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# **THE LEADING FORCE** behind liquids<sup>™</sup> since 1857

120 inch Fore Pump and Worm Oil Pump Type 1 2AM08

# A Series General Purpose Pumps

General Purpose Pumps for Pressure Lubrication, Hydraulic Service, Fuel Supply and General Transfer

# **The Roper Pump Family of Gear Pumps**

		Typical Applications	Primary Features
	3600	<ul> <li>Mix, circulate, and transfer viscous liquids</li> <li>Gasoline, asphalt, molasses</li> <li>Ink, roofing compounds, oils</li> </ul>	<ul> <li>Precise tolerances for maximum efficiency</li> <li>Direct drive or built-on gear reducers</li> <li>Bi-directional rotation*</li> <li>Configurations available for close coupled drive and close coupled hydraulic drive</li> </ul>
	z	Industrial applications requiring a special mechanical seal	<ul> <li>ANSI Flanges</li> <li>Many parts interchangeable with 3600 Series</li> <li>Direct drive or built-on gear reducers</li> <li>Bi-directional rotation*</li> <li>Configurations available for close coupled drive and close coupled hydraulic drive</li> </ul>
	3800	<ul> <li>Oilfields including light &amp; heavy crude oil</li> <li>Kerosene mixtures, condensates and hot oils</li> </ul>	<ul> <li>Sealed ball bearings</li> <li>Quadruple grease purged lip seals</li> <li>Helical gears for quiet operation</li> <li>Bi-directional rotation*</li> </ul>
	Bulk	<ul> <li>Fuels, solvents, petrochemicals</li> <li>Residual fuel oils, molasses, resins</li> <li>Tankers, barges, process plants, refineries</li> </ul>	<ul> <li>Large ports (6" and 8" available) allow more efficient transfer of fluids</li> <li>Thru port design allows for lower inlet and outlet losses</li> </ul>
-	5600	<ul> <li>Hydroseeding</li> <li>Grouting, seal coating, oil and sand</li> <li>Wastewater, waste oil, sludge, slurries</li> <li>Brine, paper pulp, fertilizer feeds</li> </ul>	<ul> <li>Rubber covered gears</li> <li>Bi-directional rotation</li> <li>Abrasive applications; up to pea size particles</li> </ul>
	А	<ul> <li>Pressure lubrication</li> <li>Hydraulic service</li> <li>General transfer applications</li> </ul>	<ul> <li>Operates at motor speeds</li> <li>Bi-directional rotation*</li> <li>Close coupled capability</li> </ul>
	2835	<ul> <li>Roofing Compounds</li> <li>Molasses</li> <li>Feed Supplements</li> </ul>	<ul> <li>Operates at standard motor speeds</li> <li>Large ports allow easier fluid entry</li> <li>Built-in relief valve</li> </ul>
	٨	<ul> <li>Hazardous liquid transfer</li> <li>"Zero leakage" applications due to environmental concerns</li> <li>Chemical and petroleum applications</li> </ul>	<ul> <li>Mag-drive, sealless design eliminates seal repair costs and down time</li> <li>C-face mount eliminates misalignment</li> <li>Bi-directional rotation and self-priming</li> </ul>
(R)	н	<ul> <li>Hydraulic power for lifts, machine actuation, fuel burners, and blenders</li> <li>General transfer of oil and petroleum fluids</li> </ul>	<ul> <li>2 inlet ports, 2 outlet ports allows multiple piping arrangements (except F150 - F300)</li> <li>High Pressure Range</li> <li>Maintain pump without pipe removal</li> </ul>
	ROC	<ul> <li>Chemical processing</li> <li>Pharmaceutical industry</li> <li>Injection or transfer of acids &amp; solvents</li> </ul>	<ul> <li>Stainless steel construction</li> <li>Bi-directional rotation*</li> <li>Mag-drive, sealless option (X5-03 only)</li> </ul>
	9622	<ul> <li>Chemical and transport applications</li> <li>Corrosive liquid transfer</li> </ul>	<ul> <li>316SS Housing</li> <li>17-4 PH SST Gears / Shafts</li> <li>Built-in Relief Valve</li> </ul>
Jan P	PC	<ul> <li>Viscous, abrasive and solids-containing liquids</li> <li>Transfer of wastewater sludge, polymers, grouts, paints and adhesives</li> </ul>	<ul> <li>Pulsation free pumping</li> <li>High suction lift capabilities</li> <li>Ideal for shear sensitive liquids</li> <li>*Pump reconfiguration may be required.</li> </ul>



# A Series General Purpose Pumps

General Purpose Pumps for Pressure Lubrication, Hydraulic Service, Fuel Supply and General <u>Transfer</u>

Up to 59 GPM • Up to 300 PSI

Roper Series A pumps are adaptable to a wide range of applications, pumping clean fluids such as pressure lubrication, hydraulic service, fuel supply or general liquid transfer.

These pumps are designed to operate at standard motor speeds, with provisions for flange or foot mounting. The internal bearings are lubricated by the fluid being pumped. With only two moving parts, the pumps run quietly.

They are manufactured and assembled with close tolerances, and regularly tested to insure dependable performance. Factory assembled for clockwise rotation (facing the pump drive shaft end), most may be reassembled for operation with equal efficiency in a counter-clockwise rotation.

### MATERIALS OF CONSTRUCTION

#### Standard Fitted

Housing	Cast Iron
Gears	Ductile Iron* Hardened Steel**
Bearings	Bronze
Idler Shafts	Ductile Iron* Steel**
Drive Shafts	Hardened Steel

### **Optional Materials**

Housing	Ductile Iron***
Bearings	Iron, Carbon

\*06 and larger sizes. \*\*03 and smaller sizes. \*\*\*In 005, 01 and 02 sizes

## **FEATURES**

- Designed to operate at standard motor speeds
- Bi-directional rotation

#### **Quiet-Running Helical Gears**

Accurate machining insures:

- proper meshing
- reduced friction and vibration
- quiet, efficient operation
- long life

#### Long-Lasting Bearing Surfaces

- Bearings are special wear-resistant, high-lead bronze. (Iron and carbon bearings are available.)
- Four heavy duty sleeve bearings give positive support to pumping gears and insure long, efficient service.

#### Precise, Rugged, Maintenance-Friendly Design

- All castings are cast iron.
- Precise manufacturing tolerances provide minimum clearances for maximum pumping efficiency.
- Large, hardened steel dowel pins insure positive alignment between the faceplate, case, and backplate.

### **THE LEADING FORCE** behind liquids<sup>™</sup> since 1857

# **Capacities & Nomenclature**

### A SERIES NOMENCLATURE

	1 - Foot Mounted	25 - Baseplate Mounted		
Model	2 - Foot Mounted with Relief Valve	26 - Baseplate Mounted with Relief Valve		
Model	<b>17</b> - Flange Mounted	33 - Close Coupled		
	<b>18</b> - Flange Mounted with Relief Valve	34 - Close Coupled with Relief Valve		
	AL - Lip Seal			
Seal	AM - Mechanical Seal			
Option	AP - Packed Box			
	AE - Mechanical Seal (AE Series Only)			
	005 - 0.05 Gal/100 Rev [0.19 L/100 Rev]	12 - 1.3 Gal/100 Rev [4.92 L/100 Rev]		
	005         - 0.05         Gal /100         Rev [0.19         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev]         01         - 0.1         Gal /100         Rev [0.38         L /100         Rev [0.38 </td <td><b>12</b> - 1.3 Gal/100 Rev [4.92 L/100 Rev]         <b>16</b> - 1.7 Gal/100 Rev [6.44 L/100 Rev]</td>	<b>12</b> - 1.3 Gal/100 Rev [4.92 L/100 Rev] <b>16</b> - 1.7 Gal/100 Rev [6.44 L/100 Rev]		
Size*				
Size* [AL, AM, AP]	01 - 0.1 Gal /100 Rev [0.38 L /100 Rev]	<b>16</b> - 1.7 Gal/100 Rev [6.44 L/100 Rev]		
[AL, AM,	01 - 0.1 Gal /100 Rev [0.38 L /100 Rev] 02 - 0.2 Gal /100 Rev [0.76 L /100 Rev]	16 - 1.7 Gal/100 Rev [6.44 L/100 Rev]         21 - 2.2 Gal/100 Rev [8.33 L/100 Rev]		
[AL, AM,	01       - 0.1 Gal /100 Rev [0.38 L/100 Rev]         02       - 0.2 Gal /100 Rev [0.76 L/100 Rev]         03       - 0.3 Gal /100 Rev [1.14 L/100 Rev]	16 - 1.7 Gal/100 Rev [6.44 L/100 Rev]         21 - 2.2 Gal/100 Rev [8.33 L/100 Rev]         27 - 2.7 Gal/100 Rev [10.22 L/100 Rev]		
[AL, AM,	01       - 0.1 Gal /100 Rev [0.38 L/100 Rev]         02       - 0.2 Gal /100 Rev [0.76 L/100 Rev]         03       - 0.3 Gal /100 Rev [1.14 L/100 Rev]         06       - 0.6 Gal /100 Rev [2.27 L/100 Rev]	16 - 1.7 Gal/100 Rev [6.44 L/100 Rev]         21 - 2.2 Gal/100 Rev [8.33 L/100 Rev]         27 - 2.7 Gal/100 Rev [10.22 L/100 Rev]         32 - 3.3 Gal/100 Rev [12.49 L/100 Rev]		

\*Size: approximate theoretical flow rate [not including slip]

EXAMPLE: 17AM32	<b>17</b>	<b>AM</b>	<b>32</b>	<b>Type 1</b>
	Model	Seal Option	Size	Internal Construction
EXAMPLE: 2AE54	<b>2</b>	<b>AE</b>	<b>54</b>	<b>Type 1</b>
	Model	Seal Option	Size	Internal Construction



Mechanical seals are for those applications where product leakage is unacceptable. The mechanical seal uses less power than the packed box and, under proper conditions, has a longer service life. It does not require adjustment. Our standard mechanical seal is an elastomeric bellows type seal, with a temperature limit of 212°F (100°C). Special fitting is available for higher temperature applications.



