ETC98: 99901267: 20070329

1998
GUIDE TO
ELECTRONIC & MANUAL
THROTTLE CONTROLS

IOWA MOLD TOOLING CO., INC.
BOX 189, GARNER, IA 50438-0189
TEL: 641-923-3711

MANUAL PART NUMBER 99901267

Iowa Mold Tooling Co., Inc. is an Oshkosh Truck Corporation company.

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REVISIONS LIST

DATE	LOCATION	DESCRIPTION OF CHANGE
20001013	3,5,21	ADD ETC 93091627 - 99 FORD F-SERIES W/AT
20010416	18	ECO 9000 SWITCH CHANGED TO TOGGLE SWITCH 77041345
20010925	3, 49-56	ADD SERVICE BULLETIN 99901304, PAGES 49-56; REVISED TABLE OF CONTENTS
20011203	52-56	EDITED TEXT FOR NEW WIRING SYSTEM
20030408	21	ECN 9161 - CHANGED FROM 70395315 DECAL TO 70396381 DECAL
20031031	22-27	ECN 9300 - CHANGED 93091624 TO 1998 TO 2003; ADDED 93091639 - CUMMINS ISB AND ISM 2004 TO CURRENT ENGINES
20040504	5	ECN 9410 - ADDED REFERENCE TO EFM MANUAL FOR DURAMAX ENGINE
	28	ECN 9437 - REV. A 99901154
20070329	COVER	UPDATED OWNERSHIP STATEMENT

GENERAL INFORMATION

INTRODUCTION

This 1998 Guide to Electronic & Manual Throttle Controls is provided as a resource in the identification, repair and ordering of parts. The Product Application Chart (page 5) lists IMT Products by Type of Throttle Control. Code letters are used to identify specific Throttle Control Kits.

Using this Code letter, consult the Description/ Usage Chart (page 4). The Description/Usage Chart will identify the IMT part number associated with the Throttle Control Kit and list a description of the Kit for further indentification purposes.

The following pages present the exploded parts drawings in Letter Code sequence. Each Kit is clearly labeled by Letter Code, Usage and Part Number. The exceptions are Kits (PN 93091610/ Code I; PN 93091623/Code U; and PN 93091632/ Code V) which are described in the Service Bulletins/Installation Instructions (PN 99900840, 99901213, and 99901304,respectively) which are included toward the end of this Guide.

Three means are used throughout this Guide to gain the attention of operating and service personnel. They are NOTES, CAUTIONS and WARNINGS and are defined as follows:

NOTE

A NOTE IS USED TO EITHER CONVEY ADDITIONAL INFORMATION OR TO PROVIDE FURTHER EMPHASIS FOR A PREVIOUS POINT.

CAUTION

A CAUTION IS USED WHEN THERE IS THE STRONG POSSIBILITY OF DAMAGE TO THE EQUIPMENT OR PREMATURE EQUIPMENT FAILURE.

WARNING

A WARNING IS USED WHEN THERE IS THE POTENTIAL FOR PERSONAL INJURY OR DEATH.

ORDERING INFORMATION

When placing orders or requesting assistance, contact: Iowa Mold Tooling at the address listed on the cover of this Guide. Be prepared to provide the model and serial number of your equipment.

DESCRIPTION/USAGE-THROTTLE CONTROL KITS

Use this chart to identify the Throttle Control Kit required. Note the Code Letter in the left-hand column. The Code Letter may be used to locate the specific Kit Assembly Drawing on the following pages.

CODE	IMT PART NO.	DESCRIPTION/USAGE
A	93091419 REF:99900817	Trombetta solenoid engine throttle control for use on all mechanical controlled diesel or gas engines only **(Ref Installation Instructions 99900817)**
B	93091586 REF:99901241	Air Bimba engine throttle control
C	31702746 REF:99901244	Cable type engine throttle control by Trombetta with 18' cable
D	31702747 REF:99901256	Cable type engine throttle control by Trombetta with 30' cable
E	93091608 REF:99901242	Caterpillar electronic engine throttle control for 3116E, 3126E, 3126E Version B, 3176B & 3406E engines wiring kit
F	93091609 REF:99901243	Navistar electronic engine throttle control for T444E & T466E electronic cntrolled engines
I	93091610 REF:99900840	1994-97 Ford F-series 7.3L diesel engine electronic throttle control module for Manual Transmission use only **(See Installation Instructions/Service Bulletin 99900840)**
J	93091618 REF:99901253	1996-98 GMC/Chevy 6.5L electronic control wiring kit only
P	93091619 REF:99901254	Caterpillar electronic engine throttle control for 3116E, 3126E, 3126E Version B, 3176B and 3406E engines for use on IMT SiteStar lube trucks
R	93091621 REF:99900840	1994-97 Ford F-series 7.3L diesel engine electronic throttle control wiring kit - Automatic Transmission use only
	93091627	1999 Ford F-Series 7.3L diesel engine electronic throttle control for automatic transmissions.
S	93091624 REF:99900904	1997-98 Cummins Celect, Celect Plus for ISB250 & ISC250 electronic controlled engine throttle control kit. Includes hardware & installation procedures.
T	93091622 REF:99901154	1998 Navistar chassis speed control kit for T444E & T466E engines & Caterpillar 3116E & 3126E Version B engines.
U	93091623 REF:99901213	1999 Ford F-Series 7.3L diesel engine electronic throttle control for manual transmissions. **(See Installation Instructions Service Bulletin 99901213.**
V	93091632 REF:99901304	2002 Ford F-Series 7.3L diesel engine electronic throttle control for manual transmissions. **(See Installation Instructions Service Bulletin 99901304.)**
		For 2002 to current GMC 4500 / 5500 with 6.6L /7.8L Duramax Engine, see the Engine Function Module manual, IMT Part Number 99903412.

PRODUCT APPLICATION-THROTTLE CONTROL KITS

IMT PRODUCT	AIR BIMBA OPTION	MANUAL CABLE TYPE	ALL CATERPILLAR ELECTRONIC ENGINES	ALL NAVISTAR ELECTRONIC ENGINES	DETROIT DIESEL ELECTRONIC ENGINES	CUMMINS ELECTRONIC ENGINES	CHEVY/GMC 6.5L ELECTRONIC ENGINES	FORD 7.3L ELECTRONIC ENGINES	ALL MECHANICAL CONTROLLED DIESEL OR GAS ENGINES
13034			E	F		S			A
16035			E	F		S			A
16042			E	F		S			A
17649			E	F		S			A
1014							J	M or N	A
2015							J	M or N	A
3016							J	M or N	A
5016			E	F		S			A
6016			E	F		S			A
7025			E	F		S			A
7415		C	E	F		S			A
12916		C	E	F		S			A
20017		C	E	F		S			A
32018		C or D	E	F		S			A
2200/345		C	E	F		S			A
3000/445		C	E	F		S			A
32000/4490		C	E	F		S			A
4300/680		C	E	F		S			A
5200/780		C	E	F		S			A
5800/880		C	E	F		S			A
7200/1080A		C	E	F		S			A
9000/1295		C	E	F		S			A
9800/1495		C	E	F		S			A
14000/19140			E	F		S			A
15000/21100			E	F		S			A
18000/2595			E	F		S			A
DA425HAR			E	F		S	J	M or N	A
DA435HAR			E	F		S	J	M or N	A
DA440HT			E	F		S		O	A
DA440HU	B		E	F		S	H	O	A
DA4110HU	B		E	F		S	H	O	A
DA4110HT	B		E	F		S	H	O	A
DA440PBT-RH								O	A
DA440PBT-LH								O	A
DA440PBU	B		E	F		S	H	O	A
DA425EA			E				G	L or Q	A
DA435EL			E				G	L or Q	A
DA435EAR			E				G	L or Q	A
SiteStar		C	P			S			A
980 MetroStar								O	
990 Commercial								O	
3030A LoadStar								O	
1210A ServiceStar								O	
3011A TriStar								K	
1296 Fibergass								L or Q	
990 Fiberglass								L or Q	

ETC98:93091419.01: 19980824

TROMBETTA SOLENOID ENGINE THROTTLE CONTROL KIT (93091419)

ALL MECHANICAL CONTROLLED DIESEL OR GAS ENGINES ONLY

ITEM	PART NO.	DESCRIPTION	QTY
2.	77040283	CABLE END	1
3.	77041479	SOLENOID W/CABLE	1
4.	60113812	CABLE CONNECTOR-KILL SW	1
5.	72066377	CABLE STOP	1
6.	72063000	WASHER 3/16 WRT	2
7.	72066168	COTTER PIN 3/32 X 3/4	1
8.	60118524	LINKAGE BRACKET	1
9.	72060004	CAP SCR 1/4-20X1 HHGR5	1
10.	72063001	WASHER 1/4 WRT	1
11.	72062104	NUT 1/4 LOCK	6
12.	72060002	CAP SCR 1/4-20X3/4 HHGR5	5
13.	72062106	NUT #10-24 LOCK	2
14.	72060638	MACH SCR #10-24X1 RDHD	2
15.	77040051	TERMINAL #8SPRSPD 16-14GA	8
16.	77040053	TERMINAL 1/4STUD 12-10GA	2

