CHOOSING THE CORRECT MOTOR FOR YOUR APPLICATION.

Motors are used in a wide variety of applications. In some applications more than 1 motor design would work; in others, if an exact replacement cannot be found, a similar motor with slight differences in mechanical and electrical characteristics will provide reliable operation. The following selection guide is designed to help you choose the correct motor for your application.

STEP 1: GATHER MOTOR INFORMATION

You will need the following information to properly select a motor. If you are replacing a motor, much of the information can be found on the existing motor nameplate. See the sample nameplate on this page:

1-Phase (PH): Either single (1) or three (3). Match exactly.

2-Voltage (Volts): Match exactly.

3-Horsepower (HP): Very small motors are often rated in watts. Choose an equal or next higher HP.

4-Physical Size/Frame (FR): Match exactly.

5-Speed (RPM): Match within 5%.

6-Frequency (Hz): Match exactly.

7-Service Factor (SF): Choose a motor of equal or greater number.

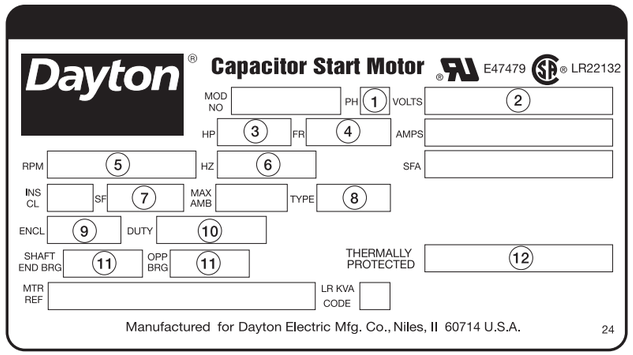
8-Type: See table below.

9-Enclosure (Encl.): See table below.

10-Duty Cycle: If current motor is intermittent duty, you may upgrade to continuous. Air-over must be installed in the driven fan blade's airstream.

11-Bearing Type: Sleeve or Ball.

12-Thermal Protection



STEP 2: DETERMINE THE RIGHT MOTOR TYPE

General-Purpose Motors are designed for mechanical loads (also effective for air moving), and for hard-to-start applications such as conveyors, belt-driven equipment, machine tools and reciprocating pumps. These motors feature ball bearings to handle heavier radial and axial loads and heavier construction for industrial applications.

Definite-Purpose Motors are designed for specific applications such as washdown, hazardous location, pump duty, etc. Motor features are driven by the specific application's environment.

HVAC Motors are designed mostly for air moving and other light- to medium-duty applications, such as fans and centrifugal pumps, small tools and office equipment.

STEP 3: SELECT THE SPECIFIC MOTOR

Match the information gathered in Step 1 on Grainger.com® or call a local branch.

AC MOTOR TYPES

Phase	Type	Typical RPM	Starting Torque as Percent of Full-Load Torque	Comparative Efficiency	Typical Uses
1	Shaded Pole	1050, 1550, 3000	Very Low 50-100%	Low	Small direct-drive fans and blowers
1	PSC	825, 1075, 1625	Low 75-150%	Moderate	Direct-drive fans and blowers
1	Split-Phase	1140, 1725, 3450	Low to Moderate 130-170%	Moderate	Belt-drive and direct-drive fans and blowers, small tools, centrifugal pumps, and appliances
1	Capacitor-Start	1140, 1725, 3450	Moderate to High 200-400%	Moderate to High	Pumps, compressors, tools, conveyors, farm equipment, and industrial ventilators
3	3-Phase	1140, 1725, 3450	Moderate to High 200-300%	High	Applications where 3-Phase power is available

ENCLOSURE TYPES

Enclosure Type	How Can I Tell?	Where Do I Use This Enclosure?
ODP/Open	Ventilation holes in shell and/or endshield	Clean, dry, nonhazardous environments
Enclosed TEFC/TENV	No ventilation holes in shell or endshield	Dirty, moist, nonhazardous environments
Hazardous Location	Enclosed. Must have a UL Hazardous Location nameplate on motor	Designed for use in hazardous environments as defined by National Electrical Code (NEC) classifications. NEC Class and Group are designated on UL Hazardous Location nameplate mounted on motor. See page 6, 29 for more details.

OTHER ABBREVIATIONS USED IN MOTOR LISTINGS

AC	Alternating Current	H, Ht.	Height	OPAO	Open Air-Over
A, Amps	Amperes	HP	Horsepower	PE	Pump End
Amb.	Ambient	Hz	Hertz	Prot.	Protection
Auto	Automatic	Imp.	Impedance	PSC	Permanent Split Capacitor
AWG	American Wire Gauge	In.	Inch, Inches	Resil.	Resilient
C	Centigrade	In.-Lb.	Inch-Pound	Rev.	Reversible
Cap.	Capacitor	Ins.	Insulation	RPM	Revolutions per Minute
CCW	Counterclockwise	L, Lgth.	Length, Long	SF	Service Factor
Cond.	Conductor	Lb.	Pounds	Shpg.	Shipping
CSA	Canadian Standards Association	Man.	Manual	Slv.	Sleeve
CW	Clockwise	Max.	Maximum	Spd.	Speed
CW/CCW	Reversible	µF	Microfarad	Syn.	Synchronous
CWSE	Clockwise Facing Shaft End	Min.	Minimum	TEAO	Totally Enclosed Air-Over
CWLE	Clockwise Facing Lead End	Mtg.	Mounting	TEFC	Totally Enclosed Fan-Cooled
CCWSE	Counterclockwise Facing Shaft End	NEC	National Electrical Code	TENV	Totally Enclosed Nonventilated
CCWLE	Counterclockwise Facing Lead End	NEMA	National Electrical Manufacturer's Association	UL	Underwriters Laboratories, Inc.
DC	Direct Current	No.	Number	V	Volts, Voltage
Dia.	Diameter	Nom.	Nominal	VFLE	View Facing Lead End
Encl.	Enclosure	OC	On Center	VFSE	View Facing Shaft End
FLA	Full-Load Amps	ODP	Open Dripproof	W	Width, Watts
Ft.-Lb.	Foot-Pound				

Find it at Grainger.