## MECHANICAL SEAL (POSITIVE DRIVEN)

These are positive driven seals with a PTFE wedge, for use where corrosive and/or viscous liquids are being processed. Wedge construction of the secondary sealing element virtually eliminates leakage. These seals have a temperature limit of 450°F (232°C). Special fitting is available for higher temperature applications.

# SIZE 005 THROUGH 02



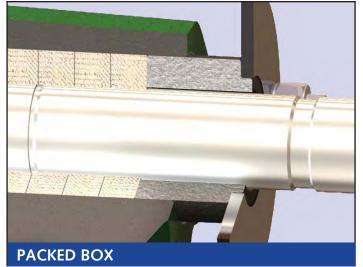
Flange Mounted

**Baseplate Unit** 

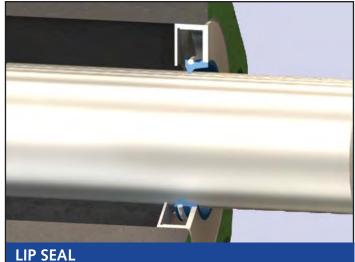


# **Pump Seals**



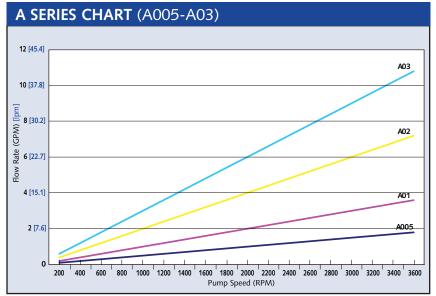


The packed box seal is suited for general purpose applications. The standard packing has a temperature limit of 250°F (121°C), with special fitting available for higher temperature applications. The gland should be adjusted to allow slight seepage.



The lip seal is suitable for low pressure sealing of lubricating fluids. The standard seal has a temperature limit of  $212^{\circ}F$  (100°C). Special fitting is available for higher temperature applications. Available in CW rotation only and 100 psi maximum discharge.

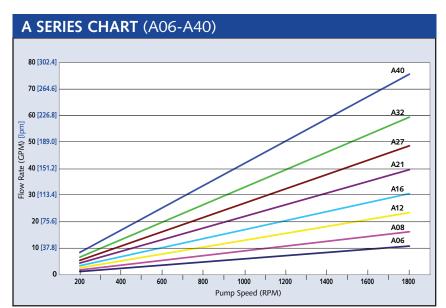
# **A Series Performance Charts**



SIZE		RPM		3600 RPM				
Pump	PSI [bar]	SSU	30	100	1000	5000	30	
	<b>50</b>	GPM [l/min]	1.62 [6.1]	1.78 [6.7]	1.83 [6.9]	1.83 [6.9]	0.7 [2.6]	
	[3.5]	HP [kW]	0.41 [0.3]	0.32 [0.2]	0.53 [0.4]	0.84 [0.6]	0.17 [0.1]	
005	150	GPM [l/min]	<b>1.3</b> [4.9]	1.71 [6.5]	1.83 [6.9]	1.83 [6.9]	0.38 [1.4]	
	[10.3]	HP [kW]	<b>0.8</b> [0.6]	0.47 [0.4]	0.64 [0.5]	0.95 [0.7]	0.33 [0.2]	
	<b>300</b> [20.7]	GPM [l/min] HP [kW]		1.62 [6.1] 0.69 [0.5]	1.82 [6.9] 0.8 [0.6]	1.83 [6.9] 1.11 [0.8]		
	<b>50</b>	GPM [l/min]	3.4 [12.9]	<b>3.55</b> [13.4]	3.59 [13.6]	3.59 [13.6]	1.6 [6.1]	
	[3.5]	HP [kW]	0.36 [0.3]	<b>0.4</b> [0.3]	0.7 [0.5]	1.1 [0.8]	0.14 [0.1]	
01	150	GPM [l/min]	<b>2.99</b> [11.3]	3.44 [13.0]	3.59 [13.6]	3.59 [13.6]	1.19 [4.5]	
	[10.3]	HP [kW]	<b>0.8</b> [0.6]	0.68 [0.5]	0.91 [0.7]	1.28 [1.0]	0.32 [0.2]	
	<b>300</b> [20.7]	GPM [l/min] HP [kW]		3.26 [12.3] 1.03 [0.8]	3.58 [13.6] 1.23 [0.9]	3.59 [13.6] 1.6 [1.2]		
	<b>50</b>	GPM [l/min]	7.01 [26.5]	7.35 [27.8]	7.53 [28.5]	7.55 [28.6]	<b>3.23</b> [12.2]	
	[3.5]	HP [kW]	0.48 [0.4]	0.52 [0.4]	0.82 [0.6]	1.19 [0.9]	<b>0.2</b> [0.1]	
02	150	GPM [l/min]	6.26 [23.7]	7.09 [26.8]	7.48 [28.3]	7.54 [28.5]	<b>2.48</b> [9.4]	
	[10.3]	HP [kW]	1.15 [0.9]	1.03 [0.8]	1.26 [0.9]	1.63 [1.2]	<b>0.5</b> [0.4]	
	<b>300</b> [20.7]	GPM [l/min] HP [kW]		5.8 [22.0] 1.7 [1.3]	7.42 [28.1] 1.92 [1.4]	7.52 [28.5] 2.29 [1.7]		
	<b>50</b>	GPM [l/min]	<b>10.42</b> [39.4]	<b>11.05</b> [41.8]	<b>11.41</b> [43.2]	<b>11.49</b> [43.5]	<b>4.66</b> [17.6]	
	[3.5]	HP [kW]	<b>0.7</b> [0.5]	<b>0.68</b> [0.5]	<b>0.94</b> [0.7]	<b>1.29</b> [1.0]	<b>0.34</b> [0.3]	
03	150	GPM [l/min]	<b>9.3</b> [35.2]	10 [37.9]	11.32 [42.9]	11.45 [43.3]	<b>3.66</b> [13.9]	
	[10.3]	HP [kW]	<b>1.6</b> [1.2]	1.6 [1.2]	1.61 [1.2]	1.96 [1.5]	<b>0.85</b> [0.6]	
	<b>300</b> [20.7]	GPM [l/min] HP [kW]		<b>9.5</b> [36.0] <b>2.6</b> [1.9]	11.21 [42.4] 2.61 [1.9]	11.41 [43.2] 2.96 [2.2]		

Performance figures show maximum horsepower requirements for minimum rated gallons per minute at the various speeds, viscosities and pressures. The charts are intended as a guide for conditions at the pump. In determining the proper conditions of operation for the pump, many factors must be considered including inlet conditions, liquid characteristics, and temperature.

If there is any question concerning these charts or the recommended operating conditions, please consult your Roper distributor, district representative, or the home office.



