SEN00060-06

Shop Manual

BULLDOZER

D85EX -15E0
D85PX -15E0

SERIAL NUMBERS D85EX- 11001 and up
D85PX- 1201

ecot3

KOMATSU®

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D85PX-15E0

Unit: kg

Machine name and type		D85PX-15E0
Serial number		1201 and up
Engine assembly (excluding coolant and oil)		1,483
• Engine assembly		1,330
• Damper assembly		131
• Universal joint		17
• Engine mounting parts (wiring)		5
Cooling assembly (excluding coolant and oil)		242
• Radiator		15
• Aftercooler		17
• Hydraulic oil cooler		4
Power train oil cooler assembly		47
Fuel tank assembly	(when empty)	215
	(when full)	618
Power train unit assembly (incl. HSS pump motor)		1,800
• Torque converter and PTO assembly		322
• Transmission assembly		443
• HSS assembly		748
• Brake valve assembly		5
• HSS cooler bypass valve assembly		11
• Power train filter assembly		17
• Scavenging pump		12
• Power train and lubrication pump		25
• HSS pump		106
• HSS motor		41
• Fan pump		25
• Fan motor		13
Final drive assembly		1,063 × 2
Sprocket teeth		(10 × 9) × 2
Hull frame		3,262
Track frame assembly (each side)		2,278
• Track frame		860
• Idler assembly		290
• Recoil spring assembly		350
• Track roller assembly	(single flange x 1)	72 × 6
	(double flange x 1)	80 × 2
• Carrier roller assembly		39 × 2
• Roller guard etc.		108
Track shoe assembly (910 mm, wet type)		2,795 × 2
Pivot shaft assembly		106 × 2
Equalizer bar		204

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Symptom supposed to be failure and troubleshooting No.

No.	Symptom that can be suspected to be a failure		Troubleshooting			
			Code display	E-mode	H-mode	S-mode
Symptom related to action code and failure code						
1	Display action code on monitor panel.		Check failure code.			
2	Display failure code in failure code display mode.		●			
Engine system						
3	Engine is hard to start. (Engine starting always takes time.)					S-1
4	Engine does not start.	Engine does not crank.		E-1		S-2a)
5		Engine cranks but no exhaust smoke comes out.				S-2b)
6		Exhaust smoke comes out but engine does not start.				S-2c)
7	Engine does not pick-up smoothly. (Poor follow-up performance)					S-3
8	Engine stops during operation.					S-4
9	Engine does not rotate smoothly (hunting).					S-5
10	Engine lacks in output or power.					S-6
11	Exhaust gas color is black (incomplete combustion).					S-7
12	Oil consumption is excessive or exhaust gas color is blue.					S-8
13	Oil gets contaminated prematurely.					S-9
14	Fuel consumption is excessive.					S-10
15	Oil is in coolant, coolant spurts back or coolant level goes down.					S-11
16	Engine oil pressure drops.					S-12
17	Oil level rises (water or fuel mixes).					S-13
18	Coolant temperature rises too high. (overheat)					S-14
19	Abnormal noise comes out.					S-15
20	Vibration is excessive.					S-16
21	Preheater does not operate.			E-2		
Power train related						
22	There is no travel power. (no drawbar pull)				H-1	S-6
23	Machine does not travel (at 2nd or 3rd speed)				H-2	
24	Machine does not start at any gear speed.				H-3	
25	Machine travels only in one direction, forward or reverse.				H-4	
26	Time lag is excessive at shifting gear speed or shifting forward-reverse.				H-5	
27	Machine cannot be steered. (Machine does not turn leftward or rightward.)				H-6	
28	Steering speed or power is insufficient.				H-7	
29	Brake does not work.				H-8	
30	Power train oil overheats.				H-9	
31	Abnormal noise comes out around HSS and hydraulic pump or HSS motor.				H-10	
Work equipment-related						
32	Speed of all work equipments is slow.				H-11	
33	All work equipments do not move.				H-12	
34	Blade lift moves slowly or lacks power.				H-13	
35	Blade tilt moves slowly or lacks power.				H-14	
36	Ripper lift moves slowly or lacks power.				H-15	
37	Hydraulic drift of blade lift is excessive.				H-16	
38	Hydraulic drift of blade tilt is excessive.				H-17	
39	Hydraulic drift of ripper lift is excessive.				H-18	

