

COSL Completion Tools

Screen Series

COSL

中海油田服务股份有限公司
China Oilfield Services Limited



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Completion Tools | Screen Series
完井工具 | 筛管系列



简介

完井工具制造中心是中海油服旗下从事完井工具和防砂筛管的研发、制造、检测和试验、维保、现场服务等业务的专业公司。

中心位于天津市滨海新区塘沽海洋高新区，占地30000平方米。我们已经成功通过API Spec Q1、ISO 9001质量管理体系认证和API Spec 11D1、API Spec 5CT、API Spec 14A产品认证。

目前，中心的主要产品有两大类：一大类是完井工具，

另一大类是防砂筛管。完井工具类产品包括生产管柱用相关工具和防砂管柱用相关工具，如井下安全阀、过电缆封隔器、桥塞、滑套等。防砂筛管类产品包括绕丝筛管、金属网布筛管（CMS）、双重介质绕丝筛管（CDWS）、冲缝筛管和割缝筛管等。这些产品已经在渤海、南中国海、东南亚、中东、北非、西非、北美和墨西哥湾等地成功应用，并赢得用户的良好评价。除了提供完井相关产品，我们还能提供成套完井和防砂管柱的设计、制造和现场服务。

Introduction

Completion-tool Manufacturing Center is a professional

company of Production Optimization Division, COSL. The center engages in the research and development, manufacturing, inspection, and testing of completion tools and sand control screen.

The center locates in Tanggu Marine Hi-Tech Development Area, Binhai New Area, Tianjin City. The center has successfully passed the certification of API Spec Q1, ISO 9001 quality management system and API Spec 11D1, API Spec 5CT, API Spec 14A.

The center provides two types of products: completion tools and sand control screen. Completion tools include

production string tools and sand control string tools, such as: ESP packer, subsurface safety valve, bridge plug, sliding sleeve,etc. Sand control screen includes wire-wrap screen, metal mesh screen, dual-filter wire-wrap screen, punched screen, slotted liner. These products were wildly employed by both onshore and offshore oilfield in South China Sea, Bohai Bay, South-east Asia, Middle-east, North Africa, West Africa, North America and Mexico Gulf. We won lots of good comments from clients. We can provide string design, manufacturing and field service depending on special requirement also.



