FOJI RACEWORKS
MX-5 WORKSHOP REFERENCE

CONFIDENCE: HIGH

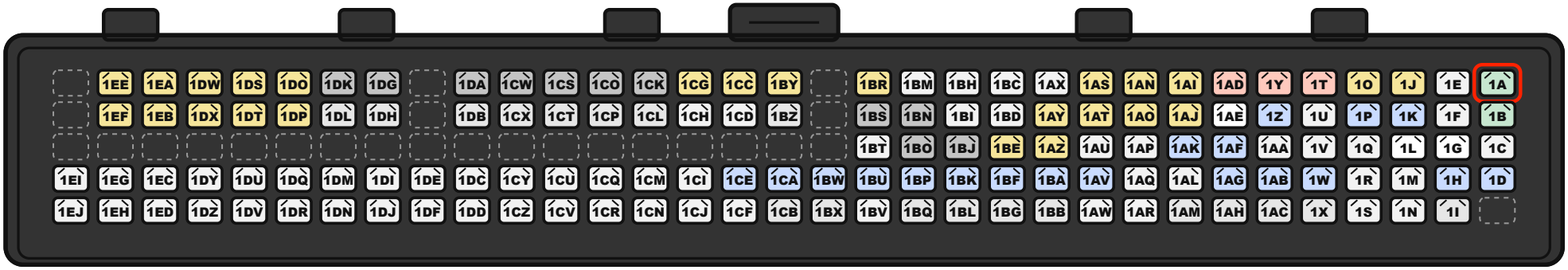
PCM PINOUT · MK4 · ND1

CONNECTOR 1 (140-WAY) · 140-WAY (1A-1EJ)

VIEW: LOOKING INTO THE ECU HEADER (SAME VIEW AS THE WIRE / BACK SIDE OF THE HARNESS PLUG) · THE PLUG'S MATING FACE READS MIRRORED

SKYACTIV-G 1.5 / 2.0 · VIN 100001-299999 | MAZDA PCM (SM2028860) · 140-WAY + 60-WAY (200 TERMINALS) · DBW · CAN · OEM REFLASH ONLY

POWER · GROUND · TRIGGER (CKP/CMP) · SENSOR IN · DRIVER / OUTPUT · COMMS / DIAG · OTHER / BODY · UNKNOWN / NC



FOJI SKETCH · PIN 1A RINGED (TOP-RIGHT) · KEYING INDICATIVE, CONFIRM ON PLUG

REAL CONNECTOR FACE (4 AND 5 ROW SECTIONS, 33 COLUMNS, 25 BLANKS). LOOKING INTO THE PCM HEADER, THE SAME VIEW AS THE WIRE/BACK SIDE OF THE HARNESS PLUG, MATCHING THE NA, NB AND NC SHEETS. EARLY ND ONLY (VIN 100001-299999): 140-WAY + 60-WAY. LETTERS RUN DOWN EACH COLUMN FROM THE RIGHT-HAND END. PIN 1A IS TOP-RIGHT OF CONNECTOR 1; ON CONNECTOR 2 THE TOP-RIGHT CAVITY OF THE RIGHT-HAND SECTION DOES NOT EXIST AND 2A SITS AT THE RIGHT-HAND END OF THE LOWER STRIP. FACE READ CELL BY CELL OFF THE FACTORY PCM INSPECTION FIGURE AM3ZZW00013565 (SM2028860), CAPTIONED WIRING HARNESS-SIDE CONNECTOR WITH THE WIRE-SIDE VIEW ICON. NOT YET RUNG OUT ON A CAR.

