PART NO.

HITACHI

Workshop Manual

EX

EX/50-5
EX800H-5
Hydraulic Excavator

Service Manual consists of the following separate Part No.
Technical Manual (Troubleshooting)
Workshop Manual

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TIGHTENING TORQUE SPECIFICATIONS

No.	Descriptions			Bolt Dia mm	Q'ty	Wrench Size (mm)	Torque N·m	Torque kgf·m	Torque lbf·ft
1	Engine cushion rubber mounting bolt	Front	Engine cushion rubber	16	2	24	265	27	195
			Cushion rubber-machine	16	2	24	265	27	195
		Rear	Engine cushion rubber	24	2	36	690	70	510
			Cushion rubber-machine	18	4	27	390	40	290
2	Muffler bracket mounting bolt			UNC 1/2 UNC 3/8	4 6	19 14	88 49	9 5	65 36
3	Radiator mounting bolt			24	4	36	690	70	510
4	Hydraulic oil tank mounting bolt			18	8	27	295	30	215
5	Fuel tank mounting bolt			18	4	27	295	30	215
6	ORS fittings for hydraulic hoses and piping			1-$\frac{7}{16}$-12UNF		41	205	21	152
7	Pump transmission mounting bolt			UNC $\frac{7}{16}$	14	16	69	7	51
8	Pump device mounting bolt			24	4	36	690	70	510
9	Control valve mounting bolt			20	4	30	390	40	290
10	Swing device mounting bolt			24	28	36	930	95	690
11	Swing motor mounting bolt (hexagonal wrench)			20	24	30	390	40	290
12	Battery mounting bolt			12	2	19	34	3.5	25.5
13	Cab mounting bolt	STD		16	4	24	205	21	152
		H		16	6	24	205	21	152
14	Swing bearing mounting bolt to upperstructure			33	36	50	2160	220	1590
				33	4	50	2160	220	1590
	Swing bearing mounting bolt to undercarriage			30	40	46	1720	175	1270
15	Travel device mounting bolt			27	40	41	1370	140	1010
	Travel motor mounting bolt			18	8	27	295	30	215
	Sprocket mounting bolt			27	48	41	1370	140	1010
16	Upper roller mounting			20	24	30	540	55	400
17	Lower roller mounting bolt	STD, H		24	72	36	930	95	690
18	Track shoe bolt	STD, H		27	408	41	1960	200	1450
19	Track guard mounting bolt	STD, H		27	16	41	1370	140	1010
20	Track frame mounting bolt			36	44	55	2750	280	2030
21	Coupling and clamp of low pressure piping	Coupling		8		13	10.5 to 12.5	1.05 to 1.26	7.6 to 9.1
		Clamp		$\frac{1}{4}$-28UNF		11	5.9	0.6	4.3
22	Counterweight mounting bolt			45	2	65	2750	280	2030
	Counterweight retaining bolt			24	4	36	690	70	510
23	Front pin-retaining bolt			20	30	30	390	40	290

NOTE: (1) Apply lubricant (e.g. white Zinc B dissolved into spindle oil) to bolts and nuts to stabilize friction coefficient of them.

(2) Make sure bolt and nut threads are clean before installing.

(3) Apply LOCTITE to threads before installing and tightening swing bearing mounting bolts.

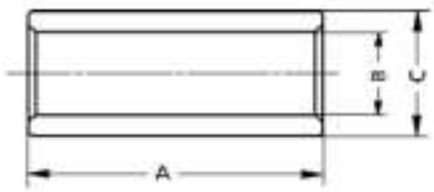
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MAINTENANCE STANDARD

Item		Allowable Limit (basis of judgment)	Remedy
Body, Spindle	Sliding Surface and Sealed Part	Scored or damaged due to foreign matter.	Replace
	Sliding Surface Except Sealed Part	1) Scored more than 0.1 mm (0.004 in).	Replace
		2) Scored less than 0.1 mm (0.004 in) deep.	Repair with oil stone
	Sliding Surface to Ring	1) Wear more than 0.5 mm (0.02 in) deep. Abnormal wear.	Replace
		2) Wear less than 0.5 mm (0.02 in) deep.	Repair
		3) Scored less than 0.5 mm (0.02 in) deep and able to repair.	Repair
Cover	Sliding Surface to Ring	1) Wear more than 0.5 mm (0.02 in).	Replace
		2) Wear less than 0.5 mm (0.02 in).	Repair
		3) Scored less than 0.5 mm (0.02 in) and able to repair.	Repair

