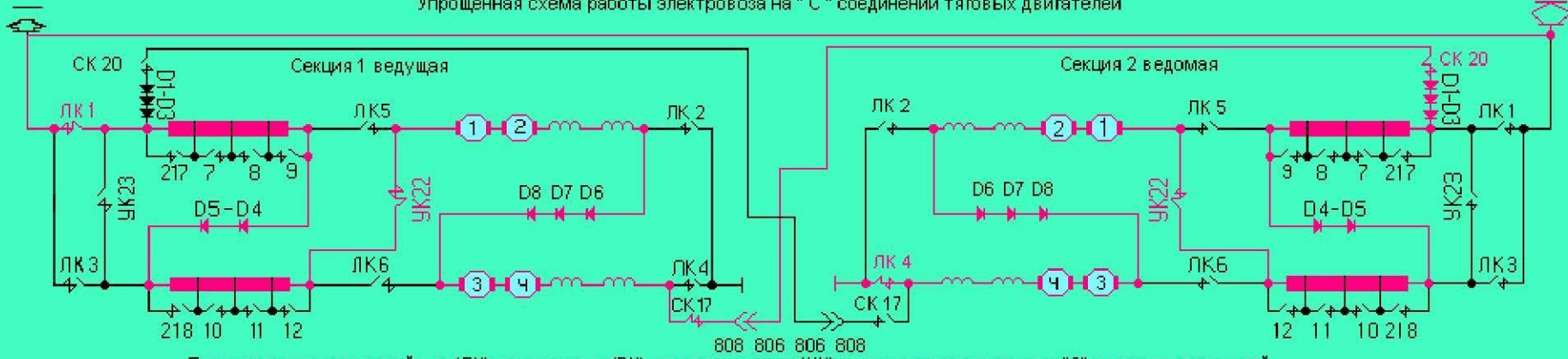


Электровоз ВЛ-10 КРП

Силовые схемы.

Упрощенная схема работы
электровоза на «С» соединении
тяговых двигателей.

Упрощенная схема работы электровоза на "С" соединении тяговых двигателей

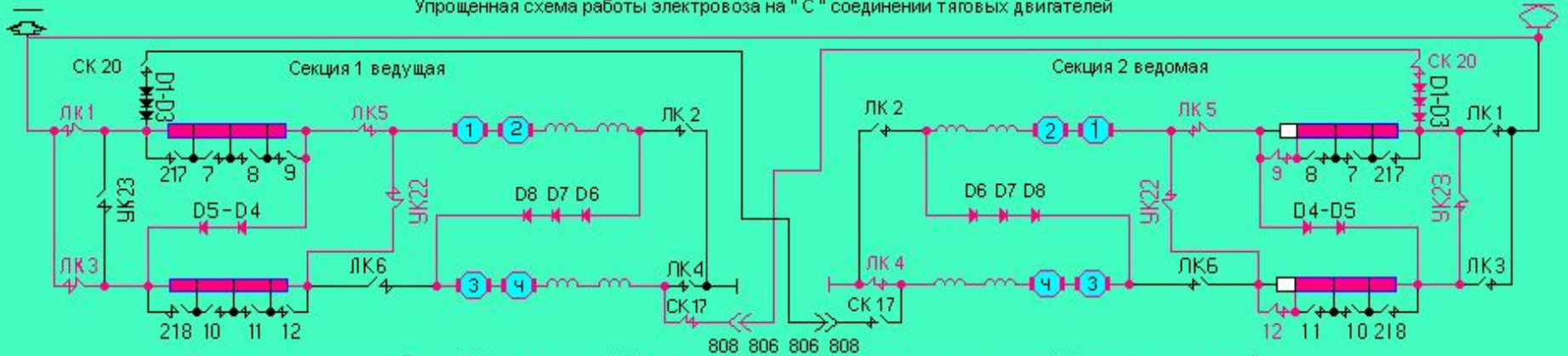


Порядок включения линейных (ЛК), реостатных (РК), уравнивающих (УК) на сересном соединении "С" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)						УК						
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
2	●														●	●			
3	●									●				●	●				
4	●								●	●				●	●				
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6	●							●	●	●				●	●				
7	●	●						●	●	●				●	●				
8	●	●	●		●			●	●	●				●	●				
9	●	●	●	●	●			●	●	●				●	●				
10	●	●	●	●	●			●	●	●				●	●				
11	●	●	●	●	●			●	●	●				●	●				
12	●	●	●	●	●			●	●	●				●	●				
13	●	●	●	●	●			●	●	●		●		●	●				
14	●	●	●	●	●			●	●	●		●		●	●				
15	●	●	●	●	●			●	●	●		●		●	●				
16	●	●	●	●	●			●	●	●		●		●	●				
17	●	●	●	●	●			●	●	●		●		●	●				
18	●	●	●	●	●			●	●	●		●		●	●				
19	●	●	●	●	●			●	●	●		●		●	●				
20	●	●	●	●	●			●	●	●		●		●	●				
21	●	●	●	●	●			●	●	●		●		●	●				
ХП	●	●	●	●	●			●	●	●		●		●	●				

№ Поз	Линейные (ЛК)						Реостатные (РК)						УК						
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●	●			
2				●					●						●	●			
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10				●					●	●					●	●		●	
11				●	●				●	●					●	●		●	
12				●	●				●	●					●	●		●	
13				●	●				●	●					●	●		●	
14				●	●				●	●					●	●		●	
15				●	●				●	●			●		●	●		●	
16				●	●				●	●			●		●	●		●	
17				●	●				●	●			●		●	●		●	
18				●	●				●	●			●		●	●		●	
19				●	●				●	●			●		●	●		●	
20				●	●				●	●			●		●	●		●	
21				●	●				●	●			●		●	●		●	
ХП				●	●				●	●			●		●	●		●	

Упрощенная схема работы электровоза на "С" соединении тяговых двигателей

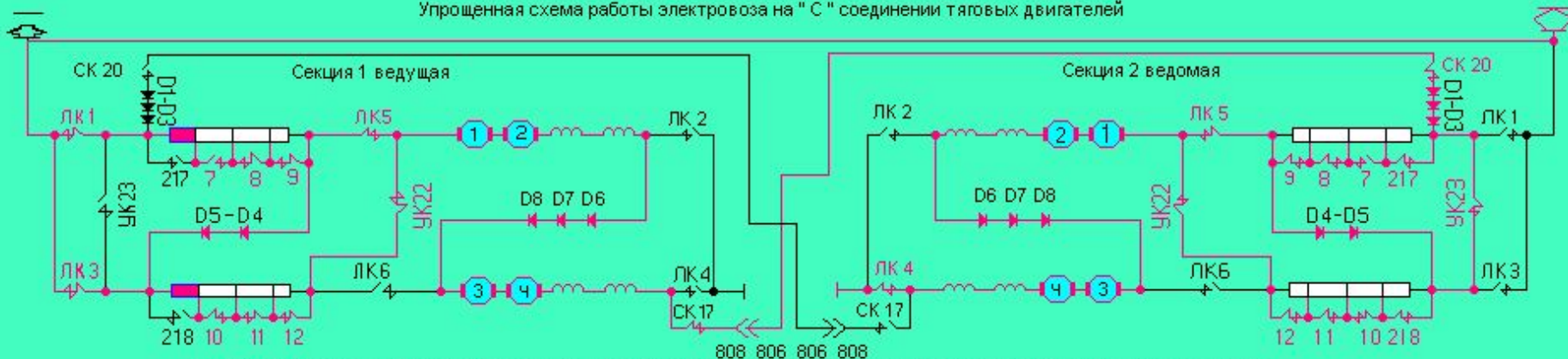


Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на сересном соединении "С" тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)						УК						
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
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6	●							●	●						●	●			
7	●	●													●	●			
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9	●	●	●	●	●										●	●			
10	●	●	●	●	●									●	●	●	●		
11	●	●	●	●	●				●						●	●			
12	●	●	●	●	●				●						●	●			
13	●	●	●	●	●				●				●		●	●			
14	●	●	●	●	●			●	●					●	●				
15	●	●	●	●	●			●	●					●	●				
16	●	●	●	●	●			●	●				●		●	●			
17	●	●	●	●	●			●	●				●		●	●			
18	●	●	●	●	●			●	●				●		●	●			
19	●	●	●	●	●			●	●				●		●	●			
20	●	●	●	●	●			●	●				●		●	●			
21	●	●	●	●	●			●	●				●		●	●			
ХП	●	●	●	●	●			●	●				●		●	●			

№	Линейные (ЛК)						Реостатные (РК)						УК						
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●	●			
2				●											●	●			
3				●					●						●	●			
4				●					●	●					●	●			
5				●					●	●					●	●			
6				●					●	●					●	●			
7				●											●	●			
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12				●	●										●	●			
13				●	●										●	●			
14				●	●										●	●			
15				●	●										●	●			
16				●	●										●	●			
17				●	●										●	●			
18				●	●										●	●			
19				●	●										●	●			
20				●	●										●	●			
21				●	●										●	●			
ХП				●	●										●	●			

Упрощенная схема работы электровоза на "С" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнильных (УК) на сересном соединении "С" тяговых двигателей

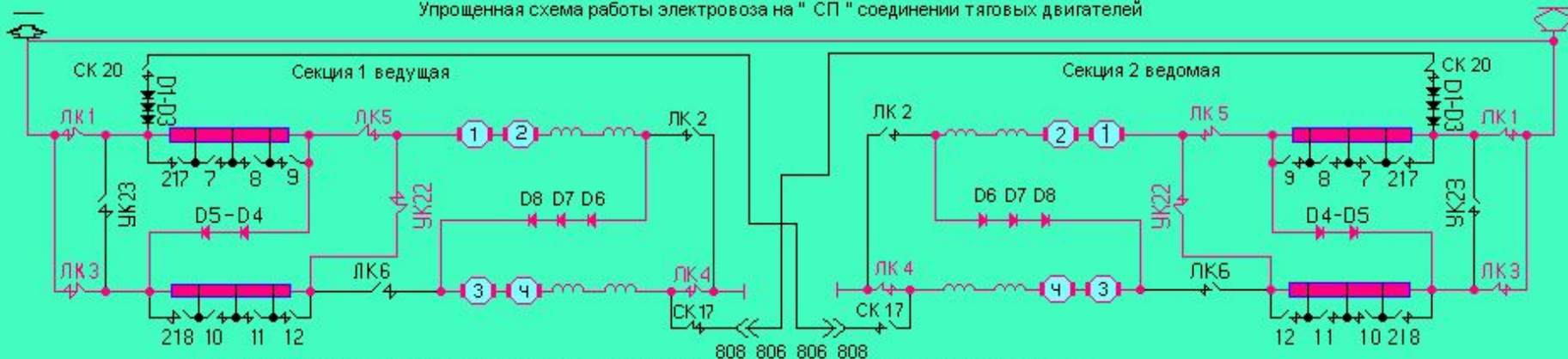
Ведущая 1 секция

№	Линейные (ЛК)						Реостатные (РК)						УК						
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●														●	●			
2	●														●	●			
3	●								●						●	●			
4	●								●	●					●	●			
5	●							●	●						●	●			
6	●							●	●						●	●			
7	●	●													●	●			
8	●	●			●										●	●			
9	●	●			●										●	●			
10	●	●			●										●	●			
11	●	●			●				●						●	●			
12	●	●			●				●						●	●			
13	●	●			●				●				●		●	●			
14	●	●			●				●				●		●	●			
15	●	●			●				●				●		●	●			
16	●	●			●				●				●		●	●			
17	●	●			●				●				●		●	●			
18	●	●			●			●	●				●		●	●			
19	●	●			●			●	●				●		●	●			
20	●	●			●			●	●				●		●	●			
21	●	●	●		●			●	●	●			●		●	●	●		
ХП	●	●	●		●		●	●	●	●	●		●		●	●	●		

Ведомая 2 секция

№	Линейные (ЛК)						Реостатные (РК)						УК						
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1				●											●	●			
2				●											●	●			
3				●											●	●			
4				●					●	●					●	●			
5				●					●	●					●	●			
6				●					●	●					●	●			
7				●											●	●			
8				●											●	●			
9				●											●	●			
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11				●	●										●	●			
12				●	●										●	●			
13				●	●										●	●			
14				●	●										●	●			
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16				●	●										●	●			
17				●	●										●	●			
18				●	●				●	●					●	●			
19				●	●				●	●					●	●			
20				●	●				●	●					●	●			
21				●	●				●	●	●				●	●	●		
ХП				●	●				●	●	●	●			●	●	●		

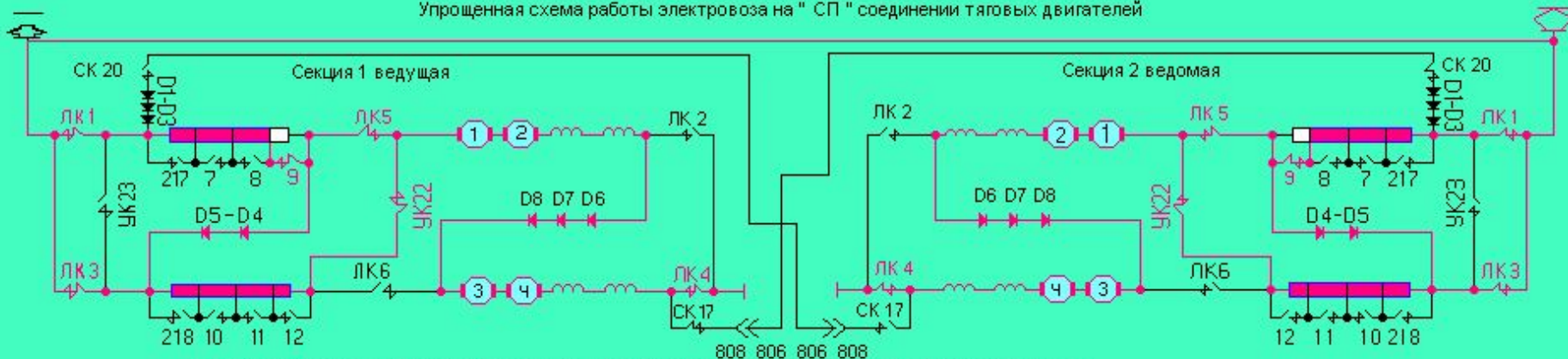
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●									●							
2	●	●	●	●	●	●			●													
3	●	●	●	●	●	●			●				●		●							
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5	●	●	●	●	●	●	●	●					●		●							
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7	●	●	●	●	●	●	●	●					●		●							
8	●	●	●	●	●	●	●	●					●		●							
9	●	●	●	●	●	●	●	●					●		●							
10	●	●	●	●	●	●	●	●	●					●								
11	●	●	●	●	●	●	●	●						●								
12	●	●	●	●	●	●	●	●						●								
13	●	●	●	●	●	●	●	●						●								
14	●	●	●	●	●	●	●	●						●								
15	●	●	●	●	●	●	●	●						●								
ХП	●	●	●	●	●	●	●	●						●								

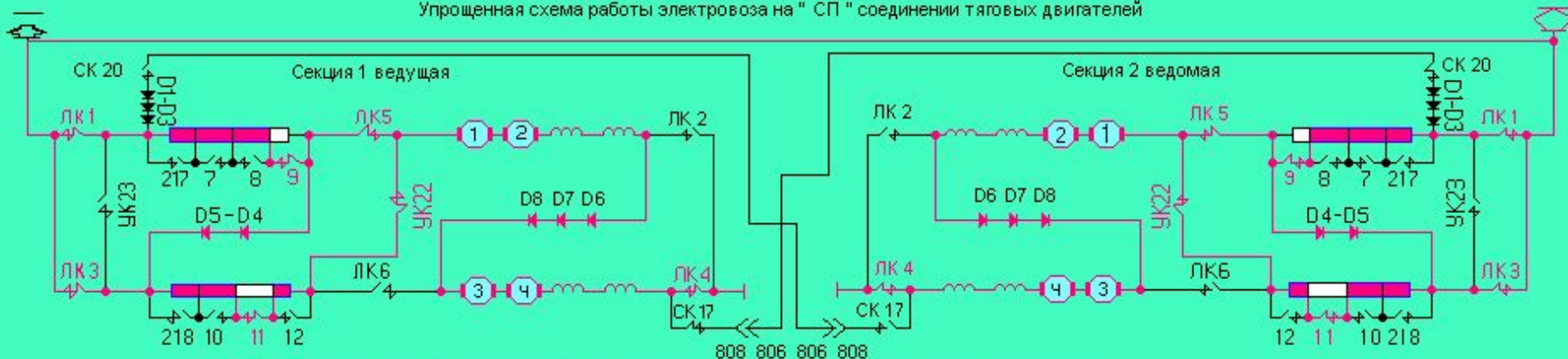
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "СП" тяговых двигателей

