Examples of equipment layouts for different types of workpiece

- High Frequency Mini Parts Feeder for chip LED
- Parts Feeder for Ultra Thin Material
- HSE Series
- High Frequency Mini Parts Feeder
- High Frequency Mini Parts Feeder Space-saving Design
- DUAL MOTION PARTS FEEDER
- PARTS FEEDER
- LINEAR FEEDER
- CONTROLLER
- MINI PARTS FEEDER
- HOPPER

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DUAL MOTION PARTS FEEDERS

Smooth, low-noise conveyance

Features
• Setting vertical amplitude at the lowest possible setting greatly reduces bouncing of workpieces. Thin, flat workpieces remain separate and are conveyed smoothly.
• Work is conveyed as though gliding, with minimal impact between workpieces and track, resulting in minimal noise.
• Compact size makes it possible to interchange them with EA/EER Series parts feeders or those of other manufacturers. (DMS Series)
• A single drive unit can be used for right or left bowl orientation.

Applications
• Plastic, easily damaged workpieces for medical and electronic equipment
• Low-noise conveyance of auto and other metal parts
• Precision equipment and other electronic parts that require highly accurate delivery requirements.

Dual Motion Principle

Friction (conveyance) controlled through elliptical vibration
Elliptical vibration is achieved by controlling optimal phase difference between the horizontal and vertical amplitudes of bowl vibration. Conveyance using elliptical vibration results from controlling friction, and workpieces thus travel as though gliding along the track.

Dual Motion in action
Dual motion is generated in these parts feeders through feedback of vibration in the horizontal and vertical directions, as shown in the diagram. Sensors detect horizontal and vertical amplitude, thereby allowing separate control.

Controller C10-4DM
Drive Unit Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>DMS-15C</th>
<th>DMS-20C</th>
<th>DMS-25C</th>
<th>DMS-30C</th>
<th>DMS-38C</th>
<th>DMS-45C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive unit outer diameter (mm)</td>
<td>ø150</td>
<td>ø210</td>
<td>ø260</td>
<td>ø310</td>
<td>ø390</td>
<td>ø460</td>
</tr>
<tr>
<td>Drive unit height (mm)</td>
<td>130</td>
<td>190</td>
<td>265</td>
<td>220</td>
<td>250</td>
<td>265</td>
</tr>
<tr>
<td>Drive unit weight (kg)</td>
<td>7</td>
<td>14</td>
<td>25</td>
<td>40</td>
<td>70</td>
<td>110</td>
</tr>
<tr>
<td>Rated voltage (V)</td>
<td>200</td>
<td>260</td>
<td>320</td>
<td>400</td>
<td>500</td>
<td>600</td>
</tr>
<tr>
<td>Rated current (A)</td>
<td>Vertical</td>
<td>0.18</td>
<td>0.3</td>
<td>0.6</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Vibration frequency (Hz)</td>
<td>Horizontal</td>
<td>0.18</td>
<td>0.3</td>
<td>0.6</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Vertical</td>
<td>0.13</td>
<td>0.25</td>
<td>0.4</td>
<td>0.8</td>
<td>0.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Unprocessed bowl diameter (mm)</td>
<td>ø150</td>
<td>ø200</td>
<td>ø250</td>
<td>ø300</td>
<td>ø375</td>
<td>ø450</td>
</tr>
<tr>
<td>Max. bowl diameter (mm)</td>
<td>ø250</td>
<td>ø320</td>
<td>ø450</td>
<td>ø550</td>
<td>ø600</td>
<td>ø750</td>
</tr>
<tr>
<td>Max. amplitude (mm)</td>
<td>Vertical</td>
<td>0.6</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>(Unprocessed cylindrical bowl periphery)</td>
<td>Horizontal</td>
<td>0.13</td>
<td>0.25</td>
<td>0.4</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Max. loaded weight (kg)</td>
<td>2.3</td>
<td>4</td>
<td>8</td>
<td>12.5</td>
<td>17</td>
<td>26</td>
</tr>
<tr>
<td>Cross section area of power cable (mm²)</td>
<td>0.75 x 5 cores</td>
<td>0.75 x 5 cores</td>
<td>0.75 x 5 cores</td>
<td>0.75 x 5 cores</td>
<td>0.75 x 5 cores</td>
<td>0.75 x 5 cores</td>
</tr>
</tbody>
</table>

Dimensions Chart

<table>
<thead>
<tr>
<th>Model</th>
<th>DM-30C</th>
<th>DM-38C</th>
<th>DM-45C</th>
<th>DM-65C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive unit outer diameter (mm)</td>
<td>ø310</td>
<td>ø390</td>
<td>ø460</td>
<td>ø670</td>
</tr>
<tr>
<td>Drive unit height (mm)</td>
<td>250</td>
<td>255</td>
<td>355</td>
<td>572.5</td>
</tr>
<tr>
<td>Drive unit weight (kg)</td>
<td>55</td>
<td>80</td>
<td>140</td>
<td>320</td>
</tr>
<tr>
<td>Rated voltage (V)</td>
<td>200</td>
<td>260</td>
<td>320</td>
<td>400</td>
</tr>
<tr>
<td>Rated current (A)</td>
<td>Vertical</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Vibration frequency (Hz)</td>
<td>Horizontal</td>
<td>0.8</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Vertical</td>
<td>0.6</td>
<td>2.0</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Unprocessed bowl diameter (mm)</td>
<td>ø300</td>
<td>ø375</td>
<td>ø450</td>
<td>ø500</td>
</tr>
<tr>
<td>Max. bowl diameter (mm)</td>
<td>ø440</td>
<td>ø550</td>
<td>ø600</td>
<td>ø700</td>
</tr>
<tr>
<td>Max. amplitude (mm)</td>
<td>Vertical</td>
<td>1.6</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>(Unprocessed cylindrical bowl periphery)</td>
<td>Horizontal</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Max. loaded weight (kg)</td>
<td>9.2</td>
<td>11.7</td>
<td>17.5</td>
<td>27.5</td>
</tr>
<tr>
<td>Cross section area of power cable (mm²)</td>
<td>0.75 x 5 cores</td>
<td>0.75 x 5 cores</td>
<td>0.75 x 5 cores</td>
<td>0.75 x 5 cores</td>
</tr>
</tbody>
</table>

DMS Series Drive Units

Accommodates bowls designed for EA and ER and DMS series (see P.11-12)

DM Series Drive Units

Can be used with DM series bowls only (see P.5)
DM Series Bowl Dimensions

Straight wall Bowl Dimensions Chart

- Workpiece diameter (mm)
  - DM-30C: 180, 167.5, 25
  - DM-38C: 230, 215, 30
  - DM-45C: 280, 260, 40
  - DM-65C: 350, 325, 50

- Workpiece length (mm)
  - DM-30C: 160, 150, 25
  - DM-38C: 210, 200, 30
  - DM-45C: 260, 250, 40
  - DM-65C: 330, 320, 50

- Approx. weight (kg)
  - DM-30C: 12, 11, 2
  - DM-38C: 20, 18, 3
  - DM-45C: 30, 28, 5
  - DM-65C: 40, 38, 7

- Capacities
  - DM-30C: 25, 23.5, 4
  - DM-38C: 35, 33, 6
  - DM-45C: 55, 52.5, 10
  - DM-65C: 85, 82.5, 15

- Notes
  1. Bowls are made of stainless steel.
  2. Bowls are made to the same specification as the previous model.
  3. Charged capacity varies according to the type of workpiece.
  4. Bowls are available with clockwise or counter-clockwise orientation.

