

КАТАЛОГ(ОБОРУДОВАНИЕ АВАРИЙНОГО СБОРА НЕФТИ НА МОРЕ)



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MAIN PRODUCTS

“水面溢油回收及系统装置”包括溢油围控装置、溢油回收装置、溢油储运及过驳装置及其他各种相关的污染处理装置，它可根据不同的工作环境和客户要求来提供不同规格型号的产品，即可以单一用于简单的溢油处理作业，也可以成系统用于大型的溢油应急事故。

水面溢油围控装置



溢油围控装置用于溢油发生时进行的防止溢油扩散的溢油围控作业，主要包括各种围油栏如：固体浮子式橡胶围油栏、固体浮子式PVC围油栏、橡胶充气式围油栏、PVC充气式围油栏、滩岸围油栏、防火围油栏、快流围油栏、栅栏式围油栏、柔性快布放围油栏及具有其它功能工作原理相似的防污屏、防波屏等。

水面溢油回收装置



溢油回收装置主要用于回收溢油，包括各种收油机如：绳式收油机、堰式收油机、转盘式收油机、转盘转刷式收油机、上行带式收油机、刷带式收油机、下行带式（动态斜面式）收油机、自航式收油机、真空式收油机、船用复合式收油机等。

溢油应急储运及过驳装置



溢油应急储运及过驳装置主要用于溢油应急过程中回收油的存储和转移，其中存储装置包括各种快装罐、浮动油囊；过驳装置主要包括弹性转子泵、过驳泵等产品。

环保工作船及浮油回收船



环保工作船及浮油回收船是应对大中型溢油应急事故不可缺少的有力工具，它是完成溢油污染清除的重要保障。主要产品包括：布栏船、多功能浮油回收船、大型环保船和滩涂两栖溢油回收车等设备。

其它相关的溢油污染处理装置



相关溢油污染处理装置作为常规收油装置难以处理时的补充，在污染事故中发挥着重要的作用，主要包括溢油分散剂及喷洒装置、吸油毡、凝油剂、收油网、吸油拖栏以及由吸油材料制作的各种装置。

Oil spill recovery system includes: oil containment device, oil recovery device, oil storage equipment, alongside transfer gear and other types of related pollution treatment equipment. It can be provided with models of different specifications according to different working environment and customer's requirements. It can be used singly for simple oil spill treatment, and it can also be used systematically for large-scale oil spill accidents.

Oil Containment Device



Oil containment device is used for preventing the spread of oil spill when oil spill occurs. It mainly includes various booms such as: solid floatation rubber boom, solid floatation PVC boom, inflatable rubber boom, inflatable PVC boom, beach boom, fire resistant boom, fast water boom, fence boom, flexible fast deployment boom, other silt protector and wave protector that have similar working principle and so on.

Oil Recovery Device



Oil recovery device is mainly used for recovering oil. It includes various skimmers such as: rope mop skimmer, weir skimmer, disk skimmer, disk brush skimmer, up-belt skimmer, belt skimmer, DIP skimmer, self-propelled skimmer, vacuum skimmer and compound skimmer for vessel.

Oil Storage Equipment and Alongside Transfer Gear



Oil storage equipment and alongside transfer gear is mainly used for storage and transference during the course of oil spill emergency. The storage equipment includes various quick loading tank and floating tank. The alongside transfer gear mainly includes: flexible rotary pump, unloading pump and so on.

Environmental Protection Vessel and Oil Recovery Vessel



Environmental protection vessel and oil recovery vessel is a powerful tool to deal with large-sized and medium-sized oil spill incidents, and it is an important guarantee for completion of oil pollution removal. The main products includes: boom deployment boom, multipurpose oil recovery vessel, large environmental protection vessel, shoal oil recovery amphibian and so on.

Other Related Oil Pollution Treatment Devices



Related oil pollution treatment device is used as a complement when the regular oil recovery devices are difficult to handle. It has played an important role in pollution accidents. It mainly includes: oil dispersant and spray device, oil absorbent, oil gelling agent, trawl bag, sorbent boom and various devices made of oil absorber.

滩岸围油栏

设备，用户可根据使用环境进行合理的选购。

Oil containment device include a variety of models and types of booms. It is important equipment to prevent the spread of oil spill, and users can choose according to environment.



固体浮子式PVC围油栏 Solid Flotation PVC Boom



固体浮子式橡胶围油栏 Solid Flotation Rubber Boom



充气式橡胶围油栏 Inflatable Boom



充气式橡胶围油栏 Inflatable Boom



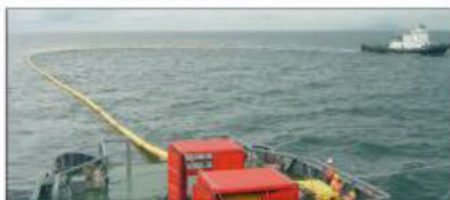
滩岸围油栏 Beach Boom



防火围油栏 Fire Resistant Boom



柔性快布放围油栏 Flexible Fast Deployment Boom



充气式PVC围油栏 Inflatable PVC boom



快流围油栏 Fast Water Boom



栅栏式围油栏 Fence Boom

一般的围油栏在滩岸或陆上既不能站立也不能和岸底或陆地密封，因而不能在这些地方拦阻溢油。滩岸型充气充水式围油栏的底部有两个并列的长管形注水室，上部有一个长管状的气室，因而在水位高时气室可将围油栏浮起，此时可和一般的围油栏一样使用；在水位低时两条注水袋坐在岸底上或陆上，柔软的注水袋在水的重力作用下，与岸底或陆地紧密接触而密封，能阻拦溢油，参看左上图。适于在潮汐区拦截溢油。此种围油栏可单独使用也可和其他围油栏配合使用，通常在近岸水域布放滩岸型围油栏，在深水区域布放一般的围油栏，两者相连构成完整的溢油围控系统。参看左下图。栏体材料有PVC和橡胶二中，前者轻便，后者结实可按作业情况选用。

特点

1. 用橡胶布或双面涂覆PVC涤纶布制成围油栏本体。具有高强度、耐油、耐磨、耐候，使用寿命长等优点。
2. 围油栏节之间用铝合金快速接头连接；该围油栏能和配这种接头的任何围油栏连接。
3. 具有稳定性好、滞油性能力强。
4. 储存体积小、机动性好，易于布放、回收和储存。
5. 围油栏的气室和注水室分别用作附件的充气机和水泵充气或注水。
6. 围油栏在滩岸需定点布设时，可在围油栏的两端或节间，用锚及绳组锚定。
7. 适于在江、河、湖、海的滩岸水域溢油应急使用。



技术规格

型号	WQV750T	WQJ750T	WQV900T	WQJ900T
材料	PVC	橡胶	PVC	橡胶
水上高度 mm	250	250	360	360
吃水 mm	320	320	360	360
抗拉强度 kN	30	40	40	50
重量 kg/m	3.9	6.2	5.6	9
节长 m	12.5/20	12.5/20	12.5/20	12.5/20
有效风速 m/s	10	10	15	15
流速 Knot	1.5	1.5	2	2
作条件波高 m	0.75	0.75	1	1



附属设备

1. 围油栏液动绞盘，用于存储和运输围油栏。
2. 动力站，向围油栏绞盘的液压马达供给液压动力并能操纵卷绕辊正转、反转、停止、制动和变速，完成围油栏的布放和回收作业。
3. 充吸气机和注水水泵在布放时给围油栏气室充排气，和充水。



附属设备可根据使用情况变通选用。

固体浮子式橡胶围油栏

SOLID FLOATATION RUBBER BOOM

固体浮子式PVC围油栏是一种经济通用围油栏,用于拦截水面溢油和其它漂浮物,特别适合在水面上长期布放。可广泛用于水池、湖泊、河流、海港和近海石油平台等水域。



性能特点

1. 受力状态好,整体强度高,使用寿命长。
2. 水中姿态好,稳定,滞油能力强。
3. 柔波性好,布放方便。
4. 易清洗、维修。

结构特征

1. PVC双面涂覆高强度布为栏体材料。
2. 上、中、下各有背绳、加强带和配重链为纵向受力元件,使围油栏在水流中形成水下滞油凹面,并使围油栏柔性段形成水上滞油凹面。
3. 横木型浮子,浮子间有柔性段。
4. 20m一节,节间连接方便。
5. 每节围油栏有锚固座。

Solid floatation PVC boom is an economize and general boom for encircling spill oil and other floaters on water. It is specially suitable for long-term deployment on water and widely used in waters such as pond, lake, river, harbour and off-shore petroleum platform.



PERFORMANCE

1. High strength because of reasonable force distribution on boom. Long service life.
2. Good oil stagnant ability with nice posture and stability in water.
3. Good wave-response. Easy deployment.
4. Easy to clean and maintain.

STRUCTURE

1. Boom's membranes is PVC double-face coated reinforced fabric. A ridge rope at top, reinforced belts at middle and a balance chain at the bottom of boom's sections bear the longitudinal load on boom and form stagnate concaves both at the skirt in water and at the flexible sections above water when boom is in a current.
2. Flexible sections between cross beam like floaters.
3. Conveniently connect sections of boom which are 20m long.
4. Every section has an anchor point.

特点

1. 特种橡胶制成栏体,高强度、耐磨、耐油、耐候。
2. 独特的外形,浮力储备大,外形平整易储运。栏体受力均匀,整体强度高,垂直稳定性好,有多种接头可选用。
3. 外表平滑,利于导引溢油和清洗。
4. 配重增强围油栏强度。围油栏栏体可形成利于滞油的凹形—高速水流中有良好滞油姿态,即“凹形效应”。

可选用特殊材料浮体

1. 耐油浮体:在橡胶栏体破裂,浮体接触油的情况下,不丧失浮力,围油栏仍能稳定漂浮。
2. 高柔性浮体:提高了围油栏的柔波性,围油栏易弯折、卷绕存储。
3. 可选装高科技夜光标记,夜间作业便于识别。

制造

与中国最大的输送带胶管生产厂—国营青岛橡胶六厂合作生产,生产技术一流、装备一流、检测手段完备可靠。

应用

最适合用在江河湖海等水域,作业频繁、环境恶劣、需长期布放围油栏控制防止溢油污染的场所,例如炼油厂、油码头、油库、取水口、浴场、水产养殖区及其它重要敏感性区。也可在溢油应急行动中作为控制溢油的手段。

辅助装置与技术支持

凡与围油栏使用有关的全部辅助装置,均可按用户需要选型或特别设计和制造。有关装置繁多,用户可根据实际情况,向本所咨询并要求有关详细资料以及特别的技术支持。



FEATURE

1. Main body is made of special synthetic rubber with high strength, oil-resistant, whether-resistant and anti-abrasive.
2. Unique configuration of floats have great buoyancy reserve, flatter out-configuration for being easily stored and shipped. There are many kinds of connector.
3. Smooth surface of the boom is convenient to guide spill oil and to be cleaned.
4. Tensile balance chain can strengthen boom and get the "concave effecting". Concaves in skirt, forming in a quick current, give booms a nice oil stagnant posture.

