# VDF

Vortex Dynamic Filter


NIKUNI

# Features

Liquid-solid separation is done by centrifugal force, **eliminating** the need to use costly filtration media which must be replaced!

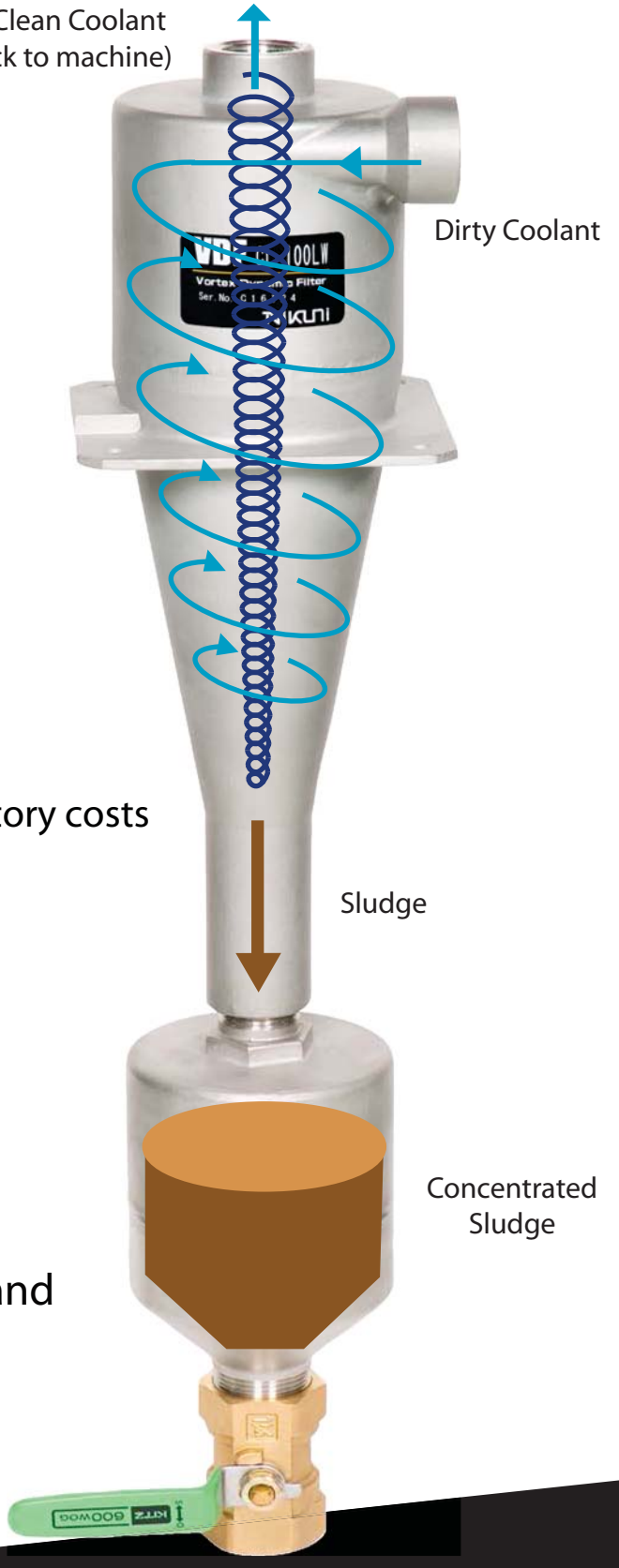
## SAVE AROUND $3,800 A YEAR ON COOLANT FILTRATION COSTS!

Features:

- ✗ No maintenance → No labor costs
- ✗ No industrial waste → No disposal costs
- ✗ No need to buy filtration media → No inventory costs

- ✓ Highly efficient and accurate
- ✓ Easy sludge disposal
- ✓ Stainless steel and PVC models
- ✓ Reduced tank cleaning frequency
- ✓ Prolonged coolant life

Sludge is discharged into the sludge pod and cannot return to the fluid tank once captured!