Cascade Bowl Dimensions Chart

- Workpiece diameter (mm)
  - DM-30C: 280, 260, 40
  - DM-38C: 350, 325, 50
  - DM-45C: 420, 395, 60
  - DM-65C: 500, 475, 70

- Workpiece length (mm)
  - DM-30C: 250, 235, 40
  - DM-38C: 320, 305, 50
  - DM-45C: 390, 375, 60
  - DM-65C: 460, 445, 70

- Approx. weight (kg)
  - DM-30C: 15, 14, 3
  - DM-38C: 25, 23, 5
  - DM-45C: 35, 33, 7
  - DM-65C: 45, 43, 9

- Capacities
  - DM-30C: 40, 38, 8
  - DM-38C: 55, 53, 10
  - DM-45C: 75, 73, 12
  - DM-65C: 95, 93, 14

- Notes
  1. Bowls are made of stainless steel.
  2. Bowls are made to the same specification as the previous model.
  3. Charged capacity varies according to the type of workpiece.
  4. Bowls are available with clockwise or counter-clockwise orientation.

DM Series Controller C10-4DM

- Input power: AC200-230V, 50/60Hz
- Control system: PWM system
- Output voltage: 0~10V
- Vibration frequency: 28~45Hz, 65Hz~120Hz, 90~180Hz
- Max. current: horizontal: 4A, vertical: 2A

Features

- Simple and easy start up
- Stroke sensor gain adjustment is not required. Just by selecting a drive unit model at the initial setting stage, necessary parameters are set automatically.
- Easy operation
- "Selection Dial" and "Setting Encoder" allow for easy operation for anyone.
- Save more space
- This controller has the same dimensions as C10-5V/SF5V/PEF, and the footprint is reduced by 36% from the previous model.

Specifications

- Model: C10-4DM
- Control system: PWM system
- Output voltage: 0~10V
- Output: 28~45Hz, 65Hz~120Hz, 90~180Hz
- Max. current: horizontal: 4A, vertical: 2A
- Operating mode: Standard drive
- Auto tuning function reduces power consumption by tracking the resonance point and keeping vibration frequency on it continuously.
- Electronic control gives optimal vibration
- Electronic control of horizontal/vertical amplitudes and phase difference provides ideal vibration characteristics for any type of workpiece.

Other

- Ambient temperature range: 10~90% (No condensation)
- Color of case: Japan Paint Industry Association U75-75D
- Weight: 2.0kg

Compatible equipment

- DM-30C, 38C, 45C, 65C
EA Series 100–180Hz

For handling a wide range of very small, precision workpieces
With high vibration frequencies of 100 to 180 Hz and small amplitude of 0.6 mm, this series is ideal for very small (10 mm or less), high precision or ultra thin workpieces. Can accommodate bowls ranging from 150 to 700 mm in diameter for highly reliable conveyance.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Drive unit outer diameter mm</th>
<th>Drive unit height mm</th>
<th>Drive unit weight kg</th>
<th>Leaf-spring attachment angle degree</th>
<th>Rated voltage V</th>
<th>Rated current A</th>
<th>Vibration frequency Hz</th>
<th>Unprocessed bowl diameter (cylindrical) mm</th>
<th>Max. bowl diameter (cylindrical) mm</th>
<th>Max. amplitude (periphery of standard cylindrical bowl) mm</th>
<th>Max. loaded weight (workpieces + bowl weight) kg</th>
<th>Cross section area of power cable mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA-15</td>
<td>160</td>
<td>155</td>
<td>17</td>
<td>30</td>
<td>200 (*1)</td>
<td>0.4</td>
<td>0.8</td>
<td>150</td>
<td>250</td>
<td>0.6</td>
<td>2.3</td>
<td>0.75 x 3 cores</td>
</tr>
<tr>
<td>EA-20</td>
<td>210</td>
<td>190</td>
<td>30</td>
<td>47</td>
<td>220</td>
<td>0.6</td>
<td>1.5</td>
<td>230</td>
<td>320</td>
<td>0.8</td>
<td>4</td>
<td>1.25 x 3 cores</td>
</tr>
<tr>
<td>EA-25</td>
<td>260</td>
<td>220</td>
<td>47</td>
<td>81</td>
<td>280</td>
<td>0.8</td>
<td>2.0</td>
<td>320</td>
<td>420</td>
<td>0.8</td>
<td>8</td>
<td>1.25 x 3 cores</td>
</tr>
<tr>
<td>EA-30</td>
<td>310</td>
<td>280</td>
<td>81</td>
<td>115</td>
<td>260</td>
<td>1.5</td>
<td>2.5</td>
<td>310</td>
<td>420</td>
<td>1.5</td>
<td>12.5</td>
<td>2.0 x 3 cores</td>
</tr>
<tr>
<td>EA-35</td>
<td>360</td>
<td>300</td>
<td>115</td>
<td>155</td>
<td>210</td>
<td>2.0</td>
<td>3.0</td>
<td>360</td>
<td>420</td>
<td>2.0</td>
<td>17</td>
<td>2.0 x 3 cores</td>
</tr>
<tr>
<td>EA-40</td>
<td>410</td>
<td>350</td>
<td>155</td>
<td>190</td>
<td>260</td>
<td>3.0</td>
<td>3.8</td>
<td>410</td>
<td>420</td>
<td>3.0</td>
<td>26</td>
<td>2.0 x 3 cores</td>
</tr>
</tbody>
</table>

Note: *1 With an AC100V power source, use C10-TR transformer (sold separately).