№	Линейные (ЛК)						Реостатные (РК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
1	●	●	●	●	●	●									●									
2	●	●	●	●	●	●				●					●									
3	●	●	●	●	●	●				●				●										
4	●	●	●	●	●	●		●						●										
5	●	●	●	●	●	●	●	●						●										
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13	●	●	●	●	●	●			●					●										
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ХП	●	●	●	●	●	●	●	●						●										

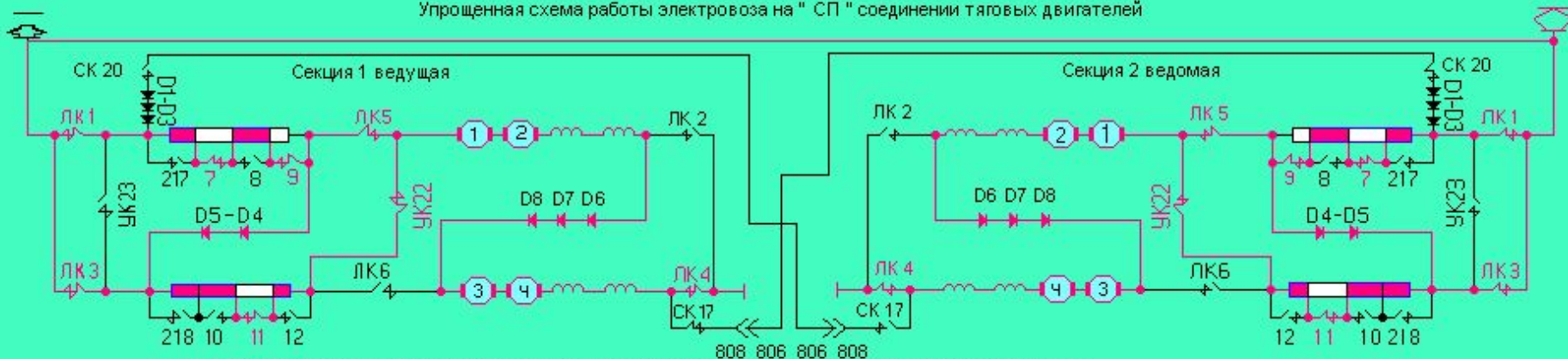
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
1	●		●	●	●										●									
2	●	●	●	●	●				●															
3	●	●	●	●	●				●				●		●									
4	●		●	●	●			●					●		●									
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14	●	●	●	●	●			●						●										
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ХП	●	●	●	●	●		●	●						●										

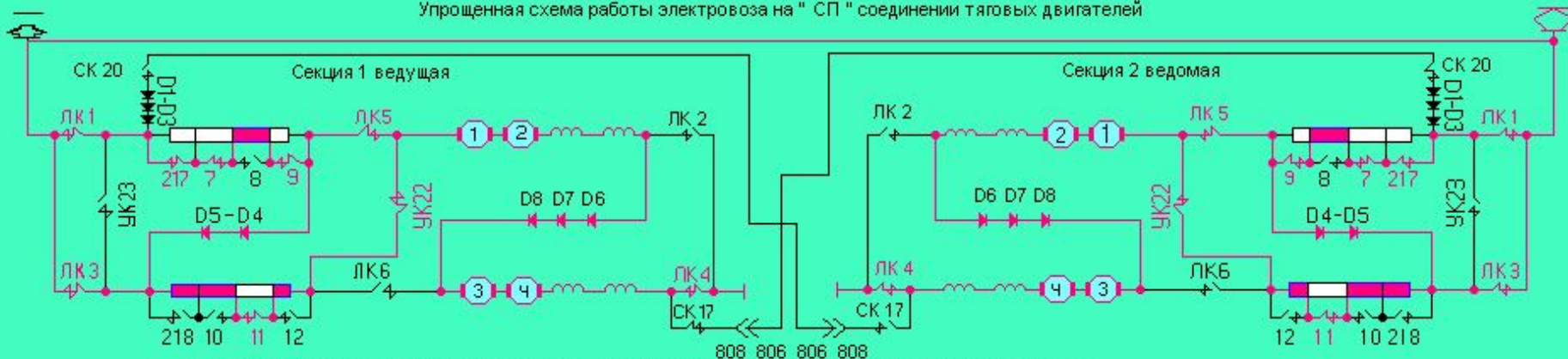
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
1	●			●	●	●										●								
2	●			●	●	●			●															
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4	●			●	●	●		●	●				●	●										
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7	●			●	●	●	●	●	●				●	●										
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ХП	●			●	●	●	●	●	●	●				●	●									

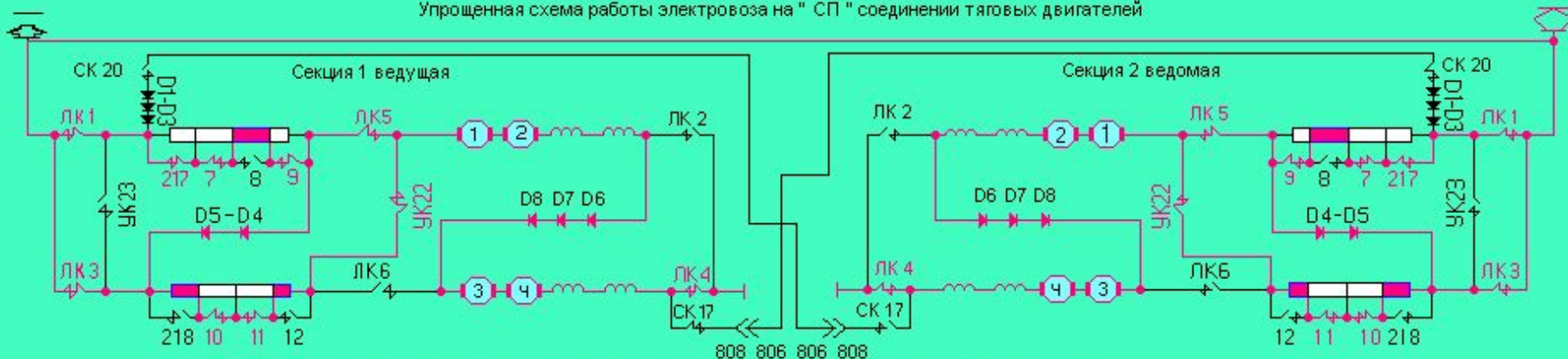
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
1	●			●	●	●										●								
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4	●	●	●	●				●																
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13	●		●	●				●	●					●	●									
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ХП	●		●	●			●	●		●				●	●									

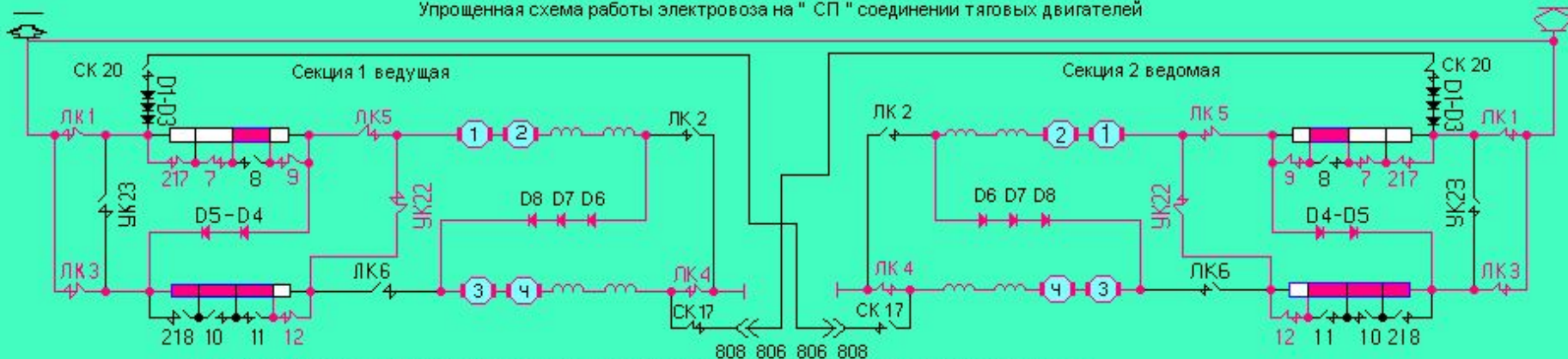
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●			●	●	●									●							
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11	●		●	●	●				●		●			●	●							
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13	●		●	●	●				●					●	●							
14	●		●	●	●			●						●	●							
15	●		●	●	●			●				●		●	●							
ХП	●		●	●	●		●	●	●	●	●	●	●	●	●							

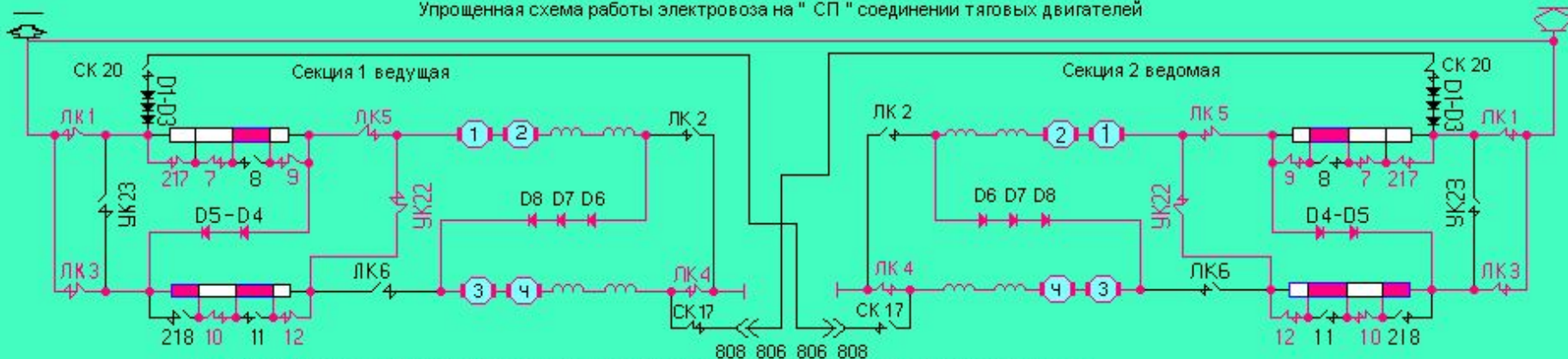
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
1	●			●	●	●									●									
2	●	●							●															
3	●		●	●					●				●		●									
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13	●		●	●				●	●	●			●	●	●									
14	●		●	●				●	●	●			●	●	●									
15	●		●	●				●	●	●			●	●	●									
ХП	●		●	●			●	●	●	●			●	●	●									

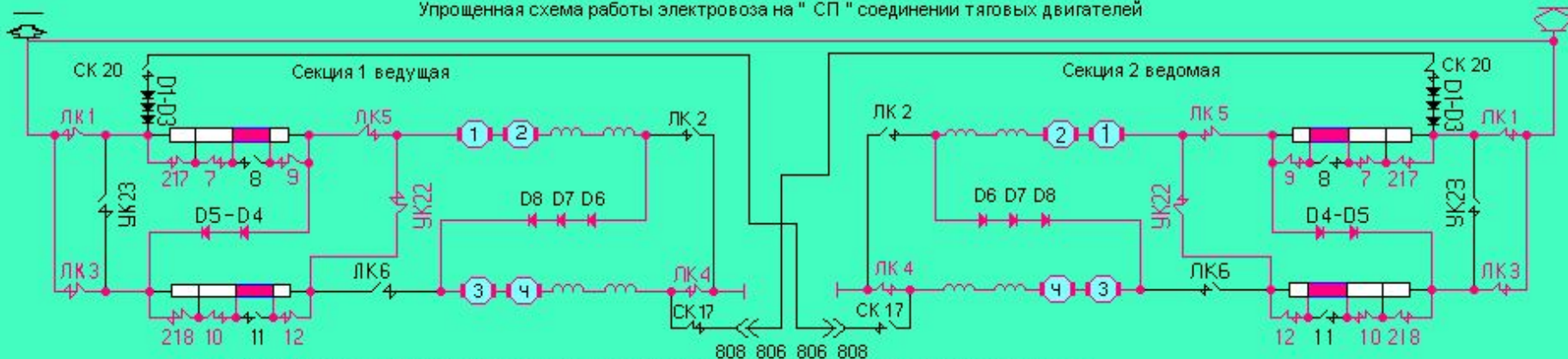
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●			●	●	●									●							
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13	●		●	●	●				●				●	●								
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15	●		●	●	●			●				●	●	●								
ХП	●		●	●	●		●	●		●	●	●	●	●								

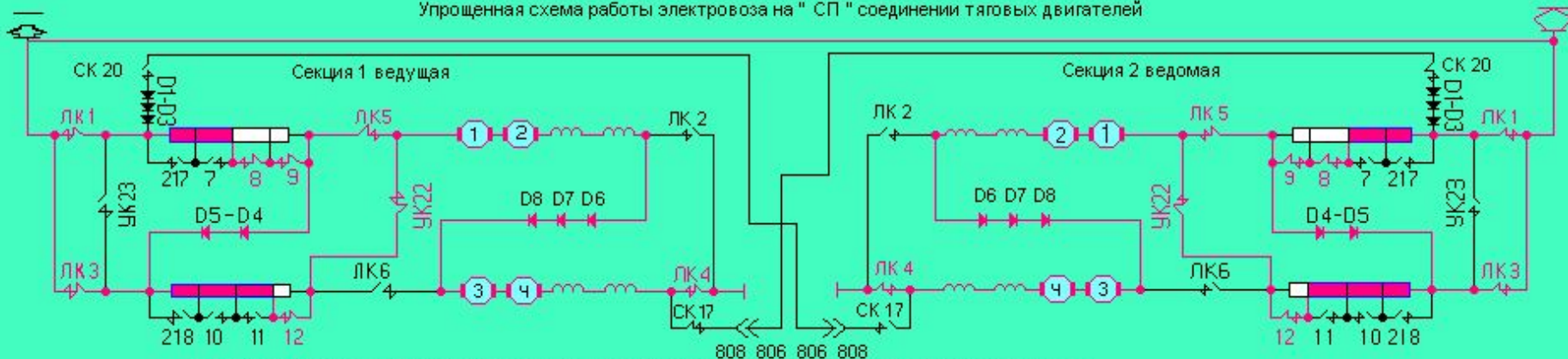
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (СК), уравнительных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (СК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
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ХП	●		●	●			●	●		●	●			●										

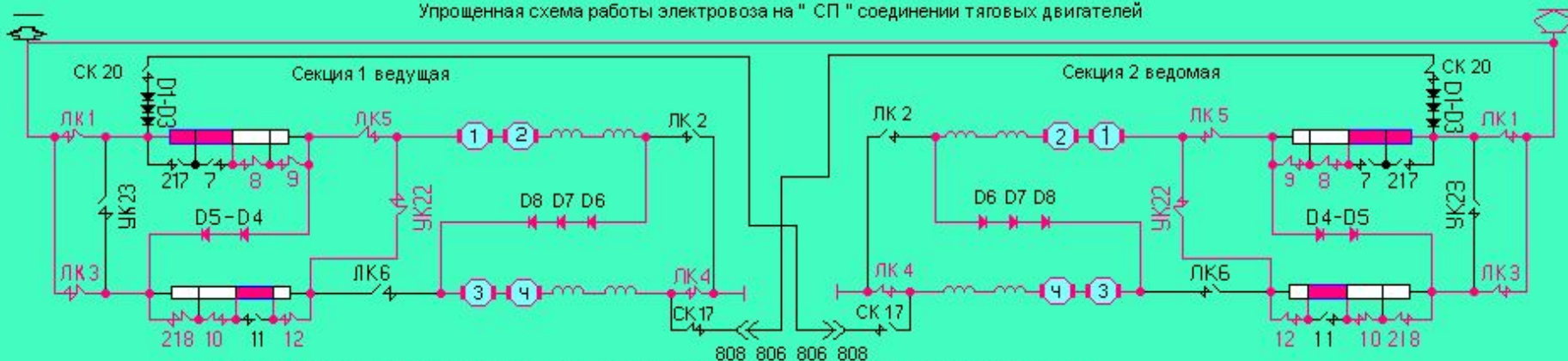
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
1	●			●	●	●									●									
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ХП	●		●	●			●	●	●	●	●	●	●	●	●									

