FACET

ENVIRONMENTAL

Making the world safer, healthier
and more productive®

Facet
Filtration Group®

80th
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1943 · 2023

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MAS Series
Oil Water Separators - Steel Construction

Facet MAS Series oil water separators are designed to treat hydrocarbon water both by gravity or pumping. These units perform the separation by physical means, do not require any consumables and have no mobile parts, so no maintenance is needed and their operation is free of failures.

Inside are housed the coalescing doubly corrugated plates Facet MPak®, which are supplied in modular packages installed within the separators together with an adjustment device which ensures that all of the fluid to be treated flows through the plates.

Each MAS Series oil water separator can be equipped with an oil storage chamber and/or with adjustable skimmers for removing the separated hydrocarbons.

Standard Features

- Access covers for easy adjustment of oil skimmers
- Epoxy coating interior and exterior
- MPak® plate packs: frame in steel and plastic hardware media is oleophilic polypropylene
- Clean plate packs in place (no need to remove from unit)
- Solids collection connections built into all units
- ¾", ¼" or ½" MPak® coalescing plate spacing
- Computerized effluent predictions for accurate sizing
- Skid in carbon steel

Engineering Specifications

- Flanges: ANSI B16.5
- Material of construction: carbon steel
- Hydrostatically tested for ½ hour
- Welding in accordance with the latest edition of A.W.S.

Standard Connections

- Inlet and outlet: 150# R.F.S.O.
- Solids cleanout: 150# R.F.S.O.
- Drain: 150# R.F.S.O.
- Heater: 2 ½" NPT coupling (heaters optional)

Options

- Two adjustable oil skimmers for oil removal
- Safety closure device in the outlet
- Oil storage tank
- Oil pump control station: includes pump and motor, control panel, high and low level float switches
- Immersion heater: Available in various ratings
- Gasketed covers
- Access ladder
- Handrail

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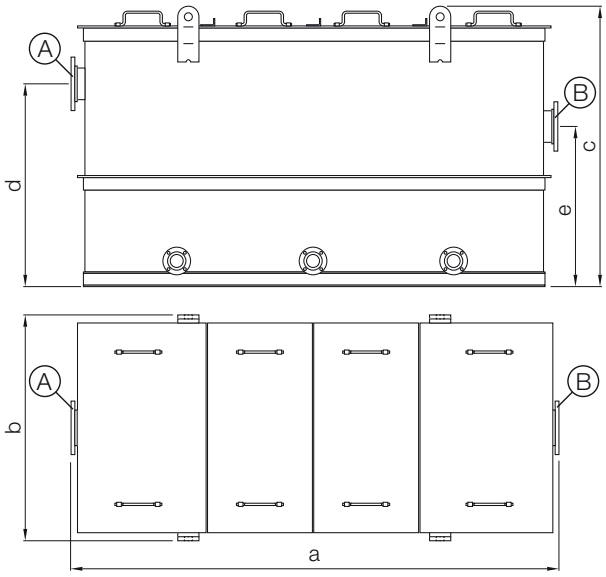
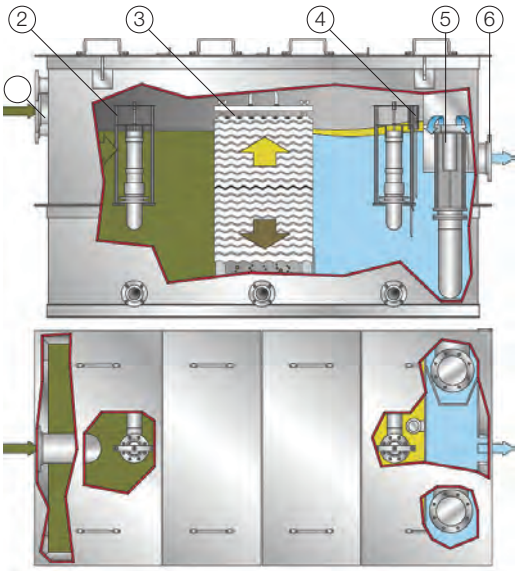
MAS Series
Oil Water Separators - Steel Construction





