

PETROLEUM DRILLING HOSE





LETONE PROFILE

Established in 2003, Letone Technology has been focusing on the **fluid sector** (hydraulic hoses, oil drilling hoses, rubber and plastic composite industrial hoses, ultra-high pressure thermoplastic hoses, fittings, hose assemblies, etc.), the **ultra-high pressure equipment and services sector** (ultra-high pressure HPP food sterilization equipment and application services, municipal engineering equipment, municipal pipeline services, etc.), and the **polymer materials sector** (material blending, material modification, special rubber and plastic products, etc.). As a national high-tech enterprise, Letone Technology has been dedicated to offer efficient fluid transfer solutions, nuclear power pipeline solutions, shale oil and gas frac solutions, ultra-high pressure water jetting solutions, hydrogen fueling system solutions, smart pipeline network solutions, ultra-high pressure food sterilization solutions and high-performance polymer material blends solutions to the clients...

Letone Technology has consistently ranked among the top in the domestic industry in various operational indicators, and has grown into a well-known enterprise with dozens of prestigious titles such as "National Level Specialized, Refined, Distinctive, and New 'Little Giant' Enterprise", "National Green Enterprise", "Excellent Private Enterprise in Henan Province", and "Top Ten Rubber Hose Enterprises in China". On 15 Nov. 2021, Letone Technology (Stock Code: 832225) became the first batch of listed companies on the Beijing Stock Exchange, entering a new stage of development.

Letone Technology focuses closely on the innovative application industry chain of ultra-high pressure fluid, extending, supplementing, and strengthening the chain, pooling efforts for high-quality development and accelerating the transformation of kinetic energy. The fluid sector mainly includes "tight bend radius, high pressure, long service life, multipurpose" rubber hoses and hose assemblies; "wear-resistant, corrosion-resistant, anti-aging, large bore" rubber-plastic composite hoses; ultra-high pressure, full-flow petroleum drilling and frac hoses; efficient and safe ultra-high pressure thermoplastic hoses; "zero leakage and easy assembly" fluid connectors and hose assemblies; the ultra-high pressure equipment and services segment includes green and safe ultra-high pressure food sterilization equipment and sterilization application services; municipal pipeline dredging equipment and safe, efficient municipal pipeline dredging, blockage removal, and demolition engineering services based on ultra-high pressure water cutting technology; the polymer materials segment includes multi-category, high-performance mixed rubber, modified materials for nylon recycling, rubber-plastic blends, special mixed rubber, and rubber-plastic products. LETONE products are widely used in engineering machinery, agricultural machinery, oil drilling, construction, industrial cleaning, steel, chemical industry, energy, nuclear power, mining development, rail transportation, shipbuilding, medicine, green food, municipal engineering, and other fields.

Letone Technology owns a national-level laboratory certified by CNAS and has established the "One Academy, Four Branches" ultra-high pressure fluid innovation Academy, consisting of the Luohe Fluid Research Institute, the Luohe Ultra-High Pressure Equipment Application Research Institute, the Zhengzhou Ultra-High Pressure Equipment Research Institute, and the Qingdao Polymer Materials Research Institute. It has collaborated with the Central Plains Food Laboratory to build a public research and development platform, nurturing and strengthening the ultra-high pressure fluid industry. Letone Technology has passed quality management systems such as GB/T 19001-2016/ISO 9001:2015, GJB 9001C-2017, API Q1, IATF 16949:2016, etc. Letone Technology also holds the environment management system international certification issued by IMS (comply with ISO14001:2015 standard), occupational health and safety management system(compliant with GB/T 45001-2020/ISO 45001:2018), etc. Letone Technology has obtained the Safety Certificate of Approval for Mining Products(MA·KA), Certificate of MSHA, API Type Approval(7K, 16C, 17K), ABS Type Approval, DNV Type Approval, GOST Certificate, Lloyd's Fire Test Certificate, etc.

Since its establishment, Letone Technology has always adhered to the core values of "doing things seriously and being honest and trustworthy", and has steadfastly followed the development strategy of "Original Leading. Altruistic Synergy". It takes on the responsibility of building four LETONEs (green, innovative, digital, and happy LETONE), leading the industry's high-quality development with new technologies, new equipment, and new materials innovations, and becoming a high-quality value creator and a warm happiness builder. LETONE aims to bring happiness to billions of people through fluid technology!









Industrial Hose Workshop



Industrial Hose Production Line



Industrial Hose Production Line







VP Steel Wire Spiral Production Line







Assembly Process









Pressure Test for Industrial Hose Assemblies





Impulse Test Fire Test







Physical Performance Laboratory





QUALIFICATION &

CERTIFICATE



























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 H2S 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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ROTARY DRILLING AND VIBRATOR HOSE

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



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.

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





SUPER ABRASION RESISTANT FRAC HOSE

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



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.

