

1	2		3	4		C54					5	6		7	8
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
24	25		26	27	28	29		30	31	32	33		34	35	

41	42	43			C53					44	45	46
47	48	49	50	51	52	53	54	55	56	57		
58	59		60	61	62	63		64	65	66		

71	72	73	74		C52					75	76	77
78	79	80	81	82	83	84	85	86	87	88	89	
90	91		92	93	94		95	96		97	98	

101	102		103	104		C116					105	106	107
108	109	110	111	112	113	114	115	116	117	118	119	120	
121	122	123		124	125		126	127	128		129	130	

MITSUBISHI DELICA SPACEGEAR

97 SERIES 2

6G72 3.0L 24V

V4A51 AUTOMATIC



This is to be used as a guide only.

Much of this is plagiarised from Mitsubishi workshop manuals.

Reference Manuals

MSSP-003B-2003 2003 US Montero Sports (aka Challenger)
and many others.

Revision 2.0

Assistance

RT (Delica club member)

This is unfinished so I have not sorted page formatting etc.

MAPPED AND TESTED BY JASON MCKENZIE (MACCA) ON HIS "TOASTER".

1	2		3	4	C54					5	6		7	8	41	42	43			44	45	46	71	72	73	74			75	76	77	101	102	103	104			105	106	107										
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	47	48	49	50	51	52	53	54	55	56	57	78	79	80	81	82	83	84	85	86	87	88	89	108	109	110	111	112	113	114	115	116	117	118	119	120
24	25		26	27	28	29		30	31	32	33		34	35	58	59		60	61	62	63		64	65	66	90	91		92	93	94		95	96		97	98	121	122	123		124	125		126	127	128		129	130

Pin No.	Inspection item	Wire colour (primary + stripe)	Inspection condition (engine condition)	Normal condition
1	No.1 injector	Blue/yellow	<ul style="list-style-type: none"> Engine: warming up, idling Suddenly depress the accelerator pedal 	From 11-14 V momentarily drops slightly
9	No. 2 injector	Yellow/green		
24	No. 3 injector	Yellow/blue		
2	No. 4 injector	Yellow/black		
10	No. 5 injector	Yellow/red		
25	No. 6 injector	Green/yellow		
11	Ignition power transistor unit A	Green/white	Engine: 3,000rpm	0.3-3.0 V
12	Ignition power transistor unit B	Green/black (thick stripe)		
13	Ignition power transistor unit C	Brown/white		
14	Stepper motor coil <A1>	Green/black (thin stripe)	<ul style="list-style-type: none"> Engine: warming up, idling A/C switch: OFF → ON Headlight switch: OFF → ON 	Battery ↔ 1 V or less (Changes repeatedly)
28	Stepper motor coil <A2>	Green/red		
15	Stepper motor coil <B1>	Green		
29	Stepper motor coil <B2>	Green/blue		
19	Volume air flow sensor reset signal	Green/white	Engine: idling	1 V or less
			Engine: 3000rpm	6 – 9 v
20	Fuel pump relay	White/red	Ignition “ON”	B+
*			Engine: idling	1v or less
21	A/C compressor clutch relay	Green/yellow	<ul style="list-style-type: none"> Engine: idling A/C switch: OFF → ON (A/C compressor is operating) 	B+ → 1V or less as A/C clutch cycles
22	Engine check light	Light green/red	Ignition switch “OFF” → “ON”	1 v or less → 9 – 13 v (after several seconds have elapsed)

[illegible]

Pin No.	Inspection item	Wire colour (Primary + stripe)	Inspection condition (engine condition)		Normal condition
41	Power supply	Black/red	Ignition switch: "ON"		B+
47					
42	PCM ground	Black	Test between pin out and body ground		Continuity (0 Ω)
48					
43	Spark check signal	White	Engine: 3,000rpm		0.3 – 3.0 V
44	Engine coolant temperature sensor	Yellow/green	Ignition switch: "ON"	When engine coolant temperature is -20° C (-4° F)	3.9 – 4.5 V
				When engine coolant temperature is 0° C (32° F)	3.2 – 3.8 V
				When engine coolant temperature is 20° C (68° F)	2.3 – 2.9 V
				When engine coolant temperature is 40° C (104° F)	1.3 – 1.9 V
				When engine coolant temperature is 60° C (140° F)	0.8 – 1.4 V
				When engine coolant temperature is 80° C (176° F)	0.3 – 0.9 V
45	Crankshaft position sensor	Blue/yellow	Engine: cranking		0.4 – 4.0 V
			Engine: idling		1.5 – 2.5 V
46	Sensor supplied voltage	Green/yellow	Ignition switch: "ON"		4.5 – 5.5 V
49	MFI relay (power supply)	Blue/green	Ignition switch: "OFF"		B+
			Ignition switch: "ON"		1 V or less
50	A/T control relay	Yellow	Ignition switch: "LOCK" (OFF)		1 V or less
			Ignition switch: "ON"		B+

1	2	3	4			5	6	7	8
9	10	11	12	13	14	15	16	17	18
19	20	21	22	23					
24	25	26	27	28	29	30	31	32	33
34	35								