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	Causes		Standard values when normal and remarks for troubleshooting		
Possible causes and the standard values when normal	7	Disconnection or short circuit with ground in wiring harness (Disconnection in wiring or defective contact of connectors or contact with ground circuit)	★ Prepare with starting switch OFF and diagnose with starting switch still OFF.		
			Wiring harness between CN12 (female) (4) – CN33 (female) (3)	Resistance	Max. 1 Ω
			Between ground and wiring harness between CN12 (female) (4) – CN33 (female) (3)	Resistance	Min. 1 MΩ
			Wiring harness between CN33 (female) (6) – CN32 (female) (4)	Resistance	Max. 1 Ω
			Between ground and wiring harness between CN33 (female) (6) – CN32 (female) (4)	Resistance	Min. 1 MΩ
			Wiring harness between fuse (4) – CN12 (female) (2) (3)	Resistance	Max. 1 Ω
			Between ground and wiring harness between fuse (4) – CN12 (female) (2) (3)	Resistance	Min. 1 MΩ
			Wiring harnesses between fuse (4) – CN32 (female) (3) and fuse (4) – CN37 (female) (3)	Resistance	Max. 1 Ω
			Between ground and wiring harnesses between fuse (4)-CN32 (female) (3) and fuse (4)-CN37 (female) (3)	Resistance	Min. 1 MΩ
			Wiring harness between CN32 (female) (5) – CN37 (female) (1)	Resistance	Max. 1 Ω
			Between ground and wiring harness between CN32 (female) (5) – CN37 (female) (1)	Resistance	Min. 1 MΩ
			Wiring harness between CN32 (female) (6) and ground	Resistance	Max. 1 Ω
			Wiring harness between CN37 (female) (2) and ground	Resistance	Max. 1 Ω