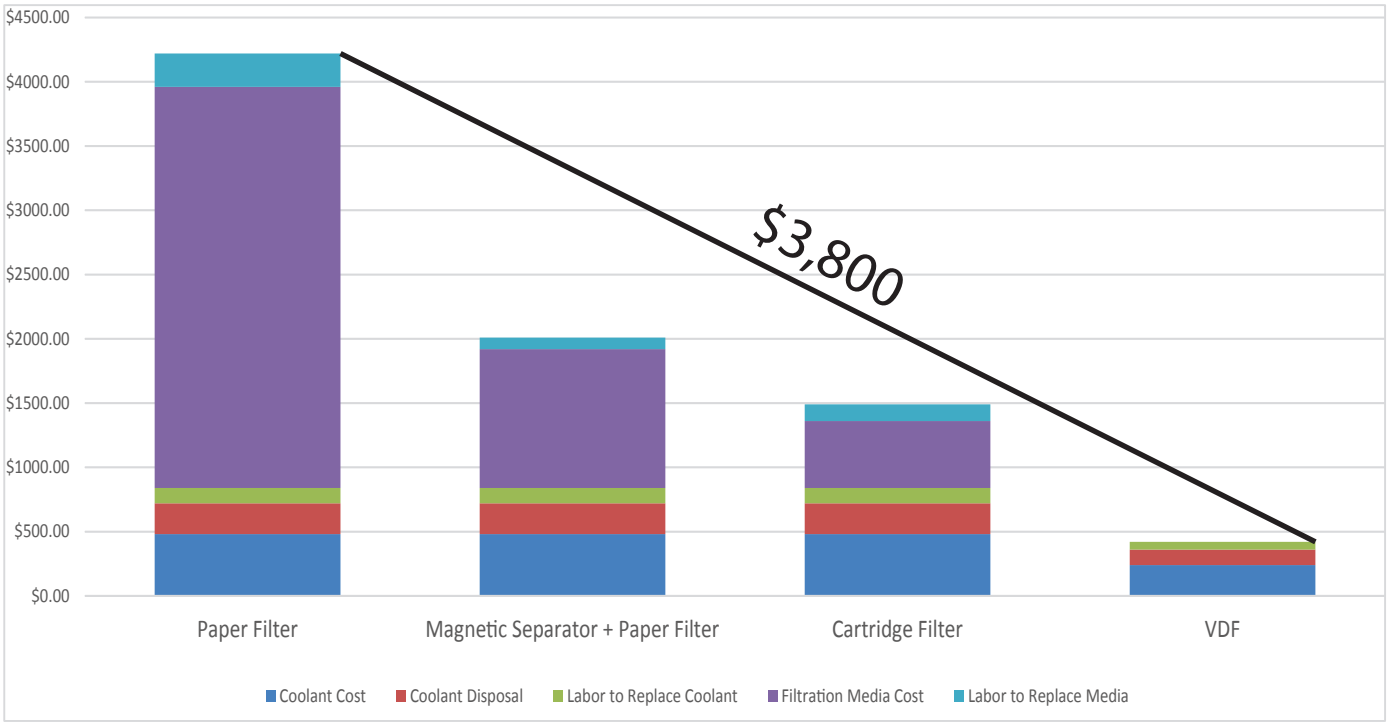

**90% FILTRATION OF 10µm SLUDGE IN WATER BASED COOLANT**

# See how you can save $3,800 a year!

- ✓ No replacement filters
- ✓ No maintenance to replace filters
- ✓ Improved accuracy
- ✓ Reduced coolant replacement/disposal