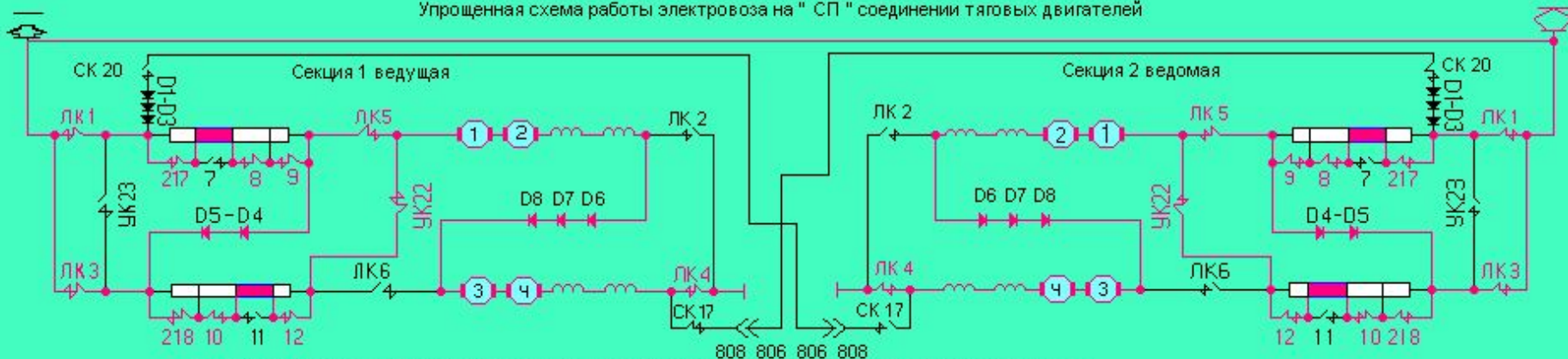
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
1	●			●	●	●									●									
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15	●		●	●				●	●				●		●									
ХП	●		●	●			●	●					●		●									

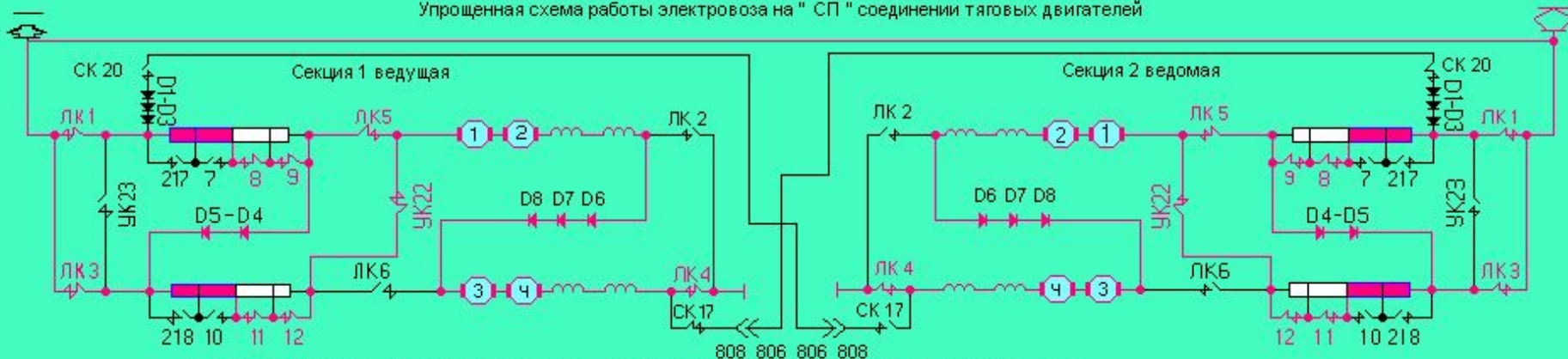
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (СК), уравнильных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (СК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
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12	●		●	●			●	●	●	●	●	●	●	●	●	●	●	●	●					
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14	●		●	●					●	●				●										
15	●		●	●					●	●				●										
ХП	●		●	●			●	●		●	●			●										

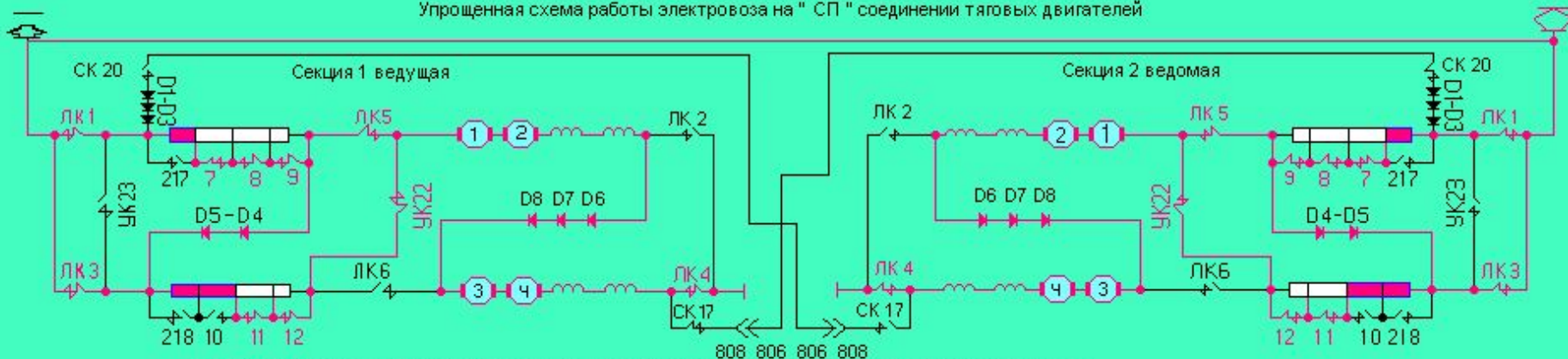
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК					
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24					
1	●			●	●	●									●									
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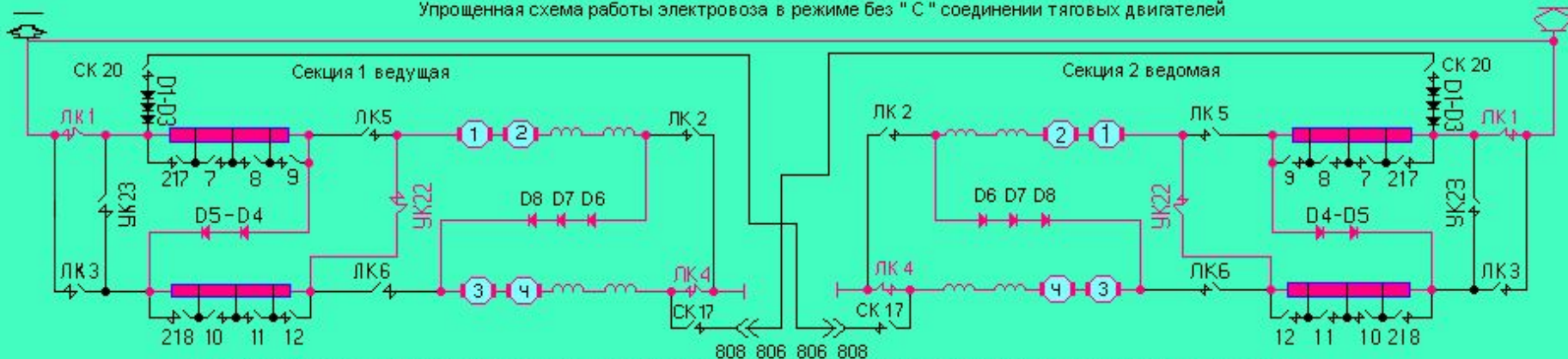
Упрощенная схема работы электровоза на "СП" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "СП" тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●		●	●	●										●							
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ХП	●	●	●	●	●		●	●	●				●	●	●							

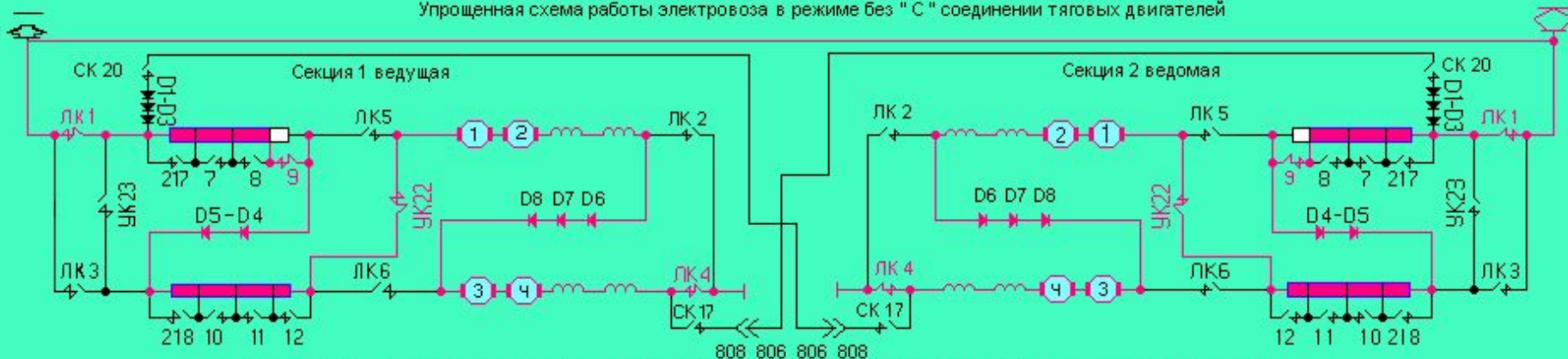
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК		
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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10	●		●	●	●		●	●					●						
11	●		●	●	●		●	●		●			●						
12	●		●	●	●		●	●		●			●						
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17	●		●	●	●		●	●		●			●						
18	●		●	●	●			●	●				●						
19	●		●	●	●			●	●				●						
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ХП	●		●	●	●		●	●		●			●						

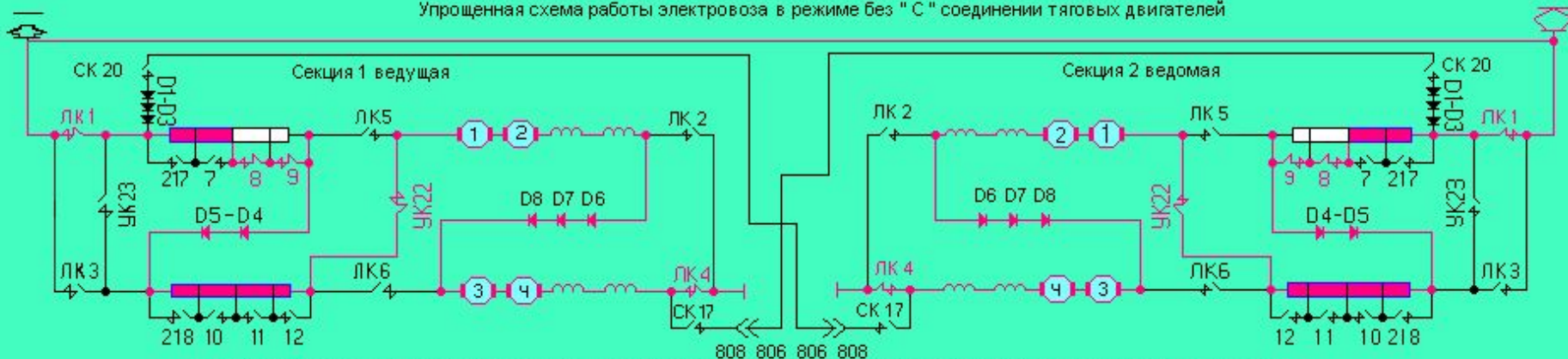
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)											УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●																		
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ХП	●		●	●	●		●	●	●	●			●						

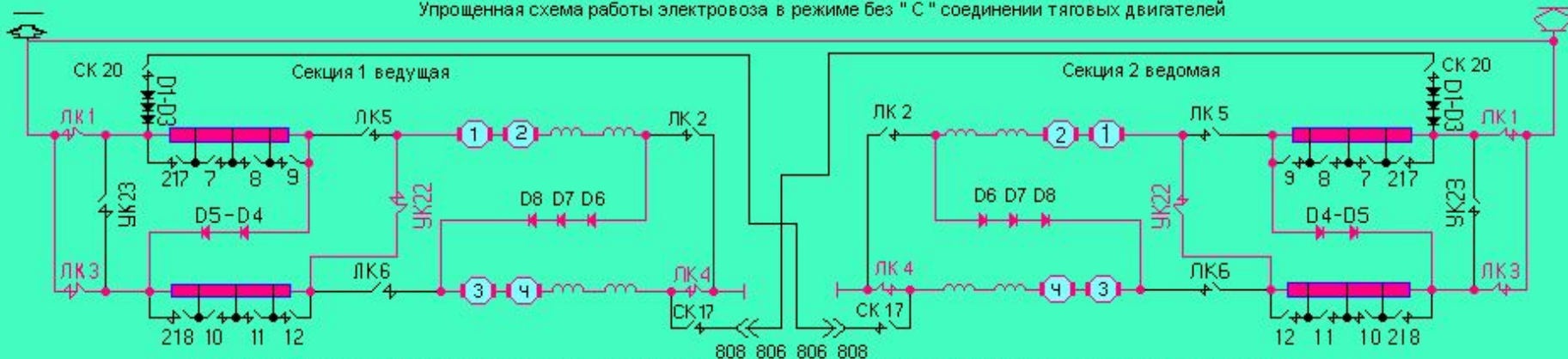
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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13	●		●	●	●		●	●							●		●			
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15	●		●	●	●			●	●						●		●			
16	●		●	●	●			●	●						●		●			
17	●		●	●	●		●	●							●		●			
18	●		●	●	●			●	●						●		●			
19	●		●	●	●			●	●						●		●			
20	●		●	●	●			●	●						●		●			
ХП	●		●	●	●		●	●							●		●			