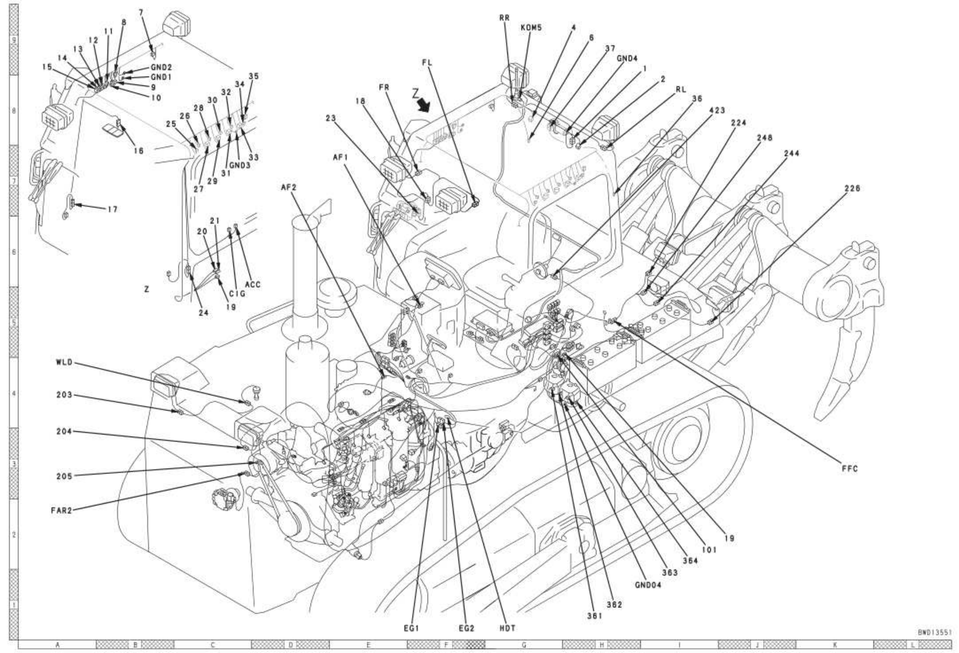
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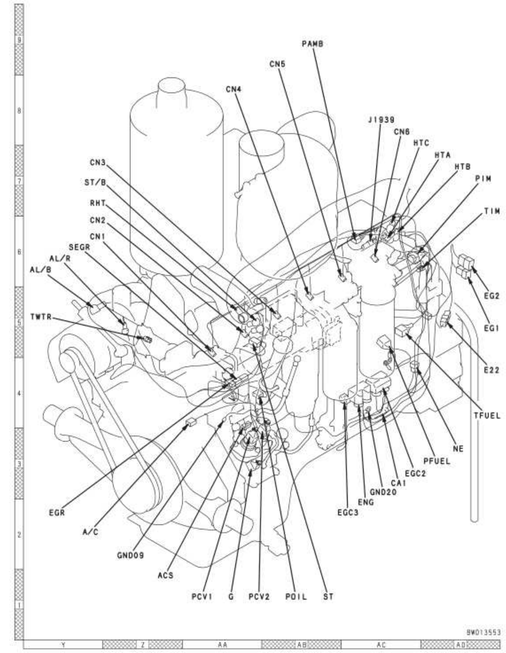
Connector list and stereogram D85EX, PX-15E0