PIN	FUNCTION	WIRE	I/O
1A	CAN2_H (CAN SYSTEM RELATED MODULES) [*1]	BR/B	I/O
1B	CAN2_L (CAN SYSTEM RELATED MODULES) [*1]	G/L	I/O
1C	NOT USED	-	-
1D	KNOCKING (-) (KS)	P	IN
1E	NOT USED	-	-
1F	NOT USED	-	-
1G	NEUTRAL SWITCH NO.2 [*5]	B/W	IN
1H	KNOCKING (+) (KS)	L	IN
1I	GND (SENSOR SHIELD)	B	GND
1J	ELECTRIC VARIABLE VALVE TIMING MOTOR (ROTATION DIRECTION) (ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER)	B/G	OUT
1K	NEUTRAL POSITION (NEUTRAL SWITCH NO.1) [*2]	L/W	IN
1L	BACK-UP LIGHT [*2]	L	IN
1M	NOT USED	-	-
1N	NOT USED	-	-
1O	ELECTRIC VARIABLE VALVE TIMING MOTOR (ROTATION PULSE) (ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER)	B/R	OUT
1P	OIL PRESSURE	R/L	IN
1Q	NOT USED	-	-
1R	NOT USED	-	-
1S	NOT USED	-	-
1T	EXHAUST CMP	B/BR	IN
1U	NOT USED	-	-
1V	NOT USED	-	-
1W	A/F	B	IN
1X	GND (EXHAUST CMP SENSOR)	B	GND
1Y	INTAKE CMP	G	IN
1Z	GENERATOR OUTPUT VOLTAGE [*3]	P	IN
1AA	NOT USED	-	-
1AB	A/F	R	IN
1AC	GND (INTAKE CMP SENSOR)	R/Y	GND
1AD	CKP	W	IN
1AE	ELECTRIC VARIABLE VALVE TIMING DRIVER (DIAGNOSTIC) (ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER)	B/L	IN
1AF	GENERATOR OUTPUT VOLTAGE [*4]	P	IN
1AG	A/F	W	IN
1AH	GND (CKP SENSOR)	L/Y	GND
1AI	PURGE CONTROL (PURGE SOLENOID VALVE)	V	OUT
1AJ	IGT4 (IGNITION COIL NO.4)	L/Y	OUT
1AK	ECT	BR/B	IN
1AL	NOT USED	-	-
1AM	GND (ECT SENSOR)	GY/B	GND
1AN	HYDRAULIC VARIABLE VALVE TIMING CONTROL (OCV)	L/B	OUT
1AO	IGT3 (IGNITION COIL NO.3)	G	OUT
1AP	NOT USED	-	-
1AQ	NOT USED	-	-
1AR	NOT USED	-	-
1AS	ENGINE OIL CONTROL (ENGINE OIL SOLENOID VALVE)	L/R	OUT
1AT	IGT2 (IGNITION COIL NO.2)	L	OUT
1AU	NOT USED	-	-
1AV	ION (NO.4) (ION SENSOR NO.4)	R	IN
1AW	NOT USED	-	-
1AX	NOT USED	-	-
1AY	IGT1 (IGNITION COIL NO.1)	V	OUT
1AZ	ELECTRIC VARIABLE VALVE TIMING CONTROL (ELECTRIC VARIABLE VALVE TIMING MOTOR/DRIVER)	B/Y	OUT
1BA	ION (NO.3) (ION SENSOR NO.3)	L	IN
1BB	GND (SENSOR SHIELD)	B	GND
1BC	NOT USED	-	-
1BD	NOT USED	-	-
1BE	GENERATOR FIELD COIL CONTROL [*4]	BR	OUT
1BF	ION (NO.2) (ION SENSOR NO.2)	G	IN
1BG	GND (SENSOR SHIELD)	B	GND
1BH	NOT USED	-	-
1BI	NOT USED	-	-
1BJ	CONSTANT VOLTAGE (VREF) (FUEL PRESSURE SENSOR)	P	PWR
1BK	ION (NO.1) (ION SENSOR NO.1)	W	IN
1BL	GND (SENSOR SHIELD)	B/W	GND
1BM	NOT USED	-	-
1BN	CONSTANT VOLTAGE (VREF) (CKP SENSOR)	G	PWR