ER Series 50–90Hz

Steady delivery of workpieces of all sizes
With low vibration frequencies of 50 to 90 Hz and a large amplitude of 1.2 mm, this series is suited to workpieces from 10 mm up in size. Bowl diameters from 250 to 1100 mm can be accommodated, to give powerful feeder performance.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Drive unit outer diameter mm</th>
<th>Drive unit height mm</th>
<th>Drive unit weight kg</th>
<th>Leaf-spring attachment angle degree</th>
<th>Rated voltage V</th>
<th>Rated current A</th>
<th>Vibration frequency Hz</th>
<th>Unprocessed bowl diameter (cylindrical) mm</th>
<th>Max. bowl diameter (cylindrical) mm</th>
<th>Max. amplitude (periphery of standard cylindrical bowl) mm</th>
<th>Max. loaded weight (workpieces + bowl weight) kg</th>
<th>Cross section area of power cable mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER-15</td>
<td>160</td>
<td>155</td>
<td>17</td>
<td>30</td>
<td>200 (*1)</td>
<td>0.4</td>
<td>0.8</td>
<td>150</td>
<td>250</td>
<td>0.6</td>
<td>2.3</td>
<td>0.75 x 3 cores</td>
</tr>
<tr>
<td>ER-20</td>
<td>210</td>
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<td>30</td>
<td>47</td>
<td>220</td>
<td>0.6</td>
<td>1.5</td>
<td>230</td>
<td>320</td>
<td>0.8</td>
<td>4</td>
<td>1.25 x 3 cores</td>
</tr>
<tr>
<td>ER-25</td>
<td>260</td>
<td>220</td>
<td>47</td>
<td>81</td>
<td>280</td>
<td>0.8</td>
<td>2.0</td>
<td>320</td>
<td>420</td>
<td>0.8</td>
<td>8</td>
<td>1.25 x 3 cores</td>
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<tr>
<td>ER-30</td>
<td>310</td>
<td>280</td>
<td>81</td>
<td>115</td>
<td>260</td>
<td>1.5</td>
<td>2.5</td>
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<td>420</td>
<td>1.5</td>
<td>12.5</td>
<td>2.0 x 3 cores</td>
</tr>
<tr>
<td>ER-35</td>
<td>360</td>
<td>300</td>
<td>115</td>
<td>155</td>
<td>210</td>
<td>2.0</td>
<td>3.0</td>
<td>360</td>
<td>420</td>
<td>2.0</td>
<td>17</td>
<td>2.0 x 3 cores</td>
</tr>
<tr>
<td>ER-40</td>
<td>410</td>
<td>350</td>
<td>155</td>
<td>190</td>
<td>260</td>
<td>3.0</td>
<td>3.8</td>
<td>410</td>
<td>420</td>
<td>3.0</td>
<td>26</td>
<td>2.0 x 3 cores</td>
</tr>
</tbody>
</table>

Note: *1 With an AC100V power source, use C10-TR transformer (sold separately).

Notes:
- 1 With an AC100V power source, use C10-TR transformer (sold separately).
- 2 C10-1VF/1VFEF C10-TR
## Straight Wall Bowls

### Track circuits: 2 : 1/4

### Bowl Dimensions EA/ER/DMS Series

<table>
<thead>
<tr>
<th>Model</th>
<th>Dia. (mm)</th>
<th>A</th>
<th>A’</th>
<th>B</th>
<th>H</th>
<th>P</th>
<th>h</th>
<th>Ød</th>
<th>T</th>
<th>Approx. Weight (kg)</th>
<th>Capacity (l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA/DMS-15</td>
<td>150</td>
<td>12</td>
<td></td>
<td>73.1</td>
<td>89.1</td>
<td>22</td>
<td>70</td>
<td>18</td>
<td>96</td>
<td>8.2</td>
<td>1.5</td>
</tr>
<tr>
<td>EA/DMS-20</td>
<td>200</td>
<td>18</td>
<td>104</td>
<td>120</td>
<td>25</td>
<td>85</td>
<td>24</td>
<td>89</td>
<td>10.2</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td>EA/DMS-25</td>
<td>250</td>
<td>20</td>
<td>143</td>
<td>159</td>
<td>27</td>
<td>120</td>
<td>30</td>
<td>83</td>
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<td>2</td>
</tr>
<tr>
<td>EA/DMS-30</td>
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<td>25</td>
<td>174.5</td>
<td>200</td>
<td>30</td>
<td>140</td>
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<td>101</td>
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<td>5.0</td>
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<td>216</td>
<td>232</td>
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<td>46</td>
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<td>8</td>
<td>1.7</td>
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<td>EA/DMS-40</td>
<td>400</td>
<td>40</td>
<td>262.5</td>
<td>298.5</td>
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<td>190</td>
<td>56</td>
<td>156</td>
<td>16.2</td>
<td>3</td>
<td>15.0</td>
</tr>
</tbody>
</table>

### Cascade Bowls

### Track circuits: 1 : 1/2

### Bowl Dimensions EA/ER/DMS Series

<table>
<thead>
<tr>
<th>Model</th>
<th>Dia. approx. (mm)</th>
<th>A’</th>
<th>A</th>
<th>B</th>
<th>H</th>
<th>P</th>
<th>h</th>
<th>Ød</th>
<th>T</th>
<th>Approx. Weight (kg)</th>
<th>Capacity (l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA/DMS-15</td>
<td>215</td>
<td>110</td>
<td>102.5</td>
<td>15</td>
<td>65</td>
<td>50</td>
<td>24</td>
<td>8.2</td>
<td>73.1</td>
<td>69.1</td>
<td>23</td>
</tr>
<tr>
<td>EA/DMS-20</td>
<td>280</td>
<td>145</td>
<td>135</td>
<td>20</td>
<td>80</td>
<td>59</td>
<td>30</td>
<td>10.2</td>
<td>104</td>
<td>120</td>
<td>26</td>
</tr>
<tr>
<td>EA/DMS-25</td>
<td>350</td>
<td>180</td>
<td>167.5</td>
<td>25</td>
<td>95</td>
<td>70</td>
<td>38</td>
<td>12.2</td>
<td>143</td>
<td>159</td>
<td>28</td>
</tr>
<tr>
<td>EA/DMS-30</td>
<td>450</td>
<td>230</td>
<td>215</td>
<td>30</td>
<td>125</td>
<td>88</td>
<td>48</td>
<td>12.2</td>
<td>174.2</td>
<td>197.2</td>
<td>38</td>
</tr>
<tr>
<td>EA/DMS-35</td>
<td>540</td>
<td>280</td>
<td>260</td>
<td>40</td>
<td>150</td>
<td>109</td>
<td>58</td>
<td>16.2</td>
<td>216</td>
<td>232</td>
<td>45</td>
</tr>
<tr>
<td>EA/DMS-40</td>
<td>650</td>
<td>335</td>
<td>310</td>
<td>50</td>
<td>185</td>
<td>135</td>
<td>72</td>
<td>16.2</td>
<td>282.5</td>
<td>288.5</td>
<td>54</td>
</tr>
</tbody>
</table>

### Notes

1) Bowls are made of stainless steel, and standard color is different from color of pictures above.
2) Bowls available with clockwise or counter-clockwise orientation.
3) Capacity varies according to the type of workpiece. *When supplied unprocessed, neither inside nor outside has been surface-treated.