质量控制 Quality Control

1. 原材料及工序检测 | Material and Processing Inspection



通径检验
Drafting



绕丝筛套单点焊接强度检测
Single welding point strength test of WWS jacket



金属网布过滤精度检测
Filtration rating test of metal woven cloth

质量管理体系证书



2. 成品型式试验 | Type Approval Test



拉伸试验
Tensile test



扭转试验
Torque test



抗外/内压试验
Collapse/burst test

3. 焊接质量检测 | NDE for Welding



着色渗透探伤
Dye penetration examination

我们必须做得更好
ALWAYS DO BETTER

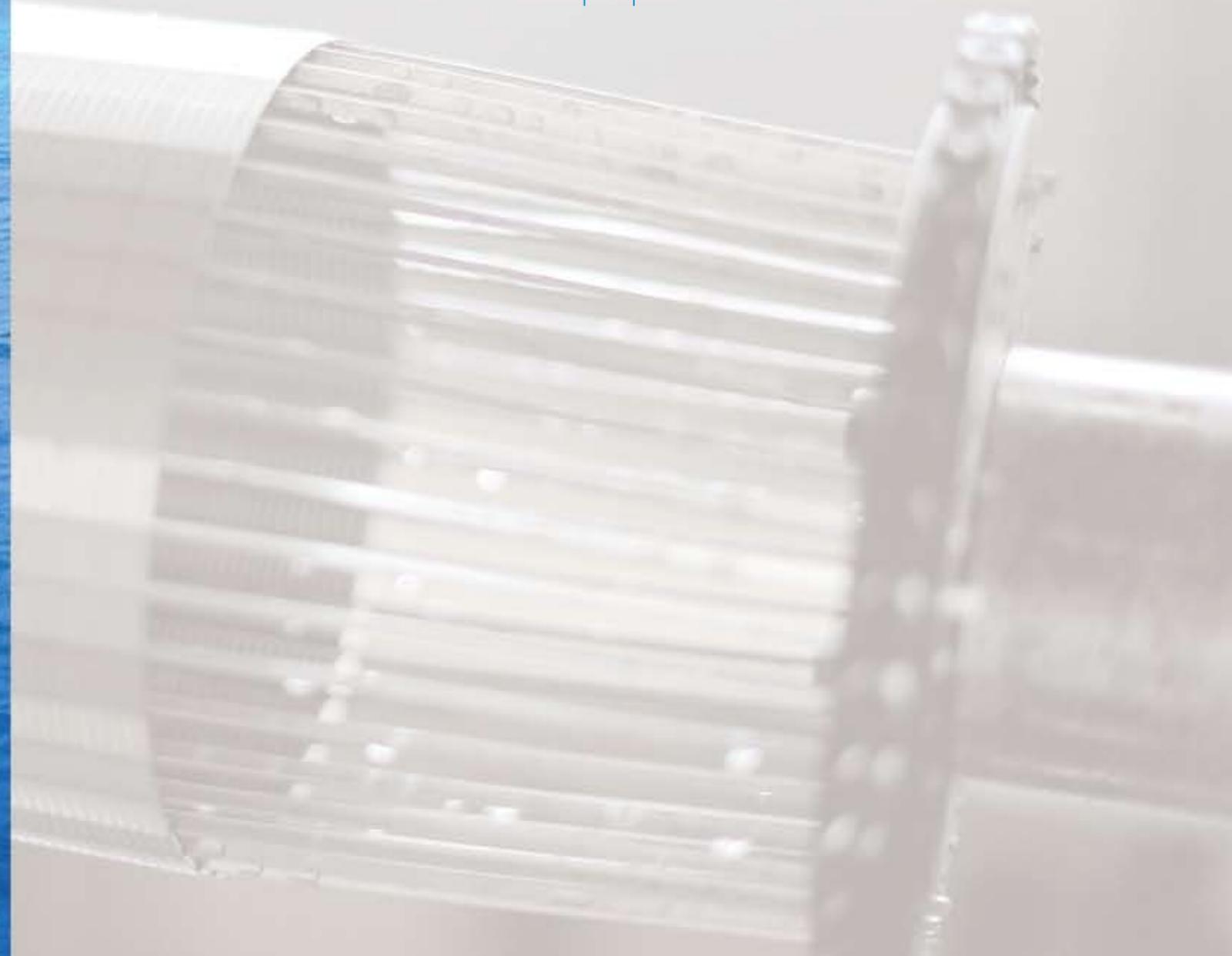


Completion Tools | Screen Series
完井工具 筛管系列

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ALWAYS DO BETTER

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绕丝筛管	08	Wire-Wrapped Screen
冲缝筛管	10	Punched Screen
割缝筛管	12	Slotted Liner



◎ CMS 筛管

CMS筛管是一种卷裹式金属网布筛管，是中海油服的专利产品，其独特的过滤层结构能有效阻挡地层砂并保持筛管自身的过流能力，适用于各种有防砂需求的油气井地层。

技术特点：

- 双层316L不锈钢金属丝编织网过滤结构，防砂可靠性高，抗破坏能力强；
- 在双层过滤网间设置有支撑泻流网，有效改善流体的流动特性；
- 渗透率大，孔隙度高，有效过流面积大，挡砂精度高；
- 耐酸碱腐蚀、耐高温、抗冲蚀，寿命长；
- 结构紧凑，强度高，便于在长距离水平井段中下入；
- 施工简单、操作方便，有利于降低施工费用、提高施工成功率；
- 抗变形能力强，直径方向变形40%后，防砂性能仍然完好；
- 可提供 $60\mu\text{m}$ ~ $350\mu\text{m}$ 精度范围的产品。

适用条件：

- $D_{10}/D_{95} \leq 10$ 、 $D_{40}/D_{90} \leq 5$ 且 $44\mu\text{m}$ 以下砂粒含量 $\leq 5\%$ 的油气藏；
- 常规套管完井，尤其适用于裸眼完井，也可用于砾石充填和压裂充填防砂作业；
- 对高产油气井，水源井和注水井；
- 高温高压井和腐蚀性油气井；
- 热采完井和大修再完井。



规格¹：

基管		内径 (mm)	最大外径 (mm)	筛管重量 (±2kg/m)	有效过流面积 ¹ (cm ² /m)	最低抗外压差 ² (MPa)	最低抗内压差 ² (MPa)	最低抗拉伸载荷 ³ (kN)
规格 (in)	重量 (lb/ft)							
2-3/8	4.6	50.6	80	11.5	330	36.5	22.2	371.1
2-7/8	6.4	62.0	94	14.5	391	36.5	18.9	516.1
3-1/2	9.2	76.0	111	20	467	36.5	16.0	737.7
4	9.5	90.1	124	21.3	528	36.5	14.2	763
4-1/2	11.6	101.6	136	24.5	584	36.5	12.9	950.3
	12.6	100.5		26				1025.1
5	15	112.0	149	30	646	36.5	11.7	1245.8
5-1/2	17	124.3	162	34	707	36.5	10.7	1413.1
6-5/8	24	150.4	192	45	839	36.5	9.1	1975.4
7	26	159.4	202	50	886	36.5	8.6	2149.8