**Comparison of the Cost of the VDF System vs. Other Systems**

| Yearly Costs | VDF | Paper Filter | Magnetic Separator + Paper Filter | Cartridge Filter |
|---|---|---|---|---|
| Filtration Media | $0<br>**No Filter Necessary** | $3,120<br>52 units at $60 per unit | $1,080<br>18 units at $60 per unit | $520<br>52 units at $10 per unit |
| Labor for Media Replacement | $0<br>**No Maintenance** | $260<br>weekly<br>10 min. at $0.50/min. | $90<br>every 3 weeks<br>10 min.at $0.50/min. | $130<br>weekly<br>5 min. at $0.50/min. |
| Coolant Replacement (10% unit capacity) | $240<br>2 times at $120/replacement | $480<br>4 times at $120/replacement | $480<br>4 times at $120/replacement | $480<br>4 times at $120/replacement |
| Labor for Coolant Replacement | $60<br>60 min. a replacement at $0.50/min. | $120<br>60 min. a replacement at $0.50/min. | $120<br>60 min. a replacement at $0.50/min. | $120<br>60 min. a replacement at $0.50/min. |
| Dirty Coolant Disposal | $120<br>2 times at $60/disposal | $240<br>4 times at $60/disposal | $240<br>4 times at $60/disposal | $240<br>4 times at $60/disposal |
| **TOTAL COSTS** | $420 | $4,220 | $2,010 | $1,490 |



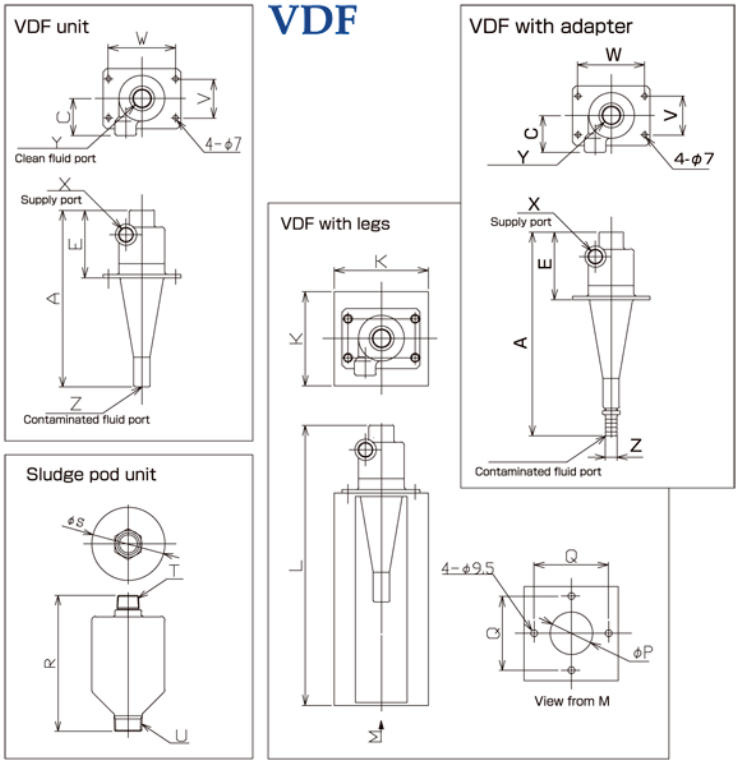
# VDF Unit

## VDF Unit Dimensions (unit: inches)

| Model | A | C | E | V | W | X | Y | Z | Weight (kg,lbs) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CL-30LW | 9.84 | 2.05 | 3.78 | 2.17 | 3.74 | Rc1/2 | Rc3/4 | Rc3/8 | 2 | 4.41 |
| CL-50LW | 12.32 | 2.46 | 5.12 | 3.90 | 3.90 | Rc1/2 | Rc1 | Rc1 | 3.5 | 7.72 |
| CL-70LW | 12.32 | 2.46 | 5.12 | 3.90 | 3.90 | Rc3/4 | Rc1 | Rc1 | 3.5 | 7.72 |
| CL-100LW | 16.9. | 2.95 | 6.42 | 4.72 | 4.72 | Rc1 | Rc1 | Rc1 | 6 | 13.23 |
| CL-200LW | 23.46 | 4.13 | 8.94 | 6.69 | 6.69 | Rc1・1/2 | Rc1・1/2 | Rc1・1/2 | 11 | 24.25 |
| CL-300LW | 28.19 | 4.92 | 10.28 | 7.87 | 7.87 | Rc1・1/2 | Rc1・1/2 | Rc1・1/2 | 16 | 35.27 |

