

CIVILMART



CDS[®] Separator **PRODUCT GUIDE**



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CDS® Separator

CDS® Separator are designed to capture and retain gross pollutants, litter, grit, sediments and associated oils, utilising patented CDS® indirect screening technology.

Civilmart offers a complete design service for CDS® products that takes into account the catchment's characteristics, pollution load, hydraulic site constraints and opportunities, system capacities, velocity, backwater, as well as the location of services and access for cleaning.

Hydraulic reports are available on request and are automatically carried out for larger units.

CDS® Continuous Deflective Separation

The CDS® Separator utilises the energy of the inflow to create a vortex flow regime within the CDS® screening chamber.

The CDS® Separator simply creates a whirlpool that draws all the deflected and settling pollutants to the centre of the screening chamber where they fall out into the storage sump below.

The pollutant storage sump located below the screening chamber allows pollutants to be removed from the flow path and away from the screens, thus maintaining a reliable treatment efficiency.

The unique CDS® technology is the most reliable way to effectively and efficiently treat gross pollutants in stormwater drainage systems.



Characteristics

- Non-blocking functionality
- 95% capture of gross pollutants >1mm
- 95% sediment capture >200µm
- Captures organics and oils
- Captures adsorbed toxics and nutrients
- Can treat any pipe or multiple pipes
- Various sump sizes available
- Customised bypass requirements
- Underground - small footprint
- Easy installation
- No moving parts
- Lowest life cycle costs
- More water treated than comparable treatment designs
- Pollutants stored in the sump, not the screens

Benefits

- Subdivisions and roads
- Residential, commercial and industrial developments
- Car parks and shopping centres
- Pre-treatment for wetlands
- Pre-treatment for reuse applications
- Pipes, channels, culverts and creeks

Other CDS® models are available for non-stormwater applications involving high flow solids/ liquids separation, such as industrial processes and sewer overflows.

CDS® Unit Models

The size and type of CDS® separator required depends on catchment area, flows, pollution loads, performance requirements, maintenance method, hydraulic limitations and site constraints.

Visit the Civilmart website for a sizing request form. Details submitted with this form provide all the information needed to calculate the size of device most applicable for the site.

CDS® Separator Model No. ⁴	Overall Dia ¹ (mm)	Treatment ³ Flow (L/s)	Weir Height ² (mm)	Minimum DTI ⁵ (mm)
Nipper 0506	1300	20-22	300	1035
CDS 0708	1750	50-55	400	1105
CDS 0708Maxi	2600	50-55	400	1185
CDS 1009	1950	100-110	500	1610
CDS 1012	1950	140-150	600	1610
CDS 1015	1950	180-200	700	1610
CDS 1512	2600	220-250	650	1610
CDS 1518	2600	350-400	800	1610
CDS 2018	3400	500-600	900	1610
CDS 2028	3400	800-900	1100	1610
CDS 3018	5000	800-900	900	1610
CDS 3024	5000	1250-1400	1000	1610
CDS 3030	5000	1750-1900	1200	1800

1: Excludes Diversion Chamber except for models 0506, 0708 & 0708M

2: Measured from outlet invert with no tailwater

3: CDS treatment flows are indicative only

4: Model sizing is undertaken independently from the bypass hydraulics of the diversion chamber

5: In most cases minimum DTI is determined by diversion chamber depth

CDS® SEPARATOR PERFORMANCE

Gross Pollutant Removal	98% (>3mm)
Sediments Capture	>80% (>75µm)
TSS Removal	>70% (d50 = 106µm)
Total Phosphorous (TP) Removal	>30% (at 70% TSS removal)
Hydrocarbon Capture	80-90% 'at typical stormwater concentrations for free oil

Maintaining CDS® Separator

The CDS® Separator has the lowest life-cycle costs due to its non-blocking functionality, large off-line storage and multiple cleaning options. There are 3 methods of emptying CDS® Separators:

- Removable basket
- Material grab
- Suction method

With no requirement to unblock screens, confined space entry is minimised. Large off-line sump volumes (up to 10m³ available) also minimise cleaning frequency.

CDS® Continuous Deflective Separation

It has long been acknowledged that best management practice for stormwater pollutant traps involves locating the devices off-line.

- GPTs located on-line suffer badly from turbulence and eddies, often resulting in the re-suspension and loss of previously captured pollutants.
- GPTs which store pollution in the screening area suffer decreasing screen area and therefore decreasing flow rates, as they fill up.
- GPTs which function by direct filtration have a treatable flow rate decay that is proportional to the percentage of screen blockage.
- GPTs that utilise a vortex only, without a screen, cannot guarantee neutrally buoyant pollution removal.

Only CDS® Separators combine the advantages of being off-line, having non-blocking functionality, vortex forces and storing pollution outside the screening area. For these reasons, no other device is “equivalent” to a CDS® Separator.

Diversion Chamber

Precast diversion chambers can be manufactured to suit most typical installations, or chambers can be tailored to meet the hydraulic limitations of the site.

