

**HORIZONTAL CRANKSHAFT  
ENGINES**

**Models 170400-171400-176400**

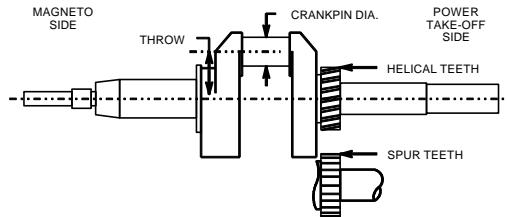
<p><b>Fig-1 BASIC</b></p> <p>Technical drawing of a basic horizontal crankshaft assembly. Key dimensions include:      - Main bearing width: <math>1\frac{1}{32}</math>      - Throw width: <math>1\frac{1}{16}</math>      - Journal diameter: <math>1.092 \text{ DIA.}</math>      - Main bearing bore diameter: <math>.9995 \text{ DIA.}</math>      - Main bearing cap thickness: <math>.498 \text{ DIA.}</math>      - Main bearing cap shoulder diameter: <math>.497 \text{ DIA.}</math>      - Main bearing cap bolt diameter: <math>\frac{5}{8} \text{-18 UNF-2A R.H. THD.}</math>      - Connecting rod journal diameter: <math>1.181 \text{ DIA.}</math>      - Connecting rod journal bore diameter: <math>1\frac{3}{32} \text{ DIA.}</math>      - Connecting rod journal shoulder diameter: <math>1\frac{7}{32} \text{ DIA.}</math>      - Connecting rod journal depth: <math>\frac{7}{16} \text{-20 UNF-2B TAP } 1^{\prime\prime} \text{ DEEP}</math>      - Crankshaft length: <math>14\frac{5}{32}</math>      - Keyway width: <math>\frac{1}{4} \text{ KEYWAY}</math>      - Main bearing cap thickness: <math>.999 \text{ DIA.}</math>      - Main bearing cap shoulder diameter: <math>1.000 \text{ DIA.}</math>      - Main bearing cap bolt diameter: <math>\frac{7}{16} \text{-20 UNF-2B TAP } 1^{\prime\prime} \text{ DEEP}</math></p> <p>396899 (NLA) 399513 BFRKD</p>	<p><b>Fig-2</b></p> <p>Technical drawing of a gear assembly. Key dimensions include:      - Number of teeth: 16 TEETH      - Bore diameter: <math>2\frac{7}{8}</math>      - Hub diameter: <math>1\frac{1}{8}</math></p> <p>397280 (NLA) 399511 PFRGK 492468 PFRGO</p>	
<p><b>Fig-3</b></p> <p>Technical drawing of a gear assembly. Key dimensions include:      - Number of teeth: 16 TEETH      - Bore diameter: <math>2\frac{3}{8}</math>      - Hub diameter: <math>1\frac{1}{16}</math>      - Bore shoulder diameter: <math>3\frac{21}{32} \text{ DIA.}</math>      - Hub shoulder diameter: <math>3\frac{31}{32} \text{ S.}</math></p> <p>397322 (NLA) 399515 BFROD</p>	<p><b>Fig-4</b></p> <p>Technical drawing of a gear assembly. Key dimensions include:      - Number of teeth: 16 TEETH      - Bore diameter: <math>4\frac{11}{32}</math>      - Hub diameter: <math>1\frac{1}{16}</math>      - Bore shoulder diameter: <math>3\frac{1}{4}</math>      - Hub shoulder diameter: <math>1\frac{27}{32}</math>      - Bore depth: <math>\frac{8725}{8715} \text{ DIA.}</math></p> <p>397326 (NLA) 399519 (NLA) 493291 BFROD</p>	<p><b>Fig-5</b></p> <p>Technical drawing of a gear assembly. Key dimensions include:      - Number of teeth: 16 TEETH      - Bore diameter: <math>2\frac{1}{4}</math>      - Hub diameter: <math>1\frac{7}{16}</math>      - Bore shoulder diameter: <math>2\frac{5}{16}</math>      - Hub shoulder diameter: <math>\frac{3}{16} \text{ KEYWAY}</math>      - Bore depth: <math>750</math>      - Hub depth: <math>749 \text{ DIA.}</math></p> <p>491720 BFRKD 492478 BFROD</p>
