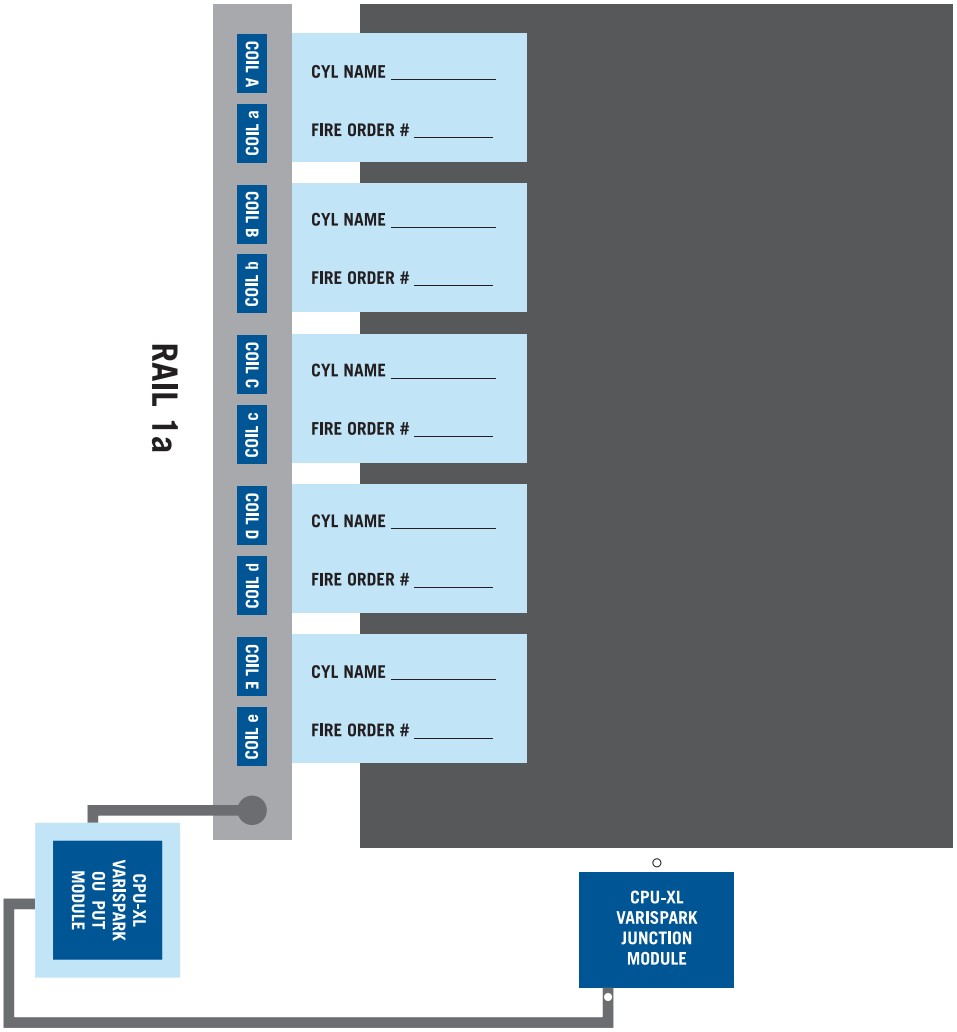
Application Drawings

Altronic CPU-XL VariSpark Ignition System

PRELIMINARY

altronic
HOERBIGER Engine Solutions

IN-LINE ENGINE, 3-5 CYLINDERS, 1 RAIL



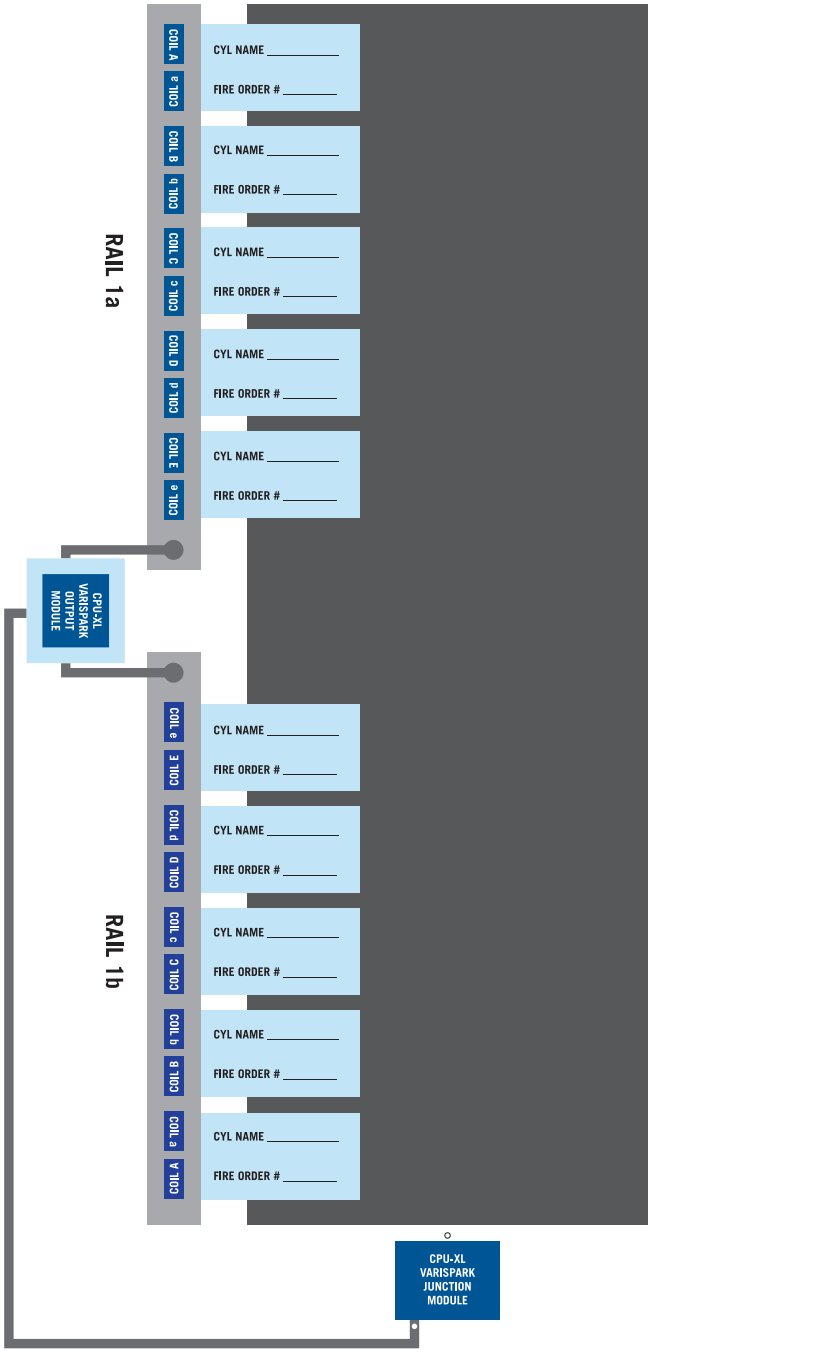
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

RAIL 1a	A B C D E
RAIL 1b	E D C B A

L5	L4	L3
X	X	X
X	X	X
X	X	X
X	X	
X		

A B C D E	RAIL 2b
E D C B A	RAIL 2a

IN-LINE ENGINE, 6-10 CYLINDERS, 2 RAILS



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

		L10	L9	L8	L8	L8		
RAIL 1a	A	X	X	X	X	X	A	RAIL 2b
	B	X	X	X	X	X	B	
	C	X	X	X	X	X	C	
	D	X	X	X	X		D	
	E	X	X				E	
	E	X					E	
	D	X	X	X			D	
RAIL 1b	C	X	X	X	X	X	C	RAIL 2a
	B	X	X	X	X	X	B	
	A	X	X	X	X	X	A	