SIZE		RPM		180	0 RPM	
Pump	PSI [bar]	SSU	30	100	1000	5000
	<b>50</b>	GPM [l/min]	<b>10.6</b> [40.1]	<b>10.9</b> [41.3]	<b>11.2</b> [42.4]	<b>11.2</b> [42.4]
	[3.5]	HP [kW]	<b>0.88</b> [0.7]	<b>0.88</b> [0.7]	<b>1.33</b> [1.0]	<b>2.08</b> [1.6]
06	<b>100</b>	GPM [l/min]	<b>9.8</b> [37.1]	<b>10.4</b> [39.4]	<b>11</b> [41.6]	<b>11.1</b> [42.0]
	[6.9]	HP [kW]	<b>1.21</b> [0.9]	<b>1.21</b> [0.9]	<b>1.66</b> [1.2]	<b>2.41</b> [1.8]
	<b>150</b>	GPM [l/min]	<b>8.7</b> [32.9]	<b>9.8</b> [37.1]	<b>10.8</b> [40.9]	<b>11</b> [41.6]
	[10.3]	HP [kW]	<b>1.54</b> [1.1]	<b>1.54</b> [1.1]	<b>1.99</b> [1.5]	<b>2.74</b> [2.0]
	<b>50</b>	GPM [l/min]	<b>15.5</b> [58.7]	<b>15.8</b> [59.8]	<b>16.1</b> [60.9]	<b>16.1</b> [60.9]
	[3.5]	HP [kW]	<b>1.7</b> [1.3]	<b>1.7</b> [1.3]	<b>1.7</b> [1.3]	<b>2.1</b> [1.6]
08	<b>100</b>	GPM [l/min]	<b>14.6</b> [55.3]	<b>15.3</b> [57.9]	<b>15.9</b> [60.2]	16 [60.6]
	[6.9]	HP [kW]	<b>2.2</b> [1.6]	<b>2.2</b> [1.6]	<b>2.2</b> [1.6]	2.6 [1.9]
	<b>150</b>	GPM [l/min]	<b>13.6</b> [51.5]	<b>14.7</b> [55.6]	<b>15.7</b> [59.4]	16 [60.6]
	[10.3]	HP [kW]	<b>2.6</b> [1.9]	<b>2.6</b> [1.9]	<b>2.6</b> [1.9]	3.1 [2.3]
	<b>50</b>	GPM [l/min]	<b>21.4</b> [81.0]	<b>22.2</b> [84.0]	23 [87.1]	<b>23.2</b> [87.8]
	[3.5]	HP [kW]	<b>1.7</b> [1.3]	<b>1.8</b> [1.3]	2.3 [1.7]	<b>2.7</b> [2.0]
12	<b>100</b>	GPM [l/min]	<b>19.9</b> [75.3]	<b>21.4</b> [81.0]	<b>22.7</b> [85.9]	23 [87.1]
	[6.9]	HP [kW]	<b>2.3</b> [1.7]	<b>2.5</b> [1.9]	<b>3</b> [2.2]	3.4 [2.5]
	<b>150</b>	GPM [l/min]	<b>18.4</b> [69.7]	<b>20.5</b> [77.6]	<b>22.4</b> [84.8]	<b>22.9</b> [86.7]
	[10.3]	HP [kW]	<b>3</b> [2.2]	<b>3.2</b> [2.4]	<b>3.7</b> [2.8]	<b>4.1</b> [3.1]
	<b>50</b>	GPM [l/min]	<b>27.8</b> [105.2]	<b>29.2</b> [110.5]	<b>30.4</b> [115.1]	<b>30.8</b> [116.6]
	[3.5]	HP [kW]	<b>2.1</b> [1.6]	<b>2.3</b> [1.7]	<b>2.6</b> [1.9]	<b>3.4</b> [2.5]
16	<b>100</b>	GPM [l/min]	<b>25.7</b> [97.3]	<b>28</b> [106.0]	<b>30</b> [113.6]	<b>30.6</b> [115.8]
	[6.9]	HP [kW]	<b>3</b> [2.2]	<b>3.2</b> [2.4]	<b>3.5</b> [2.6]	<b>4.3</b> [3.2]
	<b>150</b> [10.3]	GPM [l/min] HP [kW]		<b>26.8</b> [101.4] <b>4.1</b> [3.1]	<b>29.6</b> [112.0] <b>4.4</b> [3.3]	<b>30.4</b> [115.1] <b>5.2</b> [3.9]
	<b>50</b>	GPM [l/min]	<b>34.5</b> [130.6]	<b>36.6</b> [138.5]	<b>38.5</b> [145.7]	<b>39.1</b> [148.0]
	[3.5]	HP [kW]	<b>2.7</b> [2.0]	<b>2.8</b> [2.1]	<b>3</b> [2.2]	<b>4.1</b> [3.1]
21	100	GPM [l/min]	<b>31.7</b> [120.0]	<b>35</b> [132.5]	<b>37.9</b> [143.5]	<b>38.8</b> [146.9]
	[6.9]	HP [kW]	<b>3.8</b> [2.8]	<b>3.9</b> [2.9]	<b>4.1</b> [3.1]	<b>5.3</b> [4.0]
	150 [10.3]	GPM [l/min] HP [kW] GPM [l/min]	<b>42.6</b> [161.3]	<b>33.4</b> [126.4] <b>5.1</b> [3.8] <b>45.5</b> [172.2]	<b>37.4</b> [141.6] <b>5.3</b> [4.0] <b>48.1</b> [182.1]	<b>38.5</b> [145.7] <b>6.4</b> [4.8] <b>48.8</b> [184.7]
	50 [3.5]	GPM [l/min] HP [kW] GPM [l/min]	<b>42.6</b> [161.3] <b>3.3</b> [2.5]	<b>3.3</b> [2.5]	3.5 [2.6]	<b>48.8</b> [184.7] <b>4.9</b> [3.7] <b>48.4</b> [183.2]
27	100 [6.9] 150	HP [kW]		<b>43.4</b> [164.3] <b>4.7</b> [3.5] <b>41.4</b> [156.7]	<b>47.3</b> [179.0] <b>4.9</b> [3.7] <b>46.6</b> [176.4]	<b>6.3</b> [4.7] <b>48.1</b> [182.1]
	[10.3] 50	HP [kW]	<b>50.8</b> [192.3]	<b>6.2</b> [4.6] <b>54.3</b> [205.5]	<b>6.3</b> [4.7] <b>57.6</b> [218.0]	<b>7.7</b> [5.7]
	[3.5] 100	HP [kW]	<b>3.9</b> [2.9]	<b>3.9</b> [2.9] <b>51.8</b> [196.1]	<b>4.1</b> [3.1] <b>56.7</b> [214.6]	<b>5.7</b> [4.3] <b>58.1</b> [219.9]
32	[6.9] 150	HP [kW] GPM [l/min]		<b>5.6</b> [4.2] <b>49.4</b> [187.0]	<b>5.8</b> [4.3] <b>55.8</b> [211.2]	<b>7.5</b> [5.6] <b>57.7</b> [218.4]
	[10.3] 50	HP [kW]	<b>66.5</b> [251.7]	<b>7.3</b> [5.4]	<b>7.5</b> [5.6] <b>73.7</b> [279.0]	<b>9.2</b> [6.9] <b>74.7</b> [282.8]
	[3.5] 100	HP [kW] GPM [l/min]	4.6 [3.4]	<b>4.8</b> [3.6] <b>67.3</b> [254.8]	<b>5.8</b> [4.3] <b>72.7</b> [275.2]	<b>9.1</b> [6.8] <b>74.1</b> [280.5]
40	[6.9] 150	HP [kW]		<b>6.9</b> [5.1] <b>64.6</b> [244.5]	<b>7.9</b> [5.9] <b>71.9</b> [272.2]	<b>11.2</b> [8.4] <b>73.8</b> [279.4]
	[10.3]	HP [kW]		<b>9.1</b> [6.8]	<b>10.1</b> [7.5]	<b>13.4</b> [10.0]