注：

- 1、依据不同精度，CMS筛管的有效开口率范围为10%~30%，此处以精度 $120\mu\text{m}$ 、15%开口率计算；
- 2、工况条件下推荐使用压差可在此数据基础上乘以安全系数0.6；
- 3、此处列出了数据为N80钢级基管本体(不含螺纹)的参数；
- 4、可依据客户要求提供其他规格的产品。

◎ CMS Screen

CMS is one type of shrouded metal mesh screen. It is a patent product of COSL. The unique structure jacket can hold sand and maintain good flow-throng capability. CMS can be employed in most reservoirs where sand control device is preferred.

Key Features

- Two layers 316L stainless steel filter media, high reliability and good anti-damaging performance.
- Drainage layer between the filter media layers improves the flow properties.
- High permeability and porosity, large open area.
- Easy to run in the long horizontal wells.
- Anti-acid and alkaline, anti-high temperature, long service life.
- Simple construction, easy for operation, benefits to lower the completion costs, and increase the rate of success in installation.
- Remaining sand control performance even the radial deformation up to 40%.
- Aperture size of CMS screen usually ranges from $60\mu\text{m}$ to $350\mu\text{m}$.

Applications

- Reservoir with $D_{10}/D_{95} \leq 10$ & $D_{40}/D_{90} \leq 5$ & $\text{sub}4\mu\text{m} \leq 5\%$;
- Stand alone, open hole especially, gravel pack and frac pack application also;
- High production rate well with electric submerged pump; water producer;
- High temperature high pressure well and corrosive well;
- Overhaul completion and thermal stimulation wells;

Specifications¹

Base pipe		ID (mm)	Max. OD (mm)	Liner density (±2kg/m)	Effective open area ¹ (cm ² /m)	Min. collapse pressure ² (MPa)	Min. burst pressure ² (MPa)	Min. tensile strength ³ (kN)
Size (in)	Weight (lb/ft)							
2-3/8	4.6	50.6	80	11.5	330	36.5	22.2	371.1
2-7/8	6.4	62.0	94	14.5	391	36.5	18.9	516.1
3-1/2	9.2	76.0	111	20	467	36.5	16.0	737.7
4	9.5	90.1	124	21.3	528	36.5	14.2	763
4-1/2	11.6	101.6	136	24.5	584	36.5	12.9	950.3
	12.6	100.5		26				1025.1
5	15	112.0	149	30	646	36.5	11.7	1245.8
5-1/2	17	124.3	162	34	707	36.5	10.7	1413.1
6-5/8	24	150.4	192	45	839	36.5	9.1	1975.4
7	26	159.4	202	50	886	36.5	8.6	2149.8

Notes

1. The effective open ratio range:10%~30%, which depends on the aperture size of filter media. The example is data of $120\mu\text{m}$ filter media with open ratio of 15%.
2. The recommended value can be obtained by multiplying by a engineering safety factor 0.6.
3. Screen body only (N80 grade); excluding threaded connections.
4. Other specification products are available.

◎ CMS-Slim 筛管

CMS-Slim筛管属于CMS筛管系列产品，CMS-Slim通过采用加强型过滤材料保证防砂的有效性的同时减小了筛管外径尺寸，适用于对筛管外径有限制要求的油气井。

技术特点：

- 单层加强型316L不锈钢金属丝编织网过滤结构，防砂可靠性高，抗破坏能力强；
- 外径小，强度高，便于在长距离水平井段中下入；
- 渗透率大，孔隙度高，有效过流面积大，挡砂精度高；
- 耐酸碱腐蚀、耐高温、抗冲蚀，寿命长；
- 施工简单、操作方便，有利于降低施工费用、提高施工成功率；
- 抗变形能力强，直径方向变形40%后，防砂性能仍然完好；
- 可提供60μm~350μm精度范围的产品。