---

## Cascade Bowls

### Bowl Dimensions EA/ER/DMS Series

<table>
<thead>
<tr>
<th>Model</th>
<th>Dia. approx. (mm)</th>
<th>A’</th>
<th>A</th>
<th>B</th>
<th>H</th>
<th>P</th>
<th>h</th>
<th>Ød</th>
<th>T</th>
<th>Approx. Weight (kg)</th>
<th>Capacity (l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER-55B</td>
<td>750</td>
<td>390</td>
<td>358</td>
<td>64</td>
<td>240</td>
<td>193</td>
<td>96</td>
<td>25</td>
<td>288.5</td>
<td>318.5</td>
<td>309.2</td>
</tr>
<tr>
<td>ER-65B</td>
<td>850</td>
<td>445</td>
<td>405</td>
<td>80</td>
<td>308</td>
<td>238</td>
<td>120</td>
<td>25</td>
<td>333</td>
<td>396.2</td>
<td>373</td>
</tr>
<tr>
<td>ER-75B</td>
<td>950</td>
<td>495</td>
<td>455</td>
<td>80</td>
<td>346</td>
<td>258</td>
<td>150</td>
<td>25</td>
<td>427.8</td>
<td>486.7</td>
<td>468.9</td>
</tr>
</tbody>
</table>

### Notes

1) Bowls are made of stainless steel, and standard color is different from color of pictures above.
2) Bowls available with clockwise or counter-clockwise orientation.
3) Capacity varies according to the type of workpiece. *When supplied unprocessed, neither inside nor outside has been surface-treated.

---

### Straight Wall Bowl Selection Guide

- **Workpiece length (mm)**
- **Workpiece diameter (mm)**

### Cascade Bowl Selection Guide

- **Workpiece length (mm)**
- **Workpiece diameter (mm)**
Linear Feeder Combinations EA/ER/DMS Series

Diagrams show counter-clockwise orientation.
Linear Feeder Combinations ER Series

LFBR Series – Leaf-Spring Vibro-Isolating Type

Low-reaction force linear feeder with less floor reaction

A leaf-spring vibro-isolating type linear feeder with reduced floor reaction. We enabled low-reaction force, high accuracy and smooth parts conveyance through our review of the drive unit mechanism in detail.

Features

• Floor reaction force reduce design

By reviewing the drive unit mechanism, floor reaction force has been drastically reduced, compared with the existing leaf-spring vibro-isolating type.

• Leaf spring and Core gap adjustment are unnecessary

No troublesome leaf-spring adjustment or even core gap adjustment is necessary, by using the available C8, C10 series variable frequency digital controllers.

• No vibrational interference

Because of the middle frequency vibration range (between Full and Have wave), vibrational interference will not occur, when used in combination with other parts feeders.

• Uniform chute vibration angle

The entire chute vibration angle become uniformly, and has improved the parts conveyance become much more smoothly.

• Low power consumption

Driven near the resonant range enable to gain sufficient stroke in low current.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated voltage V</th>
<th>Rated current A</th>
<th>Vibration frequency Hz</th>
<th>Drive unit weight kg</th>
<th>Leaf-spring angle degree</th>
<th>Max. amplitude mm</th>
<th>Cross section area/power cable mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFBR-350B</td>
<td>200</td>
<td>0.12</td>
<td>95~120</td>
<td>95~120</td>
<td>15</td>
<td>0.68</td>
<td>0.75 ± 0.5 ± 0.75</td>
</tr>
<tr>
<td>LFBR-450B</td>
<td>200</td>
<td>0.14</td>
<td>75~100</td>
<td>75~100</td>
<td>15</td>
<td>0.68</td>
<td>0.75 ± 0.5 ± 0.75</td>
</tr>
<tr>
<td>LFBR-600B</td>
<td>200</td>
<td>0.2</td>
<td>75~90</td>
<td>75~90</td>
<td>15</td>
<td>0.68</td>
<td>0.75 ± 0.5 ± 0.75</td>
</tr>
</tbody>
</table>

Dimensions Chart

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFBR-350B</td>
<td>70</td>
<td>170.5</td>
<td>12</td>
<td>93.5</td>
<td>45</td>
<td>13</td>
<td>12</td>
<td>M6</td>
<td>110</td>
<td>21</td>
<td>55</td>
<td>15</td>
<td>M8</td>
</tr>
<tr>
<td>LFBR-450B</td>
<td>80</td>
<td>220</td>
<td>20</td>
<td>107.5</td>
<td>55</td>
<td>13</td>
<td>14</td>
<td>M6</td>
<td>130</td>
<td>38</td>
<td>80</td>
<td>12</td>
<td>M8</td>
</tr>
<tr>
<td>LFBR-600B</td>
<td>95</td>
<td>274.5</td>
<td>25.5</td>
<td>133</td>
<td>75</td>
<td>16.5</td>
<td>19</td>
<td>M6</td>
<td>190</td>
<td>46</td>
<td>75</td>
<td>14</td>
<td>M10</td>
</tr>
</tbody>
</table>

Chute Specifications, Including Basic Position

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. length</th>
<th>Max. width</th>
<th>Min. thickness</th>
<th>Weight range (kg)</th>
<th>Basic position (at max. chute length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFBR-350B</td>
<td>350</td>
<td>40</td>
<td>9</td>
<td>0.4~2.1</td>
<td>L120~L150</td>
</tr>
<tr>
<td>LFBR-450B</td>
<td>450</td>
<td>45</td>
<td>12</td>
<td>1.2~2.3</td>
<td>L150~L180</td>
</tr>
<tr>
<td>LFBR-600B</td>
<td>600</td>
<td>55</td>
<td>14</td>
<td>2.3~4.0</td>
<td>L200~L250</td>
</tr>
</tbody>
</table>

LFBR Series

Crude drawing of linear feeder with leaf-spring vibro-isolating type.
LFB Series — Leaf-Spring Vibro-Isolating Type

Uniform vibration with no need for adjustment

Use of a variable frequency controller eliminates the need for leaf-spring and core-gap adjustments. Provides uniform vibration with no adjustments necessary, and is easily installed to link up with other equipment, greatly improving ease of use. Can accommodate heavier chute weights and longer overhangs, to widen scope for applications. The drive unit is slim, and with virtually no vibration interference it can easily be combined with parts feeders, to suit wide-ranging combinations. The three models in this series can be used selectively to handle all sizes and shapes of workpiece.

Features

• Simple, uniform vibration
  Use with heavier chutes and longer overhangs opens a wider range of applications. Consistent, uniform vibration is supplied without the need for adjustment.