MODEL	DIMENSIONS (mm)					EMPTY WEIGHT (Kg)	FLOW (m^3/h)	CONNECTIONS	
	a	b	c	d	e			A	B
MAS 22.1	2800	860	1563	1180	813	1052	15-23	DN150	DN150
MAS 22.2	3400	860	1563	1180	813	1323	15-23	DN150	DN150
MAS 22.3	4300	860	1563	1180	813	1601	15-23	DN150	DN150
MAS 32.1	2800	1190	1563	1180	813	1449	20-35	DN150	DN150
MAS 32.2	3400	1190	1563	1180	813	1824	20-35	DN150	DN150
MAS 32.3	4300	1190	1563	1180	813	2170	20-35	DN150	DN150
MAS 52.1	2820	1747	1838	1185	910	1784	35-55	DN150	DN150
MAS 52.2	3420	1747	1838	1185	910	2314	35-55	DN150	DN150
MAS 52.3	4320	1747	1838	1185	910	2841	35-55	DN150	DN150
MAS 53.1	2820	1747	2144	1525	1185	2105	50-85	DN200	DN200
MAS 53.2	3420	1747	2144	1525	1185	2698	50-85	DN200	DN200
MAS 53.3	4320	1747	2144	1525	1185	3290	50-85	DN200	DN200
MAS 64.1	3620	2250	2274	1752	1302	3463	80-135	DN250	DN250
MAS 64.2	4230	2250	2274	1752	1302	4402	80-135	DN250	DN250
MAS 64.3	4670	2250	2274	1752	1302	5344	80-135	DN250	DN250
MAS 74.1	3930	2411	2274	1752	1302	3845	95-160	DN250	DN250
MAS 74.2	4230	2411	2274	1752	1302	4869	95-160	DN250	DN250
MAS 74.3	4750	2411	2274	1752	1302	5893	95-160	DN250	DN250
MAS 75.1	3930	2411	2520	2057	1607	4150	120-200	DN250	DN250
MAS 75.2	4230	2411	2520	2057	1607	5298	120-200	DN250	DN250
MAS 75.3	4750	2411	2520	2057	1607	6447	120-200	DN250	DN250
MAS 76.1	3930	2411	3050	2452	1985	4547	140-235	DN300	DN300
MAS 76.2	4230	2411	3050	2452	1985	5847	140-235	DN300	DN300
MAS 76.3	4750	2411	3050	2452	1985	7146	140-235	DN300	DN300

ITEM	DESCRIPTION
1	Inlet
2	Skimmer (optional)
3	Facet MPak® Plates
4	Oil level probe (optional)
5	Automatic closure device
6	Outlet

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MAS Series
Oil Water Separators - Concrete Construction

Facet MAS Series oil water separators are designed to treat hydrocarbon water both by gravity or pumping. These units perform the separation by physical means, do not require any consumables and have no mobile parts, so no maintenance is needed and their operation is free of failures.

Inside are housed the coalescing doubly corrugated plates Facet MPak®, which are supplied in modular packages installed within the separators together with an adjustment device which ensures that all of the fluid to be treated flows through the plates.

Each MAS Series oil water separator can be equipped with an oil storage chamber and/or with adjustable skimmers for removing the separated hydrocarbons.

Standard Features

- Class I Separators, according to EN-858, effluent less than 5 ppm
- Safety closure device in the outlet
- MPak® plate packs: frame in steel and plastic hardware media is oleophilic polypropylene
- Clean plate packs in place (no need remove from unit)
- ¾", ¼" or ½" MPak® coalescing plate spacing
- Computerized effluent predictions for accurate sizing

Engineering Specifications

- Material of construction: prefabricated reinforced concrete
- Hydrostatically tested for ½ hour
- Covers in cast iron Class D400 according to EN-124

Options

- Adjustable oil skimmers for oil removal
- Oil storage chamber
- Inlet solids chamber
- Oil pump control station: includes pump and motor, control panel, high and low level float switches
- Automatic warning device for light liquid Ex(i) execution