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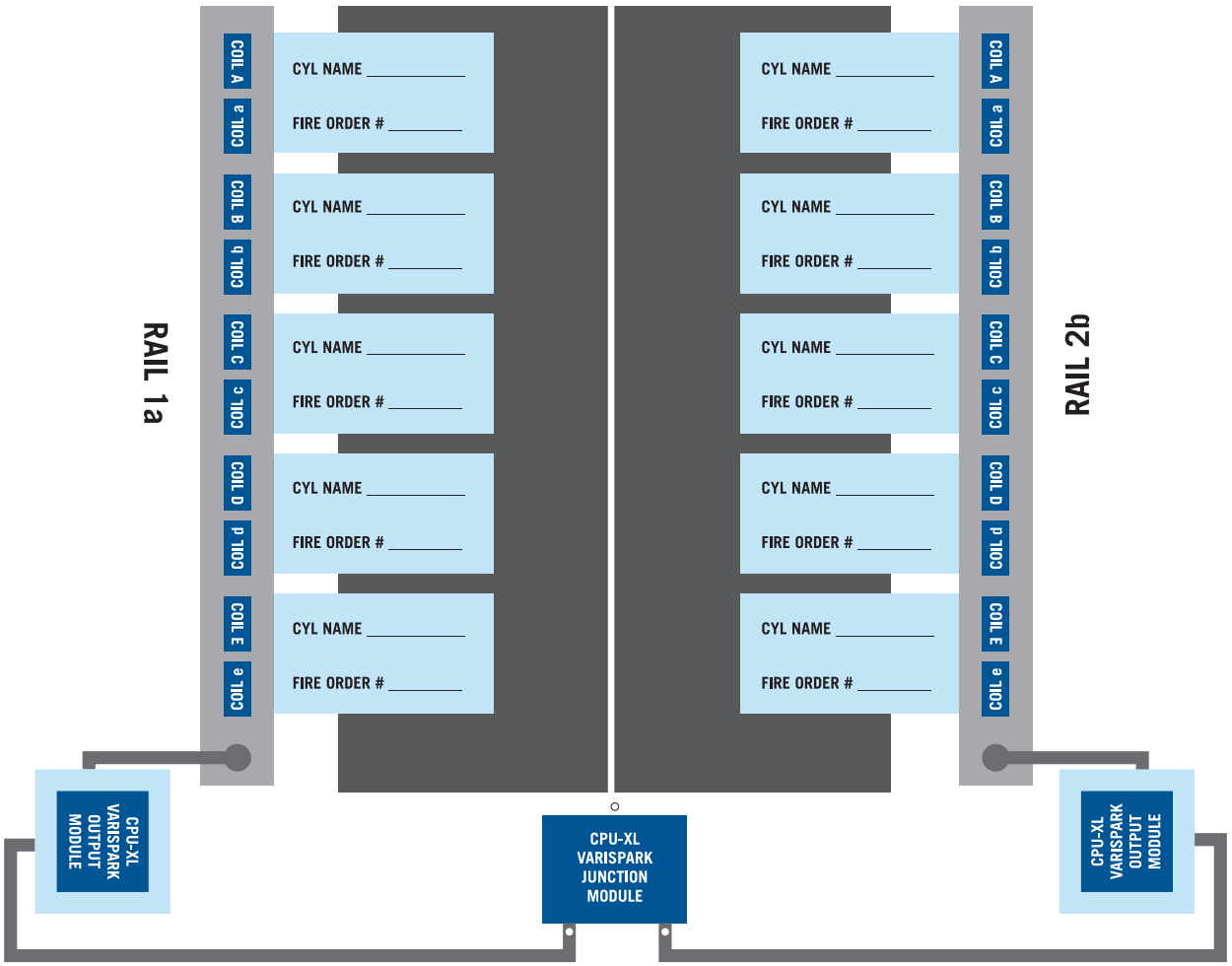
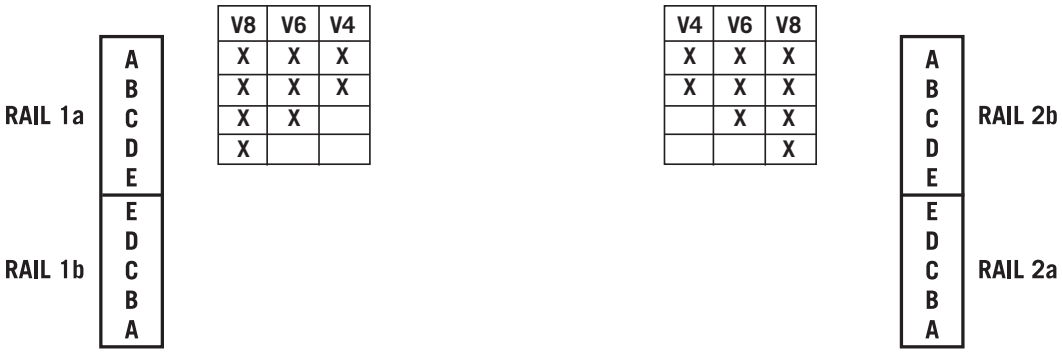
V-ENGINE, 4-8 CYLINDERS, 1 RAIL PER BANK