• Energy saving type
  Energy consumption cut by half, compared with our earlier models.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>LFB-300</th>
<th>LFB-400</th>
<th>LFB-550</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (V)</td>
<td>100</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Rated current (A)</td>
<td>0.04</td>
<td>0.06</td>
<td>0.15</td>
</tr>
<tr>
<td>Vibration frequency (Hz)</td>
<td>50 – 120</td>
<td>80 – 110</td>
<td>75 – 100</td>
</tr>
<tr>
<td>Drive unit weight (kg)</td>
<td>3.0</td>
<td>5.0</td>
<td>10.0</td>
</tr>
<tr>
<td>Leaf-spring angle (deg)</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Max. amplitude (mm)</td>
<td>0.6</td>
<td>0.65</td>
<td>0.75</td>
</tr>
<tr>
<td>Cross section area of power cable (mm²)</td>
<td>0.75 × 3 wires</td>
<td>0.75 × 3 wires</td>
<td>0.75 × 3 wires</td>
</tr>
<tr>
<td>Compatible controller</td>
<td>AC200V</td>
<td>AC100V</td>
<td>AC100V</td>
</tr>
</tbody>
</table>

Chute Specifications, Including Basic Position

<table>
<thead>
<tr>
<th>Model</th>
<th>Basic position (at max. chute length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFB-300</td>
<td>L1</td>
</tr>
<tr>
<td>LFB-400</td>
<td>105</td>
</tr>
<tr>
<td>LFB-550</td>
<td>105</td>
</tr>
</tbody>
</table>

LFB Series

LFB-300/400/550 Dimensions

LFB-600 Dimensions

LFB-600 Dimensions

LFG Series — Rubber Mount Vibro-Isolating Type

Accommodates a wide range of chutes for ideal conveyance

The variable frequency controller installed as standard eliminates need for leaf-spring and core-gap adjustments. Easy installation and coordination make it much easier to use, and by adjusting position of the rear-end weight, conveyance irregularities can be quickly and easily eliminated. With minimal lateral movement, there is virtually no vibration interference, making it easy to combine with parts feeders for stabilized delivery. The three models in this series allow a full range of equipment combinations, and cover all shapes and sizes of workpiece. A leaf-spring vibro-isolating type linear feeder with reduced floor reaction. We enabled low-reaction force, high accuracy and smooth parts conveyance through our review of the drive unit mechanism in detail.

Features

• Applicable longer and wider linear chutes.
  Because new LFG series have longer body from conventional models, more long and wide chutes can be applicable.

• Stable vibrating conveyance
  It prevents move of body caused by vibration with using original vibration isolation rubber.

• Withstand load improved
  Withstand load improved by applying a long chute

• Almost same size of drive unit compared with conventional size.
  Ability improved with same size from conventional size.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>LFG-600</th>
<th>LFG-750</th>
<th>LFG-900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage (V)</td>
<td>100</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Rated current (A)</td>
<td>0.2</td>
<td>0.37</td>
<td>0.41</td>
</tr>
<tr>
<td>Vibration frequency (Hz)</td>
<td>80 – 110</td>
<td>80 – 110</td>
<td>80 – 110</td>
</tr>
<tr>
<td>Drive unit weight (kg)</td>
<td>7.4</td>
<td>13.2</td>
<td>19.6</td>
</tr>
<tr>
<td>Leaf-spring angle (deg)</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Max. amplitude (mm)</td>
<td>0.65</td>
<td>0.75</td>
<td>0.9</td>
</tr>
<tr>
<td>Cross section area of power cable (mm²)</td>
<td>0.75 × 3 wires</td>
<td>0.75 × 3 wires</td>
<td>0.75 × 3 wires</td>
</tr>
<tr>
<td>Compatible controller</td>
<td>AC200V</td>
<td>AC100V</td>
<td>AC100V</td>
</tr>
</tbody>
</table>

Chute Specifications, Including Basic Position

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. length</th>
<th>Max. width</th>
<th>Min. thickness</th>
<th>Weight range (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFG-600</td>
<td>600</td>
<td>50</td>
<td>16</td>
<td>1.4 – 3.6</td>
</tr>
<tr>
<td>LFG-750</td>
<td>750</td>
<td>65</td>
<td>14</td>
<td>2.2 – 5.4</td>
</tr>
<tr>
<td>LFG-900</td>
<td>900</td>
<td>75</td>
<td>18</td>
<td>4.0 – 9.8</td>
</tr>
</tbody>
</table>

LFG Series

LFG-600 Dimensions

LFG-750 Dimensions

LFG-900 Dimensions
**LF Series – Direct Mount Type**

Simple and compact. Handles a wide range of micro-sized and precision parts

Developed for stabilized delivery of non-specialized micro-sized and precision parts, this series uses a small, electromagnetic drive unit that is simple and compact. Unmounted, with full wave operation to give excellent conveyance capacity for small volumes of non-specialized micro-sized workpieces. Maintenance is very straightforward and minimizes costs.

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (V)</th>
<th>Rated Current (A)</th>
<th>Vibration Frequency (Hz)</th>
<th>Weight (kg)</th>
<th>Standard compatible controllers</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF-02</td>
<td>100/110</td>
<td>0.12</td>
<td>100 – 180 (±100/120)</td>
<td>0.44</td>
<td>C10-1VF/1VFEF</td>
</tr>
<tr>
<td>LF-04</td>
<td>100/110</td>
<td>0.22</td>
<td>100 – 180 (±100/120)</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions Chart**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>L</th>
<th>M</th>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF-02</td>
<td>22</td>
<td>44.3</td>
<td>65</td>
<td>40</td>
<td>40</td>
<td>16</td>
<td>15</td>
<td>9</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LF-04</td>
<td>32</td>
<td>57.3</td>
<td>80</td>
<td>50</td>
<td>55</td>
<td>21</td>
<td>15</td>
<td>12</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Features**

- Handles a wide range of small parts
- Handles a wide range of non-specialized micro-sized, precision parts
- Simple and low cost
- Provides a simple, low-cost solution for small-volume applications.
- Easy, convenient installation
  - Compact design allows easy, convenient installation.

**MF Series – Direct Mount Type**

Compact yet powerful, for speedy delivery and versatile, longer distance conveyance

A new type of electromagnetic drive unit ideal for use with chutes handling very small, flat, and precision parts. Takes full advantage of merits of half wave operation for smooth conveyance of fragile and easily damaged workpieces.