适用范围：

- D10/D95≤10、D40/D90≤5且44μm以下砂粒含量≤5%的油气藏；
- 对筛管外径尺寸有特殊要求的井；
- 常规套管完井，尤其适用于裸眼完井，也可用于砾石充填防砂作业；
- 对高产油气井，水源井和注水井；
- 高温高压井和腐蚀性油气井；
- 热采完井和大修再完井。

规格：

基管		内径 (mm)	最大外径 (mm)	筛管重量 (±2kg/m)	有效过 流面积 ¹ (cm ² /m)	最低抗 外压差 ² (MPa)	最低抗 内压差 ² (MPa)	最低抗拉 伸载荷 ³ (kN)
规格 (in)	重量 (lb/ft)							
2-3/8	4.6	50.6	75	10.5	330	28	22.2	371.1
2-7/8	6.4	62.0	88	13	391	28	18.9	516.1
3-1/2	9.2	76.0	105	18	467	28	16.0	737.7
4	9.5	90.1	118	19	528	28	14.2	763
4-1/2	11.6	101.6	130	22	584	28	12.9	950.3
	12.6	100.5		24				1025.1
5	15	112.0	142	27	646	28	11.7	1245.8
5-1/2	17	124.3	156	31	707	28	10.7	1413.1
6-5/8	24	150.4	187	42	839	28	9.1	1975.4
7	26	159.4	196	46	886	28	8.6	2149.8

注：

- 1、依据不同精度，CMS-Slim筛管的有效开口率范围为10%~30%，此处以精度120μm、15%开口率计算；
- 2、工况条件下推荐使用压差可在此数据基础上乘以安全系数0.6；
- 3、此处列出了数据为N80钢级基管本体(不含螺纹)的参数；
- 4、可依据客户要求提供其他规格的产品。



◎ CMS-Slim Screen

CMS-Slim is one type of shrouded metal mesh screen which has smaller OD than CMS by strengthened filter media. CMS-Slim can be employed in wells where restricted ID exist and special OD tool is preferred.

Key Features

- One layer strengthened 316L stainless steel filter media, high reliability and good anti-damaging performance.
- Smaller OD, easy for operation, benefits to lower the completion costs, and increase the rate of success in installation.
- High permeability and porosity, large open area.
- Easy to run in the long horizontal wells.
- Anti-acid and alkaline, anti-high temperature, long service life.
- Remaining sand control performance even the radial deformation up to 40%.
- Aperture size ranges from 60um to 350μm.

Applications

- Reservoir with D10/D95≤10 & D40/D90≤5 & sub 44μm≤5%;
- Wells where special requirements on screen OD
- Stand alone, open hole especially, gravel pack and frac pack application also;
- High production rate well with electric submerged pump; water producer;
- High temperature high pressure well and corrosive well;
- Overhaul completion and thermal stimulation wells;

Specifications

Base pipe		ID (mm)	Max. OD (mm)	Liner density (±2kg/m)	Effective open area ¹ (cm ² /m)	Min. collapse pressure ² (MPa)	Min. burst pressure ² (MPa)	Min. tensile strength ³ (kN)
Size (in)	Weight (lb/ft)							
2-3/8	4.6	50.6	75	10.5	330	28	22.2	371.1
2-7/8	6.4	62.0	88	13	391	28	18.9	516.1
3-1/2	9.2	76.0	105	18	467	28	16.0	737.7
4	9.5	90.1	118	19	528	28	14.2	763
4-1/2	11.6	101.6	130	22	584	28	12.9	950.3
	12.6	100.5		24				1025.1
5	15	112.0	142	27	646	28	11.7	1245.8
5-1/2	17	124.3	156	31	707	28	10.7	1413.1
6-5/8	24	150.4	187	42	839	28	9.1	1975.4
7	26	159.4	196	46	886	28	8.6	2149.8

Notes

1. The effective open ratio range:10%~30%, which depends on the aperture size of filter media. The example is data of 120μm filter media with open ratio of 15%.
2. The recommended value can be obtained by multiplying by a engineering safety factor 0.6.
3. Screen body only (N80 grade); excluding threaded connections.
4. Other specification products are available.