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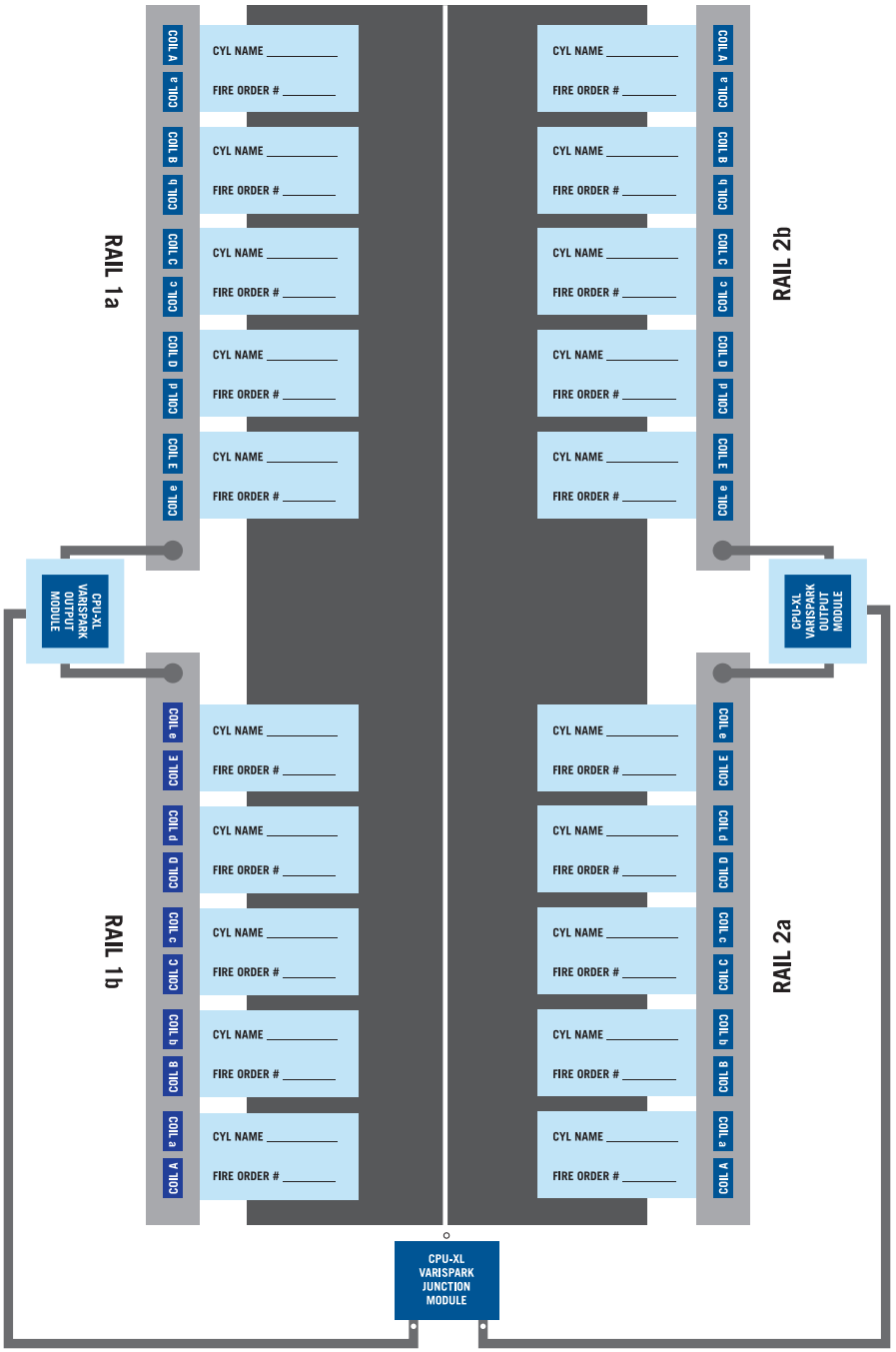
V-ENGINE, 8-20 CYLINDERS, 2 RAILS PER BANK



		V20	V16	V12	V10	V8
RAIL 1a	A	X	X	X	X	X
	B	X	X	X	X	X
	C	X	X	X	X	
	D	X	X			
	E	X				
RAIL 1b	E	X				
	D	X	X			
	C	X	X	X		
	B	X	X	X	X	X
	A	X	X	X	X	X

		V8	V10	V12	V16	V20
RAIL 2b	A	X	X	X	X	X
	B	X	X	X	X	X
	C		X	X	X	X
	D				X	X
	E					X
RAIL 2a	E					X
	D				X	X
	C			X	X	X
	B	X	X	X	X	X
	A	X	X	X	X	X

