Dean Pump Division

Series RWA
Fan Cooled Hot Water Pumps
Data Pak
### Standard Materials of Construction

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part Name</th>
<th>RWA 2096 Class 22</th>
<th>RWA 4166 Class 22</th>
<th>RWA 4206 Class 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Impeller</td>
<td>C.I. (1)</td>
<td>C.I. (1)</td>
<td>C.I. (1)</td>
</tr>
<tr>
<td>4</td>
<td>Impeller Key</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
<tr>
<td>5</td>
<td>Gasket</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
<tr>
<td>6</td>
<td>Bearing Housing</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
<tr>
<td>7</td>
<td>Shaft Sleeve</td>
<td>N.A.</td>
<td>316 S/S</td>
<td>316 S/S</td>
</tr>
<tr>
<td>8</td>
<td>Thrust Bearing</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
<tr>
<td>10</td>
<td>Fan Collar</td>
<td>N.A.</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
<tr>
<td>12</td>
<td>Seal Gland</td>
<td>N.A.</td>
<td>316 S/S</td>
<td>316 S/S</td>
</tr>
<tr>
<td>13</td>
<td>Anti-Kotation Pin</td>
<td>N.A.</td>
<td>316 S/S</td>
<td>316 S/S</td>
</tr>
<tr>
<td>14</td>
<td>Shaft Bearing</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
<tr>
<td>15</td>
<td>Casing Drain Plug</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
<tr>
<td>16</td>
<td>Casing Stud Nut</td>
<td>N.A.</td>
<td>Steel (3)</td>
<td>Steel (3)</td>
</tr>
<tr>
<td>17</td>
<td>Casing Stud Cap</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
<tr>
<td>18</td>
<td>Casing Cap Screw</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
<td>Steel (2)</td>
</tr>
</tbody>
</table>

### Mechanical Design Specifications

#### Pump Type

<table>
<thead>
<tr>
<th>PUMP TYPE</th>
<th>RWA 2096</th>
<th>RWA 4166</th>
<th>RWA 4206</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter of Rotation (Viewed from Coupling End)</td>
<td>CW</td>
<td>CCW</td>
<td>CCW</td>
</tr>
<tr>
<td>Casing Thickness, Maximum</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
<td>1/8&quot;</td>
</tr>
<tr>
<td>Corrosion Allowance</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Impeller Balance – Optional Extra</td>
<td>Dynamic</td>
<td>Dynamic</td>
<td>Dynamic</td>
</tr>
</tbody>
</table>

#### Flanges

- ANSI Class
- Facing
- Finish
- Flanges

#### Suction Pressure, Maximum
- 100 PSI
- 250 PSI
- 250 PSI

#### Horsepower Rating, Maximum
- 1150 RPM
- 1750 RPM
- 1750 RPM

#### Bearings

- Thrust Bearing, Ball Type, Grease Lubricated
- Thrust Bearing, Double Row
- Thrust Bearing, Angular Contact Pair

#### Rotor Bearing, Sleeve Type, Pumpage Lubricated

<table>
<thead>
<tr>
<th>Bearing Type</th>
<th>Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shaft</td>
<td>1&quot;/8&quot;</td>
<td>2&quot;/1/&quot;</td>
</tr>
<tr>
<td>Shaft</td>
<td>3/4&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>Shaft</td>
<td>8&quot;/1&quot;</td>
<td>11/4&quot;</td>
</tr>
</tbody>
</table>

#### Shaft Diameter

<table>
<thead>
<tr>
<th>Diameter</th>
<th>3/4&quot;</th>
<th>2&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material</td>
<td>18-8 S/S</td>
<td>18-8 S/S</td>
</tr>
</tbody>
</table>

#### Sealing Chamber

<table>
<thead>
<tr>
<th>Material</th>
<th>Cast Iron</th>
<th>Ductile Iron</th>
<th>Ductile Iron</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drill Diameter</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Maximum Working Pressure</td>
<td>250 PSI</td>
<td>450 PSI</td>
<td>450 PSI</td>
</tr>
<tr>
<td>Pumping Temperature Maximum</td>
<td>200°F</td>
<td>200°F</td>
<td>200°F</td>
</tr>
<tr>
<td>Maximum Maximum</td>
<td>320°F</td>
<td>400°F</td>
<td>400°F</td>
</tr>
<tr>
<td>Maximum Ambient Temperature</td>
<td>110°F</td>
<td>110°F</td>
<td>110°F</td>
</tr>
</tbody>
</table>