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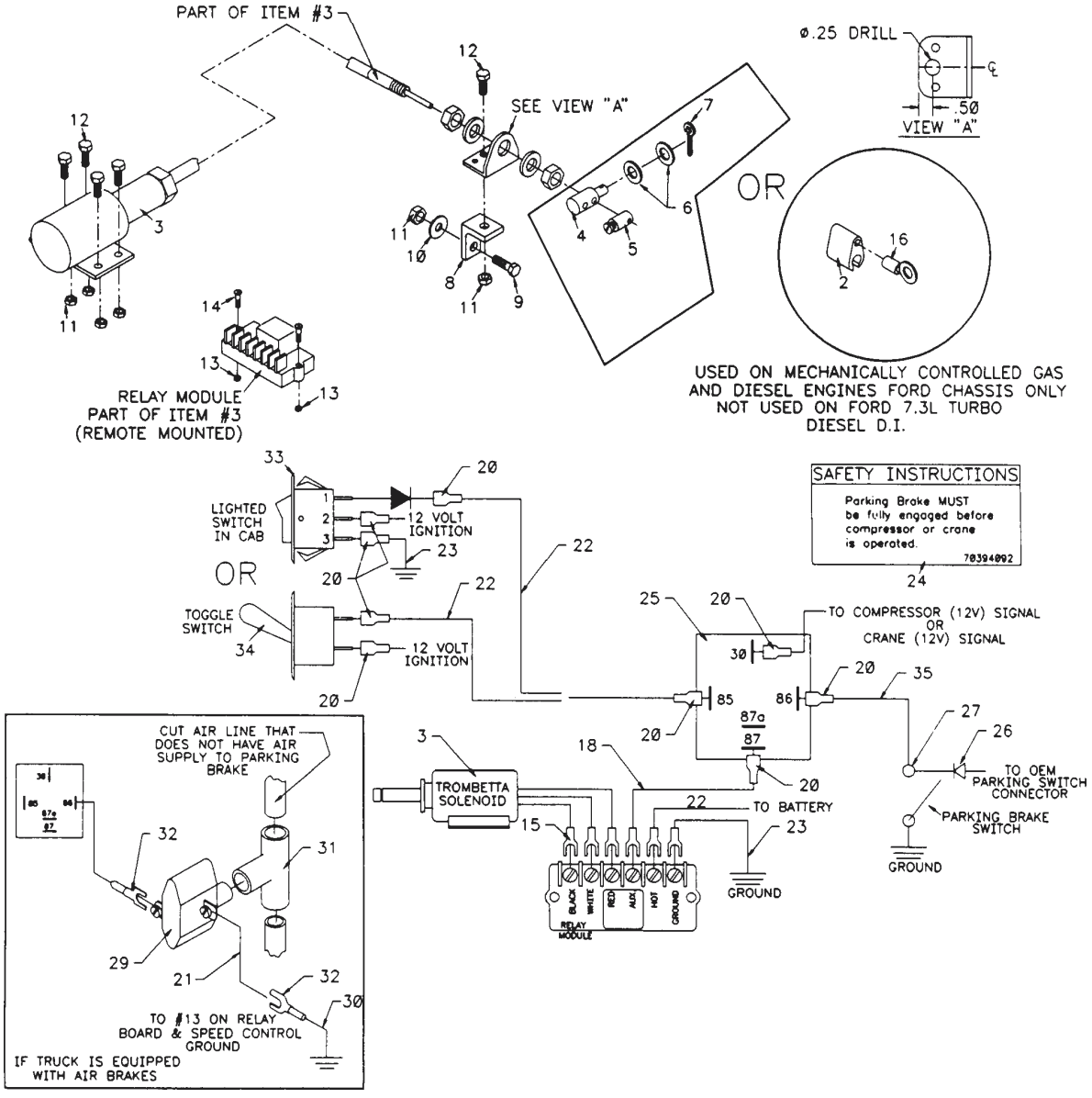
REF DWG: 99900817

17.	77040052	TERMINAL 3/8STUD 12-10GA	2
18.	89044371	CABLE 14GA 3WIRE X 40	1
19.	77040048	BUTT CONNECTOR 16-14GA	3
20.	77040186	TERMINAL 1/4FSLPON 16-14GA	7
21.	89044371	CABLE 14GA 3WIRE X 240	1
22.	89044232	WIRE 14GA RED X 240	1
23.	89044235	WIRE 14GA WHT X 48	1
24.	70394092	DECAL-CAUTION BRK/COMP	1
25.	77041251	RELAY-P&B	1
26.	51712961	PROTECTOR-DIODE BRK/COMP	1
27.	77040282	TERMINAL 1/4PIGBAC 16-14GA	1
28.	88800817	INSTALLATION DRAWING	1
29.	77041008	PRESSURE SWITCH	*1
30.	89044235	WIRE 14GA WHT X 60	*1
31.	72533495	TEE 3/8NPT BRASS	*1
32.	77040051	TERMINAL #18SPADE 16-14GA	*2
33.	51713190	PROTECTOR-DIODE MSTR SW	1
34.	77041386	SWITCH-SGL POLE	1
35.	89044274	WIRE 14GA BLK X 48	1

* USED WITH AIR BRAKES ONLY



ETC98: 93091586.01: 19980824

AIR BIMBA ENGINE THROTTLE CONTROL (93091586-1)

ITEM	PART NO.	DESCRIPTION	QTY
1.	60104268	BOLT-CABLE ADJ	1
2.	60104269	TUBE-SCREW ADJ	1
3.	60118524	BRACKET-SPD CTRL	1
4.	60108133	BRACKET-SPD CTRL CYL	1
5.	72053589	STREET ELBOW 1/8NPT 90° BRS	1
6.	72060002	CAP SCR 1/4-20X3/4 HHGR5	5
7.	72060539	SET SCR #8-32X1/4 SH	2
8.	72061004	SHT MTL SCR #14X3/4 SLTHXWH	2
9.	72062000	NUT 1/4-20 HEX	3
10.	72062036	NUT 5/16-24 HEX	2
11.	72063049	WASHER 1/4 LOCK	3
12.	72066377	CABLE STOP	1
13.	72066523	CLAMP-CABLE CASING	2
14.	72532551	HOSE FITTING MPT/PUSH ON	3
15.	73054250	CYLINDER-BIMBA SPD CTRL	1
16.	89058892	CASING-CABLE X 60	1
17.	89058934	CABLE 1/16 X 60	1
18.	89392146	HOSE 1/4 GRAY PUSH ON X 480	1
19.	72532014	STREET TEE 1/8NPT BRS	2
20.		POP-OFF VALVE (COMPRSSR)	1REF
21.	89392552	HOSE 1/4 GP 350#WP PUSHLOCK	3FT
22.	72053013	PIPE NIPPLE 1/4 X CLOSE BLK	1
23.	72053601	TEE 1/4NPT BLK	1
24.	72532552	HOSE FTG-TYPE O 1/4 1/4 BRS	1

8

REF DWG: 99901241

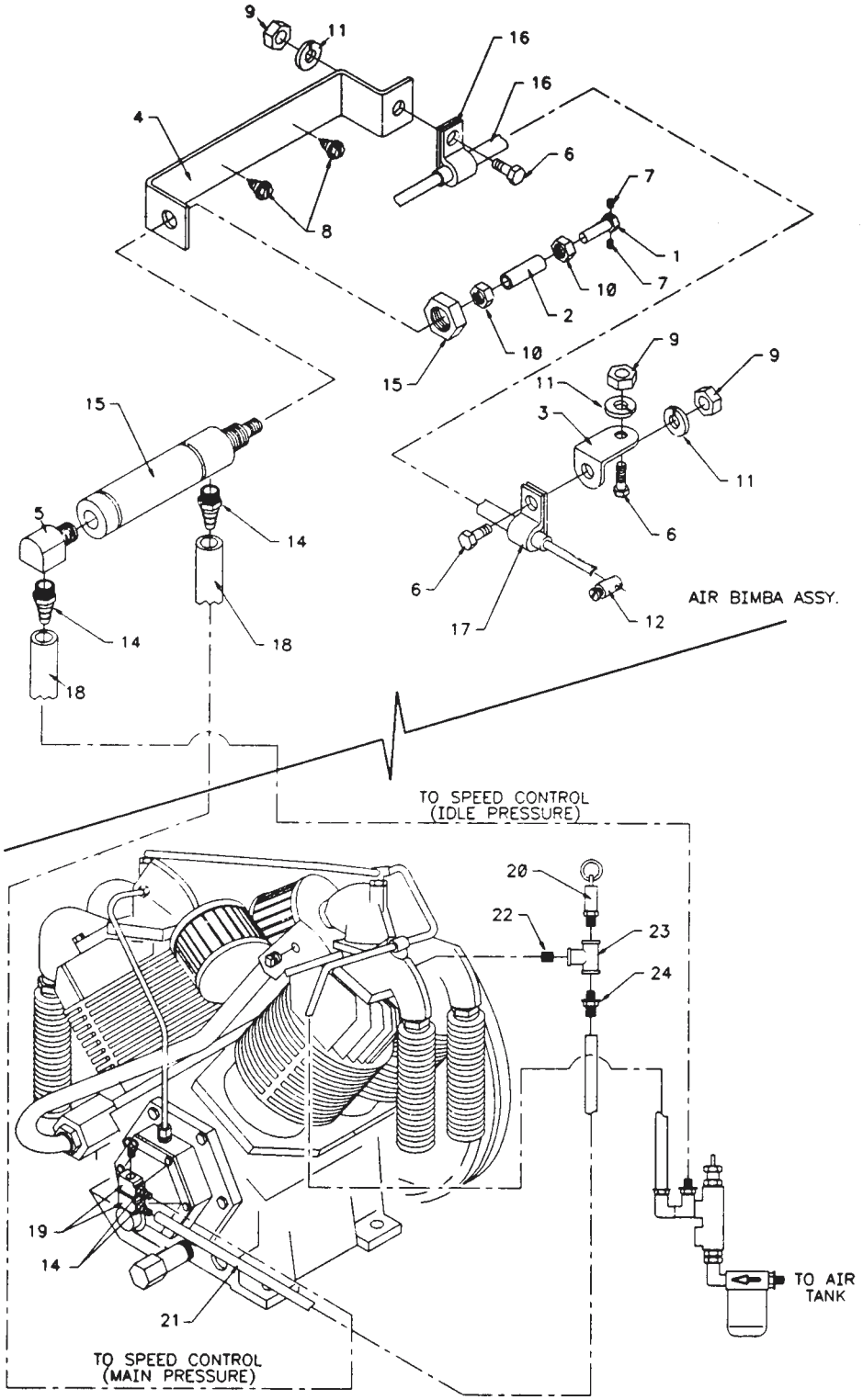
B

SEE FOLLOWING PAGE FOR DRAWING

ETC98:93091586.02: 19980824 9 **REF DWG: 99901241**

B

AIR BIMBA ENGINE THROTTLE CONTROL (93091586-2)



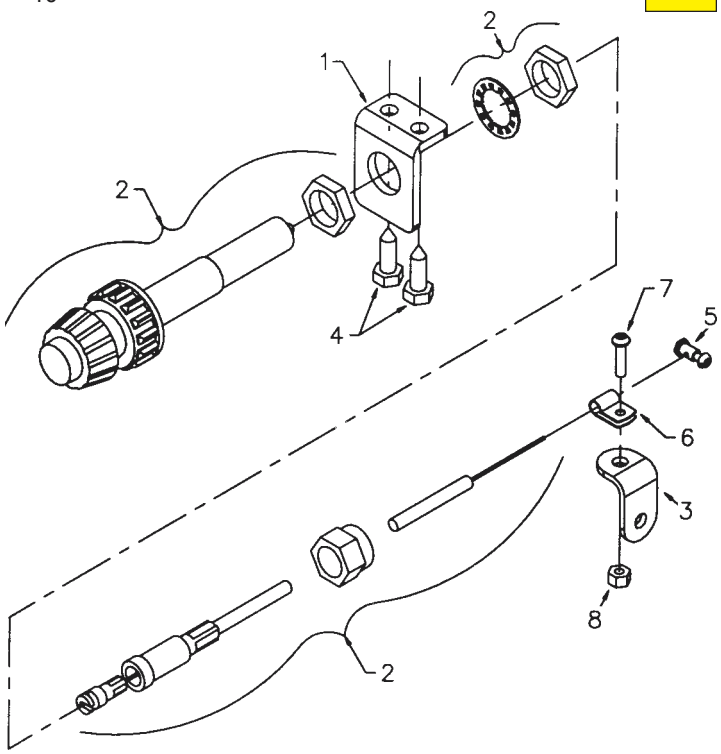
ETC98:31702746.01: 19980824

10 **REF DWG: 99901244**

C

MANUAL THROTTLE CONTROL KIT - 18' (31702746)