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Master Bushing

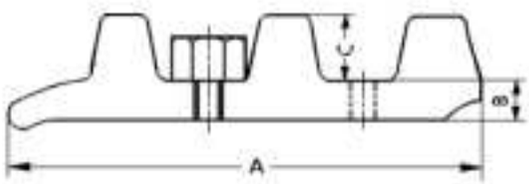


W105-03-07-023

Unit: mm (in)

	Standard	Allowable Limit	Remedy
A	204.15 (8.04)	–	Replace
B	57.65 (2.27)	60.65 (2.39)	
C	85.35 (3.36)	80.35 (3.16)	

Grouser Shoe



W105-03-07-024

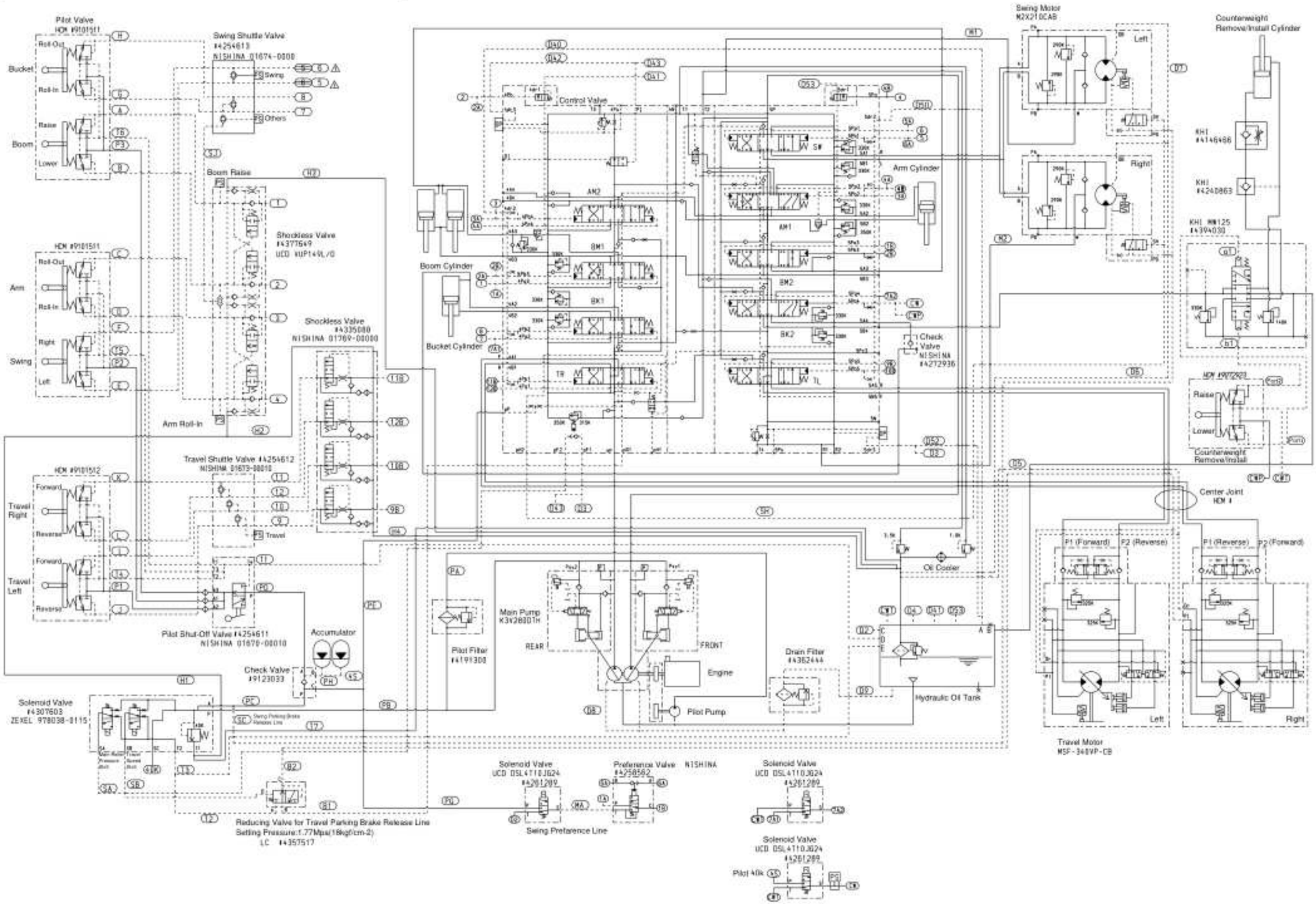
Unit: mm (in)