1BO	CONSTANT VOLTAGE (VREF) (MAP SENSOR)	GY	PWR
1BP	TP (NO.1) (TP SENSOR NO.1)	R/Y	IN
1BQ	GND (TP SENSOR NO.1, TP SENSOR NO.2)	Y	GND
1BR	GENERATOR FIELD COIL CONTROL [*3]	BR	OUT
1BS	CONSTANT VOLTAGE (VREF) (TP SENSOR NO.1, TP SENSOR NO.2)	BR	PWR
1BT	NOT USED	-	-
1BU	TP (NO.2) (TP SENSOR NO.2)	L/Y	IN
1BV	NOT USED	-	-
1BW	MAP	R	IN
1BX	GND (MAP SENSOR, IAT SENSOR NO.2)	L	GND
1BY	A/F SENSOR HEATER CONTROL	G	OUT
1BZ	GND	B	GND
1CA	FUEL PRESSURE	G	IN
1CB	GND (FUEL PRESSURE SENSOR)	R/Y	GND
1CC	DRIVE-BY-WIRE CONTROL (-) (THROTTLE VALVE ACTUATOR)	L	OUT
1CD	NOT USED	-	-
1CE	IAT (NO.2) (IAT SENSOR NO.2)	L/Y	IN
1CF	NOT USED	-	-
1CG	DRIVE-BY-WIRE CONTROL (+) (THROTTLE VALVE ACTUATOR)	V	OUT
1CH	NOT USED	-	-
1CI	NOT USED	-	-
1CJ	NOT USED	-	-
1CK	BATTERY VOLTAGE (MAIN RELAY)	B/R	PWR
1CL	GND	B	GND
1CM	NOT USED	-	-
1CN	NOT USED	-	-
1CO	BATTERY VOLTAGE (FUEL INJECTOR RELAY)	G/B	PWR
1CP	GND	B	GND
1CQ	NOT USED	-	-
1CR	NOT USED	-	-
1CS	BATTERY VOLTAGE (FUEL INJECTOR RELAY)	G/B	PWR
1CT	GND	B	GND
1CU	NOT USED	-	-
1CV	NOT USED	-	-
1CW	BATTERY VOLTAGE (FUEL INJECTOR RELAY)	G/B	PWR
1CX	GND	B	GND
1CY	NOT USED	-	-
1CZ	NOT USED	-	-
1DA	BATTERY VOLTAGE (FUEL INJECTOR RELAY)	G/B	PWR
1DB	GND	B	GND
1DC	NOT USED	-	-
1DD	NOT USED	-	-
1DE	NOT USED	-	-
1DF	NOT USED	-	-
1DG	BATTERY VOLTAGE (FUEL INJECTOR RELAY)	G/B	PWR
1DH	GND	B	GND
1DI	NOT USED	-	-
1DJ	NOT USED	-	-
1DK	BATTERY VOLTAGE (FUEL INJECTOR RELAY)	G/B	PWR
1DL	GND	B	GND
1DM	NOT USED	-	-
1DN	NOT USED	-	-
1DO	FUEL INJECTION CONTROL (-) (FUEL INJECTOR NO.1)	W	OUT
1DP	FUEL INJECTION CONTROL (+) (FUEL INJECTOR NO.1)	R	OUT
1DQ	NOT USED	-	-
1DR	NOT USED	-	-
1DS	FUEL INJECTION CONTROL (-) (FUEL INJECTOR NO.4)	L/Y	OUT
1DT	FUEL INJECTION CONTROL (+) (FUEL INJECTOR NO.4)	P	OUT
1DU	NOT USED	-	-
1DV	NOT USED	-	-
1DW	FUEL INJECTION CONTROL (-) (FUEL INJECTOR NO.2)	G	OUT
1DX	FUEL INJECTION CONTROL (+) (FUEL INJECTOR NO.2)	BR	OUT
1DY	NOT USED	-	-
1DZ	NOT USED	-	-
1EA	FUEL INJECTION CONTROL (-) (FUEL INJECTOR NO.3)	L	OUT
1EB	FUEL INJECTION CONTROL (+) (FUEL INJECTOR NO.3)	P	OUT
1EC	NOT USED	-	-
1ED	NOT USED	-	-
1EE	HIGH PRESSURE FUEL PUMP CONTROL (+)	B/G	OUT
1EF	HIGH PRESSURE FUEL PUMP CONTROL (-)	B/L	OUT
1EG	NOT USED	-	-
1EH	NOT USED	-	-
1EI	NOT USED	-	-
1EJ	NOT USED	-	-