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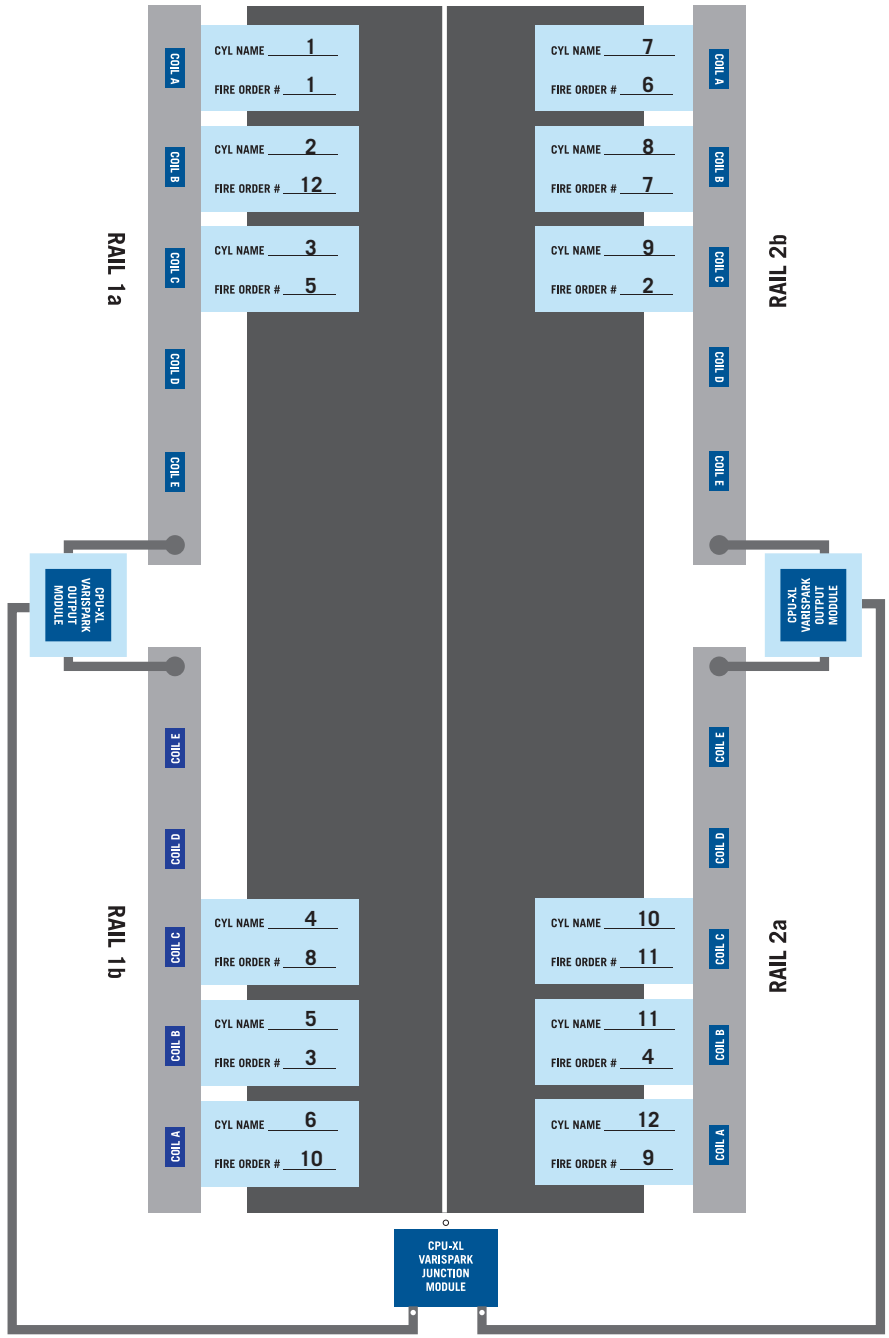
V-12 ENGINE, EXAMPLE 1

