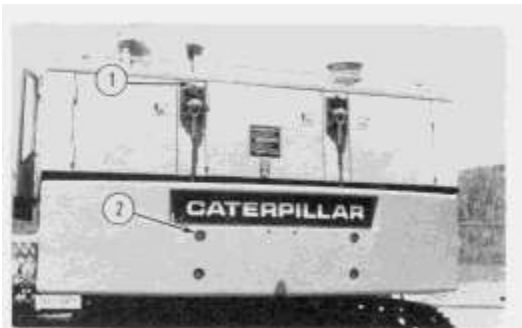


Counterweight

SMCS - 7110-010

Remove And Install Counterweight

NOTE: Before removal of the counterweight check to see that the center posts and tension rods are tight.

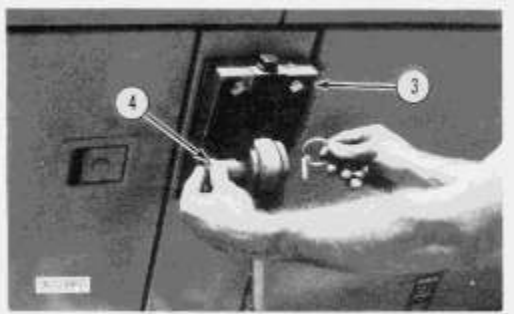


1. Tighten bolts (1) until cables are tight. Remove bolts (2) from counterweight.
2. Put machine in position with boom directly over side of track, with the stick in a vertical position.
3. Lower the boom and lift one side of machine off the ground. The counterweight will swing away from machine and lower to ground as machine is lifted. Weight of counterweight is 4536 kg (10,000 lb).



4. Remove pins from brackets (3) and disconnect cables from machine.
5. Lower machine by lifting boom.

NOTE: The following steps are for the installation of the counterweight.