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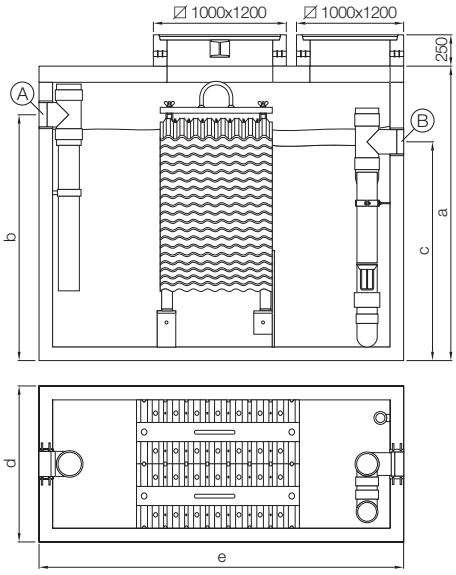
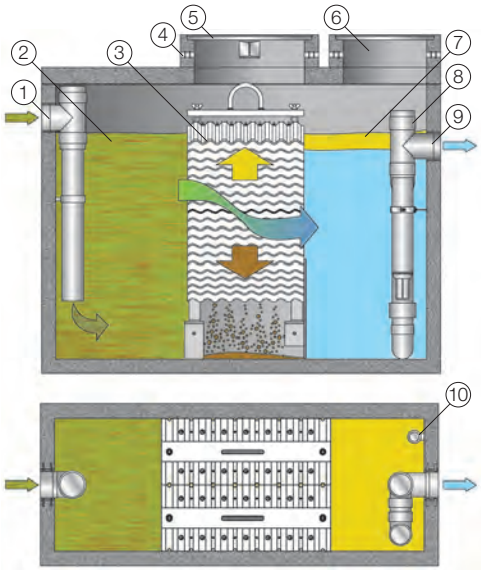
MAS Series
Oil Water Separators - Concrete Construction





MODEL	DIMENSIONS (mm)					FLOW (l/s)	CONNECTIONS	
	a	b	c	d	e		A	B
MAS 11.1	1000	725	615	1200	1000	1.5	DN100	DN100
MAS 12.1	1000	725	615	1200	1000	3	DN100	DN100
MAS 13.1	1500	1320	1160	1200	1000	6	DN150	DN150
MAS 23.1	2010	1460	1250	820	2835	10	DN150	DN150
MAS 24.1	2310	1780	1530	820	2835	15	DN200	DN200
MAS 25.1	2705	2175	1925	820	2835	20	DN200	DN200
MAS 35.1	2800	2250	1900	1135	2910	30	DN250	DN250
MAS 45.1	2800	2250	1945	1440	2910	40	DN300	DN300
MAS 55.1	2850	2225	1875	1750	3035	50	DN300	DN300
MAS 75.1	2850	2275	1925	2360	3035	65	DN300	DN300
MAS 76.1	3100	2610	2260	2360	3035	80	DN300	DN300
MAS 75.2	2850	2275	1925	2360	4620	100	DN300	DN300
MAS 76.2	3100	2610	2260	2360	4620	125	DN400	DN400
MAS 96.2	2900	2475	1792	2100	4650	150	DN400	DN400

ITEM	DESCRIPTION
1	Inlet
2	Inlet chamber
3	Facet MPak® Plates
4	Vent
5	Cover
6	Manhole
7	Outlet chamber
8	Automatic closure device
9	Outlet
10	Oil level probe (optional)

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MAS Series
Oil Water Separators - GFRP Construction

Facet MAS Series oil water separators are designed to treat hydrocarbon water both by gravity or pumping. These units perform the separation by physical means, do not require any consumables and have no mobile parts, so no maintenance is needed and their operation is free of failures.

Inside are housed the coalescing doubly corrugated plates Facet MPak®, which are supplied in modular packages installed within the separators together with an adjustment device which ensures that all of the fluid to be treated flows through the plates.

Each MAS Series oil water separator can be equipped with an oil storage chamber and/or with adjustable skimmers for removing the separated hydrocarbons.

Standard Features
- Access covers for easy adjustment of oil skimmers
- Epoxy coating interior and exterior
- MPak® plate packs: frame in steel and plastic hardware media is oleophilic polypropylene
- Clean plate packs in place (no need to remove from unit)
- Solids collection connections built into all units
- ¾", ¼" or ½" MPak® coalescing plate spacing
- Computerized effluent predictions for accurate sizing
- Skid in carbon steel

Engineering Specifications
- Flanges: ANSI B16.5
- Material of construction: carbon steel
- Hydrostatically tested for ½ hour
- Welding in accordance with the latest edition of A.W.S.

