



IDEAL V	Vire-Nut [®] Wire Conne	ectors		
Model	300 Volt	Maximum		600 Volt Maximum
71B®	1 #14 1 #14 w/1 #20 or #22 1 or 2 #16 1 #16 w/1 #18 1 #16 w/1 or 2 #20 1 #16 w/1 to 3 #22 1 #16 w/1 to 3 #22 1 #18 str. 1 #18 w/1 to 3 #20 1 #18 w/1 to 4 #22 1 or 2 #18 w/1 #20 w/1 #22	2 or 3 #18 2 #18 w/1 #20 2 #18 w/1 or 2 #22 1 #20 w/1 to 4 #22 2 to 4 #20 2 #20 w/1 to 3 #22 3 #20 w/1 or 2 #22 4 #20 w/1 #22 2 #22 str. 3 or 4 #22 5 #22 sol		
72B®	1 #14 str. 1 #14 w/1 #16 1 #14 w/1 or 2 #18 1 #14 w/1 or 3 #20 1 #14 w/1 to 3 #20 1 #16 str. 1 #16 w/1 to 3 #18 1 #16 w/1 #18 w/1 #20 1 #16 w/1 #18 w/1 #20 2 or 3 #16 2 #16 w/1 #18 2 #16 w/1 or 2 #20 2 #16 w/1 to 3 #22 1 #14 w/2 #16	2 #16 w/1 #20 w/1 #22 1 #18 str. 1 #18 w/1 to 4 #20 or #22 1 or 2 #18 w/1 #20 v/1 #22 1 #18 str. w/1 #20 str. 2 #18 w/1 to 3 #20 or #22 2 to 4 #18 3 #18 w/1 or 2 #20 or #22 3 to 5 #20 4 #18 w/1 #20 or #22 3 #20 w/1 or 2 #22 4 #20 w/1 #22 2 #22 5 #18	1 or 2 #14	2 #16 w/1 #18
73B®	1 #14 w/1 #16 w/1 #18 1 #14 w/3 #18 1 #14 w/4 #20 2 #14 w/1 #18 2 #14 w/1 to 3 #20 or #22 3 or 4 #16 1 #16 w/4 #18 2 #16 w/2 or 3 #18 2 #16 w/3 #20 3 #16 w/1 #18 3 #16 w/1 or 2 #20 or #22	1 #18 w/1 #20 4 #18 w/1 #20 or #22 3 #18 w/2 #20 or #22 2 #18 w/3 #22 1 #18 str. w/5 #22 str. 3 to 5 #20 4 #20 w/1 #22 3 #20 w/1 or 2 #22 2 #20 w/2 or 3 #22 1 #20 w/4 #22 5 #22	1 #14 w/1 or 2 #18 1 #14 w/1 or 2 #18 1 #14 w/1 to 3 #20 1 #14 w/1 to 3 #22 1 #14 w/1 #16 w/1 #18 1 #14 w/1 #16 1 #16 str. 1 #16 w/1 or 2 #18 1 #16 w/1 to 3 #20 or #22 2 #16 w/1 to 3 #22	1 or 2 #16 w/1 #20 w/1 #22 1 #16 w/1 #18 w/1 #22 2 #16 2 #18 w/1 or 2 #20 or #22 1 #18 w/2 to 4 #20 1 #18 w/3 to 4 #22 1 #18 str. 3 #18 w/1 #20 or #22 2 to 4 #18 1 or 2 #18 w/1 #20 w/1 #22
74B®	<u>4 #16 w/1 #20 or #22</u> 1 #10 w/2 #12		1 #8 1 #70 1 to 3 #12 1 to 4 #14 2 to 5 #16 3 to 6 #20 1 #10 w/1 #12 1 #10 w/1 or 2 #14, #16 or #18 1 #10 w/3 or 4 #16 or #18 1 #12 w/1 to 3 #14, #16 or #18 1 #12 w/1 or 3 #14, #16 or #18 1 #12 w/1 or 2 #14 2 #12 w/1 or 2 #14 2 #12 w/1 or 2 #16 or #18 1 #14 w/1 to 4 #16, #18 or #20 3 #14 w/1 or 2 #16 or #18 1 #16 w/1 to 3 #18, #20 or #22 2 #16 w/1 to 3 #18, #20 or #22 3 #16 w/1 or 2 #18, #20 or #22 3 #16 w/1 or 2 #18, #20 or #22 1 #18 w/3 or 4 #20 or #22 1 #18 w/3 or 4 #20 or #22	1 #10 w/1 #12 w/1 #14 or #16 1 #10 w/1 #12 w/1 or 2 #18 1 #10 w/1 #14 w/2 #16 1 #10 w/1 #14 w/1 to 3 #18 1 #10 w/2 #14 w/1 #16 1 #10 w/1 #16 w/1 or 2 #18 1 #12 w/1 #14 w/3 #16 1 #12 w/2 #14 w/2 #16 2 #12 w/1 #14 w/1 #16 or #18 2 #12 w/1 #14 w/1 do ar #18 2 #12 w/1 #16 w/1 or 2 #18 1 #14 w/1 #16 w/1 or 2 #18 or #20 2 #14 w/1 #16 w/1 or 3 #20 2 #14 w/1 #16 w/1 to 3 #20 2 #14 w/1 #16 w/1 to 3 #20 2 #14 w/1 #16 w/1 to 3 #20 2 #14 w/1 #18 w/1 or 2 #18 or #20 2 #14 w/1 #18 w/1 ar 22 or #22 3 #14 w/1 #18 w/1 ar 22 or #22 1 #16 w/1 #18 w/2 or 3 #20 or #22 1 #16 w/1 #18 w/1 or 2 #20 or #22 1 #16 w/1 #18 w/1 or 2 #20 or #22 3 #14 w/1 #18 w/1 or 2 #20 or #22 1 #16 w/1 #18 w/1 or 2 #20 or #22 3 #16 w/1 #18 w/1 #20 or #22 1 #18 w/1 #20 w/3 #22 2 #18 w/1 #20 w/3 #22 2 #18 w/1 #20 w/3 #22