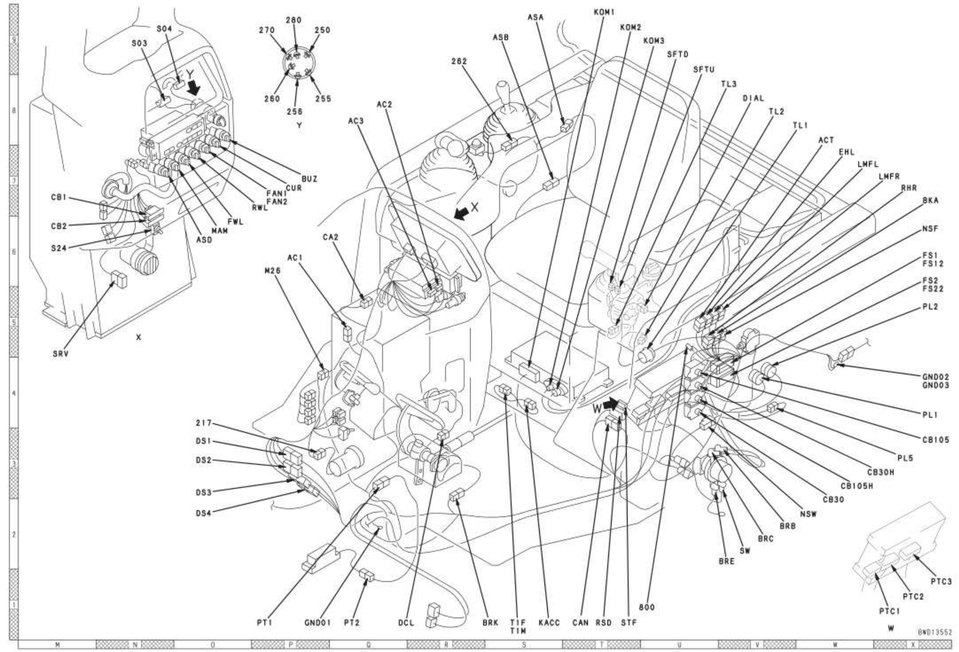
Connector No.	Type	Number of pins	Location	Arrangement drawing
1	DT	4	Intermediate connector [Cab specification]	I-9
2	KES1	2	Rear speaker (Left) [Cab specification]	I-8
4	KES1	2	Rear speaker (Right) [Cab specification]	H-9
6	One-pin connector	1	Heater wire glass [Cab specification]	H-9
7	PA	9	Radio [Cab specification]	B-9
8	DT	2	Accessory (12 V) [Cab specification]	B-9
9	YAZAKI	3	Heater wire glass switch [Cab specification]	B-8
10	M	2	Additional light switch [Cab specification]	B-8
11	M	2	Wiper intermittent switch [Cab specification]	B-9
12	KES1	6	Rear wiper switch [Cab specification]	A-9
13	KES1	6	Right door wiper switch [Cab specification]	A-9
14	KES1	6	Front wiper switch [Cab specification]	A-9
15	KES1	6	Left door wiper switch [Cab specification]	A-9
16	KES1	2	Room lamp [Cab specification]	B-7
17	DT	4	Right door wiper [Cab specification]	B-7
18	DT	4	Intermediate connector [Cab specification]	E-8
19	DT	4	Intermediate connector (Windshield washer motor) [Cab specification]	C-5, J-2
20	DTHD#8	1	Cab power supply [Cab specification]	C-6
21	DTHD#12	1	Cab power supply (Battery direct) [Cab specification]	C-6
23	DT	6	Front wiper [Cab specification]	E-8
24	DT	4	Left door wiper [Cab specification]	C-5
25	Relay (YAZAKI)	4	For light [Cab specification]	B-8
26	Relay (YAZAKI)	6	Left wiper intermittent relay [Cab specification]	C-8
27	Relay	5	Left wiper intermittent selector relay [Cab specification]	C-7
28	Relay (YAZAKI)	6	Front wiper intermittent relay [Cab specification]	C-8
29	Relay	5	Front wiper intermittent selector relay [Cab specification]	C-7
30	Relay (YAZAKI)	6	Right wiper intermittent relay [Cab specification]	C-8
31	Relay	5	Right wiper intermittent selector relay [Cab specification]	C-7
32	Relay (YAZAKI)	6	Rear wiper intermittent relay [Cab specification]	C-8
33	Relay	5	Rear wiper intermittent selector relay [Cab specification]	C-7
34	Relay	4	Heater wire glass relay [Cab specification]	C-8
35	M	4	Converter [Cab specification]	C-8
36	One-pin connector	1	Heater wire glass [Cab specification]	I-8
37	KES1	4	Rear wiper [Cab specification]	H-9
101	DT-A	8	Intermediate connector (Headlamp)	I-2
203	DT	2	Right head lamp	A-4
204	DT	2	Left head lamp	A-3
205	One-pin connector	1	Horn	A-3
217	DT	2	Caution buzzer	n-4
224	DT	2	Left rear lamp	J-8
226	DT	2	Ripper point lamp	K-7
244	DT	2	Backup alarm	J-7
248	DT	2	Intermediate connector (Ripper point lamp)	J-8
250	Terminal	1	Starting switch terminal B	P-9
255	Terminal	1	Starting switch terminal R1	P-8
256	Terminal	1	Starting switch terminal R2	P-8