FLOATS OF SPECIAL MATERIAL ARE OPTIONAL

1. Oil-resistant float: The boom is still stable on water when there is a crack in rubber sheet and the floats contact with oil.
2. High-flexible float: It gives boom better wave-riding ability and boom is easily rolled for storage.
3. Optional advanced luminous on boom for indicating the boom at night.

MANUFACTURE

We co-operate with state-owned Qingdao No.6 Rubber Factory, which is the largest rubber hose and transporting belt manufacturer in China with first class technology, equipments and a set of inspecting means, to produce high quality booms.

APPLICATION

It is suitable for permanent deployment, frequent operation and adverse circumstance, such as seaport, oil depot, and oil wharf, aquatic sea bath beach, water platation and other important sensitive sites. It also can be used in an emergency spill-oil action.

AUXILIARIES AND TECHNICAL SUPPORT

All necessary auxiliaries for boom can be selected or specially designed upon users. Because the auxiliaries are of many kind, welcome to contact us for technical information and special technical support.

技术数据

Technical Data

型号 Model	WGJ 550	WGJ 600	WGJ 750	WGJ 900	WGJ 1100	WGJ 1500
水上高 Freeboard (mm)	130	130	260	300	360	500
水下深 Draught (mm)	330	380	390	480	560	750
每节长度 Section's Length (m)	10 / 20	10 / 20	20	20	20	20
抗拉力 Tension Strength (kN)	20	20	30	50	80	120
波高 Wave Height (m)	0.3	0.3	0.5	1	1.5	2
风速 Wind Speed (m/s)	8	8	10	15	20	20
流速 Current Speed (kn)	1	1	1.5	1.5	2	3
节重量 Section's Weight (kg)	51	53	75	130	195	255
每节包装尺寸 Section's Packing Dimension m						
长 Length	1.0	1.0	1.1	1.3	1.6	1.9
宽 Width	0.88	0.88	1.1	1.1	1.5	1.8
高 Height	0.8	0.8	0.85	1.0	1.25	1.5

技术数据

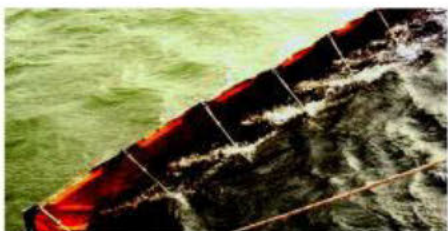
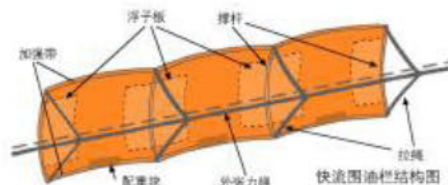
Technical Data

型号 Model	水下高度 Draught mm	每节长度 Boom Section's Length (m)	抗力 Tensile Strength kN	波高 Wave Height m	风速 Wind Speed m/s	流速 Current Kn
WGJ 800	280	390	65	0.75	10	1.5
GWJ 800						
WGJ 900	310	470	80	1.0	15	2.0
GWJ 900						
WGJ 1100	360	560	100	1.5	15	3.0
GWJ 1100						
WGJ 1500	500	750	120	2.0	20	3.0
GWJ 1500						

栅栏式围油栏

Fence Boom

WGVK快流型固体浮子式PVC围油栏是一种带有外张力绳的栅栏式围油栏在高速水流作用下由于外张力绳的牵引作用,围油栏的立姿得以保持,不会像一般围油栏那样在高速水流中发生倒伏现象(参看下图),而且围油栏栏体所受的强大张力被分散而均匀分布,因而可以做得轻便。快流围油栏可以缠绕在绞盘上便于运送和快速投放、回收,储存体积小。特别适合于江河以及海上高流速的水域或作业航速较高的场合应急使用。



结构

WGVK围油栏系统是由围油栏和外张力绳组成,外张力绳上有许多拉绳与围油栏上的撑杆两端相接,参看上图。围油栏由双面涂敷聚氧乙烯的涤纶布制成。两层布间填充泡沫浮板,围油栏有纵向加强带以确保围油栏有足够的抗拉力。

设在围油栏的上半部的浮力板使围油栏获得向上的浮力,设在围油栏底部的配重块使围油栏获得向下的重力,浮力和重力起到展平围油栏并保持垂直的作用,还有设在围油栏全高的撑杆防止围油栏产生竖向弯折,三者作用相结合,使围油栏在外张力绳的牵引下,成为不会倒的“竖墙”,获得了极高的抗水流和风浪的性能。每节围油栏两端的接头可将多节围油栏连接成所需的长度。

规格	WGVK750	WGVK900	WGVK1100
总高度mm	750	900	1100
吃水线上高度mm	250	300	370
吃水深度mm	500	600	730
抗流速Knot	3	3	3
抗拉强度kN	60	80	100
单节长m	20	20	20
重量Kg/m	5.8	6.8	8.0

围油栏绞盘架、动力站和储存架

绞盘架 液压马达通过链轮、链条驱动绞盘能正反向运转、自动刹车和无级变速,慢慢收放围油栏非常方便、安全。

规格	WJK750	WJK900	WJK1100
外形尺寸m	3.4×2.4×2.591	3.9×2.4×2.591	4.6×2.4×2.591
链子的尺寸m	φ2.1×2.7	φ2.1×3.2	φ2.1×3.9
重量kg	1500	1800	2200
链子的最大扭矩Nm	14000	14000	14000
储存围油栏的数量m	200	200	200



配套的柴油动力站的主要技术参数

外形尺寸mm长×宽×高	1400×1000×1343
质量kg	800(带燃油和液压油)
燃油/液压油容量L	50/100
发动机类型	空冷2缸柴油发动机
功率	18-21KW/3000r/min
发动机启动方式	电动和手动



双缸风冷柴油液压动力站

用户可以选择带液压绞盘的集装箱存储围油栏;也可选择人力投放、回收作业,以节省费用。这种方式通常围油栏要放在专用的存储架中备用,以便储存和运输。

栅栏式围油栏具有储存体积小,可以缠绕在绞盘上方便运送和使用,适合在池塘、水库、内湖、河流等水域使用,特别适宜在应急使用。还能港口和码头、沿海水域、河流提供简便方便有效的溢油防护。



性能参数

规格	WGV900Z
总高度 mm	910
吃水线上高度 mm	300
吃水深度 mm	610
重量 Kg/m	6
总体强度 kN	≥165
拖动速度(直线) Knot	10
拖动速度(围油) Knot	1
单节长 m	20

拖头是由拖头体、拖绳、和卸扣组成。拖头把载荷均匀分布在围油栏的整个高度。



特点

- 1、本体为PVC高强度双面涂覆增强塑料布,栏体内有耐油固体泡沫浮子。栏体下端挂有配重块,浮子间形成的柔性段保证了围油栏的可折叠性和乘波性。
- 2、浮子间隔安装有撑片,以保证围油栏的垂直稳定性。
- 3、上、中、下加强带为三个纵向受力元件,保证围油栏可承受极大的纵向拉力,有多个浮子组成的围油栏节间用接头连接。节的一端有固锚座便于布放围油栏时连接锚绳用。

FEATURE

1. The membrane is made from PVC high-intensity double-sided coated reinforced plastic sheeting, and it has oil-resistant solid foam floats. Ballast weight hanging at the bottom of the main body. Spacing between floats form flexible compartment to ensure the boom be collapsible and wave-following.
2. The stays fitted in the intervals between floats make the boom maintain stable vertically.
3. Upper, middle and lower reinforcing bands are the three vertical bands that are subjected to force, and ensure that the boom can withstand a great vertical pull. The boom sections made of many floats are connected by connector. One end of boom section is with anchor bearing to facilitate connecting with the anchor rope when you deploy booms.

柔性快布放围油栏

轻型充气式围油栏是一种经济实用、轻便易操作的围油栏，特别适合于应急情况下使用。



特征

围油栏采用耐油高强度PVC布经过特殊的焊接工艺制成，在水上和水下形成拦油屏障。栏体上部有较长的气室，气室上有气阀，充满气后气室呈圆柱形。气室下的栏体称为裙体，高强度配重链用PVC布包在裙体底部，使围油栏在水中尽量维持垂直状态和一定的水下深度，同时作为纵向拉力元件承受水流和风对围油栏产生的力。两端铰链接头符合国际标准，用于围油栏节之间联结。



性能参数

围油栏型号	WGV1100	WGV1200
总高度 mm	1100	1200
水上高度 mm	3660	400
水下高度 mm	520	590
每节长度 m	50	50
长度方向最低拉力 kN	100	80
适宜充气压力 Pa	4000~6500	4000~6500
围油栏 波高 m	1.5	1.5
有效 流速 Kn	3	3
使用条件 风速 m/s	15	15
围油栏质量 Kg/m	5	7.8

Light inflatable boom is an economical and practical boom which is easy to operate. It is particularly suitable for use in case of emergency.

性能

- 1、强度高、耐油、耐候，使用寿命长。
- 2、乘波性好、稳定性好、滞油能力强。
- 3、储存体积小、机动性好，易于布放、回收和储存。
- 4、采用长气室结构，受力状态好、布放和回收速度快。
- 5、适于在江、河、湖、海的码头、港湾和海上石油平台等水域使用。特别适于应急情况下使用。

PERFORMANCE

1. High strength and high ability to resist oil, galling and weather, and has long life.
2. Good wave-response, good oil-stagnant ability and high stability.
3. Small storage volume, good maneuverability, easy to deploy, recovery and store.
4. Long air chamber structure, a good state of force, fast to deploy and recover.
5. Suitable for water area such as dock, bay and offshore petroleum platform, especially suitable for emergent oil spill response.



FEATURE

The membrane, made of oil-resistant fiber reinforced rubber sheet, forms a barrel above and under water. The air chambers, which are at the upper part of the boom membrane and have valves on them, give buoyancy for boom and are cylindrical when it is full of air. The part below the membrane is named as skirt. High-strength heavy chain is wrapped with PVC cloth at the bottom of the skirt. The chain keeps the boom as vertical as possible, give boom a draught and is a lengthways force-enduring component to bear the load caused by current and wind. The struts, fixed between air chambers by brackets, keep the membrane flat and maintain draught and freeboard. End hinge connectors, made upon international standard, connect boom sections.