	650 mm Grouser		
	Standard	Allowable Limit	Remedy
A	302 (11.89)	–	Replace
B	20 (0.79)	–	
C	50 (1.97)	30 (1.18)	

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EX750-5 EX800H-5 HYDRAULIC CIRCUIT DIAGRAM (BACKHOE:C/W REMOVE/INSTALL DEVICE)

⚠ CAUTION: Parts numbers on the drawing are provided only for reference purpose.
To order parts on the drawing, be sure to consult the Parts Catalog.



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EX750-5 CAB HARNESS 2 (Machines produced up to end of April 1997)

⚠ CAUTION : This cab harness is applicable to all machines manufactured before April, 1997.

NO.	SIZE	COLOR	CIRCUIT FROM	CIRCUIT TO	COMENT
1	0.5	LOr	E c/u 1	RELAY/H 3	CAVS
2	0.5	BW	E c/u 2	V c/u 11	CAVS
3	0.5	BY	E c/u 3	V c/u 5	CAVS
4	0.5	W	E c/u 4	ENG/H	AV Seald
8	0.5	YR	E c/u 8	ENG/H	CAVS
9	0.5	BR	E c/u 9	V c/u 4	CAVS
10	0.5	BL	E c/u 10	V c/u 12	CAVS
11	0.5	B	E c/u 11	ENG/H	AV Seald
14	0.5	BrY	E c/u 14	RELAY/H 2	CAVS
15	0.5	LW	E c/u 15	Max.Flow Change Sw. 1	CAVS
16	0.5	GOr	E c/u 16	Max.Flow Change Sw. 6	CAVS
17	0.5	OrL	E c/u 17	RELAY/H 1	CAVS
18	0.5	OrB	E c/u 18	RELAY/H 1	CAVS
19	0.5	BG	E c/u 19	ENG/H	CAVS
20	0.5	RG	E c/u 20	Cut Off Press. Change Sw. 2	CAVS
21	0.5	WG	E c/u 21	ENG/H	CAVS
22	0.5	WG	E c/u 22	(21)	CAVS
23	0.5	WR	E c/u 23	Eng.Control Dial 9	CAVS
24	0.5	BrY	E c/u 24	FUSE 2	CAVS
25	0.5	B	E c/u 25	Floor GND	CAVS
26	0.5	BrB	E c/u 26	(39)	CAVS
28	0.5	YL	E c/u 28	Max.Flow Change Sw. 3	CAVS
29	0.5	BrG	E c/u 29	Cut Off Press. Change Sw. 3	CAVS
30	0.5	W	E c/u 30	RELAY/H 1	CAVS
31	0.5	RW	E c/u 31	Quick Idle SW(Fe)	CAVS
32	0.5	YB	E c/u 32	Quick Idle SW(M)	CAVS
33	0.5	LY	E c/u 33	ENG/H	CAVS