#### Hydraulic Test Pressure

| Test Pressure | 430 PSI | 700 PSI | 700 PSI |

### Allowable Working Pressure vs. Pumping Temperature

- PUMPING TEMPERATURE - DEGREES F.
- WORKING PRESSURE - POUNDS PER SQUARE INCH
- CAPACITY - CUBIC METERS PER HOUR - 2900 RPM - 50 HERTZ
- CAPACITY - CUBIC METERS PER HOUR - 1450 RPM - 50 HERTZ
- CAPACITY - U.S. GALLONS PER MINUTE - 3500 RPM - 60 HERTZ
- CAPACITY - U.S. GALLONS PER MINUTE - 1450 RPM - 60 HERTZ

### Dean Pump Division

6040 Guion Road, Indianapolis, IN 46254
Phone: (317) 293-2930, Fax: (317) 297-7028
6040 Guion Road, Indianapolis, IN 46254
Phone: (317) 293-2930, Fax: (317) 297-7028

Dean Pump Division specializes in the design and manufacture of hot water pumps. These pumps are specifically designed for use with hot water, ethylene glycol, propylene glycol, and triethylene glycol. They will not work on other liquids.
FLANGES:
A.N.S.I. RATING . . . Class 150
FACING . . . . . . . . . . Flat Face
FINISH . . . . . . . . . . . . . 125 Ra

All dimensions in inches

IMPORTANT: Do not use for construction unless certified.

DIMENSION DWG.
NO. RWA-1103
RWA-2096 WITH SHAFT FAN

**FLANGES:**
A.N.S.I. RATING . . . Class 150
FACING . . . . . . . . . . Flat Face
FINISH . . . . . . . . . . . . .125 Ra

**DIMENSION DWG. NO. RWA-1123**

**All dimensions in inches**

**IMPORTANT:** Do not use for construction unless certified.

**FRAME**

<table>
<thead>
<tr>
<th>C</th>
<th>AB</th>
<th>HA</th>
<th>HAI</th>
<th>HB</th>
<th>HD</th>
<th>HE</th>
<th>HG</th>
<th>HM</th>
</tr>
</thead>
<tbody>
<tr>
<td>143T</td>
<td>13/16</td>
<td>6/16</td>
<td>12</td>
<td>-</td>
<td>39</td>
<td>81/16</td>
<td>41/2</td>
<td>31/4</td>
</tr>
<tr>
<td>145T</td>
<td>13/16</td>
<td>6/16</td>
<td>12</td>
<td>-</td>
<td>39</td>
<td>81/16</td>
<td>41/2</td>
<td>31/4</td>
</tr>
<tr>
<td>182T</td>
<td>15/8</td>
<td>71/2</td>
<td>12</td>
<td>-</td>
<td>39</td>
<td>81/16</td>
<td>41/2</td>
<td>31/4</td>
</tr>
<tr>
<td>184T</td>
<td>15/8</td>
<td>71/2</td>
<td>12</td>
<td>-</td>
<td>39</td>
<td>81/16</td>
<td>41/2</td>
<td>31/4</td>
</tr>
<tr>
<td>213T</td>
<td>181/4</td>
<td>101/2</td>
<td>12</td>
<td>-</td>
<td>39</td>
<td>81/16</td>
<td>41/2</td>
<td>31/2</td>
</tr>
<tr>
<td>215T</td>
<td>195/8</td>
<td>111/4</td>
<td>12</td>
<td>-</td>
<td>39</td>
<td>81/16</td>
<td>41/2</td>
<td>31/2</td>
</tr>
<tr>
<td>254T</td>
<td>231/8</td>
<td>111/2</td>
<td>15</td>
<td>-</td>
<td>52</td>
<td>107/8</td>
<td>6</td>
<td>41/2</td>
</tr>
<tr>
<td>256T</td>
<td>243/8</td>
<td>111/2</td>
<td>15</td>
<td>-</td>
<td>52</td>
<td>107/8</td>
<td>6</td>
<td>41/2</td>
</tr>
<tr>
<td>284TS</td>
<td>251/2</td>
<td>131/2</td>
<td>15</td>
<td>-</td>
<td>52</td>
<td>111/2</td>
<td>6</td>
<td>41/2</td>
</tr>
<tr>
<td>286TS</td>
<td>275/8</td>
<td>131/2</td>
<td>15</td>
<td>-</td>
<td>52</td>
<td>111/2</td>
<td>6</td>
<td>41/2</td>
</tr>
<tr>
<td>324TS</td>
<td>283/4</td>
<td>143/4</td>
<td>12</td>
<td>161/2</td>
<td>45</td>
<td>131/2</td>
<td>41/2</td>
<td>31/2</td>
</tr>
</tbody>
</table>