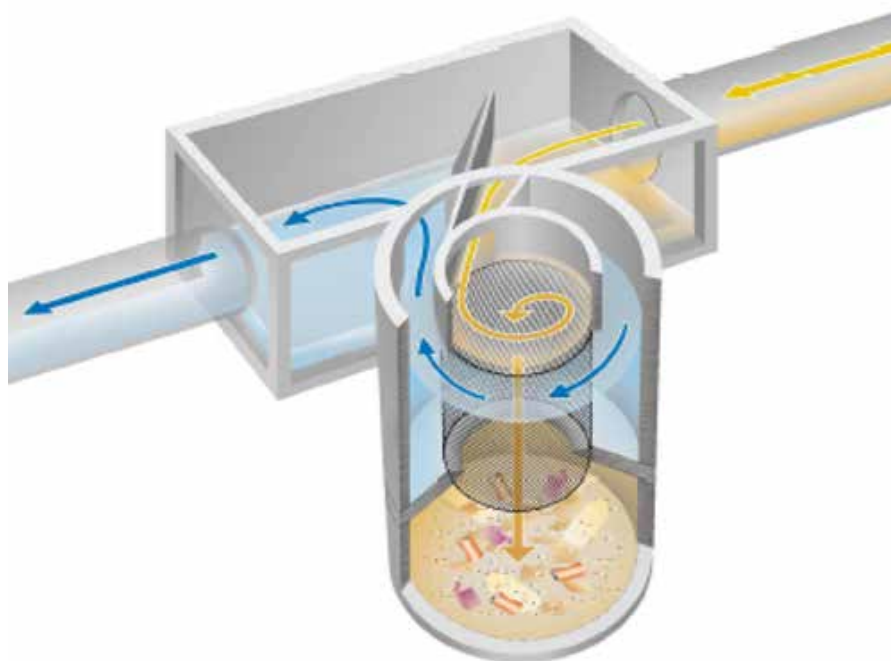
The diversion chamber has the capacity to cater for the highest possible flow in the stormwater system. The chamber is configured on the assumption that the CDS® Separator has not been maintained and there is no flow passing through the unit.

A weir is located within the diversion chamber to create a driving head and direct the majority of flows into the CDS® GPT.

Chamber Options

The CDS® Separator and diversion chamber design depends on the system capacity and site constraints. Rocla will design the most suitable CDS® Separator configuration to meet project requirements.

- Precast diversion chambers
- Semi-precise diversion chambers
- Customised designs for multiple pipes, drops and bends
- In-situ channel designs
- Fixed or collapsible weirs
- Any flow capacity
- No flooding



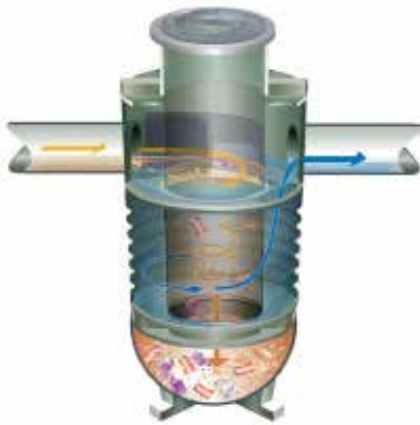
CDS® 0506 Separator

The PL0506 in-line CDS® Unit, known as the Nipper, is the smallest in the CDS® range of gross pollutant traps. It provides the fully proven performance of CDS® Separators in a pint-sized polymer unit.

The Nipper is ideally suited for installation at the collection source in small catchment areas of less than a hectare and is designed to remove gross pollutants, organic waste, silt, sediment and oils.

Manufactured from strong, lightweight polymer material, the CDS® 0506 is delivered to site in one piece, making it easy to install and cost-effective.

CDS® 0506 PERFORMANCE	
Pipe Flows	Treatment 25 L/s Max 150 L/S
Gross Pollutant Removal	98% (>3mm)
Sediments Capture	>80% (>75µm)
TSS Removal	>70% (d50 = 106µm)
Total Phosphorous (TP) Removal	>30% (at 70% TSS removal)
Hydrocarbon Capture	80-90% 'at typical stormwater concentrations for free oil
Free Oil Storage Capacity	150 litres



Product Application Design (PAD) Services

Civilmart offers a full design and drafting service in support of its water quality products, including the CDS® separator.

These services are available to all customers. To see how Civilmart can assist you with your water sensitive urban design (WSUD) solutions please visit the Civilmart website.

Specifications

- **Storage**
0.72 cubic metres
- **Weight**
140 kilograms
- **Footprint**
1050mm diameter
- **Material**
High density polyethylene
- **Treatment**
Self-cleaning screens, vortex and gravity
- **Screens**
2.4mm stainless steel
- **Inlet Size**
Up to 375mm diameter

Applications

- Small subdivisions
- Bus and train stations
- Pre-screening bio-retention systems
- Pre-screening construction wetlands
- Packaging warehouses
- Roadside drains
- Car parks



Custom Precast Specialists



Need a custom job?

Civilmart is uniquely positioned amongst precast concrete suppliers in that we are experts in designing and manufacturing custom precast products. If non-standard specifications are involved in a project, we will do what it takes to make it a reality. We have extensive custom-manufacturing capabilities and if necessary, we will build new moulds to create exactly what you need. Our agility and flexibility when creating products is unmatched, it's something we're extremely proud of.

Submit your plans or let us work with you to design a product that will perfectly fit your next project. Whether it's a small variation to a standard product or a completely new idea built from scratch, Civilmart will help you get it done.







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