Model 300 Volt Maximum 600 Volt Maximum 1#6 w/1 or 2 #16 1#10 w/1 #12 w/3 or 4 #14 1#6 2#12 w/1 to 3 #14 1#6 w/1 #14 1#10 w/2 #12 w/2 or 3 #16 or #18 1#6 2#12 w/1 to 3 #14 1#6 w/1 #12 1#10 w/2 #12 w/2 or 3 #16 or #18 1#8 1#12 w/3 or 4 #22 1#6 w/1 #12 1 #10 w/2 #12 w/1 or 2 #14 1#8 w/1 to 3 #16 1 #12 w/2 to 4 #18 or #20 76B® 1#6 w/1 #14 w/1 to 4 #22 2 #10 w/3 #16 1 #8 w/1 or 2 #14 1 #12 w/1 to 4 #14 or #16	
1 #6 w/1 #14 1 #10 w/2 #12 w/2 or 3 #16 or #18 1 #8 1 #12 w/3 or 4 #22 1 #6 w/1 #12 1 #10 w/2 #12 w/1 or 2 #14 1 #8 w/1 to 3 #16 1 #12 w/2 to 4 #18 or #20	
1 46 wit #14 wit or 2 #18 2 #10 wit 2 or 3 #14 1 #8 wit #12 1 #8 wit #12 1 #12 wit #20 wit 20 wit 0 4 #22 2 #8 xit 2 #10 wit #16 wit 2 or 3 #18 2 #10 wit #16 wit 2 or 3 #18 1 #8 wit #14 wit 10 4 #18, #20 or #22 1 #12 wit #2 wit 0 10 3 #20 or #2 1 #8 wit #14 2 #10 wit #14 wit 2 or 3 #20 or #22 1 #8 wit #14 wit 10 4 #18, #20 or #22 1 #12 wit #14 wit 10 4 #20 or #2 1 #12 wit #12 wit #14 wit 10 4 #20 or #2 1 #8 wit #14 wit 10 2 #10 wit #14 wit 0 a #16 1 #10 wit 10 a #16 1 #12 wit #14 wit 10 4 #20 or #2 1 #12 wit #16 wit 10 4 #20 or #2 1 #8 wit #14 wit 10 4 #16 3 #10 wit #16 or #18 1 #10 wit 16 ar #18 1 #10 wit 16 ar #18 1 #10 wit 16 ar #18 1 #8 wit #12 wit 10 4 #16 3 #10 wit #16 or #18 2 #12 wit #14 wit 0 a #16 1 #10 wit 10 a #20 or #2 2 #12 wit #16 wit 10 a #20 or #2 1 #8 wit #12 wit 10 4 #16 3 #10 wit #16 or #18 1 #10 wit 10 a #20 or #2 2 #12 wit #16 wit 10 a #20 or #2 2 #12 wit #16 wit 10 a #20 or #2 1 #8 wit #12 wit #14 wit or 2 #14 3 #12 wit #14 wit 0 a #16 1 #10 wit 18 wit 10 4 #20 or #2 2 #12 wit #16 wit 10 a #20 or #2 1 #10 wit #12 wit #14 wit or 2 #16 3 #12 wit #14 wit or 2 #16 1 #10 wit 10 a #18 2 #12 wit #14 wit 10 a #18 1 #10 wit #12 wit #14 wit 10 a #16 3 #	2 22 , #20 or#22 22

IDEAL Wire-Nut® Wire Connectors						
Model	300 Volt Max.	600 Volt Maximum				
59B®		1 #12 1 #12 w/1 to 3 #18 1 #12 w/1 or 2 #16 1 #12 w/1 #14 1 to 3 #14 1 #14 w/1 to 5 #18, #20 or #22 1 #14 w/1 to 3 #16 1 #14 w/1 #20 w/1 or 2 #22 1 #14 w/1 #18 w/1 or 2 #22 1 #14 w/1 #16 w/1 #20 or #22 2 #14 w/1 to 4 #20 or #22 2 #14 w/1 to 4 #18	2 #14 w/1 #16 2 #14 w/1 #16 2 #14 w/1 #20 w/1 or 2 #22 2 #14 w/1 #18 w/1 or 2 #22 2 #14 w/1 #16 w/1 #20 or #22 1 #16 Stranded OR 1#18 Str. 2 to 4 #16 1 #16 w/1 to 5 #18, #20 or #22 1 #16 w/1 #18 w/1 or 2 #22 2 #16 w/1 #18 w/1 or 2 #22	3 #16 w/1 to 3 #20 or #223 #16 w/1 or 2 #18 3 #16 w/1 ar 2 #18 3 #16 w/1 #20 w/1 or 2 #22 3 #16 w/1 #18 w/1 or 2 #22 4 #16 w/1 #18 or #20 4 #16 w/1 #20 w/1 #22 2 to 6 #18 3 #18 w/1 to 3 #20 or #22 3 #18 w/1 to 3 #20 or #22 4 #18 w/1 or 2 #22 4 #18 w/1 or 2 #22 4 #18 w/1 ar 2 #20 or #20 4 #18 w/1 #20	5 #18 w/1 #20 w/1 #22 1 #18 w/1 to 4 #20 or #22 1 #18 w/1 to 4 #20 or #22 2 #18 w/1 to 4 #20 or #22 2 #18 w/1 to 4 #20 or #22 2 to 6 #20 1 #20 w/1 or 2 #22 2 #20 w/1 to 4 #22 3 #20 w/1 to 4 #22 4 #20 w/1 or 2 #22 5 #20 w/1 to 2 #22 5 #20 w/1 #22 4 to 6 #20	