围油栏采用了柔性浮子，可缠绕在卷绕架上，既增加了围油栏布放的灵活性，又具有普通固体浮子围油栏的可靠性，布放回收均采用液压力，方便快捷。



性能特征

- 1、采用先进的焊接技术，保证围油栏良好的性能；
- 2、具有优良的耐紫外线，耐自然老化性能，耐油、耐磨，使用寿命长；
- 3、受力状态好，强度高；
- 4、乘波性好、稳定性好、滞油能力强；
- 5、柔性浮体可卷绕储存，不需充气即可布放，机动性好，布放速度快，易于布放、回收、存储；
- 6、特别适用于溢油应急布放。

性能参数

围油栏型号	WGV1500R (海湾型)	WGV1100R (港口型)	WGV900R (港口型)
总高度 mm	1500	1100	900
水上高度 mm	500	360	320
水下高度 mm	750	560	460
每节长度 m	100	100	100
长度方向最低拉力 kN	200	100	80
围油栏 波高 m	2	1.5	1
有效 流速 Kn	3	3	2
使用条件 风速 m/s	20	15	15
围油栏质量 Kg/m	10	7	5.5
卷绕架型号	WJR900	WJR1100	WJR1500
卷绕架外形尺寸 mm	4700(L)x2350 (W)x2800(H)	6000(L)x2350 (W)x2800(H)	6000(L)x3500 (W)x4000(H)
卷绕架质量 kg	2980	3580	4380
卷绕架尺寸 mm	Φ2400x3800	Φ2400x4800	Φ3500x4800
使用动力站型号	PK1650C2	PK1650C2	PK1650C2

The boom adopts flexible floats and can be wound on reel, which not only increases flexibility of boom deployment, but also has reliability of general solid flotation boom. Deployment and recovery use hydraulic power, which is quick and convenient.

结构特征

围油栏采用耐油高强度PVC布经过特殊的焊接工艺制成，浮体呈圆柱形，浮体下面裙体上配有高强度配重链保证，围油栏具有较好的垂直状态，较强的抗拉力。

STRUCTURAL CHARACTERISTICS

The boom is made of oil-resistant high-strength PVC fiber through a special welding process. Flotation is cylindrical, and the high strength ballast chains at the bottom of flotation make the boom have good vertical state and strong tensile.



PERFORMANCE CHARACTERISTICS

1. Advanced welding technology ensures the boom has good performance;
2. UV-resistant, weather-resistant, oil-resistant, gall-resistant, long service life;
3. A good state of force, high strength.
4. Good wave-response, high stability and high oil-stagnant ability;
5. Flexible flotation can be rolled to store, and can be deployed without inflation; high maneuverability, fast deployment, easy to deploy, recover and store;
6. Especially suitable for emergent oil spill response.



INFLATABLE BOOM

充气式围油栏是围控溢油、防止溢油扩散的重要设备，特别适用于应急处理溢油事故。可广泛用于河流、海港、海洋石油平台和船舶救难抢险等溢油水域。



特点

1. 强度高,耐油,耐候,耐磨,可在恶劣条件下工作。
2. 乘波性,稳定性,滞油性良好。
3. 储存体积小。
4. 机械化收放。
5. 配套全。

配套

1. 每200m围油栏卷在一个液动绞盘上。
2. 每套装备配置一套动力站和一个充气机。
3. 可根据用户要求配置清洗装置和其他附件。

围油栏集装箱

液压驱动卷绕架固定在集装箱内。集装箱前后开门，便于多箱围油栏串联操作。



Inflatable boom is an important equipment for encircling spill oil and for preventing spill oil diffusion. It is specially suitable for emergent combating of spill oil accident. It is widely used in spill oil waters such as river, harbour, off-shore petroleum platform and ship salvages.



FEATURE

1. High strength and high ability to resist oil, galling and weather, and can work in rough sea.
2. Good wave-response, good oil-stagnant ability and high stability.
3. Small storage.
4. Mechanically deployed and recovered.
5. With all necessary accessories.

ASSISTANT EQUIPMENT

1. Every 200m boom is wound in a hydraulically driven reel and the reel can be put in a container.
2. Every set is equipped with a power pack and an inflator.
3. Also can be equipped with a set of clean device and other accessories upon the consumer's requirement.

INFLATABLE BOOM CONTAINER

The hydraulically driven reel can be put in a container, with front and rear door for easy operation when more than one containers put in line.



液压站及充吸机组

液压驱动卷绕架必须配备的液压站有电动机和柴油机两种形式供用户选择。充吸气机用于布放围油栏时充气和回收围油栏时吸气，也有电动机和柴油机二种形式供用户选择。

POWER PACK AND AERATOR

Power pack provides hydraulic power for winder's hydraulic motor. There are two types for power pack: electric and diesel power. The users may select it according to their require. The aerator is used for inflating or sucking the air chambers of boom.

围油栏清洗装置

由辅助卷绕架、高压热水清洗机及清洗槽组成，用于充气式围油栏使用后的清洗。

INFLATABLE BOOM CLEAN DEVICE

It consists of a auxiliary winder, a high-press, hot-water cleaner and clean box. It is used in cleaning used boom body.



技术数据

参数 Data	型号 Model	WQJ 3200	WQJ 2600	WQJ 2000	WQJ 1500	WQJ 1100	WQJ 900
		海洋型 (Ocean model)	海洋型 (Ocean model)	海洋型 (Ocean model)	海湾型 (Bay model)	港口型 (Harbour model)	港口型 (Harbour model)
全高 Overall height (mm)		3200	2600	2000	1500	1100	900
水上高度 Freeboard (mm)		1250	900	600	500	340	320
水下高度 Draught (mm)		1300	1250	1100	750	560	460
抗拉强度 Tensile strength (KN)		300	260	200	200	100	100
充气工作压力 Working pressure (Pa)		5000~8000					
使用条件 Operational limits	最大波高 Max. wave height (m)	6	5	3	2	1	1
	最大流速 Max. current speed (Kn)	3~4	3~4	3	3	3	2
	最大风速 Max. wind speed (m/s)	25	25	20	20	15	15
集装箱尺寸: 长X宽X高 (m) The container dimension: length x width x height		4.7X2.3X2.6	4X2.3X2.6	3.1X2.2X2.6	2.3X2.21X2.1	2.2X2.0X2.0	2.0X2.0X2.1
围油栏重量 Inflation boom weight (kg/m)		30	26	22	18	10	8.8

如需更详细资料，请来信索取。产品追求完美不断改进，如有变化不另通知。
For further details of the inflatable boom, please see the operating manual.

防污屏

防波屏

强度高、易布放储存、可以重复使用。



结构

1. 耐热钢浮子、浮子间柔性件和围油栏快接头。
2. 水下裙体为耐油橡胶布或PVC双面涂覆高强度布。
3. 三个受力元件：耐热钢丝绳，加强带和配重链。
4. 每两节围油栏存储在一个储存架上，储存架可叠放，布放时储存架吊入水中后围油栏浮起，可用船拖出。

STRUCTURE

1. Floats, flexible sections between floats and boom's quick connector are made of heat-resistant steel.
2. The skirt in water is made of PVC double-face coated reinforced fabric.
3. Three tension members: Ridge wire of heat-resistant steel, reinforced belts and ballast chain.
4. A section of boom is stored in a basket. The baskets are piled up for shipping and storage. Put the basket into water to float the boom for deployment.



技术数据

型号 Model	水上高度 Freeboard mm	水下高度 Draught mm	使用条件 Operational limits			
			抗拉强度 Tensile Strength kN	波高 Wave Height m	风速 Wind Speed m/s	流速 Current Kn
WGJ 900H-橡胶	300	480	50	1.0	15	1.5
WGV 900H-PVC						

Reusable, Easily Handled, High

应用

1. 拦截水面溢油和流消火，与灭火剂泡沫合用效果好。
2. 可用于溢油燃烧处理。U型拦截、转移溢油或分割大片溢油，能收集溢油便于点火和保证安全燃烧。

USAGE

1. Contain flowtable fire, enhance the effect of fire fighting foam.
2. For burning spilled oil on water. U-configuration hold up spilled oil, shift spilled oil or divide spilled oil of an area for thickening spilled oil to convenience igniting and for safety burning.



现场实验 在1994年11月9日“上海黄浦江大面积流消火实战演习”中，被上海消防局誉为“围火栏”。

Field proof The boom was praised as a "Fire containing boom" by Shanghai Fire-fighting Bureau in "The wide-area flowable fire-fighting exercise at Huangpu river in Shanghai, on Nov 9, 1995."

围油栏存储架外形尺寸 Overall Dimensions of storing Basket

围油栏每节长度 Boom's unit length m	长 Length m	宽 Width m	高 Height m
20	3.4	2.5	0.6
40	6	2.5	0.6

防污屏是防止在填海、建港等工程中海水泥沙在大面积置换过程中海底泥沙泛起而造成污染的必备器材。防治泥沙污染的主要手段就是要防止泥沙大面积扩散。布放防污屏是目前国际上在防治海底泥沙扩散而广泛采用的有效手段。



结构

由浮体和裙体组成，浮体包布为PVC双面涂覆增强塑料布。浮体为聚苯乙烯泡沫，并用耐油塑料膜密封，浮子间的柔性段防止防污屏的可折叠性和乘波性，裙体的下端包有配重链，保持垂直稳定性。背绳、加强带和配重链为纵向受力元件。防污屏两端及中间有锚座便于布放防污屏时连接锚绳用。



防波屏是专为水上运动项目比赛场地，以防止、减少由于外界干扰引起的波浪对赛道内的影响而开发的产品，在十一届全运会日照赛区使用中获得组委会及专家充分肯定。



结构特征

主体由浮体和减波裙体组成，配有配重链及锚座等布放连接件。

PVC双面涂覆高强度布，为屏体材料，屏体上中下各有背绳、加强带和配重链，为纵向受力元件。



绳式收油机

ROPE MOP SKIMMER

水面溢油回收装置主要包括各种规格型号的收油机、收油网和吸附器材等，它们可满足各种作业条件下的溢油回收作业。



绳式收油机



下行带式收油机



真空式收油机



船用复合式收油机



自航式收油机



转盘式收油机



自航式收油机



罐式收油机



转盘转刷式收油机



小型浮油回收船

既适合在海洋那样广阔的水域工作，又能在工厂含油污水井中收油
It Can Work At Open Water Such As Sea And Also Recover Oil From Polluted Wells Of Plants

结构原理

可漂浮在水面的亲油收油绳接成一闭合绳环并通过收油机中的弹性挤压辊转动。收油绳运行经过水面时吸附溢油，再通过收油机时绳上吸附的油被挤压挤出。

类型

1. 台车型: 收油绳被一个或几个浮动的导绳导引使收油绳在水面上伸展经过油污水面, 收油机固定放在船甲板或岸上。可以用长收油绳覆盖较大面积水域, 也可在码头下使用。岸线清理时收油绳可以和岸线平行布放。
2. 悬挂型: 收油机悬挂在溢油区上面, 一条或几条收油绳通过收油机, 悬垂到水面吸油。收油机可放在污水池(井)的上方, 也可装在船上, 随船移动使一定范围水域的油得到回收。

性能特点

1. 特别适用于吸附中低粘度的油。
2. 收得油中游离水份少。
3. 膜裂纤维编制的亲油绳寿命长, 使用温度范围广。
4. 收油作业不受水面垃圾、冰块的影响。
5. 悬垂型收油机操作方便、安全。

STRUCTURE

Floatable philo-oil endless ropes pass rollers in the skimmer. The ropes on water absorb oil. Elastic rollers squeeze oil off the ropes into a sump when the ropes pass through the skimmer.