260	Terminal	1	Starting switch terminal BR	P-8
262	DT	2	Horn switch	R-9
270	Terminal	1	Starting switch terminal ACC	P-9
280	Terminal	1	Starting switch terminal C	P-9
361	M	2	Left door washer motor [Cab specification]	H-1
362	M	2	Front window washer motor [Cab specification]	H-1
363	M	2	Right door washer motor [Cab specification]	I-1
364	M	2	Rear window washer motor [Cab specification]	I-2
423	DT	2	Fuel level sensor	I-8
453	DT	2	Torque converter oil temperature sensor	AH-1
800	—	1	Intermediate connector	U-1
A/C	DT	2	A/C compressor	Y-2
AC1	MIC	17	Air conditioner unit	P-6
AC2	AMP	16	Air conditioner controller	Q-8
AC3	AMP	12	Air conditioner controller	Q-8
ACC	YAZAKI	2	Accessory socket [Cab specification]	C-6
ACS	DT	2	Diode	Z-1
ACT	Relay	5	ACC cut relay	W-8
AF1	DT	2	Intermediate connector (Air-flow switch)	E-7
AF2	DT	2	Air flow switch	D-7
AL/B	Terminal	1	Alternator terminal B	Y-6
AL/R	Terminal	1	Alternator terminal R	Y-6
ASA	DT	2	Intermediate connector (Air suspension seat)	S-9
ASB	DT	2	Air suspension seat	S-9
ASD	KES1	4	Auto shift-down switch	Q-6
BKA	Relay	5	Backup alarm relay	X-7
BRB	Terminal	1	Battery relay power supply inlet	V-2
BRC	Terminal	1	Battery relay power supply outlet	V-2
BRE	Terminal	1	Battery relay ground	V-2
BRK	DT	3	Brake pedal	S-1
BUZ	KES1	3	Buzzer cancel switch	P-7
CA1	DT	3	CAN terminating resistor	AC-3
CA2	DT	3	CAN terminating resistor	Q-6
CAN	DT-A	12	Intermediate connector (KOMTRAX)	T-1
CB1	One-pin connector	2	Circuit breaker (Starting switch 20A)	M-7
CB105	—	—	Circuit breaker (Mainpower 105A)	X-3
B105H	—	—	Circuit breaker (Ribbon heater 105A)	W-3
CB2	One-pin connector	2	Circuit breaker (Air conditioner)	M-6
CB30	—	1	Circuit breaker (Constant power source 30A)	W-3
CB30H	—	1	Circuit breaker (Engine controller 30A)	W-3
CIG	YAZAKI	2	Cigarette lighter [Cab specification]	C-5
CN1	DT	2	Engine No.1 injector	Y-6
CN2	DT	2	Engine No.2 injector	Z-6
CN3	DT	2	Engine No.3 injector	Z-7
CN4	DT	2	Engine No.4 injector	AA-9
CN5	DT	2	Engine No.5 injector	AB-9
CN6	DT	2	Engine No.6 injector	AC-8
CUR	KES1	3	Information switch	P-7
DCL	DT	3	Decelerator pedal	R-1
DIAL	DT	3	Fuel control dial potentiometer	V-8
DPNL	DT	2	Diode (Emergency switch)	AJ-8
DS1	DT-B	12	Intermediate connector	O-3
DS2	DT-A	12	Intermediate connector	O-3
DS3	DT-C	12	Intermediate connector	O-3
DS4	DT-D	12	Intermediate connector	O-2
E22	DT	6	Intermediate connector (Starting motor)	AD-4
EG1	DTP	2	Intermediate connector (Engine controller)	F-1, AD-5
EG2	DT-B	12	Intermediate connector	F-1, AD-5
EGC1	DRC-60	60	Engine controller	AC-2
EGC2	DRC-50	50	Engine controller	AC-3
EGC3	DTP	4	Engine controller	AC-2

