

# Oil Spill Response Equipments



## Company Introduction

Qingdao Singreat Industry Technology Co.,Ltd. is the most professional supplier of oil spill response equipments in China. It develops, manufactures, and supplies best available technology and full range of oil spill response equipment including oil containment booms, oil recovery skimmers, oil absorbent material, oil dispersant systems, turbidity curtains, oil storage devices and ect. From oil spill accident in Gulf of Mexico in 2010 to “11.22 Oil Pipeline Explosion Accident in Qingdao” in 2013, Evergreen Property have positively anticipated so many oil spill recovery activities in the passed few years. Evergreen’s professional solution to oil spills and top quality oil spill response equipment has wined positive evaluation from customers all over the world. We will continuously improve and develop oil spill response equipment to meet customers’ requirement worldwide.

## Outstanding Achievement

- ★ In 1996, Participating in the “Zhonghua No.1” oil tank’s rescues from fire at Xiamen Port.
- ★ In 1999, attending the nautical pollution preventing committee changing meeting and the proseminar of the nautical pollution preventing 21 century.
- ★ In 2001, the company attended the drill on “Haijiu I” held by The North Sea Fleet and MSA Shanghai.



The drill on “Haijiu I”



- ★ In 2001, participate in the “Shamidun” oil tank rescue.
- ★ In 2003, participate the 863 scientific technique project of “the 10<sup>th</sup> five year plan” of the state—the algae warding off and water guiding project of the Meiliangwan source of water in Taihu.
- ★ In 2003, attend the work of the searching and rescuing center at sea of Hebei Province and large-scale comprehensive maneuver.



The searching and rescuing  
center at sea of Hebei Province

★ In 2004, the company attended the drill on oil spill emergency in the Three Gorges Reservoir Area.

★ In 2005, Participating in the joint searching and rescuing drill held by China and South Korea in East China Sea.

★ In 2005, attending the drill on oil spill prevention in Ningbo.

★ In 2006, participating in the oil spill emergency response operation at the Qingdao port.



The drill on oil spill emergency in the Three Gorges Reservoir Area

★2007: took part in the “Bohai Delta Oil Spill Drill” organized by the Ministry of Communications

★2008: participated in the algae control operations at the sea area of Qingdao and received the “Outstanding Unit in the Preparedness for the 29th Olympic Sailing Events” title from Shandong Provincial Government.

★2009, conducted the “Oil Spill Emergency Response Drill” along with Sinopec Pipeline Storage and Transportation Company at Caofeidian, Hebei.





★In the 2010 Dalian 7.16 Accident, a explosion of crude oil pipeline causing a fire of Dalian New Port Crude Oil Tank,our company deployed more than 20,000 meters of oil containment booms.。 We also supplied 130 tons of oil absorbent pad,60 tons of oil dispersant, oil skimmers, spraying devices and so on.

★2010,Gulf of Mexico oil spill: our company supplied more than 50,000 meters of oil containment booms.



★In the 2012 Huangdao oil pipeline explosion accident, our company supplied more than 15000m oil containment boom and large quantity of absorbent material, oil disperstant and oil recovery capability and attended the rescue





## Main Products

Our main products include a full range of oil containment booms, oil skimmers, oil storage device, oil absorbent material and etc.



# Oil Boom Series



## The Inflatable Neoprene Oil Boom

1. It is a kind of heavy duty oil containment boom with inflatable air chamber to use in nearshore, harbors, open waters and offshore.
2. It is made of neoprene rubber reinforced by two layers of high strength fabric. The neoprene rubber has good property of oil resistance, chemical resistance and UV resistance. So the inflatable neoprene oil boom has longer service life with a minimum maintenance.



3. There are elastic stiffen rods between air chambers to make the boom stiff to prevent the waves from overtopping. Each individual air chamber is isolated and will not be affected by other adjacent damaged air chambers.

4. The inflatable rubber boom works under the hydraulic power pack and air blowers. It can be packed in reel machine to store in special designed container or covered by tarpaulin.