TYPE

1. Stationary Rope Mop Skimmer: The rope is guided over the oiled water by one or more floatable pullers. The skimmer is on beach or deck. A large area can be covered by a long rope. It can be used under piers, and parallel to shoreline during beach cleaning.
2. Suspended Rope Mop Skimmer: With one or several ropes, the skimmer is suspended over the oiled water, for example a polluted well. It also can skim an area when it moves with the boat, on which it sits.

PERFORMANCE CHARACTERISTICS

1. It is specially suitable for middle and low viscosity oil.
2. Little free water in recovered oil.
3. The rope made of crack-membrance fibre has long service life and wide operational temperature.
4. Debris and ice present no difficulty on the operation.
5. The suspended skimmer is easily operated with safety.



技术数据

Technical Data

型号 Model	最大收油速率 Recovery Rate m ³ /h	收油绳直径 Rope Diameter mm	收油绳数量 Number of Ropes	类型 Type
SS 0.3	0.3	100	1	悬挂型 Suspended
SSC 2	2	150	1	台车型 Stationary
SS 5	5		1	
SS 10	10		2	
SS 20	20	230	4	组合悬垂型 Assembled, Suspended
SS 30	30		6	
SS 40	40		6	
SS 60	60	350	8	



ZS DISC SKIMMER

ZS转盘式收油机是一种轻巧、高效的回收水面溢油的设备。它由可漂浮在水面的撇油器、置于岸上或船上的动力站和连接二者的管线组成。它的适用范围很广，选用适宜型号的机型，可用于水池、湖泊、江河、海洋的溢油回收。

ZS disc skimmer is an efficient, light and handy device recovering oil spill on water. It consists of a floatable head, a power pack put on the deck of a boat or the bank and linking hoses between the head and the power pack. It has some models to suit most conditions such as pond, lake, river, harbour and sea.



特点

1. 可回收燃油、润滑油、原油、植物油等流动油，回收油速率高
2. 吃水浅，乘波性好。收回油中游离水含量低(最佳条件下可达3-5%)
3. 重量轻，易调动，适于溢油应急反应
4. 齿型转盘收油机适于回收高粘度油。



FEATURE

1. Can recover all flowable oil such as fuel, mechanical, lubricant, crude and vegetable oil, High recovering rate
2. Little free water in the recovered oil (min3-5% at optimum condition)
3. Low draft and high wave-response.
4. Light and easy maneuvering for oil spill emergent response.



适于回收高粘度油的齿形转盘收油机

结构

1. 撇油器主体由铝合金、不锈钢制成的箱框组成。
2. 浮箱密封并发泡充填，浮力稳定可靠，有较高抗破损能力。
3. 弹性刮油片，可自动补偿与收油转盘间隙，可改善收低粘度油效果。
4. 动力种类可选择。
5. 液压传动强劲可靠，无级变速。
6. 维修拆卸方便。



STRUCTURE

1. The head's body is made of stainless steel and aluminum-alloy.
2. Having sealed shell and filled up with foam plastic, the floats of the head have stable buoyance and high anti-crack ability.
3. Elastic scrapers can auto-compensate the gap between scrapers and discs to improve scraping off oil and recovering low viscous oil.
4. The kind of power can be choiced.
5. The disks are powerfully and reliably driven and stepless speed regulated by hydraulic motor.
6. The disks bank are easy disassembled for maintenance.

技术数据		Technical Data				
参数 Data	型号 Model	ZSY 5	ZS 15	ZSY 20	ZS 30	ZS 60
撇油器 Skimmer's head	回收速率 Recovering rate m ³ /h	最大 up to 5	最大 up to 15	最大 up to 20	最大 up to 30	最大 up to 60
	外形 Contour (LxWxH) mm	770x750x350	1100x1100x550	1325x1100x570	1650x1650x700	2400x2400x1750
	质量 Weight kg	30	76	95	170	710
	吃水深 Draft mm	110-150	260-290	280-310	380-420	630-680
动力站 Power pack	功率 Power	电机 Electric motor	3 kw	5.5 kw	5.5 kw	
		柴油机 Diesel	4.4 kw	5-6 kw	5-6 kw	22 kw
	抽/排油泵类型 Type of pump		自吸 Self-priming			
	吸程/扬程 Suck/lift head H ₂ O	5/12 m	5/12 m	5/12 m	5/20 m	扬程 lift head 30 m
吸排管 Hoses	质量 Weight kg	225	300	300	520	630
		通径 Dia (mm)	ø38	ø50	ø50	ø76
			ø38	ø50	ø50	ø76

■ ZSY型为带凸缘转盘结构。The disks of ZSY skimmer are with axial projecting flange.

TOWABLE SUBMERSION MOVING PLANE SKIMMER

一种适合船拖带的、在宽阔水域回收溢油的动态斜面收油系统
A Vessel-towed DIP VOSS Suitable For Recovering Oil On Open Water

特点

1. 适合回收各种粘度溢油。
2. 适合回收任何厚度溢油。
3. 总回收效率高。
4. 风浪对收油效率影响小。
5. 适合在水流中收油。

FEATURES

1. It is suitable for recovering all viscosities of oils.
2. It is suitable for recovering any oil slick thickness.
3. It has high throughput efficiency.
4. Wind and wave have less impact on recovering efficiency.
5. It is suitable to work in Current.

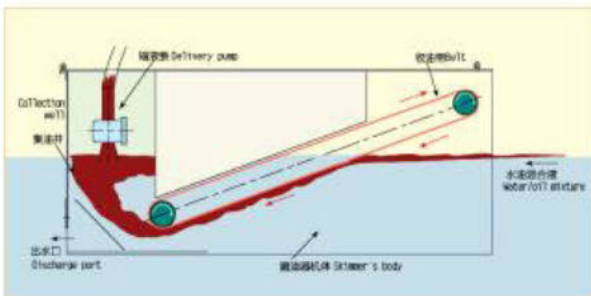


DIP(DYNAMICAL INCLINED PLANE)PRINCIPLE

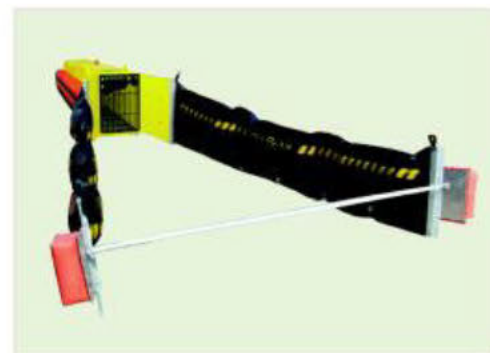
The skimmer presents a conveyor-belt to the oil/water interface and directs it under water to a collection well. The collection well has a discharge port along its bottom, allowing water to be released and providing gravity oil/water separation. A delivery pump in the skimmer sucks oil off the well when there is thick oil film in it. Debris and oil tar-ball are enclosed in the basket in the well.

动态斜面原理

收油机撇油器中收油带的运动将水/油混合物带入水下进入集油井中。集油井底部有排出口让井底部的水排出，油留在井上部。撇油器的向前运动速度和收油带的向后运动速度相等，使收油带和油层处于相对静止状态，这样油层不受搅动更易粘附在收油带上。当井中油膜较厚时，撇油器中的输油泵将井中的油排出。



船挽式收油系统由撇油器、动力站和软管三部分组成。撇油器被一条船侧拖带向前运动收油。撇油器的收油带和输油泵都由液压马达驱动。是由放在船甲板上的动力站通过液压软管组提供动力并进行控制。收油机回收的油传送到作业船上存储回收油的装置中。作业船上应有布放撇油器用的吊车。



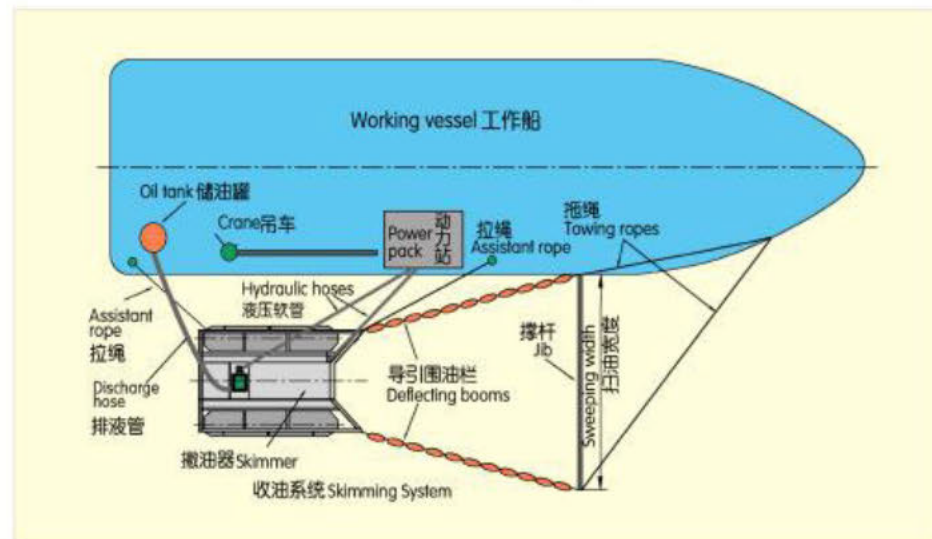
The Vessel Opportunity Skimming System consists of three parts: Skimmer, Power pack and hoses. The skimmer towed by a vessel advances and skims oil. The power pack on deck of the vessel supplies hydraulic power through hydraulic hoses to hydraulic motors in the skimmer, which drive skimming belt and transfer pump. The oil recovered by skimmer is transferred to a storage device of vessel. The vessel should have a crane to deploy skimmer.

撇油器上的收油带、输油泵、集油井等装在一铝合金制机架上，机架上两个浮筒。

为加大扫油宽度，撇油器前端两侧接两条围油栏，两条围油栏的前端用一杆撑开。作业船用拖绳拖带撑杆两端并通过围油栏拖带撇油器前进。

The skimming belt, transfer pump and collection well are in an Al-frame of the skimmer, which has two float-cylinders.

To widen sweep width, two booms connect with the front ends of the skimmer. A jib is between the front ends of the two booms. A vessel tows the ends of the jib.