## VDF with adapter Dimensions (unit: inches)

| Model | A | C | E | V | W | X | Y | Z | Weight (kg,lbs) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CL-30LWAD | 10.59 | 2.05 | 3.78 | 2.17 | 3.74 | Rc1/2 | Rc3/4 | ø17 | 2 | 4.41 |
| CL-50LWAD | 14.69 | 2.46 | 5.12 | 3.90 | 3.90 | Rc1/2 | Rc1 | ø27 | 4 | 8.82 |
| CL-70LWAD | 14.69 | 2.46 | 5.12 | 3.90 | 3.90 | Rc3/4 | Rc1 | ø27 | 4 | 8.82 |
| CL-100LWAD | 19.29 | 2.95 | 6.42 | 4.27 | 4.72 | Rc1 | Rc1 | ø27 | 6.5 | 14.33 |



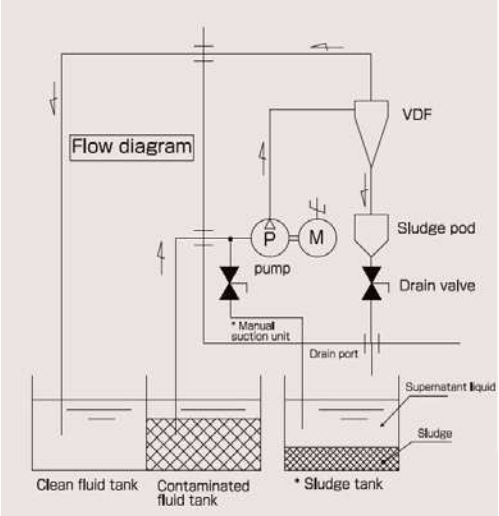

## VDF with Legs Dimensions (unit: inches)

| Model | K | L | P | Q | Weight (kg, lbs) | |
|---|---|---|---|---|---|---|
| CL-30LWT | 5.24 | 15.59 | 2.36 | 4.13 | 5.5 | 12.13 |
| CL-50LWT | 6.06 | 18.90 | 3.15 | 4.92 | 7.5 | 16.53 |
| CL-70LWT | 6.06 | 18.90 | 3.15 | 4.92 | 7.5 | 16.53 |
| CL-100LWT | 7.08 | 21.97 | 3.94 | 6.61 | 13 | 28.66 |
| CL-200LWT | 11.02 | 32.56 | 5.91 | 9.06 | 24 | 52.91 |
| CL-300LWT | 12.99 | 37.83 | 7.09 | 11.02 | 31 | 68.34 |

## Sludge Pod Dimensions (unit: inches)

| Model | R | S | T | U | Weight (kg, lbs) | |
|---|---|---|---|---|---|---|
| SPD-100LW | 8.27 | 4.41 | R1 | R1・1/4 | 2 | 4.41 |
| SPD-300LW | 10.75 | 6.30 | R1・1/2 | R1・1/2 | 3 | 6.61 |
| SPD-100P | 6.42 | 5.12 | Rc1 | Rc1・1/4 | 0.6 | 1.32 |