◎ CDWS筛管

CDWS筛管是金属网布筛管和绕丝筛管的结合体，具备双重过滤体系。依据实际应用条件，可将绕丝筛套置于金属网布筛套外侧，亦可将绕丝筛套置于金属网布筛套内侧。CDWS筛管具备优异的防砂性能和耐冲蚀性能，特别适用于热采井、高产井、严重腐蚀等条件苛刻的环境。

技术特点：

- 金属网过滤层和绕丝过滤层提供双重过滤体系，服役寿命长；
- 316L不锈钢金属丝编织网过滤结构，防砂可靠性高，抗破坏能力强；
- 在过滤网间设置有支撑泻流网，有效改善流体的流动特性；
- 渗透率大，孔隙度高，有效过流面积大，挡砂精度高；
- 强度高，耐酸碱腐蚀、耐高温、抗冲蚀；
- 施工简单、操作方便，有利于降低施工费用、提高施工成功率；
- 抗变形能力强，直径方向变形40%后，防砂性能仍然完好；
- 可提供 $60\text{ }\mu\text{m}$ ~ $350\text{ }\mu\text{m}$ 精度范围的产品。



适用范围：

- 筛管简易防砂时，适用于 $D_{10}/D_{95} \leq 10$ 、 $D_{40}/D_{90} \leq 5$ 且 $44\mu\text{m}$ 以下砂粒含量 $\leq 5\%$ 的油气藏；
- 砂石充填防砂时，适用于 $D_{50} < 75\mu\text{m}$ 或 $D_{10}/D_{95} > 10$ 或 $D_{40}/D_{90} > 5$ 或 $44\mu\text{m}$ 以下砂粒含量 $> 5\%$ 的油气藏；
- 套管井或裸眼井，与砾石充填或压裂充填配合时防砂效果更佳；
- 高温高压井、热采井、腐蚀性油气井；
- 其他苛刻条件油气井

规格：

基管		内径 (mm)	最大外径 (mm)	筛管重量 (±2kg/m)	有效过 流面积 ¹ (cm ² /m)	最低抗 外压差 ² (MPa)	最低抗 内压差 ² (MPa)	最低抗拉 伸载荷 ³ (kN)
规格 (in)	重量 (lb/ft)							
2-3/8	4.6	50.6	90	16.5	330	36.5	22.2	371.1
2-7/8	6.4	62.0	103	21	391	36.5	18.9	516.1
3-1/2	9.2	76.0	119	26	467	36.5	16.0	737.7
4	9.5	90.1	132	28	528	36.5	14.2	763
4-1/2	11.6	101.6	144	31.5	584	36.5	12.9	950.3
	12.6	100.5		33				1025.1
5	15	112.0	157	37.5	646	36.5	11.7	1245.8
5-1/2	17	124.3	170	42	707	36.5	10.7	1413.1
6-5/8	24	150.4	198	54	839	36.5	9.1	1975.4
7	26	159.4	208	60	886	36.5	8.6	2149.8

注：

- 1、依据不同精度，CDWS筛管的有效开口率范围为10%~30%，此处以精度 $120\mu\text{m}$ 、15%开口率计算；
- 2、工况条件下推荐使用压差可在此数据基础上乘以安全系数0.6；
- 3、此处列出了数据为N80钢级基管本体(不含螺纹)的参数；
- 4、可依据客户要求提供其他规格的产品。

◎ CDWS Screen

CDWS is an acronym for COSL Dual-filter Wire-wrap Screen. It is a combination of CMS and WWS. The jacket of CDWS consists of wire-wrapped jacket and shrouded metal-mesh jacket. The wire-wrapped jacket may be outside of the shrouded metal-mesh jacket or vice versa, which depends on completion design and producing requirement. CDWS is a special product for thermal stimulation well (steam huff-puff/injection/production well), high rate well, high temperature high pressure well, and other harsh conditions.

Key Features

- Wire-wrapped jacket and shrouded metal-mesh jacket provide double filtration systems, longer service life;
- 316L stainless steel filter media, high reliability and good anti-damaging performance.
- Drainage layer between the filter media layers improves the flow properties.
- High permeability and porosity, large open area.
- Anti-acid and alkaline, anti-high temperature.
- Easy for operation, benefits to lower the construction expense, and increase the rate of success in installation.
- Remaining sand control performance even the radial deformation up to 40%.
- Aperture size ranges from $60\mu\text{m}$ to $350\mu\text{m}$.

Applications

- Stand alone if reservoir with $D_{10}/D_{95} \leq 10$ & $D_{40}/D_{90} \leq 5$ & $44\mu\text{m} \leq 5\%$;
- Coupled with gravel pack/frac pack, if $D_{50} < 75\mu\text{m}$ or $D_{10}/D_{95} > 10$ or $D_{40}/D_{90} > 5$ or $44\mu\text{m} > 5\%$;
- Cased hole or open hole, coupled with gravel pack/frac pack will gain a better performance.
- High temperature high pressure well, thermal stimulation wells and corrosive well;
- Other harsh conditions.