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage (V)</th>
<th>Current (A)</th>
<th>Vibration (Hz)</th>
<th>Weight (kg)</th>
<th>Standard compatible controllers</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF-04C</td>
<td>100/110</td>
<td>0.13</td>
<td>90 – 120 (±50/60)</td>
<td>0.6</td>
<td>C10-1VF/1VFEF</td>
</tr>
<tr>
<td>MF-15C</td>
<td>100/110</td>
<td>0.2</td>
<td>90 – 120 (±50/60)</td>
<td>1.8</td>
<td></td>
</tr>
</tbody>
</table>

**Dimensions Chart**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF-04C</td>
<td>46</td>
<td>56</td>
<td>62</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>9</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MF-15C</td>
<td>56</td>
<td>78</td>
<td>100</td>
<td>9</td>
<td>52</td>
<td>16</td>
<td>8</td>
<td>3.2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Features**

- Compact and powerful
- Small unit size with half wave operation capable of longer distance conveyance.
- Speedy delivery, and versatile, longer distance conveyance
  - High vibration frequency and amplitude give speedy delivery, and can meet a range of longer distance conveyance requirements.
- Easy, convenient installation
  - Compact design takes up little space and allows easy, convenient installation.

**Chute Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. length</th>
<th>Max. width</th>
<th>Max. weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF-04C</td>
<td>500</td>
<td>35</td>
<td>0.4</td>
</tr>
<tr>
<td>MF-15C</td>
<td>450</td>
<td>45</td>
<td>1.5</td>
</tr>
</tbody>
</table>

*Note: Chutes must straddle drive unit to distribute weight.*

*Users are asked to drill holes as required for chute attachment.*
Swift, stable conveyance of high volumes of large workpieces

Large-capacity electromagnetic drive unit has strong coil springs positioned at front and rear, and drive controlled by amplitude angle adjustment, to give speedy, steady, straight-line delivery of large-sized workpieces. The low-floored half-wave drive provides uniform amplitude and vibration frequency to eliminate irregularities during high-volume conveyance of large workpieces.

Specifications

- Large size feeder provides smooth workpiece delivery
  - Large, vibro-isolating feeder that keeps the flow of workpieces smooth through adjustment of leaf-spring angle.
- Fast, stable delivery of high volumes of large workpieces
  - Extremely high conveyance efficiency allows high-volume delivery of large workpieces.
- Dial control for free adjustment of conveyance speed
  - By changing the vibration frequency and amplitude with the dial control, delivery speed can be freely adjusted.

Dimensions Chart

- Chute Specifications
  - Applicable linear feeder
  - Max. length
  - Max. width
  - Max. weight (kg)
  - LF-30 650 120 3.5
  - LF-40 750 150 5.5

Notes:
- Chute must straddle drive unit to distribute weight.

Features

- By attaching a feeder to a hopper, parts delivery is extremely smoothly accomplished and running noise is kept extremely low.

Notes

*1 Hoppers come in stainless steel only.
*2 Vibrating frequency: 50~70Hz; rated voltage: 200/220V; compatible controller: C10-1VFEF. (No standard model with 100/110V specifications.)
*3 Paint finish: Munsell N7.5
*4 For 15- and 30-liter hoppers, hopper heights come in 5 levels at 50mm intervals; for 60- and 100-liter hoppers, hopper heights come in 8 levels at 50mm intervals.
*5 Heavy-duty 60- and 100-liter hoppers (permissible total work weight 112kg) are available as non-standard models.
* Manufactured to order.
Digital control operated in ‘Analog’ way

A completely new type of digital controller that can be used with the full line-up of feeders, from high frequency mini parts feeders to small electromagnetic feeders and large size models. With ‘analog-style’ operation it can be adjusted very swiftly. With an auto-tuning function that eliminates the need for frequency adjustment, and convenient digital settings and display, drive units can be operated to their full potential.

**Features**

- Auto-tuning function eliminates leaf-spring adjustment (C10-1VF, VFEF, 5VF, VFEF).

This digital equipment has a special advanced vibration frequency auto-tuning function. It automatically tracks resonance paint changes not only from changes to input volume of workpieces, but also from mechanical changes over time, to deliver optimal vibration at all times. No leaf-spring adjustment or even frequency adjustment is necessary, thereby boosting operation efficiency and saving energy.

- Digital setting and display makes settings easy to manage.

Amplitude, drive frequency, output voltage notches are all set and displayed digitally, for easy management.

- Constant amplitude control matched to workpieces or materials (C10-1VF, VFEF, 5VF, VFEF).

Amplitude can be set digitally, and an amplitude sensor allows drive at constant amplitude suited to the workpieces under conveyance.

- Easy-to-use panel design.

The frequency, voltage, soft-start, on delay and off delay settings needed for parts feeder adjustment are located on a central panel. A rotary encoder allows ‘analog-style’ setting input to be changed to digital values.

- Many external control functions

Choice of four speeds can be made by external signal. Two-step control through external regulating resistance. External voltage adjustment via a DC/AC-20mA signal is also possible.

- CE Marking confirmed product

Required to be installed inside the control box treated with Noise filter and IP4X to make product comply to CE Marking.

**C10 Series Parts & Functions**

- **Data display screen**
  - Displays voltage/amplitude (%), frequency, settings, and error codes
  - In data modification mode for stroke and frequency, press AUTO FREQ button to enter data modification mode
  - Light indicates the position of a figure

- **Data display lights**
  - AUTO FREQ light
  - AUTO FREQ button
  - RUN light
  - RUN/STOP button
  - Soft start
  - Voltage (V)
  - Speed selector
  - Error code

- **Additional features**
  - Output signal
  - Synchronized power output
  - Control system
  - Power source input
  - Soft start
  - On/Off control
  - Power source input to controller
  - Power supply

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>C10-5VF</th>
<th>C10-3VF</th>
<th>C10-1VF</th>
<th>C10-VFEF</th>
<th>C10-3VFEF</th>
<th>C10-1VFEF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input power source</td>
<td>AC100~200V</td>
<td>AC200~230V</td>
<td>AC100~230V</td>
<td>AC100~230V</td>
<td>AC100~230V</td>
<td>AC100~230V</td>
</tr>
<tr>
<td>Power source input</td>
<td>For DC 12V, max 80VA with power plug</td>
<td>For DC 12V, max 80VA with power plug</td>
<td>For DC 12V, max 80VA with power plug</td>
<td>For DC 12V, max 80VA with power plug</td>
<td>For DC 12V, max 80VA with power plug</td>
<td>For DC 12V, max 80VA with power plug</td>
</tr>
<tr>
<td>Current</td>
<td>5A</td>
<td>3A</td>
<td>1.5A</td>
<td>1.5A</td>
<td>3A</td>
<td>1.5A</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-10% to 100°C</td>
<td>0~90°C</td>
<td>0~90°C</td>
<td>0~90°C</td>
<td>0~90°C</td>
<td>0~90°C</td>
</tr>
<tr>
<td>Ambient humidity</td>
<td>10~90% (no condensation)</td>
<td>10~90% (no condensation)</td>
<td>10~90% (no condensation)</td>
<td>10~90% (no condensation)</td>
<td>10~90% (no condensation)</td>
<td>10~90% (no condensation)</td>
</tr>
<tr>
<td>Weight</td>
<td>0.9kg</td>
<td>0.8kg</td>
<td>0.8kg</td>
<td>0.8kg</td>
<td>0.8kg</td>
<td>0.8kg</td>
</tr>
<tr>
<td>Power source input</td>
<td>0<del>190V (for AC 200V input) 0</del>95V (for AC 100V input)</td>
<td>0<del>190V (for AC 200V input) 0</del>95V (for AC 100V input)</td>
<td>0<del>190V (for AC 200V input) 0</del>95V (for AC 100V input)</td>
<td>0<del>190V (for AC 200V input) 0</del>95V (for AC 100V input)</td>
<td>0<del>190V (for AC 200V input) 0</del>95V (for AC 100V input)</td>
<td>0<del>190V (for AC 200V input) 0</del>95V (for AC 100V input)</td>
</tr>
</tbody>
</table>