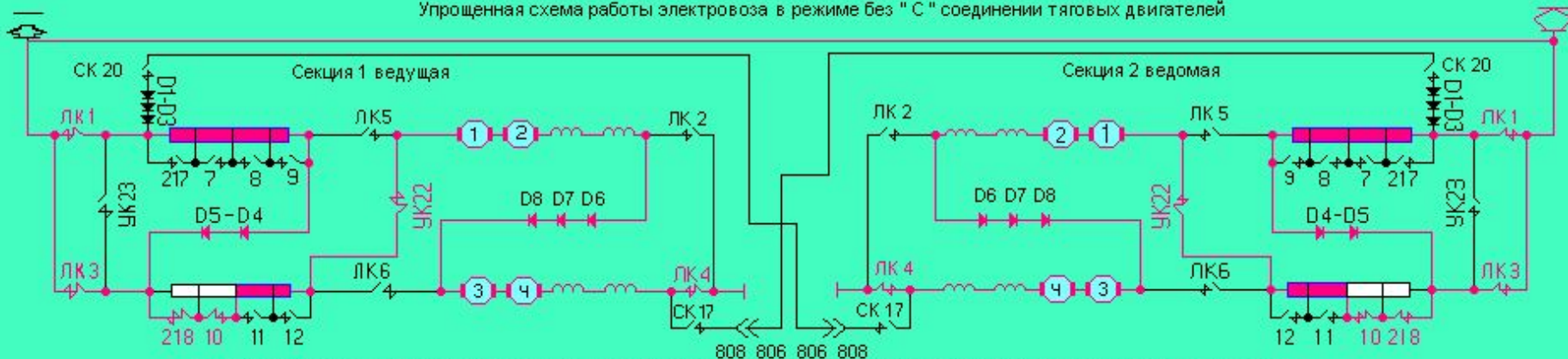
Упрощенная схема работы электровоза в режиме без "С" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнительных (УК) в режиме без "С" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●																			
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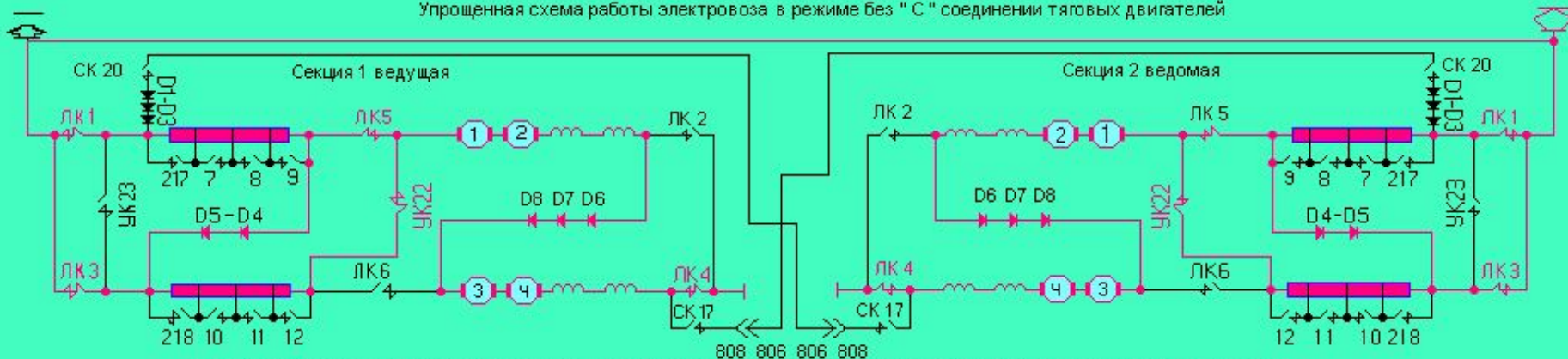
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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12	●		●	●	●		●	●		●				●						
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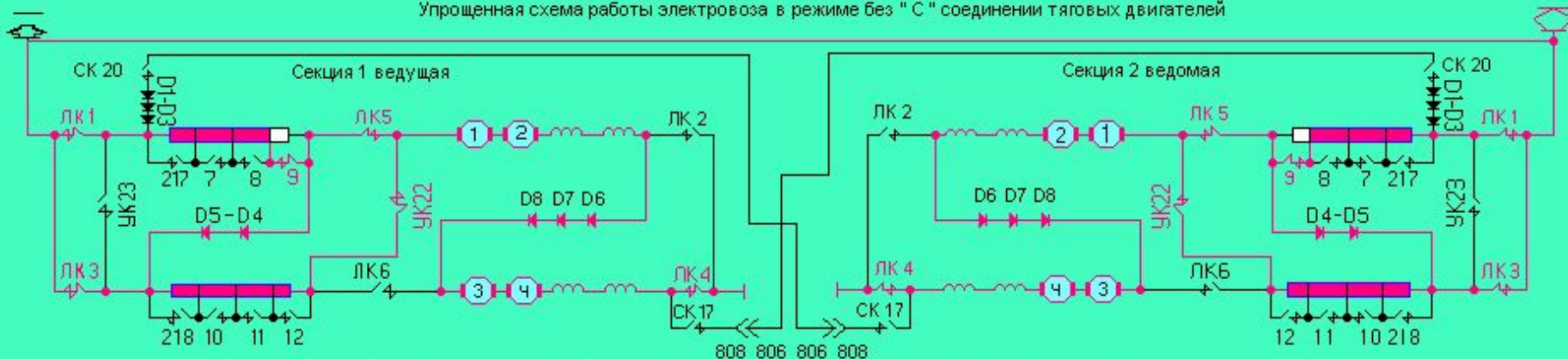
Упрощенная схема работы электровоза в режиме без "С" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●																			
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3	●			●					●	●							●			
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5	●		●	●						●	●						●			
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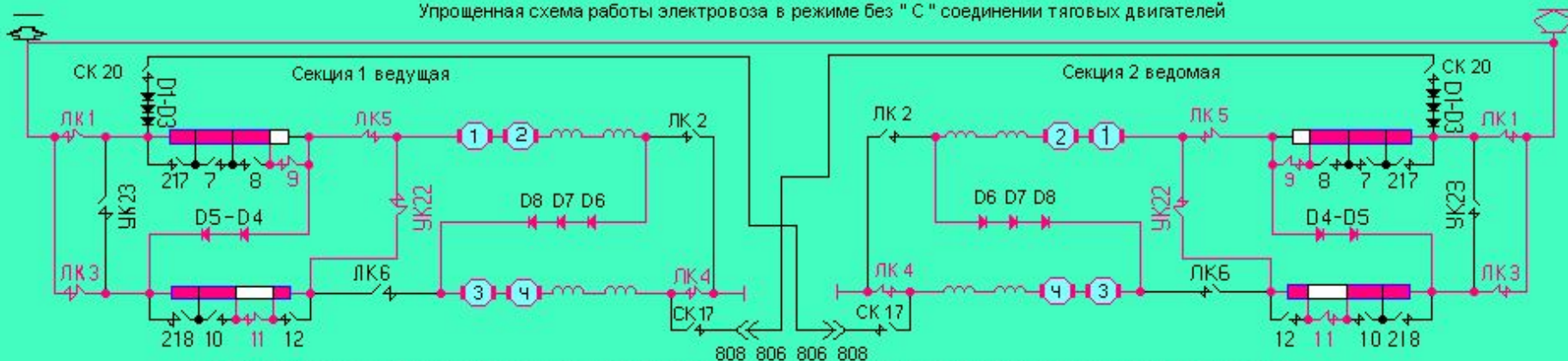
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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ХП	●			●	●	●				●	●			●						

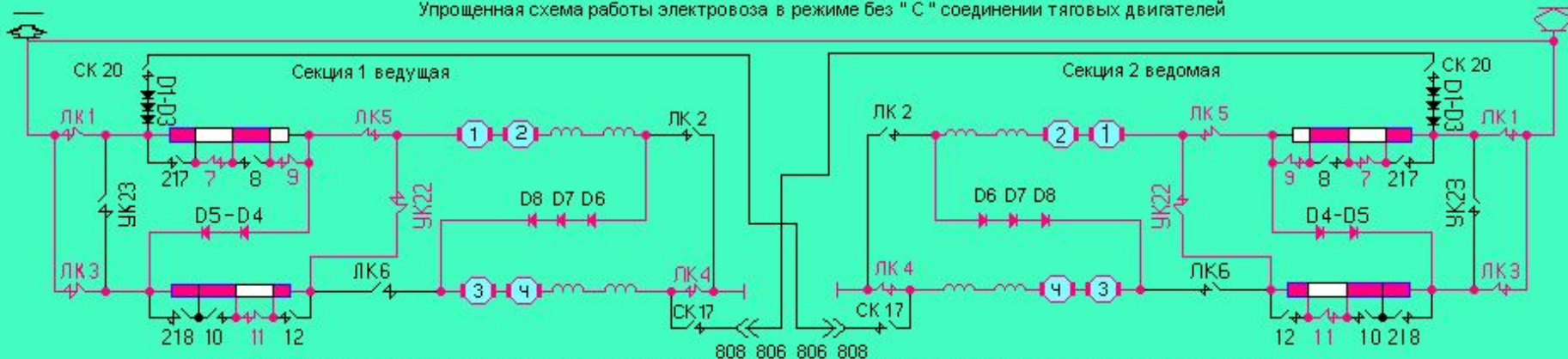
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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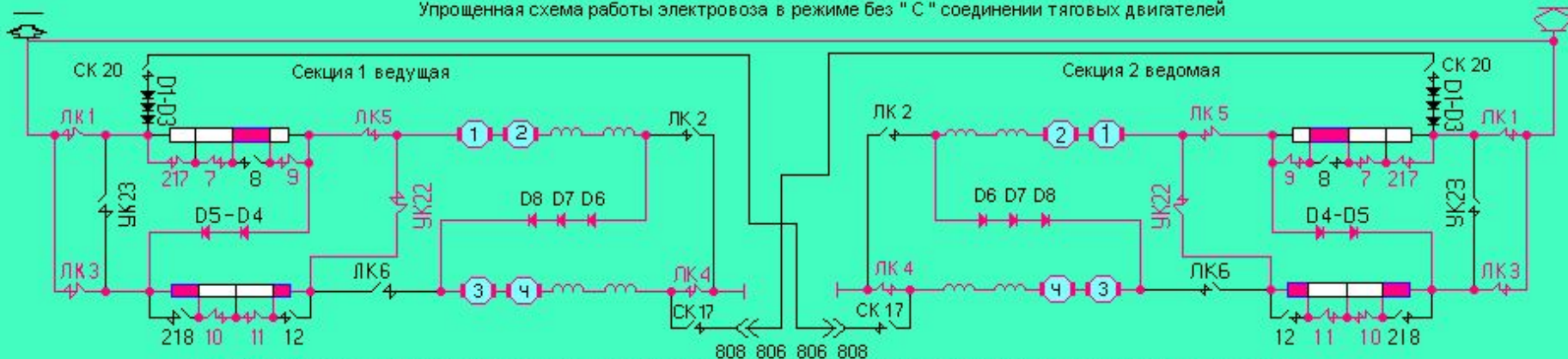
Упрощенная схема работы электровоза в режиме без "С" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнительных (УК) в режиме без "С" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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ХП	●		●	●	●		●	●		●				●		●				

