Fuse Sizing Guide
This guide is a general recommendation and does not include the many variables that can exist for specific situations such as special local codes, unusual temperature or other operating conditions, NEC® demand factors, conductor derating, etc.

Recommended UL Current Limiting Fuse Classes & EDISON Fusegear Symbols:*  

**Time-Delay Type**  
Class L –LCL –600VAC or less: 601-6000A  
Class RK1 –LENRK –250VAC or less: 6/10-600A  
Class RK5 –ECNR –250VAC or less: 1/10-600A  
Class J –JDL –600VAC or less: 1-600A  
Class CC –HCTR –600VAC or less: 1/4-10A

**Fast-Acting Type** (Non/time-delay)  
Class T –TJN –300VAC or less: 1-800A  
Class L –LCU –600VAC or less: 601-6000A  
Class RK1 –NCLR –250VAC or less: 1-600A  
Class J –JFL –600VAC or less: 1-600A  
Class CC –HCLR –600VAC or less: 1/10-30A

*The fuse classes shown are UL Listed as "current limiting" with 200,000 RMS symmetrical amperes interrupting rating. Classes J and L are not interchangeable with fuses having lower I.R.. Class R fuses require Class R rejection fuse clips to prevent interchangeability with Classes H and K fuses with lower interrupting rating. (NEC 110-9 and 240-60b.)

**1 Main Service Conductor Cable Limiters (NEC 240, 230.82):**  
a) Select by cable size and mounting terminal configurations required.

**2 Main Service Circuit Fuses–Mixed Loads:**  
a) Size fuses same as item 6.

**3 Transformer Circuit Fuses**  
(NEC 450.3b, 240.3, 240.21, 430.72 (c) as required):*  
a) PRIMARY FUSES: Size fuses not over 125%. As exceptions exist, refer to the appropriate NEC® paragraphs. Recommended fuses: LESRK, ECSR, JDL, LCL+.*  
b) SECONDARY FUSES (Sum of following): 125% of the continuous load plus 100% of non-continuous load. Fuse size not to exceed 125% of transformer secondary rated amps. RECOMMENDED FUSES: LENRK, ECNR, NCLR, JDL or LCU.  
*Fuse size must not exceed ampacity of conductors. Where selectivity is desired, refer to EDISON selectivity methods.

**4 Branch Circuit Fuse Size, No Motor Load**  
(NEC 240.3, 210.20):*  
a) 100% of non-continuous load, +125% of continuous load.  
*Do not exceed conductor ampacity. Recommended fuses: LENRK, ECSR, JDL, LCU, or LCL.

**5 Branch Circuit Fuse Size, No Motor Load**  
(NEC 240.3, 210.20):*  
a) 100% of non-continuous load, +125% of continuous load. Fuse may be sized 100% when used with a continuous rated switch. Recommended fuses same as 4.  
*Do not exceed conductor ampacity.

**6 Feeder Circuit Fuse Size, Mixed Load**  
(NEC 240.3, 430.63, 430.24):*  
a) 100% of non-continuous, non-motor load plus 125% of continuous, non-motor load.  
b) Determine non-continuous motor load (NEC 430.22 (e).  
1.) Add to "a" above.  
c) Determine A/C or refrigeration load. (NEC 440.6). Add to "a" above.  
d) Feeder protective device shall have a rating or setting not greater than the rating of the largest branch device and sum of the FLCs of the other motors. (NEC 430.62)  
e) Recommended fuses: LENRK/LESRK, JDL, ECNR/ECSR, LCU, LCL.  
*Do not exceed conductor ampacity.

**7 Feeder Circuit Fuse Size, 100% Motor Load**  
(NEC 240.3, 430.62 (a).  
a) Determine non-continuous motor load (NEC 430.22 (e).  
 b) Determine load of A/C or refrigeration equipment (NEC 440.6). Add to "a" above.  
c) Feeder protective device shall have a rating or setting not greater than the rating of the largest branch device and sum of the FLCs of the other motors. (NEC 430.62)  
d) Recommended fuses: LENRK/LESRK, JDL, ECNR/ECSR or LCL.  
*Do not exceed conductor ampacity.

**Figure 1**
\textbf{Branch Circuit Fuse Size, Individual Motor Load, With Fuse Overload Protection (No Starter Overload Relays):} (NEC 430.32, 430.36):

a) Motors with 1.15 Service Factor or temperature rise not over 40 Degrees C., size fuses at not more than 125\% of the motor nameplate current rating.

b) For all other A-C motors, size fuses at not more than 115\%.

c) Best protection is obtained by measuring motor running current and sizing fuses at 125\% of measured current for normal motor operation. Reference to “Average Time/Current Curves” is recommended.

d) Recommended Fuses: LENRK/LESRK, JDL, or ECNR/ECSR.

\textbf{Branch Circuit Fuse Size, Individual Motor Load, With Starter Overload Relays:} (NEC 430.32, 430.52):

a) For “back-up” NEC\textsuperscript{®} overload, ground fault and short-circuit protection size the fuses the same as (8 a, b) above, or the next standard size larger.

b) The fuse sizes in a) above may be increased as allowed by NEC\textsuperscript{®} references. Generally, dual element fuses should not exceed 175\% of motor nameplate F.L.A. and non-UL defined time-delay fuses not more than 300\%.

c) Recommended fuses: LENRK/LESRK, JDL, ECNR/ECSR or LCL.

\textbf{Fuse Sizing for Individual Large Motors With F.L.A. Above 480 Amps or Otherwise Require Class L Fuses -} (NEC 430.52):

\textbf{Application Tips:}

1. Size fuses as closely as practical to the ampacity of the protected circuit components without the probability of unnecessary fuse opening from harmless, transient current surges. This usually requires a choice between time-delay and non-time-delay fuses.

2. Use Class R fuse clips with Class R fuses to prevent installation of fuses with less interrupting rating or current limitation. Class H fuse reducers cannot be used with Class R fuse clips.

3. When a conductor is oversized to prevent excess voltage drop, size the fuses for the ampacity of protected circuit components instead of oversizing fuses for the larger conductor.