IDEAL Wing	-Nut [®] Wire Connectors			
Model	300 Volt Maximum	600 Volt Maximum		
		1 #10 1 #10 w/1 #12	2 #12 w/1 or 2 #18 2 #12 w/1 #16	3 #14 w/1 or 2 #18 2 to 4 #16
		1 #10 w/1 or 2 #14	2 #12 w/1 #14	1 #16 w/1 to 5 #18
451®		1 #10 w/1 or 2 #16	1 to 3 #14	2 #16 w/1 to 4 #18
		1 #10 w/1 to 3 #18	1 #14 w/1 to 5 #18	3 #16 w/1 to 3 #18
		1 to 3 #12	1 #14 w/1 to 4 #16	4 #16 w/1 or 2 #18
		1 #12 w/1 to 5 #18	2 #14 w/1 to 3 #18 2 #14 w/1 to 3 #16	2 to 4 #18
		1 #12 w/1 to 3 #16 1 #12 w/1 or 2 #14	2 #14 w/1 to 5 #16 3 #14 w/1 #16	
		1#12 W/1 01 2 #14	3 #10 w/1 or 2 #14	4 #14 w/1 or 2 #16
		1 or 2 #8	3 #10 w/1 #12	4 #14 w/1 #16 w/ 1#18
		1 to 4 #10	3 #10 w/1 #16 w/1 or2 #18	5#14 w/ 1#185#14 w/ 1#16
452®		1 to 5 #12	3 #10 w/1 #14 w/1 or2 #18	1 #16 w/1 to 5 #22
		1 to 6 #14	3 #10 w/1 #14 w/1 #16	1 #16 w/1 to 5 #20
&		1 to 6 #16	3 #10 w/1 #12 w/1 #18	1 #16 w/1 to 5 #18
Twister-		2 to 6 #18	3 #10 w/1 #12 w/1 #16	1 #16 w/1 #20 w/1 to 2 #22
PRO®		3 to 6 #20	1 #12 w/1 to 5 #18	1 #16 w/2 #20 w/1 to 2 #22
-		4 to 6 #22	1 #12 w/1 to 5 #16	2 #16 w/1 #20 w/1 to 2 #22
344®		1 #6 w/ 1 or 2 #12 1 #6 w/ 1#10	1 #12 w/1 to 5 #14	2 #16 w/2 #20 w/1 to 2 #22
		1 #6 w/ 1#10 1 #6 w/ 2#14 w/ 1 or 2 #16	1 #12 w/1 #16 w/1 to 3 #18 2 #12 w/1 #16 w/1 to 3 #18	1 #16 w/1 #18 w/1 to 3 #22 1 #16 w/1 #18 w/1 to 3 #20
		1 #6 w/ 1#12 w/ 1 or 2 #14	1 #12 w/1 #14 w/1 to 3 #18	2 #16 w/1 #18 w/1 to 3 #22
		1 #6 w/ 2#12 w/ 1 #18	1 #12 w/1 #14 w/1 to 3 #16	2 #16 w/1 #18 w/1 to 3 #20
		1 #6 w/ 1#10 w/ 1 #14	2 #12 w/1 #14 w/1 to 3 #16	2 #16 w/1 to 4 #22
		1 #8 w/ 1 to 5 #16	2 #12 w/1 #14 w/1 to 3 #18	2 #16 w/1 to 4 #20
		1 #8 w/ 1 to 4 #14	1 #12 w/2 #14 w/1 or 2 #16	2 #16 w/1 to 4 #18
		1 #8 w/ 1 to 3 #12	2 #12 w/2 #14 w/1 or 2 #16	3 #16 w/1 to 3 #22
		1 #8 w/ 2#12 w/ 1 or 2#14	2 #12 w/1 to 4 #18	3 #16 w/1 to 3 #20
		1 #8 w/1 or 2 #10	2 #12 w/1 to 4 #16	3 #16 w/1 to 3 #18
		1 #8 w/1 #10 w/ 1 or 2 #14	2 #12 w/1 to 4 #14	3 #16 w/1 or 2#22 w/ 1#20
		1 #8 w/1 #10 w/ 1 or 2 #12	3 #12 w/1 to 3 #18	3 #16 w/1 #18 w/1 or 2#22
		1 #8 w/2 #10 w/ 1#14 1 #10 w/1 to 5 #18	3 #12 w/1 to 3 #16 3 #12 w/1 to 3 #14	3 #16 w/1 #18 w/1 or 2#20 4 #16 w/1 to 2 #22
		1 #10 w/1 to 5 #16	3 #12 w/1 #16 w/1 or 2 #18	4 #16 w/1 to 2 #22 4 #16 w/1 to 2 #20
		1 #10 w/1 to 5 #14	3 #12 w/1 #14 w/1 or 2 #18	4 #16 w/1 to 2 #18
		1 #10 w/1 or 4 #12	3 #12 w/1 #14 w/1 or 2 #16	4 #16 w/1 #22 w/ 1#20
		1 #10 w/1 #16 w/1 to 4 #18	3 #12 w/1 #14 w/ 1 #16	4 #16 w/1 #18 w/1 1#22
		1 #10 w/1 #14 w/1 to 4 #16	4 #12 w/1 or 2 #16	4 #16 w/1 #18 w/1 1#20
		1 #10 w/1 #14 w/1 to 4 #18	4 #12 w/1 #14	5 #16 w/1 #22
		1 #10 w/2 #14 w/1 to 3 #16	4 #12 w/1 #16 w/ 1#18	5 #16 w/1 #20
		1 #10 w/1 #12 w/1 to 4 #14	4 #12 w/1 #14 w/ 1#18	5 #16 w/1 #18
		1 #10 w/1 #12 w/1 to 4 #16	4 #12 w/1 #14 w/ 1#16	1 #18 w/1 to 5 #22
		1 #10 w/1 #12 w/1 to 4 #18 1 #10 w/2 #12 w/1 to 3 #16	1 #14 w/1 to 5 #22 1 #14 w/1 to 5 #20	1 #18 w/1 to 5 #20 1 #20 w/1#22 w/ 1 to3 #18
		1 #10 w/2 #12 w/1 to 3 #18	1 #14 w/1 to 5 #18	1 #20 w/2#22 w/ 1 to3 #18
		1 #10 w/2 #12 w/1 to 2 #14	1 #14 w/1 to 5 #16	2 #20 w/1#22 w/ 1 to3 #18
		1 #10 w/3 #12 w/1 #14	1 #14 w/1 #16 w/1 to 3 #18	2 #18 w/1 to 4 #22
		2 #10 w/1 to 4 #18	2 #14 w/1 #16 w/1 to 3 #18	2 #18 w/1 to 4 #20
		2 #10 w/1 to 4 #16	2 #14 w/1 to 4 #22	3 #18 w/1 to 3 #22
		2 #10 w/1 to 3 #14	2 #14 w/1 to 4 #20	3 #18 w/1 to 3 #20
		2 #10 w/1 to 3 #12	2 #14 w/1 to 4 #18	4 #18 w/1 or 2 #22
		2 #10 w/1 #16 w/1 to 3 #18	2 #14 w/1 to 4 #16	4 #18 w/1 or 2 #20
		2 #10 w/2 #14 w/1 to 2 #16	3 #14 w/1 to 3 #22	5 #18 w/1 #22
		2 #10 w/1 #12 w/1 to 3 #16	3 #14 w/1 to 3 #20	5 #18 w/1 #20 1 #20 w/2 to 5 #22
		2 #10 w/1 #12 w/1 or 2 #14	3 #14 w/1 to 3 #18	1 #20 w/2 to 5 #22
		2 #10 w/2 #12 w/1 or 2 #18 2 #10 w/2 #12 w/1 or 2 #16	3 #14 w/1 to 3 #16 3 #14 w/1 #16 w/1 or 2 #18	2 #20 w/1 to 4 #22 3 #20 w/1 to 3 #22
		2 #10 w/2 #12 w/1 of 2 #16 2 #10 w/2 #12 w/1 #14	3 #14 w/1 #16 w/1 or 2 #18 4 #14 w/1 or 2 #22	4 #20 w/1 to 2 #22
		3 #10 w/1 to 3 #18	4 #14 w/1 or 2 #20	4 #20 w/1 to 2 #22 4 #20 w/1 to 2 #22
		3 #10 w/1 to 3 #16	4 #14 w/1 or 2 #18	1 # 20 WH 10 2 # 22

