If replacing a Briggs & Stratton engine with another Briggs & Stratton engine, use the original engine's model and type numbers to assure the correct replacement. If replacing a competitor's engine with a Briggs & Stratton engine, let the power level and features of the original engine, plus the expected work cycle, guide you in selecting the correct replacement. Also consider these factors:

1. **Engine Selection**
   Match the engine's performance and cost to your specific application to get the optimum performance at an affordable price. That means better value for you.
   - **Vanguard™** OHV (overhead valve) engines are maximum performance, cast iron sleeved engines.
   - select for continuous heavy duty applications.
   - **INTEK™ PRO, Industrial Plus™ and I/C®** 
     (Industrial/Commercial) engines are cast iron sleeved.
   - select for medium duty commercial, industrial and rental use.
   - **INTEK™ and PowerBuilt™** engines are aluminum cylinder bore OHV engines.
   - select for general consumer use.
   - **Standard** engines are aluminum cylinder bore, side valve engines.
     - select for general consumer use.

2. **Safety Points**
   For many safe hours of operation, it is important to maintain the original engine's power, starter type and position, fuel tank location, fuel line routing, muffler location, exhaust direction and muffler accessories (i.e., deflector, spark arrester, etc.). Reinstall all guards, shields and safety devices. Replace missing, worn or damaged parts.

3. **Horizontal Crankshaft Engines**
   - Compare the overall engine size to avoid possible mounting interference
   - Match the crankshaft
     - Diameter “A”
     - Height “B” (distance from base to crankshaft center line)
     - Length “C” (distance from oil seal/cover’s mounting face to end of crankshaft)
   - Match the crankshaft type, i.e., keyway, tapered or threaded
   - Match the crankcase cover’s tapped holes for mounting accessories (if applicable)
   - Match the base mounting dimensions and bolt hole spacing

4. **Vertical Crankshaft Engines**
   - Compare the overall engine size to avoid possible mounting interference
   - Match the starter type and starter grip position “A”
   - Match the crankshaft
     - Diameter “B”
     - Keyway type “C”
     - Length “D” (distance from mounting face of sump - not oil seal - to end of crankshaft)
   - Match the mounting base dimensions and bolt hole spacing

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**WARNING**

Briggs & Stratton does not approve or authorize the use of these engines on 3-wheel All Terrain Vehicles (ATVs), motor bikes, fun/recreational go-karts, aircraft products or vehicles intended for use in competitive events. Use of these engines in such applications could result in property damage, serious injury (including paralysis), or even death.
Vanguard™ 23.0 Gross HP
627 CC

Bore 2.97 in. (75.5 mm)
Stroke 2.76 in. (70 mm)
Oil Capacity 48 fl. oz. (1.42 L)

Features:
• Dura-Bore™ cast iron cylinder sleeve for extended life
• Float carburetor for consistent easy starting
• Maintenance-free Magnetron® electronic ignition for quick, dependable starts
• Dual-Clean™ air cleaner pleated paper filter with a foam pre-cleaner ensures maximum protection for extended engine life
• Full pressure lubrication with oil cooler and spin-on oil filter assures controlled lubrication for extended component life
• Overhead valve design (OHV) for cooler operation and longer valve life
• Buyer protection package provides three-year commercial limited warranty