Standard Connections
- Inlet and outlet: 150# R.F.S.O.
- Solids cleanout: 150# R.F.S.O.
- Drain: 150# R.F.S.O.
- Heater: 2 ½" NPT coupling (heaters optional)

Options
- Two adjustable oil skimmers for oil removal
- Safety closure device in the outlet
- Oil storage tank
- Oil pump control station: includes pump and motor, control panel, high and low level float switches
- Immersion heater: Available in various ratings
- Gasketed covers
- Access ladder
- Handrail

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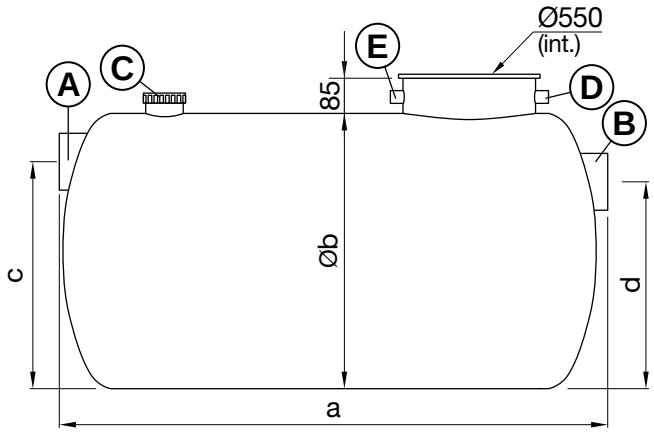
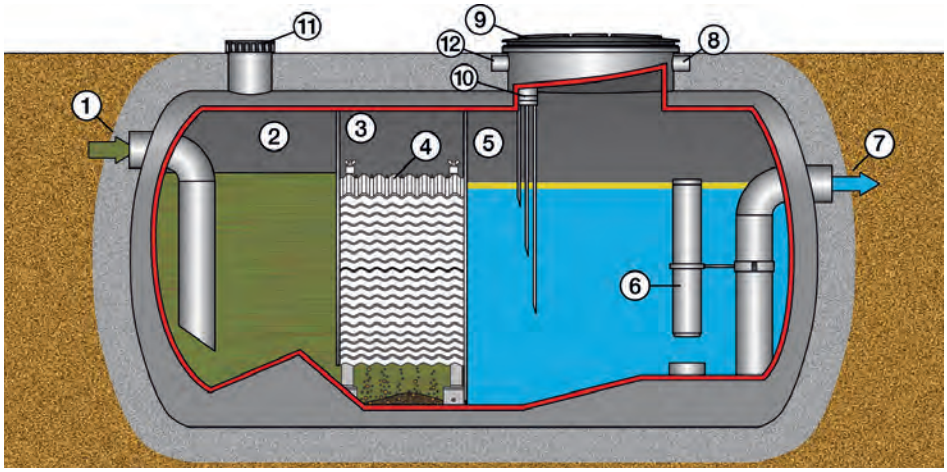
MAS Series
Oil Water Separators - GFRP Construction



MODEL	Q	a	Øb	c	d	WEIGHT	V	A	B	C	D	E
	l/s	mm	mm	mm	mm	kg	l	DN	DN	DN/(mm)	mm	mm
MAS-11.1-GF	1.5	2330	1000	895	815	140	1830	110	110	90/(80)	25	25
MAS-12.1-GF	3	2330	1000	895	815	140	1830	110	110	90/(80)	25	25
MAS-13.1-GF	6	2330	1000	895	815	150	1830	160	160	90/(80)	25	25
MAS-23.1-GF	10	2330	1300	1170	1090	260	3100	160	160	90/(80)	40	25
MAS-24.1-GF	15	2460	1600	1450	1350	330	4950	200	200	90/(80)	40	25
MAS-25.1-GF	20	2460	1600	1450	1350	340	4950	200	200	90/(80)	40	25
MAS-35.1-GF	30	2590	2000	1825	1700	470	8100	250	250	90/(80)	40	25
MAS-45.1-GF	40	2760	2400	2200	2050	720	12500	315	315	90/(80)	40	25
MAS-55.1-GF	50	2760	2400	2200	2050	750	12500	315	315	90/(80)	40	25