Model	300 Volt Maximum		600 Volt Maximum		
		1 or 2 #6	1 #6 w/1 #12 w/1 to 4 #14	1 #8 w/2 #10 w/1 to 3 #12	
		2 or 3 #8	1 #6 w/2 #12 w/1 to 3 #14	1 #8 w/3 #10 w/1 or 2 #14	
		1 #8 w/1 to 5 #14	1 #6 w/3 #12 w/1 or 2 #14	1 #8 w/3 #10 w/1 #12	
454®		1 #8 w/1 to 5 #12	1 #6 w/4 #12 w/1 #14	2 #8 w/1 #12 w/1 to 3 #14	
+J4°		1 #8 w/1 to 4 #10	1 #6 w/1 #10 w/1 to 4 #14	2 #8 w/2 #12 w/1 or 2 #14	
		2 to 5 #10	1 #6 w/1 #10 w/1 to 3 #12	2 #8 w/3 #12 w/1 #14	
		1 #10 w/3 to 5 #14	1 #6 w/2 #10 w/1 or 2 #14	2 #8 w/1 #10 w/1 to 3 #14	
		3 to 6 #12	1 #6 w/2 #10 w/1 #12	2 #8 w/1 #10 w/1 or 2 #12	
		1 #12 w/4 or 5 #14	1 #6 w/1 #8 w/1 to 3 #14	2 #8 w/2 #10 w/1 #14 sol	
		2 #12 w/2 to 4 #14	1 #6 w/1 #8 w/1 or 2 #12	1 #10 w/1 #12 w/1 to 4 #14	
		3 #12 w/1 to 3 #14	1 #6 w/1 #8 w/1 #10	1 #10 w/2 #12 w/1 to 3 #14	
		4 #12 w/1 #14	2 #8 w/1 to 4 #14	1 #10 w/3 #12 w/1 or 2 #1	
		5 or 6 #14	2 #8 w/1 to 3 #12	1 #10 w/4 #12 w/1 #14	
		1 #6 w/1 to 4 #14	2 #8 w/1 or 2 #10	1 #10 w/2 to 4 #12	
		1 #6 w/1 to 5 #12	3 #8 w/1 or 2 #14	2 #10 w/1 #12 w/1 to 3 #14	
		1 #6 w/1 to 3 #10	1 #8 w/1 #12 w/1 to 4 #14	2 #10 w/2 #12 w/1 or 2 #14	
		1 #6 w/1 or 2 #8	1 #8 w/2 #12 w/1 to 3 #14	2 #10 w/3 #12 w/1 #14	
		2 #6 w/1 #14	1 #8 w/3 #12 w/1 or 2 #14	2 #10 w/1 to 4 #14 or #12	
		2 #6 w/1 #12	1 #8 w/4 #12 w/1 #14	3 #10 w/1 #12 w/1 or 2 #14	
			1 #8 w/1 #10 w/1 to 4 #14	3 #10 w/2 #12 w/1 #14	
			1 #8 w/1 #10 w/1 to 4 #12	3 #10 w/1 to 3 #14 or #12	
			1 #8 w/2 #10 w/1 to 3 #14	4 #10 w/1 #12 w/1 #14	
				4 #10 w/1 #14 w/1 #12	

IDEAL Twist	DEAL Twister® Wire Connectors				
Model	300 Volt Maximum	6	00 Volt Maximum		
		1 to 3 #10	2 #18 w/1 to 4 #16, #14		
		1 #10 w/1 #8	3 #18 w/1 to 3 #12		
		1 to 3 #12	2 #18 w/1 or 2 #10		
341™		4 #12 sol	3 #18 w/1 to 3 #16, #14 or #12		
341		1 #12 w/1 or 2 #10	3 #18 w/1 or 2 #10		
		1 #12 w/1 #8	4 #18 w/1 or 2 #16, #14 or #12		
		2 #12 w/1 #10	4 #18 w/1 #10		
		1 to 5 #14	5 #18 w/1 #16 or #14		
		1 #14 sol w/1 to 3 #12	2 to 6 #20		
		1 #14 w/1 or 2 #10	1 #20 w/1 to 4 #18, #16 or #14		
		2 #14 w/1 or 2 #12	2 #20 w/1 to 3 #18, #16 or #14		
		2 #14 w/1 or 2 #10	3 #20 w/1 or 2 #18, #16 or #14		
		2 #14 w/1 #8	4 #20 w/1 or 2 #18, #16 or #14		
		3 #14 w/1 #12 or #10	3 to 6 #22		
		3 #14 w/2 #12	1 #22 sol w/1 #20 sol		
		4 #14 w/1 #12 or #10	1 #22 w/2 to 5 #20		
		1 to 6 #16	1 #22 w/1 to 5 #18 or #16		
		1 #16 w/1 to 4 #14 or #12	2 #22 w/1 to 4 #20, #18 or #16		
		1 #16 w/1 or 2 #10	3 #22 w/1 to 3 #20, #18 or #16		
		2 #16 w/1 to 4 #14	4 #22 w/1 or 2 #20, #18 or #16		
		2 #16 w/1 to 3 #12	1 #22 w/1 #18 w/1 #16		
		2 #16 w/1 or 2 #10	1 #22 w/1 #20 w/1 or 2 #16		
		3 #16 w/1 to 3 #14	1 #14 w/1 or 2 #12 w/1 #10		
		3 #16 w/1 or 2 #12 or #10	2 #14 w/1 #12 w/1 #10		
		4 #16 w/1 or 2 #14 or #12	1 #16 w/1 #12 w/1 #10		
		4 #16 w/1 #10	2 #16 w/1 #14 w/1 or 2 #12		
		5 #16 w/1 #14	2 #16 w/2 #14 w/1 #12		
		5 #16 sol w/1 #10 sol	2 #16 w/1 #12 w/1 #10		
		1 #16 w/1 or 2 #14 w/1 #12 or #10	3 #16 w/1 #14 w/1 #12 or #10		
		2 to 6 #18	4 #16 w/1 #12 w/1 #10		
		1 #18 w/1 or 2 #10	1 #18 w/1 to 4 #16, #14 or #12		