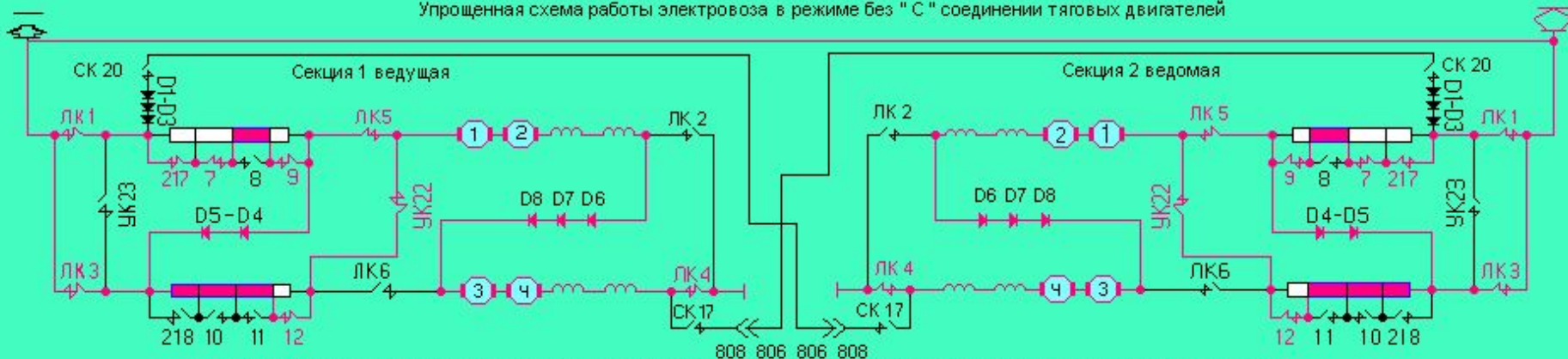
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнивательных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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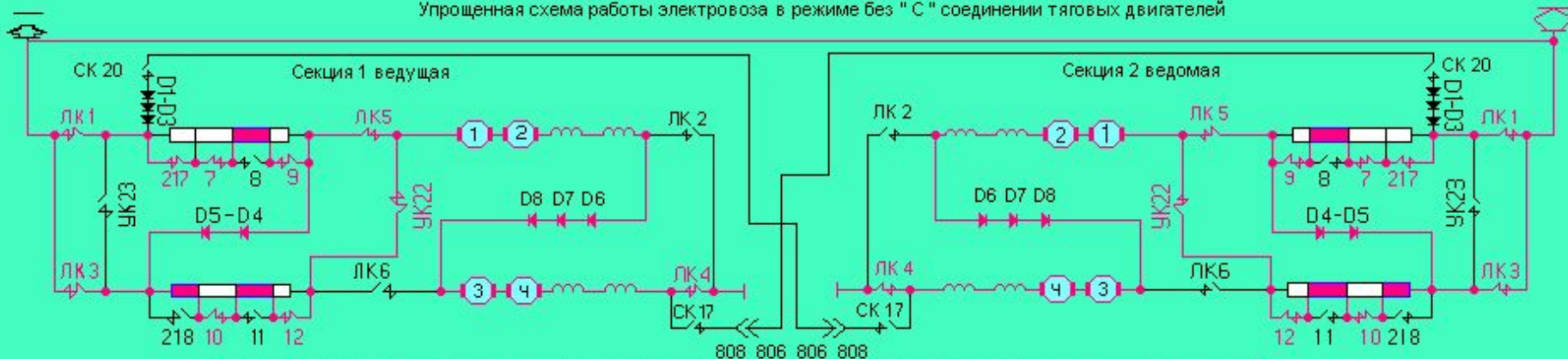
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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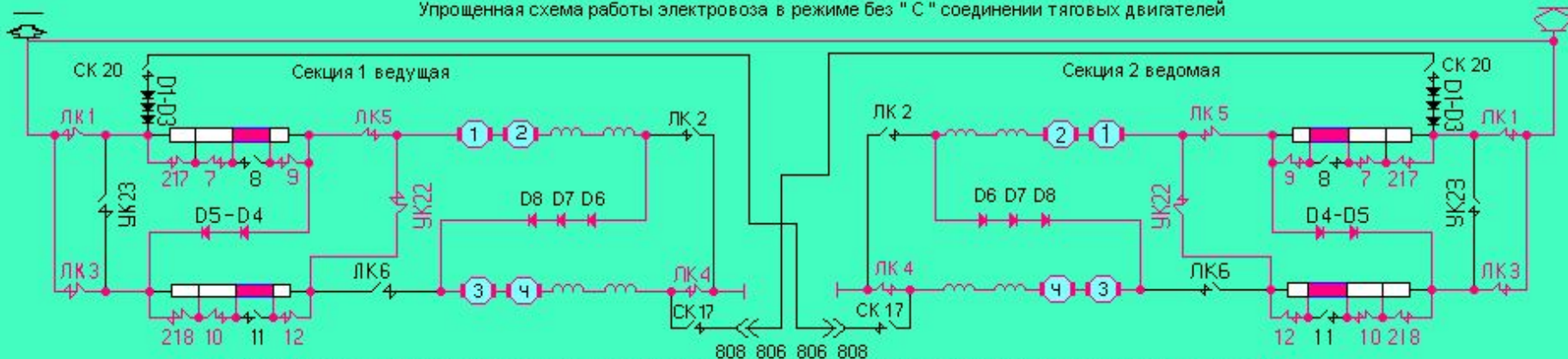
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)										УК		
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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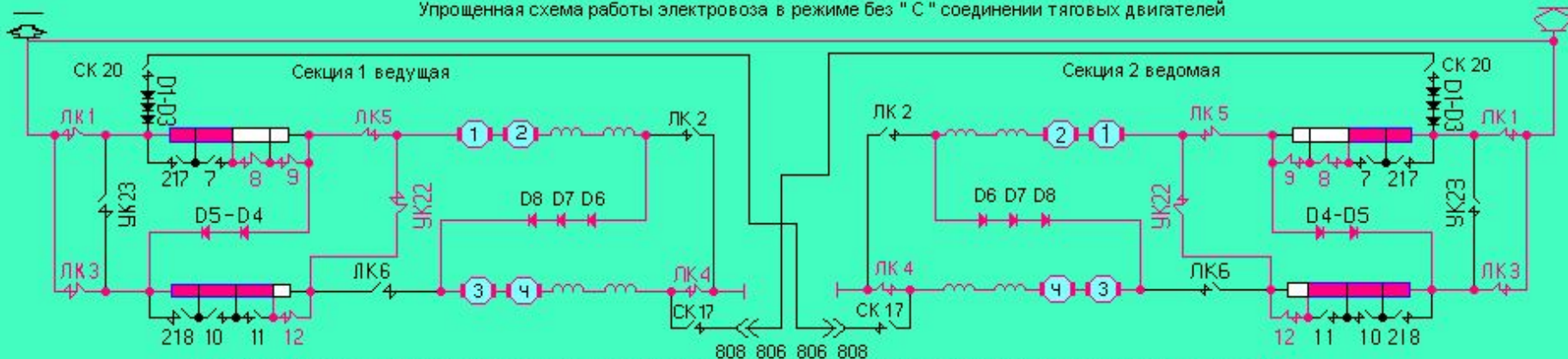
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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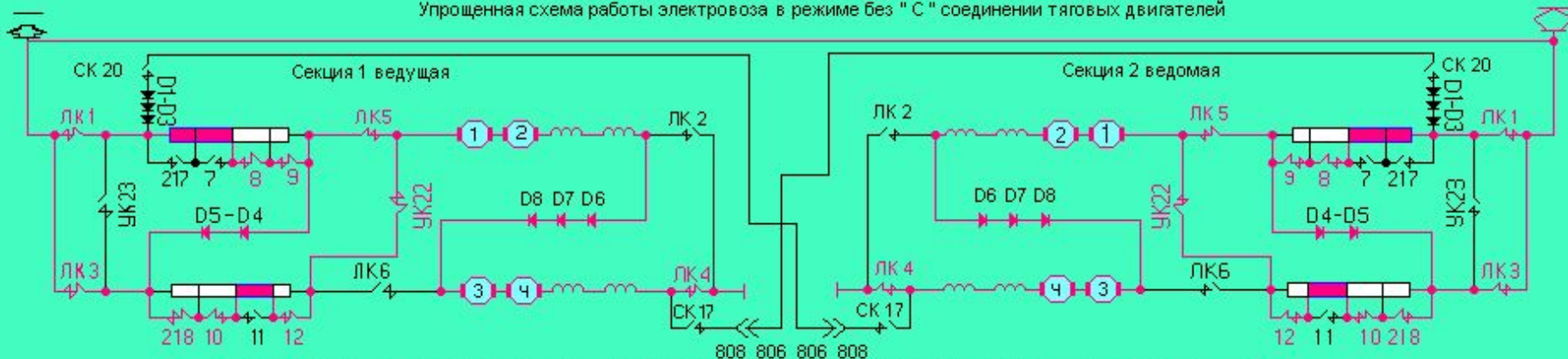
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)										УК		
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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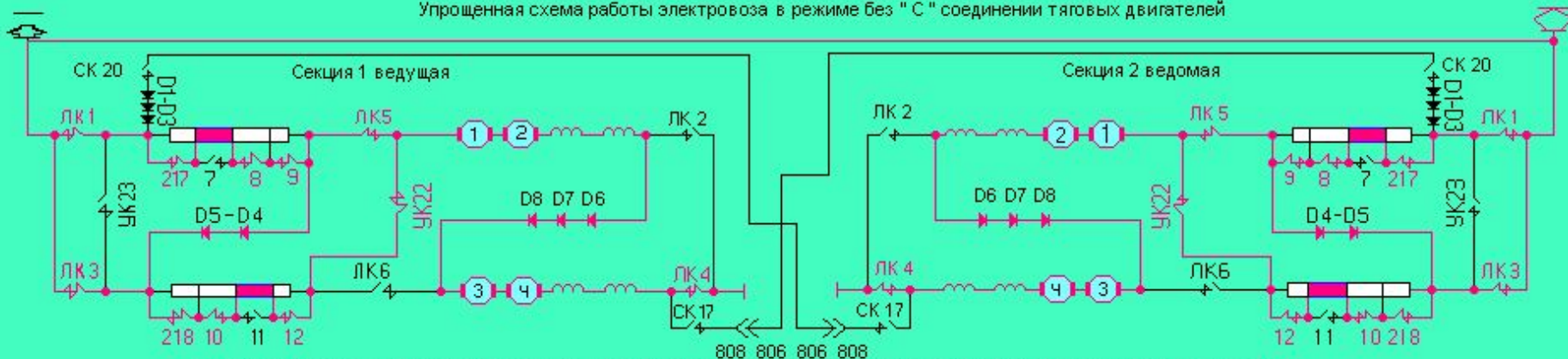
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)										УК		
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
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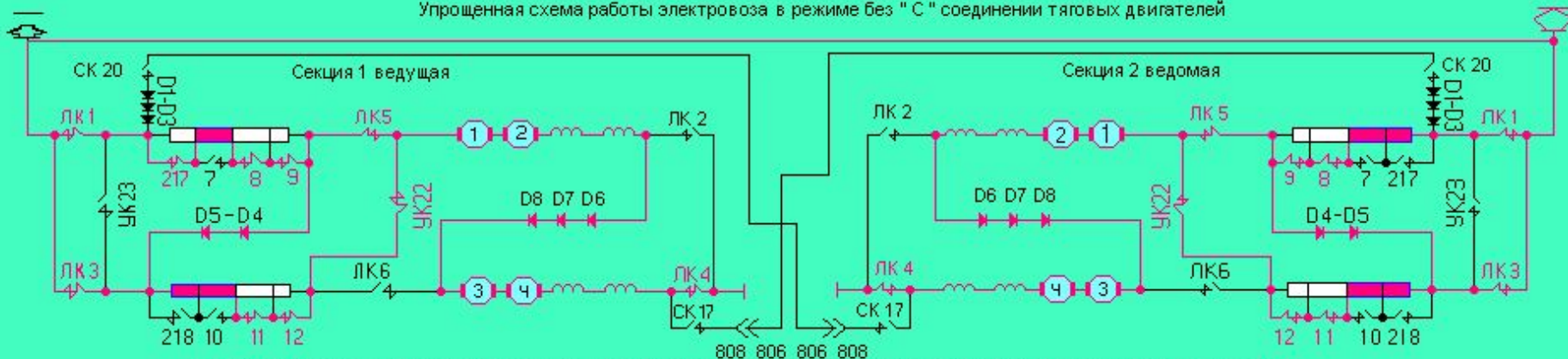
Упрощенная схема работы электровоза в режиме без "С" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) в режиме без "С" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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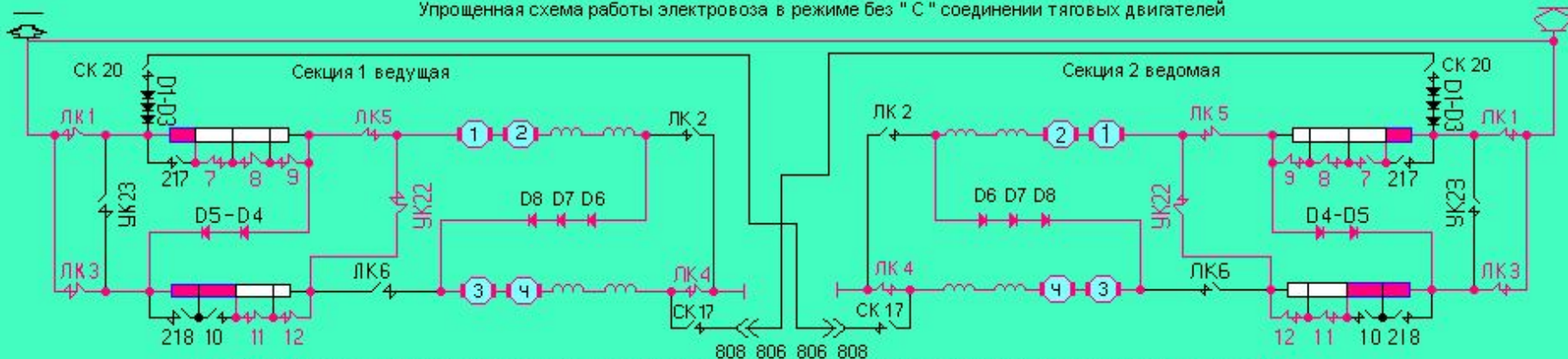
Упрощенная схема работы электровоза в режиме без "С" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнительных (УК) в режиме без "С" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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19	●		●	●	●		●	●		●				●	●	●				
20	●		●	●	●		●	●		●				●	●	●				
ХП	●		●	●	●		●	●		●				●	●	●				

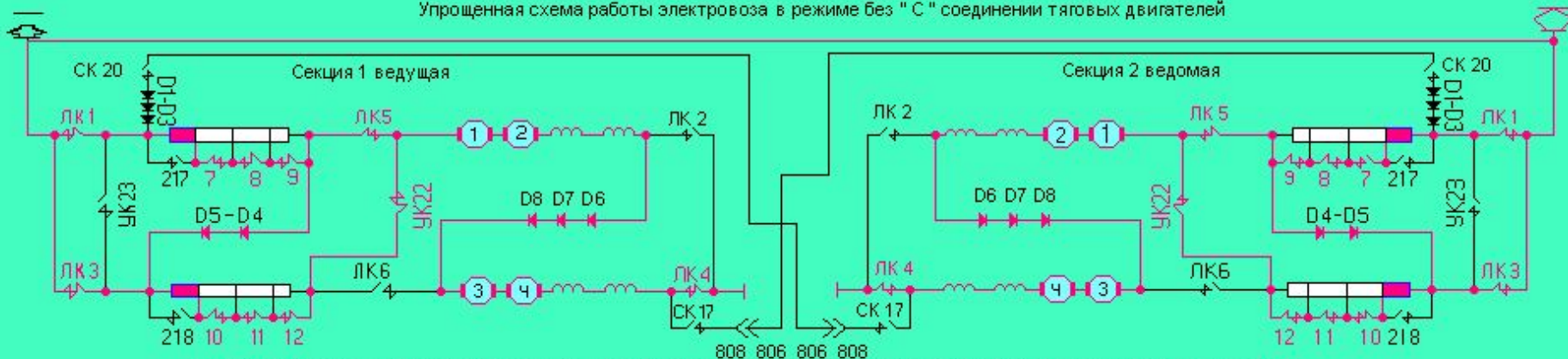
Упрощенная схема работы электровоза в режиме без "С" соединения тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнительных (УК) в режиме без "С" соединения тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●			●						●										
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8	●		●	●	●					●				●						
9	●		●	●	●				●	●				●						
10	●		●	●	●		●	●						●						
11	●		●	●	●		●	●		●				●						
12	●		●	●	●		●	●		●				●						
13	●		●	●	●		●	●		●				●						
14	●		●	●	●		●	●		●				●						
15	●		●	●	●		●	●		●				●						
16	●		●	●	●		●	●		●				●						
17	●		●	●	●		●	●		●				●						
18	●		●	●	●		●	●		●				●						
19	●	●	●	●	●		●	●	●	●				●	●	●				
20	●		●	●	●		●	●		●				●						
ХП	●		●	●	●		●	●		●				●						

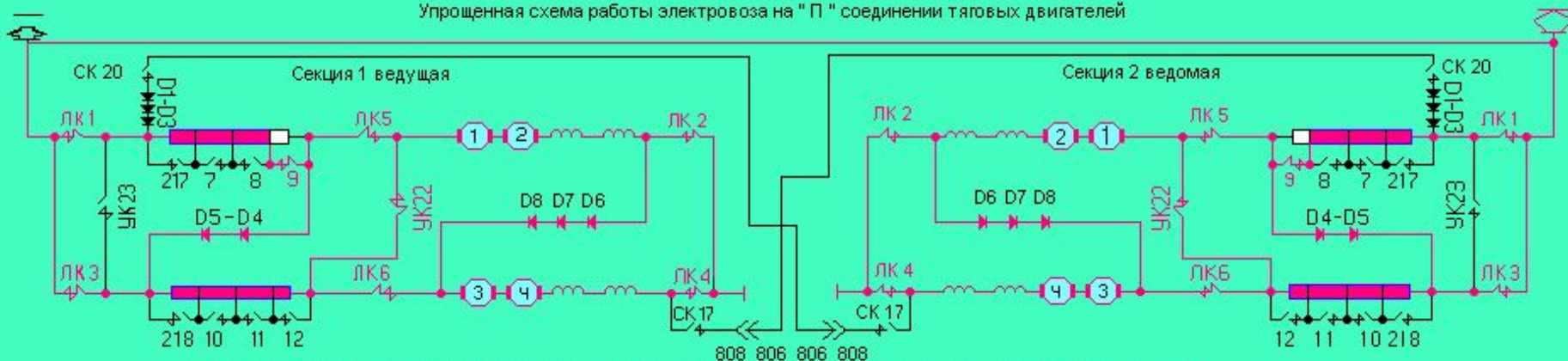
Упрощенная схема работы электровоза в режиме без "С" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (ПК), уравнительных (УК) в режиме без "С" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (ПК)										УК		
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24
1	●			●						●									
2	●			●						●									
3	●			●					●	●									
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6	●		●	●	●														
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8	●		●	●	●					●				●					
9	●		●	●	●				●	●				●					
10	●		●	●	●		●	●						●					
11	●		●	●	●		●	●		●				●					
12	●		●	●	●		●	●		●				●					
13	●		●	●	●		●	●		●				●					
14	●		●	●	●		●	●		●				●					
15	●		●	●	●		●	●		●				●					
16	●		●	●	●		●	●		●				●					
17	●		●	●	●		●	●		●				●					
18	●		●	●	●		●	●		●				●					
19	●		●	●	●		●	●		●				●					
20	●		●	●	●		●	●		●				●					
ХП	●		●	●	●		●	●		●				●					

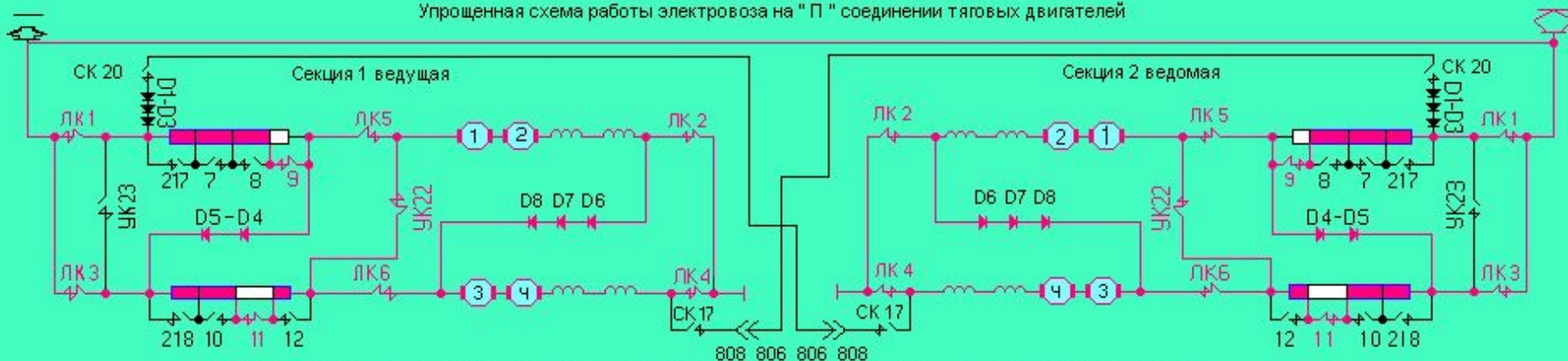
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)											УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24		
1	●	●	●	●	●	●			●						●						
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6	●	●	●	●	●	●	●														
7	●	●	●	●	●	●	●	●			●										
8	●	●	●	●	●	●	●	●			●	●									
9	●	●	●	●	●	●			●					●							
10	●	●	●	●	●	●			●	●	●			●							
11	●	●	●	●	●	●			●	●				●							
12	●	●	●	●	●	●			●	●				●							
13	●	●	●	●	●	●		●	●				●								
14	●	●	●	●	●	●		●	●		●			●							
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						