主要技术参数

最大收油速率 Max. Recovery Rate	收油时撇油器航速 Skimming Speed	撇油器耐最大波高 Max. Wave height for effect operation	传输泵输出压力 Output pressure of transfer pump	导流围油栏数量 Quantity of guiding boom	导流围油栏长度 Length of guiding boom	撑杆长度/扫油宽度 Sweep width/ jib length	动力站柴油机功率 Power for diesel of power pack
15-60 m³/h	0-1.5m/s	1-2m	0.4 Mpa	2	4.5m	4 m	21-32kW

Main Technical Data

SELF-PROPELLED BELT SKIMMER

可追踪并可高效回收各种粘度水面溢油的收油机

A Skimmer, Which Can Trail And Efficiently Recover All Viscosity Oil On Water

概述

通常溢油回收作业需船只配合,溢油分布范围较宽的情况更是如此。对于溢油预测风险小、溢油规模小而缺少船只的业主,购买船只来应对小概率的溢油事故,显然经济上不合算,类似情况采用自航式收油机是一种可选的解决方案。大型溢油回收船配备小型自航式收油机在宽阔水域捕捉油膜更加灵活、方便。

构成

自航式收油机根据油品性质可选择不同收油原理的收油机,和适当的推进系统以及驾控系统三部分组合构成。

收油机可选一种或几种原理的组合,例如下行带式、上行带式、转盘式、刷式等收油机或其中二三种组合。

在小型收油机中多数为螺旋桨式或喷水式的单舵桨推进装置。其收回油由其拖带的管线输往岸上或船上。较大型的常设计成双体船式的,则采用双舵桨增加控制的灵活性。

驾控系统、较大型的产品可选人工驾驶,较小型的可选用线控(液压、气压遥控管线、线缆)或无线遥控。三部分可根据作业要求选配组合“量身定制”。这些收油机平时不用,都可以吊上岸或放在母船上,甚至在库内,无需船员值守,几乎无腐蚀和维护和船舶管理费用。



GM-9S自航式收油机



GM-7S自航式收油机



GM-12S自航式收油机

GM-8自航带式收油机收油机的特点

1. 用不同孔眼度滤油带,可回收各种粘度油;
2. 用钉齿带可排除垃圾干扰,并可回收低温下的油块。
3. 收油速率高;
4. 收回油中游离水含量低;(最佳条件下可达3%)。
5. 收油机为自航式,并设有导流装置。近处油被导流装置导入收油机。对于远处油,可以驾驶收油机航行到达该处进行收油。



GM-8S自航式收油机

结构

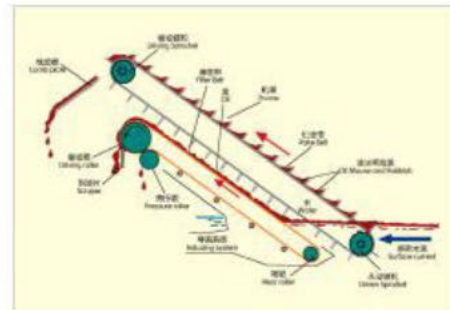
ZDS40收油机的机身为双体船形,两不锈钢制浮体之间装有组合带式撇油器、集油槽、传输泵、操纵台、螺旋桨和舵等收油和自航系统部件。撇油器、传输泵和螺旋桨均为液压驱动,液压动力由动力站提供,航行和收油操作均由操纵台控制。

动力站可装在收油机机体上;但对于象在水池中工作的移动距离不远的自航式收油机,为减小收油机的尺寸和重量,动力站也可放在岸上,通过液压软管向收油机提供液压动力。

本收油机还可提供加热系统作为选件,适合在冬季,将回收的粘油加热便于向外输送。

组合带式撇油器

组合带式撇油器的机架上装有被液压马达所驱动两条收油带,钉齿带在上,滤油带在下,两条带。撇油器的机架下部安装有流动导流装置。撇油器工作时,导流装置形成表层水流将水和油混合物带到两收油带,其中垃圾和大块油块被钉齿带回收,余下的流动溢油被滤油带回收。回收的油流入集油箱,集油箱中的油通过传输泵输送到收油机旁的浮动油囊中或直接送到岸上储油装置。



ZSD40B自航式收油机

自航收油机主要技术规格

型号	收油速率 (m³/h)	功率 (kW)	外形尺寸 L x W x H (m)	重量 (kg)	备注
ZSD40A	40	22	4.05 x 2.0 x 0.75	1580	双上行带式收油机
ZSD40B	40	22	3.35 x 1.8 x 0.75	1050	同上,动力站放在岸上
GM-8 S	40	52	9.1 x 2.5 x 1.2	6700	复合式收油机
GM-9 S	40	66 x 2	8.2 x 2.4 x 1.10	4500	复合式收油机
GM-12.5 S	20	88	12.5 x 3.8 x 1.2	17500	复合式收油机

注: H为型深。

YS系列 堰式收油机

溢油浮于水面，设于油水界面及其下方的挡水元件“堰”阻挡水进入同时通过堰内泵系的吸引，使堰上方（堰唇）的浮油进入堰内被泵排走，达到将油分离出水实现回收的目的。

An oil skimmer most suitable to sea beach, shallow and narrow water

真空式收油机是一种最适合滩岸、浅水、水上陆上平台和狭小水域的溢油回收设备。由收油罐车、泵车及管线等组成。泵车为收油罐提供动力。真空泵、真空罐（收油罐）设计为便于移动的车式结构，便于携带和运输。整套设备主要材料采用不锈钢，耐用、维修量小、成本低、结构简单、易于操作、且耐腐蚀。

特点

1. 吸能率高，能回收油的粘度范围宽，含油渣及固体小颗粒的溢油也能回收。
2. 配备轻便储油罐或其他的应急储油设施的的情况下，可以迅速展开回收作业，且压力卸油，不需登高，通过管线可将油输往远处、高处或容器内。也可输入到通用的油桶中，而不必用特备的带顶盖的大口油桶，具有更好的适用性。
3. ZK30真空式收油机灵活、轻便、便于携带和运输，在车船难以接近的滩岸，在狭小的作业空间、起伏的地面或水面，或一般的收油机因吃水深而无法作业的浅水区，都可作业收油。

Vacuum skimmer is a oil spill recovery device that most suitable for sea beach, shallow and narrow water. It consists of oil tank pushcart, pump pushcart and hoses. Pump pushcart affords power for oil tank. The pushcart struction of vacuum pump, vacuum tank (oil tank) is advantageous for motion, tote and transportation. The main material of equipment is the stainless steel, durable, anti-corrosive, low cost, simple structure, easy to operate and repair.



FEATURE

1. High recovering rate, Recovering all viscosities of oil, including oil sediment and solid granule.
2. Equipped with tank or other emergency oil storage equipment, It can recover oil rapidly, and oil delivered by pressure offshore, does not have to elevate, through the pipeline transfers the oil to the far and high or container. Also can transfer to the oil drum, but does not need to use ready especially the big caliber oil drum without top coping, has a better serviceability.
3. It is flexible, portable, advantageous for tote and transportation. Can recovered in the sea beach which vessel can't touch, narrow water, up-and-down ground and water, or shallow water that skimmer can't work just because its draft is deep.



ZK30 技术参数 Technical Data

柴油机功率 Power of diesel engine	真空泵排气量 Displacement of the vacuum pump (air)	最大吸程 Max suction head	最大扬程 Max discharge head	罐容积 Volume of the oil pot	油罐车尺寸 Pot pushcart's dimension	真空泵车尺寸 Vacuum pump pushcart's dimension
4kw	80m³/h	5.5m	5.5m	0.3m³	920x700x1350mm (L) × (W) × (H)	1020x790x860mm (L) × (W) × (H)

原理

堰式收油机由撇油器、动力站和连接二者的软管组成。装有浮筒的撇油器漂在水面，并使撇油器的集油斗上缘（堰唇）置于油水界面以上的油层中，堰唇以上的油可流入集油斗，水被挡在外面。进入集油斗的油被从集油斗下面抽走并通过排管传送到储油设施中去，达到了回收油的目的。设有液压温控系统，可在液压站上精确地将堰唇位置调节到油水界面处就可得到最佳的收油效果。



几种常用的典型产品

1. YS50液压温控堰式收油机

可通过液压系统在船上或在岸上控制堰的吃水位置高低，以便获得较高的回收率。在围控油层厚度较大的情况下效果极好，例如大型船舶海难、大量井喷及时围控时可选用。

2. YS30自调堰式收油机

堰的吃水位置高低随波浪浮动而自动调节。适于较薄油层的回收。

3. ZKX300披肩式收油机

收油机的撇油器部分（像外国修女的披肩），呈荷叶形浮于水面。有极小的厚度，其周边的堰和进油通道固定设置在撇油器上，整体随波浪浮动，相当堰自动调节吃水深度。特别适于在漫长宽阔的岸线水域收油。本机采用大流量的真空装置抽取收油，收油速率高。



YS50式收油机



ZKX300披肩式收油机

YS50收油机技术参数				
型号	YS5	YSB50	ZKX300	
最大收油速率m³/h	5	50	30	
撇油器	吃水深度(mm)	285 ~ 300	610 ~ 640	
	外形尺寸(m)	1.2 × 1.1 × 0.5	1.96 × 1.72 × 1	
	质量(kg)	52	400	
	收油斗调节方式	浮力自调	液压调节	
柴油机动力站	功率(kw)	3.7	21	
	外形尺寸(m)	0.72 × 0.68 × 0.82	1.4 × 1 × 1.34	
	质量(kg)	110	750	
液压软管	—	—	4 × 20m	
吸油软管	1 × DN38 × 12m	—	1 × DN76 × 20m	
排油软管	1 × DN38 × 8m	1 × DN76 × 20m	1 × DN76 × 20m	

※可根据用户要求的回收能力（收油速率）设计制造。

转刷/转盘式收油机

BRUSH/ DISC SKIMMER

一种可根据不同油品更换转盘组或转刷组的收油机，适用于对溢油油品回收范围广泛的情况下使用，具有一机多用的特点。

It has the oil recovery function of weir, up-belt, down-belt, vacuum skimmer ect. Complex skimmer worked at open water, can be towed by vessel or directly installed on double hulls vessel.



直接安装在双体船上的复合式收油机

特点

配置了粗、精分离箱罐，浮油聚集槽、防逆流板、疏水板等装置，使得油水流线顺畅合理。该设备受波浪影响小，油水分离效率高。选用精密可靠的油水界面探测器、可编程控制器（PLC）使收油过程实现了智能化、自动化。配备的上行垃圾分离装置可将垃圾和块状浮油同时回收，该设备适合回收各种厚度及粘度的浮油。

FEATURE

Equipped with rough, refined separating tank. Auxiliary device: floating oil leading boom*anti-adverse current plate, water transportation valve, making oil water line smoothness and rationalize and keep high resolving power and recovering oil rate under wave affects. Achieved intelligentize and automatization by the credible oil water interface probe, PLC. Up-belt garbage separating device recover garbage and oil bulk at one time. It is applicable to all viscosities of oil.