41	42	43			C53			44	45	46
47	48	49	50	51	52	53	54	55	56	57
58	59		60	61	62	63		64	65	66

71	72	73	74				75	76	77
78	79	80	81	82	83	84	85	86	87
88	89								
90	91	92	93	94	95	96	97	98	

101	102	103	104					105	106	107
108	109	110	111	112	113	114	115	116	117	118
119	120									
121	122	123	124	125	126	127	128	129	130	

Pin No.	Inspection item	Wire colour (Primary + stripe)	Inspection condition (engine condition)		Normal condition
52	Power steering pressure switch	Blue/white	Engine: warming up or idling	When steering wheel is stationary	B+
				When steering wheel is turned	1V or less
55 *	Barometric pressure sensor	Pink	Ignition switch: "ON"	When altitude is 0 m (0 ft)	3.7 – 4.3 V
				When altitude is 600 m (1,969 ft)	3.4 – 4.0 V
				When altitude is 1,200 m (3,937 ft)	3.2 – 3.8 V
				When altitude is 1,800 m (5,906 ft)	2.9 – 3.5 V
56	Camshaft position sensor	Blue/red	Engine: cranking		0.4 – 3.0 V
			Engine: idling		0.5 – 2.0 V
57	Engine/transmission sensor ground	Black	Test between body and pin out while connected to PCM/ECU		Virtually Continuity (0 Ω)
58	Ignition switch	Black/blue	Engine: cranking		8 V or more
59 *	In gear indicator	Black/yellow	Ignition: "ON" gear selector in any position other than P or N		B+
64 *	Intake air temperature sensor	Red/blue	Ignition switch: "ON"	When intake air temperature is -20° C (-4° F)	3.8 – 4.4 V
				When intake air temperature is -0° C (32° F)	3.2 – 3.8 V
				When intake air temperature is 20° C (68° F)	2.3 – 2.9 V
				When intake air temperature is 40° C (104° F)	1.5 – 2.1 V
				When intake air temperature is 60° C (140° F)	0.8 – 1.4 V
				When intake air temperature is 80° C (176° F)	0.4 – 1.0 V
65	Volume air flow sensor	White/black	Engine: idling and at 2,500rpm		2.2 – 3.2 V
66	Backup power supply	Red/Black	Ignition switch: "OFF" "Always powered"		B+

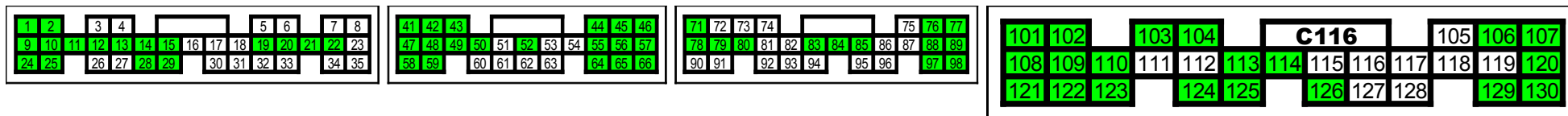
1	2		3	4				5	6		7	8		
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
24	25		26	27	28	29		30	31	32	33		34	35

41	42	43					44	45	46	
47	48	49	50	51	52	53	54	55	56	57
58	59		60	61	62	63		64	65	66

71	72	73	74	C52				75	76	77	
78	79	80	81	82	83	84	85	86	87	88	89
90	91		92	93	94		95	96		97	98

101	102		103	104					105	106	107	
108	109	110	111	112	113	114	115	116	117	118	119	120
121	122	123		124	125		126	127	128		129	130

Pin No.	Inspection item	Wire colour (Primary + stripe)	Inspection condition (engine condition)		Normal condition
71	Oxygen sensor	White	Engine: Warming up, 2,500rpm (check using digital multimeter)		0↔ 0.8 V Changes repeatedly
76	Ground	Black	Always		1 V or less
77	Solenoid valve power supply	Red/blue (thick)	Ignition switch: LOCK (OFF)		1 V or less
			Ignition switch: ON		B+
78	Throttle position sensor	Brown	Ignition switch: "ON" (check for smooth voltage increase as throttle is moved from idle position to wide open throttle)	Closed throttle	0.535 – 0.735 V
				Wide open throttle	4.5 – 5.5 V
79	Idle position signal	Yellow/red (thick)	Ignition switch: ON	Set throttle valve to idle position	0 – 1 V
				Open throttle slightly	4 V or more
80	Speed sensor	Yellow/red (thin)	<ul style="list-style-type: none"> Ignition switch: ON Move the vehicle slowly forward 		0↔ 8 – 12 V (Changes repeatedly)
83	A/C switch	Green/red	Turn the A/C switch OFF		1 V or less
			Turn the A/C switch ON (A/C compressor is operating)		B+
84	Diag Connector MPI functions query data >>>	Green/red (thin)	4.7V ign on and running, weird outputs when switched off		???????????????
85	Diag Connector MPI functions report data <<<	Yellow/orange	Switches variable voltage in on position, no delay switching off, switches off in start position.		
88	Ground	Black	Always		1 V or less
89	Solenoid valve power supply	Red/blue (thick)	Ignition switch: LOCK (OFF)		1 V or less
			Ignition switch: ON		B+
97	Ground	Black	Always		1 V or less
98	Ignition switch-IG	Yellow/blue	Ignition switch: "ON"		B+