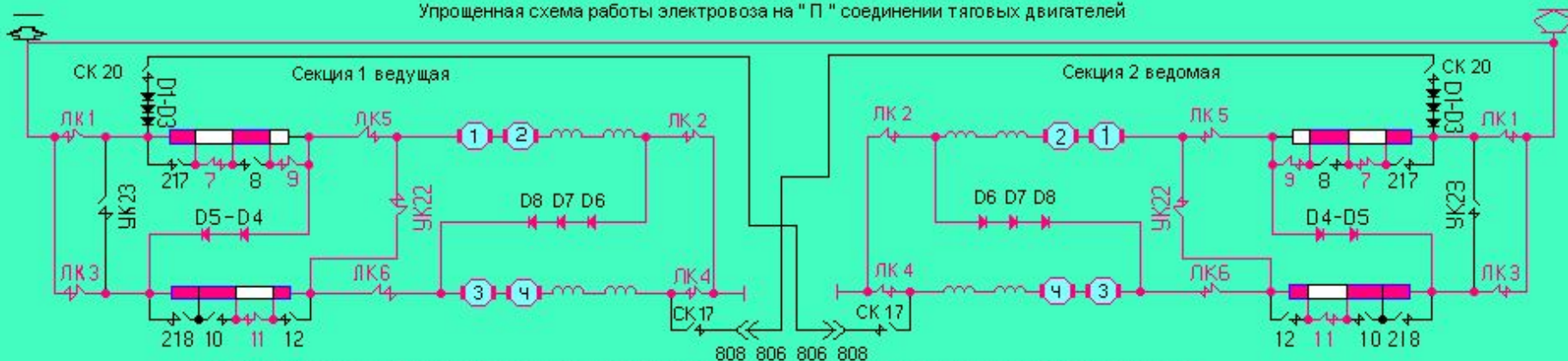
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●			●						●							
2	●	●	●	●	●	●			●				●		●							
3	●	●	●	●	●	●		●		●			●		●							
4	●	●	●	●	●	●	●	●					●		●							
5	●	●	●	●	●	●	●	●			●	●			●							
6	●	●	●	●	●	●	●	●			●	●			●							
7	●	●	●	●	●	●	●	●			●	●			●							
8	●	●	●	●	●	●	●	●			●	●			●							
9	●	●	●	●	●	●	●	●			●	●			●							
10	●	●	●	●	●	●	●	●			●	●			●							
11	●	●	●	●	●	●	●	●			●	●			●							
12	●	●	●	●	●	●	●	●			●	●			●							
13	●	●	●	●	●	●	●	●			●	●			●							
14	●	●	●	●	●	●	●	●			●	●			●							
ХП	●	●	●	●	●	●	●	●			●	●			●							

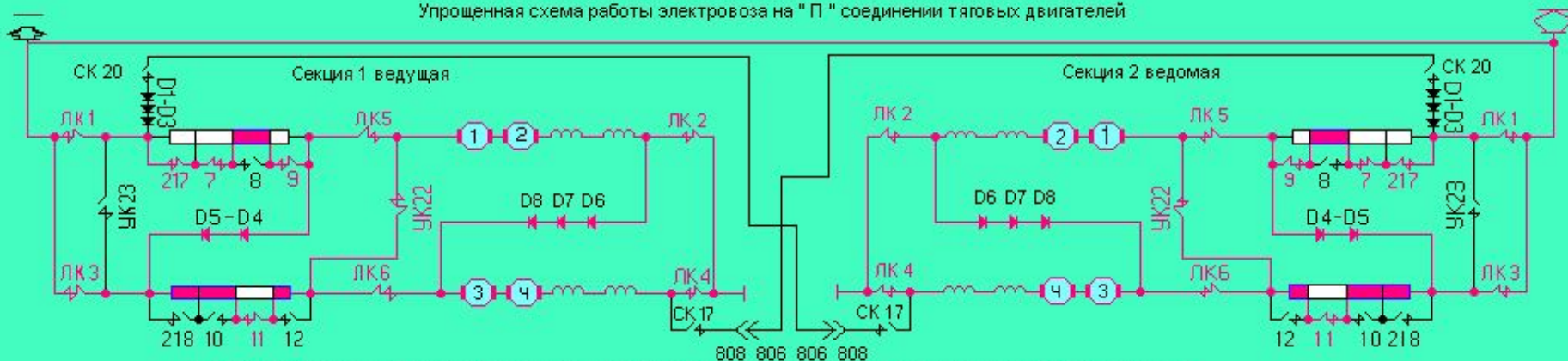
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●				●					●							
2	●	●	●	●	●	●							●									
3	●	●	●	●	●	●	●		●				●		●							
4	●	●	●	●	●	●	●	●					●		●							
5	●	●	●	●	●	●	●	●		●				●								
6	●	●	●	●	●	●	●	●		●	●			●								
7	●	●	●	●	●	●	●	●		●	●	●		●								
8	●	●	●	●	●	●	●	●		●	●	●	●	●								
9	●	●	●	●	●	●	●	●		●	●	●	●	●								
10	●	●	●	●	●	●	●	●		●	●	●	●	●								
11	●	●	●	●	●	●	●	●		●	●	●	●	●								
12	●	●	●	●	●	●	●	●		●	●	●	●	●								
13	●	●	●	●	●	●	●	●		●	●	●	●	●								
14	●	●	●	●	●	●	●	●		●	●	●	●	●								
ХП	●	●	●	●	●	●	●	●		●	●	●	●	●								

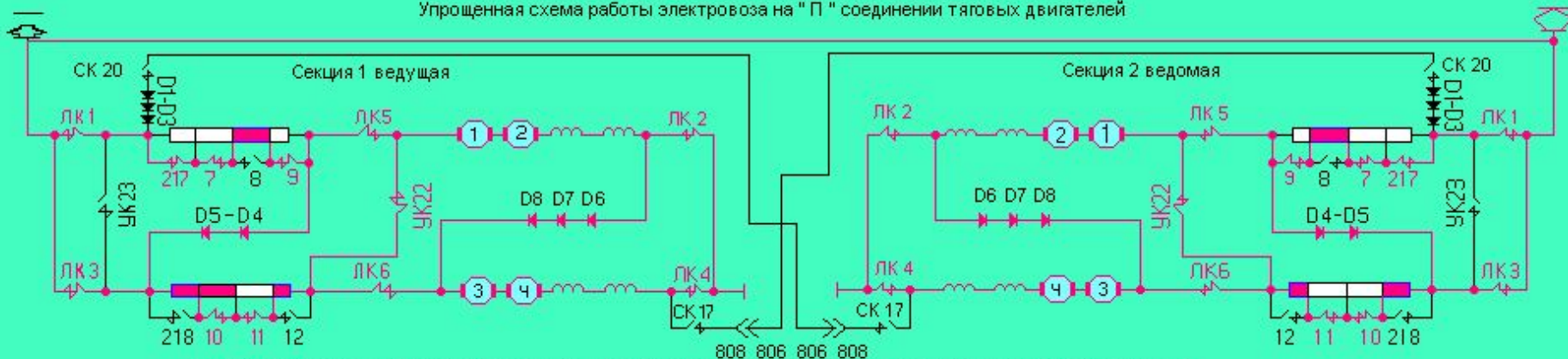
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●				●					●							
2	●	●	●	●	●	●							●									
3	●	●	●	●	●	●		●		●			●		●							
4	●	●	●	●	●	●	●	●		●			●		●							
5	●	●	●	●	●	●	●	●		●		●		●								
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7	●	●	●	●	●	●				●	●	●	●	●	●							
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9	●	●	●	●	●	●			●	●	●	●	●	●	●							
10	●	●	●	●	●	●			●	●	●	●	●	●	●							
11	●	●	●	●	●	●			●	●	●	●	●	●	●							
12	●	●	●	●	●	●			●	●	●	●	●	●	●							
13	●	●	●	●	●	●		●	●	●	●	●	●	●	●							
14	●	●	●	●	●	●		●	●	●	●	●	●	●	●							
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							

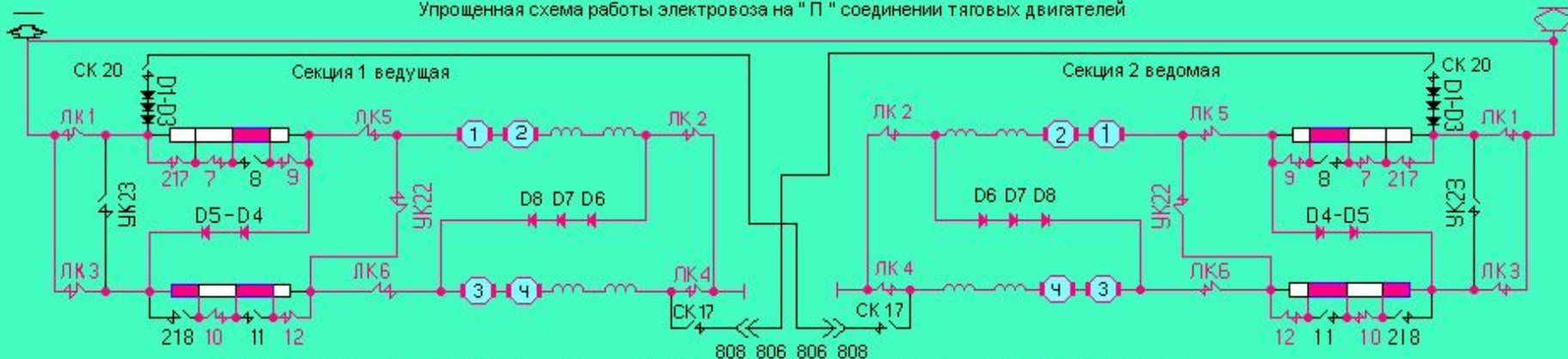
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●				●					●							
2	●	●	●	●	●	●							●									
3	●	●	●	●	●	●		●		●			●		●							
4	●	●	●	●	●	●																
5	●	●	●	●	●	●	●	●		●		●	●	●	●							
6	●	●	●	●	●	●	●	●		●				●	●							
7	●	●	●	●	●	●						●										
8	●	●	●	●	●	●	●	●			●	●		●	●							
9	●	●	●	●	●	●			●					●	●							
10	●	●	●	●	●	●			●	●	●	●		●	●							
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12	●	●	●	●	●	●			●					●	●							
13	●	●	●	●	●	●		●	●				●	●								
14	●	●	●	●	●	●			●	●				●	●							
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							

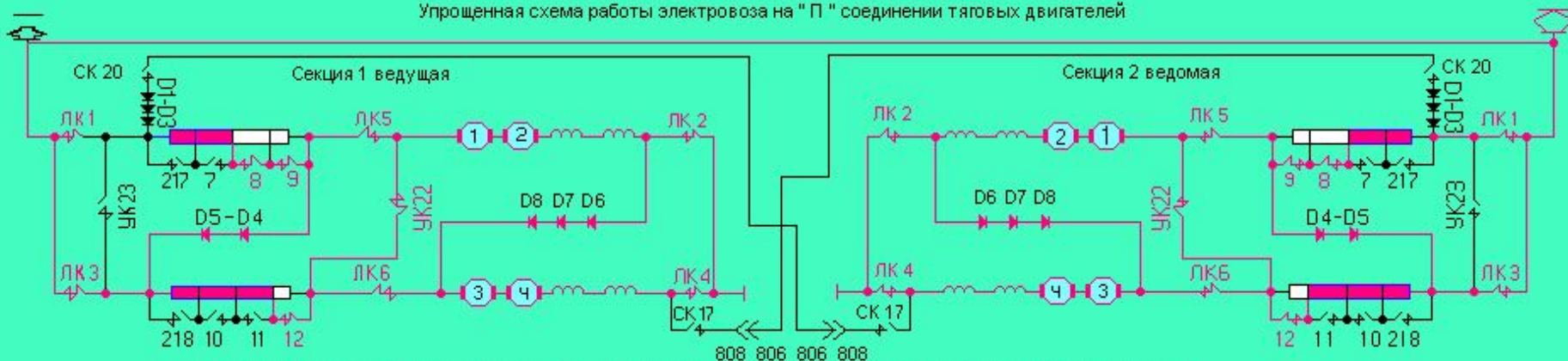
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●			●						●							
2	●	●	●	●	●	●							●									
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5	●	●	●	●	●	●	●	●				●	●									
6	●	●	●	●	●	●	●	●						●								
7	●	●	●	●	●	●	●	●	●		●			●	●							
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9	●	●	●	●	●	●		●	●					●	●							
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12	●	●	●	●	●	●		●	●	●				●	●							
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ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							

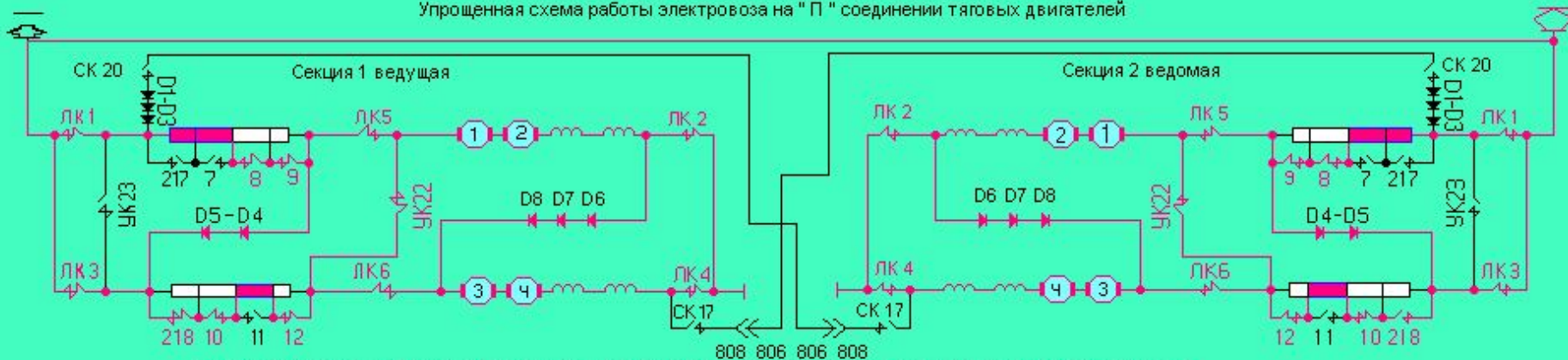
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●				●					●							
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3	●	●	●	●	●	●		●		●			●		●							
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5	●	●	●	●	●	●	●	●			●	●			●							
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9	●	●	●	●	●	●		●	●					●	●							
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12	●	●	●	●	●	●			●	●			●	●								
13	●	●	●	●	●	●		●	●				●	●								
14	●	●	●	●	●	●		●	●		●	●		●	●							
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							

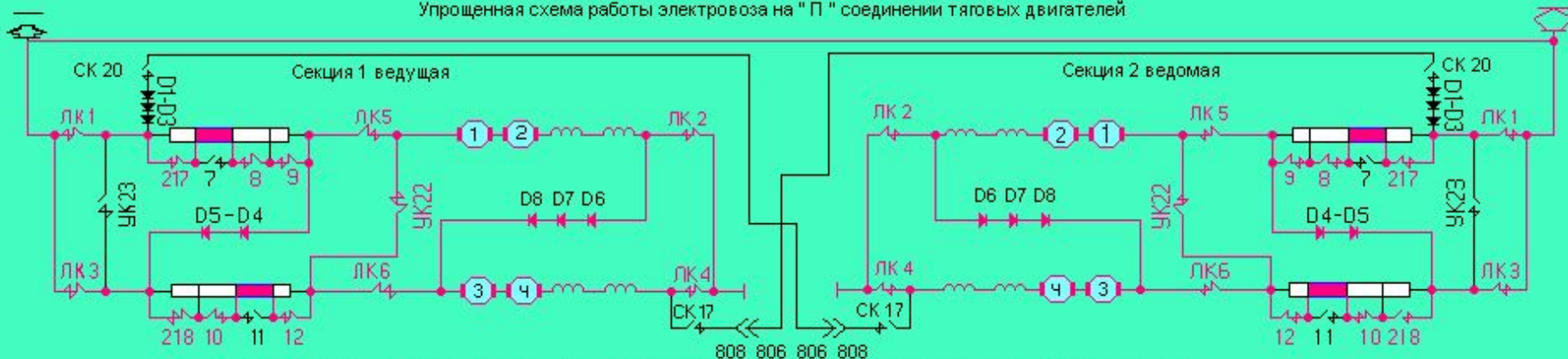
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●			●						●							
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12	●	●	●	●	●	●			●	●	●	●		●	●							
13	●	●	●	●	●	●			●	●	●	●		●	●							
14	●	●	●	●	●	●			●	●	●	●		●	●							
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							

