraled high tensile synthetic fibers and highly flexible steel helix wire

**Outer Layer:** black or blue EPDM synthetic rubber (UPE layer is available)

**Temperature Range:** -30°C~82°C (-22°F~180°F)

**The hose pressure and inner diameter can be customized based on the requirements**

| 软管内径 I.D | | 软管外径 O.D | | 工作压力 W.P | 最小爆破压力 Min.B.P | 最小弯曲半径 Min.B.R | 参考重量 W.T |
|---|---|---|---|---|---|---|---|
| in | mm | in | mm | psi | psi | mm | kg/m |
| 1/2 | 13 | 0.89 | 22.5 | 290 | 870 | 130 | 0.34 |
| 5/8 | 16 | 1.04 | 26.5 | 290 | 870 | 150 | 0.44 |
| 3/4 | 19 | 1.17 | 29.7 | 290 | 870 | 180 | 0.52 |
| 1 | 25 | 1.39 | 35.2 | 290 | 870 | 205 | 0.52 |
| 1-1/4 | 32 | 1.77 | 45 | 290 | 870 | 250 | 0.95 |
| 1-1/2 | 38 | 2.04 | 52 | 290 | 870 | 300 | 1.2 |
| 2 | 51 | 2.64 | 67 | 300 | 750 | 400 | 1.65 |
| 3 | 76 | 3.82 | 97 | 300 | 750 | 570 | 2.75 |
| 4 | 102 | 4.84 | 123 | 300 | 750 | 750 | 4.65 |

# 橡塑密封件

RUBBER & PLASTIC SEALS



**产品信息:**

**材质:**NBR/HNBR/EPDM/FKM

**温度范围:**-55°C~+200°C (-67°F~+392°F)

**产品特性:**耐高温、耐腐蚀、耐油，满足食品级密封要求

**应用范围:**适用于密封液压油、腐蚀性溶剂（强酸、强碱等）、蒸汽、水等介质。广泛应用于石油、化工、工程机械、煤矿机械、食品机械、电力设备、冶金设备、制冷设备、工程盾构等行业。

**Product Information:**

**Materials:** NBR/HNBR/EPDM/FKM

**Temperature Range:** -55°C~+200°C (-67°F~+392°F)

**Product Features:** high temperature resistance, corrosion resistance, oil resistance, food grade product

**Application :** Suitable for the sealing of medium like hydraulic oil, corrosive solvent (such as strong acid and strong alkali), steam and water, etc. The products widely apply to petrochemical, construction machinery, coal mining machinery, food machinery, electrical equipment, metallurgical equipment, refrigeration equipment, shields machine and other industries.

# 锤击由壬

HAMMER UNIONS



## Figure 602 Threaded 6000 PSI CWP

对金属密封面特别设计的唇形弹性体密封保护金属，同时减少了线流湍流

Specially Designed Lip Type Elastomer Seal Protects Metal to Metal Sealing Surface and Reduces Line Flow Turbulence

| 部件号 Part Number | 规格（英寸） Size (in.) | 单个重量（公斤） Weight Each (KG) | 标准装箱数量 Standard Carton |
|---|---|---|---|
| HUT602-1 | 1 | 1.70 | 4 |
| HUT602-2 | 2 | 5.85 | 4 |
| HUT602-3 | 3 | 10.34 | 2 |
| HUT602-4 | 4 | 16.80 | 1 |



## Figure 1002 Butt Weld 10,000 PSI CWP

对金属密封面特别设计的唇形弹性体密封保护金属，同时减少了线流湍流

Specially Designed Lip Type Elastomer Seal Protects Metal to Metal Sealing Surface and Reduces Line Flow Turbulence

| 部件号 Part Number | 规格（英寸） Size (in.) | 单个重量（公斤） Weight Each (KG) | 标准装箱数量 Standard Carton |
|---|---|---|---|
| HUW1002-2 | 2 | 6.33 | 4 |
| HUW1002-3 | 3 | 11.70 | 2 |
| HUW1002-4 | 4 | 17.01 | 1 |



## Figure 602 Butt Weld 6000 PSI CWP

对金属密封面特别设计的唇形弹性体密封保护金属，同时减少了线流湍流

Specially Designed Lip Type Elastomer Seal Protects Metal to Metal Sealing Surface and Reduces Line Flow Turbulence

| 部件号 Part Number | 规格（英寸） Size (in.) | 单个重量（公斤） Weight Each (KG) | 标准装箱数量 Standard Carton |
|---|---|---|---|
| HUW602-2 | 2 | 6.28 | 4 |
| HUW602-3 | 3 | 11.93 | 2 |
| HUW602-4 | 4 | 17.19 | 1 |



## Figure 1502 Butt Weld 15,000 PSI CWP

对金属密封面特别设计的唇形弹性体密封保护金属，同时减少了线流湍流

Specially Designed Lip Type Elastomer Seal Protects Metal to Metal Sealing Surface and Reduces Line Flow Turbulence

| 部件号 Part Number | 规格（英寸） Size (in.) | 单个重量（公斤） Weight Each (KG) | 标准装箱数量 Standard Carton |
|---|---|---|---|
| HUW1502-2 | 2 | 9.07 | 2 |
| HUW1502-3 | 3 | 13.20 | 2 |
| HUW1502-4 | 4 | 35.63 | 1 |

# LT301F超耐磨酸化压裂软管应用案例

LT301F SUPER ABRASION RESISTANT FRAC HOSE CASE STUDYS

➤ 塔里木油田钻探项目高效、低更换率的钻井解决方案：

*Letone Effective-Drilling solution on a project in Tarim Oilfield in Xinjiang, China.*






➤ 美国休斯顿压裂项目柔性压裂解决方案：

*Letone Flex-Frac solution on a project in Houston, USA.*





➤ 吐哈油田压裂项目柔性压裂解决方案：

*Letone Flex-Frac solution on a project in Tuha oilfield in Xinjiang, China.*





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电话：0395-2610009
传真：0395-2610007
网址：www.letone.cn
邮箱：info@letone.cn
地址：国家·漯河经济技术开发区东方红路88号

Tel: 0395-2610006
Fax: 0395-2610007
Web: www.letone.cn
E-mail: info@letone.cn
ADD：No.88 Dongfanghong Road, Economic and Technological Development Area, Luohe, Henan Province, P.R.China



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