Inflator

Hinge Pin  
Connector



Air Inlet

### Technical data:

Parameter	Model	WQJ800	WQJ1000	WQJ1200	WQJ1500	WQJ1800	WQJ2000	WQJ2600
Overall height(mm)		800	1000	1200	1500	1800	2000	2600
Freeboard(mm)		280	360	400	500	560	600	810
Draft(mm)		370	430	590	780	950	1100	1400
Max, working tensile strength(KN)		110	140	170	190	230	260	280
Length per section (m)		100/200						
Max, wave height to withstand(m)		2	2	2.5	3	3	4	4
Max, wind speed to withstand(m/s)		15	15	20	20	20	25	25
Max, current speed to with stand(KN)		2~3	3	3~4	3~4	3~4	3-4	3-4



## Solid Float Rubber Boom

1. Made of neoprene rubber reinforced by two layers high strength fabric.
2. Fitted with hot dipped galvanized chain or ballast member in the bottom.
3. Compare to PVC solid float oil boom, solid float rubber boom has higher strength, anti-abrasion resistance property.
4. Suitable for permanent deployment on waters such as open seas, gulfs, harbors, wharfs, rivers and offshore oil platforms.



## Technical data:

Parameter	Model	WGJ600	WGJ800	WGJ1000	WGJ1200	WGJ1400	WGJ1600	WGJ1800
Overall height(mm)		600	800	1000	1200	1400	1600	1800
Freeboard(mm)		210	280	340	400	460	520	590
Draft(mm)		280	360	480	600	700	810	900
Max, working tensile strength(KN)		50	80	100	110	120	140	160
Length per section (m)		20						
Max, wave height to withstand(m)		1.5	2	2	2.5	3	3	3.5
Max, wind speed to withstand(m/s)		10	15	25	20	20	20	25
Max, current speed to with stand(KN)		1.5	2	2.5	3	3	3-4	3-4





## PVC Solid Float Oil Boom

### Features:

1. Made of high strength PVC fabric and cylindrical foam inside.
2. Fitted with top tension cable and bottom galvanized chain which both increase the tensile strength of the boom.
3. Equipped with ASTM quick connector which is easy to deploy and maintenance.



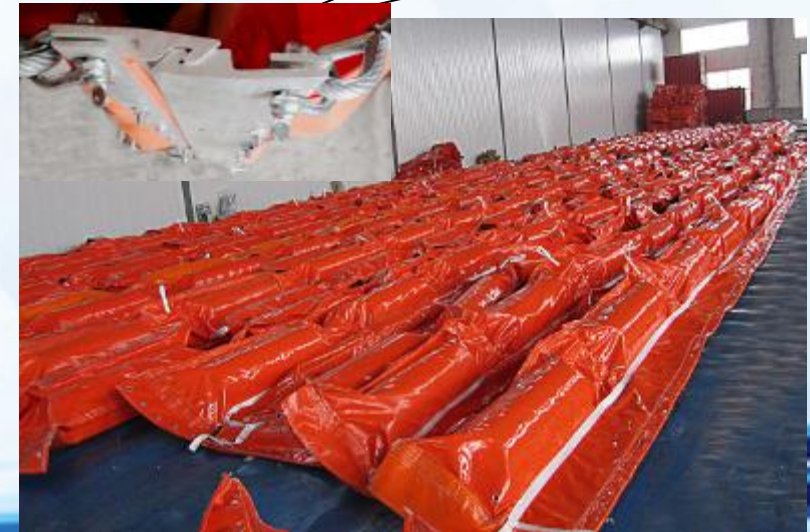
4. Because of its economical and light weight, The PVC oil boom can be used in wide range environment including industrial area, rivers, harbors and other calm water:

**Technical data:**

Model	WGV600	WGV700	WGV750	WGV800	WGV900	WGV1000	WGV1100
Parameter							
Overall height(mm)	600	700	750	800	900	1000	1100
Freeboard(mm)	150	210	260	280	320	340	370
Draft(mm)	380	390	400	420	490	540	560
Max, working tensile strength(KN)	20	25	30	45	55	75	85
Length per section (m)	20						
Max, wave height to with stand(m)	0.5	0.5	1	1.5	1.8	2	2
Max, wind speed to with stand(m/s)	8	10	10	15	15	18	20
Max, current speed to with stand(KN)	1	1	1.5	1.5	2	2.5	2.5
Standard connector	ASTM connector or as customer's requirement						
packing dimensions for 20m (m)	1x1x0.6	1.2x1x1	1.2x1x1	1.3x1.1x1.1	1.4x1.5x1.2	1.4x1.6x1.3	1.4x1.7x1.4



Quick connector





## Permanent Oil Boom

1. Permanent Oil boom is special designed for permanent deployment to contain oil spills or debris in harbors, tidal inlets and other oil facilities.
2. It is constructed with semi-rigid PU fabric or neoprene rubber belt and high density polyethylene (HDPE) float shells filled with Polyurethane (PU) foam.



3.The Permanent oil containment boom is fixed ASTM universal or quick connector for easy deployment.

#### Technical Data:

Model	POB450	POB600	POB750	POB900
Overall height	450mm	600mm	750mm	900mm
Fabric material	PVC or neoprene belt			
Float	HDPE or per customer's requirement			
Section Length	20m or 25m or per customer's requirement			
Max working tensile strength(Kn)	40	50	70	80





## PVC Fence Boom

1. PVC fence boom is a kind of light weight permanent containment boom, made of high strength orange PVC fabric with closed cell polyethylene foam to control oil spill in calm water area.
2. There is a top steel cable and bottom ballast chain to keep the strength of the fence boom. There are elastic stiffeners between solid floats to keep the oil fence straight and stiff and ensure an effective draft.



3.It is equipped with ASTM Z quick connector and easy to handle, store and deploy from handle bag, reel or rack because its light weight, compact volume.

Technical data:

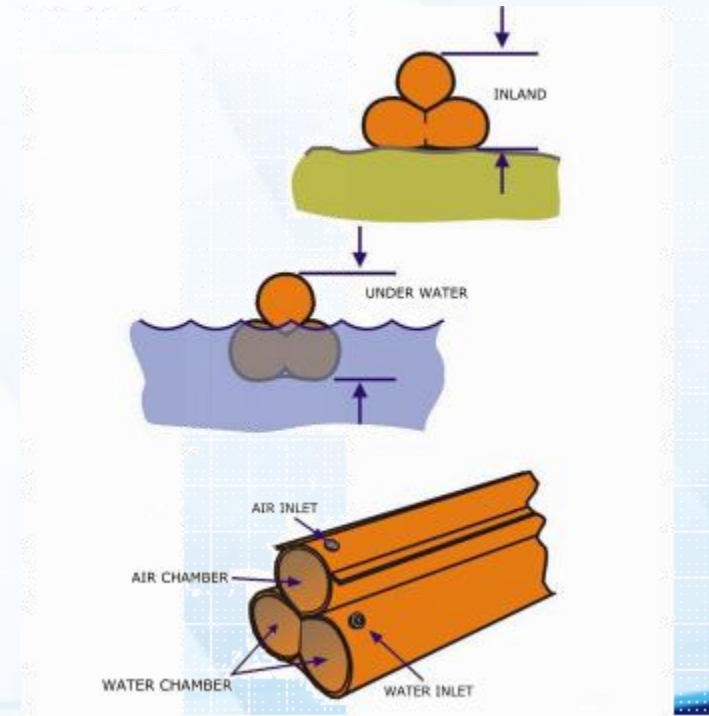
Model	SWL450	SWL750	SWL900	SWL1100
Overall height	450mm	750mm	900mm	1100mm
Freeboard(mm)	150	250	300	350
Draft(mm)	300	500	600	750
Packing	Reel or Rack or as customer's requirement			
Section Length	20m or 25m or per customer's requirement			
Standard Connect	ASTM Z quick connector			
or				





## Beach Sealing Boom

The beach sealing oil boom is known as shore sealing oil boom or tidal oil barrier. It is a kind of new oil spill containment boom with an upper air chamber and two bottom ballast water chambers.