**All dimensions in inches**
**Dean Pump Division**

6040 Guion Road  Indianapolis, IN 46254
Phone: (317) 293-2930  FAX: (317) 297-7028

**RWA-4166 WITH SHAFT FAN**

**DIMENSIONAL DRAWINGS**

---

- **Dimensions**
  - All dimensions in inches
  - Pump Sizes
    - 1 x 3 x 8/1
    - 1 1/2 x 3 x 8/1
    - 2 x 3 x 8/1
    - 3 x 4 x 8/1
    - 4 x 6 x 8/1
    - 1 1/2 x 3 x 10
    - 2 x 3 x 10
    - 3 x 4 x 10
    - 4 x 6 x 10 #2

- **Motor Frame CG**
  - 143T/145T: 6.81
  - 182T/184T: 6.13
  - 213T/215T: 6.63
  - 254T/256T: 7.25
  - 284TS/286TS: 6.50
  - 324TS/326TS: 7.13
  - 364TS/365TS: 7.13

---

**IMPORTANT:** Do not use for construction unless certified.
IMPORTANT: Do not use for construction unless certified.
**Dean Pump Division**

6040 Guion Road  Indianapolis, IN 46254
Phone: (317) 293-2930  FAX: (317) 297-7028

**RWA-4206 WITH SHAFT FAN**

**BASEPLATE Drip Pan**

10" SQ. IN. AREA GROUT HOLE IN EACH BULKHEAD SECTION. SEE TABLE BELOW FOR QTY. OF HOLES.

6-1.25" DIA. HOLES FOR FOUNDATION BOLTS

**FLANGES:**

A.N.S.I. RATING . . . Class 300
FACING . . . . . . . Raised Face
FINISH . . . . . . . . . . . . .125 Ra

**SERIES RWA**

**FAN COOLED HOT WATER PUMPS**

**DIMENSIONAL DRAWINGS**

6040 Guion Road   Indianapolis, IN 46254
Phone:  (317) 293-2930   FAX:  (317) 297-7028

Dean Pump Division

**IMPORTANT:** Do not use for construction unless certified.

**DIMENSION DWG.**

NO. RWA-2032

---

**PUMP SIZE**

<table>
<thead>
<tr>
<th></th>
<th>DISCHARGE</th>
<th>SUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SIZE</td>
<td>O.D.</td>
</tr>
<tr>
<td>4 x 6 x 10FT</td>
<td>4 10</td>
<td>11/4</td>
</tr>
</tbody>
</table>

All dimensions in inches

---

**FRAME**

<table>
<thead>
<tr>
<th>FRAME</th>
<th>C</th>
<th>AB</th>
<th>HB</th>
<th>HM</th>
<th>QTY. OF GROUT HOLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>254T</td>
<td>22/4</td>
<td>11</td>
<td>68</td>
<td>24/4</td>
<td>3</td>
</tr>
<tr>
<td>256T</td>
<td>24/4</td>
<td>11</td>
<td>68</td>
<td>24/4</td>
<td>3</td>
</tr>
<tr>
<td>284T</td>
<td>26/4</td>
<td>121/4</td>
<td>68</td>
<td>25/4</td>
<td>3</td>
</tr>
<tr>
<td>286T</td>
<td>28/4</td>
<td>121/4</td>
<td>68</td>
<td>25/4</td>
<td>3</td>
</tr>
<tr>
<td>324T</td>
<td>29/4</td>
<td>14/4</td>
<td>72</td>
<td>26/4</td>
<td>3</td>
</tr>
<tr>
<td>326T</td>
<td>29/4</td>
<td>14/4</td>
<td>72</td>
<td>26/4</td>
<td>3</td>
</tr>
<tr>
<td>326T</td>
<td>31/4</td>
<td>14/4</td>
<td>72</td>
<td>26/4</td>
<td>3</td>
</tr>
<tr>
<td>326T</td>
<td>31/4</td>
<td>16/4</td>
<td>72</td>
<td>26/4</td>
<td>3</td>
</tr>
</tbody>
</table>

All dimensions in inches

---

*The 2 x 4 x 151/2 pump has a 1/2" NPT drain*
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.

CENTRIFUGAL PUMP PERFORMANCE DATA: CURVE RA1060-A2
PUMP SIZE: 1" X 1 1/2" X 6"
PUMP TYPE: RA2096 & RWA2096 FAN COOLED
1" DISCHARGE X 1 1/2" SUCTION
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.