1800	RPM			1200	RPM			900	RPM			720	RPM	
100	1000	5000	30	100	1000	5000	30	100	1000	5000	30	100	1000	5000
0.87 [3.3]	0.91 [3.4]	0.91 [3.4]	0.39 [1.5]	0.56 [2.1]	0.61 [2.3]	0.61 [2.3]	0.24 [0.9]	0.41 [1.6]	0.45 [1.7]	0.45 [1.7]	0.15 [0.6]	0.32 [1.2]	0.36 [1.4]	0.36 [1.4]
0.14 [0.1]	0.21 [0.2]	0.34 [0.3]	0.06 [0.0]	0.06 [0.0]	0.13 [0.1]	0.21 [0.2]	0.05 [0.0]	0.05 [0.0]	0.09 [0.1]	0.15 [0.1]	0.04 [0.0]	0.04 [0.0]	0.06 [0.0]	0.12 [0.1]
0.79 [3.0]	0.91 [3.4]	0.91 [3.4]		0.48 [1.8]	0.61 [2.3]	0.61 [2.3]		0.33 [1.2]	0.45 [1.7]	0.45 [1.7]		0.24 [0.9]	0.36 [1.4]	0.36 [1.4]
0.21 [0.2]	0.26 [0.2]	0.39 [0.3]		0.1 [0.1]	0.15 [0.1]	0.24 [0.2]		0.08 [0.1]	0.11 [0.1]	0.18 [0.1]		0.06 [0.0]	0.09 [0.1]	0.14 [0.1]
	0.9 [3.4]	0.91 [3.4]		0.39 [1.5]	0.61 [2.3]	0.61 [2.3]		0.24 [0.9]	0.44 [1.7]	0.45 [1.7]			0.35 [1.3]	0.36 [1.4]
	0.34 [0.3]	0.47 [0.4]		0.15 [0.1]	0.2 [0.1]	0.3 [0.2]		0.12 [0.1]	0.15 [0.1]	0.22 [0.2]			0.12 [0.1]	0.17 [0.1]
1.75 [6.6]	1.79 [6.8]	1.79 [6.8]	1 [3.8]	1.15 [4.4]	1.19 [4.5]	1.19 [4.5]	0.7 [2.6]	0.85 [3.2]	0.89 [3.4]	0.89 [3.4]	0.52 [2.0]	0.67 [2.5]	0.71 [2.7]	0.71 [2.7]
0.16 [0.1]	0.26 [0.2]	0.39 [0.3]	0.09 [0.1]	0.09 [0.1]	0.15 [0.1]	0.26 [0.2]	0.06 [0.0]	0.06 [0.0]	<b>0.1</b> [0.1]	0.18 [0.1]	0.05 [0.0]	0.05 [0.0]	0.07 [0.1]	0.13 [0.1]
1.64 [6.2]	1.79 [6.8]	1.79 [6.8]		1.04 [3.9]	1.19 [4.5]	1.19 [4.5]		0.74 [2.8]	0.89 [3.4]	0.89 [3.4]		0.56 [2.1]	0.71 [2.7]	0.71 [2.7]
0.29 [0.2]	0.37 [0.3]	0.5 [0.4]		0.16 [0.1]	0.22 [0.2]	0.33 [0.2]		0.11 [0.1]	0.15 [0.1]	0.23 [0.2]		0.09 [0.1]	0.12 [0.1]	0.17 [0.1]
1.46 [5.5]	1.78 [6.7]	1.79 [6.8]		0.86 [3.3]	1.18 [4.5]	1.19 [4.5]		0.56 [2.1]	0.88 [3.3]	0.89 [3.4]		0.38 [1.4]	0.7 [2.6]	0.71 [2.7]
0.45 [0.3]	0.52 [0.4]	0.65 [0.5]		0.27 [0.2]	0.33 [0.2]	0.44 [0.3]		0.19 [0.1]	0.23 [0.2]	0.31 [0.2]		0.15 [0.1]	0.18 [0.1]	0.24 [0.2]
3.57 [13.5]	3.75 [14.2]	3.77 [14.3]	1.97 [7.5]	2.31 [8.7]	2.49 [9.4]	2.51 [9.5]	1.34 [5.1]	1.68 [6.4]	1.86 [7.0]	1.88 [7.1]	0.96 [3.6]	1.3 [4.9]	1.48 [5.6]	1.5 [5.7]
0.22 [0.2]	0.32 [0.2]	0.45 [0.3]	0.13 [0.1]	0.13 [0.1]	0.19 [0.1]	0.3 [0.2]	0.09 [0.1]	0.09 [0.1]	0.13 [0.1]	0.21 [0.2]	0.07 [0.1]	0.07 [0.1]	0.1 [0.1]	0.15 [0.1]
3.31 [12.5]	3.7 [14.0]	3.76 [14.2]		2.05 [7.8]	2.44 [9.2]	2.51 [9.5]		1.42 [5.4]	1.81 [6.9]	1.88 [7.1]		1.04 [3.9]	1.44 [5.5]	1.5 [5.7]
0.46 [0.3]	0.54 [0.4]	0.67 [0.5]		0.28 [0.2]	0.34 [0.3]	0.45 [0.3]		0.2 [0.1]	0.24 [0.2]	0.32 [0.2]		0.16 [0.1]	0.19 [0.1]	0.24 [0.2]
2.96 [11.2]	3.64 [13.8]	3.74 [14.2]		1.7 [6.4]	2.38 [9.0]	2.5 [9.5]		1.07 [4.1]	1.75 [6.6]	1.87 [7.1]			1.37 [5.2]	1.49 [5.6]
0.8 [0.6]	0.87 [0.6]	1 [0.7]		0.5 [0.4]	0.56 [0.4]	0.67 [0.5]		0.37 [0.3]	0.4 [0.3]	0.48 [0.4]			0.32 [0.2]	0.37 [0.3]
5.29 [20.0]	5.65 [21.4]	5.73 [21.7]	2.74 [10.4]	3.37 [12.8]	3.73 [14.1]	3.82 [14.5]	1.78 [6.7]	2.41 [9.1]	2.77 [10.5]	2.86 [10.8]	1.2 [4.5]	1.83 [6.9]	2.19 [8.3]	2.28 [8.6]
0.33 [0.2]	0.45 [0.3]	0.62 [0.5]	0.2 [0.1]	0.2 [0.1]	0.29 [0.2]	0.46 [0.3]	0.15 [0.1]	0.15 [0.1]	0.21 [0.2]	0.34 [0.3]	0.12 [0.1]	0.12 [0.1]	0.17 [0.1]	0.27 [0.2]
4.83 [18.3]	5.56 [21.0]	5.69 [21.5]		2.91 [11.0]	3.64 [13.8]	3.8 [14.4]		1.95 [7.4]	2.68 [10.1]	2.84 [10.8]		1.37 [5.2]	2.1 [7.9]	2.26 [8.6]
0.68 [0.5]	0.77 [0.6]	0.94 [0.7]		0.41 [0.3]	0.5 [0.4]	0.67 [0.5]		0.31 [0.2]	0.37 [0.3]	0.5 [0.4]		0.25 [0.2]	0.3 [0.2]	0.4 [0.3]
3.8 [14.4]	5.45 [20.6]	5.65 [21.4]		2.44 [9.2]	3.53 [13.4]	3.78 [14.3]		1.48 [5.6]	2.57 [9.7]	2.82 [10.7]			1.99 [7.5]	2.24 [8.5]
1.3 [1.0]	1.25 [0.9]	1.42 [1.1]		0.74 [0.6]	0.83 [0.6]	1 [0.7]		0.55 [0.4]	0.6 [0.4]	0.7 [0.5]			0.5 [0.4]	0.6 [0.4]
												anges indicated		1

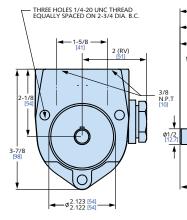
NOTE: Consult your Roper Area Sales Manager for operation in the ranges indicated by the yellow colored areas.