# C-CAT



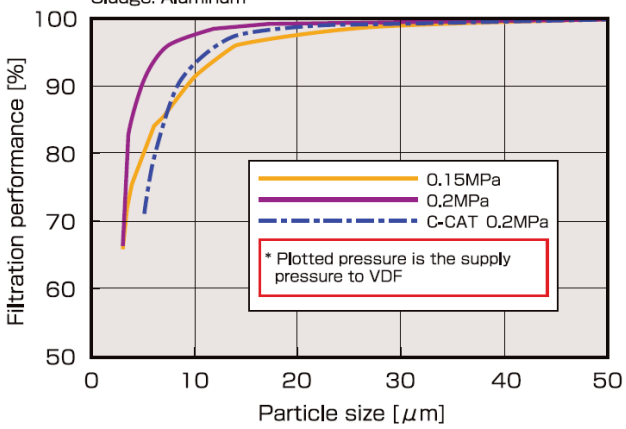


## C-CAT Specifications

| Model | Filtration Capacity | | Power Requirement | |
|---|---|---|---|---|
| | L/min | GPM | | |
| C-CAT M30 | 35 | 9.2 | 450 | AC210V±10%; 4.1 A |
| C-CAT M50 | 65 | 17.1 | 460 | AC210V±10%; 7.6A |
| C-CAT M70 | 80 | 21.0 | 465 | AC210V±10%; 7.6A |
| C-CAT M100 | 100 | 26.3 | 465 | AC210V±10%; 7.6A |
| C-CAT M200 | 195 | 51.0 | 538 | AC210V±10%; 9.0A |
| C-CAT M300 | 280 | 74.0 | 538 | AC210V±10%; 9.0A |

## Filtration Performance vs. Pressure Supply

Fluid: Water (Specific gravity 1.0 Kinematic viscosity 1cSt)
Sludge: Aluminum




| Particle size [μm] | 3 μm | 5 μm | 10 μm | 15 μm | 25 μm |
|---|---|---|---|---|---|
| Aluminum (specific gravity 2.7) | 65 | 88 | 95 | 98 | 99 |
| FC (specific gravity 7.21) | 70 | 90 | 97 | 99 | 99 |

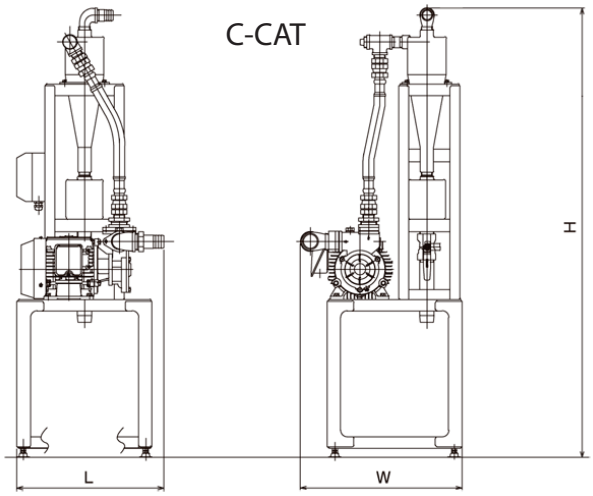
Figure 1 shows VDF CL-100 performance for removing aluminum sludge.

The VDF provides filtration of approx. 65% of aluminum particles contained in water for 3μm size, over 95% for 10μm, and 99% for 25μm at the supply pressure of 0.2MPa.

Higher performance is expected for FC or SCS material which has higher specific gravity than aluminum.

## C-CAT Dimensions (unit: inches)

| Model | L (mm, inches) | | W (mm, inches) | | H (mm, inches) | | Weight (kg, lbs) | |
|---|---|---|---|---|---|---|---|---|
| C-CAT M30 | 410 | 16.14 | 450 | 17.72 | 1300 | 51.18 | 60 | 132 |
| C-CAT M50 | 415 | 17.52 | 460 | 18.11 | 1340 | 52.76 | 65 | 143 |
| C-CAT M70 | 520 | 17.52 | 465 | 18.11 | 1340 | 52.76 | 75 | 143 |
| C-CAT M100 | 520 | 17.52 | 465 | 19.29 | 1355 | 53.35 | 80 | 154 |
| C-CAT M200 | 735 | 28.94 | 538 | 21.18 | 1870 | 73.62 | 100 | 221 |
| C-CAT M300 | 735 | 28.94 | 538 | 21.18 | 1903 | 74.92 | 105 | 232 |



