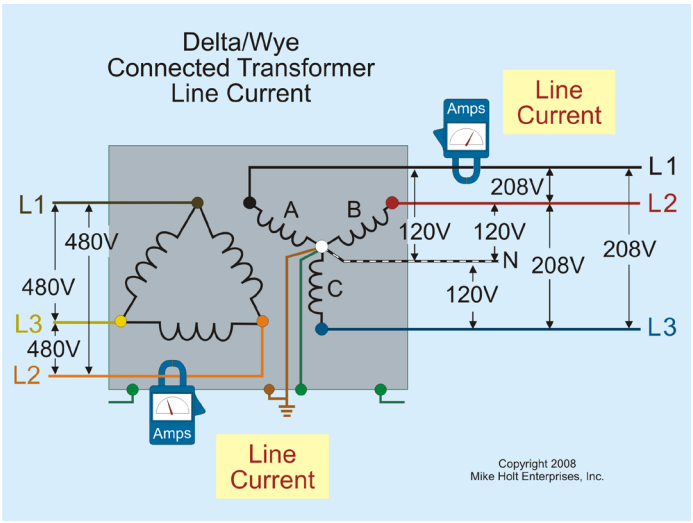

Figure 12–35

- The primary and secondary line currents are inversely proportional to the voltage ratio of the transformer. This means that the winding with the greatest number of turns has a higher voltage and lower current than the winding with the least number of turns, which has a lower voltage and higher current. Figure 12–36
- In a typical step-down transformer, the primary has more windings, higher voltage, lower current, and smaller wire. The secondary has fewer windings, lower voltage, higher current, and larger wire. See Figure 12–36.

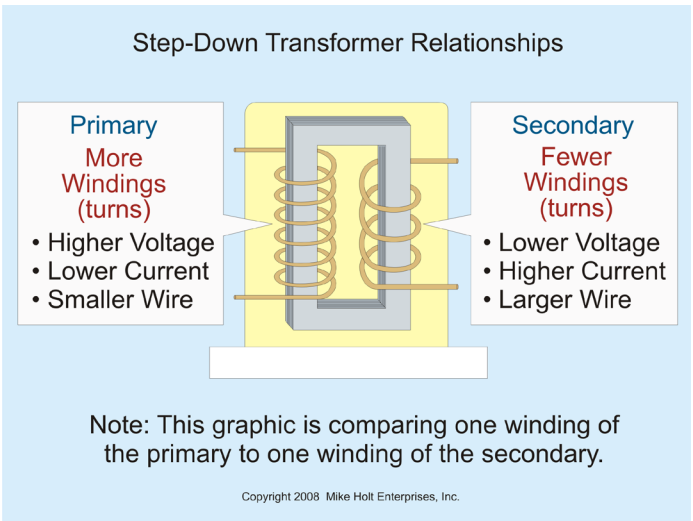

Figure 12–36

Tables 12–1 and 12–2 show the current relationship between kVA and voltage for common size transformers:

Table 12–1. Single-Phase Transformers I = VA/E

kVA Rating	Current at 208V	Current at 240V	Current at 480V
7.50	36A	31A	16A
10.00	48A	42A	21A
15.00	72A	63A	31A
25.00	120A	104A	52A
37.50	180A	156A	78A

Table 12–2. Three-Phase Transformers I = VA/(E x √3)

kVA Rating	Current at 208V	Current at 240V	Current at 480V
15.00	42A	36A	18A
22.50	63A	54A	27A
30.00	83A	72A	36A
37.50	104A	90A	45A
45.00	125A	108A	54A
50.00	139A	120A	60A
75.00	208A	180A	90A
112.50	313A	271A	135A

▶ Single-Phase Example

Question: *What is the maximum primary and secondary line current at full load for a 480V to 240V, 25 kVA single-phase transformer?* Figure 12–37

(a) 52/104A *(b) 104/52A*
(c) 104/208A *(d) 208/104A*

Answer: *(a) 52/104A*

I primary = VA/E
I primary = 25,000 VA/480V
I primary = 52A

I secondary = VA/E
I secondary = 25,000 VA/240V
I secondary = 104A