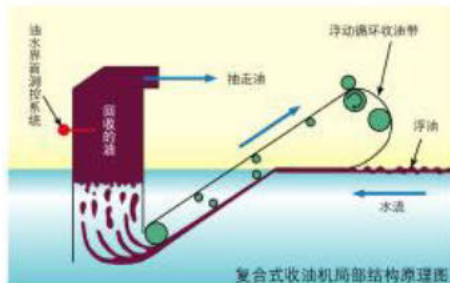


收油原理

根据浮油上浮特性，水流中的油和水混合液进入收油机入口后，油和水接触到收油机一个向下倾斜并循环运动的带（也称为动态斜面）。水通过堰板进入，从收油机的底部排水孔中流走，收油机完成了粗分离。油在紧贴下行带的下表面随同进入到最低端然后被抛离并飘浮到分离罐顶部，油在分离罐上部聚集，从而完成了精分离。当分离出的油积累到一定厚度时，油水界面探测器发出控制信号使收油机真空泵开始工作，将分离出来的油排送到储油装置中；当上部油层的厚度减少到一定的厚度时，油水界面探测器发出控制信号使收油机停止工作。此过程连续重复进行，实现了油水分离，达到了回收油的目的。

PRINCIPLE OF RECOVERING OIL

According to the floating feature of oil, oil water interface through the structure of weir, this is the first time roughly separate oil water, and then begin advanced separating. Oil float, water flow from the net that resist oil in the bottom of rough separating tank. A floating belt (also called dynamic inclined plane) directs oil to entrance, water float from lower level, oil than on the top was directed to the bottom by belt, after scraping oil by scraper then rise to the top of refined separating tank, when oil get certain thickness, oil water probe surveyed oil then send out signal, pump begins sucking; if water, stops working. Skimmer system equipped with reliable auto-control and oil water auto-identify system, intelligent auto-control operation.



一种可根据不同油品更换转盘组或转刷组的收油机，适用于对溢油油品回收范围广泛的情况下使用，具有一机多用的特点。

The skimmer, whose brush assembly and disc assembly can be replaced with each other according to different oils, is suitable for a wide range of oil-spill recovery. It is a multi-purpose machine.



收油原理

转刷/转盘收油机利用半浸于液体中转刷或转盘的不间断转动，将溢油粘附在转刷或转盘上带出水面，再用刮油板将油刮下，流入集油槽中，通过输油泵排走，送至指定回收容器中，达到回收油的目的。

RECOVERY PRINCIPLE

Discs or brushes of brush/ disc skimmer, half submerged in water, continuously rotate and make oil adhere to the brush or disc and carry the oil out of water. The adhered oil on discs or brushes is scraped off by oil wiper and flows into a collecting sump, and then the oil is pumped out by the oil transfer pump. Thus, the oil is recovered.



性能特点

1. 转盘组适于回收中低粘度的油，转刷组适于回收中、高粘度的油；
2. 可以根据油污的粘度更换转刷组或转盘组；
3. 回收效率高；
4. 撇油器漂浮稳定，有良好的乘波性和抗风浪能力。

PERFORMANCE CHARACTERISTICS

1. The brush assembly is suitable for recovering medium and high viscosity oil, while the disc assembly is suitable for recovering medium and low viscosity oil.
2. The brush assembly or disc assembly can be replaced according to the viscosity of sump oil.
3. High recovery rate.
4. The oil skimmer floats stably and has good wave riding ability and a certain degree of anti-wind ability.



技术参数

参数	型号	ZSPS10	ZSPS20	ZSPS30	ZSPS50
最大收油速率m³/h		10	20	30	50
最大排油压力MPa		0.4	0.4	0.4	0.4

主要技术参数

收油速率 (最大m³/h)	作业流速 (相对m/s)	适应波高 m	输出压力 MPa	导引圈油 栏数量(条)	导引圈油 栏长度(m)	撑杆长度 (扫油宽度)m	动力站功率 Kw
30	0-1.5	1	0.4	2	10	6	21
50	0-1.5	1	0.4	2	10	6	32
100	0-1.5	2	0.4	2	10	6	46
200	0-1.5	2	0.4	2	20	8	68

※可根据用户要求的回收能力（收油速率）设计制造。

WORK VESSEL SERIES

水面环保专用船舶
Special-purpose vessel for marine environmental protection



GM series of vessels and marine environmental equipment, developed and manufactured by our company upon our experiences/techniques on oil spill control and vessel's design ability, are special purpose vessel for environmental protection which are to be used in sea, river, lake and reservoir. Our company has got certificate for manufacturing spill oil recovering vessel issued by "Vessel Inspection Bureau of PRC". GM-8 spill oil recovering vessel passed product appraise and has got national patent and certificate of new keystone product in national level.

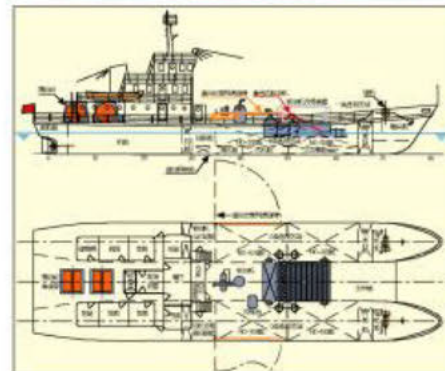


GM系列环保工作船是我公司依托多年从事开发生产"水面溢油回收技术及系统装置"所积累的丰富经验和船舶设计开发能力的基础上,研究生产的一系列适合海洋、江湖、水库使用的水面环保专用船舶。我公司已获得"中华人民共和国船舶检验局"颁发的浮油回收船制造许可证。2001年我公司研制开发了国内第一条具有自主知识产权的GM-8型浮油回收船并通过产品鉴定,获得国家专利及国家级重点新产品证书,此后又完成了"胜利油田502浮油回收船"、大庆油田采油厂"庆环一号"、惠州大亚湾"碧海一号"、中石油广东小虎岛油库"石清号"、中石油海上应急救援响应中心"中油应急302"等十余条专用浮油回收船的建设,我公司是目前国内唯一有自主知识产权的浮油及漂浮物回收船的研制开发制造企业。



双体船

光明系列双体环保船采用两组Z推配浆系统,在低速环保作业时,具有优良的操纵性。可灵活地避转横移,追逐水上漂浮物。双体船艏的聚拢作用,增大了清理水面的宽度。漂浮污染物回收效率高。回收装置设在两片体间的升降机械上起落方便。甲板作业空间大。



单体船

单体环保船通用性较好,可兼作其它用途。专用环保设备固定于主甲板,作业时由起重设备吊装于船舶两舷侧。



船用型水面环保专用设备

船用复合式水面溢油系列回收设备是横式、上行、下行、真空等多种常规收油方式复合而成。

船用复合式水面溢油系列回收设备主要特点:

根据浮油上浮特性,配置了粗、精分离箱罐,浮油聚集槽防逆流板、疏水隔板等附属装置,使油水流线顺畅合理,设备受波浪影响小,分离效率高;由精密可靠的油水界面探头,可编程控制器和变频器组成控制系统,使溢油泵吸过程中实现了智能化、自动化;并可随时提供溢油回收过程中的有关数据和信号,使船舶驾驶员能及时地变更船舶航速,使船舶和收油设备之间达到理想的配合;配置了高效溢油过滤装置,从而能有效地拦截杂质,提高了自动阀和泵吸系统工作的可靠性。负压力提示报警装置能及时提醒操作人员及时清洁过滤装置中的杂物,保证了工作的高效性。

轻便储油罐

PORTABLE OIL TANK

一种可以在陆地和滩岸上应急使用的轻便型储油容器
A Light Oil Container For Emergency Application On Shore Or Land

一种可漂浮在水面并可拖带的柔性储液容器
A Floatable, Towable, Flexible Liquid Container

在溢油应急行动中用作水面储存和运输油的工具。
也可用作陆上或车载储液容器。
A storing and transporting means on water for oil spill action. A liquid container in land or vehicles.

结构特点

1. 用耐油橡胶布或纤维增强双面PVC涂覆布制成，使用寿命长，便于清洗修补。
2. 折叠储存在便于运输的包装箱内。
3. 长圆筒囊体上有气室和进出液口。
4. 油囊上有拖头便于拖带。
5. 卸下拖头可打开囊体一端，便于内部清洗。

STRUCTURE CHARACTERISTIC

1. Made of oil-resistant rubber sheet or double-face coated reinforced PVC fabric, have long service life, easy to clean and maintain.
2. Fold-stored in a well-handled packing box.
3. The bladder of long cylinder has air chambers and inlet and exit ports.
4. The bladder is equipped with tow-bars for being towed.
5. Disassemble a tow-bar to open one end of the bladder for cleaning.

可吊浮动油囊

一般浮动油囊容量大，不能在装油情况下吊起。需用泵从油囊中将油吸出。可吊式浮动油囊容量较小，且用强度高的橡胶布制成，可在装满油情况下从水面吊到甲板或岸上，并可在吊起的状态下卸油，特别适合临时存储高粘度油。多个可吊式浮动油囊可组成串联拖带的列车式浮动油囊组。

SUSPENDABLE FLOATING TANK

A normal floating bladder can't be lifted before the oil in the bladder is sucked out.
The suspendable floating bladder, which made of high strength rubber sheets and has small volume, with oil full in it can be lifted from water to a deck or beach and for offloading. A row of suspendable floating bladders composes a bladder-train.

技术参数

型号 Model	额定容积 Rated volume m ³	最大装载尺寸 Dimension Full of Liquid (m)	平展后尺寸 Stretch dimension (m)	吃水 Draught (m)	拖带速度 Towing speed (knot)	净重(橡胶) Net weight (rubber) (kg)	工作温度 Working Temperature (°C)
FN 3	3	Φ1.15 × 4.5	5.0 × 3.1	0.8	3	108	-20 ~ +50
FN 10	10	Φ1.15 × 10	10.6 × 3.2	0.8		258	
FN 15	15	Φ1.15 × 15	15.6 × 3.2	0.8		348	

Specifications

注：20m³以上的按用户要求制作。



FEATURE

1. Can store recovered oil and most other liquids, also as a gravity separating tank and a test pond.
2. Portable. After disassembled, it is stored in a packing box, that handles well by manpower. It is specially suitable for the field that vehicles and boats are difficult to get to.
3. Fast and easy assembly and disassembly need no tool and even base. A pieced together metal frame, and a belt-hung and ground-beared flexible tank body.
4. An anti-corrosive tank body with long service life. Oil-resistant rubber sheet or PVC double-face coated reinforced fabric for tank body.
5. Easy to clean and maintain.