6. Lift one side of machine high enough to connect cable to brackets (3) with pins (4).

7. Lower machine and lift counterweight into position on machine.



8. Install bolts (2) that hold counterweight to machine.

9. After the counterweight is installed loosen bolts in bracket (3) to release tension on cables.

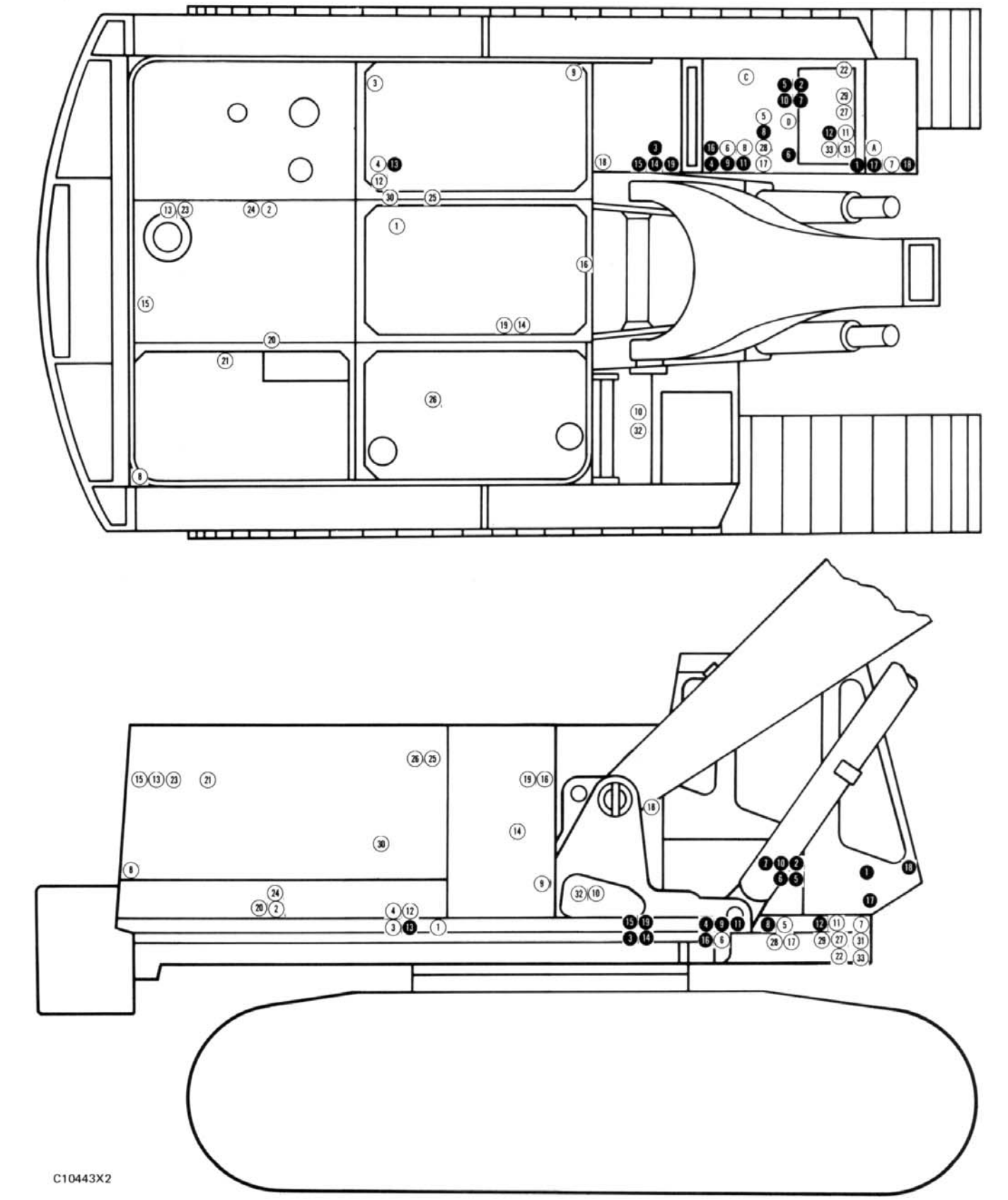
Main _____ 2

Collage _____ 4

Schematic

235C Excavator and Front Shovel Electrical System

5AF1-UP
4DG1-UP
2PG1-UP
3WG1-UP

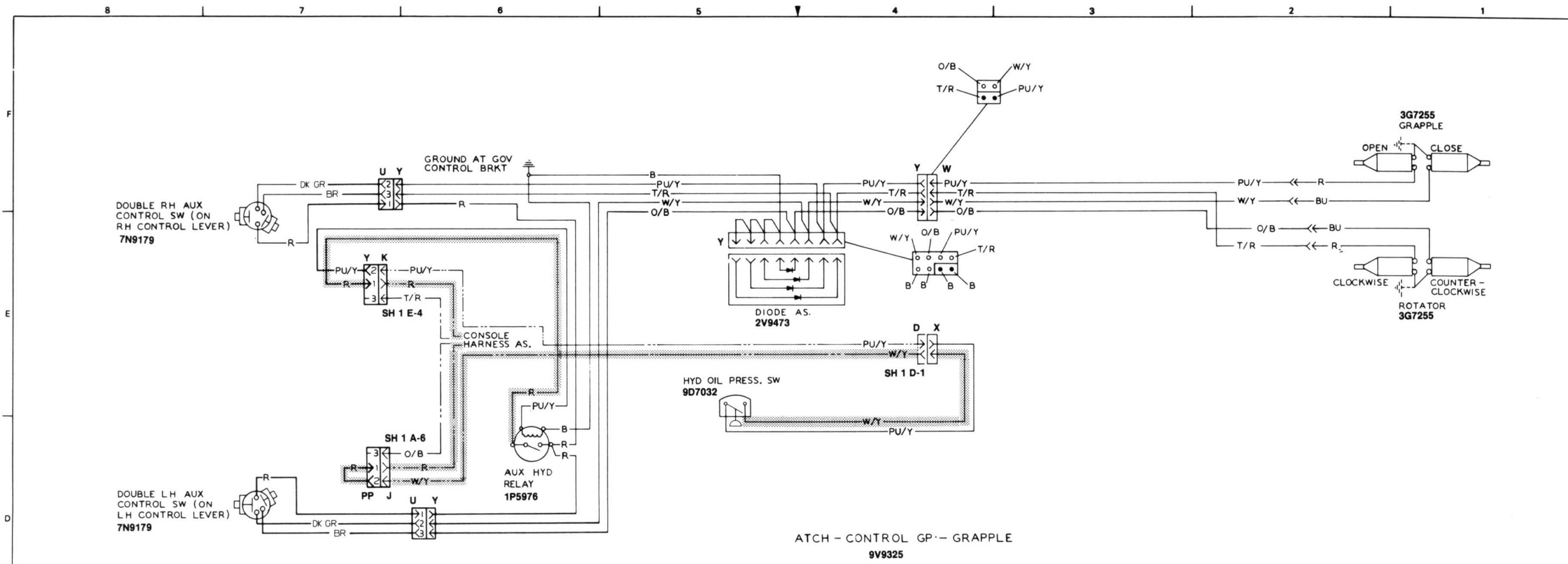


C104432

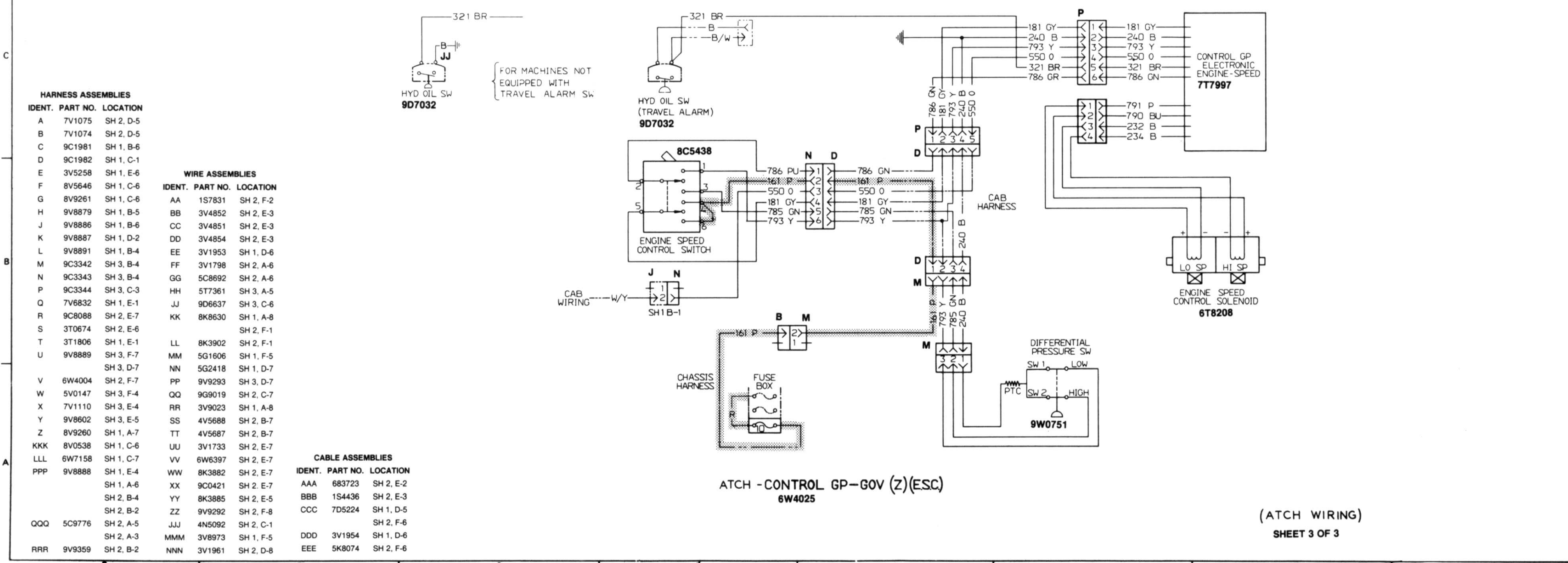
HARNES CONNECTOR AND COMPONENT LOCATIONS