Features:

1. The tidal oil boom is made of high strength visible orange polyethylene coated fabric and equipped with ASTM Z quick connector.
2. The upper air chamber is equipped with one air filling valve and one relief valve. And the bottom two water chambers are equipped separately with two relief valves and one water filling valve.





3. During deployment, the beach sealing boom can be operated by filling air to upper air chamber and filling water to bottom water chambers.

4. It is largely used to prevent the oil spills from spreading beach with tidal waves and land. A full range of water pump, air blower, reel or crane are available.

Technical data:

Parameter	Model	WQV700T	WQV800T	WQV900T	WQV1000T	WQV1200T
Overall height(mm)		700	800	900	1000	1200
Freeboard(mm)		200	250	300	350	400
Draft(mm)		200	250	300	350	400
Length per section		10M or 20M				
Total tensile strength ( KN )		30	35	40	45	50
Work、 storage temperature ( °C )		0-60	0-60	0-60	0-60	0-60
Max.wave height to withstand(m)		0.5	0.5	0.8	1.2	1.5
Max. wind speed to withstand(m/s)		4	5	6	8	10
Max.current speed to with stand(Kn)		0.5	0.5	0.8	1.2	1.5



Water pump



Air pump

■ 充气泵



## Quick Deploy Oil Boom

### Features:

1. Made of double-layer high strength PVC fabric and closed cell flexible foam.
2. Usually packed on the reel and easy to deploy without inflating to contain and control oil spills on water areas such as sea or harbors.
3. Accessories: relevant boom reel frame and power pack.



## Technical data:

Model/Parameter	KW800	KW900	KW1000	KW1200	KW1600
Overall height(mm)	600	800	1000	1200	1400
Water height(mm)	210	280	340	400	460
Underwater depth(mm)	280	260	480	600	700
Standard length per section(m)	200				
Total tensile strength ( KN )	60	65	70	80	100
Laying speed ( m/min )	≥40	≥40	≥40	≥40	≥40
Max.wave height to withstand(m)	0.8	1.2	1.5	1.8	2
Max. wind speed to withstand(m/s)	6	8	10	12	15
Max. current speed to with stand(Kn)	0.8	1.2	1.5	1.5	2





## Silt Curtain

1. Silt curtain is well known as turbidity barrier, silt barrier or silt screen. It is a solid float device made up of solid float PVC or rubber boom with woven geotextile curtain to protect water from polluting by the silt or sediment or float in civil works near harbors or channels or shipyards.
2. Silt Curtains is not a filtration device but to extend settling time to allow the suspended silt or sediment to fall to the bottom bed.



3. The silt curtain has different functions such as only prevent floating debris or only filter sediment or stop sediments from dispersing according to change the bottom different fabric.
4. It can be supplied with any length and depth from 1m to max. 15m according to different application.





# Oil Skimmer Series

## Disc/Brush Skimmer

### Features:

1. Disc/brush oil recovery skimmer is a floating oil skimmer with rotating disc or brush to recovery the oil spills in water.
2. The disc and brush could be exchangeable according to customer's requirement. It consists of a power pack, a floatable head and linking hoses between the head and power pack.
3. There are many models to suit oil viscosity and recovery conditions. These devices have been widely used on open seas, rivers, harbors, lakes and ponds.





## Technical Data:

Model/Parameter	ZSJ5	ZSJ10	ZSJ20	ZSJ30	ZSJ60
rotate speed (R/M)	40-100	40-100	40-200	40-300	40-600
Working pressure(Mpa)	3~6	3~6	3~6	3~6	5~8
Flow rate of oil pump(m <sup>3</sup> /h)	5	10	20	30	60
recovery capability(m <sup>3</sup> /h)	5	10	20	30	60
drive power(diesel engine or explosion-proof motor)KW	4.0/3	6.3/4	4.0+6.3/7.5	14.5/11	21/15
main unit weight (Kg)	55	70	120	160	200
weight of power station (KG)	100	115	255	500	550
diameter of oil discharge hose	2"	2"	2.5"	3"	4"

**Power station**



## Inclined Belt Skimmer

1. The inclined belt skimmer is mainly composed of the hydraulic power station, skimmer head (the main unit), the hydraulic oil hose, oil pipe and other parts.
2. The main unit of the skimmer can recovery the oil spill by pushing the oil spills into the water and then make it go through the oil collecting channel. One end of the inclined belt is above the water surface while another end is below the water surface.