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Shipping Weight</th>
<th>Crankshaft</th>
<th>Crankshaft (P.T.O.) Extension</th>
<th>Dimension</th>
<th>Starter Position</th>
<th>Bald-On/Changeable</th>
<th>Oil Fill &amp; Drain</th>
<th>Governor</th>
<th>Controls</th>
<th>Exhaust System</th>
<th>Fuel Tank (Quarts)</th>
<th>Pulse Fuel Pump</th>
<th>Flange Mtg.</th>
<th>Oil Pump w/Filter</th>
<th>Manual &amp; Remote</th>
<th>Remote Choke</th>
<th>Remote Governor Speed</th>
<th>Notes</th>
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<tbody>
<tr>
<td>386447</td>
<td>3020</td>
<td>104</td>
<td>843807</td>
<td>1” dia., Keyway, tapped 3/8-24</td>
<td>2-29/32(c)</td>
<td>12</td>
<td>M AG/R/MF</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>†</td>
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<tr>
<td>3021</td>
<td>104</td>
<td>94</td>
<td>843812</td>
<td>1-1/8” dia., Keyway, tapped 7/16-20</td>
<td>3-1/4(c)</td>
<td>9</td>
<td>M R</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>3047</td>
<td>92</td>
<td>843812</td>
<td>1-1/8” dia., Keyway, tapped 7/16-20</td>
<td>3-1/4(c)</td>
<td>*</td>
<td>M AG/R/MF</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<td>X</td>
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<td>4(c)</td>
<td>9</td>
<td>M AG/R/MF</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>3600</td>
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<td>9</td>
<td>M AG/R/MF</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>X</td>
<td>X</td>
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<td>3077</td>
<td>97</td>
<td>843808</td>
<td>Threaded 1-1/4, 1” thread length</td>
<td>3-21/32(c)</td>
<td>9</td>
<td>M AG/R/MF</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>X</td>
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<td>3600</td>
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<tr>
<td>3078</td>
<td>100</td>
<td>843810</td>
<td>Tapered, drill &amp; tap 5/16-24</td>
<td>3-51/64(c)</td>
<td>9</td>
<td>M AG</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>3750</td>
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<td>3079</td>
<td>92</td>
<td>843807</td>
<td>1” dia., Keyway, tapped 3/8-24</td>
<td>2-29/32(c)</td>
<td>9</td>
<td>M AG/R/MF</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>3600</td>
<td>†</td>
<td></td>
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</tr>
</tbody>
</table>

Exhaust manifold and muffler omitted. See Briggs & Stratton Master Parts Catalog MS-4185 for Exhaust Manifold and Muffler Options. Oil fill and dipstick in cover; dual drain. Fuel tank omitted. Engine equipped with 12 Volt Gear Drive Starter and 16 Amp DC Alternator with Starter Panel Assembly. † Engine equipped with 12 Volt Gear Drive Starter and 20/50 Amp Alternator.

All power levels stated gross power per SAE J1940
SPECIFICATIONS OF SERVICE ENGINES

LEGEND OF ABBREVIATIONS

STARTER POSITION: Number shown is “o’clock” position of rewind starter. Spark plug is considered to be the 12 o’clock position.


GROUND WIRE TERMINAL: May be used with stop switch in remote location.

ACCESSORY MTG. BOSS or FLANGE MOUNTING: Tapped holes in crankcase cover used to fasten clutch brackets, belt guards, etc.

DIMENSION: Distance from end of crankshaft to one of the points listed below:
(a) Oil seal on plain bearing horizontal crankshaft engines.
(b) Mounting face of sump on vertical crankshaft engines.
(c) Flange mounting face on horizontal crankshaft engines.

SHIPPING WEIGHT: Gross Domestic Shipping Weight.

Briggs & Stratton Corporation believes the specifications in this brochure to be correct at time of printing. However, specifications, standard equipment, options, and colors are subject to change without notice.

ALL POWER RATINGS ShOWN IN THIS CATLOG ARE SUBJECT TO THE FOLLOWING:

The gross power rating for individual gas engine models is labeled in accordance with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure), and rating performance has been obtained and corrected in accordance with SAE J1995 (Revision 2002-05). Torque values are derived at 3060 RPM; horsepower values are derived at 3600 RPM. The gross power curves can be viewed at www.BRIGGSandSTRATTON.COM. Net power values are taken with exhaust and air cleaner installed whereas gross power values are collected without these attachments. Actual gross engine power will be higher than net engine power and is affected by, among other things, ambient operating conditions and engine-to-engine variability. Given the wide array of products on which engines are placed, the gas engine may not develop the rated gross power when used in a given piece of power equipment. This difference is due to a variety of factors including, but not limited to, the variety of engine components (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine-to-engine variability. Due to manufacturing and capacity limitations, Briggs & Stratton may substitute an engine of higher rated power for this Series engine.
YOUR KEY TO THE WORLD’S FINEST ENGINES

This chart explains the unique Briggs & Stratton numerical model designation system. It is possible to determine most of the important mechanical features of the engine by merely knowing the model number. Here is how it works:

A. The first one or two digits indicate the approximate CUBIC INCH DISPLACEMENT.
B. The first digit after the displacement indicates the BASIC DESIGN SERIES, relating to cylinder construction, ignition, general configuration, etc.
C. The second digit after the displacement indicates ORIENTATION OF CRANKSHAFT.
D. The third digit after the displacement indicates TYPE OF BEARINGS, and whether or not the engine is equipped with REDUCTION GEAR or AUXILIARY DRIVE.
E. The last digit indicates the TYPE OF STARTER.