UNDERWRITER'S LABORATORIES LISTED WIRE COMBINATIONS

Model	300 Volt Maximum		600 Volt Maximum
		1 or 2 #8	1 #16 w/1 to 3 #10
		1 #8 w/1 #6	2 #16 w/1 to 4 #14 or #12
		2 to 4 #10	2 #16 w/1 or 2 #10
342™		1 #10 w/1 or 2 #8	3 #16 w/1 to 3 #14
J72		2 #10 w/1 #8	3 #16 w/1 or 2 #12 or #10
		2 to 6 #12	4 #16 w/1 or 2 #14 or #12
		1 #12 w/1 or 2 #10	4 #16 w/1 #10
		1 #12 w/3 #10	3 #18 w/3 #16 or #14
		1 #12 w/1 or 2 #8	3 #18 w/1 or 2 #12 or #10
		1 or 2 #12 w/1 #6	4 #18 w/1 or 2 #16, #14 or #12
		2 #12 w/1 or 2 #10	5 #18 w/1 #16, #14, #12 or #10
		2 #12 w/1 #8 or #6	1 #12 w/1 #10 w/1 #8
		2 #12 w/2 #8	1 #14 w/1 #12 w/1 or 2 #10
		3 #12 w/1 #10 or #8	1 #14 w/1 #12 w/1 #8 or #6
		3 #12 w/2 #10	1 #14 w/2 #12 w/1 or 2 #10
		4 #12 w/1 #10	1 #14 w/2 #12 w/1 #8
		3 to 6 #14	1 #14 w/3 #12 w/1 #10
		1 #14 w/1 to 4 #12	1 #14 w/1 #10 w/1 #8
		1 #14 w/1 to 3 #10	2 #14 w/1 #12 w/1 or 2 #10
		1 #14 w/1 or 2 #8	2 #14 w/1 #12 w/1 #8
		1 or 2 #14 w/1 #6	2 #14 w/2 #12 w/1 #10
		2 #14 w/1 to 3 #12	2 #14 w/1 #10 w/1 #8
		2 #14 w/1 to 3 #10	3 #14 w/1 #12 w/1 #8
		2 #14 w/1 #8	3 #14 w/1 #10 w/1 #8
		3 #14 w/1 to 3 #12 or #10	1 #16 w/1 #14 w/1 or 2 #12
		3 or 4 #14 w/1 #8	2 #16 w/1 #14 w/1 or 2 #12
		3 #14 w/1 #6	2 #16 w/2 #14 w/1 #12 or #10
		4 #14 w/1 or 2 #12 or #10	2 #16 w/1 #12 w/1 #10
		4 #14 w/1 #6	3 #16 w/1 #14 w/1 or 2 #12
		5 #14 w/1 #12 or #10	3 #16 w/1 #14 w/1 #10
		5 #14 w/1 #8	4 #16 w/1 #14 w/1 #12
		1 #16 w/2 to 5 #14 or #12	

Model	300 Volt Maximum	600 Volt Maximum			
		4 to 6 #22	3 #16 w/1 to 3 #14	The following are copper to aluminum	
		3 to 6 #20	3 #16 w/1 or 2 #12, #10	combinations. Not for use on aluminum	
		2 to 6 #18	4 #16 w/1 or 2 #14, #12	to aluminum conductors.	
65		1 to 6 #16	4 #16 w/1 #10		
05		1 to 5 #14	5 #16 w/1 #14	1 #10 AL sol. w/1 or 2 #10 CU sol.	
		1 to 3 #12	5 #16 sol w/1 #10 sol	1 #10 AL w/1 or 2 #12 CU	
		4 #12 sol	1 #14 sol w/1 to 3 #12	1 #10 AL w/1 or 2 #14 CU	
		1 to 3 #10	1 #14 w/1 or 2 #10	1 #10 AL w/1 or 2 #16 CU	
		2 #22 w/3 to 5 #20	2 #14 w/1 or 2 #12	2 #10 AL sol. w/1 #12 CU	
		1 #22 w/1 to 5 #18, #16	2 #14 w/1 or 2 #10	2 #10 AL sol. w/1 #14 CU	
		2 #22 w/1 to 4 #20, #18, #16	2 #14 w/1 #8	2 #12 AL sol. w/1 #10 CU sol.	
		3 #22 w/1 to 3 #20, #18, #16	3 #14 w/1 #12 or #10	2 #12 AL sol. w/1 #10 CU str.	
		4 #22 w/1 or 2 #20, #18, #16	3 #14 w/2 #12	1 #12 AL sol. w/1 or 2 #10 CU sol or str	
		1 #20 w/1 to 4 #18, #16, #14	4 #14 w/1 #12 or #10	1 #12 AL str. w/1 or 2 #10 CU sol.	
		2 #20 w/1 to 3 #18, #16, #14	1 #12 w/1 or 2 #10	1 #12 AL w/1 or 2 #12 CU	
		3 #20 w/1 or 2 #18, #16, #14	1 #12 w/1 #8	2 #12 AL sol. w/1 #12 CU	
		4 #20 w/1 or 2 #18, #16, #14	2 #12 w/1 #10	1 #12 AL w/1 or 2 #14 CU	
		1 #18 w/1 to 4 #16, #14, #12	1 #10 w/1 #8	2 #12 AL sol. w/1 #14 CU	
		1 #18 w/1 or 2 #10	1 #22 w/1 #18 w/1 #16	1 #10 AL w/1 or 2 #18 CU	
		2 #18 w/1 to 4 #16, #14, #12	1 #22 w/1 #20 w/1 or 2 #16	2 #10 AL sol. w/1 #16 CU	
		2 #18 w/1 or 2 #10	1 #16 w/1 or 2 #14 w/1 #12 or #10	2 #10 AL sol. w/1 #18 CU	
		3 #18 w/1 or 2 #10	1 #16 w/1 #12 w/1 #10	1 #12 AL w/1 or 2 #16 CU	
		4 #18 w/1 or 2 #16, #14, #12	2 #16 w/1 #14 #w/1 or 2 #12	1 #12 AL w/1 or 2 #18 CU	
		4 #18 w/1 #10	2 #16 w/2 #14 w/1 #12	2 #12 AL sol. w/1 #16 CU	
		5 #18 w/1 #16 or #14	2 #16 w/1 #12 w/1 #10	2 #12 AL sol. w/1 #18 CU	
		1 #16 w/1 to 4 #14, #12	3 #16 w/1 #14 w/1 #12 or #10		
		1 #16 w/1 or 2 #10	4 #16 w/1 #12 w/1 #10		
		2 #16 w/1 to 4 #14	1 #14 w/1 or 2 #12 w/1 #10		
		2 #16 w/1 to 3 #12	2 #14 w/1 #12 w/1 #10		
		2 #16 w/1 or 2 #10			