Call or visit your local branch or go to **grainger.com/daytonmotors** for complete product line information.

Dayton®

Dayton®

DAYTON MOTORS PRODUCT GUIDE

Dayton motors are built with heavy-duty construction, demanding specifications and the design functionality to fit both commercial and industrial applications. With one of the most comprehensive lines of motors in the market, the Dayton brand has 25 different types to help you find just what you need to get the job done. Let the dependability of the Dayton brand help you reduce downtime, increase efficiency, meet deadlines and stay within budget.

DEFINITE-PURPOSE MOTORS

Our definite-purpose motors are built with features and benefits that match specific applications. From industrial applications like driving a punch press to agriculture uses such as managing a hatchery for chickens, count on Dayton motors for the design features you need.

WASHDOWN MOTOR

For use in the food processing, chemical processing and beverage industries.

FARM DUTY (AUGER)

For conveyors, silo unloaders, barn cleaners, compressors and manure pumps.

AIR COMPRESSOR MOTOR

Direct replacements for selected air compressors. Mechanical features provide long life in high-tension, belt-type loads, which typically shorten motor life.

50 HZ

For use in machinery, air compressors, conveyors, fans, blowers, machine tools, speed reducers, pumps and industrial equipment in noncombustible environments.

JET/WELL PUMP

For jet pump water systems, centrifugal and hydraulic pumps and other applications requiring NEMA 56C- or 56J-face mounting.

POWER TOOLS

For use with high-speed, moderate-starting-torque woodworking and metalworking tools, wood lathes, sanders, grinders, table saws, planers and other applications where the maximum HP load will not exceed nameplate rating.

PRESSURE WASHER

Suitable for high-pressure water applications, including car wash, pressure wash, sewer jetting and cooling misting.

UNIVERSAL AC/DC

Designed for use with speed controls or NEMA Type K DC power supplies on constant or diminishing torque applications.

VIBRATOR

For bins, chutes, hoppers, screens, feeders, compaction tables and concrete forms and pumps.

INSTANT REVERSE

Designed for mechanical doors, gates, hoists and other equipment requiring remote control instant reversibility.

Call or visit your local branch or go to **grainger.com/daytonmotors** for complete product line information.

GENERAL-PURPOSE MOTORS

Our general-purpose motor offering is one of the most extensive in the market, including split-phase, capacitor-start and 3-phase designs. From 1/12 HP to 50 HP, the Dayton brand has a wide variety of designs and configurations to help meet your motor needs.

CAPACITOR-START MOTORS

SPLIT-PHASE MOTORS

3-PHASE MOTORS

HVAC MOTORS

Grainger offers a variety of Dayton motors for HVAC applications. From simple C-frame motors to commercial condenser fan motors, the Dayton brand has what you need to help keep your system up and running

C-FRAME MOTORS

BELT-DRIVE MOTORS

DIRECT-DRIVE BLOWER MOTORS

CONDENSER FAN MOTORS

ACCESSORIES AND POWER TRANSMISSION

CAPACITORS

Motor run and motor start capacitors are all RoHS compliant, UL and CSA recognized.

SPEED REDUCERS

Right angle, dual-shaft and parallel design in ratios from 5:1 to 100:1.

BELTS

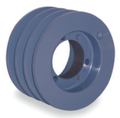
A complete line of belts in all sizes and HP ranges.

VARIABLE FREQUENCY DRIVE

For use in adjustable speed applications of 3-phase motors on pumps, conveyors, machine tools and other industrial equipment.

SOFT-START CONTROLLERS

Help reduce motor temperatures and prolong motor life while decreasing shock on mechanical systems.



PULLEYS AND SHEAVES

A complete line of precision cast iron sheaves in solid bore and bushed designs.

MOUNTING BASES

Designed to position mounted motors for proper belt tension during initial installation and at later maintenance checks.

Dayton®

Find it at Grainger.

MOTOR TEST LAB

Before we add a Dayton motor to the Grainger product offering, our engineers carefully evaluate each design. Our quality audit process is unique in industrial and commercial distribution. This capability enables Grainger to maintain quality standards on a consistent basis as part of our commitment to total customer satisfaction.

- Equipment is state of the art
- All Dayton motors are designed to meet UL and NEMA specifications
- Every Dayton motor is covered by a warranty, so you can buy it with confidence. Premium-efficiency motors carry a three-year warranty.

KNOWLEDGEABLE TECHNICAL SUPPORT

Our Technical Support Specialists have hands-on experience in all major product categories and are trained to assist with the following:

- Application assistance
- Installation
- Maintenance
- Performance data
- Product selection
- Troubleshooting

Call 1-800-Grainger (1-800-472-4643).

FULL-FACT NAMEPLATE

All Dayton motors offer full-fact nameplates with easy-to-read wiring diagrams. This helps reduce installation time and prevents miswiring.

WHEN YOU NEED IT FAST, THE DAYTON BRAND DELIVERS.

You'll get it quickly, because it's stocked at a nearby Grainger branch. You can count on great service, availability and technical knowledge with Grainger.

GRAINGER HISTORY IN MOTORS

The Grainger Motor Test Lab was started in 1960 and is dedicated to ensuring the quality of every motor that Grainger offers. The lab is still in operation at its current location in Mundelein, IL.

Call or visit your local branch or go to **grainger.com/daytonmotors** for complete product line information.