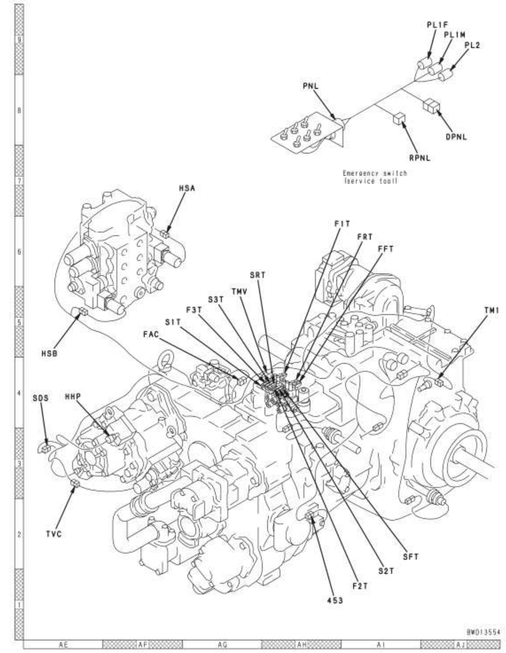
Connector No.	Type	Number of pins	Location	Arrangement drawing
EGR	DT	2	EGR valve	Y-2
EHL	Relay	5	Engine hold relay	W-7
F1T	DT	2	1st clutch ECMV (Fill switch)	AH-6
F2T	DT	2	2nd clutch ECMV (Fill switch)	AI-1
F3T	DT	2	3rd clutch ECMV (Fill switch)	AG-5
FAC	DT	2	Fan pump control valve	AF-5
FAN1	KES1	3	Fan clean mode switch	P-7
FAN2	KES1	4	Fan reverse mode switch	P-7
FAR2	DT	2	Fan reverse solenoid	A-2
FFC	DT-A	12	Intermediate connector (Rear lamp)	K-3
FFT	DT	2	Forward clutch ECMV (Fill switch)	AI-6
FL	DT	2	Front additional light (Left) [Cab specification]	F-9
FR	DT	2	Front additional light (Right) [Cab specification]	E-8
FRT	DT	2	Reverse clutch ECMV (Fill switch)	AI-6
FS1	—	—	Fuse box	X-6
FS2	—	—	Fuse box	X-6
FS12	—	—	Fuse box	X-6
FS22	—	—	Fuse box	X-5
FWL	KES1	4	Headlamp switch	O-6
G	SUMITOMO	3	Engine speed G sensor	AA-1
GND01	Terminal	1	Ground (Floor)	P-1
GND02	Terminal	1	Ground (ROPS)	X-4
GND03	Terminal	1	Ground (ROPS)	X-4
GND04	Terminal	1	Ground (Fender)	I-1
GND09	Terminal	1	Ground	Z-2
GND1	Terminal	1	Ground [Cab specification]	B-8
GND2	Terminal	1	Ground [Cab specification]	B-9
GND3	Terminal	1	Ground [Cab specification]	C-7
GND4	Terminal	1	Ground [Cab specification]	H-9
GND20	Terminal	1	Ground	AC-3
HDT	DT	2	Diode	G-1
HHP	DT	3	Hydraulic oil pressure sensor	AE-4
HSA	DT	2	HSS-EPC solenoid (Left swing)	AG-7
HSB	DT	2	HSS-EPC solenoid (Right swing)	AE-5
HTA	Terminal	1	Heater relay (Terminal A)	AD-7
HTB	Terminal	1	Heater relay (Terminal B)	AD-7
HTC	Terminal	1	Heater relay (Terminal C)	AC-7
J1939	DT	3	Service connector	AC-9
KACC	DT	3	Intermediate connector (KOMTRAX)	S-1
KOM1	DRC26	40	KOMTRAX controller	T-9
KOM2	GIT5	1	KOMTRAX controller	T-9
KOM3	BNC	1	KOMTRAX controller	T-9
KOM5	ML	1	KOMTRAX controller (Antenna)	G-9
LMFL	Relay	5	Left head lamp relay	W-7
LMFR	Relay	5	Right head lamp relay	X-7
M26	M	6	Air conditioner controller	P-6
MAM	KES1	4	Manual mode switch	O-6
NE	FRAMATO-NE	3	Engine speed NE sensor	AD-3
NSF	Relay	5	Neutral safety relay	X-6
NSW	DT	3	Parking lock switch	W-2
PAMB	AMP	3	Ambient pressure sensor	AB-9
PCV1	SUMITOMO	2	Fuel supply pump (PCV1)	AA-1
PCV2	SUMITOMO	2	Fuel supply pump (PCV2)	AA-1
PFUEL	AMP	3	Common rail pressure sensor	AD-3
PIM	SUMITOMO	3	Boost pressure sensor	AD-7
PL1	HD-24	23	Intermediate connector (Power train)	X-4
PL1F	HD-24	23	Intermediate connector (Emergency switch)	AJ-9