34	0.5	GB	E c/u 34	ENG/H	CAVS
35	0.5	WB	E c/u 35	ENG/H	CAVS
36	0.5	WB	E c/u 36	(35)	CAVS
37	0.5	BrY	E c/u 37	(24)	CAVS
38	0.5	B	E c/u 38	(25)	CAVS
39	0.5	RB	E c/u 39	FUSE 6	CAVS
42	0.5	W	(233)	ENG/H	CAVS
45	0.5	RY	(240)	ENG/H	CAVS
101	1.25	B	E c/u 101	Floor GND	CAVS
102	0.5	BrW	E c/u 102	RELAY/H 3	CAVS
103	0.5	Br	E c/u 103	ENG/H	CAVS
104	0.5	R	E c/u 104	ENG/H	CAVS
105	1.25	B	E c/u 105	(101)	CAVS
106	0.5	BrW	E c/u 106	(102)	CAVS
107	0.5	Or	E c/u 107	ENG/H	CAVS
108	0.5	Y	E c/u 108	ENG/H	CAVS
201	0.5	BW	V c/u 1	ENG/H	CAVS
202	0.5	BG	V c/u 2	ENG/H	CAVS
203	0.5	BrR	V c/u 3	ENG/H	CAVS
206	0.5	BL	V c/u 6	Dr.EX 3	CAVS
207	0.5	RB	V c/u 7	Dr.EX 2	CAVS
208	0.5	BY	V c/u 8	ENG/H	CAVS
209	0.5	WB	V c/u 9	ENG/H	CAVS
210	0.5	BrG	V c/u 10	ENG/H	CAVS
213	0.5	BG	V c/u 13	Dr.EX 1	CAVS
215	0.5	BP	V c/u 15	Dr.EX 4	CAVS
216	0.5	LOr	V c/u 16	ENG/H	CAVS
217	0.5	LB	V c/u 17	ENG/H	CAVS
218	0.5	BY	V c/u 18	ENG/H	CAVS
220	0.5	GrL	V c/u 20	RELAY/H 1	CAVS
221	0.5	BY	V c/u 21	RELAY/H 1	CAVS
222	0.5	YB	V c/u 22	ENG/H	CAVS
223	0.5	WL	V c/u 23	D10-A	CAVS
224	0.5	LG	V c/u 24	ENG/H	CAVS
225	0.5	LW	V c/u 25	ENG/H	CAVS
227	0.5	GrR	V c/u 27	RELAY/H 1	CAVS
228	0.5	BR	V c/u 28	RELAY/H 1	CAVS
229	0.5	Or	V c/u 29	ENG/H	CAVS
230	0.5	WR	V c/u 30	ENG/H	CAVS
231	0.5	GB	V c/u 31	ENG/H	CAVS
232	0.5	G	V c/u 32	ENG/H	CAVS
233	0.5	W	V c/u 33	ENG/H	CAVS
234	0.5	GOr	V c/u 34	ENG/H	CAVS
235	0.5	RW	V c/u 35	ENG/H	CAVS
236	0.5	Y	V c/u 36	EX3-1 2	CAVS
237	0.5	YG	V c/u 37	FUSE 8	CAVS
238	0.5	B	V c/u 38	(25)	CAVS
239	0.5	BrY	V c/u 39	(24)	CAVS
240	0.5	RY	V c/u 40	ENG/H	CAVS
241	0.5	G	V c/u 41	ENG/H	CAVS
242	0.5	RG	V c/u 42	ENG/H	CAVS
243	0.5	RY	V c/u 43	ENG/H	CAVS