ITEM	PART NO.	DESCRIPTION	QTY
1.	60105400	MOUNTING BRACKET	1
2.	70058067	THROTTLE CONTROL 18'	1
3.	60118524	LINKAGE BRACKET	1
4.	72060962	SCR 5/16-18X1 HH SLFTPG	2
5.	72066377	CABLE STOP	1
6.	72066523	CLAMP	1
7.	72060636	MACH SCR #10-24X3/4 RDH	2
8.	72062106	NUT #10-24 LOCK	2



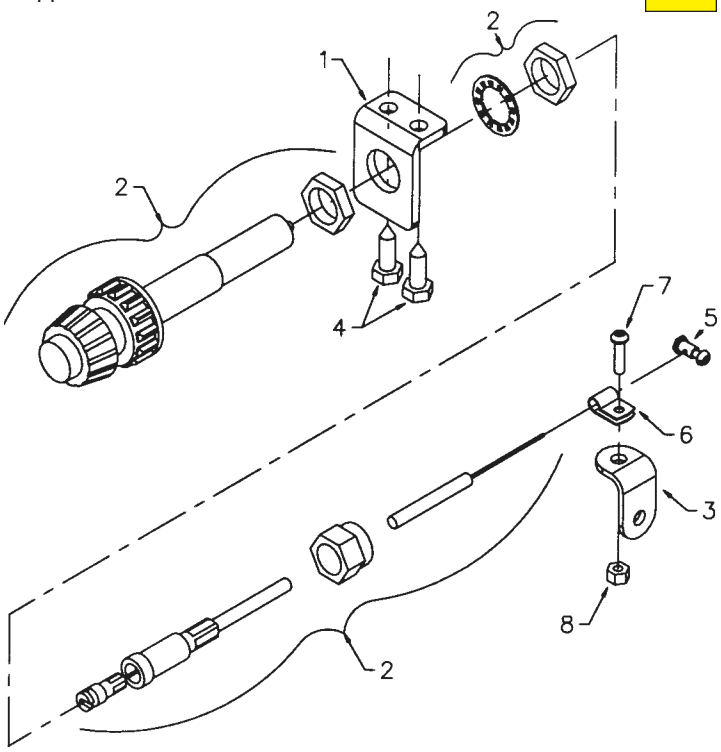
ETC98:31702747.01: 19980824

11 **REF DWG: 99901256**

D

MANUAL THROTTLE CONTROL KIT - 30' (31702747)

ITEM	PART NO.	DESCRIPTION	QTY
1.	60105400	MOUNTING BRACKET	1
2.	70058068	THROTTLE CONTROL 30'	1
3.	60118524	LINKAGE BRACKET	1
4.	72060962	SCR 5/16-18X1 HH SLFTPG	2
5.	72066377	CABLE STOP	1
6.	72066523	CLAMP	1
7.	72060636	MACH SCR #10-24X3/4 RDH	2
8.	72062106	NUT #10-24 LOCK	2



ETC98:93091608.01: 19980824 12 **REF DWG: 99901242** **E**

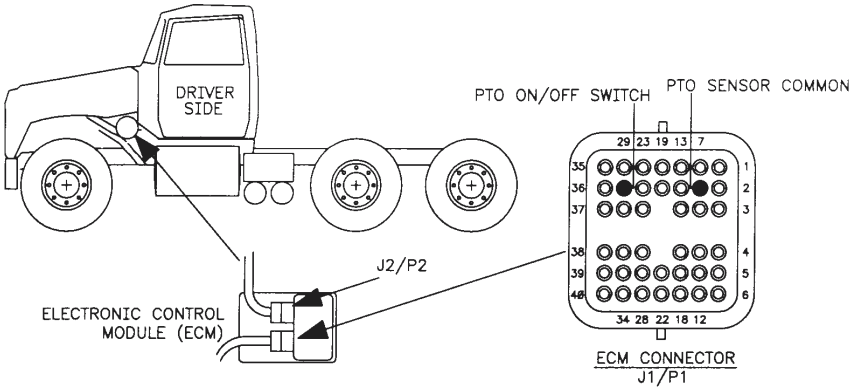
CONTINUED ON FOLLOWING PAGE

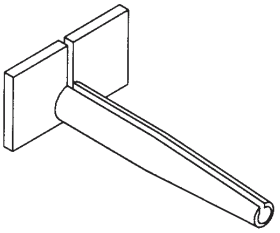
ELECTRONIC THROTTLE CONTROL KIT (93091608-1)

1996-1997 CATERPILLAR MODELS 3116E, 3126E, 3126E VERSION B, 3176B & 3406E

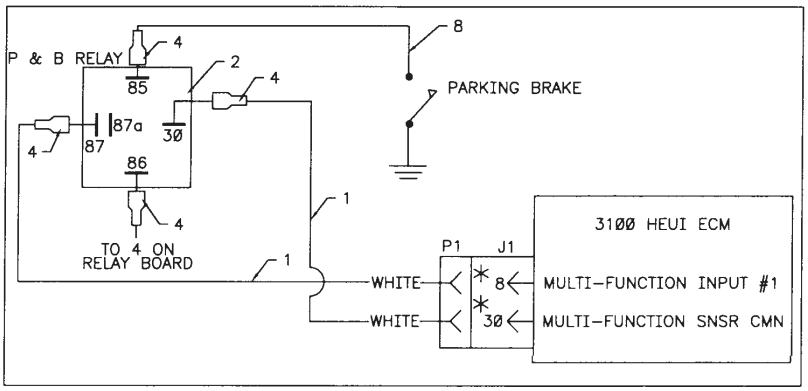
ITEM	PART NO.	DESCRIPTION	QTY
1.	51714048	WIRE ASM 16GA WHT W/SOCKET	2
2.	77041251	P&B RELAY	1
4.	77040186	TERMINAL 1/4 FSLPON 16-14GA	4
5.	79085317	CONTACT REMOVAL TOOL	1
6.	70394092	DECAL-CAUTION BRK/COMP	1
7.	77041008	PRESSURE SWITCH	*1
8.	89044235	WIRE 14GA WHT	5FT
9.	72533495	TEE 3/8NPT BRASS	*1
10.	77040051	TERMINAL #18 SPADE 16-14GA	*2

* USED WITH AIR BRAKES ONLY





#5 CONTACT REMOVAL TOOL



NOTE: INSTALL DECAL NEXT TO PARKING BRAKE ACTUATOR ON DASH PANEL.

#6

SAFETY INSTRUCTIONS

Parking Brake MUST be fully engaged before compressor or crane is operated.

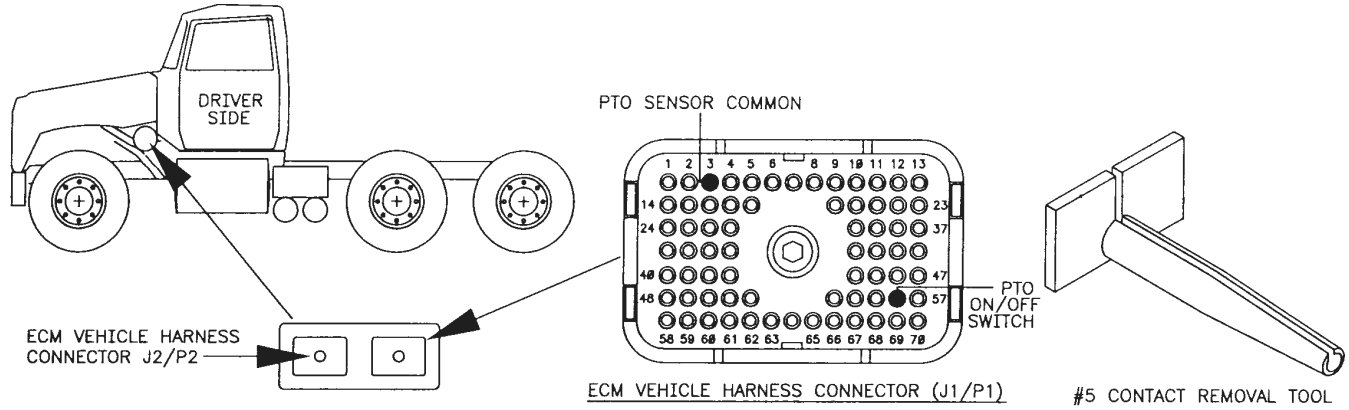
78394092

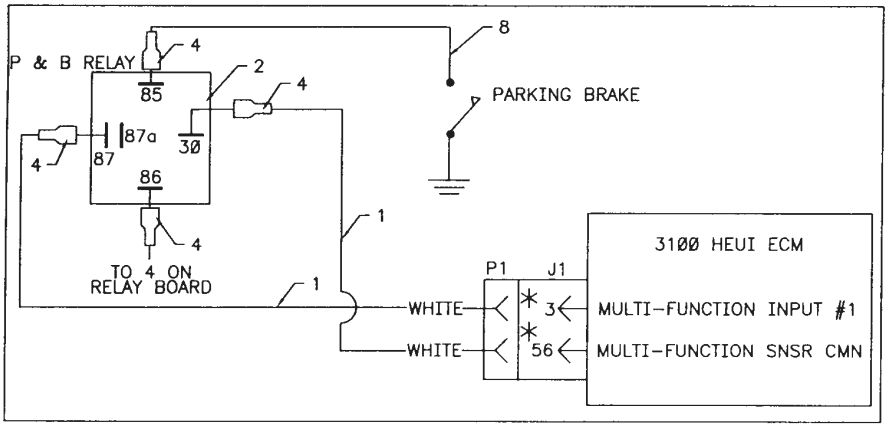
* NOTE: PINS 8 & 30 MAY HAVE EXISTING WIRES OR PLUGS INSTALLED. USE "BLUE" DEUTSCH CONTACT REMOVAL TOOL (IMT #79085317) TO EXTRACT THESE WIRES. INSERT THE 3 FT. SECTION OF WHITE WIRE WITH DEUTSCH SOCKET CONTACT, (IMT # 51714048) INTO J1-8. REPEAT FOR J1-30.

E

ELECTRONIC THROTTLE CONTROL KIT (93091608-2)

1996-1997 CATERPILLAR MODELS 3116E, 3126E, 3126E VERSION B, 3176B & 3406E





NOTE: INSTALL DECAL NEXT TO PARKING BRAKE ACTUATOR ON DASH PANEL.