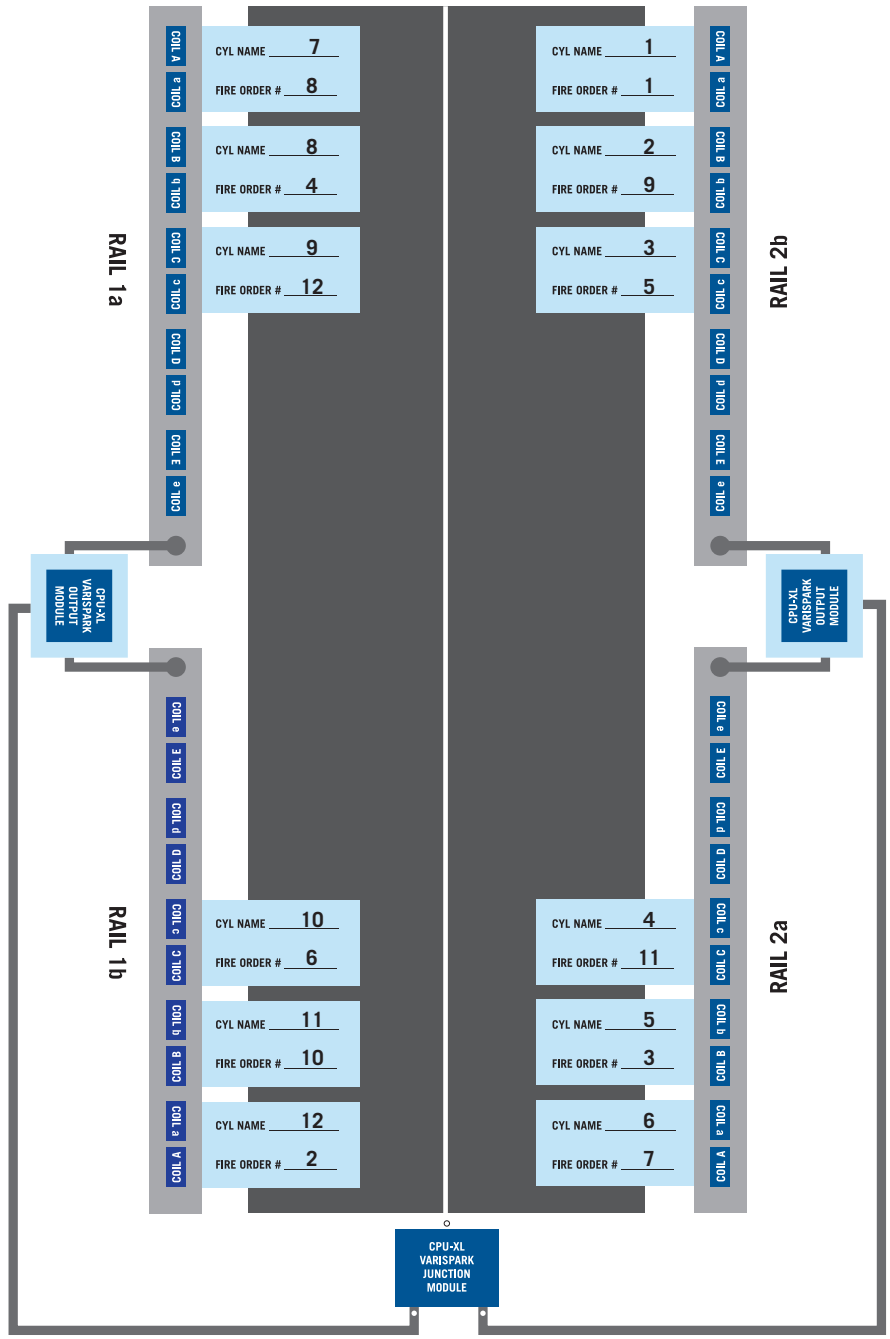


CYL. F/O	1	12	5	8	3	10	6	7	2	11	4	9	ENGINE FIRING ORDER
LEAD	1	2	3	4	5	6	7	8	9	10	11	12	13 14 15 16 17 18 19 20

		CYL	LEAD
RAIL 1a	A	1	1
	B	2	9
	C	3	5
	D		
	E		
RAIL 1b	E		
	D		
	C	4	11
	B	5	3
	A	6	7

		CYL	LEAD
RAIL 2b	A	7	8
	B	8	4
	C	9	12
	D		
	E		
RAIL 2a	E		
	D		
	C	10	6
	B	11	10
	A	12	2

V-12 ENGINE, EXAMPLE 2