3.It is driven by the hydraulic motor to push the oil spill under the water, then the oil spill would emerge from the water and then into oil collecting channel.

4.It is not only suitable for harbors, wharfs, gulf, rivers, lakes and other semi-enclosed waters, but also for open seas, offshore and other open water.



## Rope Mop Skimmer

1. Rope mop skimmer is made of oleophilic polypropylene rope to collect oil from the water. The oil could be squeezed from the rope passing through the skimmer and then to the oil collecting channel in skimmer body.

2. It is suitable for shallow water area to absorb medium to viscous oil.





## Technical Data:

Model	SS-2	SS-5	SS-10	SS-20	SS-30
Max. skimming rate ( m <sup>3</sup> /h )	2	5	10	20	30
rope diameter of the rope ( mm )	Φ300	Φ300	Φ300	Φ300	Φ300
rope length of the rope	7m or 14m or any length can be made to order				
quantity of the rope(pieces)	1	1	2	4	6
drive power(diesel engine or explosion-proof motor)KW	301/2.2	4.0/3	6.3/4	4+6.3/7.5	14.5/11
Type	Desktop/hanging		hanging		

## Vaccum Skimmer

1. The vacuum oil skimmer is driven by diesel engine to suck oil spill by suction head and temporary oil tank.
  2. The spilled oil will be recovered to the temporary oil tank by the suction head and then transported to the storage device in vessel or shore.
- The vacuum skimmer is mainly used in harbor, oil tank, river, lake, petrochemical plant and ect.





## Technical Data:

Parameter	Model	ZKJ-5	ZKJ-10	ZKJ-20	ZKJ-30	ZKJ-60
Working pressure(Mpa)		3-6	3-6	3-6	5-6	5-8
Max. skimming rate ( m <sup>3</sup> /h )		5	10	20	30	60
Max. vacuum		-0.044mpa	-0.044mpa	-0.044mpa	-0.044mpa	-0.044mpa
buffer tank diameter( mm)		Φ710	Φ710	Φ710	Φ840	Φ900
oil pumping station power(diesel engine or explosion-proof motor) ( KW )		4.0/3	6.3/4	6.3/5.5	14.5/7.5	14.5/11

## Weir Skimmer

1. The weir oil recovery skimmer consists of floating head, power pack and oil hoses between the skimmer head and the power pack.
2. It recovers spilled oil via self-adjusting weir and suction oil pump.
3. The weir skimmer is suitable for recovery of oil spills with low and medium viscosity and can be widely used on harbors, oil ports, wharfs, rivers, lakes, shipyards, ship-breaking yards, petroleum and chemical industries, power plants, wastewater treatment plants and other site where are oil spills to be recovered.



Item	YSJ-30	YSJ-50	YSJ-100
Max. skimming rate(m <sup>3</sup> /h)	30	50	100
underwater depth of overflow weir(mm)	35-90	50-120	80-150
drive power(diesel engine or explosion-proof motor)(KW)	14.5/7.5	14.5/11	21/15
suction head of oil recovery pump(m)	8	8	8
operating pressure of hydraulic cylinder(mpa)	5	5	5



# Oil Absorbent Material

## Oil Absorbent Pad/Mat

1. Oil absorbent pad or mat is one of the important materials for treading oil spill on water. It is made of 100% polypropylene with high oleophilic property.
2. It is not only used for absorbing oil inside absorbent booms but also for absorbing oil spills in water where mechanical recovery devices cannot recovery oil spills or the oil dispersant can be not used.