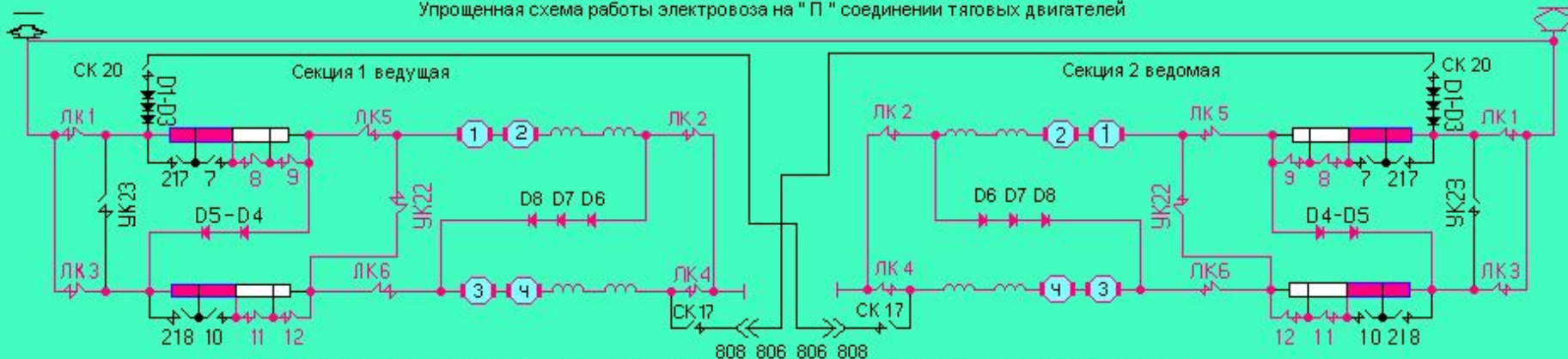
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●				●					●							
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13	●	●	●	●	●	●		●	●						●							
14	●	●	●	●	●	●		●	●		●				●							
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							

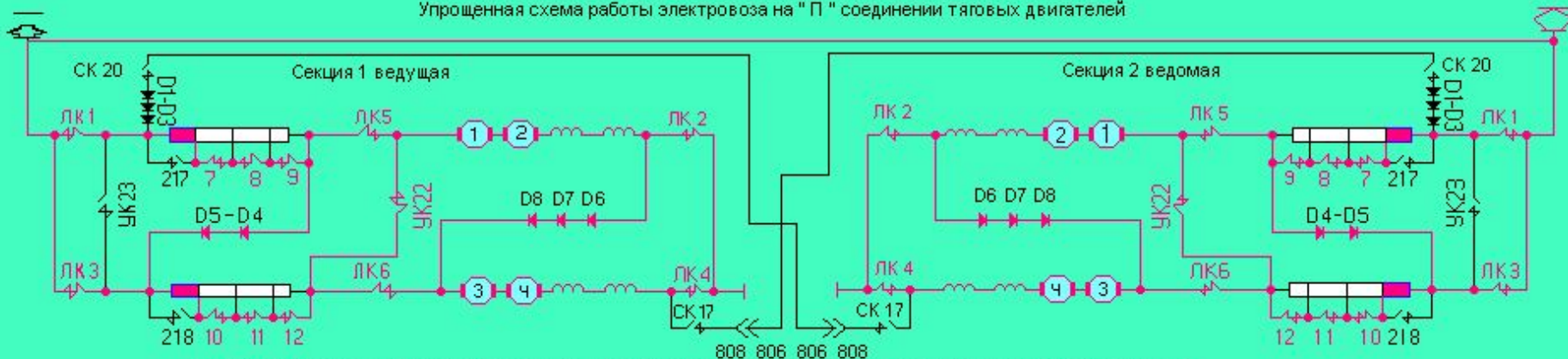
Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●				●					●							
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4	●	●	●	●	●	●	●	●							●							
5	●	●	●	●	●	●	●	●			●				●							
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7	●	●	●	●	●	●	●	●			●				●							
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9	●	●	●	●	●	●			●						●							
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11	●	●	●	●	●	●	●	●	●						●							
12	●	●	●	●	●	●		●	●				●	●	●							
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14	●	●	●	●	●	●		●	●			●			●							
ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							

Упрощенная схема работы электровоза на "П" соединении тяговых двигателей



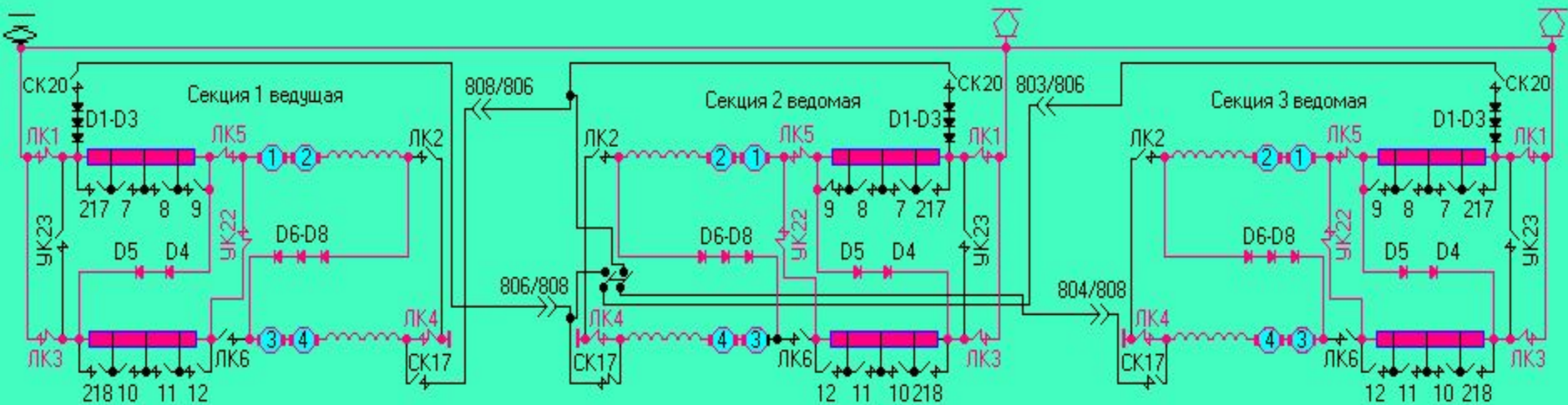
Порядок включения линейных (ЛК), реостатных (РК), уравнивательных (УК) на "П" соединении тяговых двигателей

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК			
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24			
1	●	●	●	●	●	●				●					●							
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ХП	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							

Трех секционный вариант

Упрощенная схема трех секционного сцепа на «СП» соединении тяговых двигателей (4 двигателя последовательно)

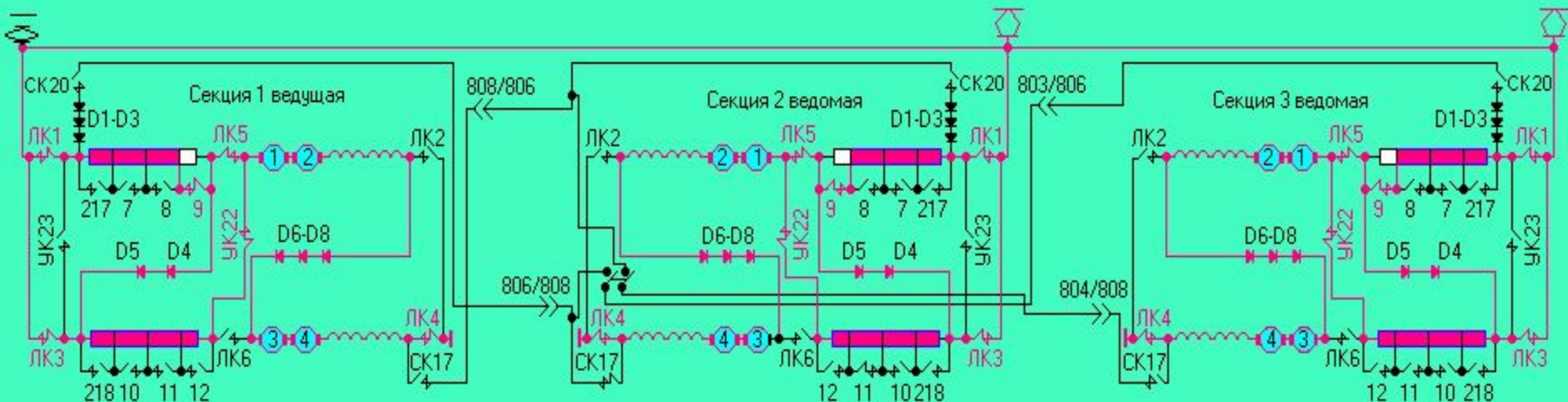
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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11	●		●	●	●		●	●	●	●	●	●		●		●				
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14	●		●	●	●		●	●	●	●	●	●		●		●				
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ХП	●		●	●	●		●	●	●	●	●	●		●		●				

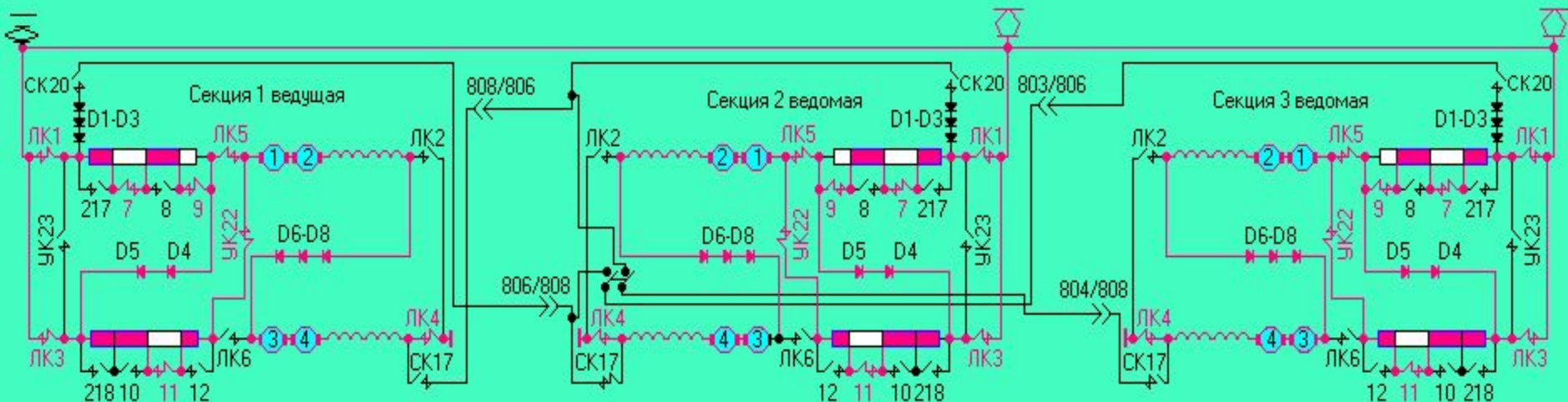
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
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ХП	●			●	●	●	●	●		●			●	●	●					

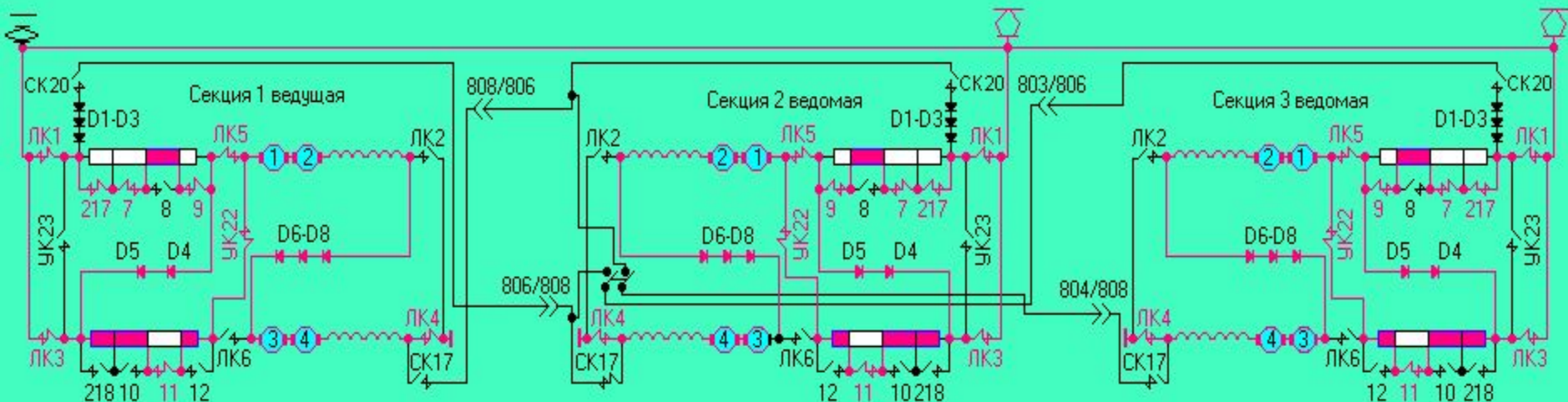
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№	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●		●	●	●										●					
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6	●	●	●	●		●	●	●	●		●	●		●	●					
7	●	●	●	●		●	●	●	●					●	●					
8	●	●	●	●		●	●	●	●		●	●		●	●					
9	●	●	●	●		●	●		●	●	●			●	●					
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12	●	●	●	●		●	●	●	●	●	●			●	●					
13	●	●	●	●			●	●	●	●	●			●	●					
14	●	●	●	●			●	●	●	●	●			●	●					
15	●	●	●	●			●	●	●	●	●			●	●					
ХП	●	●	●	●		●	●	●	●	●	●	●	●	●	●					

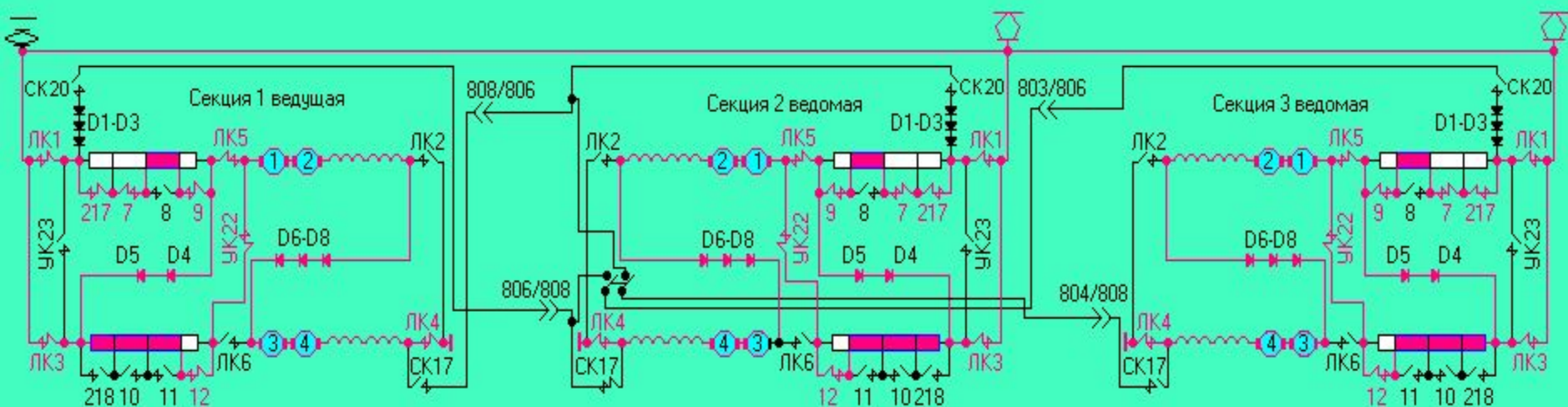
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№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
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1	●		●	●	●										●					
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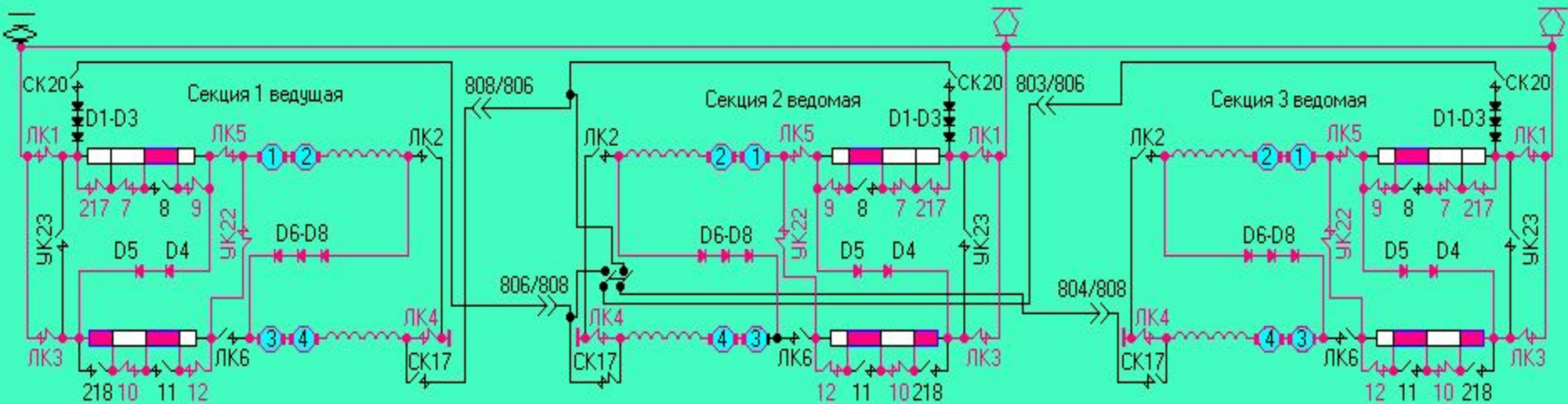
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№	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●		●	●	●										●					
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ХП	●	●	●	●			●	●	●			●		●	●					