CYL. F/O	1	12	5	8	3	10	6	7	2	11	4	9	ENGINE FIRING ORDER
LEAD	1	2	3	4	5	6	7	8	9	10	11	12	13 14 15 16 17 18 19 20

		CYL	LEAD
RAIL 1a	A	7	8
	B	8	4
	C	9	12
	D		
	E		
RAIL 1b	E		
	D		
	C	10	6
	B	11	10
	A	12	2

		CYL	LEAD
RAIL 2b	A	1	1
	B	2	9
	C	3	5
	D		
	E		
RAIL 2a	E		
	D		
	C	4	11
	B	5	3
	A	6	7

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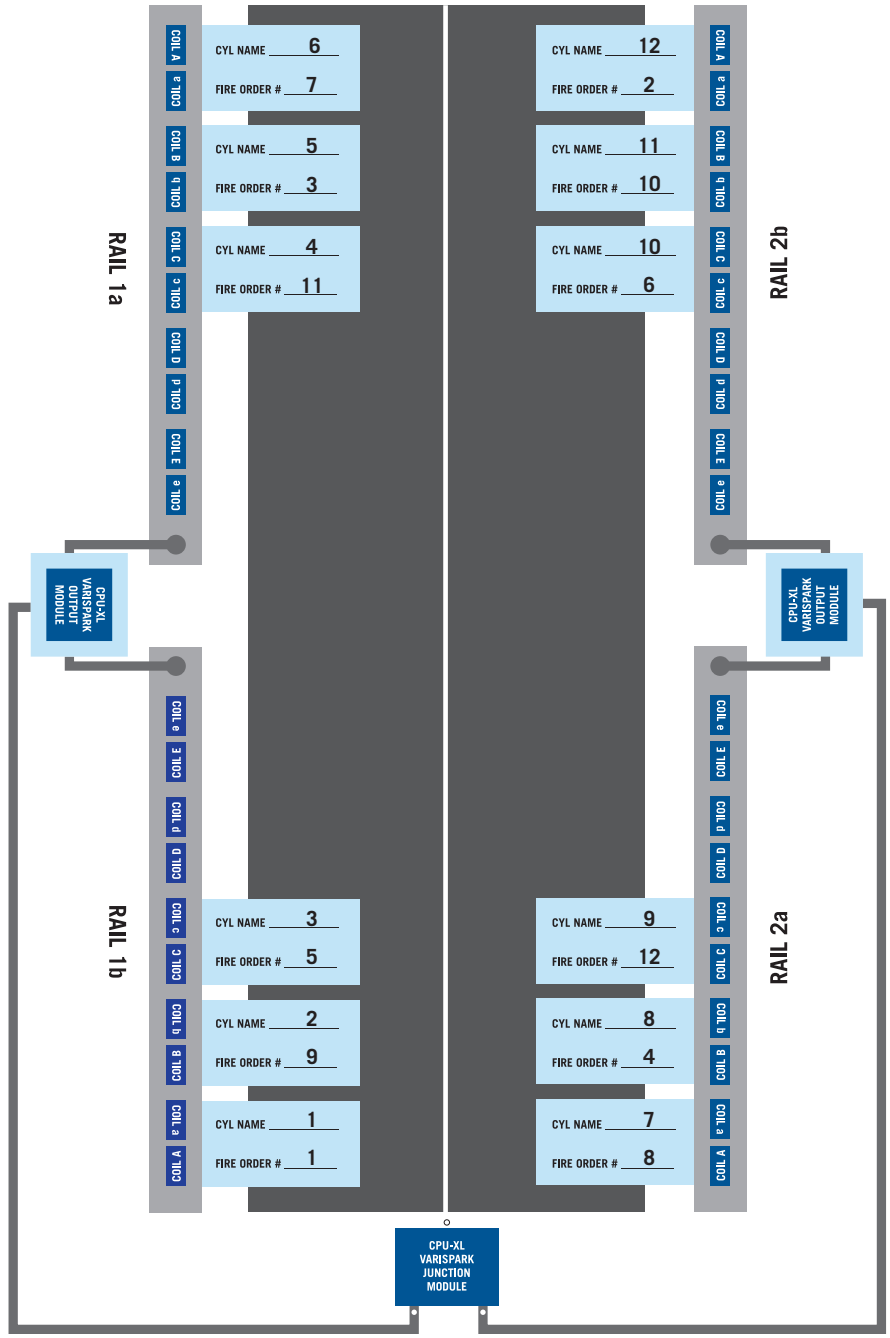
V-12 ENGINE, EXAMPLE 3