ITEM	DESCRIPTION
1	Inlet
2	Inlet chamber
3	Plate chamber
4	MPak® plates
5	Outlet chamber
6	Automatic closure device
7	Outlet
8	Vent connection
9	Manhole
10	Oil level probe (optional)
11	Solids removal connection (with cover)
12	Connection for oil level probe wiring

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MCP Series
Oil Water Separators

Facet's new Model MCP Oil Water Separators are versatile, compact, high efficiency units designed for small flow rates. They are complete with a simple and reliable pneumatic pump to bring the liquid into the separator and Facet's patented MPak® coalescing plate technology to remove the oil from the water. Each separator has a small oil reservoir to accumulate the unwanted oil for disposal and an alarm system to alert the operator it is time to remove the oil. Two sizes are available. Optional wheels make easy to roll the MCP from one task to another within the plant.

Applications

The MCP separators are great for use in removing tramp oils from machine tool coolants, floor washing or parts washing water garages, auto dealers, or other equipment service facilities. They can even be used for (land-based) processing of oily bilge water from boats. In most any situation where there is a relatively small quantity of water containing unwanted oils a MCP unit can be a cost effective, space effective solution to the problem. And the MCP unit uses no filter cartridges or other disposables to increase costs and cause disposal problems. The recovered oil can sometimes be reused or recycled.

Operation Description

The MCP unit pumps the contaminated water through the patented MPAK plate pack. As the water passes through the plate pack, oil droplets in the water rise up and meet the undersides of the plates, where they are removed from the water. The droplets eventually coalesce and form large drops which rise to the surface and are automatically skimmed off of the surface into the oil reservoir. Cleaned water passes through the plates and exits the separator. After the liquid is pumped into the system, the operation of the separator is purely by gravity – clean, efficient, and very reliable.

Options

- Available in two sizes: 1,6 gpm and 3,2 gpm nominal flow rates
- Floating inlet skimmers and level switches for use in sumps
- Wheels for easy portability
- Alarm bell in addition to standard alarm light

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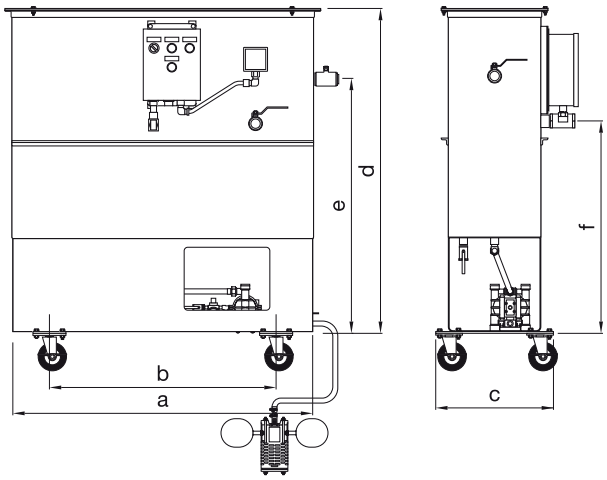
MCP Series
Oil Water Separators

Specifications

- Inlet connection: 3/8" (10 mm) hose type
- Outlet connection: 1" (45 mm) NPT
- Drain connection: 1" (45 mm) NPT
- Oil drain: 1" (45 mm) NPT
- Electrical: 110-120 - 220 Vol. AC
- Pump: Pneumatic

Standard Materials

- Vessel and Stand: Carbon Steel
- Coating: Flexible Epoxy
- Coalescing Plates: Calcium Carbonate-filled Polypropylene



MODEL	MAX FLOW		SHIP WEIGHT		a		b		c		d		e		f	
	gpm	lpm	lbs	kg	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
MCP-11	1.6	6.0	590	267	42	1067	30	762	16	406	36	914	30½	775	23½	600
MCP-12	3.2	12.0	670	304	42	1067	30	762	16	406	48	1219	34½	877	32½	825

All dimensions are for estimating purposes only.

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MPP Series
Oil Water Separators
Polypropylene Construction

Facet's MPP Series Oil Water Separators utilize the most efficient oil and water separation technology available.

Now, this breakthrough in environmental clean-up technology is available in a lightweight, polypropylene housing. These polypropylene oil/water separators are flexible, cost-effective, and up to the challenge — wherever oil and water hit the floor.