Size	I.D.	O.D.	W.P.	T.P.	Min	.B.R.	W	'.T	Vol	ume	Connector W.T		Connection Type
inch	mm	mm	Psi	Psi	m	ft	kg/m	lb/ft	bbl/min	m ³ /min	kg	lb/set	Connection Type
2"	32	81	15000	22500	1.2	3.94	11.5	7.7	4.5	0.72	25	55	2" FIG 1502 Hammer Union or 2 1/16"15K API flange
2"	44	95	15000	22500	1.4	4.59	18	12	9	1.46	45	99	
	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	3" FIG 1502 Hammer Union or
2.5	64	126	15000	22500	1.5	4.92	27	18	18.5	2.90	75	165	31/16″15K API flange"
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" FIG 1502 Hammer Union or
	102	179	15000	22500	2.0	6.56	60	40	47	7.47	154	340	41/16″15K API flange
5"	120	208	15000	22500	2.1	6.89	80	54	65	10.34	402	886	51/8″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	71/10/15// ADI (1-1-1-1
6"	152	255	15000	22500	2.3	7.54	125	84	104.5	16.62	703	1550	7 1/16″15K API flange
2"	51	112	20000	30000	1.5	4.92	26	17	12	1.91	78	172	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"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	3"FIG 2002 Hammer Union or 3 1/16"20K API flange
4"	102	202	20000	30000	2.1	6.89	94	63	47	7.47	400	882	4 1/16" 20K API flange

Remark: According to the customer's requriements, the l.D. of all the above sizes of hose assemblies can be made into full bore l.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.





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HIGH PRESSURE CEMENTING HOSE

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)

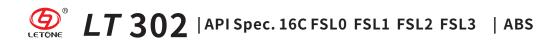
Connector: integral union or integral flange

Application: Flexible connection in the manifold for delivering water-based and oil-based cement slurries under

high pressure.

PRESSURE LEVEL Psi	I.D.	O.D. mm	W.P. Psi	T.P. Psi	Min.B.P. Psi	Min.B.R. mm	W.T kg/m
	2	83	10000	15000	22500	1000	10.8
	2 1/2	98	10000	15000	22500	1000	19.4
10000	3	129	10000	15000	22500	1400	28
10000	3 1/2	137	10000	15000	22500	1400	33
	4	154	10000	15000	22500	1600	38.5
	5	154	10000	15000	22500	1800	kg/m 10.8 19.4 28 33
15000	2	101	15000	22500	33750	1200	20.5
	3	125	15000	22500	33750	1500	36
2000	2	106	20000	30000	45000	1500	24
20000	3	142	20000	30000	45000	1700	44





FLEXIBLE CHOKE AND KILL LINE

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: $-29^{\circ}C^{+}+121^{\circ}C(-20^{\circ}F^{+}+250^{\circ}F)$

Connector: integral union or integral flange

Application: Flexible connection in the chock and kill manifolds for the delivery of oil-gas mixture that containing hydrogen sulfide (H₂S) and other dangerous gases and various water-based, oil-based and foam killing fluids under high pressure.

PRESSURE LEVEL	I.D.	O.D.	W.P.	T.P.	Min. B.P.	Min.B.R.	W.T
Psi	inch	mm	Psi	Psi	Psi	mm	kg/m
	2	89	5000	7500	11250	1000	9.5
5000	3	115	5000	7500	11250	1200	14.8
3000	3 1/2	133	5000	7500	11250	1400	20
	4	147	5000	7500	11250	1600	30
	2	96	10000	15000	22500	1200	15
10000	2 1/2	126	10000	15000	22500	1600	25
10000	3	140	10000	15000	22500	1600	33
	4	167	10000	15000	22500	1800	52
	2	101	15000	22500	33750	1400	21
15000	3	141	15000	22500	33750	1600	33
	4	171	15000	22500	33750	2000	56







BOP CONTROL HOSE

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

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

I.D.	W.P.	T.P.	Min.B.P.	Min.B.R.	W.T
inch	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







MULTI - PURPOSE CRUDE OIL HOSE

Hose Construction

Inner Tube: polymer composites

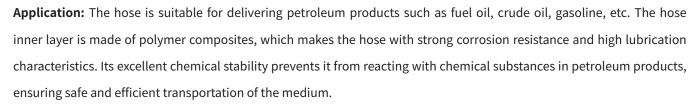
Reinforcement: multi-spiraled high tensile texile cords and highly

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

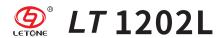


1.1).	W.P.	Safety Factor
inch	mm	МРа	,
2	51	2~35	2.5times
2 1/2	63	2~35	2.5times
3	76	2~35	2.5times
3 1/2	90	2~35	2.5times
4	102	2~35	2.5times
5	127	2~35	2.5times
6	152	2~35	2.5times



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UPE LOW PRESSURE MULTIPURPOSE HOSE

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



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.

1.	I.D O.D		W.P	Min.B.P	Min.B.R	W.T	
inch	mm	inch	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



RUBBER & PLASTIC SEALS

Product Information:

Materials: NBR/HNBR/EPDM/FKM

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

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,

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

shields machine and other industries.

HAMMER UNIONS



Figure 602 Threaded 6000 PSI CWP

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

Part Number	Size (in.)	Weight Each (KG)	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

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

Part Number	Size (in.)	Weight Each (KG)	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

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

Part Number	Size (in.)	Weight Each (KG)	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

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

Part Number	Size (in.)	Weight Each (KG)	Standard Carton
HUW1502-2	2	9.07	2
HUW1502-3	3	13.20	2
HUW1502-4	4	35.63	1





LT301F SUPER ABRASION RESISTANT FRAC HOSE CASE STUDYS

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













TO BECOME A HIGH-QUALITY VALUE CREATOR AND A WARM HAPPINESS BUILDER



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