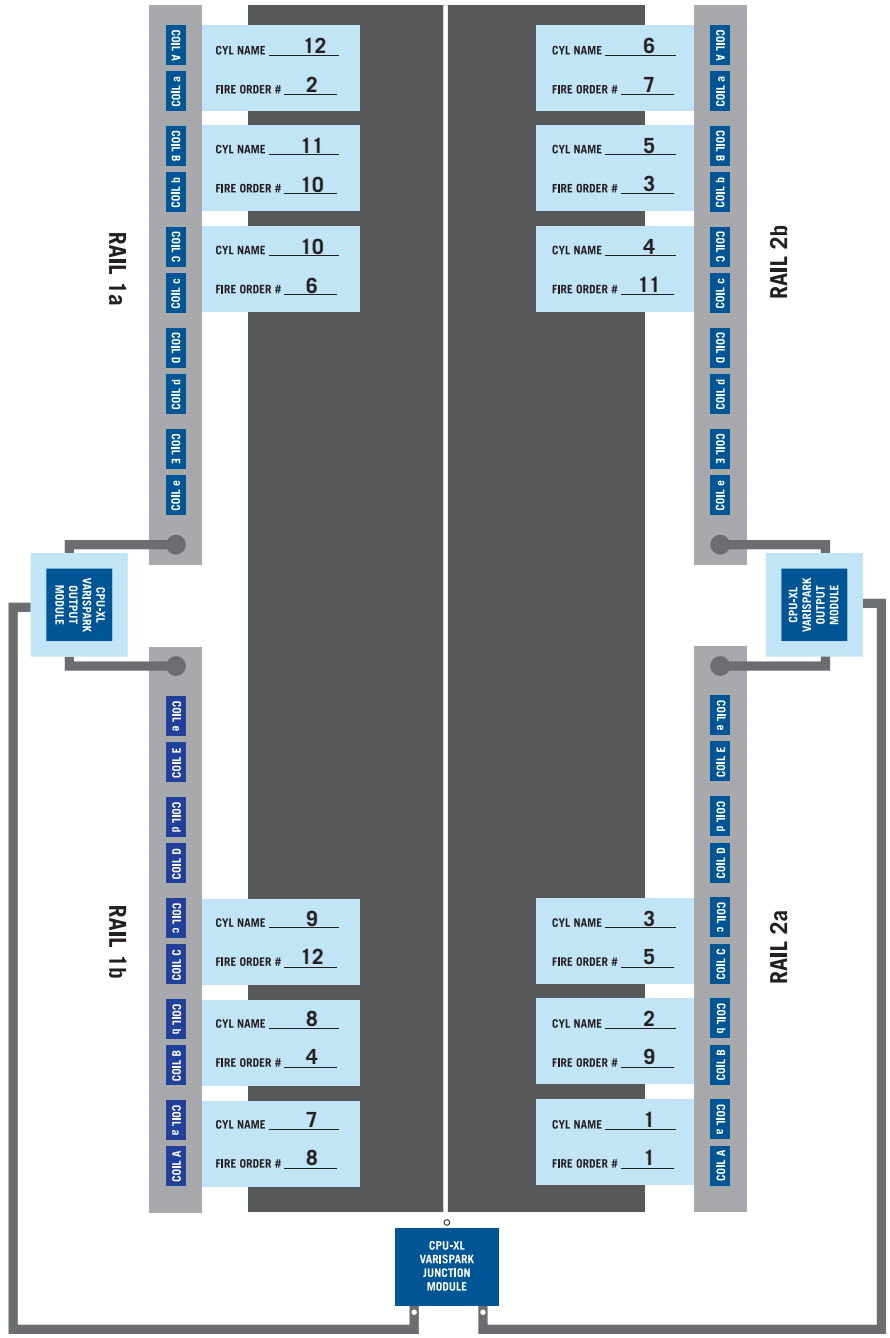


CYL. F/O	1	12	5	8	3	10	6	7	2	11	4	9	ENGINE FIRING ORDER
LEAD	1	2	3	4	5	6	7	8	9	10	11	12	13 14 15 16 17 18 19 20

		CYL	LEAD
RAIL 1a	A	6	7
	B	5	3
	C	4	11
	D		
	E		
RAIL 1b	E		
	D	3	5
	C	2	9
	B	1	1
	A		

		CYL	LEAD
RAIL 2b	A	12	2
	B	11	10
	C	10	6
	D		
	E		
RAIL 2a	E		
	D	9	12
	C	8	4
	B	7	8
	A		

V-12 ENGINE, EXAMPLE 4



CYL. F/O	1	12	5	8	3	10	6	7	2	11	4	9	ENGINE FIRING ORDER
LEAD	1	2	3	4	5	6	7	8	9	10	11	12	13 14 15 16 17 18 19 20

		CYL	LEAD
RAIL 1a	A	12	2
	B	11	10
	C	10	6
	D		
	E		
RAIL 1b	E		
	D	9	12
	C	8	4
	B	7	8
	A		

		CYL	LEAD
	A	6	7
	B	5	3
	C	4	11
	D		
RAIL 2b	E		
	E		
	D	3	5
	C	2	9
RAIL 2a	B	1	1
	A		

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