CENTRIFUGAL PUMP PERFORMANCE DATA: CURVE RA1080-A2
PUMP SIZE: 1" X 1 1/2" X 8"
PUMP TYPE: RA2096 & RWA2096 FAN COOLED
1" DISCHARGE X 1 1/2" SUCTION
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.
Dean Pump Division
6040 Guion Road   Indianapolis, IN 46254
Phone:  (317) 293-2930   FAX:  (317) 297-7028

CENTRIFUGAL PUMP PERFORMANCE DATA: CURVE R2085-A2
PUMP SIZE: 2" X 3" X 8\(\frac{1}{2}\)"
PUMP TYPE: RA3146 & RWA4166 FAN COOLED

2" DISCHARGE X 3" SUCTION

PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.

CENTRIFUGAL PUMP PERFORMANCE DATA: CURVE R20100-A2
PUMP SIZE: 2" X 3" X 10"
PUMP TYPE: RA3146 & RWA4166 FAN COOLED
2" DISCHARGE X 3" SUCTION
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.
CAPACITY - CUBIC METERS PER HOUR

0  20  40  60  80  100  120  140  160  200  220  240
0  200  400  600  800  1000  1200  1400  1600  1800  2000
0  20  40  60  80  100  120  140
0  20  40  60  80  100  120  140

3500 RPM

CAPACITY - CUBIC METERS PER HOUR

0  0.5  1  1.5  2  2.5  3
0  0.5  1  1.5  2  2.5  3
0  0.5  1  1.5  2  2.5  3

TOTAL HEAD - FEET

0  100  200  300  400  500
0  100  200  300  400  500
0  100  200  300  400  500

TOTAL HEAD - METERS

0  100  200  300  400  500
0  100  200  300  400  500
0  100  200  300  400  500

CAPACITY - GALLONS PER MINUTE

0  100  200  300  400  500  600
0  100  200  300  400  500  600
0  100  200  300  400  500  600

40  50  60  70  80  90  100
40  50  60  70  80  90  100
40  50  60  70  80  90  100

14 FT NPSH

16  18  72  74% EFF
16  18  72  74% EFF
16  18  72  74% EFF

30 HP & 1 SPGR

PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.
PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.
Dean Pump Division
6040 Guion Road, Indianapolis, IN 46254
Phone: (317) 293-2930  FAX: (317) 297-7028

CENTRIFUGAL PUMP PERFORMANCE DATA: CURVE R40100-B2
PUMP SIZE: 4" X 6" X 10" #2
PUMP TYPE: R4140, R5140, RA3146, RWA4166

4" DISCHARGE X 6" SUCTION

PUMP PERFORMANCE: This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from the performance indicated on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.

CAPACITY - GALLONS PER MINUTE

TOTAL HEAD - FEET

6040 Guion Road, Indianapolis, IN 46254
Phone: (317) 293-2930  FAX: (317) 297-7028

Customer:
Customer's Order No.:
Item No.:
Dean Pump Serial No.:
Factory Order No.:

CAPACITY - CUBIC METERS PER HOUR

TOTAL HEAD - METERS

6040 Guion Road, Indianapolis, IN 46254
Phone: (317) 293-2930  FAX: (317) 297-7028

Customer:
Customer's Order No.:
Item No.:
Dean Pump Serial No.:
Factory Order No.:

CAPACITY - CUBIC METERS PER HOUR

TOTAL HEAD - FEET

6040 Guion Road, Indianapolis, IN 46254
Phone: (317) 293-2930  FAX: (317) 297-7028

Customer:
Customer's Order No.:
Item No.:
Dean Pump Serial No.:
Factory Order No.:

CAPACITY - GALLONS PER MINUTE

TOTAL HEAD - METERS

6040 Guion Road, Indianapolis, IN 46254
Phone: (317) 293-2930  FAX: (317) 297-7028

Customer:
Customer's Order No.:
Item No.:
Dean Pump Serial No.:
Factory Order No.
This curve, based on extensive tests, defines the average performance of this pump for liquids having a viscosity of 70 SSU or less. Actual performance of individual units may differ slightly from that shown on this curve. Pump applications made from the data contained herein are subject to confirmation and acceptance by our Engineering Department at our Indianapolis Office.

Dean Pump Division
6040 Guion Road, Indianapolis, IN 46254
Phone: (317) 293-2930   FAX: (317) 297-7028