VERIFY ON CAR: RING OUT EVERY PIN AND CONFIRM WIRE COLOURS AGAINST THE CAR. MAZDA HARNESS COLOURS CHANGE BETWEEN SUB-YEAR BUILDS AND MARKETS.

SOURCE: Functions from the Mazda MGSS PCM INSPECTION table SM2028860 (SKYACTIV-G 1.5 / 2.0): 200 terminals, 122 named, 78 dashed. Face read cell by cell off that document's own figure am3zzw00013565, captioned WIRING HARNESS-SIDE CONNECTOR with Mazda's wire-side view icon, so no rotation and no mirror. Wire colours from the Mazda UK CONTROL SYSTEM (SKYACTIV-G 1.5, 2.0) sheet 0140-1, all eight pages 1a to 1h, in both editions WD800119 and WD800916 for carline ND**7*** VIN 100001-299999, read as SVG text with coordinates and every non-matching cell confirmed on the render, corroborated by Autodata diagrams 1271441 + 1271442. Mazda draws 122 PCM pins and they are exactly the 122 pins coloured here: no pin is drawn that this sheet calls vacant, and none is coloured that Mazda does not draw. 120 agree cell for cell. 2AD is flagged CONFLICT, Mazda drawing B on both editions where Autodata prints W. 2AJ agrees at BR/O but its later-VIN alternate is BR on WD800916 and G/Y on WD800119, flagged on the row. 2K is Mazda-only, traced out of MAIN RELAY terminal E, because Autodata does not draw it. The nine rows written as X (or Y) are a VIN split inside the early band, not a disagreement: Mazda prints both values on the one wire and footnotes the second *28, VIN JMZ ND6E***# 200001- on WD800119. Which of the two editions is RHD is not declared anywhere on disk. Footnotes: *1 A/T, *2 M/T, *3 with i-ELOOP, *4 without, *5 with i-stop (M/T). Neither publisher declares a 1.5 versus 2.0 pin difference, so the split is by VIN. VIN 300001-649999 has no PCM INSPECTION table on file, and Mazda's nd-mid CONTROL SYSTEM sheet 0140-1a (WD546117 / WD546946, VIN 300001-499999) prints PCM pins 2BO and 2BR, which exist only on the late 72-way connector, so a middle car is already on the late PCM: read this sheet as 100001-299999 only. Not rung out on a car, no ND donor plug yet. FOJI internal reference, corroborated 2026-06. Original FOJI compilation, not reproduced from Mazda artwork.