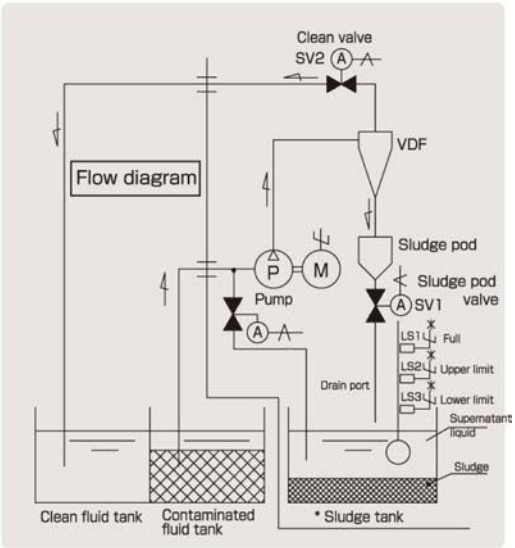
# C-Jaguar

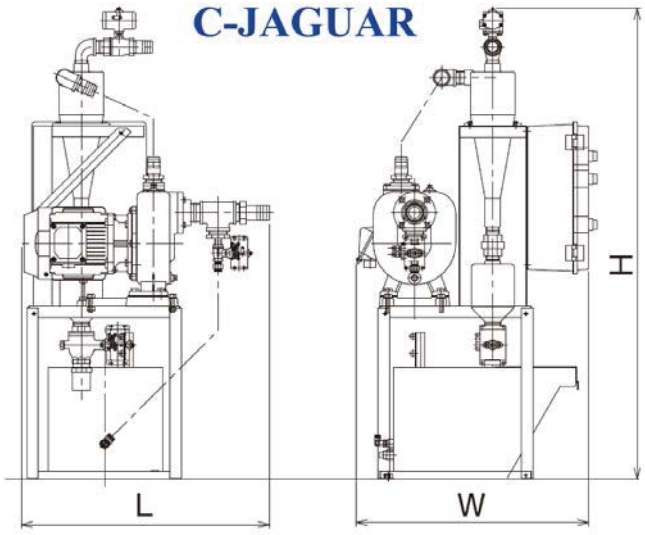
## C-JAGUAR Dimensions

| Model | L (mm, inches) | | W (mm, inches) | | H (mm, inches) | | Weight (kg, lbs) | |
|---|---|---|---|---|---|---|---|---|
| C-JAGUAR-30LW | 406 | 15.9 | 720 | 28.3 | 1180 | 46.5 | 60 | 132 |
| C-JAGUAR-50LW | 415 | 16.3 | 725 | 28.3 | 1205 | 47.4 | 65 | 143 |
| C-JAGUAR-70LW | 640 | 25.2 | 635 | 25.0 | 1205 | 47.4 | 75 | 165 |
| C-JAGUAR-100LW | 640 | 25.2 | 635 | 25.0 | 1240 | 48.8 | 75 | 165 |
| C-JAGUAR-200LW | 885 | 34.8 | 825 | 32.5 | 1935 | 78.2 | 140 | 309 |
| C-JAGUAR-300LW | 885 | 34.8 | 825 | 32.5 | 1970 | 76.2 | 145 | 320 |

## C-JAGUAR Specifications

| Model | Flow Rate (L/min.) | | Power | | Air Pressure(MPa) |
|---|---|---|---|---|---|
| | (50HZ) | (60HZ) | (50HZ) | (60HZ) | |
| C-JAGUAR-30LW | 30 | 30 | AC200V,4.1A | AC200-220V,4.1A | 0.4 |
| C-JAGUAR-50LW | 55 | 65 | AC200V,7.6A | AC200-220V,7.6A | |
| C-JAGUAR-70LW-5 | 70 | - | AC200V, 5.8A | - | |
| C-JAGUAR-70LW-6 | - | 75 | - | AC200-220V, 5.8-5.3A | |
| C-JAGUAR-100LW-5 | 90 | - | AC200V, 5.8A | - | |
| C-JAGUAR-100LW-6 | - | 90 | - | AC200-220V, 5.8-5.3A | |
| C-JAGUAR-200LW-5 | 190 | - | AC200V,10A | - | |
| C-JAGUAR-200LW-6 | - | 195 | - | AC200-220V, 9A | |
| C-JAGUAR-300LW-5 | 270 | - | AC200V,10A | - | |
| C-JAGUAR-300LW-6 | - | 280 | - | AC200-220V, 9A | |