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ATCH - CONTROL GP - GRAPPLE
9V9325



ATCH - CONTROL GP - GOV (Z)(ESC)
6W4025

(ATCH WIRING)
SHEET 3 OF 3

HARNES ASSEMBLIES

IDENT.	PART NO.	LOCATION
A	7V1075	SH 2, D-6
B	7V1074	SH 2, D-5
C	9C1981	SH 1, B-6
D	9C1982	SH 1, C-1
E	3V5258	SH 1, E-6
F	8V9260	SH 1, C-6
G	8V9261	SH 1, C-6
H	9V8879	SH 1, B-5
I	9V8880	SH 1, B-6
J	9V8881	SH 1, D-2
K	9V8882	SH 1, D-2
L	9V8883	SH 1, B-4
M	9C3342	SH 3, B-4
N	9C3343	SH 3, B-4
O	9C3344	SH 3, C-3
P	7V6832	SH 1, E-1
Q	9C3008	SH 2, E-7
R	3T0674	SH 2, E-6
S	3T1806	SH 1, E-1
T	9V8889	SH 3, F-7
U	9V8890	SH 3, D-7
V	6W4004	SH 2, F-7
W	5V0147	SH 3, F-4
X	7V1110	SH 3, E-4
Y	9V8902	SH 3, E-5
Z	9V8903	SH 1, A-7
AAA	8V9262	SH 1, C-6
BBB	8V9263	SH 1, C-6
CCC	8V9264	SH 1, C-6
DDD	8V9265	SH 1, C-6
EEE	8V9266	SH 1, C-6

WIRE ASSEMBLIES

IDENT.	PART NO.	LOCATION
AA	157831	SH 2, F-2
BB	3V4852	SH 2, E-3
CC	3V4851	SH 2, E-3
DD	3V4854	SH 2, E-3
EE	3V1953	SH 1, D-6
FF	3V1798	SH 2, A-6
GG	5C8692	SH 2, A-6
HH	5T7361	SH 3, A-6
II	9C6637	SH 3, C-6
KK	8K6330	SH 1, A-8
LL	8K3902	SH 2, F-1
MM	5G1606	SH 1, F-5
NN	5G2418	SH 1, D-7
OO	9V9293	SH 3, D-7
PP	9V9293	SH 3, D-7
QQ	9G9019	SH 2, C-7
RR	3V9023	SH 1, A-8
SS	4V5688	SH 2, B-7
TT	4V5687	SH 2, B-7
UU	3V1733	SH 2, E-7
VV	6V6397	SH 2, E-7
WW	8K3882	SH 2, E-7
XX	9C0421	SH 2, E-7
YY	8K3885	SH 2, E-7
ZZ	9V9292	SH 2, F-8
AAA	887723	SH 2, E-2
BBB	154436	SH 2, E-3
CCC	7D5224	SH 1, D-5
DDD	3V1954	SH 1, D-6
EEE	8K8074	SH 2, F-6

CABLE ASSEMBLIES

IDENT.	PART NO.	LOCATION
AAA	887723	SH 2, E-2
BBB	154436	SH 2, E-3
CCC	7D5224	SH 1, D-5
DDD	3V1954	SH 1, D-6
EEE	8K8074	SH 2, F-6