**Compatible equipment**

<table>
<thead>
<tr>
<th>Model</th>
<th>ER-65B, ER-65B, ER-12B, ER-12B</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER-65B</td>
<td>ER-65B, ER-65B, ER-12B, ER-12B</td>
</tr>
<tr>
<td>ER-65B</td>
<td>ER-65B, ER-65B, ER-12B, ER-12B</td>
</tr>
</tbody>
</table>

Note: Specifications above are applied for later than ver. A
### Equipment Combinations

#### For source voltage AC200/220V

<table>
<thead>
<tr>
<th>Single Drive</th>
<th>Twin Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts Feeder Controller</td>
<td>C10-5VF/3VF/1VF</td>
</tr>
<tr>
<td>Linear Feeder Controller</td>
<td>C10-5VF/3VF/1VF</td>
</tr>
<tr>
<td>Parts Feeder Controller</td>
<td>C10-5VF/3VF/1VF</td>
</tr>
<tr>
<td>Linear Feeder Controller</td>
<td>C10-5VF/3VF/1VF</td>
</tr>
</tbody>
</table>

#### For source voltage AC100/110V

<table>
<thead>
<tr>
<th>Single Drive</th>
<th>Twin Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts Feeder Controller</td>
<td>C10-3VF/1VF</td>
</tr>
<tr>
<td>Linear Feeder Controller</td>
<td>C10-1VF</td>
</tr>
<tr>
<td>Parts Feeder Controller</td>
<td>C10-3VF/1VF</td>
</tr>
<tr>
<td>Linear Feeder Controller</td>
<td>C10-1VF</td>
</tr>
</tbody>
</table>

---

For source voltage AC200/220V

**Single Drive**

- Power source: AC200/220V
- Parts Feeder Controller: C10-5VF/3VF/1VF
- Linear Feeder Controller: C10-5VF/3VF/1VF
- Parts Feeder Level switch
- Vibrator or Feeder
- Controller for hopper
- Sensor amp

**Twin Drive**

- Linear Feeder Controller: C10-1VF
- Parts Feeder Controller: C10-5VF/3VF/1VF
- Parts Feeder Controller: C10-5VF/3VF/1VF
- Linear Feeder Controller: C10-5VF/3VF/1VF
- Power source: AC200/220V
- Controller for hopper
- Hopper
- Level switch
- Sensor amp
- Vibrator or Feeder

For source voltage AC100/110V

**Single Drive**

- Power source: AC100/110V
- Parts Feeder Controller: C10-3VF/1VF
- Linear Feeder Controller: C10-1VF
- Parts Feeder Controller: C10-3VF/1VF
- Linear Feeder Controller: C10-1VF
- Power source: AC100/110V
- Controller for hopper
- Hopper
- Level switch
- Sensor amp
- Vibrator or Feeder

**Twin Drive**

- Linear Feeder Controller: C10-1VF
- Parts Feeder Controller: C10-3VF/1VF
- Parts Feeder Controller: C10-3VF/1VF
- Linear Feeder Controller: C10-3VF/1VF
- Power source: AC100/110V
- Controller for hopper
- Hopper
- Level switch
- Sensor amp
- Vibrator or Feeder

---

For source voltage AC200/220V

**Single Drive**

- Power source: AC200/220V
- Parts Feeder Controller: C10-5VF/3VF/1VF
- Linear Feeder Controller: C10-5VF/3VF/1VF
- Parts Feeder Level switch
- Vibrator or Feeder
- Controller for hopper
- Sensor amp

**Twin Drive**

- Linear Feeder Controller: C10-1VF
- Parts Feeder Controller: C10-5VF/3VF/1VF
- Parts Feeder Controller: C10-5VF/3VF/1VF
- Linear Feeder Controller: C10-5VF/3VF/1VF
- Power source: AC200/220V
- Controller for hopper
- Hopper
- Level switch
- Sensor amp
- Vibrator or Feeder

For source voltage AC100/110V

**Single Drive**

- Power source: AC100/110V
- Parts Feeder Controller: C10-3VF/1VF
- Linear Feeder Controller: C10-1VF
- Parts Feeder Controller: C10-3VF/1VF
- Linear Feeder Controller: C10-1VF
- Power source: AC100/110V
- Controller for hopper
- Hopper
- Level switch
- Sensor amp
- Vibrator or Feeder

**Twin Drive**

- Linear Feeder Controller: C10-1VF
- Parts Feeder Controller: C10-3VF/1VF
- Parts Feeder Controller: C10-3VF/1VF
- Linear Feeder Controller: C10-3VF/1VF
- Power source: AC100/110V
- Controller for hopper
- Hopper
- Level switch
- Sensor amp
- Vibrator or Feeder
High-speed, high-precision handling of micro-sized parts and electronic chips. Compact design and versatility to handle a wide range of small parts.

Features

- **Smooth, reliable, orderly presentation of tiny, thin parts**
  - High vibration frequency and small amplitude allow for the orderly delivery of micro-sized, thin and complex-shaped parts, which is hard to achieve with conventional feeder vibration characteristics.

- **Highly accurate sorting and conveyance**
  - Bouncing of workpieces during conveyance is reduced, and even slight variations in shape and weight distribution of small parts can be detected for accurate sorting.

- **No problems at connecting points**
  - With little vibration displacement, there is no damage to workpieces caused by gaps between bowl and chute or chute and non-vibrating parts.

- **High vibration frequency gives high speed delivery**
  - High vibration frequency conveys workpieces smoothly, speedily and with no resistance, to supply a stable quantity with little variation, for a significant improvement in efficiency.

- **No readjustment of leaf-spring necessary**
  - Once set, leaf-spring requires no further adjustment. With feedback control for amplitude, changes over time in voltage or load do not cause fluctuations in vibration.