Model 300 Volt Maximum	600 Volt Maximum		
60	1 to 2 #10 1 to 3 #12 1 #12 w/1 #8 1 #12 w/1 #10 2 #12 w/1 #10 1 to 4 #14 1 #14 sol w/1 to 2 #12 1 #14 w/1 or 2 #10 2 #14 w/1 #12 3 #14 w/1 #12	1 #16 w/1 to 3 #12 or #14 1 #16 w/1 #10 or #12 and 1 or 2 #14 2 #16 w/1 or 2 #12 2 #16 w/1 or 2 #14 2 #16 w/1 or 2 #14 2 #16 w/1 or 2 #14 2 #16 w/1 to 3 #14 3 #16 w/1 to 3 #14 3 #16 w/1 or 2 #10 or #12 3 #16 w/1 or 2 #12 or #14	4 #16 w/1 #10 5 #16 w/1 #14 5 #16 sol w/1 #10 sol 1 #18 w/1 to 3 #12, #14 or #16 2 #18 w/1 to 2 #10 2 #18 w/1 to 2 #12, #14 or #16 3 #18 w/1 to 2 #14 or #16 3 #18 w/1 to 2 #14 or #16 3 #18 w/1 #10 1 #20 w/1 to 4 #16 or #18 2 #20 w/1 to 3 #14, #16 or #18

IDEAL Gr	IDEAL Greenie [®] Grounding Connectors						
Model	300 Volt Maximum		600 Volt Maximum				
92		1 #10 w/1 or 2 #12 1 #10 w/1 to 3 #14 1 #12 w/1 to 3 #14 2 to 4 #12	3 #12 w/1 #14 2 #12 w/1 to 3 #14 2 to 4 #14				

IDEAL Set Set	crew Wire Connectors			
Model	300 Volt Maximum	600 Volt Maximum		
		1 #10	1 #16 w/1 #20 w/1 or 2 #22	
		1 #10 str. w/1 #20	1 #16 w/1 #18 w/1 or 2 #22	
		1 #10 str. w/1 or 2 #22	2 #16 w/1 to 4 #20 or #22	
10		1 #12	2 #16 w/1 to 3 #18	
10		1 #12 str. w/1 #14	3 #16 w/1 #18 or #20 w/1 or 2 #22	
		1 #12 str. w/1 #16 w/1 #18	3 #16 w/1 to 3 #20 or #22	
		1 #12 str. w/1 or 2 #18 or #20	4 #16 w/1 #18, #20 or #22	
		1 #12 str. w/1 #18 or #20 w/1 or 2 #20	4 #16 w/1 #20 w/1 #22	
		1 #12 w/3 or 4 #20 or #22	2 to 6 #18	
		1 or 2 #14	1 #18 w/1 to 5 #20 or #22	
		2 #14 w/1 #16	1 #18 w/1 #20 w/1 or 2 #22	
		1 #14 w/1 or 2 #16	2 #18 w/1 to 4 #20 or #22	
		2 #14 str. w/1 #16 w/1 #20 or #22	2 #18 w/1 #20 w/1 or 2 #22	
		1 #14 str. w/1 #16 w/1 #18, #20 or #22	3 #18 w/1 to 4 #22	
		2 #14 w/1 or 2 #18	3 #18 w/1 to 3 #20	
		1 #14 w/1 to 3 #18	3 #18 w/1 #20 w/1 or 2 #22	
		2 #14 str. w/1 #18 or #20 w/1 or 2 #22	4 #18 w/1 or 2 #20 or #22	
		1 # 14 str. w/1 #18 or #20 w/1 or 2 #22	4 #128 w/1 #20 w/1 or 2 #22	
		2 #14 w/1 to 3 #20	5 #18 w/1 #20 w/1 or 2 #22	
		1 #14 w/3 to 5 #20	2 to 6 #20	
		1 #14 str. w/1 or 2 #20	1 #20 w/1 to 5 #22	
		1 #14 str. w/2 to 5 #22	2 #20 w/1 to 4 #22	
		2 #14 w/3 or 4 #22	3 #20 w/1 to 3 #22	
		2 #14 str. w/1 or 2 #22	4 #20 w/1 or 2 #22	
		2 to 4 #16	5 #20 w/1 #22	
		1 #16 w/1 to 5 #20 or #22	4 to 6 #22	
		1 #16 w/1 to 4 #18	3 #16 w/1 or 2 #18	