#6

SAFETY INSTRUCTIONS

Parking Brake MUST be fully engaged before compressor or crane is operated.

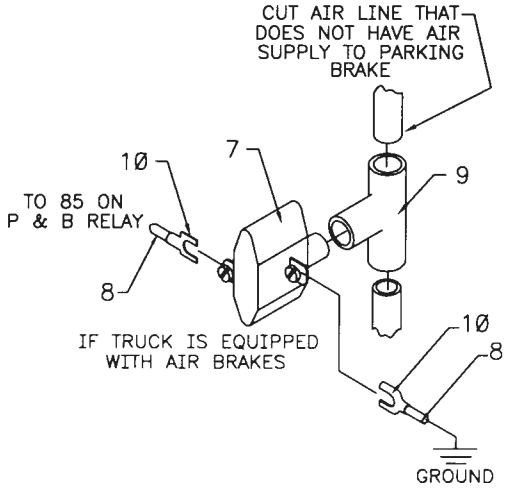
ENGINE THROTTLE CONTROL IS USED ON 1998 CATERPILLAR ENGINES: 3126B, 3116, 3176B, 3406E, C10, & C12

* NOTE: PINS 3 & 56 MAY HAVE EXISTING WIRES OR PLUGS INSTALLED. USE "BLUE" DEUTSCH CONTACT REMOVAL TOOL (IMT #79085317) TO EXTRACT THESE WIRES. INSERT THE 3 FT. SECTION OF WHITE WIRE WITH DEUTSCH SOCKET CONTACT, (IMT # 51714048) INTO J1-3. REPEAT FOR J1-56.

ELECTRONIC THROTTLE CONTROL KIT (93091608-3)

1996-1997 CATERPILLAR MODELS 3116E, 3126E, 3126E VERSION B, 3176B & 3406E

DEDICATED PTO PARAMETERS	NEW VALUES	AVAILABLE RANGE/OPTIONS	DEFAULT
PTO CONFIGURATION	REMOTE SWITCH	REMOTE SWITCHES, CAB SWITCHES, REMOTE THROTTLE, OFF	OFF
PTO TOP ENGINE LIMIT	125Ø RPM *	6ØØ TO 212Ø RPM	212Ø RPM
PTO ENGINE RPM SET SPEED	125Ø RPM *	LOW IDLE–PTO TEL	Ø RPM
PTO TO SET SPEED	YES	YES	NO
PTO CAB THROTTLE RPM LIMIT	TEL	PTO TEL	TEL
IDLE/PTO RPM RAMP RATE	5ØØ RPM/SEC.	5 TO 1ØØØ RPM/SEC	5Ø RPM/SEC



* VALUES TO BE DETERMINED BY END USER. (MUST BE THE SAME)

HAVE AUTHORIZED CATERPILLAR® DEALER USE MPSI PRO–LINC 9ØØØ TO CHANGE THE ABOVE ECM PARAMETERS FROM DEFAULT TO NEW VALUES TO ENABLE PROPER ENGINE IDLE CONTROL.

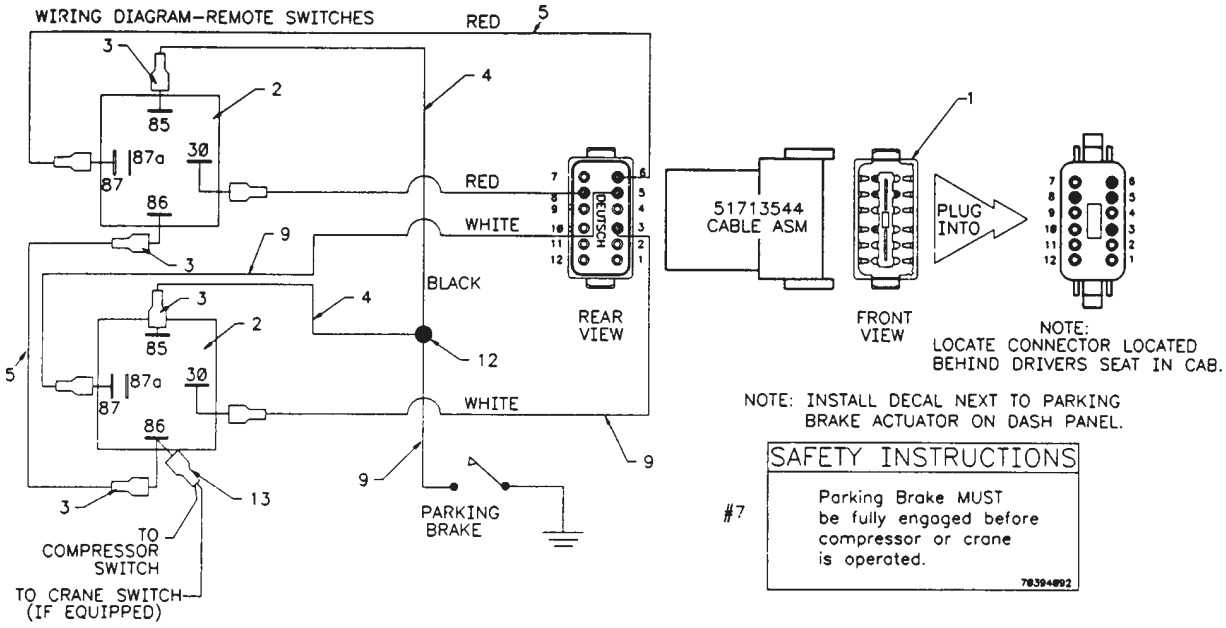
CONTINUED ON FOLLOWING PAGE

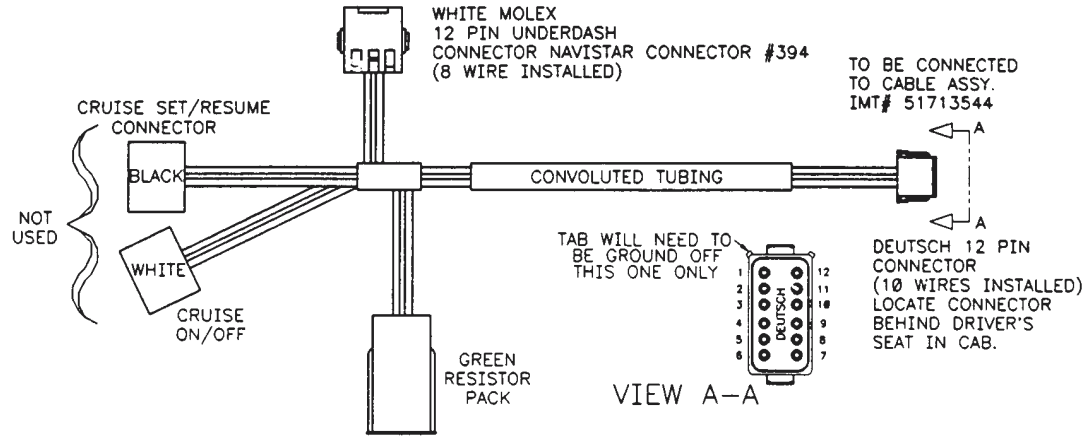
ELECTRONIC THROTTLE CONTROL KIT (93091609-1)

1996-97 NAVISTAR MODELS T444E & T466E

ITEM	PART NO.	DESCRIPTION	QTY
1.	51713544	CABLE ASM 12-PIN (SEE DWG)	1
2.	77041251	P&B RELAY	2
3.	77040186	TERMINAL 1/4 FSLPON 16-14GA	4
4.	89044274	WIRE 14GA BLK X 12	2
5.	89044232	WIRE 14GA RED X 12	1
6.	77044666	CABLE ASM-NAVISTAR	1
7.	70394092	DECAL-CAUTION BRK/COMP	1
8.	77041008	PRESSURE SWITCH	*1
9.	89044235	WIRE 14GA WHT X 60	1
10.	72533495	TEE 3/8NPT BRASS	*1
11.	77040051	TERMINAL #18 SPADE 16-14GA	*2
12.	77040049	BUTT CONNECTOR 12-10GA	1
13.	77040282	TERMINAL 1/4 PIGBAC 16-14GA	1

* USED WITH AIR BRAKES ONLY.

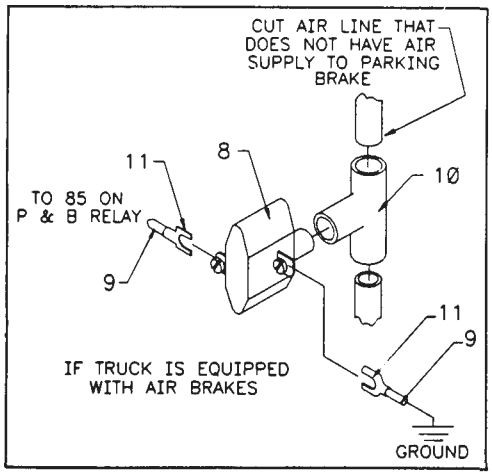




ITEM #6 INTERFACE CABLE ASSEMBLY FOR NAVISTAR ELECTRONIC THROTTLE SHOWN HERE.
PART NO.: 77044666

ELECTRONIC THROTTLE CONTROL KIT (93091609-2)

1996-97 NAVISTAR MODELS T444E & T466E



PROGRAMMABLE PARAMETER SETTINGS FOR PRESET ENGINE SPEED CONTROL.

USE MPSI PRO-LINK 9000 @ AUTHORIZED NAVISTAR® DEALER.

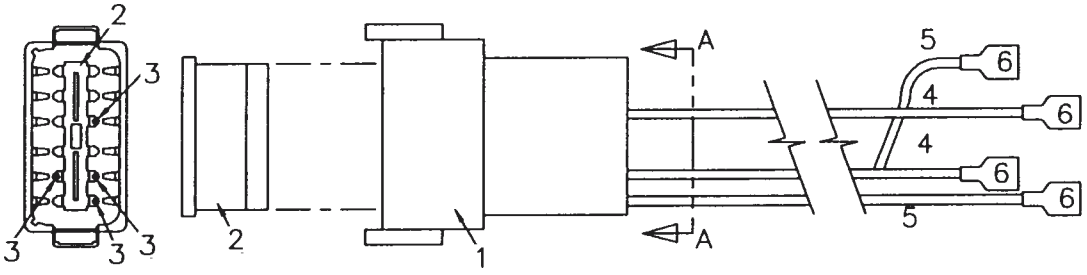
SERVICE TOOL NAME	PARAMETER SETTING
PTO MODE	IN-CAB AND REMOTE
IN-CAB PTO MODE	PRESET
DISABLE CAB CONTROLS	YES
SET SWITCH SPEED	PROGRAM AS REQUIRED USER TO DETERMINE RPM SELECTION
RESUME SWITCH SPEED	SAME AS SET SWITCH SPEED
ENGINE RAMP RATE	500 RPM/SEC.