<p><b>Fig-6 BASIC</b></p> <p>Technical drawing of a basic horizontal crankshaft assembly. Key dimensions include:      - Main bearing width: <math>1\frac{1}{32}</math>      - Throw width: <math>1\frac{1}{16}</math>      - Journal diameter: <math>1.092 \text{ DIA.}</math>      - Main bearing bore diameter: <math>.9995 \text{ DIA.}</math>      - Main bearing cap thickness: <math>.498 \text{ DIA.}</math>      - Main bearing cap shoulder diameter: <math>.497 \text{ DIA.}</math>      - Main bearing cap bolt diameter: <math>\frac{5}{8} \text{-18 UNF-2A R.H. THD.}</math>      - Connecting rod journal diameter: <math>1.181 \text{ DIA.}</math>      - Connecting rod journal bore diameter: <math>1\frac{3}{32} \text{ DIA.}</math>      - Connecting rod journal shoulder diameter: <math>1\frac{7}{32} \text{ DIA.}</math>      - Connecting rod journal depth: <math>\frac{7}{16} \text{-20 UNF-2B TAP } 1^{\prime\prime} \text{ DEEP}</math>      - Crankshaft length: <math>14\frac{5}{32}</math>      - Keyway width: <math>\frac{1}{4} \text{ KEYWAY}</math>      - Main bearing cap thickness: <math>.999 \text{ DIA.}</math>      - Main bearing cap shoulder diameter: <math>1.000 \text{ DIA.}</math>      - Main bearing cap bolt diameter: <math>\frac{7}{16} \text{-20 UNF-2B TAP } 1^{\prime\prime} \text{ DEEP}</math></p> <p>495733 BROD</p>	<p><b>Fig-8</b></p> <p>Technical drawing of a gear assembly. Key dimensions include:      - Number of teeth: 16 TEETH      - Bore diameter: <math>2\frac{7}{8}</math>      - Hub diameter: <math>1\frac{1}{8}</math></p> <p>692366 PRGO</p>	
<p><b>Fig-7</b></p> <p>Technical drawing of a gear assembly. Key dimensions include:      - Number of teeth: 16 TEETH      - Bore diameter: <math>2\frac{3}{8}</math>      - Hub diameter: <math>1\frac{1}{16}</math>      - Bore shoulder diameter: <math>2\frac{29}{32} \text{ DIA.}</math>      - Hub shoulder diameter: <math>2\frac{31}{32} \text{ DIA.}</math></p> <p>692367 PROD</p>	<p><b>Fig-9</b></p> <p>Technical drawing of a gear assembly. Key dimensions include:      - Number of teeth: 16 TEETH      - Bore diameter: <math>2\frac{1}{4}</math>      - Hub diameter: <math>1\frac{7}{16}</math>      - Bore shoulder diameter: <math>2\frac{5}{16}</math>      - Hub shoulder diameter: <math>\frac{3}{16} \text{ KEYWAY}</math>      - Bore depth: <math>750 \text{ DIA.}</math>      - Hub depth: <math>749 \text{ DIA.}</math></p> <p>495775 BROD</p>	<p><b>Fig-10</b></p> <p>Technical drawing of a gear assembly. Key dimensions include:      - Number of teeth: 16 TEETH      - Bore diameter: <math>4\frac{11}{32}</math>      - Hub diameter: <math>1\frac{1}{16}</math>      - Bore shoulder diameter: <math>3\frac{1}{4}</math>      - Hub shoulder diameter: <math>1\frac{27}{32}</math>      - Bore depth: <math>\frac{8725}{8715} \text{ DIA.}</math>      - Hub depth: <math>\frac{5}{16} \text{-24 UNF-2B TAP } \frac{3}{8} \text{ DEEP}</math></p> <p>495791 BROD</p>
<p><b>Fig-11</b></p>	<p><b>Fig-12</b></p>	<p><b>Fig-13</b></p>
<p><b>Fig-14</b></p>	<p><b>Fig-15</b></p>	<p><b>Fig-16</b></p>