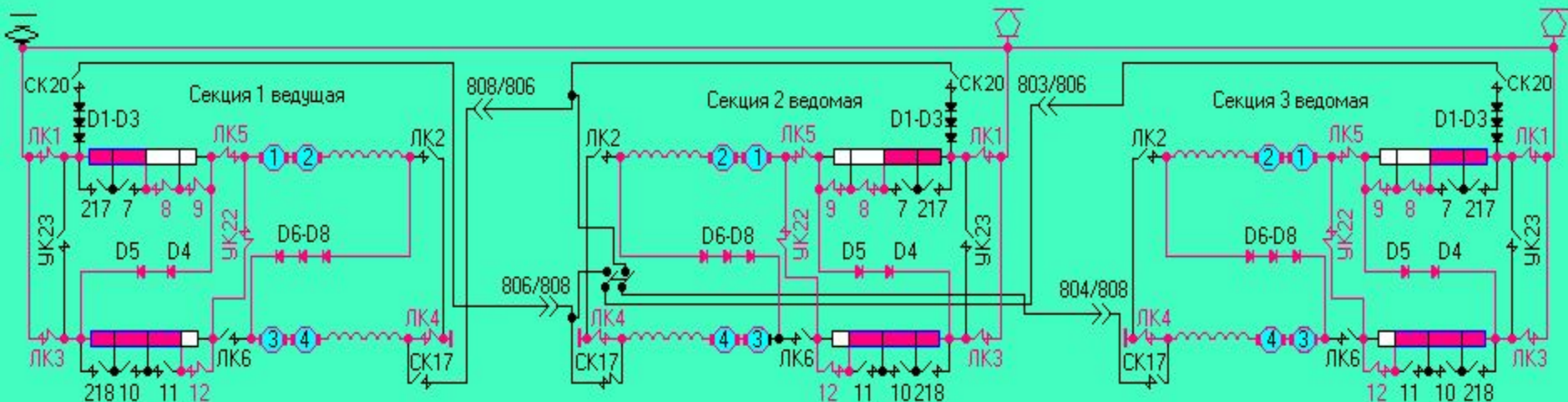
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№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●		●	●	●										●					
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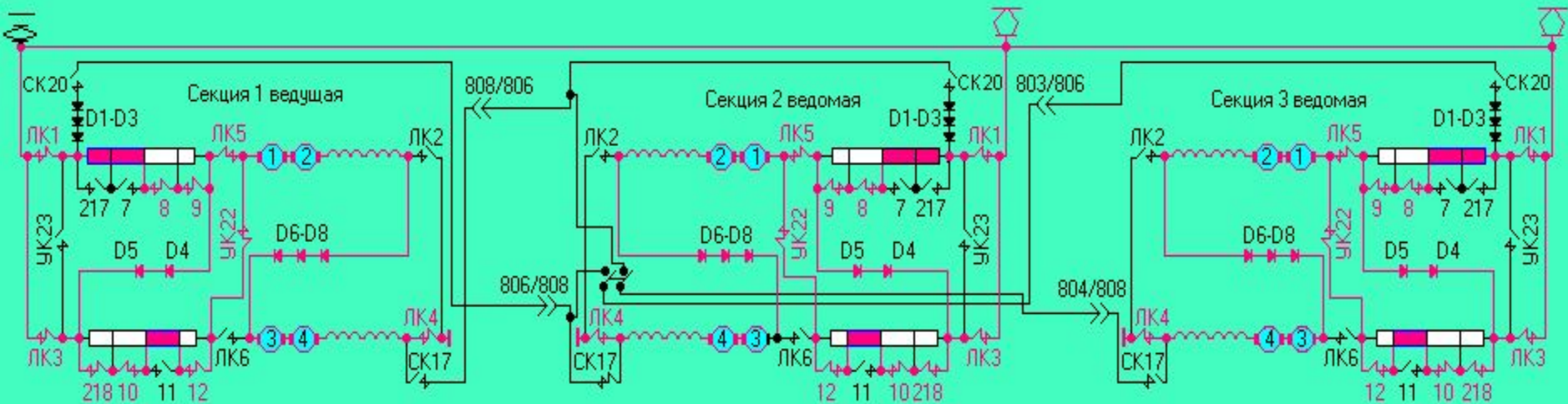
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●		●	●	●															
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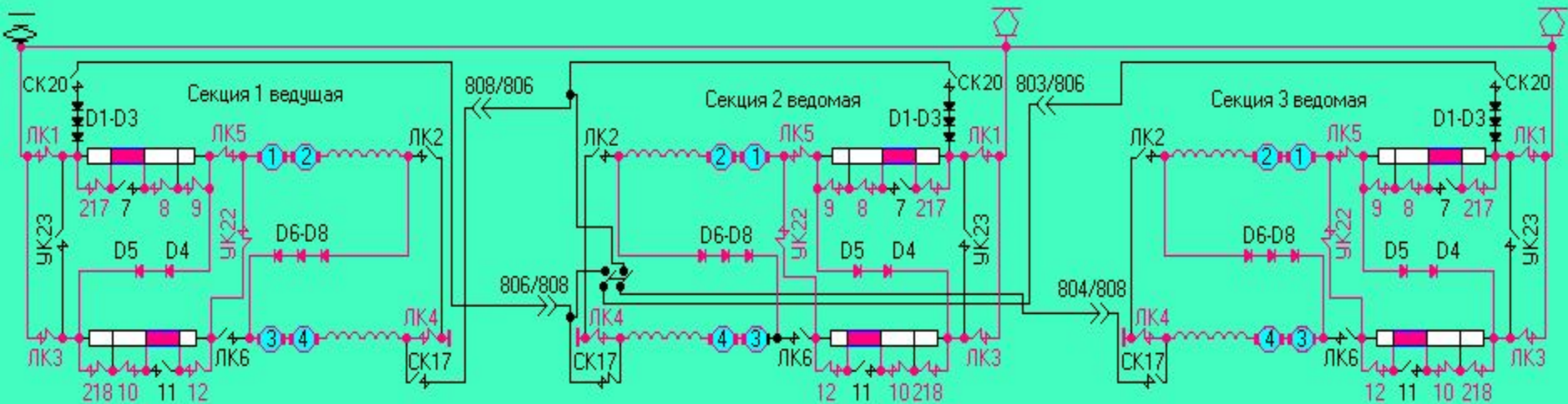
Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●		●	●	●										●					
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ХП	●	●	●	●			●	●	●	●	●	●	●	●						

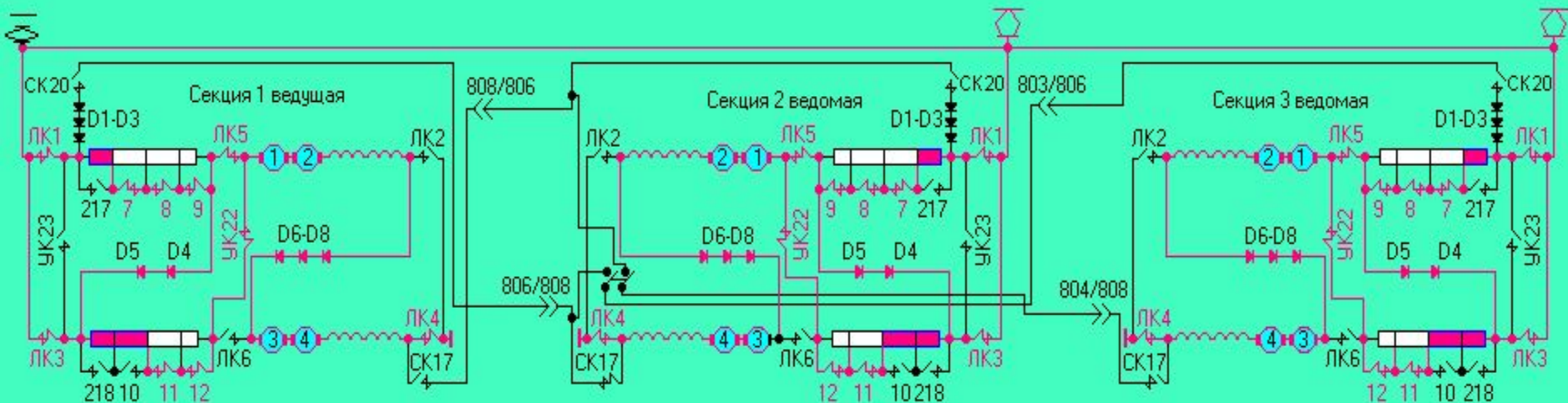
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№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●		●	●	●										●					
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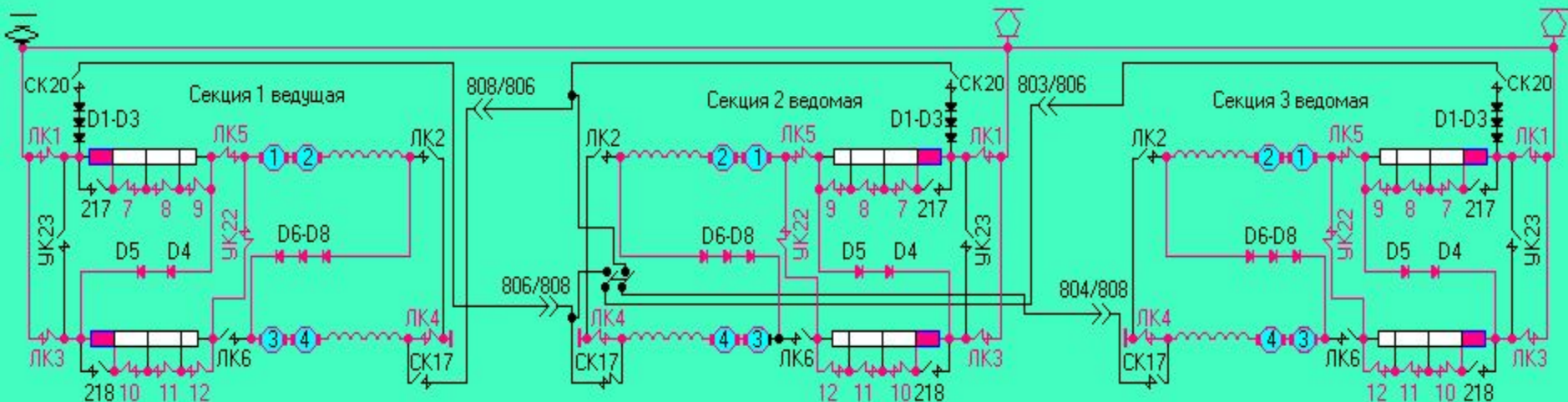
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№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
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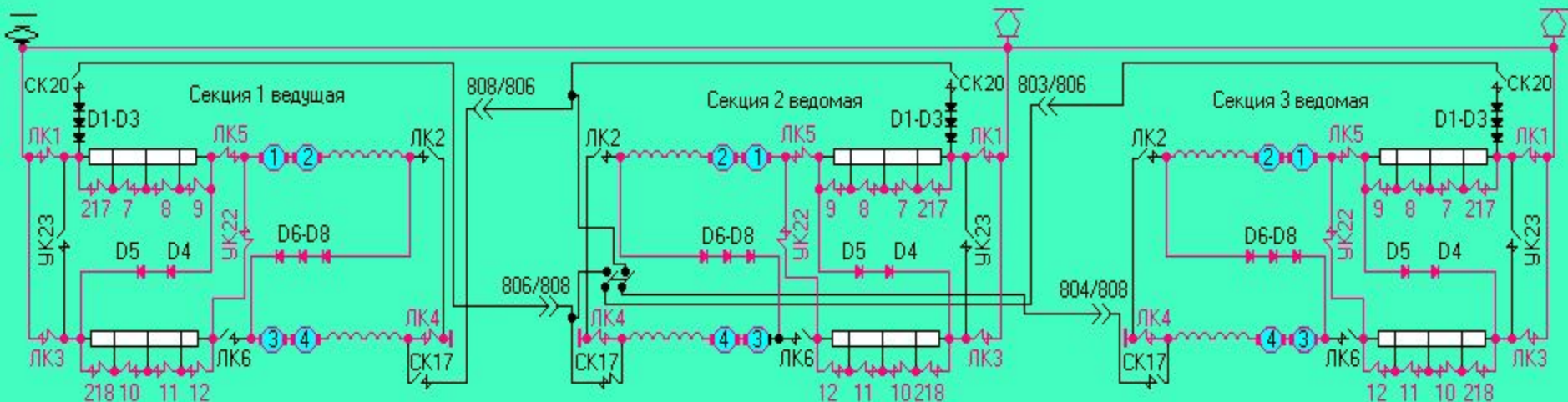
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1	●		●	●	●										●					
2	●	●	●	●					●						●					
3	●	●	●	●					●				●		●					
4	●	●	●	●			●		●				●		●					
5	●	●	●	●			●	●	●				●		●					
6	●	●	●	●			●	●	●		●		●		●					
7	●	●	●	●			●	●	●				●		●					
8	●	●	●	●			●	●	●		●		●		●					
9	●	●	●	●			●	●	●		●		●		●					
10	●	●	●	●			●	●	●		●		●		●					
11	●	●	●	●			●	●	●		●		●		●					
12	●	●	●	●			●	●	●		●		●		●					
13	●	●	●	●			●	●	●		●		●		●					
14	●	●	●	●			●	●	●		●		●		●					
15	●	●	●	●			●	●	●		●		●		●					
ХП	●	●	●	●			●	●	●		●		●		●					

Упрощенная схема работы трех секционного сцепа на "СП" соединении тяговых двигателей (4 двигателя последовательно)



Порядок включения линейных (ЛК), реостатных (РК), уравнительных (УК) контакторов на "СП" соединении тяговых двигателей (4 двигателя последовательно)

№ Поз	Линейные (ЛК)						Реостатные (РК)												УК	
	1	2	3	4	5	6	217	7	8	9	218	10	11	12	22	17	20	23	24	
1	●		●	●	●											●				
2	●	●	●	●	●				●							●				
3	●	●	●	●	●				●				●			●				
4	●	●	●	●	●		●		●				●			●				
5	●	●	●	●	●		●	●	●				●			●				
6	●	●	●	●	●		●	●	●		●	●				●				
7	●	●	●	●	●		●	●	●				●			●				
8	●	●	●	●	●		●	●	●		●	●				●				
9	●	●	●	●	●		●	●	●		●	●				●				
10	●	●	●	●	●		●	●	●		●	●				●				
11	●	●	●	●	●				●	●	●	●				●				
12	●	●	●	●	●		●		●	●	●	●				●				
13	●	●	●	●	●			●	●			●				●				
14	●	●	●	●	●		●	●	●			●				●				
15	●	●	●	●	●		●	●	●		●	●				●				
ХП	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●				