- **Compact design, with a height adjustment function**
  - Down-sized design for maximum space-saving, with a vibro-isolating base. Bowl height can be adjusted within 3 mm range to simplify positioning.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (V)</th>
<th>Rated Current (A)</th>
<th>Vibration frequency (Hz)</th>
<th>Weight (kg)</th>
<th>Loaded weight (kg)</th>
<th>Max. bowl diameter (mm)</th>
<th>Compatible standard controller</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME-08C</td>
<td>0.30</td>
<td>0.15</td>
<td>100~180</td>
<td>2.5</td>
<td>0.6</td>
<td>ø140</td>
<td>C10-1VP C10-1VFEP C9-03VFPC</td>
</tr>
<tr>
<td>ME-14C</td>
<td>0.55</td>
<td>0.15</td>
<td>220~360</td>
<td>7.8</td>
<td>2.0</td>
<td>ø200</td>
<td></td>
</tr>
<tr>
<td>HME-08C</td>
<td>0.30</td>
<td>0.15</td>
<td>100/110</td>
<td>2.5</td>
<td>0.6</td>
<td>ø140</td>
<td></td>
</tr>
<tr>
<td>HME-14C</td>
<td>0.30</td>
<td>0.15</td>
<td>220~360</td>
<td>7.8</td>
<td>2.0</td>
<td>ø200</td>
<td></td>
</tr>
</tbody>
</table>

Note: Loaded weight is permissible weight of bowl and work.
LFB/HLFB Series – Leaf-Spring Vibro-Isolating Type

Ideal vibration characteristics to cut bouncing
A high-precision electromagnetic drive unit ideal for use with chutes for precision parts, to meet present-day requirements for rapid processing of micro-sized workpieces. Vibro-isolating leaf-springs are installed front and rear to absorb rebound, and vibration characteristics can be adjusted to match the workpiece. Giving uniform vibration the whole length of the trough, this series provides smooth delivery of the most delicate, easily damaged parts with minimal bouncing.

Features
- Leaf-spring vibro-isolating type ideal for precision parts
- Minimizes bouncing
- Adjustable vibration characteristics give increased delivery efficiency while minimizing workpiece bouncing
- Compact and high precision
- Compact unit accommodates demands for rapid processing, providing high precision conveyance of micro-sized and precision parts.
- Reduce Vibration Reaction Force to 1/3 (HLFB-04C)
- By reducing weight balances of movable base and fixed base, it reduced vibration reaction force to 1/3 compared from conventional model.
- Realized consistent handling speed of works (HLFB-04C)
- It is able to realize stable supply of work piece with equalize handling speed from chute to outlet by improving degree of leaf springs.
- 14 tapped holes for chute installation (HLFB-04C)
- By gaining number of tapped hole for chute installation on movable base from 4 to 14, it is suitable for many working conditions.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (V)</th>
<th>Rated Current (A)</th>
<th>Vibration frequency (Hz)</th>
<th>Weight (kg)</th>
<th>Standard compatible controllers</th>
</tr>
</thead>
<tbody>
<tr>
<td>LFB-02</td>
<td>100/110</td>
<td>0.12</td>
<td>100 – 180</td>
<td>1.2</td>
<td>C10-1VF F10-1VF</td>
</tr>
<tr>
<td>LFB-04</td>
<td>100/200</td>
<td>0.08</td>
<td>100 – 200</td>
<td>2.7</td>
<td>C10-1VF F10-1VF</td>
</tr>
<tr>
<td>HLFB-02</td>
<td>100/110</td>
<td>0.25</td>
<td>220 – 360</td>
<td>1.2</td>
<td>C9-03VFTC</td>
</tr>
<tr>
<td>HLFB-04C</td>
<td>100/110</td>
<td>0.35</td>
<td>220 – 365</td>
<td>2.7</td>
<td>C9-03VFTC</td>
</tr>
</tbody>
</table>

Dimensions Chart

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLFB/LFB-02</td>
<td>22</td>
<td>130</td>
<td>86</td>
<td>65</td>
<td>15</td>
<td>49</td>
<td>65</td>
<td>130</td>
<td>72</td>
<td>6</td>
<td>4.5</td>
<td>45</td>
<td>5</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LFB-04</td>
<td>32</td>
<td>170</td>
<td>108</td>
<td>80</td>
<td>20</td>
<td>50</td>
<td>155</td>
<td>170</td>
<td>67</td>
<td>6</td>
<td>4.5</td>
<td>49</td>
<td>7.5</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chute Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. voltage (V)</th>
<th>Max. current (A)</th>
<th>Max. weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLFB/LFB-02</td>
<td>180</td>
<td>20</td>
<td>0.2</td>
</tr>
<tr>
<td>LFB-04</td>
<td>240</td>
<td>30</td>
<td>0.4</td>
</tr>
<tr>
<td>HLFB-04C</td>
<td>240</td>
<td>30</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Note: Chute must straddle drive unit to distribute weight.

C9-03VFTC – Variable Frequency Digital Controllers

Digital Control for Revolutionary Delivery of Micro-sized Parts
This new digital controller represents a major advance in the control of high frequency mini parts feeders for delivery of electronic chips and other micro-sized parts. Auto-tuning makes frequency adjustment unnecessary, and with its convenient digital settings and display it enables high frequency mini parts feeders to be operated to their full potential.

Features
- Auto-tuning function eliminates frequency adjustments
- Constant amplitude control matched to workpieces
- Amplitude can be set digitally, and an amplitude sensor keeps drive at a uniform amplitude suited to the workpieces under conveyance.
- One controller for all
- One controller can control both parts feeders or linear feeders.
- Computerized control delivers optimal drive

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Input Power source</th>
<th>Control system</th>
<th>Operating modes</th>
<th>Additional features</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>C9-03VFTC</td>
<td>AC100~220 V, 50/60Hz</td>
<td>PWM system</td>
<td>Auto-tuning mode</td>
<td>Sensor allows parts feeder overload control</td>
<td>Ambient temperature 0~40℃</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Constant amplitude mode</td>
<td>Start/Stop control</td>
<td>Ambient humidity 10~90% (no condensation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Start/stop control by external signal</td>
<td>On/off delay, Variable, 0.2~60 secs</td>
<td>Case color Beige (5Y7/1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Digital setting for amplitude</td>
<td>DC12V</td>
<td>Weight 2.4kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Amplitude controlled to be uniform by means of amplitude sensor</td>
<td>Output signal synchronized to operation of parts feeder</td>
<td>Our compatible Parts feeders ME-04C, ME-14C, HME-04D, HME-14</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sensor power source</td>
<td>Soft start</td>
<td>Our compatible Linear feeders LFB-02A4, LFB-02A4C,</td>
</tr>
</tbody>
</table>

Dimensions

Power cable 1,800mm

Power cable 1,500mm