# NAX - CS II

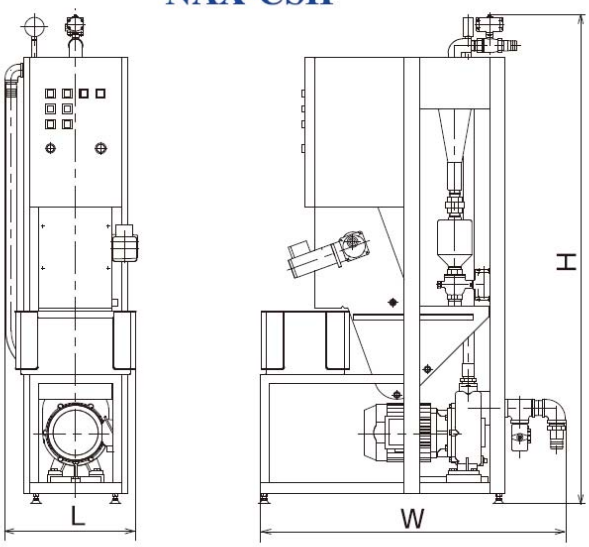

## NAX-CSII Dimensions

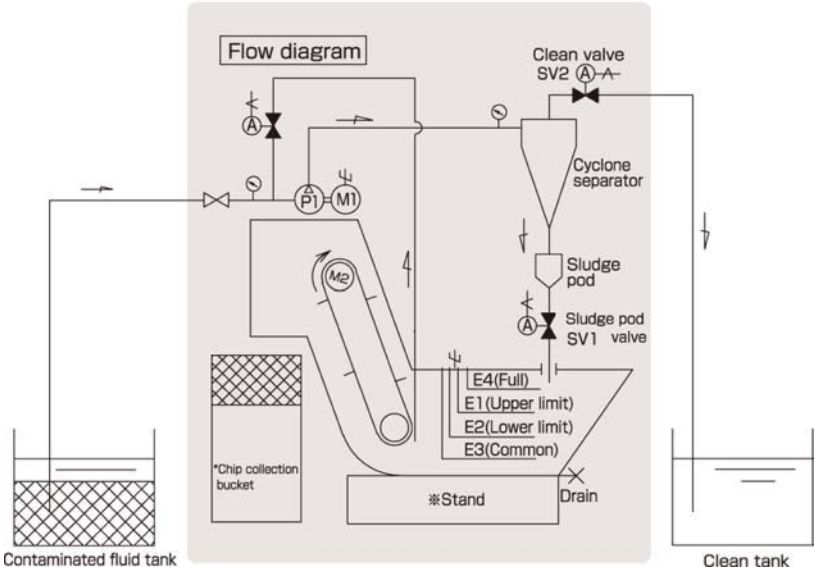
| Model | L (mm, inches) | | W (mm, inches) | | H (mm, inches) | | Weight (kg, lbs) | |
|---|---|---|---|---|---|---|---|---|
| NAXCSII-30LW | 440 | 17.3 | 800 | 31.5 | 1145 | 45.1 | 130 | 287 |
| NAXCSII-50LW | 440 | 17.3 | 800 | 31.5 | 1560 | 61.4 | 135 | 297 |
| NAXCSII-70LW | 440 | 17.3 | 940 | 37.0 | 1560 | 61.4 | 145 | 320 |
| NAXCSII-100LW | 440 | 17.3 | 940 | 37.0 | 1600 | 63.0 | 150 | 331 |
| NAXCSII-200LW | 810 | 31.9 | 1050 | 41.3 | 1865 | 73.4 | 150 | 331 |
| NAXCSII-300LW | 810 | 31.9 | 1050 | 41.3 | 1900 | 74.8 | 155 | 342 |