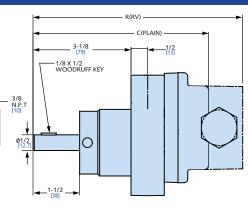
	1200	RPM				900 RPM					720 RPM		
30	100	1000	5000	30	100	1000	5000	10000	30	100	1000	5000	10000
<b>6.8</b> [25.7] <b>0.48</b> [0.4]	<b>7.1</b> [26.9] <b>0.48</b> [0.4]	<b>7.4</b> [28.0] <b>0.7</b> [0.5]	<b>7.5</b> [28.4] <b>1.04</b> [0.8]	<b>4.9</b> [18.5] <b>0.34</b> [0.3]	<b>5.2</b> [19.7] <b>0.34</b> [0.3]	<b>5.5</b> [20.8] <b>0.49</b> [0.4]	<b>5.6</b> [21.2] <b>0.71</b> [0.5]	<b>5.6</b> [21.2] <b>0.85</b> [0.6]	<b>3.8</b> [14.4] <b>0.25</b> [0.2]	<b>4.1</b> [15.5] <b>0.25</b> [0.2]	<b>4.4</b> [16.7] <b>0.35</b> [0.3]	<b>4.4</b> [16.7] <b>0.48</b> [0.4]	<b>4.5</b> [17.0] <b>0.57</b> [0.4]
6 [22.7] 0.7 [0.5]	<b>6.7</b> [25.4] <b>0.7</b> [0.5]	<b>7.2</b> [27.3] <b>0.92</b> [0.7]	<b>7.4</b> [28.0] <b>1.26</b> [0.9]	<b>4.1</b> [15.5] <b>0.5</b> [0.4]	<b>4.8</b> [18.2] <b>0.5</b> [0.4]	<b>5.3</b> [20.1] <b>0.65</b> [0.5]	5.5 [20.8] 0.87 [0.6]	5.5 [20.8] 1.01 [0.8]		<b>3.6</b> [13.6] <b>0.38</b> [0.3]	<b>4.2</b> [15.9] <b>0.48</b> [0.4]	<b>4.4</b> [16.7] <b>0.61</b> [0.5]	<b>4.4</b> [16.7] <b>0.7</b> [0.5]
	6 [22.7] 0.92 [0.7]	7 [26.5] 1.14 [0.9]	7.3 [27.6] 1.48 [1.1]		<b>4.1</b> [15.5] <b>0.67</b> [0.5]	<b>5.1</b> [19.3] <b>0.82</b> [0.6]	<b>5.4</b> [20.4] <b>1.04</b> [0.8]	<b>5.4</b> [20.4] <b>1.18</b> [0.9]			<b>4</b> [15.1] <b>0.62</b> [0.5]	<b>4.3</b> [16.3] <b>0.75</b> [0.6]	<b>4.3</b> [16.3] <b>0.84</b> [0.6]
<b>10.1</b> [38.2] <b>0.6</b> [0.4]	<b>10.4</b> [39.4] <b>0.6</b> [0.4]	<b>10.7</b> [40.5] <b>0.8</b> [0.6]	<b>10.7</b> [40.5] <b>1.2</b> [0.9]	<b>7.4</b> [28.0] <b>0.4</b> [0.3]	<b>7.7</b> [29.1] <b>0.4</b> [0.3]	8 [30.3] 0.6 [0.4]	8 [30.3] 0.8 [0.6]	<b>8.1</b> [30.7] <b>0.9</b> [0.7]	<b>5.8</b> [22.0] <b>0.3</b> [0.2]	6.1 [23.1] 0.3 [0.2]	<b>6.3</b> [23.8] <b>0.4</b> [0.3]	<b>6.4</b> [24.2] <b>0.6</b> [0.4]	<b>6.4</b> [24.2] <b>0.6</b> [0.4]
<b>9.2</b> [34.8] <b>1</b> [0.7]	<b>9.9</b> [37.5] <b>1</b> [0.7]	<b>10.5</b> [39.7] <b>1.1</b> [0.8]	<b>10.6</b> [40.1] <b>1.5</b> [1.1]	<b>6.5</b> [24.6] <b>0.6</b> [0.4]	<b>7.2</b> [27.3] <b>0.6</b> [0.4]	<b>7.8</b> [29.5] <b>0.8</b> [0.6]	<b>7.9</b> [29.9] <b>1</b> [0.7]	8 [30.3] 1.1 [0.8]	<b>4.9</b> [18.5] <b>0.4</b> [0.3]	<b>5.6</b> [21.2] <b>0.5</b> [0.4]	<b>6.2</b> [23.5] <b>0.6</b> [0.4]	<b>6.3</b> [23.8] <b>0.7</b> [0.5]	6.4 [24.2] 0.8 [0.6]
<b>8.2</b> [31.0] <b>1.3</b> [1.0]	<b>9.3</b> [35.2] <b>1.3</b> [1.0]	<b>10.3</b> [39.0] <b>1.5</b> [1.1]	<b>10.6</b> [40.1] <b>1.8</b> [1.3]		<b>6.6</b> [25.0] <b>0.9</b> [0.7]	<b>7.6</b> [28.8] <b>1</b> [0.7]	<b>7.9</b> [29.9] <b>1.2</b> [0.9]	<b>7.9</b> [29.9] <b>1.8</b> [1.3]		<b>5</b> [18.9] <b>0.7</b> [0.5]	6 [22.7] 0.8 [0.6]	<b>6.2</b> [23.5] <b>0.9</b> [0.7]	6.3 [23.8] 1 [0.7]
<b>13.6</b> [51.5] <b>0.9</b> [0.7]	14.4 [54.5] 1 [0.7]	15.2 [57.5] 1.2 [0.9]	<b>15.4</b> [58.3] <b>1.5</b> [1.1]	<b>9.7</b> [36.7] <b>0.6</b> [0.4]	<b>10.5</b> [39.7] <b>0.6</b> [0.4]	<b>11.3</b> [42.8] <b>0.8</b> [0.6]	<b>11.5</b> [43.5] <b>1</b> [0.7]	<b>11.6</b> [43.9] <b>1.2</b> [0.9]	<b>7.4</b> [28.0] <b>0.4</b> [0.3]	<b>8.2</b> [31.0] <b>0.5</b> [0.4]	<b>8.9</b> [33.7] <b>0.6</b> [0.4]	<b>9.2</b> [34.8] <b>0.8</b> [0.6]	<b>9.2</b> [34.8] <b>0.9</b> [0.7]
<b>12.1</b> [45.8] <b>1.3</b> [1.0]	<b>13.6</b> [51.5] <b>1.4</b> [1.0]	<b>14.9</b> [56.4] <b>1.6</b> [1.2]	<b>15.2</b> [57.5] <b>2</b> [1.5]		<b>9.7</b> [36.7] <b>1</b> [0.7]	<b>11</b> [41.6] <b>1.1</b> [0.8]	<b>11.3</b> [42.8] <b>1.4</b> [1.0]	<b>11.4</b> [43.2] <b>1.5</b> [1.1]		<b>7.3</b> [27.6] <b>0.7</b> [0.5]	<b>8.6</b> [32.6] <b>0.8</b> [0.6]	9 [34.1] 1 [0.7]	<b>9.1</b> [34.4] <b>1.2</b> [0.9]
	<b>12.7</b> [48.1] <b>1.9</b> [1.4]	<b>14.6</b> [55.3] <b>2.1</b> [1.6]	<b>15.1</b> [57.2] <b>2.4</b> [1.8]		<b>8.8</b> [33.3] <b>1.3</b> [1.0]	<b>10.7</b> [40.5] <b>1.4</b> [1.0]	<b>11.2</b> [42.4] <b>1.7</b> [1.3]	<b>11.3</b> [42.8] <b>1.9</b> [1.4]		6.4 [24.2] 1 [0.7]	<b>8.3</b> [31.4] <b>1.1</b> [0.8]	<b>8.9</b> [33.7] <b>1.3</b> [1.0]	<b>9</b> [34.1] <b>1.4</b> [1.0]
<b>17.4</b> [65.9] <b>1.2</b> [0.9]	<b>18.8</b> [71.2] <b>1.3</b> [1.0]	<b>20.1</b> [76.1] <b>1.4</b> [1.0]	<b>20.4</b> [77.2] <b>1.8</b> [1.3]	<b>12.2</b> [46.2] <b>0.8</b> [0.6]	<b>13.6</b> [51.5] <b>0.8</b> [0.6]	<b>14.9</b> [56.4] <b>1</b> [0.7]	<b>15.2</b> [57.5] <b>1.3</b> [1.0]	<b>15.3</b> [57.9] <b>1.5</b> [1.1]	<b>9.1</b> [34.4] <b>0.6</b> [0.4]	<b>10.5</b> [39.7] <b>0.6</b> [0.4]	<b>11.8</b> [44.7] <b>0.7</b> [0.5]	<b>12.1</b> [45.8] <b>1</b> [0.7]	<b>12.2</b> [46.2] <b>1.1</b> [0.8]
	<b>17.6</b> [66.6] <b>1.9</b> [1.4]	<b>19.6</b> [74.2] <b>2</b> [1.5]	<b>20.2</b> [76.5] <b>2.4</b> [1.8]		<b>12.4</b> [46.9] <b>1.3</b> [1.0]	<b>14.4</b> [54.5] <b>1.4</b> [1.0]	<b>15</b> [56.8] <b>1.8</b> [1.3]	<b>15.2</b> [57.5] <b>2</b> [1.5]		<b>9.3</b> [35.2] <b>1</b> [0.7]	<b>11.3</b> [42.8] <b>1.1</b> [0.8]	<b>11.9</b> [45.0] <b>1.3</b> [1.0]	<b>12.1</b> [45.8] <b>1.5</b> [1.1]
	<b>16.5</b> [62.5] <b>2.5</b> [1.9]	<b>19.2</b> [72.7] <b>2.6</b> [1.9]	<b>20</b> [75.7] <b>3</b> [2.2]		<b>11.3</b> [42.8] <b>1.7</b> [1.3]	<b>14</b> [53.0] <b>1.9</b> [1.4]	<b>14.8</b> [56.0] <b>2.2</b> [1.6]	<b>15</b> [56.8] <b>2.4</b> [1.8]			<b>10.9</b> [41.3] <b>1.5</b> [1.1]	<b>11.7</b> [44.3] <b>1.7</b> [1.3]	<b>11.9</b> [45.0] <b>1.9</b> [1.4]
<b>21.3</b> [80.6] <b>1.5</b> [1.1]	<b>23.4</b> [88.6] <b>1.6</b> [1.2]	<b>25.3</b> [95.8] <b>1.7</b> [1.3]	<b>25.9</b> [98.0] <b>2.4</b> [1.8]	14.7 [55.6] 1.1 [0.8]	<b>16.8</b> [63.6] 1.1 [0.8]	<b>18.7</b> [70.8] <b>1.2</b> [0.9]	<b>19.3</b> [73.1] <b>1.7</b> [1.3]	<b>19.4</b> [73.4] <b>2</b> [1.5]		<b>12.8</b> [48.5] <b>0.8</b> [0.6]	<b>14.8</b> [56.0] <b>0.9</b> [0.7]	<b>15.3</b> [57.9] <b>1.3</b> [1.0]	<b>15.6</b> [59.1] <b>1.5</b> [1.1]
	<b>21.8</b> [82.5] <b>2.4</b> [1.8]	<b>24.7</b> [93.5] <b>2.5</b> [1.9]	<b>25.6</b> [96.9] <b>3.2</b> [2.4]		<b>15.2</b> [57.5] <b>1.7</b> [1.3]	<b>18.1</b> [68.5] <b>1.8</b> [1.3]	<b>19</b> [71.9] <b>2.3</b> [1.7]	<b>19.2</b> [72.7] <b>2.5</b> [1.9]		<b>11.2</b> [42.4] <b>1.3</b> [1.0]	<b>14.2</b> [53.8] <b>1.4</b> [1.0]	<b>15</b> [56.8] <b>1.7</b> [1.3]	<b>15.2</b> [57.5] <b>1.9</b> [1.4]
	<b>20.2</b> [76.5] <b>3.1</b> [2.3]	<b>24.2</b> [91.6] <b>3.3</b> [2.5]	<b>25.3</b> [95.8] <b>4</b> [3.0]			<b>17.6</b> [66.6] <b>2.4</b> [1.8]	<b>18.7</b> [70.8] <b>2.9</b> [2.2]	<b>19</b> [71.9] <b>3.1</b> [2.3]			<b>13.6</b> [51.5] <b>1.9</b> [1.4]	<b>14.7</b> [55.6] <b>2.2</b> [1.6]	<b>15</b> [56.8] <b>2.4</b> [1.8]
<b>26.1</b> [98.8] <b>1.9</b> [1.4]	<b>29</b> [109.8] <b>2</b> [1.5]	<b>31.6</b> [119.6] <b>2.1</b> [1.6]	<b>32.3</b> [122.3] <b>2.9</b> [2.2]	<b>17.9</b> [67.8] <b>1.4</b> [1.0]	<b>20.8</b> [78.7] <b>1.4</b> [1.0]	<b>23.3</b> [88.2] <b>1.6</b> [1.2]	24 [90.8] 2.1 [1.6]	<b>24.2</b> [91.6] <b>2.5</b> [1.9]		<b>15.8</b> [59.8] <b>1</b> [0.7]	<b>18.4</b> [69.7] <b>1.2</b> [0.9]	<b>19.1</b> [72.3] <b>1.6</b> [1.2]	<b>19.3</b> [73.1] <b>1.8</b> [1.3]
	<b>26.9</b> [101.8] <b>2.9</b> [2.2]	<b>30.8</b> [116.6] <b>3.1</b> [2.3]	<b>31.9</b> [120.8] <b>3.9</b> [2.9]		<b>18.7</b> [70.8] <b>2.1</b> [1.6]	<b>22.6</b> [85.6] <b>2.3</b> [1.7]	<b>23.7</b> [89.7] <b>2.8</b> [2.1]	<b>24</b> [90.8] <b>3.2</b> [2.4]			<b>17.6</b> [66.6] <b>1.8</b> [1.3]	<b>18.7</b> [70.8] <b>2.2</b> [1.6]	<b>19</b> [71.9] <b>2.4</b> [1.8]
		<b>30.1</b> [113.9] <b>4</b> [3.0]	<b>31.6</b> [119.6] <b>4.8</b> [3.6]			<b>21.9</b> [82.9] <b>3</b> [2.2]	<b>23.3</b> [88.2] <b>3.5</b> [2.6]	<b>23.7</b> [89.7] <b>3.9</b> [2.9]			<b>16.9</b> [64.0] <b>2.3</b> [1.7]	<b>18.4</b> [69.7] <b>2.7</b> [2.0]	<b>18.8</b> [71.2] <b>3.1</b> [2.3]
<b>31</b> [117.3] <b>2.3</b> [1.7]	<b>34.5</b> [130.6] <b>2.3</b> [1.7]	<b>37.8</b> [143.1] <b>2.5</b> [1.9]	<b>38.7</b> [146.5] <b>3.4</b> [2.5]		<b>24.6</b> [93.1] <b>1.7</b> [1.3]	<b>27.9</b> [105.6] <b>1.8</b> [1.3]	<b>28.8</b> [109.0] <b>2.5</b> [1.9]	<b>29.1</b> [110.2] <b>2.9</b> [2.2]		<b>18.7</b> [70.8] <b>1.3</b> [1.0]	<b>22</b> [83.3] <b>1.4</b> [1.0]	<b>22.9</b> [86.7] <b>1.9</b> [1.4]	<b>23.1</b> [87.4] <b>2.2</b> [1.6]
	<b>32</b> [121.1] <b>3.5</b> [2.6]	<b>36.9</b> [139.7] <b>3.7</b> [2.8]	<b>38.3</b> [145.0] <b>4.6</b> [3.4]		<b>22.1</b> [83.7] <b>2.5</b> [1.9]	<b>27</b> [102.2] <b>2.7</b> [2.0]	<b>28.4</b> [107.5] <b>3.3</b> [2.5]	<b>28.7</b> [108.6] <b>3.7</b> [2.8]			<b>21.1</b> [79.9] <b>2.1</b> [1.6]	<b>22.4</b> [84.8] <b>2.6</b> [1.9]	<b>22.8</b> [86.3] <b>2.9</b> [2.2]
		<b>36</b> [136.3] <b>4.85</b> [3.6]	<b>37.9</b> [143.5] <b>5.8</b> [4.3]			<b>26.1</b> [98.8] <b>3.5</b> [2.6]	<b>28</b> [106.0] <b>4.2</b> [3.1]	<b>28.4</b> [107.5] <b>4.6</b> [3.4]			<b>20.2</b> [76.5] <b>2.8</b> [2.1]	<b>22</b> [83.3] <b>3.3</b> [2.5]	<b>22.5</b> [85.2] <b>3.6</b> [2.7]
<b>41.3</b> [156.3] <b>2.8</b> [2.1]	<b>45.1</b> [170.7] <b>3</b> [2.2]	<b>48.5</b> [183.6] <b>3.3</b> [2.5]	<b>49.5</b> [187.4] <b>4.9</b> [3.7]		<b>32.5</b> [123.0] <b>2.1</b> [1.6]	2.3 [1.7]	<b>36.9</b> [139.7] <b>3.2</b> [2.4]	<b>37.2</b> [140.8] <b>4</b> [3.0]		<b>24.94</b> [94.4] <b>1.5</b> [1.1]	<b>28.3</b> [107.1] <b>1.6</b> [1.2]	<b>29.3</b> [110.9] <b>2.3</b> [1.7]	<b>29.6</b> [112.0] <b>2.8</b> [2.1]
	<b>42.1</b> [159.4] <b>4.4</b> [3.3]	<b>47.5</b> [179.8] <b>4.7</b> [3.5]	<b>48.9</b> [185.1] <b>6.3</b> [4.7]		<b>29.5</b> [111.7] <b>3.2</b> [2.4]	<b>34.9</b> [132.1] <b>3.4</b> [2.5]	<b>36.3</b> [137.4] <b>4.3</b> [3.2]	<b>36.8</b> [139.3] <b>5.1</b> [3.8]			<b>27.3</b> [103.3] <b>2.6</b> [1.9]	<b>28.7</b> [108.6] <b>3.3</b> [2.5]	<b>29.2</b> [110.5] <b>3.8</b> [2.8]
		<b>46.7</b> [176.8] <b>6.3</b> [4.7]	<b>48.6</b> [184.0] <b>7.9</b> [5.9]			<b>34.1</b> [129.1] <b>4.4</b> [3.3]	<b>36</b> [136.3] <b>5.3</b> [4.0]	<b>36.5</b> [138.2] <b>6.1</b> [4.5]			<b>26.5</b> [100.3] <b>3.5</b> [2.6]	<b>28.4</b> [107.5] <b>4.2</b> [3.1]	<b>28.9</b> [109.4] <b>4.7</b> [3.5]