Specifications

Base pipe		ID (mm)	Max. OD (mm)	Liner density (±2kg/m)	Effective open area ¹ (cm ² /m)	Min. collapse pressure ² (MPa)	Min. burst pressure ² (MPa)	Min. tensile strength ³ (kN)
Size (in)	Weight (lb/ft)							
2-3/8	4.6	50.6	90	16.5	330	36.5	22.2	371.1
2-7/8	6.4	62.0	103	21	391	36.5	18.9	516.1
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7	26	159.4	208	60	886	36.5	8.6	2149.8

Notes

1. The effective open ratio range: 10%~30%, which depends on the aperture size of filter media. The example is data of $120\mu\text{m}$ filter media with open ratio of 15%.
2. The recommended value can be obtained by multiplying by a engineering safety factor 0.6.
3. Screen body only (N80 grade); excluding threaded connections.
4. Other specification products are available.

◎ 绕丝筛管

绕丝筛管是一种传统的防砂筛管，主要由不锈钢绕丝筛套和基管组成，广泛应用于油气井的防砂作业。一般与砾石充填工艺配合应用，防砂效果和服役寿命非常好。

技术特点：

- T型自洁缝设计，不易堵塞，易于反洗；
- 耐酸碱腐蚀，寿命长；
- 全焊接结构，强度高；
- 缝隙最小宽度达到0.1mm；
- 开口率高，可达15%以上；
- 防砂应用工艺成熟，适应性好；
- 防砂效果好。

适用范围：

- 厚度大于3m的单一产层和多产层；
- 单独使用时，适用于D10/D95<10、D40/D90<3且44μm以下砂粒含量<2%的油气藏；
- 与砾石充填配合使用时，适用于D50<75μm或D10/D95>10或D40/D90>5或44μm以下砂粒含量>5%的油气藏；
- 对产量要求较高的中低压油气井、水源井；
- 水源井、热采井、稠油井和腐蚀性井适用；

规格：

API基管		筛管内径 (mm)	筛管外径 ¹ (mm)	基管孔眼 直径 (mm)	基孔孔眼 密度 (孔/m)	径条 数目 (条)	筛管重量 (kg/m)	最低抗 拉伸载荷 ² (kN)
规格 (in)	重量 (lb/ft)							
2-3/8	4.6	50.6	78.0	10	160	11.3	371.1	371.1
2-7/8	6.4	62.0	91.0	10	200	14.4	516.1	516.1
3-1/2	9.2	76.0	107.0	10	240	19.0	737.7	737.7
4	9.5	90.1	119.5	10	280	20.3	763	763
4-1/2	11.6	101.6	132.5	10	280	23.6	950.3	950.3
	12.6	100.5					25.1	1025.1
5	15	112.0	145.0	10	320	29.0	1245.8	1245.8
5-1/2	17	124.3	158.0	10	360	32.6	1413.1	1413.1
6-5/8	24	150.4	186.0	10	440	43.6	1975.4	1975.4
7	26	159.4	196.0	10	440	47	2149.8	2149.8

注：

- 1、指绕丝筛套的外径，扶正器片外径需依据所下入套管内径确定；
- 2、N80钢级基管本体(不含螺纹)的参数；
- 3、还可提供抗冲蚀型绕丝筛管产品。



◎ Wire-Wrapped Screen

Wire-Wrapped screen is a traditional sand control screen. Wire-Wrapped jacket and base pipe are main components. It is widely used in both onshore and offshore oil & gas wells. The longevity and sand control performance are very well if combine with gravel pack.

Key Features

- “T” shape slot, never plugging in the slot;
- Anticorrosion, long service life;
- All welded structure ,high mechanical strength;
- Minimum slot opening: 0.004 inch;
- High open ratio, up to 15%;
- Gravel Pack & Frac Pack are mature techniques;
- Good adaptability and sand control performance.