A - COMPONENTS IN OPERATOR COMPARTMENT - FRONT DASH
B - COMPONENTS IN OPERATOR COMPARTMENT - RIGHT CONSOLE
C - COMPONENTS IN OPERATOR COMPARTMENT - LEFT CONSOLE
D - COMPONENTS IN OPERATOR COMPARTMENT

IDENT.	SCHEMATIC COMPONENTS	LOCATION	IDENT.	SCHEMATIC COMPONENTS	LOCATION
1	Alarm - Travel	C - 7, sh 2	C	Switch - Defroster	A - 4, sh 1
2	Alternator	C - 1, sh 2	22	Switch - Differential Pressure	A - 3, sh 3
3	Batteries	F - 6, sh 2	A	Switch - Disconnect	D - 5, sh 1
D	Breaker - Air Conditioner (A/C)	F - 2, sh 1	C	Switch - Double L.H. Auxiliary Control (Lever)	D - 7, sh 3
D	Breaker - Air Conditioner (A/C)	E - 1, sh 1	B	Switch - Double R.H. Auxiliary Control (Lever)	F - 7, sh 3
4	Breaker - Main (60 Amp)	E - 3, sh 2	23	Switch - Engine Coolant Temperature (Start Aid)	E - 1, sh 2
5	Control - Electronic Engine-Speed (Circuit Breaker)	C - 2, sh 3	24	Switch - Engine Oil Pressure (Hour Meter)	E - 3, sh 2
A	Control - Monitor (MC)	E - 7, sh 1	C	Switch - Engine Speed Control	B - 5, sh 3
6	Diode As. - (Grapple Control)	E - 5, sh 3	D	Switch - Front And Rear Horn	B - 7, sh 1
A	Gauge - Engine Coolant Temperature	D - 8, sh 1	D	Switch - Heater	A - 5, sh 1
A	Gauge - Engine Oil Pressure	D - 8, sh 1	25	Switch - Hydraulic Oil Filter Pressure (IMC)	C - 6, sh 2
7	Horn - Front	B - 8, sh 1	26	Switch - Hydraulic Oil Low Level (MC)	F - 5, sh 2
8	Horn - Rear	F - 1, sh 2	27	Switch - Hydraulic Oil Pressure (Governor Control)	C - 5, sh 3
C	Meter - Service (Hour)	B - 2, sh 1	28	Switch - Hydraulic Oil Pressure (Grapple)	E - 5, sh 3
A	Meter - Voltage	D - 7, sh 1	29	Switch - Hydraulic Oil Pressure (Travel Alarm)	A - 7, sh 1
D	Motor - Air Conditioner Blower	E - 2, sh 1	30	Switch - Hydraulic Oil Temp. Compensator (MC)	B - 6, sh 2
D	Motor - Circulating Fan	F - 5, sh 1	D	Switch - Increase Pressure	F - 2, sh 1
A	Motor - Defroster	C - 8, sh 1	C	Switch - L.H. Auxiliary Control	A - 6, sh 1
D	Motor - Heater Blower	E - 2, sh 1	C	Switch - Monitor Control Test (Warning System)	A - 5, sh 1
9	Motor - Windshield Washer Pump	A - 6, sh 2	31	Switch - Neutral/Start	B - 7, sh 1
D	Motor - Windshield Wiper	C - 8, sh 1	B	Switch - R.H. Auxiliary Control	F - 4, sh 1
10	Motors - Condenser (A/C)	E - 6, sh 2	32	Switch - Refrigerant Pressure (A/C)	E - 6, sh 2
11	Relay - Auxiliary Hydraulic (Grapple Control)	D - 6, sh 3	C	Switch - Start	A - 6, sh 1
12	Relay - Start	E - 3, sh 2	B	Switch - Start Aid	F - 3, sh 1
13	Solenoid - Air Conditioner Clutch	C - 2, sh 2	D	Switch - Swing Orifice	F - 3, sh 1
14	Solenoid - Increased Pressure	F - 7, sh 2	B	Switch - Thermostat	F - 1, sh 1
15	Solenoid - Start Aid	D - 2, sh 2	C	Switch - Travel Alarm (Override)	A - 8, sh 1
16	Solenoid - Swing Orifice	F - 6, sh 2	D	Switch - Windshield Washer	A - 3, sh 1
17	Solenoids - Engine-Speed Control	B - 2, sh 3	C	Switch - Windshield Wiper	A - 4, sh 1
18	Solenoids - Grapple	F - 1, sh 3	D	Switch - Windshield Wiper	C - 7, sh 1
19	Solenoids - L.H. R.H. Auxiliary Control	E - 5, sh 2	C	Timer - Travel Alarm	A - 7, sh 1
20	Starter	E - 3, sh 2			
B	Switch - Air Conditioner And Blower	E - 2, sh 1			
21	Switch - Air Filter (MC)	F - 2, sh 2			
C	Switch - Boom And Front Lights	A - 5, sh 1			