	IDEAL Set Screw Wire Connectors					
Model	300 Volt Maximum	600) Volt Maximum			
		1 #10	1 #16 w/3 to 5 #20			
		1 #10 str. w/1 or 2 #16, #18 or #20	1 #16 w/2 to 5 #18			
44		1 #10 w/3 or 4 #18 1 #10 w/3 #16	2 #16 w/1 to 5 #22 2 #16 w/2 to 5 #20			
11		2 #12	2 #16 w/2 to 5 #20 2 #16 w/1 to 4 #18			
		1 #12 w/4 #18	3 #16 w/1 to 5 #22			
		1 #12 w/2 #14	3 #16 w/1 to 4 #20			
		1 #12 w/1 #16	3 #16 w/1 to 3 #18			
		1 #12 w/3 to 5 #20	4 #16 w/1 to 5 #22			
		1 #12 w/1 to 3 #16 or #18	4 #16 w/1 or 2 #18 or #20			
		1 #12 w/1 #14	5 #16 w/1 to 4 #22			
		2 #12 w/2 or 3 #20	5 #16 w/1 #18 or 1 #20			
		2 #12 w/1 or 2 #18 2 or 3 #14	6 or 7 #18 1 #18 w/4 or 5 #20 or #22			
		3 #14 w/5 #22	2 #18 w/2 to 5 #22			
		3 #14 w/3 #20	2 #18 w/3 or 4 #20			
		1 #14 w/2 to 5 #22	3 #18 w/1 to 5 #22			
		1 #14 w/1 to 5 #18 or #20	3 #18 w/1 to 3 #20			
		1 #14 w/1 to 4 #16	4 #18 w/1 to 5 #22			
		2 #14 w/1 to 5 #20 or #22	4 #18 w/1 or 2 #20			
		2 #14 w/1 to 4 #18	5 #18 w/1 to 5 #22			
		2 #14 w/1 to 3 #16	5 #18 w/1 #20			
		3 #14 w/1 or 3 #22 3 #14 w/1 or 2 #18 or #20	1 #20 w/4 or 5 #22 2 #20 w/3 to 5 #22			
		3 #14 w/1 #16	3 #20 w/3 to 5 #22			
		4 or 5 #16	4 #20 w/3 to 5 #22			
		1 #16 w/4 or 5 #22	5 #20 w/1 to 5 #22			
		1 or 2 #10	3 #12 w/1 or 2 #16			
		1 #10 str. w/3 to 5 #20	3 #12 w/1 #14			
		1 #10 w/3 to 5 #18	2 to 6 #14			
22		1 #10 w/2 to 5 #16	1 #14 w/3 to 5 #18			
		1 #10 w/1 to 4 #14	1 #14 w/2 to 5 #16			
		1 #10 w/1 or 2 #12 2 #10 w/2 to 4 #20	2 #14 w/2 to 4 #20 2 #14 w/1 to 4 #16			
		2 #10 W/2 to 4 #20 2 #10 w/1 to 3 #18	3 #14 w/2 or 3 #20			
		2 #10 w/1 or 2 #16	3 #14 w/1 to 3 #16			
		2 #10 w/1 #14	4 #14 w/1 or 2 #16			
		2 #10 w/1 #12	5 #14 w/1 #16			
		2 to 4 #12	2 #16 or #18			
		1 #12 w/3 to 5 #18	4 to 6 #16			
		1 #12 w/2 to 5 #16	1 #16 w/3 to 5 #18			
		1 #12 w/1 to 5 #14 2 #12 w/1 to 4 #18	2 #16 w/2 to 4 #18 3 #16 w/1 to 3 #18			
		2 #12 W/1 to 4 #16	4 #16 w/1 or 2 #18			
		2 #12 w/1 to 4 #16	5 #16 w/1 #18			
		3 #12 w/1 to 3 #18	2 #18			
		2 or 3 #16	2 #20 w/1 to 4 #22			
Crimp		2 to 5 #18	3 #20 w/1 to 3 #22			
Connector		2 to 6 #20	4 #20 w/1 or 2 #22			
		2 to 6 #22	5 #20 w/1 #22			
NC-2212		1 #14 w/1 #22 1 #14 w/1 to 3 #20	1 #14 w/1 #18 w/1 to 3 #22 1 #14 w/1 #18 w/1 or 2 #20			
Stranded		1 #14 w/1 to 3 #20 1 #14 w/1 or 2 #18	1 #14 w/1 #18 w/1 or 2 #20 1 #16 w/1 #20 w/2 #22			
Only		1 #14 w/1 #16	1 #16 w/2 #18 w/1 or 2 #22			
Ciny		1 #16 w/1 to 5 #22	1 #16 w/2 #18 w/1 #20			
		1 #16 w/1 to 4 #20	1 #16 w/1 #18 w/1 or 2 #20 w/1 #22			
		1 #16 w/1 to 3 #18	1 #16 w/1 #18 w/1 #20 w/2 #22			
		2 #16 w/1 to 3 #22	2 #16 w/1 #18 w/1 #20 or #22			
		2 #16 w/1 or 2 #18 or #20	1 #18 w/1 to 4 #20 w/1 #22			
		1 #18 w/1 to 5 #20 or #22	1 #18 w/1 #20 w/2 to 4 #22			
		2 #18 w/1 to 3 #20 or #22	1 #18 w/2 #20 w/2 or 3 #22			
		3 #18 w/1 to 3 #22 3 #18 w/1 or 2 #20	1 #18 w/3 #20 w/2 #22 2 #18 w/1 to 3 #20 w/1 #22			
		3 #18 w/1 or 2 #20 4 #18 w/1 #20 or #22	2 #18 w/1 to 3 #20 w/1 #22 2 #18 w/1 #20 w/1 to 3 #22			
		4 #18 w/1 #20 01 #22 1 #20 w/1 to 5 #22	2 # 18 w/1 #20 w/1 to 3 #22 3 #18 w/1 #20 w/1 #22			
L	1		5 " 10 WI I " 20 WI I " 22			

Model	300 Volt Maximum	600 Volt Maximum		
NC-1610 Str.anded Only		2 #14 2 or 3 #16 3 to 6 #18 1 #12 w/1 or 2 #18 1 #12 w/1 #16	1 #14 w/1 or 2 #16 1 #16 w/1 to 4 #18 2 #16 w/1 to 3 #18 3 #16 w/1 #18 1 #14 w/1 #16 w/1 #18	
NC-8 Stranded Only		1 #14 w/1 to 3 #18 2 #10 2 or 3 #12 3 to 5 #14 4 to 7 #16 7 to 12 #18 1 #8 w/1 #14, #16 or #18 1 #8 w/2 #18 1 #10 w/1 #12 1 #10 w/1, 2 or 4 #16 (no 3 #16's) 1 #10 w/1 to 6 #18 1 #12 w/3 to 8 #18 1 #12 w/2 to 5 #16 1 #12 w/1 to 4 #14 2 #12 w/1 to 4 #14	1 #18 sol w/2 #18 str. 2 #12 w/1 to 3 #16 2 #12 w/2 #14 1 #14 w/4 to 10 #18 1 #14 w/3 to 6 #16 2 #14 w/2 to 7 #18 2 #14 w/1 to 4 #16 3 #14 w/1 to 5 #18 3 #14 w/1 to 3 #16 4 #14 w/1 or 2 #18 1 #16 w/5 to 11 #18 2 #16 w/4 to 9 #18 3 #16 w/2 to 7 #18 4 #16 w/1 to 6 #18 5 #16 w/1 to 4 #18 6 #16 w/1 #18	