Applications

- Thickness of pay zone lager than 3m, both single layer and multi-layer;
- Stand alone, if D10/D95<10 & D40/D90<3 & sub 44μm<2%;
- Coupled with gravel pack/frac pack, if D50<75μm or D10/D95>10 or D40/D90>5 or sub 44μm>5%;
- High production rate oil &gas well & water source well with middle or low reservoir pressure;
- Thermal production well, heavy oil well and corrosive well;

Specifications

API base pipe		Screen ID (in)	Screen jacket OD (in)	perforation OD (mm)	Perforating density (hole/m)	Rod number (piece)	Screen weight (lb/ft)	Min. tensile strength ² (kib)
Size (in)	Weight (lb/ft)							
2-3/8	4.6	1.995	3.071	10	160	7.8	83.4	83.4
2-7/8	6.4	2.441	3.583	10	200	9.9	116	116
3-1/2	9.2	2.992	4.213	10	240	13.1	165.8	165.8
4	9.5	3.548	4.705	10	280	14.0	171.5	171.5
4-1/2	11.6	4	5.217	10	280	16.3	213.6	213.6
	12.6	3.958					17.3	230.4
5	15.0	4.409	5.709	10	320	20.0	280	280
5-1/2	17	4.894	6.220	10	360	22.5	317.6	317.6
6-5/8	24	5.921	7.323	10	440	30.1	444	444
7	26	6.275	7.717	10	440	32.4	483.2	483.2

Notes

1. jacket OD only. The OD of centralizer fins depends on the outer casing ID.
2. Screen body only (N80 grade); excluding threaded connections.
3. Anti erosion type products are available on request.

◎ 冲缝筛管

冲缝筛管由冲缝筛套和基管组成，具备较好的耐腐蚀能力，外径小，可作为割缝筛管的升级产品广泛应用。

技术特点：

- 筛管强度高，可防止井壁坍塌；
- 筛套外径较接箍外径小，便于下入；
- 缝宽范围：0.15–2.0mm
- 缝隙精度高，缝隙公差为±0.05mm；
- 抗腐蚀能力强，寿命长；
- 开口率：4%~8%；
- 侧向缝隙，抗堵塞能力强。

适用条件：

- 单一油层或压力岩性基本一致的多油层或不分采的多油层，产层长度不限；
- 常规套管完井和裸眼完井；
- 疏松中粗砂地层；
- 对产量要求较高的油井、水源井；
- 适用于热采井、稠油井和腐蚀性井；

规格：

基管		筛管内径 (mm)	筛管外径 (mm)	基管孔眼密度 (孔/m)	基管孔眼直径 (mm)	筛管重量 (kg/m)	最低拉伸载荷 ¹ (kN)
规格 (in)	重量 (lb/ft)						
2-3/8	4.6	50.6	70.3	10	160	8.5	371.1
2-7/8	6.4	62.0	83	10	200	11.5	516.1
3-1/2	9.2	76.0	98.9	10	240	16.1	737.7
4	9.5	90.1	111.6	10	280	16.8	763
4-1/2	11.6	101.6	124.3	10	280	20.4	950.3
	12.6	100.5				21.9	1025.1
5	15	112.0	137	10	320	25.7	1245.8
5-1/2	17	124.3	149.7	10	360	28.9	1413.1
6-5/8	24	150.4	178.3	10	440	40.1	1975.4
7	26	159.4	187.8	10	440	43.3	2149.8



◎ Punched Screen

Punched screen consists of stainless punched jacket and base pipe. Punched screen is an ideal substitute of slotted liner due to better anticorrosion performance and relatively small OD.

Key Features

- Optimized design for perforation on base pipe, high mechanical properties;
- Easy RIH due to relatively small OD. The OD of jacket is no larger than that of coupling.
- Slot width: 0.15–2.0mm
- High precision of slot, tolerance of the slot width is ±0.05mm;
- Good performance of anticorrosion, long service life;
- Open ratio: 4~8%;
- Side slot, good anti-plugging ability.

Applications

- Single pay zone, multi-layer with almost same pressure & lithology, commingled producing multi-layer well; no limitation of thickness of pay zone;
- Cased hole and Open hole completion;
- Loose reservoir with middle & coarse sand;
- Oil & gas well or water source well with middle or low production rate;
- Thermal production well, heavy oil well and corrosive well;

Specifications

Base pipe		Screen ID (in)	Screen jacket OD (in)	Dia. of perforation (mm)	Perforating density (hole/m)	Weight of screen (lb/ft)	Min. tensile strength ¹ (kib)
size (in)	weight (lb/ft)						
2-3/8	4.6	1.995	3.150	10	160	5.7	83.4
2-7/8	6.4	2.441	3.701	10	200	7.7	116
3-1/2	9.2	2.992	4.370	10	240	10.8	165.8
4	9.5	3.548	4.882	10	280	11.3	171.5
4-1/2	11.6	4	5.354	10	280	13.7	213.6
	12.6	3.958				14.7	230.4
5	15	4.408	5.866	10	320	17.3	280
5-1/2	17	4.892	6.378	10	360	19.4	317.6
6-5/8	24	5.921	7.559	10	440	26.9	444
7	26	6.276	7.953	10	440	29.1	483.2