From big machine shops to single-bay quick lubes, tooling companies to oil change centers, the MPP oil/water separators are the clear and simple solution in virtually any application.

Simple, streamlined inlet/outlet piping connections allow gravity driven or pumped flow operation. Adjustable water outlets make Model MPP flexible and feasible, regardless of foundation discrepancies and irregularities.

With polypropylene construction, the new MPP oil/water separators are lightweight and portable when empty, and corrosion resistant. These units can be installed inside or outside.

The unique Polypropylene Oil/Water Separator features the large surface area of Facet's patented MPak® technology for optimum coalescence of oils and hydrocarbons as well as efficient removal and storage of solids.

MPak® coalescing plates need very little maintenance. When necessary, cleaning is quick and easy with the MPak® Cleaning Wand.

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Oil level control system for Oil Water Separators

The Facet Oil Control and Alarm System for MAS/MCS/ MPP/ NG/MCPS Oil Water Separators is designed to optimize the maintenance costs, reducing to the maximum the number of controls, saving time and unnecessary displacements. This way, it is possible to discharge the oil collected only when it is near its maximum recommended level.

The Control System monitors two situations: Warning and Alarm. The first level (Warning) is activated when the oil collected reaches its maximum recommended level to plan its removal; whereas the second level (Alarm) indicates that the critical oil level has been reached and it is imperative to discharge the oil collected in the Separator in order to prevent it from being discharged outwards.

The above mentioned situations are reported through indicators, luminous and acoustic, installed into the Control Panel, so it is known clearly and in all times the level status of the collected oil without the constant supervision by an operator.

The system consists of:

- One set of Level Probes to be installed inside the Separator or inside the Oil Chamber, depending on the model.
- One Control Panel with pilots and acoustic alarm which indicates the above mentioned situations.

Standard Features

- Possibility of installation in Separators series MAS/MCS/ MPP/NG/MCPS with or without oil chamber
- Indication of two situations: Warning and Alarm, with visual and audible alert. Warning situation can be disconnected with a switch
- Power supply 230V/1Ph/50Hz/25W
- IP-65 Control Panel in polyester, for wall mounting in control room for operator supervision
- Wide range of operating temperatures (-20ºC to +50ºC)
- Distance of level probes to Control Panel 100m maximum
- Intrinsically safe Ex(i)

Options

- Galvanized carbon steel support for Control Panel to be installed outdoors
- Sunshade for the Control Panel in polyester/stainless steel
- Control Panel in stainless steel
- SPDT voltage free contact

Technical Features

- Control Panel (IP-65)
  - Polyester box in RAL 7032, with translucent cover to be set up on wall, of 270x180x180 mm and 2.55 kg, IP-65
  - 2 metal cable glands PG11
  - 1 Main switch
  - 1 Reset button for audible alarm
  - 2 pilots (red)
  - 1 acoustic buzzer, 72 db(A)@1m
  - 1 Amplifier barrier [Ex ia] IIC with two input and 2 output channels
- Level Probe (in oil water separator)
  - Oil resistant synthetic head
  - 3 stainless steel sensors
- Level Probe (in oil chamber)
  - Steel connection box, protected inside and outside with polyester epoxy paint RAL-7032, IP 55 protection, 85x85 mm, and connection through metal cable glands IP 68
  - 2 polysulfone floating sensor, hydrocarbon resistant. Highly sensitive and maintenance free
- Cable signal from level probe to control panel (not supplied by Facet), it is recommended:
  - Maximum length: 100 m
  - Regulation: EN 21123-4 / IEC 60502-1
  - Type: RZ1.K - 0.6/1kV
  - Conductors: 3x 1.5 mm^2 copper, flexible class 5
  - Insulation: Reticulated polyethylene (XLPE)
  - External coating: halogen free
  - Flame retardant (EN 60332-1-2 / IEC 60332-1-2)
  - Fire retardant (EN60332-3-24/25) / IEC60332-3-24/25)