Model	300 Volt Maximum	600 Volt Maximum		
		2 #14 str. 5 to 10 #18	4 #16 w/1 to 5 #18	
		3 to 7 #16	5 #16 w/1 to 4 #18 6 #16 w/1 or 2 #18	
410		1 #14 sol w/1 #14 str. 3 to 6 #14	7 #16 w/1 #18 1 #10 w/1 #18 w/5 #16	
		2 to 4 #12	1 #10 w/1 to 3 #18 w/4 #16	
		2 t0 4 # 12 2 #10 str.	1 #10 w/1 to 4 #18 w/3 #16	
		1 #10 sol w/1 #10 str.	1 #10 w/1 to 6 #18 w/2 #16	
		1 #14 w/1 to 3 #12		
			1 #10 w/1 to 8 #18 w/1 #16	
		1 #14 w/1 or 2#12 w/1 #10 2 #14 w/1 or 2 #12	2 #10 w/1 or 2 #16 2 #10 w/1 or 2 #18 w/1 #16	
		2 #14 w/1 or 2 #12 2 #14 w/1 #10 w/1 #12		
		2 # 14 W/1 # 10 W/1 # 12 3 #14 W/1 or 2 #12	2 #10 w/1 to 4 #18 1 #12 w/1 or 2 #18 w/6 #16	
		3 # 14 W/1 01 2 # 12 3 #14 W/1 #10	1 #12 w/1 to 3 #18 w/6 #16	
		1 #12 w/1 to 4 #14	1 #12 w/1 to 4 #18 w/4 #16	
		2 #12 w/1 to 3 #14	1 #12 w/1 to 5 #18 w/3 #16	
		2 #12 w/1 to 3 #14 2 #12 w/1 #10	1 #12 w/1 to 6 #18 w/2 #16	
		2 #12 w/1 #10 2 #10 w/1 or 2 #14	1 #12 w/1 to 8 #18 w/1 #16	
		2 #10 w/1 #12	2 #12 w/1 #18 w/4 #16	
		1 #10 w/1 to 4 #14	2 #12 w/1 to 3 #18 w/3 #16	
		1 #10 w/1 #12	2 #12 w/1 to 4 #18 w/2 #16	
		1 #10 w/2 #12	2 #12 w/1 to 5 #18 w/1 #16	
		1 #10 str. or sol w/1 or 2 or 4 to 7 #18	3 #12 w/1 or 2 #18 w/1 #16	
		(no combinations with 3 #18)	1 #14 w/1 #18 w/6 #16	
		1 #10 str. or sol w/1 to 6 #16 str.	1 #14 w/1 or 2 #18 w/5 #16	
		1 #10 str. w/1 to 6 #16 sol	1 #14 w/1 to 4 #18 w/4 #16	
		1 #12 w/1 to 9 #18 or 1 to 7 #16	1 #14 w/1 to 5 #18 w/3 #16	
		2 #12 w/1 to 6 #18 or 1 to 4 #16	1 #14 w/1 to 7 #18 w/2 #16	
		3 #12 w/1 to 3 #18 or #1 or 2 #16	1 #14 w/1 to 8 #18 w/1 #16	
		1 #14 w/1 to 9 #18	2 #14 w/1 #18 w/4 #16	
		1 #14 w/1 to 7 #16	2 #14 w/3 #18 w/3 #16	
		2 #14 w/1 to 8 #18 or 1 to 5 #16	2 #14 w/5 #18 w/2 #16	
		3 #14 w/1 to 5 #18	2 #14 w/7 #18 w/1 #16	
		3 #14 w/1 to 4 #16	3 #14 w/1 or 2 #18 w/3 #16	
		4 #14 w/1 to 3 #18 or 1 or 2 #16	3 #14 w/1 to 4 #18 w/2 #16	
		1 #16 w/3 to 7 #18	3 #14 w/1 to 5 #18 w/1 #16	
		2 #16 w/2 to 8 #18	4 #14 w/1 or 2 #18 w/1 #16	
		3 #16 w/1 to 7 #18		

Model	Connectors 300 Volt Maximum	600 Volt Maximum		
WOUEI				
		2 #8 2 #8 w/1 #12	3 #10 w/1 or 2 #18 2 #10 w/1 to 3 #12	4 #12 w/1 #18 3 #12 w/1 or 2 #14
		2 #8 w/1 or 2 #14		3 #12 w/1 or 2 #14
		2 #8 W/1 01 2 #14 1 #8 W/1 or 2 #10	2 #10 w/1 to 3 #14 2 #10 w/1 to 3 #16	3 #12 w/1 of 2 #16 3 #12 w/1 or 2 #18
411		1 #8 w/1 to 3 #12	2 #10 w/1 to 3 #16 2 #10 w/1 to 3 #18	3 #12 w/1 of 2 #18 2 #12 w/2 or 3 #14
		1 #8 w/1 to 4 #14	1 #10 w/2 to 4 #12	2 #12 w/2 01 3 #14 2 #12 w/3 #16
		2 or 3 #10	1 #10 w/3 or 4 #12	2 # 12 w/3 # 10 1 #12 w/4 #14
		4 #10 sol	1 #10 W/3 01 4 #14 1 #10 w/4 #16	1 # 12 W/4 # 14 5 #14
		3 #10 w/1 #12	3 to 5 #12	J#14
		3 #10 w/1 or 2 #14	4 #12 w/1 #14	
		3 #10 w/1 or 2 #16	4 #12 w/1 #16	1 //1 /
		1 #4 w/1 to 3 #14	3 #10 w/1 to 4 #18	1 #14 w/1 to 6 #16
		1 #4 w/1 or 2 #12	3 #10 w/1 to 4 #16	2 #14 w/1 to 5 #18
		1 #4 w/1 #10	3 #10 w/1 to 4 #14	2 #14 w/1 to 5 #16
412		1 #4 w/1 #8	3 #10 w/1 to 3 #12	3 #14 w/2 to 4 #18
		1 #6 w/1 to 6 #14	4 #10 w/1 to 3 #18	3 #14 w/1 to 3 #16
		1 #6 w/1 to 5 #12	4 #10 w/1 to 3 #16	4 #14 w/1 to 3 #18
		1 #6 w/1 to 3 #10	4 #10 w/1 to 3 #14	4 #14 w/1 to 3 #16
		1 #6 w/1 or 2 #8	4 #10 w/1 or 2 #12	5 #14 w/1 or 2 #18
		2 #6 w/1 #14	1 #12 w/1 to 6 #18	5 #14 w/1 or 2 #16
		2 #6 w/1 #12	1 #12 w/1 to 6 #16	6 #14 w/1 #18
		1 #8 w/1 to 5 #14	1 #12 w/1 to 6 #14	6 #14 w/1 #16
		1 #8 w/1 to 5 #12	2 #12 w/1 to 5 #16	1 #16 w/4 to 6 #18
		1 #8 w/1 to 3 #10	2 #12 w/1 to 5 #16	2 #16 w/2 to 5 #18
		2 #8 w/1 to 5 #14	2 #12 w/1 to 5 #14	3 #16 w/1 to 4 #18
		2 #8 w/1 to 3 #12	3 #12 w/1 to 3 #18	4 #16 w/1 to 3 #18
		2 #8 w/1 or 2 #10	3 #12 w/1 to 3 #16	5 #16 w/1 or 2 #18
		1 #10 w/1 to 6 #18	3 #12 w/1 to 4 #14	6 #16 w/1 #18
		1 #10 w/1 to 6 #16	4 #12 w/1 to 3 #18	2 #6
		1 #10 w/1 to 5 #14	4 #12 w/1 to 3 #16	2 or 3 #8
		1 #10 w/1 to 5 #12	4 #12 w/1 to 3 #14	2 to 5 #10
		2 #10 w/1 to 5 #18	5 #12 w/1 or 2 #18	2 to 6 #12
		2 #10 w/1 to 5 #16	5 #12 w/1 or 2 #16	2 to 7 #14
		2 #10 w/1 to 5 #14	5 #12 w/1 or 2 #14	3 to 7 #16
		2 #10 w/1 to 5 #12	1 #14 w/2 to 6 #18	5 to 7 #18