Notes

1. Screen body only (N80 grade); excluding threaded connections.
2. Other specification products are available.

注：

- 1、N80钢级基管本体(不含螺纹)的参数；
- 2、可依据客户要求提供其他规格的产品。

◎ 割缝筛管

割缝筛管是一种传统机械防砂器材。我们是通过高能激光束在油套管上加工出缝隙的。在缝隙宽度一定时，我们通过优化缝隙长度、缝隙密度和分布形式，在保留最低强度要求的条件下使过流面积最大化，进而确保割缝筛管拥有最优的过流能力。

技术特点:

- 管缝同体，便于下井；
- 强度高，允许适当弯曲，适用于各种复杂井况；
- 作为水平井完井管柱起到防砂和支撑水平井眼的作用；
- 价格低廉，施工简单，作业成本低；
- 最小缝隙宽度：0.1mm
- 开口率：1% – 6%；
- 缝隙均匀分布；
- 选用适当管材（如超级13Cr）时具备抗腐蚀能力。

适用条件:

- 单一油层或压力岩性基本一致的多油层或不分采的多油层，产层厚度不大于30m；
- 常规套管完井和裸眼完井；
- 疏松中粗砂地层；
- 对产量要求较低的陆地油气井、水源井；

规格:

API基管		筛管内径 (mm)	筛管外径 (mm)	缝宽 (mm)	缝长 (mm)	最低拉伸载荷 ¹ (kN)
规格 (in)	基管重量 (lb/ft)					
2-3/8	4.6	50.6	60.3	0.1–2.0	80	371.1
2-7/8	6.4	62	73.0	0.1–2.0	80	516.1
3-1/2	9.2	76	88.9	0.1–2.0	80	737.7
4	9.5	90.1	101.6	0.1–2.0	80	763
4-1/2	12.6	100.5	114.3	0.1–2.0	80	1025.1
5	15.0	112.0	127.0	0.1–2.0	80	1245.8
5-1/2	17	124.3	139.7	0.1–2.0	80	1413.1
6-5/8	24	150.4	168.3	0.1–2.0	80	1975.4
7	26	159.4	177.8	0.1–2.0	80	2149.8
7	26	159.4	187.8	354	12.7	43.3



◎ Slotted Liner

Slotted liner is a traditional mechanical sand control device. We cut the slots on the tubing or casing by high energy laser. We optimize the slot length, distribution and slot density to ensure maximum open ratio while maintaining the required strength and slot width.

Key Features:

- Slots and base pipe are integrate, large ID/OD ratio;
- High mechanical strength, high flexibility to allow adequate bending;
- Both supporting well bore and sand control functions;
- Low cost in manufacture and installations;
- Minimum slot width: 0.1mm;
- Open ratio: 1%-6%;
- Optimized slot distribution;
- With corrosion resistance if special pipes (such as super 13Cr) are employed.

Applications:

- Single pay zone, multi-layer with almost same pressure & lithology, commingled producing multi-layer well; thickness of pay zone no larger than 30m;
- Cased hole and open hole completion;
- Loose reservoir with middle & coarse sand;
- Oil & gas well or water source well with low production rate;

Specifications:

API Base pipe		Screen ID (in)	Screen OD (in)	Slot width (in)	Slot length (in)	Min. tensile strength ¹ (klb)
Size (in)	Weight (lb/ft)					
2-3/8	4.6	1.955	2.375	0.004-0.078	3.15	83.4
2-7/8	6.4	2.441	2.875	0.004-0.078	3.15	116
3-1/2	9.2	2.992	3.5	0.004-0.078	3.15	165.8
4	9.5	3.548	4.0	0.004-0.078	3.15	171.5
4-1/2	12.6	3.958	4.5	0.004-0.078	3.15	230.4
5	15.0	4.409	5.0	0.004-0.078	3.15	280
5-1/2	17	4.894	5.5	0.004-0.078	3.15	317.6
6-5/8	24	5.921	6.625	0.004-0.078	3.15	444
7	26	6.275	7.0	0.004-0.078	3.15	483.2
7	26	6.276	7.953	108	1/2	29.1

Notes:

1. N80钢级基管本体(不含螺纹)的参数；
2. 可依据客户要求提供其他规格的产品。