Crankshaft Identification List



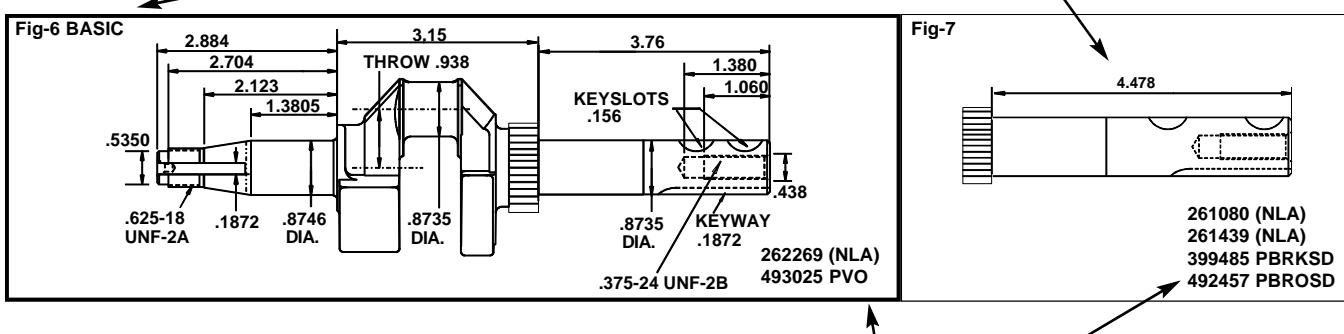
## CRANKSHAFT IDENTITY

To determine the part number of a crankshaft, compare the crankshaft with the illustrations shown for the specified engine Model Series. Basic areas where dimensions are called-out in the illustrations are shown at right.



Crankshaft illustrations are grouped by model series and crankshaft orientation. Each group contains one or more complete illustrations of a standard crankshaft boxed by bold lines, and labeled as BASIC.

Any crankshafts which are dimensionally the same as the BASIC are displayed directly following, with only the dimensions that are different shown.



To order the crankshaft, the service number is located in the lower right hand corner of each box. If there is more than one service number listed, the part has been superseded. Review the other part number(s) listed. Check the abbreviations behind the number to determine the correct crankshaft.

### LEGEND OF ABBREVIATIONS

The suffix following the part number indicates:

- B** = Ball bearing, power take-off side.
- D** = Deep cover used with flange mount ball bearing or flange mount plain bearing and gear reduction engines.
- E** = Electric starter engine.
- F** = Ball bearing, magneto side.
- G** = Gear reduction.
- J** = Special crankshaft counterweight.
- K** = With plunger flat - fixed or loose timing gear included.  
**(NOTE:** if no plunger flat, Magnetron® module might be included.)
- L** = Pressure lubrication.
- M** = No plunger flat - timing gear not required (2-cycle) or loose timing gear not included - Magnetron® module not included.
- N** = Needle bearing, magneto side.
- (NLA)** = Crankshaft is illustrated for identification, but this part number is no longer available from factory. See illustrations for possible replacement.
- O** = No plunger flat - fixed or loose timing gear included - Magnetron® module not included.
- P** = Plain bearing.
- R** = Rewind starter engine.
- S** = Standard plain bearing cover.
- V** = Vertical pull starter engine.
- Y** = With plunger flat - loose timing gear not included.

The dimension from end of crankshaft to dotted line indicates the distance from the end of the crankshaft to:

- Oil seal on plain bearing horizontal crankshaft engines.
- Mounting face of sump on vertical crankshaft engines.
- Flange mounting face on horizontal crankshaft engines.

**NOTE:** All crankshaft power take-off tapers are, unless noted, 2-1/4 inches per foot.