NO.	SIZE	COLOR	CIRCUIT FROM	CIRCUIT TO	COMENT
244	0.5	YL	V c/u 44	ENG/H	CAVS
246	0.5	YG	V c/u 46	(237)	CAVS
247	0.5	B	V c/u 47	(25)	CAVS
248	0.5	BrY	(239)	V c/u 48	CAVS
301	1.25	B	V c/u 101	(101)	CAVS
302	0.5	BrR	V c/u 102	FUSE 9	CAVS
303	0.5	GY	V c/u 103	D20-K	CAVS
306	0.5	RB	V c/u 106	ENG/H	CAVS
309	1.25	B	V c/u 109	(101)	CAVS
310	0.5	BrR	V c/u 110	(302)	CAVS
312	0.5	OrL	V c/u 112	ENG/H	CAVS
314	0.5	RL	V c/u 114	ENG/H	CAVS
317	0.5	GOr	(234)	ENG/H	CAVS
355	0.5	BrR	(302)	ENG/H	CAVS
362	0.5	BW	RELAY/H 3	FUSE 3	CAVS
364	Seald	Wire	(101)	ENG/H	AVS
401	0.5	RL	RELAY/H 1	D16-A	CAVS
402	0.5	WY	RELAY/H 1	ENG/H	CAVS
403	0.5	GL	RELAY/H 1	ENG/H	CAVS
404	0.5	BrW	RELAY/H 1	Auto-Lub./Con 19	CAVS
406	0.5	P	RELAY/H 1	Limit SW 2	CAVS
407	0.5	WB	RELAY/H 1	ENG/H	CAVS
408	0.5	L	RELAY/H 1	ENG/H	CAVS
409	0.5	G	RELAY/H 1	ENG/H	CAVS
410	0.5	WL	RELAY/H 1	ENG/H	CAVS
429	0.5	YG	RELAY/H 2	(237)	CAVS
434	0.5	YL	RELAY/H 2	Eng.Control Dial 1	AVS
435	0.5	YR	RELAY/H 2	Eng.Control Dial 3	AVS
438	0.5	YW	RELAY/H 2	Eng.Control Dial 2	CAVS
439	0.5	R	RELAY/H 2	FUSE 1	CAVS
440	0.5	YG	RELAY/H 3	(237)	CAVS
443	0.5	Or	RELAY/H 3	D20-A	CAVS
446	0.5	Br	RELAY/H 2	ENG/H	CAVS
447	0.5	RG	RELAY/H 2	ENG/H	CAVS
500	5	B	RELAY/H 5	Floor GND	AVS
501	3	B	(500)	ENG/H	AVS
515	0.85	BrB	ENG/H	FUSE 5	CAVS
531	3	R	ENG/H	Key SW 1	AVS
534	3	RW	FUSE 18 +	Key SW 4	AVS
535	2	RB	D6-A	Key SW 5	AVS
536	2	BW	FUSE 4 +	Key SW 6	AVS
537	2	RW	D6-K	ENG/H	AVS
548	8	W	FUSE 11 +	ENG/H	AV
549	2	RB	(535)	FUSE 5 +	AVS
550	0.5	R	(531)	RELAY/H 2	CAVS
552	0.5	RW	(537)	RELAY/H 2	CAVS
553	3	RG	FUSE 11	RELAY/H 5	AVS
557	0.85	Y	ENG/H	RELAY/H 3	CAVS
558	2	RL	ENG/H	RELAY/H 4	AVS
562	2	R	ENG/H	RELAY/H 4	AVS
565	2	RW	FUSE 18	RELAY/H 4	AVS
568	0.5	P	Horn SW(Fe)	RELAY/H 3	CAVS
569	0.5	B	Horn SW(M)	(501)	CAVS
570	1.25	RG	RELAY/H 4	ENG/H	CAVS
572	0.5	L	FUSE 13	RELAY/H 2	CAVS
593	0.5	LY	ENG/H	RELAY/H 2	CAVS
595	0.85	BrR	FUSE 20	Room Lamp	CAVS
596	0.5	LgW	Speaker R+	RADIO FM 3	CAVS
597	0.5	LgB	Speaker R-	RADIO FM 9	CAVS
598	0.5	LgY	Speaker L+	RADIO FM 4	CAVS
599	0.5	LgR	Speaker L-	RADIO FM 10	CAVS
600	0.5	B	(500)	RADIO FM 7	CAVS
602	0.5	R	(439)	RADIO FM 6	CAVS
610	0.85	WY	FUSE 7	Air Con./C 1	CAVS
611	3	R	(531)	FUSE 1 +	AVS
612	5	W	(548)	FUSE 10 +	AVS Diverform 6
613	3	W	(548)	FUSE 12 +	AVS Diverform 6
614	3	W	(548)	FUSE 16 +	AVS
620	1.25	Br	FUSE 19	RELAY/H 4	CAVS
621	0.5	BrR	(595)	RADIO FM 2	CAVS
625	2	W	(548)	FUSE 14 +	AVS
630	0.85	L	FUSE 15 +	Key SW 3	CAVS
631	0.5	Y	FUSE 15	Ether SW 1	CAVS
632	0.5	YL	ENG/H	Ether SW 2	CAVS
633	0.5	Sb	RELAY/H 3	ENG/H	CAVS
634	0.5	W	(548)	RELAY/H 3	CAVS