PL1M	HD-24	23	Intermediate connector (Emergency switch)	AJ-9
PL2	HD-24	31	Intermediate connector (Power train)	X-5
PL2	HD-24	31	Intermediate connector (Emergency switch)	AJ-9
PL5	DT	6	Intermediate connector	X-3
PNL	HD-24	31	Intermediate connector	AH-8
POIL	FRAMATO-NE	3	Engine oil pressure sensor	AB-1
PT1	DT	3	Intermediate connector [Pitch angle sensor]	P-1
PT2	DT	3	Pitch angle sensor	Q-1
PTC1	DRC26	24	Steering and transmission controller	X-1
PTC2	DRC26	40	Steering and transmission controller	X-1
PTC3	DRC26	40	Steering and transmission controller	X-1
RHR	Relay	5	Pre-heater relay	X-7
RHT	Terminal	1	Electrical intake air heater	Z-7
RL	DT	2	Rear additional light (Left) [Cab specification]	I-8
RPNL	X	2	Intermediate connector (Emergency switch)	AI-7
RR	DT	2	Rear additional light (Right) [Cab specification]	G-9
RSD	DT	2	Diode	T-1
RWL	KES1	4	Rear lamp switch	P-7
S03	070	20	Monitor panel	N-9
S04	070	12	Monitor panel	N-9
S24	Terminal	4	Service switch	M-6
ST1	DT	2	1st clutch ECMV (Solenoid)	AF-5
ST2	DT	2	2nd clutch ECMV (Solenoid)	AI-1
ST3	DT	2	3rd clutch ECMV (Solenoid)	AG-5
SDS	DT	2	Hydraulic oil temperature sensor	AE-4
SEGR	DT	4	EGR valve position sensor	Y-6
SFT	DT	2	Forward clutch ECMV (Solenoid)	AI-2
SFTD	—	3	Shift-down switch	U-9
SFTU	—	3	Shift-up switch	U-9
SRT	DT	2	Reverse clutch ECMV (Solenoid)	AH-6
SRV	DT	12	Intermediate connector (Service connector)	M-5
ST	DT	2	Starting motor	AB-1
ST/B	Terminal	1	Starting motor (Terminal B)	Z-7
STF	X	4	Software writing connector (Steering and transmission controller)	T-1
SW	Terminal	1	Battery relay terminal BR	V-2
TFUEL	PACKARD	2	Fuel temperature sensor	AD-4
T1F	DT	2	Check connector (KOMTRAX)	S-1
T1M	DT	2	Check connector (KOMTRAX)	S-1
TIM	PACKARD	2	Boost temperature sensor	AD-6
TL1	HD-24	23	Intermediate connector [Console]	W-8
TL2	DT-B	8	Travel lever	V-8
TL3	DT	6	Intermediate connector [Shift switch]	V-8
TM1	DT	2	Transmission bevel speed sensor	AJ-5
TMV	HD-24	23	Intermediate connector (Transmission ECMV)	AG-5
TVC	DT	2	HSS/hydraulic pump	AE-2
TWTR	PACKARD	2	Engine coolant temperature sensor	Y-5
WLD	DT	2	Radiator coolant level sensor	A-4

★ The color symbols of the bodies of the heavy duty wire connectors (DT-8 poles, 12 poles) are as follows.
DT-A = Gray, DT-B = Black, DT-C = Green, DT-D = Brown









D85EX, PX-15E0

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