NOTE: An outboard ball bearing is recommended for viscosities below 40 ssu.

## SIZE 005 THROUGH 02 (flange mounted)

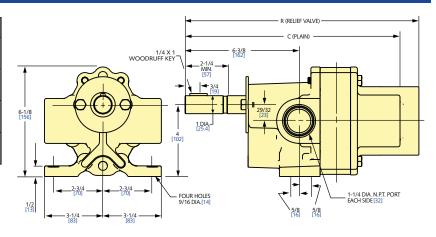
PUMP	С	R	PUMP	С	R
17A-005	<b>5-9/16</b> [141]		18A-01		<b>6-15/16</b> [176]
18A-005		<b>6-3/4</b> [171]	17A-02	<b>6-3/16</b> [157]	
17A-01	<b>5-13/16</b> [148]		18A-02		<b>7-3/8</b> [187]





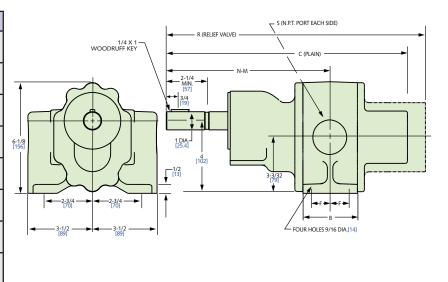
# SIZE 06 THROUGH 16 (foot mounted)

PUMP	С	R	PUMP	С	R
1A-06	<b>10-15/32</b> [266]		1A-12	<b>11-5/16</b> [287]	
2A-06		<b>12-5/32</b> [309]	2A-12		<b>13</b> [330]
1A-08	<b>10-3/4</b> [273]		1A-16	<b>11-7/8</b> [301]	
2A-08		<b>12-7/16</b> [316]	2A-16		<b>13-9/16</b> [344]