BRIGGS & STRATTON MODEL NUMBERING SYSTEM

<table>
<thead>
<tr>
<th>FIRST DIGIT AFTER DISPLACEMENT</th>
<th>SECOND DIGIT AFTER DISPLACEMENT</th>
<th>THIRD DIGIT AFTER DISPLACEMENT</th>
<th>FOURTH DIGIT AFTER DISPLACEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>CUBIC INCH DISPLACEMENT</td>
<td>BASIC DESIGN SERIES</td>
<td>CRANKSHAFT ORIENTATION</td>
<td>PTO BEARING, REDUCTION GEAR, AUXILIARY DRIVE, LUBRICATION</td>
</tr>
<tr>
<td>2-61</td>
<td>0-9</td>
<td>0 to 4 - Horizontal Shaft</td>
<td>0 - Plain Bearing</td>
</tr>
<tr>
<td></td>
<td>A-Z</td>
<td>5 to 9 - Vertical Shaft</td>
<td>3 - Ball Bearing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A to G - Horizontal Shaft</td>
<td>4 - Ball Bearing Pressure Lubrication</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H to Z - Vertical Shaft</td>
<td>5 - Plain Bearing Gear Reduction (6 to 1) CCW Rotation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 - Ball Bearing Gear Reduction (2 to 1) CCW Rotation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7 - Plain Bearing Pressure Lubrication</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9 - Plain Bearing Auxiliary Drive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EXAMPLE - To identify Model 303447:

30 - 30 Cubic Inch
3 - Design Series 3
4 - Horizontal Shaft
4 - Ball Bearing Pressure Lubrication
7 - Electric Starter with Alternator

TYPE 123401, The type number identifies the engines mechanical parts, color of paint, decals, governed speed, and Original Equipment Manufacturer.

CODE 01061201, The code is the manufacturing date and is read as follows:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>MONTH</th>
<th>DAY</th>
<th>ASSEMBLY LINE AND MANUFACTURING PLANT</th>
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<tbody>
<tr>
<td>01</td>
<td>06</td>
<td>12</td>
<td>01</td>
</tr>
</tbody>
</table>

Column D historical numbers that have been discontinued include: 1- Plain Bearing/DU, 2- Sleeve Bearing Flange Mounting Splash Lube, 8- Plain Bearing Auxiliary Drive (PTO) Perpendicular to Crankshaft

Column E historical numbers that have been discontinued include: 1- Rope Starter, 3- Electrical Starter Only 110 or 230 Volt Gear Drive, 4- Electrical Starter/110 or 230 Volt Gear Drive with Alternator, 7- Electrical Starter Only 12 or 24 Volt Gear Drive, 8- Vertical Pull Starter or Side Pull Starter, 9- Mechanical Starter and A- Electrical Starter 12 or 24 Volt Gear Drive with Alternator & Inverter

Revised 2/11

All power levels stated gross power per SAE J1940
BRIGGS & STRATTON ENGINE WARRANTY POLICY

LIMITED WARRANTY

Briggs & Stratton warrants that, during the warranty period specified below, it will repair or replace, free of charge, any part that is defective in material or workmanship only. Transportation charges on product submitted for repair or replacement under this warranty must be borne by purchaser. This warranty is effective for and is subject to the time periods and conditions stated below. Warranty service is available only through Briggs & Stratton Authorized Service Dealers. Locate your nearest Authorized Service Dealer at BRIGGSandSTRATTON.COM. The purchaser must contact the Authorized Service Dealer, and then make the product available to the Authorized Service Dealer for inspection and testing.

There is no other express warranty. Implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year from purchase, or to the extent permitted by law. All other implied warranties are excluded. Liability for incidental or consequential damages are excluded to the extent that any such damages are not proved to have been caused by the breach of this warranty. Briggs & Stratton has no obligation of any kind, including without limitation, to furnish copies of manuals, parts lists, service bulletins, or to furnish replacement parts, without charge.

The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated in the table above. "Consumer use" means personal, residential household use by a retail consumer. "Commercial use" means all other uses, including use for commercial, income producing or rental purposes. Engines used in competitive racing or on commercial or rental tracks are not warranted.

Briegs & Stratton welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate. To avoid misunderstanding which might occur between the customer and the dealer, listed below are some of the causes of engine failure that the warranty does not cover.