Pin No.	Inspection item	Wire colour (Primary + stripe)	Inspection condition (engine condition)	Normal condition
101	Park/Neutral position switch: P	Red	Ignition switch: "ON" Selector lever position: P	B+
			Ignition switch: "ON" Selector lever position: Over than above.	1 V or less
102	Park/Neutral position switch: D	Yellow	Ignition switch: "ON" Selector lever position: D	B+
			Ignition switch: "ON" Selector lever position: Over than above.	1 V or less
103*	Input shaft speed sensor	Blue	Measure between terminals 57 and 103 with an oscilloscope. Engine: 2,000rpm Gear range: 3 rd gear	Refer to XXXXXX Inspection Procedure Using an oscilloscope.
104*	Output shaft speed sensor	Blue/white	Measure between terminals 57 and 104 with an oscilloscope. Engine: 2,000rpm Gear range: 3 rd gear	Refer to XXXXXX Inspection Procedure Using an oscilloscope.
106	Second solenoid valve	Red/yellow	Engine: Idling Gear range: 2 nd gear (Test by rolling into 2 nd gear or using hold button)	B+
			Engine: Idling Selector lever position: P	6 – 9 V
107*	Unsure	Yellow	Ignition: ON In any gear position etc Got no results other than B+	B+
108	Park/Neutral position switch: R	Red/blue	Ignition switch: ON Selector lever position: R	B+
			Ignition switch: ON Selector lever position: Other than above	1 V or less
109	Overdrive switch	Red/black	Ignition switch: ON Overdrive switch: ON	B+
			Ignition switch: ON Over drive switch: OFF	1 V or less

1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	24 25 26 27 28 29 30 31 32 33 34 35	41 42 43 44 45 46	47 48 49 50 51 52 53 54 55 56 57	58 59 60 61 62 63 64 65 66	71 72 73 74 75 76 77	78 79 80 81 82 83 84 85 86 87 88 89	90 91 92 93 94 95 96 97 98	101 102 103 104	C116	105 106 107	108 109 110 111 112 113 114 115 116 117 118 119 120	121 122 123 124 125 126 127 128 129 130
-----------------	---	-------------------------------------	-------------------	----------------------------------	----------------------------	----------------------	-------------------------------------	----------------------------	-----------------	------	-------------	---	---

Pin No.	Inspection item	Wire colour (Primary + stripe)	Inspection condition (engine condition)	Normal condition
110	Park/Neutral position switch: L	Pink	Ignition switch: ON Selector lever operation:L	B+
			Ignition switch: ON Selector lever operation: Anything other than above	1 V or less
120*		Forgot to record!!!	Ignition: ON “No results, only B+ in any gear, test etc”	B+
121	Park/Neutral position switch: N	Black/white	Ignition switch: ON Selector lever operation: N	B+
			Ignition switch: ON Selector lever operation: Anything other than above	1 V or less
122	Park/Neutral position switch: 2	Yellow/black	Ignition switch: ON Selector lever operation: 2	B+
			Ignition switch: ON Selector lever operation: Anything other than above	1 V or less
123	Stoplight switch	Green	Ignition switch: ON Brake pedal: Depressed	B+
			Ignition switch: ON Brake pedal: Released	1 V or less
124	A/T fluid temperature sensor	Green/red	A/T fluid temperature: 20°C (68°F)	3.8 – 4.0 V
			A/T fluid temperature: 40°C (104°F)	3.2 – 3.4 V
			A/T fluid temperature: 80°C (176°F)	1.7 – 1.9 V

1 2 3 4 5 6 7 8	9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	24 25 26 27 28 29 30 31 32 33 34 35	41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66	71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98	101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130
-----------------	---	-------------------------------------	---	---	---

Pin No.	Inspection item	Wire colour (Primary + stripe)	Inspection condition (engine condition)	Normal condition
125 (T)	Transfer low detection switch <V4A51>	Blue/red	Ignition switch: ON Selector lever operation: N Transfer position: 4L <V4A51>	1 V or less
			Ignition switch: ON Selector lever operation: N Transfer position: Other than above	B+
129	Low-reverse solenoid valve	Red/green	Engine: Idling Selector lever position: P	B+
			Engine: Idling Selector lever position: 2 nd gear	6 – 9 V
130	Overdrive solenoid valve	Blue	Engine: Idling Selector lever position: 3 rd gear	B+
			Engine: Idling Selector lever position: P	6 – 9 V

Anything marked with * means untested or unconfirmed

Yes there has been a few times I had missed recording colours etc

This is unfinished.

Please contact me via email if you spot errors or can confirm anything for me.
4wdtoaster@gmail.com