CONFIDENCE: HIGH

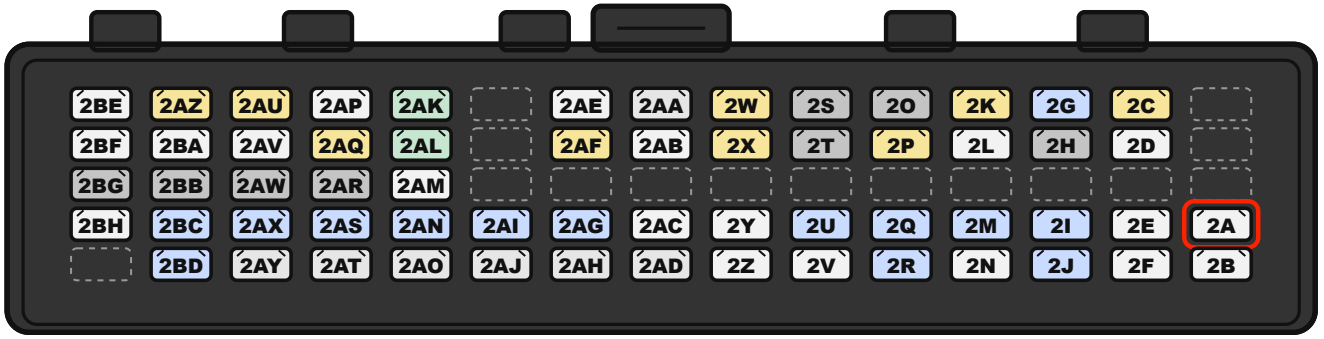
PCM PINOUT · MK4 · ND1

CONNECTOR 2 (60-WAY) · 60-WAY (2A-2BH)

VIEW: LOOKING INTO THE ECU HEADER (SAME VIEW AS THE WIRE / BACK SIDE OF THE HARNESS PLUG) · THE PLUG'S MATING FACE READS MIRRORED

SKYACTIV-G 1.5 / 2.0 · VIN 100001-299999 | MAZDA PCM (SM2028860) · 140-WAY + 60-WAY (200 TERMINALS) · DBW · CAN · OEM REFLASH ONLY

POWER · GROUND · TRIGGER (CKP/CMP) · SENSOR IN · DRIVER / OUTPUT · COMMS / DIAG · OTHER / BODY · UNKNOWN / NC



FOJI SKETCH · PIN 2A RINGED (LOWER STRIP, RIGHT-HAND END · THE CAVITY ABOVE IT DOES NOT EXIST) · KEYING INDICATIVE, CONFIRM ON PLUG

REAL CONNECTOR FACE (4 AND 5 ROW SECTIONS, 15 COLUMNS, 15 BLANKS). LOOKING INTO THE PCM HEADER. THE SAME VIEW AS THE WIRE/BACK SIDE OF THE HARNESS PLUG, MATCHING THE NA, NB AND NC SHEETS. EARLY ND ONLY (VIN 100001-299999): 140-WAY + 60-WAY. LETTERS RUN DOWN EACH COLUMN FROM THE RIGHT-HAND END. PIN 1A IS TOP-RIGHT OF CONNECTOR 1; ON CONNECTOR 2 THE TOP-RIGHT CAVITY OF THE RIGHT-HAND SECTION DOES NOT EXIST AND 2A SITS AT THE RIGHT-HAND END OF THE LOWER STRIP. FACE READ CELL BY CELL OFF THE FACTORY PCM INSPECTION FIGURE AM3ZZW00013565 (SM2028860), CAPTIONED WIRING HARNESS-SIDE CONNECTOR WITH THE WIRE-SIDE VIEW ICON. NOT YET RUNG OUT ON A CAR.