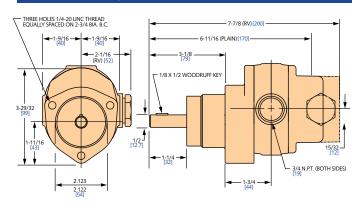


## SIZE 21 THROUGH 40 (foot mounted)

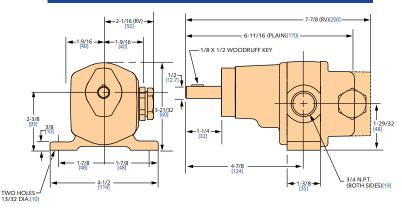
PUMP	В	С	F	N-M	R	S
1A-21	<b>3</b> [76]	<b>12-5/8</b> [321]	<b>1</b> [25]	<b>9</b> [229]		<b>1-1/2</b> [38]
2A-21	<b>3</b> [76]		<b>1</b> [25]	<b>9</b> [229]	<b>14-5/16</b> [364]	<b>1-1/2</b> [38]
1A-27	<b>3-3/4</b> [95]	<b>13-3/8</b> [340]	<b>1-3/8</b> [35]	<b>9-3/8</b> [238]		<b>2</b> [51]
2A-27	<b>3-3/4</b> [95]		<b>1-3/8</b> [35]	<b>9-3/8</b> [238]	<b>15-1/16</b> [382]	<b>2</b> [51]
1A-32	<b>4-1/2</b> [114]	<b>14-1/8</b> [359]	<b>1-3/4</b> [44]	<b>9-3/4</b> [248]		<b>2</b> [51]
2A-32	<b>4-1/2</b> [114]		<b>1-3/4</b> [44]	<b>9-3/4</b> [248]	<b>15-13/16</b> [402]	<b>2</b> [51]
1A-40	<b>4-1/2</b> [114]	<b>14-1/8</b> [359]	<b>1-3/4</b> [44]	<b>9-3/4</b> [248]		<b>2</b> [51]
2A-40	<b>4-1/2</b> [114]		<b>1-3/4</b> [44]	<b>9-3/4</b> [248]	<b>15-13/16</b> [402]	<b>2</b> [51]



# SIZE 003 (flange mounted)

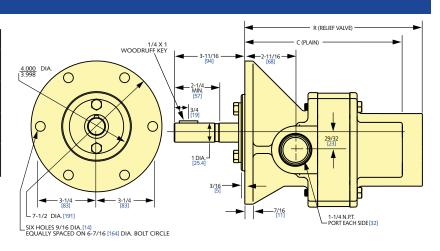


# SIZE 003 (foot mounted)



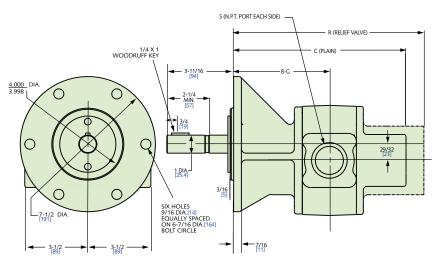
## SIZE 06 THROUGH 16 (flange mounted)

PUMP	С	R	PUMP	С	R
17A-06	<b>6-25/32</b> [172]		17A-12	<b>7-5/8</b> [194]	
18A-06		<b>8-15/32</b> [215]	18A-12		<b>9-5/16</b> [237]
17A-08	<b>7-1/16</b> [179]		17A-16	<b>8-3/16</b> [208]	
18A-08		<b>8-3/4</b> [222]	18A-18		<b>9-3/4</b> [248]



## SIZE 21 THROUGH 40 (flange mounted)

PUMP	С	B-G	R	S
17A-21	<b>8-15/16</b> [227]	<b>5-5/16</b> [135]		<b>1-1/2</b> [38]
18A-21		<b>5-5/16</b> [135]	<b>10-5/8</b> [270]	<b>1-1/2</b> [38]
17A-27	<b>9-11/16</b> [246]	<b>5-11/16</b> [144]		<b>2</b> [51]
18A-27		<b>5-11/16</b> [144]	<b>11-3/8</b> [289]	<b>2</b> [51]
17A-32	<b>10-7/16</b> [265]	<b>6-1/16</b> [154]		<b>2</b> [51]
18A-32		<b>6-1/16</b> [154]	<b>12-1/8</b> [308]	<b>2</b> [51]
17A-40	<b>10-7/16</b> [265]	<b>6-1/16</b> [154]		<b>2</b> [51]
18A-40		<b>6-1/16</b> [154]	<b>12-1/8</b> [308]	<b>2</b> [51]





# **AE Series Pumps**

Low Pressure • Capacities to 130 GPM Pressures to 300 PSI



Roper AE Series pumps are well suited to applications where a compact and quiet unit is required, such as hydraulic lift applications. Bearings and wear-plates are special wear-resistant, high lead bronze. The pumping gears are accurately machined to run quietly and smoothly.

They can be operated at various speeds, depending on the conditions of installation.

### SIZES AVAILABLE

19	019 Gallons Per Revolution
29	029 Gallons Per Revolution
54	054 Gallons Per Revolution
75	075 Gallons Per Revolution

#### **MATERIALS OF CONSTRUCTION**

### Standard Fitted

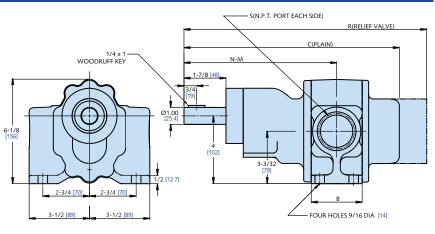
Housing	Cast Iron
Gears	Hardened Steel
Bearings	Bronze
Shafts	Hardened Steel