## NAX-CSII Specifications

| Model | Flow Rate (L/min.) | | Power | | Air Pressure(MPa) |
|---|---|---|---|---|---|
| | (50HZ) | (60HZ) | (50HZ) | (60HZ) | |
| NAXCSII-30LW | 30 | 30 | AC200V,4.5A | AC200-220V,4.5A | 0.4 |
| NAXCSII-50LW | 55 | 65 | AC200V,8A | AC200-220V,8A | |
| NAXCSII-70LW-5 | 70 | - | AC200V, 6A | - | |
| NAXCSII-70LW-6 | - | 75 | - | AC200-220V, 6A | |
| NAXCSII-100LW-5 | 90 | - | AC200V, 6A | - | |
| NAXCSII-100LW-6 | - | 90 | - | AC200-220V, 6A | |
| NAXCSII-200LW-5 | 190 | - | AC200V,10A | - | |
| NAXCSII-200LW-6 | - | 195 | - | AC200-220V, 9A | |
| NAXCSII-300LW-5 | 270 | - | AC200V,10A | - | |
| NAXCSII-300LW-6 | - | 280 | - | AC200-220V, 9A | |

## NAX-CSII



# Options

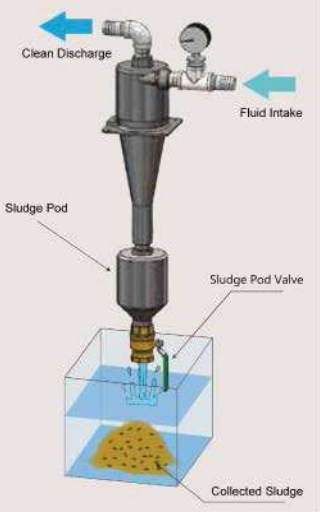
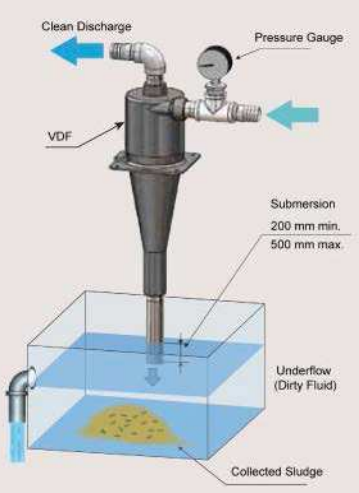
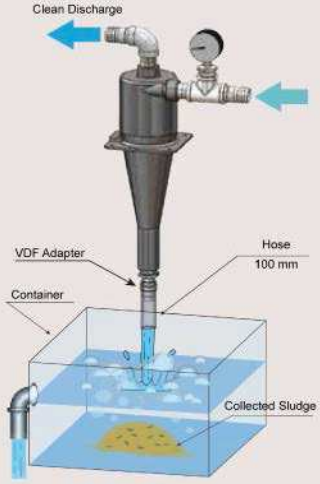
## Model Comparison Chart

O Standard  Δ Optional  X Not Included

| Model | Description | Sludge Pod Valve | Supernatant Return | Auto Stop When Full | Sludge Tank w/ Scraper | Gather-Up Conveyor |
|---|---|---|---|---|---|---|
| C-CAT | Manual | Manual[1] | Δ[1] | X | Δ[2] | X |
| C-JAGUAR | Semi-Automatic | Auto (Pneumatic) | O Auto (Pneumatic) | O | O | X |
| NAX-CS II | Full-Automatic | Auto (Pneumatic) | O Auto (Pneumatic) | O | N/A | O |

[1] The manual sludge pod valve and the manual supernatant return valve can easily be replaced with actuated valves by end-users, and controlled by a set of analog timers as shown in Example 1.
[2] The sludge tank and the scraper can be purchased separately. (Identical to those included in C-Jaguar as standard.)

## Adapter Options

| Sludge Pod *(Recommended)* | Continuous: Submerged | Continuous: Open to Air |
|---|---|---|
|  |  |  |
| Dirty coolant can be concentrated and coolant waste can be reduced.<br>The sludge pod should be discharged periodically to avoid blockage. | Submerged underflow pipe helps to avoid bubbling in the tank.<br>Requires coolant drain to avoid overflow.<br>**A siphoning effect between the clean and dirty tanks can occur when the pump is stopped** | The VDF adapter is required to open the underflow to air.<br>Requires coolant drain to avoid overflow.<br>**There is a possibility of foaming.** |

**Example 1:** Modified C-SEL with electrical actuated valves and sludge tank.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