特点

1. 可储存回收的溢油和多数其它液体，可用作重力分离罐、实验水池。
2. 便于携带，拆卸后储存在人易抬动的包装箱内。
3. 特别适于在车、船难接近的地区使用。装卸便捷，不需工具和平坦地基。金属拼装式。
4. 框架。系吊式柔性罐体同时被地面所支撑。罐体耐腐蚀、寿命长。耐油橡胶布或纤维增强双面PVC涂覆高强度布罐体。
5. 便于清洗和修理。



技术数据

Technical Data

型号 Model	有效容积 Effective Volume m ³	外形尺寸(直径X高) Overall Dimension (Diameter x Height) mm	使用温度 Temperature Range °C
QG 3	3	2000x1100	-15~60
QG 5	5	2500x1200	
QG 9	9	3000x1520	



★ 可根据客户要求制作其它规格的产品

过驳泵及应用

过驳泵能够输送从低粘度到高粘度的、含较大颗粒杂质的、某些腐蚀性的介质以及要求低剪切率的介质。可广泛用于环保、化工、石油、采矿、建筑、船舶、陶瓷、食品加工及农业等行业。如：输送污水、污油、泥浆水、采矿废水、废燃油、石灰浆、洗涤液、乳状液等等。流量范围可涵盖10m³/h至200m³/h。

电机过驳泵

该装置是采用GMTB凸轮转子泵与YS防爆调速电机组成的移动式过驳装置。



柴油机过驳泵

该装置配备了柴油动力站，配置齐全，应用范围较广。将过驳泵、动力站、液压管线、支架等组合为一个单元，便于吊车或叉车移动。

结构特征

该泵采用两个凸轮转子的啮合转动，依靠两凸轮将流体沿泵壳从一侧挤压至另一侧，凸轮转子在同步齿轮的带动下作同步旋转，产生液体的搬移，其流量随转速增加而增加，出口压力随背压增大而增大。



Unloading pump can transfer medium that is from low viscosity to high viscosity, or with larger particles of impurities, or some corrosive medium and the medium that require low shear rate. It can be widely used in environmental protection, chemicals, petroleum, mining, construction, shipping, ceramics, and food processing and agriculture industries. Such as: conveying sewage, waste oil, mud water, mining waste, waste fuel oil, lime white, washing liquid, emulsion and so on. Flow range can cover 10m³/h-200 m³/h.

MOTOR UNLOADING PUMP

The device adopts the unloading equipment composed of GMTB cam rotor pump and YS explosion-proof speed adjustable motor.



DIESEL ENGINE UNLOADING PUMP

The matching device is equipped with a diesel power pack. The configuration is complete, and the application range is wide. It combines unloading pump, power pack, hydraulic lines and support as a unit, which facilitates crane or forklift to move.

STRUCTURAL CHARACTERISTICS

The pump adopts the meshing rotation of two elliptical cam rotors, and depends on the valley of cam to squeeze fluid from one side to another side along the pump shell. The cam rotor, driven by gear, rotates synchronously and makes the liquid move. The flow increases when the speed increases, and the outlet pressure increases when back-pressure increases.

性能特征

- 1、流量与转速成线性关系，不同的工作压力，所需输入功率不同。
- 2、对带有大颗粒直径的介质有着良好的通过性，最大可达30-50mm。
- 3、采用弹性表面凸轮转子，密封性特别好，提高了自吸能力。
- 4、容积效率高达95%以上。

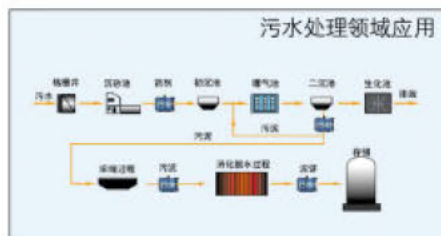


主要参数

型号	压力 (bar)	流量 (m³/h)	配套动力 (Kw)	最大转速 (r.p.m)
GMTB-100	0-6	-30	2	600
GMTB-150	0-6	-50	4	600
GMTB-200	0-6	-100	5	600

可为用户提供10m³/h到200m³/h的多种产品

应用举例



PERFORMANCE CHARACTERISTICS

1. The flow has linear relationship with speed, and different working pressures need different input power.
2. The medium whose particles are of large diameter can pass well, and the largest diameter of particles can be up to about 40mm.
3. Because the surface of salient pole rotor is elastic, so the seal is particularly good and improve the capacity of self-suction.
4. Efficiency is higher, up to 80%.



GM-2 溢油分散剂

OIL SPILL DISPERSANT

PS40轻便型溢油分散剂喷洒装置

1. 机架为手推小车型，便于运输；
2. 用手持喷枪喷洒，操作方便、灵活；喷射压力高，射程远，雾化程度可调节；特别适于分散面积不大的水面溢油清理；
3. 可直接从包装桶抽取溢油分散剂。



技术参数		Technical Data			
最大喷射量	最大水平射程	最大深度	功率	质量	外形尺寸 LxWxH
40 L/min	10 m	3 m	3-4 kW	120 kg	840x940x800 mm



PSB系列船用溢油分散剂喷洒臂，适于装在船上对大面积水域喷洒溢油分散剂

1. 引进喷嘴，扇形雾迹，分散剂利用效率高；
2. 根据溢层厚度和船速调节喷洒量并显示流量；
3. 存储方便；不用时可收回甲板存储；适于装在几乎所有种类船上。



技术参数		Technical Data	
船舶喷洒臂的数量	臂长	最大喷射量	
1-2个	3-10m	40-400 L/min	

PSF系列飞机用溢油分散剂喷洒装置，适用小型飞机或直升飞机对广阔水域喷洒溢油分散剂

1. PSF喷洒装置由存储罐和一个喷洒臂组成，喷洒泵固定在存储罐一端的筒体内。
2. 喷洒装置既可机载喷洒作业，也可悬挂在直升飞机下进行喷洒作业。机载作业时，存储罐可装入机内，喷洒臂固定在机体尾部进行喷洒；悬吊喷洒时，存储罐和喷洒臂固定在一起，悬挂在直升飞机下方进行喷洒，在飞机上遥控操作的工作。
3. 可根据飞机形式和大小设计喷洒臂的长度、喷洒泵的排量和存储罐的容积。



认可证书号：

国家海事局 编号：HS-X-014
国家海洋局南海分局 海南环字[2009]3号
国家海洋局北海分局 海北环字 2010-001号

No. of Approval Certification:

Maritime Organization of PRC HS-X-014
South China Sea Branch. SOA. [2009]3
North China Sea Branch. NOA. 2010-001

GM-2型溢油分散剂(也称消油剂)，是我公司研制的高效常规型溢油分散剂，它的主要作用是当水域发生溢油时，喷洒溢油分散剂能使水面溢油分散成微小颗粒，使其在波浪或外加搅拌力的作用下分散到水内并不在上升，从而加速溢油被水中微生物降解的过程，达到降低污染损害和尽快消除溢油污染的目的。

喷洒溢油分散剂是处理水域溢油污染的有效方法和重要手段之一，它可广泛用于海上石油钻井平台、船舶、港口、码头等所在水域。



溢油分散剂用量

1. 一般用量为溢油量的20%左右，可根据环境条件和油品种类适当调整，但最大用量不宜超过90%，原液喷洒。
2. 用水枪射水控制油火，在水中混入2-5%消油剂，可增加灭火效果。不得用原液喷洒灭火。

喷洒

选用专门设计的喷洒设备可提高溢油分散剂的利用率和分散效果。

包装与贮存

两种包装：大桶170千克，小桶装20千克。贮存处应通风干燥，防止锈蚀，并要避免高温。良好的储存条件下，原包装贮存期达五年。

项目	GM-2性能
外观	清澈透明，不分层
PH	7-7.5
燃点(℃)	> 70
粘度(30℃) (mm ² /s)	< 50
乳化率(%)	10 min
	> 20
	30 s
	> 20
生物降解度BOD5/COD (%)	> 30
鱼类急性毒性—在规定浓度下的半数致死时间(h)	> 24

溢油分散剂的使用

作业前

1. 应熟悉国家海洋局和交通部有关使用溢油分散剂的规定。
2. 使用前应在现场做简易试验，确认在现场条件下的溢油能被分散剂分散才可喷洒作业。
3. 指挥人员要选择适宜时机，在溢油未形成油包水乳化液之前，向油膜喷洒溢油分散剂，才能获得良好的分散溢油效果。
4. 尽可能使用收油机吸附材料等，回收和吸附溢油，减少油膜厚度，然后再使用溢油分散剂。

喷洒中

1. 对水面溢油喷洒溢油分散剂时，应当调节喷洒设备的喷洒速率和运载工具的移动速度，以获得适宜的剂量。
2. 喷洒应从上风处开始向下风处进行；先向油膜周边喷洒，逐渐向油膜中部进行。
3. 应充分利用风浪、船首波和螺旋推进器的搅动作用；没有上述条件时可借助水龙头射水或拖带搅拌装置对喷洒区域的水面进行搅动。
4. 滩岸在溢油到达前应先喷洒溢油分散剂，可减少被污染程度和清污工作量。
5. 岸壁、岩石、船舷、构筑物被油污污染处应少量多次喷洒溢油分散剂；喷洒后要有一段停留时间再用高压水枪冲洗，困难的地方要用高压热水清洗机清洗或配合刷洗。
6. 工作人员应着用雨衣，防滑雨靴和眼镜等防护用品。及时观察处理效果，适当调节喷洒速率或航速，剂量不足处可再处理。

喷洒后

处理结束时及时清洗喷洒设备，整理好以备再用；对落在船只及用品上的溢油分散剂也应及时擦洗干净。



吸油拖栏

OIL-SORBENT BOOM

吸油毡是处理溢油的重要器材之一。在水面溢油应急处理工作中，一般方法是先用机械装置将大部分溢油回收起来，然后用吸油毡吸着捕集水面少量残留溢油。在机械装置达不到的地方，不得产生二次污染的水域（不得使用溢油分散剂），常常使用吸油毡清除溢油。

PP-1, PP-2型吸油毡是人造化学纤维毡，是一种良好的清油器材，其特点是：

1. 比重小，能漂浮在水面上。
2. 多间隙亲油，具有强烈的吸油性，吸水能力差，且吸油毡吸油过程中，能将水排出。
3. 耐酸、耐碱、耐化学腐蚀，燃烧后无有害气体。
4. 保油性能好，能反复使用。
5. PP-1适合吸附轻质油和多数比重较轻的化工液货。
6. PP-2适合吸附粘度比较高的油品。



其他用途

1. 陆上泄漏油或化学品吸附回收；
2. 机械设备油污的清理和擦拭；
3. 储油池、排水沟、船底仓等油污清理；
4. 工厂仓库中泄漏油的清理；
5. 可作流体过滤，分离滤材或粗化材料。

Sorbent pads are important material for oil spill combating. In a spill cleaning action, sorbent pads normally remove last sheen of oil, after most spilled oil is mechanically recovered, and clean spilled oil, where mechanical devices can't be used and water isn't allowed to be secondly polluted (using oil spill dispersant isn't allowed).

PP-1, PP-2 sorbent pads of synthetic fibre are good oil-cleaning material and characterized by:

1. Small density and floatable on water.
2. Porous, oleophilic, high oil-absorptive, poor water absorptive and water-displaceable when absorbing oil.
3. Acid, alkali and corrosion resistant and less harm-gas releasable when burn.
4. High oil-hold-ability.
5. PP-1 sorbent pads are for light oil and most light chemical liquids.
6. PP-2 is for viscous oils.

OTHER USAGE

1. Absorb spill oil and chemicals on land, prevent them from spreading.
2. Clean oil tanks, drain and bottom cabins.
3. Clean oil spill in warehouses.
4. Clean oil in kitchen.
5. As filtering and coarse materials for separates, it can filter liquid.