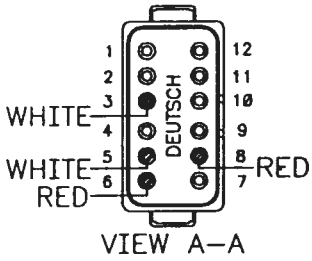
NOTICE:
SALES CODE 12VVS & 12VVW MUST BE ORDERED AND INSTALLED ON TRUCK PRIOR TO INSTALLING IMT # 93091609 SPEED CONTROL KIT.

CABLE ASSEMBLY-12 PIN (51713544)

THIS ASSEMBLY USED ON 93091609

ITEM	PART NO.	DESCRIPTION	QTY
1.	77040381	RECEPTACLE 12-WAY	1
2.	77040379	WEDGELOCK	1
3.	77044621	PIN	4
4.	89044397	WIRE 16GA WHT X 26	2
5.	89044400	WIRE 16GA RED X 26	2
6.	77040186	TERMINAL 1/4 FSLPON 16-14GA	4





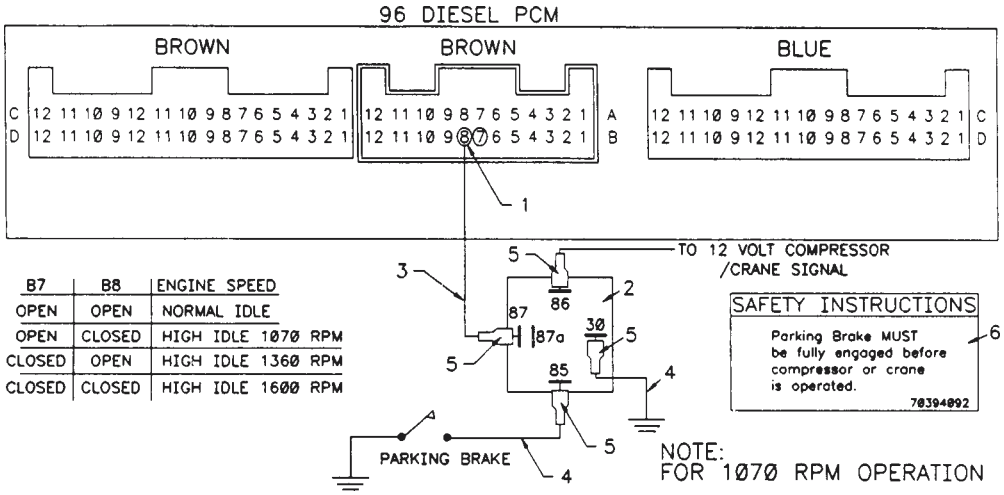
ETC98:93091618.01: 19980824 17 **REF DWG: 99901253**

J

ELECTRONIC THROTTLE CONTROL KIT (93091618)

1996-98 GMC/CHEVY 6.5L DIESEL

ITEM	PART NO.	DESCRIPTION	QTY
1.	70145389	TERMINAL PIN-CHEVY	2
2.	77041251	RELAY-P&B	1
3.	89044232	WIRE 14GA RED X 96	1
4.	89044274	WIRE 14GA BLK X 48	1
5.	77040186	TERMINAL 1/4FSLPON 16-14GA	4
6.	70394092	DECAL-CAUTION BRK/COMP	1



B7	B8	ENGINE SPEED
OPEN	OPEN	NORMAL IDLE
OPEN	CLOSED	HIGH IDLE 1070 RPM
CLOSED	OPEN	HIGH IDLE 1360 RPM
CLOSED	CLOSED	HIGH IDLE 1600 RPM

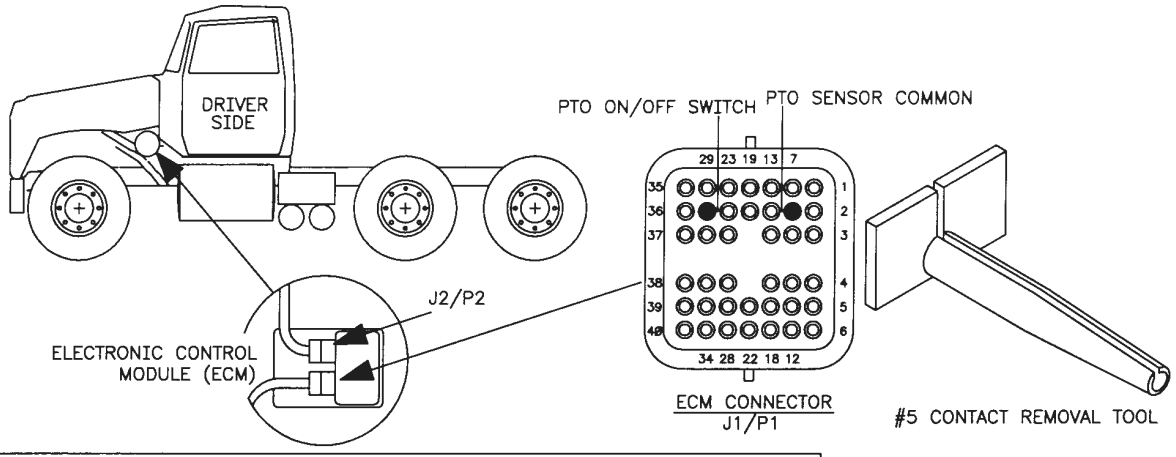
CONTINUED ON FOLLOWING PAGE

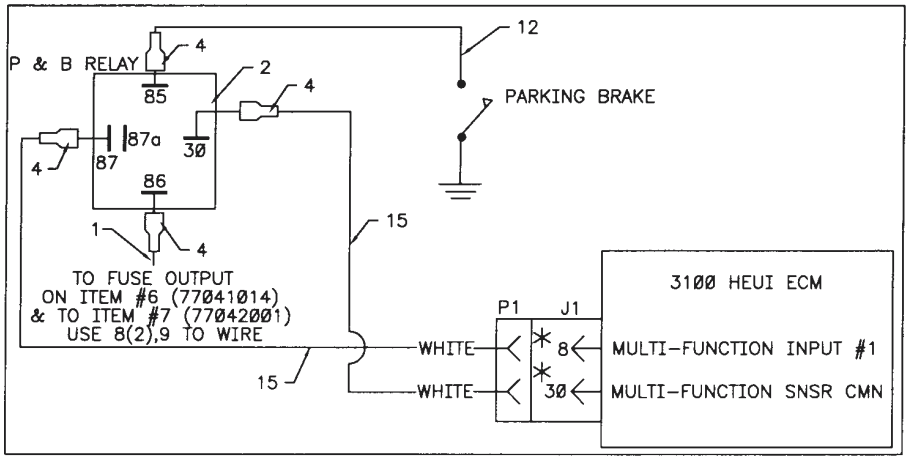
ELECTRONIC THROTTLE CONTROL KIT (93091619-1)

CATERPILLAR 3116E, 3126E, 3126E VERSION B, 3176B & 3406E / IMT SITESTAR LUBE TRUCKS

ITEM	PART NO.	DESCRIPTION	QTY
1.	89044235	WIRE 14GA WHT X 420	1
2.	77041251	P&B RELAY	1
4.	77040186	TERMINAL 1/4FSLPON 16-14GA	4
5.	79085317	CONTACT REMOVAL TOOL	1
6.	77041345	TOGGLE-SGL THW 8530K39	1
7.	77042001	LIGHT-RED INDICATOR	1
8.	77040053	TERMINAL 1/4STUD 12-10GA	2
9.	77040230	TERMINAL 12-10GA SPD INSUL	1
10.	70394092	DECAL-CAUTION BRK/COMP	1
11.	77041008	PRESSURE SWITCH	*1
12.	89044235	WIRE 14GA WHT X 60	1
13.	72533495	TEE 3/8NPT BRASS	*1
14.	77040051	TERMINAL #18SPADE	*2
15.	51714048	WIRE ASM	2

* USED WITH AIR BRAKES ONLY





WIRING DIAGRAM–REMOTE SWITCHES

ENGINE THROTTLE CONTROL IS USED ON CATERPILLAR ENGINES: 3126, 3116, 3176B & 3406E

NOTE: INSTALL DECAL NEXT TO PARKING BRAKE ACTUATOR ON DASH PANEL.

#10

SAFETY INSTRUCTIONS

Parking Brake MUST be fully engaged before compressor or crane is operated.

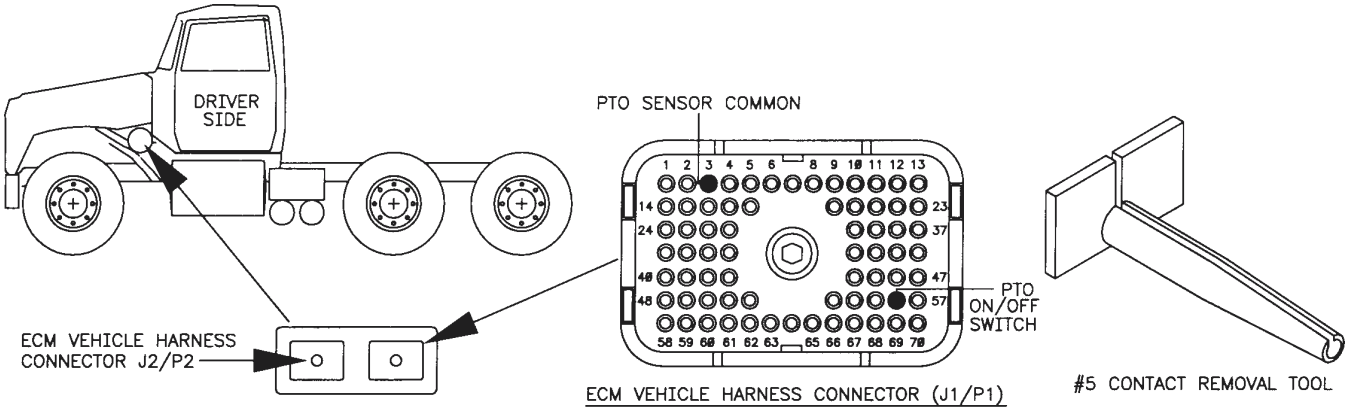
78394092

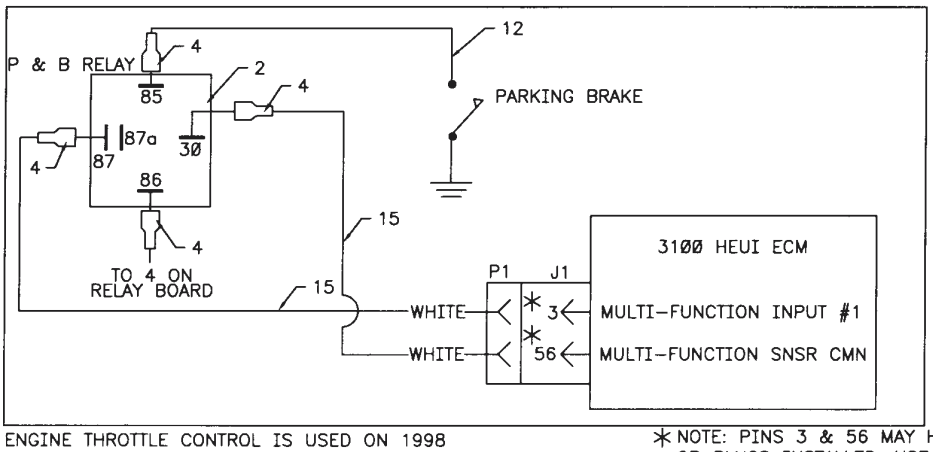
* NOTE: PINS 8 & 30 MAY HAVE EXISTING WIRES OR PLUGS INSTALLED. USE "BLUE" DEUTSCH CONTACT REMOVAL TOOL (IMT #79085317) TO EXTRACT THESE WIRES. INSERT THE 3 FT. SECTION OF WHITE WIRE WITH THE DEUTSCH SOCKET CONTACT, (IMT # 51714048) INTO J1–8. REPEAT FOR J1–30.