Item	Technical data
Color	White/grey/green or as customer's requirement
Absorbent capability	15-20times of self weight
Material	100% polypropylene
Size	as customers' requirement
Storage life	3 years



## Oil Absorbent Boom

1. Oil absorbent boom is made of super absorbent polypropylene with strong outer mesh. There is a nylon cable running through each boom which can be connected each other by a special steel connector.
2. There are a full range of oil absorbent material similar to oil absorbent boom like oil absorbent pillow, oil absorbent sweep and ect.
3. The oil sorbent boom can be used to control oil spills such as fuel oil, hydraulic oil, gasoline, diesel and ect.



## Technical Data:

Item	Dimension	Pack(Bag or Carton)	Absorb Capability	Weight
XTL127-1Marine Oil absorbent Booms	12.7cm*3M	4pcs/ B	96 L/ B	8 kg/ B
XTL127-2Marine Oil absorbent Booms	12.7cm*6M	2pcs/ B	96 L/ B	8 kg/ B
XTL220-1Marine Oil absorbent Booms	20cm*3M	4pcs/ B	192 L/ B	16 kg/ B
XTL220-2Marine Oil absorbent Booms	20cm*6M	2pcs/ B	192 L/ B	16 kg/ B





# Oil Dispersant Series

## Dispersant

1. Chemical dispersants (oil spill dispersants) utilizes the molecular interaction principle to break up oil spills from the state of aggregation to the smaller oil-water emulsion in the molecular state to make the oil spills on the water surface uniformly dispersed into the water system, so as to eliminate the oil spill pollution on the water surface.



2. It can be widely used in waters of seas, harbors, oil ports, wharfs and other site where there are oil spills to be disposed of. It is particularly suitable for the open water system and on the occasion where the sea conditions is rough, oil spills can not be recovered, or the oil spills is too thin to recover.

This product can best treat the oil spills with their viscosity ranging from 0-10000 °Cst. It is suitable for dispersing oil spills with low and medium viscosity.



## Oil Spill Dispersant Sprayer

Features:

1. Oil Spill Dispersant Sprayer is mainly used to spray oil spill dispersants, clean up oil spill pollution on waters, shoal, rock, building and other site.
2. It can also be used to cleanse containment booms, skimmers and other devices.
3. There are mainly two types of spraying device: Portable oil dispersant sprayer and oil dispersant sprayer mounded in hull.



## Technical Data:

Model/Parameter	PS40	PS80	PS120	PS160
Max. flow rate ( T/h )	2.4	4.8	7.2	9.6
Working pressure ( MPA )	1.6~4	1.5~4	1.5~4	1.5~4
Length of suction arm ( m )	/	6	6	6
Number of spray heads	/	8	10	10
Weight ( Kg )	70	240	280	300
External dimensions of pump station ( mm )	900x550x706	1000x750x675	1000x800x650	1000x850x700
power station power ( KW ) ( diesel engine )	4.0	6.3	6.3	6.3
spray gun	1	2	2	2
Max. spraying distance of spray gun ( m )	12	12	12	12



# Oil Storage Device

## Floating Oil Bladder

1. The floating oil bladder is made of neoprene rubber reinforced with fabric, equipped with quick connector and towing bridle.
2. As a towable oil storage device, It has one inlet for pouring oil and one outlet for discharging oil and both ports are fitted with quick coupling.
3. It stores the oil in the middle of the oil bladder with both side and the bottom as float.



Model/Parameter	FN-1.5	FN-4	FN-5	FN-8	FN-10	FN-20
storage volume(m3)	1.5	4	5	8	10	20
Towing speed ( KN )	3	3	3	3	3	3

## Portable PVC Oil Tank

1. The portable PVC oil tank is made of heavy duty PVC fabric and constructed aluminum frame or stainless steel frame.
2. It is used to temporarily store recovered oil from water and industrial waste. It can assemble and easy to operate in ground.
3. Technical Data:



Model/Parameter	QG-V3	QG-V5	QG-V10	QG-V15
storage volume(m3)	3M3	5M3	10 M3	15 M3
Dimensions(mm)	Φ1900x1380	Φ2400x1380	Φ3400x1380	Φ4000x1500





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