SIZE		RPM	3	3600 RP/	Ν	1800 RPM 1200 RP			RPM	900 RPM					720 RPM					
Pump	PSI [bar]	SSU	30	100	1000	30	100	1000	30	100	1000	10,000	30	100	100	10,000	30	100	1000	10,000
	<b>50</b> [3.5]	GPM [l/min] HP [KW]	60 [227] 3.9 [2.9]	63 [238] 3.9 [2.9]	64 [242] 3.9 [5.1]	28 [106] 1.5 [1.1]	31 [117] 1.5 [1.1]	32[121] 2.2 [1.6]	17 [64] 1.1 [0.8]	20 [76] 1.1 [0.8]	21 [79] 1.3 [1.0]	22 [83] 2.2 [1.6]	11 [42] 0.8 [0.6]	14 [53] 0.8 [0.6]	15 [57] 1.0 [0.7]	16 [61] 1.5 [1.1]	7 [26] 0.6 [0.4]	10 [38] 0.6 [0.4]	11 [42] 0.8 [0.6]	12 [45] 1.2 0.9]
19	100 [6.9]	GPM [l/min] HP [KW]	58 [220] 5.8 [4.3]	62 [235] 5.8 [4.3]	63 [238] 8.8 [6.6]	26 [98] 2.4 [1.8]	30 [114] 2.4 [1.8]	<b>31</b> [117] <b>3.1</b> [2.3]	15 [57] 1.8 [1.3]	19 [72] 1.8 [1.3]	20 [76] 2.0 [1.5]	21 [79] 2.9 [2.2]	9 [34] 1.3 [1.0]	13 [49] 1.3 [1.0]	14 [53] 1.5 [1.1]	15 [57] 2.0 [1.5]	5 [19] 1.0 [0.7]	<b>9</b> [34] <b>1.0</b> [0.7]	10 [38] 1.2 [0.9]	11 [42] 1.6 [1.2]
	<b>200</b> [13.8]	GPM [l/min] HP [KW]		59 [223] 9.6 [7.2]	62 [235] 12.6 [9.4]		27 [102] 4.3 [3.2]	30[114] 5.0 [3.7]		16 [61] 3.1 [2.3]	19 [72] 3.3 [2.5]	20 [76] 4.2 [3.1]		10 [38] 2.3 [1.7]	13 [49] 2.5 [1.9]	14 [53] 3.0 [2.2]		6 [23] 1.7 [1.3]	9 [34] 1.9 [1.4]	10 [38] 2.3 [1.7]
	<b>300</b> [20.7]	GPM [l/min] HP [KW]			61 [231] 16.5 [12.3]			<b>29</b> [110] <b>7.0</b> [5.2]			<b>18</b> [68] <b>4.6</b> [3.4]	<b>19</b> [72] <b>5.5</b> [4.1]			12 [45] 3.5 [2.6]	<b>13</b> [49] <b>4.0</b> [3.0]			8 [30] 2.7 [2.0]	9 [34] 3.1 [2.3]
	<b>50</b> [3.5]	GPM [l/min] HP [KW]	98 [371] 7.8 [5.8]		105 [397] 12.0 [8.9]	45 [170] 2.7 [2.0]	<b>49</b> [185] <b>2.7</b> [2.0]	52 [197] 3.7 [2.8]	28[106] 1.6 [1.2]	<b>31</b> [117] <b>1.6</b> [1.2]	34[129] 2.1 [1.6]	<b>34.5</b> [131] <b>3.3</b> [2.5]	19 [72] 1.0 [0.7]	22 [83] 1.0 [0.7]	25 [95] 1.3 [1.0]	25.5 [97] 2.1 [1.6]	14 [5.3] 0.75 [0.6]	17 [64] 0.75 [0.6]	20 [76] 0.95 [0.7]	20.5 [78] 1.4 [1.0]
29	100 [6.9]	GPM [l/min] HP [KW]	95 [360] 17.0 [12.7]	100 [379] 12.0 [8.9]	104 [394] 15.0 [11.4]	42 [159] 6.5 [4.8]	47 [178] 5.0 [3.7]	51 [193] 5.5 [4.1]	24 [91] 2.8 [2.1]	29[110] 2.6 [1.9]	<b>33</b> [125] <b>3.1</b> [2.3]	<b>34.3</b> [130] <b>4.3</b> [3.2]	15 [57] 2.2 [1.6]	20 [76] 2.0 [1.5]	24 [91] 2.3 [1.7]	25.3 [96] 3.1 [2.3]		15 [57] 1.5 [1.1]	<b>19</b> [72] <b>1.7</b> [1.3]	20.3 [77] 2.2 [1.6]
	<b>200</b> [13.8]	GPM [l/min] HP [KW]		96 [363] 18.0 [13.4]	103 [390] 22.0 [16.4]		<b>43</b> [163] <b>9.0</b> [6.7]	50 [189] 9.5 [7.1]		25 [95] 5.0 [3.7]	<b>32</b> [121] <b>5.5</b> [4.1]	<b>34.1</b> [129] <b>6.6</b> [4.9]		<b>16</b> [61] <b>3.9</b> [2.9]	<b>23</b> [87] <b>4.2</b> [3.1]	25.1 [95] 4.9 [3.7]			18 [68] 3.1 [2.3]	20.1 [76] 3.7 [2.8]
	<b>300</b> [20.7]	GPM [l/min] HP [KW]			102 [386] 29.0 [21.6]			<b>49</b> [185] <b>13.5</b> [10.1]			<b>31</b> [117] <b>8.5</b> [6.3]	<b>34</b> [129] <b>9.6</b> [7.2]			<b>22</b> [83] <b>5.9</b> [4.4]	<b>25</b> [95] <b>6.6</b> [4.9]				20 [76] 5.1 [3.8]
	<b>50</b> [3.5]	GPM [l/min] HP [KW]				<b>83</b> [314] <b>4.5</b> [3.4]	<b>93</b> [352] <b>4.5</b> [3.4]	100[379] 6.2 [4.6]	<b>50</b> [189] <b>3.1</b> [2.3]	60[227] 3.1 [2.3]	67 [254] 3.7 [2.8]	68[257] 5.3 [4.0]	31[117] 2.4 [1.8]	41 [155] 2.4 [1.8]	<b>48</b> [182] <b>2.8</b> [2.1]	<b>49</b> [] <b>3.8</b> [2.8]	22 [83] 1.5 [1.1]	<b>32</b> [121] <b>1.5</b> [1.1]	<b>39</b> [148] <b>1.9</b> [1.4]	40 [151] 2.8 [2.1]
54	100 [6.9]	GPM [l/min] HP [KW]				71 [269] 12.0 [8.9]			40[151] 5.1 [3.8]	<b>54</b> [204] <b>4.9</b> [3.7]	65[246] 5.6 [4.2]	67 [254] 7.3 [5.4]	20 [76] 3.8 [2.8]	<b>35</b> [132] <b>3.6</b> [2.7]	<b>46</b> [174] <b>4.0</b> [3.0]	<b>48</b> [182] <b>5.0</b> [3.7]		26 [98] 2.8 [2.1]	<b>37</b> [140] <b>3.1</b> [2.3]	<b>39</b> [148] <b>4.0</b> [3.0]
	<b>200</b> [13.8]	GPM [l/min] HP [KW]								44[167] 9.6 [7.2]	62 [235] 11.0 [8.2]	66[250] 12.0 [8.9]		25 [95] 7.5 [5.6]	<b>43</b> [163] <b>8.0</b> [6.0]	<b>47</b> [178] <b>9.0</b> [6.7]			<b>35</b> [132] <b>5.8</b> [4.3]	38 [144] 6.2 [4.6]
	<b>300</b> [20.7]	GPM [l/min] HP [KW]									60[227] 16.0[11.9]	65[246] 17.0[12.7]			40[151] 11.0 [8.2]	46[174] 12.0 [8.9]				37 [140] 9.0 [6.7]
	<b>50</b> [3.5]	GPM [l/min] HP [KW]							65 [246] 3.8 [2.8]	77 [291] 3.8 [2.8]	<b>86</b> [326] <b>4.5</b> [3.4]	88[333] 7.0 [5.2]	43[163] 3.0 [2.2]	54[204] 3.0 [2.2]	64[242] 3.6 [2.7]	67 [254] 5.1 [3.8]		<b>40</b> [151] <b>2.2</b> [1.6]	<b>49</b> [185] <b>2.7</b> [2.0]	52 [197] 3.6 [2.7]
75	100 [6.9]	GPM [l/min] HP [KW]							<b>49</b> [185] <b>7.5</b> [5.6]	68[257] 7.0 [5.2]	<b>83</b> [314] <b>8.5</b> [6.3]	87 [329] 10.0 [7.5]	<b>27</b> [102] <b>5.8</b> [4.3]	<b>46</b> [174] <b>5.6</b> [4.2]	61[231] 6.0 [4.5]	66 [250] 8.0 [6.0]		<b>31</b> [117] <b>4.2</b> [3.1]	47 [178] 4.7 [3.5]	51 [193] 5.6 [4.2]
75	<b>200</b> [13.8]	GPM [l/min] HP [KW]								52 [197] 13.0 [9.7]	<b>79</b> [299] <b>14.0</b> [10.4]	86[326] 16.0[11.9]		<b>30</b> [114] <b>9.5</b> [7.1]	57[216] 10.0 [7.5]	65 [246] 11.0 [8.2]			<b>42</b> [159] <b>7.6</b> [5.7]	50 [189] 8.6 [6.4]
	<b>300</b> [20.7]	GPM [l/min] HP [KW]									76[288] 20.0[14.9]	85[322] 22.0[16.4]			54[204] 15.0[11.2]	64[242] 16.0[11.9]				49 [185] 13.0 [9.7]

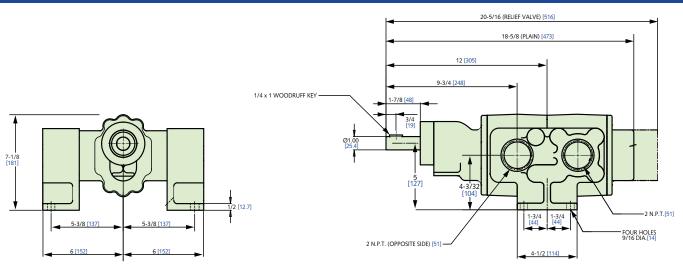
NOTE: Consult your local Roper Pump Company representative for operation in the range indicated by the yellow colored areas.

# SIZE 19 THROUGH 29 (foot mounted)

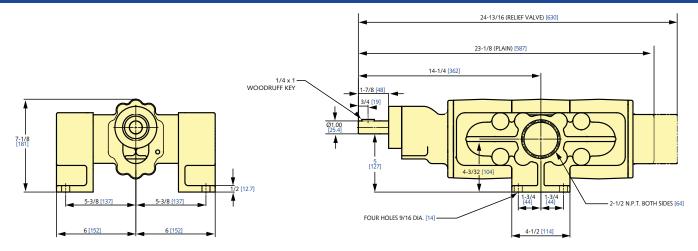
PUMP	В	С	F	N-M	R	S
1AE-19	<b>3</b> [76]	<b>12-5/8</b> [321]	<b>1</b> [25]	<b>9</b> [229]		<b>1-1/2</b> [38]
2AE-19	<b>3</b> [76]		<b>1</b> [25]	<b>9</b> [229]	<b>14-13/16</b> [376]	<b>1-1/2</b> [38]
1AE-29	<b>4-1/2</b> [114]	<b>14-1/8</b> [359]	<b>1-3/4</b> [44]	<b>9-3/4</b> [248]		<b>2</b> [51]
1AE-29	<b>4-1/2</b> [114]		<b>1-3/4</b> [44]	<b>9-3/4</b> [248]	<b>15-13/16</b> [402]	<b>2</b> [51]



SIZE 54 (foot mounted)



## SIZE 75 (foot mounted)





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**Roper Pump Company** is a global supplier of high quality positive displacement pumps, designed to handle a broad range of industrial applications. In addition to helical gear pumps and progressing cavity pumps, we design and develop numerous custom pumps for customers with unique and demanding applications.

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