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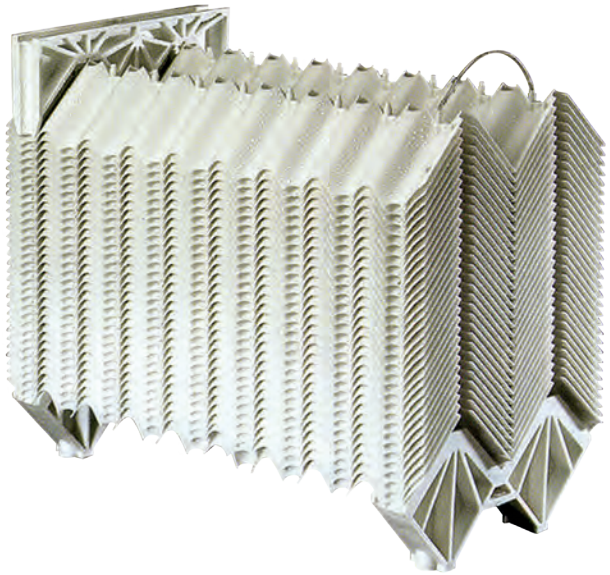
MPak®
Coalescing Plates



Facet's NEW HIGH-PERFORMANCE MPak® COALESCING PLATES PROVIDE SUPERIOR PERFORMANCE IN REAL WORLD ENVIRONMENTAL CLEAN-UP.

Facet's patented MPak® coalescing plates are designed to separate oil and solids from water using the differences in their specific gravities. The plates MPak® are installed in packages with a predetermined spacing therebetween, so as to enable the space required for retention of solids.

The adaptability of the plates makes of them the most appropriate system for both the conversion of existing devices and for new facilities.

Features

- Reduces oil contamination to limits as low as 5 ppm
- Virtually self-cleaning -solids fall to the bottom, oil weeps to the top
- Modular construction -retrofits existing API separators and tanks
- New support system that allows access for solids removal
- ¾", ¼" and ½" spacing
- Computer sizing —guarantees effluent quality
- Operating temperature 40° F to 208° F
- pH range from 2 to 12
- Oleophilic material
- Surface area per 2 ft^3: 186 ft^2 is greater than any competitor

Applications

Facet's MPak® coalescing plates have hundreds of environmental applications, including:

- Rainwater run-off clean-up
- Maintenance washdown clean-up
- Heavy equipment and transportation washdown facilities
- Groundwater remediation clean-up
- Machine tool coolant recovery
- Manufacturing facility effluent water
- Oil refinery/storage terminal effluent water
- Offshore and onshore oil production facilities
- Marine applications
- General industry

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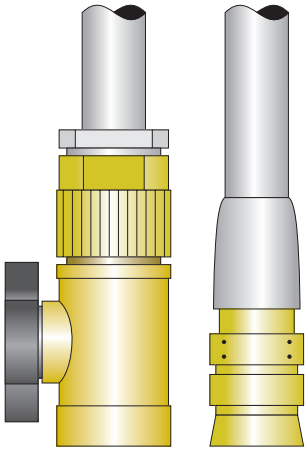
MPak®
Cleaning Wand

Facet MPak® oil water separator plate packs are selfcleaning, but under determined adverse conditions can become plugged with solids.

Considering these situations, the plate packs have been designed so that can be cleaned in place using the special cleaning wand and city water pressure.
This device includes an ordinary connection of ½", topped with a small conical strainer that releases the cleaning holes.



Guidelines For Using The Device

Although the plates are designed to be cleaned in situ, it is possible to remove the packages of plates for cleaning operations.

In both cases, before you start cleaning, you must stop the flow in the unit, remove the oil and drain the water.

In case you opt for in situ cleaning, connect the special cleaning device to a water hose pressure (60 psig at least).

After this, the next step is to open the water so that a stream in spray is produced and insert the end of the device slowly into each hole of the plate package, starting from the inlet side of the package.

As the water flushes the dirt out of the plate packs it should be removed by a vacuum system or transferred to an oil water sewer.

In case you opt for cleaning outside of the vessel, you must remove by using a crane the plate packs and other internal elements (except bolted-in internals). Flush with hose and clean, once cleaning is complete, return to their original position all the elements.

ITEM	DESCRIPTION
1	½" Hose
2	"Garden" hose shut-off valve
3	Special hose nozzle
4	Hose barbs
5	Water jets (typical)

Note: The spray wand produces a vigorous spray. Operators should wear waterproof clothing and goggles or face masks.

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