CONTINUED ON FOLLOWING PAGE

ELECTRONIC THROTTLE CONTROL KIT (93091619-2)

CATERPILLAR 3116E, 3126E, 3126E VERSION B, 3176B & 3406E / IMT SITESTAR LUBE TRUCKS





ENGINE THROTTLE CONTROL IS USED ON 1998 CATERPILLAR ENGINES: 3126B, 3116, 3176B, 3406E, C10, & C12

NOTE: INSTALL DECAL NEXT TO PARKING BRAKE ACTUATOR ON DASH PANEL.

#10

SAFETY INSTRUCTIONS

Parking Brake MUST be fully engaged before compressor or crane is operated.

78394892

* NOTE: PINS 3 & 56 MAY HAVE EXISTING WIRES OR PLUGS INSTALLED. USE "BLUE" DEUTSCH CONTACT REMOVAL TOOL (IMT #79085317) TO EXTRACT THESE WIRES. INSERT THE 3 FT. SECTION OF WHITE WIRE WITH DEUTSCH SOCKET CONTACT, (IMT # 51714048) INTO J1-3. REPEAT FOR J1-56.

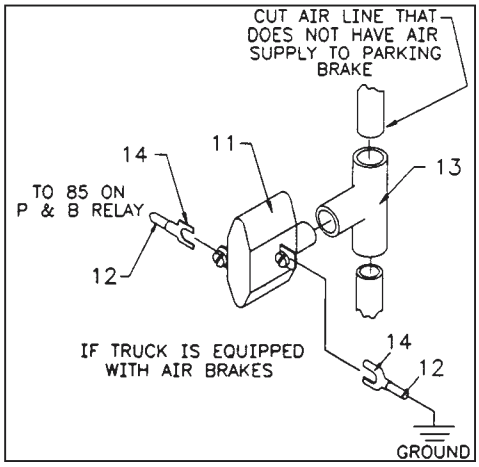
P

ELECTRONIC THROTTLE CONTROL KIT (93091619-3)

CATERPILLAR 3116E, 3126E, 3126E VERSION B, 3176B & 3406E / IMT SITESTAR LUBE TRUCKS

DEDICATED PTO PARAMETERS	NEW VALUES	AVAILABLE RANGE/OPTIONS	DEFAULT
PTO CONFIGURATION	REMOTE SWITCH	REMOTE SWITCHES, CAB SWITCHES, REMOTE THROTTLE, OFF	OFF
PTO TOP ENGINE LIMIT	1250 RPM *	600 TO 2120 RPM	2120 RPM
PTO ENGINE RPM SET SPEED	1250 RPM *	LOW IDLE–PTO TEL	Ø RPM
PTO TO SET SPEED	YES	YES	NO
PTO CAB THROTTLE RPM LIMIT	TEL	PTO TEL	TEL
IDLE/PTO RPM RAMP RATE	500 RPM/SEC.	5 TO 1000 RPM/SEC	50 RPM/SEC

* VALUES TO BE DETERMINED BY END USER. (MUST BE THE SAME)



HAVE AUTHORIZED CATERPILLAR® DEALER USE MPSI PRO-LINC 9000 TO CHANGE THE ABOVE ECM PARAMETERS FROM DEFAULT TO NEW VALUES TO ENABLE PROPER ENGINE IDLE CONTROL.

ETC98:93091621.01: 20001013

21

REF DWG: 99900840

R

SEE INSTALLATION INSTRUCTIONS 99900840 FOR INSTALLATION OF THIS KIT

ELECTRONIC THROTTLE CONTROL KIT (93091621)

1994-97 FORD F-SERIES 7.3L DIESEL AUTOMATIC TRANSMISSION ONLY

ITEM	PART NO.	DESCRIPTION	QTY
1.	70394558	TIE 8"	2
2.	70733173	IDLE CONTROL-FORD	1
3.	77040377	CONNECTOR-TELSPLICE	5
4.	77040378	SPLICE TAP	1
5.	99900840	INSTALLATION INSTRUCTIONS	1

93091627.01: 20030408

ELECTRONIC THROTTLE CONTROL KIT (93091627)

1999 FORD F-SERIES 7.3L W/AUTO TRANSMISSION

ITEM	PART NO.	DESCRIPTION	QTY
1.	70396381	DECAL-OPERATION	1
2.	77044817	AUX PWR CTRL MODULE	1

DRAWING NOT AVAILABLE AT TIME OF PRINTING

ETC98: 93091624.01.20031031

22

REF DWG: 99900904

S

ELECTRONIC THROTTLE CONTROL KIT (93091624-1)

USED ON 1998-2003 CUMMINS ISB250 AND 1998 TO CURRENT ISC ENGINES ONLY

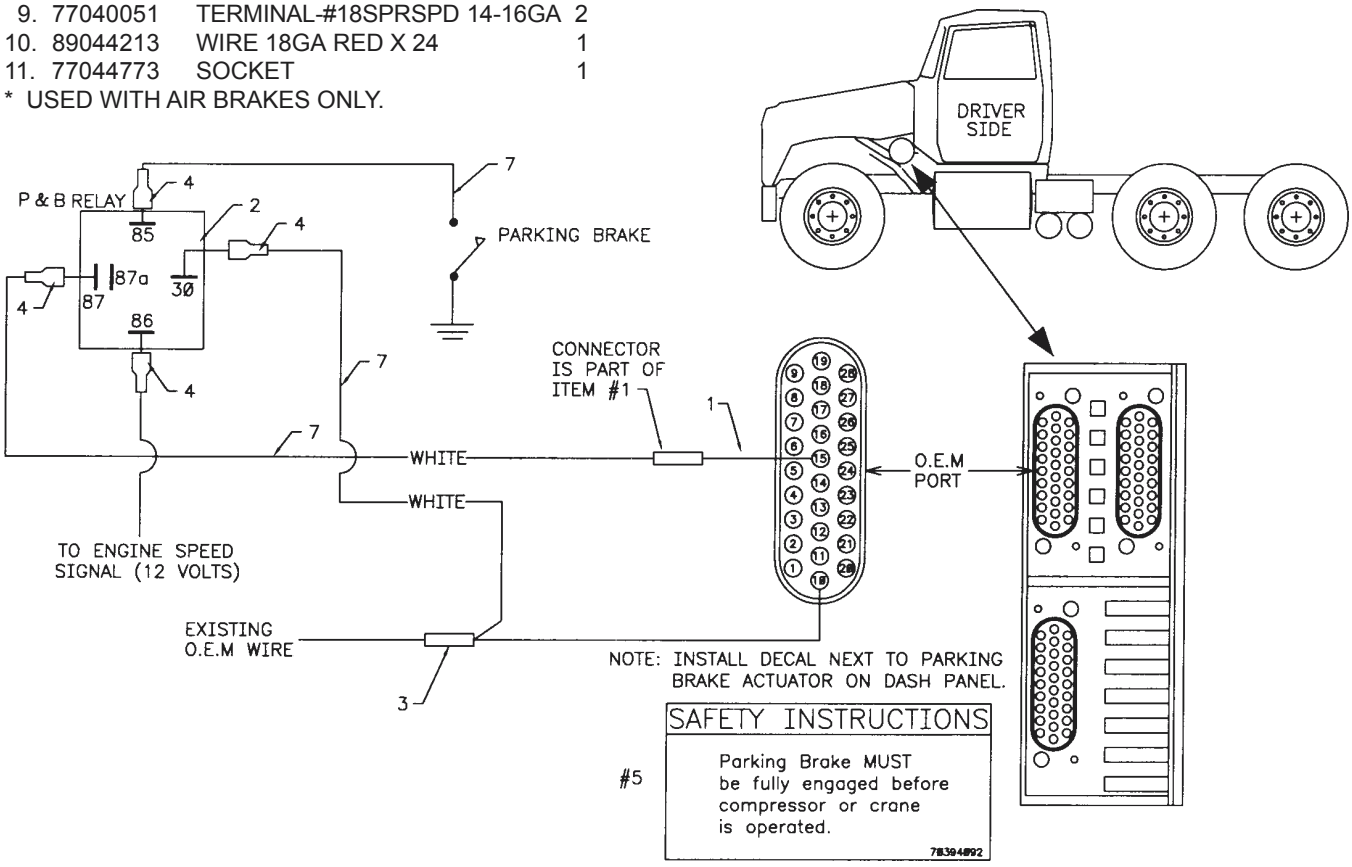
ITEM	PART NO.	DESCRIPTION	QTY
1.	77044763	WIRE ASM 16GA W/AMP SKT	1
2.	77041251	P&B RELAY	1
3.	77040048	BUTT CONNECTOR 16-14GA	1
4.	77040186	TERMINAL-1/4FSLPON 16-14GA	4
5.	70394092	DECAL-CAUTION BRK/CMPRSR	1
6.	77041008	PRESSURE SWITCH	*1
7.	89044235	WIRE 14GA WHT	11FT
8.	72533495	TEE 3/8 BRASS	*1
9.	77040051	TERMINAL-#18SPRSPD 14-16GA	2
10.	89044213	WIRE 18GA RED X 24	1
11.	77044773	SOCKET	1

* USED WITH AIR BRAKES ONLY.