PIN	FUNCTION	WIRE	I/O
2A	NOT USED	-	-
2B	NOT USED	-	-
2C	HO2S HEATER CONTROL	P	OUT
2D	NOT USED	-	-
2E	NOT USED	-	-
2F	NOT USED	-	-
2G	BRAKE (NO.1) (BRAKE SWITCH (NO.1 SIGNAL))	R	IN
2H	IGNITION (IG1) (IG1 RELAY)	W	PWR
2I	AMBIENT TEMPERATURE	L	IN
2J	CPP [*2]	P	IN
2K	MAIN RELAY CONTROL	L	OUT
2L	NOT USED	-	-
2M	CLUTCH STROKE SENSOR [*5]	SB	IN
2N	NOT USED	-	-
2O	BATTERY VOLTAGE	LG	PWR
2P	DC-DC CONVERTER CONTROL (DC-DC CONVERTER (I-ELOOP)) [*3]	B	OUT
2Q	POWER BRAKE UNIT VACUUM (VACUUM SENSOR 2)	R	IN
2R	BRAKE (NO.2) (BRAKE SWITCH (NO.2 SIGNAL))	W	IN
2S	BATTERY VOLTAGE (MAIN RELAY)	B/R (OR R)	PWR
2T	BATTERY VOLTAGE (MAIN RELAY)	B/R (OR R)	PWR
2U	IAT (NO.1) (IAT SENSOR NO.1)	B/G (OR R)	IN
2V	NOT USED	-	-
2W	DC-DC CONVERTER (I-ELOOP) CONTROL [*3]	L	OUT
2X	FAN CONTROL	G	OUT
2Y	NOT USED	-	-
2Z	NOT USED	-	-
2AA	GND	B	GND
2AB	NOT USED	-	-
2AC	NOT USED	-	-
2AD	GND (SENSOR SHIELD) [CONFLICT: MAZDA 0140-1B DRAWS B ON BOTH ND-EARLY EDITIONS, AUTODATA 1271442 PRINTS W]	B	GND
2AE	NOT USED	-	-
2AF	A/C CUT-OFF CONTROL (A/C RELAY)	G	OUT
2AG	HO2S (-)	Y	IN
2AH	GND (VACUUM SENSOR 2, CLUTCH STROKE SENSOR *5)	V	GND
2AI	HO2S (+)	BR	IN
2AJ	GND [CONFLICT: THE *28 LATER-VIN ALTERNATE IS BR ON WD800916 BUT G/Y ON WD800119]	BR/O (OR BR)	GND
2AK	HS CAN_H (CAN SYSTEM RELATED MODULES)	B/L	I/O
2AL	HS CAN_L (CAN SYSTEM RELATED MODULES)	B/R	I/O
2AM	NOT USED	-	-
2AN	APP (NO.1) (APP SENSOR NO.1)	B	IN
2AO	GND (APP SENSOR NO.1)	V	GND
2AP	NOT USED	-	-
2AQ	FUEL PUMP CONTROL (FUEL PUMP RELAY)	P	OUT
2AR	CONSTANT VOLTAGE (VREF) (APP SENSOR NO.1)	G	PWR
2AS	APP (NO.2) (APP SENSOR NO.2)	BR	IN
2AT	GND (APP SENSOR NO.2)	LG	GND
2AU	COOLING FAN CONTROL (COOLING FAN RELAY)	LG/R (OR LG)	OUT
2AV	NOT USED	-	-
2AW	CONSTANT VOLTAGE (VREF) (APP SENSOR NO.2)	SB	PWR
2AX	REFRIGERANT PRESSURE	L/B (OR L)	IN
2AY	GND (MAF SENSOR, IAT SENSOR NO.1)	B/R (OR G)	GND
2AZ	STARTER CUT-OFF CONTROL (STARTER RELAY, START STOP UNIT)	LG	OUT
2BA	NOT USED	-	-
2BB	CONSTANT VOLTAGE (VREF) (REFRIGERANT PRESSURE SENSOR, MAF SENSOR)	B/G (OR W)	PWR
2BC	MAF	B (OR L)	IN
2BD	SELECTOR LEVER POSITION *1 (TR SWITCH, START STOP UNIT)	GY/L (OR GY)	IN
2BE	NOT USED	-	-
2BF	NOT USED	-	-
2BG	CONSTANT VOLTAGE (VREF) (VACUUM SENSOR 2, CLUTCH STROKE SENSOR *5)	L	PWR
2BH	NOT USED	-	-

VERIFY ON CAR: RING OUT EVERY PIN AND CONFIRM WIRE COLOURS AGAINST THE CAR. MAZDA HARNESS COLOURS CHANGE BETWEEN SUB-YEAR BUILDS AND MARKETS.

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