NO.	SIZE	COLOR	CIRCUIT FROM	CIRCUIT TO	COMMENT
640	0.85	YW	FUSE 17	ENG/H	CAVS
644	0.85	B	Motion Alarm SW1	(500)	CAVS
645	0.85	YL	Motion Alarm SW2	ENG/H	CAVS
650	0.5	GW	(675)	ENG/H	CAVS
651	0.5	YW	Auto-Lub./C 14	Auto-Lub. Alarm SW 3	CAVS
652	0.5	OrW	Auto-Lub./C 3	Auto-Lub. Alarm SW 2	CAVS
654	0.5	RW	Auto-Lub./C 17	Auto-Lub. Alarm SW 4	CAVS
656	0.5	WR	Auto-Lub./C 6	Auto-Lub. Interval SW 4	CAVS
658	0.5	RG	Auto-Lub./C 8	RELAY/H 3	CAVS
661	0.5	GW	Auto-Lub./C 11	(675)	CAVS
662	0.5	LW	Auto-Lub./C 12	Auto-Lub. Interval SW 2	CAVS
663	0.5	YR	Auto-Lub./C 13	Auto-Lub. Interval SW 3	CAVS
664	0.5	WL	Auto-Lub./C 1	ENG/H	CAVS
667	0.5	RL	Auto-Lub./C 4	ENG/H	CAVS
668	0.5	LY	Auto-Lub./C 18	RELAY/H 3	CAVS
671	0.5	B	Auto-Lub./C 21	(25)	CAVS
675	1.25	GW	RELAY/H 4	FUSE 10	CAVS
676	1.25	Y	RELAY/H 4	ENG/H	CAVS
677	0.5	WL	ENG/H	D10-K	CAVS
678	0.5	WL	(677)	D11-K	CAVS
679	0.5	G	ENG/H	D11-A	CAVS
681	0.5	BrR	(302)	D9-K	CAVS
682	0.5	OrL	(312)	D9-A	CAVS
684	0.5	BrB	(515)	D12-K	CAVS
685	0.5	B	(500)	D12-A	CAVS
686	0.5	WG	(21)	Resistor 2	CAVS
687	0.5	WB	(35)	Cut Off Press. Change Sw. 1	CAVS
690	0.5	YW	(438)	Eng.Control Dial 4	CAVS
691	0.5	B	(25)	Eng.Control Dial 6	CAVS
692	0.5	Y	(557)	Eng.Control Dial 7	CAVS
693	0.5	WB	(35)	Eng.Control Dial 8	CAVS
694	0.5	WG	(21)	Eng.Control Dial 10	CAVS
700	0.5	WY	Blower Main Relay 1	(610)	CAVS
701	0.5	G	Blower Main Relay 2	Air Con./C 2	CAVS
702	1.25	RW	Blower Main Relay 3	Blower Motor 2	CAVS
703	2	Br	Blower Main Relay 4	FUSE 12	AVS
706	1.25	B	Blower Hi. Relay 3	(500)	CAVS
707	1.25	BR	Blower Hi. Relay 4	Blower Motor 1	CAVS
708	0.5	WY	Blower Hi. Relay 1	(700)	CAVS
709	0.5	YL	Blower Hi. Relay 2	Air Con./C 5	CAVS
712	1.25	B	Blower Mid. Relay 2-3	(706)	CAVS
713	1.25	LR	Blower Mid. Relay 2-4	Blower Resistor 2	CAVS
714	0.5	WY	Blower Mid. Relay 2-1	(700)	CAVS
715	0.5	L	Blower Mid. Relay 2-2	Air Con./C 4	CAVS
718	1.25	B	Blower Mid. Relay 1-3	(706)	CAVS
719	1.25	WR	Blower Mid. Relay 1-4	Blower Resistor 3	CAVS
720	0.5	WY	Blower Mid. Relay 1-1	(700)	CAVS
721	0.5	W	Blower Mid. Relay 1-2	Air Con./C 3	CAVS
724	1.25	W	Compress.Relay 3	ENG/H	CAVS
725	1.25	Br	Compress.Relay 4	(703)	CAVS
726	0.5	WY	Compress.Relay 1	(700)	CAVS
727	0.5	BrW	Compress.Relay 2	Dual Press. SW2	CAVS
730	0.5	P	Air Con./C 6	Dual Press. SW1	CAVS
731	0.5	LG	Air Con./C 21	Sirc.Servo Motor 1	CAVS
732	0.5	GR	Air Con./C 22	Sirc.Servo Motor 2	CAVS
733	0.85	B	Air Con./C 14	(706)	CAVS
734	1.25	B	Blower Resistor 4	(706)	CAVS
735	1.25	BR	Blower Resistor 1	(707)	CAVS
736	0.5	BrR	Vent.Servo Motor 2	Air Con./C 13	CAVS
737	0.5	Or	Vent.Servo Motor 3	Air Con./C 11	CAVS
738	0.5	Lg	Vent.Servo Motor 4	Air Con./C 23	CAVS
739	0.5	BG	Vent.Servo Motor 5	Air Con./C 18	CAVS
740	0.5	RY	Vent.Servo Motor 1	Air Con./C 17	CAVS
741	0.5	BrR	A/M Servo Motor 5	(736)	CAVS
742	0.5	RW	A/M Servo Motor 3	Air Con./C 10	CAVS
743	0.5	GW	A/M Servo Motor 4	Air Con./C 16	CAVS
744	0.5	BL	A/M Servo Motor 2	Air Con./C 20	CAVS
745	0.5	RL	A/M Servo Motor 1	Air Con./C 19	CAVS
746	0.5	BrR	Thermister 1	(736)	CAVS
747	0.5	PG	Thermister 2	Air Con./C 9	CAVS
750	0.85	BW	FUSE 4	ENG/H	CAVS
751	2	RW	FUSE 19 +	(534)	CAVS