NOTES

1. ITEM #1 & #3 ARE USED WITH THE “SELECT” AND “ SECLECT PLUS” ENGINE MODELS.

2. ITEMS #10 & #11 ARE USED WITH ISB250 & ISC250 ENGINE MODELS.

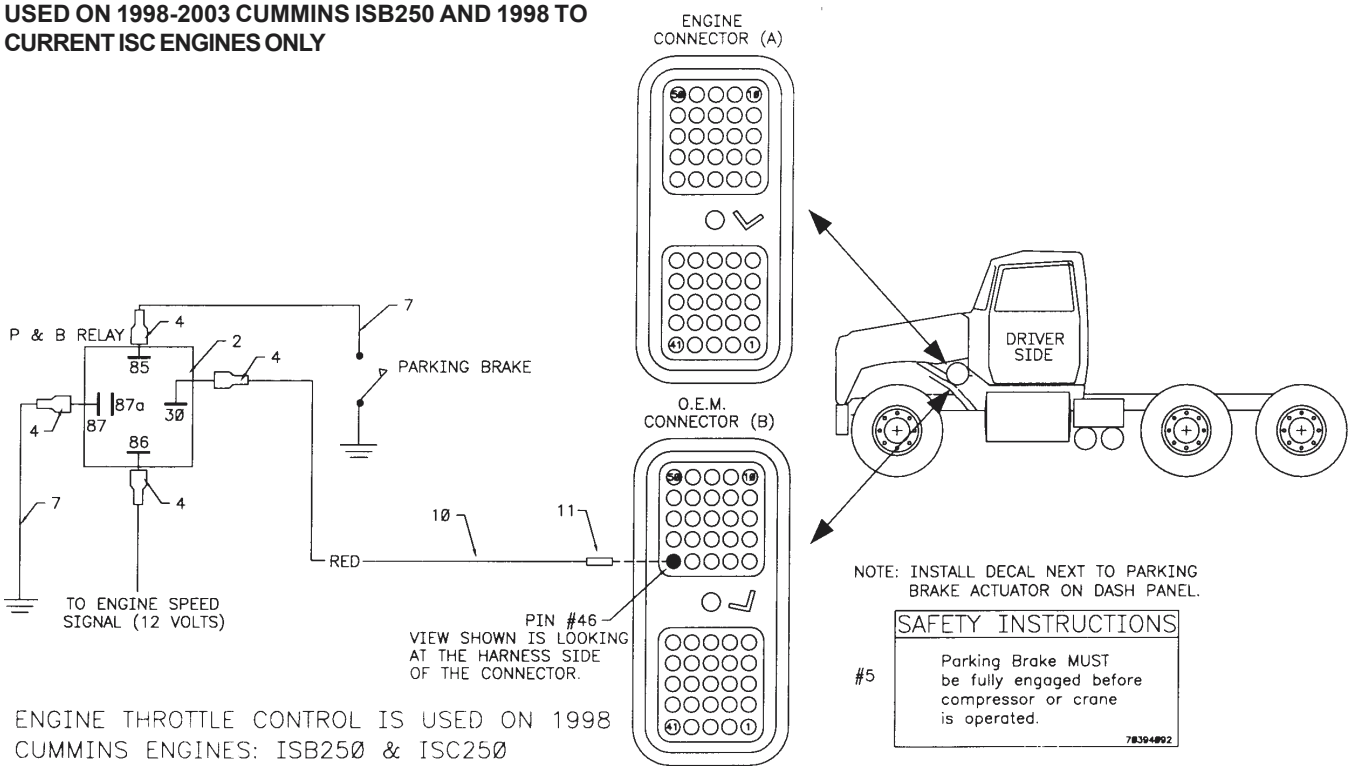


ETC98: 93091624.02.20031031 23 **REF DWG: 99900904**

S

ELECTRONIC THROTTLE CONTROL KIT (93091624-2)

USED ON 1998-2003 CUMMINS ISB250 AND 1998 TO CURRENT ISC ENGINES ONLY



ENGINE THROTTLE CONTROL IS USED ON 1998 CUMMINS ENGINES: ISB250 & ISC250

ETC98: 93091624.03.20031031 24 **REF DWG: 99900904**

S

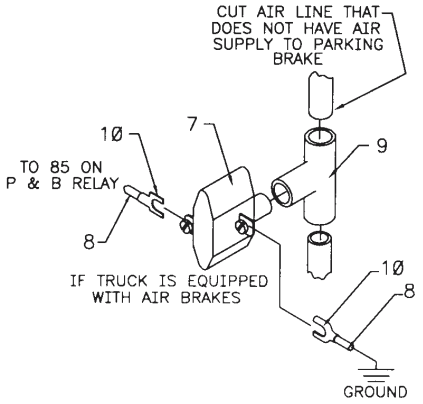
ELECTRONIC THROTTLE CONTROL KIT (93091624-3)

USED ON 1998-2003 CUMMINS ISB250 AND 1998 TO CURRENT ISC ENGINES ONLY

PROGRAMMING INSTRUCTIONS

USE PC EQUIPPED WITH CUMMINS "INSITE" SOFTWARE OR CONTACT LOCAL AUTHORIZED CUMMINS DEALER TO CONFIGURE ENGINE CONTROL MODULE (ECM) WITH PARAMETERS UTILIZED IN FIXED ENGINE SPEED CONTROL.

* SELECT "FEATURES AND PARAMETERS" UNDER THE "ADJUSTMENTS" MENU
* SELECT TAB LABELED "PTO OPTIONS"
* CLICK BOX NEXT TO "PTO/REMOTE PTO ENABLED" FIELD (AN "X" SHOULD BE IN THIS FIELD)
* ENTER DESIRED ENGINE SPEED IN THE "REMOTE PTO SPEED" FIELD. E.g. 1200 (VALUE TO BE DETERMINED BY END USER)
* SELECT TAB LABELED "VEHICLE PERFORMANCE 2"
* ENSURE THAT "SHUTDOWN IN PTO ENABLED" IS SET TO OFF
* CLICK THE "OK" ICON AND FOLLOW ONSCREEN INSTRUCTIONS.



ETC98: 933091639.01.20031031 25 **REF DWG: 99903585**

H

ELECTRONIC THROTTLE CONTROL KIT (93091639-1)

USED ON 2004 CUMMINS ISB AND ISM ENGINES ONLY

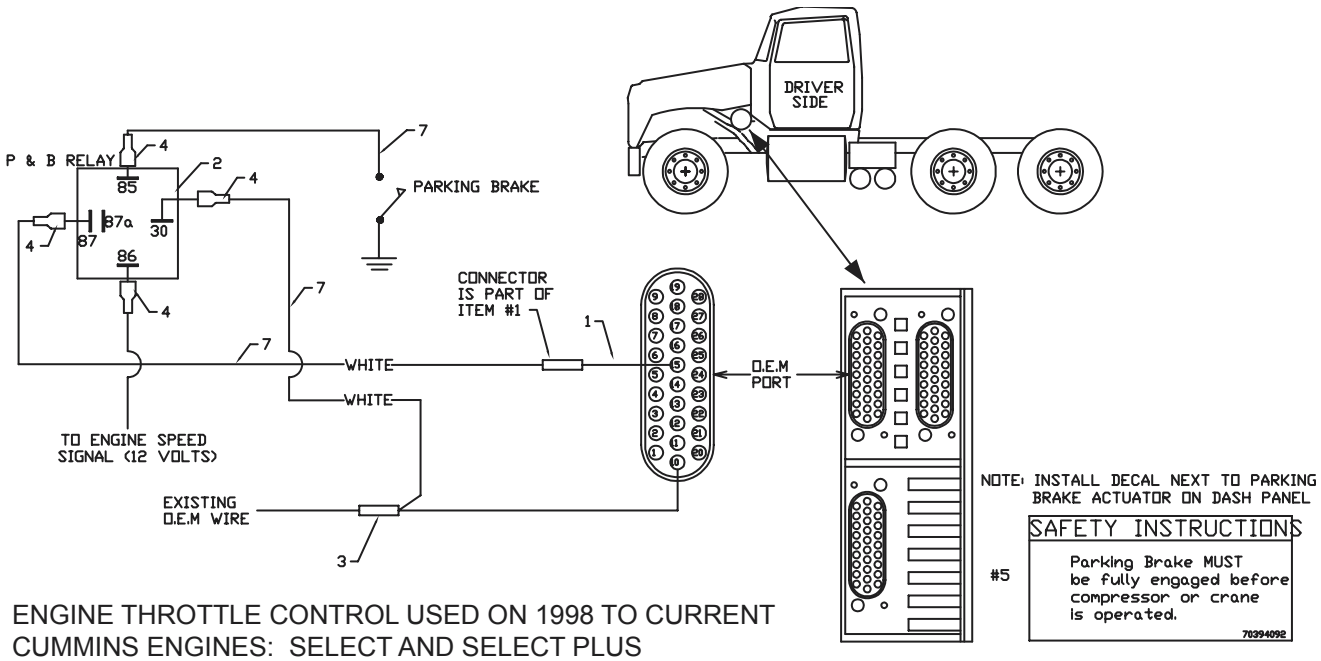
ITEM	PART NO.	DESCRIPTION	QTY
1.	77044763	WIRE ASM 16GA W/AMP SKT	1
2.	77041251	P&B RELAY	1
3.	77040048	BUTT CONNECTOR 16-14GA	1
4.	77040186	TERMINAL-1/4FSLPON 16-14GA	4
5.	70394092	DECAL-CAUTION BRK/CMPRSR	1
6.	77041008	PRESSURE SWITCH	*1
7.	89044235	WIRE 14GA WHT	11FT
8.	72533495	TEE 3/8 BRASS	*1
9.	77040051	TERMINAL-#18SPRSPD 14-16GA	2
10.	89044213	WIRE 18GA RED	2’
11.	77044773	SOCKET	1

* USED WITH AIR BRAKES ONLY.