CONNECTORS	IDENT.	HARNES AND/OR COMPONENTS	SCHEMATIC LOCATION	CONNECTORS	IDENT.	HARNES AND/OR COMPONENTS	SCHEMATIC LOCATION
14 CONTACTS	1	E - 3V5258 Monitor Control	E - 6, sh 1	9	D - 9C1982	Monitor Control	C - 6, sh 1
10 CONTACTS	2	D - 9C1982 L - 9V8891	B - 4, sh 1	10	D - 9C1982 J - 9V8890	Travel Alarm	B - 6, sh 1
	3	B - 7V1074	B - 8, sh 2	11	D - 9C1982 P - 9C3344	Travel Alarm	C - 4, sh 3
	4	D - 9C1982	B - 1, sh 1	12	Z - 8V9260	Timer Assembly (Travel Alarm)	A - 7, sh 1
8 CONTACTS	5	Y - 9V8602 Diode Assembly	E - 5, sh 3	13	H - 9V8879	Travel Alarm	A - 7, sh 1
	6	D - 9C1982 H - 9V8879	B - 5, sh 1	14	A - 7V1075	Travel Alarm	C - 5, sh 2
7 CONTACTS	7	D - 9C1982 K - 9V8887	D - 2, sh 1	15	B - 7V1074	Travel Alarm	C - 8, sh 2
	8	D - 9C1982 M - 9C3343	B - 4, sh 3	16	D - 9C1982 N - 9C3342	Travel Alarm	C - 1, sh 1
6 CONTACTS	9	P - 9C3344 Electronic Engine-Speed Control	C - 3, sh 3	17	E - 8V5646	Electronic Engine-Speed Control Solenoids	C - 3, sh 3
				18	LLL - 6W7158	Electronic Engine-Speed Control Solenoids	C - 3, sh 3
				19	LLL - 6W7158	Electronic Engine-Speed Control Solenoids	C - 3, sh 3

SWITCH SPECIFICATIONS				
PART NO.	FUNCTION	ACTUATE	DEACTUATE	NORMAL CONDITION
9D7032	Hydraulic Oil Pressure	517 ± 35 kPa (75.0 ± 5.0 psi)	414 ± 35 kPa (60.0 ± 5.0 psi)	N.O.
9G8010	Engine Oil Pressure (Service Meter)	110 ± 21 kPa (16.0 ± 3.0 psi)	62 ± 21 kPa (9.0 ± 3.0 psi)	N.O.
4N7687	Hydraulic Oil Temperature (Filter)	37.8 ± 2.8°C (100 ± 5°F)	26.7°C (80°F)	N.C.
6N5899	Engine Coolant Temperature (Start Aid)	37.8 ± 2.8°C (100 ± 5°F)	26.7°C (80°F)	N.C.
7N4446	Hydraulic Oil Differential Pressure (Filter)	117 ± 14 kPa (17.0 ± 2.0 psi)	-	N.C.

N.O. = NORMALLY OPEN N.C. = NORMALLY CLOSED