NO.	SIZE	COLOR	CIRCUIT FROM	CIRCUIT TO	COMENT
756	0.5	LY	ENG/H	(33)	CAVS
758	0.5	RW	(235)	ENG/H	CAVS
759	0.5	RY	(243)	ENG/H	CAVS
760	0.5	G	(241)	ENG/H	CAVS
762	0.5	WB	(35)	ENG/H	CAVS
763	0.5	RW	(235)	EX3-1 1	CAVS
764	0.5	RY	(243)	EX3-1 3	CAVS
765	0.5	LR	EX3-2 2	EX3-2 3	CAVS
766	3	R	FUSE 16	Aux.+	AVS
767	3	B	(500)	Aux.-	AVS
768	0.5	R	(766)	D7-K	CAVS
769	0.5	B	(767)	D7-A	CAVS
804	2	W	ENG/H	FUSE 14	AVS
823	1.25	RW	ENG/H	RELAY/H 4	CAVS
829	0.5	B	(500)	Limit SW 1	CAVS
831	0.5	YL	D16-K	ENG/H	CAVS
832	0.5	YL	D17-K	(831)	CAVS
833	0.5	LY	D17-A	(756)	CAVS
834	0.5	W	D18-K	(724)	CAVS
835	0.5	B	D18-A	(500)	CAVS
836	0.5	GY	Buzzer	(303)	CAVS
837	0.5	YG	Buzzer	(237)	CAVS
850	0.5	WB	(35)	Cut Off Press. Change Sw. 4	CAVS
851	0.5	WB	(35)	ENG/H	CAVS
852	0.5	LW	(225)	ENG/H	CAVS
853	0.5	Or	Max. Flow Change Sw. 2	ENG/H	CAVS
854	0.5	Or	Max. Flow Change Sw. 4	(853)	CAVS
855	0.5	Or	Max. Flow Change Sw. 5	(853)	CAVS
856	0.5	RG	(20)	Resistor 1	CAVS
857	0.5	Or	D21-K	(853)	CAVS
858	0.5	LW	D21-A	(852)	CAVS
864	0.5	RG	Signal Line	(20)	CAVS
865	0.5	WB	Ground Line	(887)	CAVS
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