本类产品都是用吸油毡制成的用来吸附水面浮油的吸油器材。与一般的吸油毡相比，主要是便于回收和投放，同时兼有围控和回收溢油的能力，有些情况下可代替围油栏和收油机。每节栏两端都有接头，可无缝连接成所需要的长度。本类产品有三种：圆形吸油拖栏、片形吸油拖栏和圆刷形吸油拖栏。



XTL-Y220圆形吸油拖栏

长圆柱型，柔性好。外周有护网套，中心有拖拉绳。可在水面和地面拦截、吸附溢油，也可用船拖带清理水面油层。栏内有浮体，干舷高，有一定的抗风浪和水流能力。可用在海上，特别适合于滩岸拦油和吸油。



XTL-P900片形吸油拖栏

为长带型，吸油毡制成的栏体固定在有足够强度的拖拉绳上，拖拉时栏体平贴在水面上。接头处无缝隙。适合在较平静水面上“U”型拖带清理水面油层，也可在水面拦截溢油。最适合用来清除大面积薄油膜。



XTL-YS200圆刷形吸油拖栏

刷毛用薄吸油毡条制成，刷芯用软绳制成。刷毛编结在绳中形成连续圆刷形柔性主体。适于在平静水域吸附回收溢油。可方便地通过挤压辊挤出油重复使用。



Made of sorbent pad, sorbent boom is used to clean oil spill on water. It is more convenient to deploy and recover than pad. Able to both contain and clean spill, it can replace oil boom with skimmer in some cases. The end connectors seamlessly connect boom sections with each other to a necessary length. Three types of sorbent booms: Cylinder, Strip and Round-Brush.



CYLINDER SORBENT BOOM

Being flexible cylinder with a tension rope in center and a cover net outside, the boom can contain spill on water/ground and also be towed by vessels to sweep oil on water. It has high freeboard due to floats in it and can work in wave and current. It is especially suitable for shore-line.

STRIP SORBENT BOOM

The belt-like boom body, made by sorbent materials and attached to a rope of high strength, will flatly floats on water when towed. With seamless connection between sections, the boom suits "U" tow sweep cleaning on calm water. It not only can contain oil on water but especially suits to deal with thin slick of large area.

ROUND-BRUSH SORBENT BOOM

The bristles, made of thin sorbent strips, are woven in a flexible core rope to form a flexible and continuous round-brush of boom body. It is light and is suitable recover oil on calm water and can be reused after absorbed oil pressured out by extrusion rollers.

三种吸油拖栏的技术数据

Technical Data for Three Types of Sorbent Booms

型号 Model	质量 (kg/m) Weight	宽度 (m) Width	截面直径 (mm) Section Diameter	每节长度 (m) Section length	每节重量 (kg) Section Weight
XTL-Y 220	2.15		220	10	22
XTL-P 900	1.25	0.9		20	13
XTL-YS 200	0.60		200	3	7

注：其它规格可按用户要求定做

性能		Technical data			
原材料比重	0.9g/cm ³	Density of raw material	0.91g/cm ³		
纤维直径	PP-1:0.002 ~ 0.003 mm PP-2:0.02 ~ 0.03 mm	Fabric diameter	PP-1:0.002~0.003 mm PP-2:0.02~0.03 mm		
吸油量	自重的10 ~ 20倍	Oil-absorption capacity	10~20 times of self-weight		
吸水量	自重的0.05 ~ 1.4倍 (吸油后水被油置换排除)	Water-absorption capacity	0.05~1.4 times of self-weight (water in pads will be displaced by absorbed oil)		
包装类别					
包 装	张/包	每张规格(m)	重量/包	外包装尺寸(m)	堆比重
普通包装 (编织袋)	12	2x1x0.04 ~ 0.06	20 (kg)	1x0.5x0.45	~ 89 kg/m ³
备 注	其它规格可按用户要求定做				

收油网

GMN-01凝油剂, 是以一种天然纤维素制成的环保产品, 具有生物降解性、无毒性。其独特的性质使它能够吸收液态的油类、农用化学品以及大部分碳氢化合物, 但对水却吸收得很少, 而且在吸收有机液体后, 能将水置换出来。

只要简单地与这些液态化学品接触, 凝油剂便可在2分钟内发生作用, 因而非常简单方便可应用于河坝及海洋、化工厂、工厂管道区、油田、港口、船舶、运输车辆、各种作业平台、饭店等溢油事故现场, 各种油类、化学泄漏物的清除工作, 即使在风浪中也同样有效。

溢油处理

陆上溢油

- 将松散型GMN-01凝油剂均匀覆盖溢油表面;
- 等待1~2分钟完全吸收后用耙子、网, 或者其他方式将凝油剂回收至容器内等待处理。

水上溢油

- 对水面溢油进行围控, 防止进一步扩散;
- 将松散型GMN-01凝油剂均匀覆盖溢油表面;
- 等待1~2分钟以完全吸收后用耙子、网, 或者其他方式将凝油剂回收至容器内等待处理。

OIL SPILL DISPOSAL

Oil Spill On Land

- spray evenly the loose GMN-01 oil gelling agent on the surface of oil spill;
- Wait for 1-2 minutes, when it is totally absorbed, recover oil gelling agent with the rake, net, or other ways, and put it in a container to dispose.

Oil Spill on Water

- Contain the oil spill on the surface of water, and prevent further spread;
- spray evenly the loose GMN-01 oil gelling agent on the surface of oil spill;
- Wait for 1-2 minutes, when it is totally absorbed, recover oil gelling agent with the rake, net, or other ways, and put it in a container to dispose.



GMN-01 oil gelling agent is an environmentally friendly product made from natural fiber. It is biodegradable and non-toxic. Its unique properties make it absorb liquid oils, agricultural chemicals and most of the hydrocarbons, but it absorbs very little water, and can make metathesis of water after organic liquids are absorbed. Oil gelling agent can work in 2 minutes after simply contacts with these chemicals, liquid, which is very easy and convenient. It can be applied to oil spill scene of the accident of dam, marine, chemical plants, factory pipe areas, oil fields, ports, ships, transport vehicles, various operating platforms, and hotels and so on. All kinds of cleanup work of oil and chemical spill are equally effective even in wind and waves.



存放

应放在库房中, 避免阳光照射, 堆放应有通风通道, 特别要避免接近高温和明火, 以免发生火灾。

STORAGE

It should be placed in warehouse, and avoid sunlight drying. If it stacks, there should be ventilation channels, in particular, it should avoid high temperatures and open flame to avoid fire.



收油网是回收水面高粘度浮油、焦油球、巧克力冻状油的有效设备。使用时收油网由单船成双船拖带, 水面上的冻状溢油被围油栏引导至收油网内。水和油进入集油网时, 水通过集油网的网孔流走, 而块状溢油留在网内。

带密封袋的串接型收油网

一种具有国际先进水平的专利产品。参看图1,

二个独特的优点

■ 多个短网串接收油效率高

一般的收油网因网眼很快被高粘度油堵死, 特别是网的后部和底(尾)部更为严重, 网口进水阻力增大, 进油量急剧下降, 一个大网也只能收到很少的油。本收油网由多个短网串接组成, 当它的尾部的一个网被油堵死网眼效率降低时, 该短网已收到足够的油, 吊拉机械随即吊拉此短网二端口的绳组, 此网二端口即被绳扎死, 并脱离与前网的连接, 被吊离水面送往储存处, 前一个短网的网筒尾端在与后网脱离的同时被绳扎死, 形成一个新的有网底的尾网, 继续收油。重复上述过程, 直到全部短网用完, 再换新的网串继续收油。这种结构收油效率高, 而且一段一段的短网易于用小的吊拉设备吊升和转移, 易存储。

■ 每个短网都外包一个高分子膜材制成的密封袋, 在该短网的前后两端口被吊拉绳扎死的同时, 密封袋在被挤压排出袋中的水垢, 它的前后两端口也被绳扎死, 像香肠一样, 两端被吊拉绳吊起放到甲板上或移往卸油舱, 不会漏油污染。而一般的网在拖航或试图提升出水时, 由于网内压力增加, 网内的油会像面条一样从网眼中流出, 不仅收不到油, 还会造成航道、码头等处大范围污染, 这是一般的网的致命性缺陷。本收油网可选用单船单侧或双侧(二套)拖带方式作业, 适合应对大规模, 每套包括撑杆、撑杆浮筒, 收油网串(一般三个短网), 绳系, 紧绳器引导围油栏等。除撑杆、撑杆浮筒之外, 其余部分可选用液压卷绕架来卷绕存放和投放, 回收。



带密封袋的串接型收油网

图1



图3

维修及储存

- 收油网用后应作清洗。清洗前应将收油网总成和撑杆总成脱开。收油网总成可用高温高压清洗机冲洗, 然后晾干。撑杆总成可以用洗净剂和清水去油清洗后晾干。并作防锈处理。
- 收油网应储存在通风干燥和没有太阳直射的地方。
- 对破损的集油网和引领网进行修补。

注意事项

- 操作人员应佩戴工作帽、工作鞋, 并穿上救生衣
- 工作应在有足够水深的开阔水域(3米以上)中进行, 水域中应无可刮损收油网的硬物。
- 工作应在拖船和收油栏均可正常工作的海况下进行。



简易型收油网

图2

青岛光明海洋环境应急中心有限公司

青岛光明溢油应急中心是依托青岛光明环保技术有限公司利用企业自身资源与行业知名优势组建的，在应对海上突发溢油事故，清除海上、海岸溢油及固体垃圾污染，有着丰富的应急处理实践经验，且配备了先进的溢油应急处理装备的专业化溢油应急响应队伍。公司配有应急设备库，有处理突发溢油事故所需的各种配套装置可供选用，并有经验丰富的作业和技术指导人员，有能力自发的进行有效地远程支持服务，多次参加国内外大型溢油污染事故的现场处理工作，深受用户好评，多次受到政府部门奖励和表彰，并多次应邀参加国内最高水平的防污搜救演习，向世界展示了国内领先的技术产品和训练有素的应急队伍，中央电视台多次在国内溢油应急事故中有相关的专题报道。



该中心自成立以来先后参加了‘南希号’烟台港内溢油、烟台‘打捞局船舶’成山头海域溢油、韩国‘亚洲希望号’成山头海域溢油、“大庆243号”、南京水域爆炸溢油事故、辽河油田井喷火灾溢油、大连‘海荣号’货轮成山头沉没溢油、科威特籍特大型油轮、“沙米敦号”青岛海域原油泄漏、浙江‘顺星101’油轮威海海域漏油、天津‘天利’号青岛海域溢油事故、珠江口海域溢油污染事故、黄浦江溢油污染事故、阿提哥大连海域溢油事故，以及2010年陕西渭河溢油污染事故等国内近百次溢油污染的现场清除服务工作，深受政府部门、海事部门领导及广大业主的信赖与好评。