NOTES

1. ITEM #1 & #3 ARE USED WITH THE “SELECT” AND “ SELECT PLUS” ENGINE MODELS.

2. ITEMS #10 & #11 ARE USED WITH ISB & ISM ENGINE MODELS.

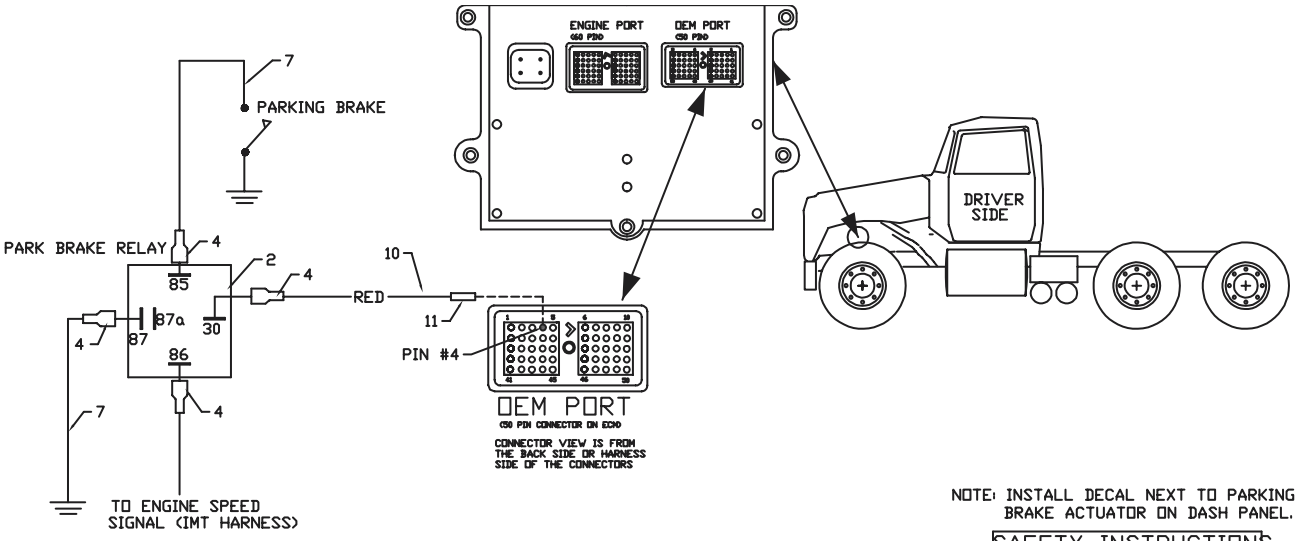


ENGINE THROTTLE CONTROL USED ON 1998 TO CURRENT CUMMINS ENGINES: SELECT AND SELECT PLUS

H

ELECTRONIC THROTTLE CONTROL KIT (93091639-2)

USED ON 2004 CUMMINS ISB & ISM ENGINES ONLY



ENGINE THROTTLE CONTROL IS USED ON 2004 TO CURRENT CUMMINS ISB AND ISM ENGINES

NOTE: INSTALL DECAL NEXT TO PARKING BRAKE ACTUATOR ON DASH PANEL.

#5

SAFETY INSTRUCTIONS

Parking Brake MUST be fully engaged before compressor or crane is operated.

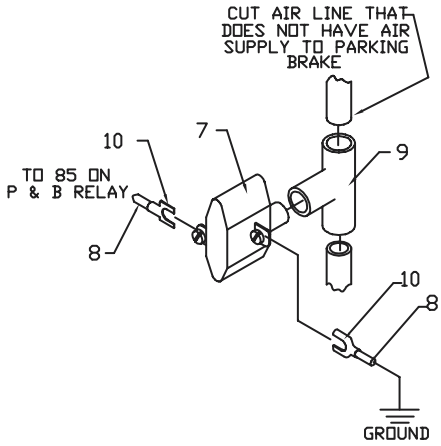
70394092

ETC98: 93091639.03.20031031 27 **REF DWG: 99903585**

H

ELECTRONIC THROTTLE CONTROL KIT (93091639-3)

USED ON 2004 CUMMINS ISB & ISM ENGINES ONLY



IF TRUCK IS EQUIPPED WITH AIR BRAKES

PROGRAMMING INSTRUCTIONS

USE PC EQUIPPED WITH CUMMINS 'INSITE' SOFTWARE OR CONTACT LOCAL AUTHORIZED CUMMINS DEALER TO CONFIGURE ENGINE CONTROL MODULE (ECM) WITH PARAMETERS UTILIZED IN FIXED ENGINE SPEED CONTROL.

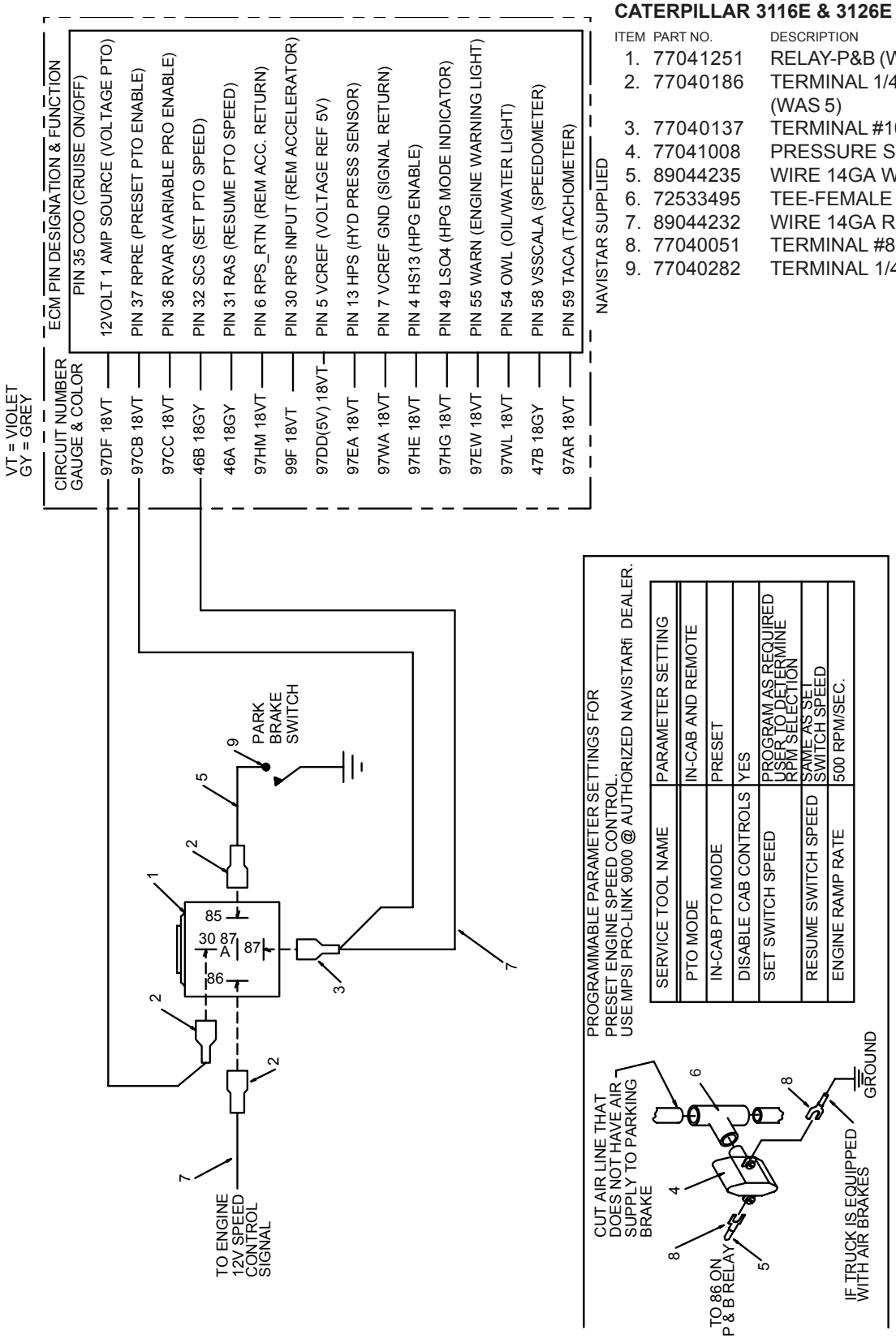
* SELECT 'FEATURES AND PARAMETERS' UNDER THE 'ADJUSTMENTS' MENU
* SELECT TAB LABELED 'PTO OPTIONS'
* CLICK BOX NEXT TO 'PTO/REMOTE PTO ENABLED' FIELD (AN 'X' SHOULD BE IN THIS FIELD)
* ENTER DESIRED ENGINE SPEED IN THE 'REMOTE PTO SPEED' FIELD. E.g. 1200 (VALUE TO BE DETERMINED BY END USER)
* SELECT TAB LABELED 'VEHICLE PERFORMANCE 2'
* ENSURE THAT 'SHUTDOWN IN PTO ENABLED' IS SET TO OFF
* CLICK THE 'OK' ICON AND FOLLOW ONSCREEN INSTRUCTIONS.

T

REF DWG: 99901154
SPEED CONTROL KIT (93091622)

USED ON 1998 NAVISTAR T444E & T466E ENGINES & CATERPILLAR 3116E & 3126E VERSION B ENGINES.

ITEM	PART NO.	DESCRIPTION	QTY
1.	77041251	RELAY-P&B (WAS 2)	1
2.	77040186	TERMINAL 1/4FSLPON 16-14GA (WAS 5)	3 5
3.	77040137	TERMINAL #10FSLPON (WAS 3)	1
4.	77041008	PRESSURE SWITCH	1
5.	89044235	WIRE 14GA WHT X 24”	1
6.	72533495	TEE-FEMALE BRANCH	1
7.	89044232	WIRE 14GA RED X 24”	1
8.	77040051	TERMINAL #8SPRSPD 16-14GA	2
9.	77040282	TERMINAL 1/4PIGBAK 16-14GA	1



I

Attachment:
1998 Guide to Electronic & Manual Throttle Controls (99901267)

Service Bulletin

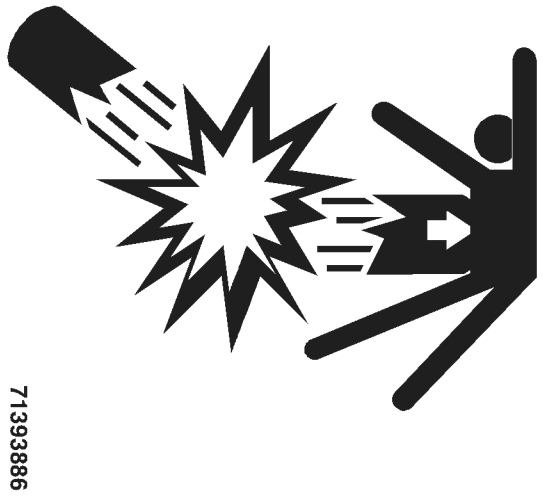
INSTALLATION INSTRUCTIONS

Closed Loop Electronic Throttle Control for '94 thru '97 Ford 7.3 Liter Diesel Engines

IOWA MOLD TOOLING CO., INC.
BOX 189, GARNER, IA 50438-0189
TEL: 641-923-3711
TECHNICAL SUPPORT FAX: 641-923-2424
SERVICE BULLETIN PART NUMBER 99900840

PRECAUTIONS

Read before operating your compressor!



⚠ DANGER

EXPLODING TANK WILL CAUSE
DEATH, SERIOUS INJURY
OR PROPERTY DAMAGE

- Drain air tank after each use to prevent moisture build-up and corrosion which leads to tank failure.
- Assure that tank and compressor relief valves work properly, and are at correct pressure settings.
- DO NOT modify or repair air tank.
- NEVER drive vehicle with pressure in air tank.

Failure to follow operating and maintenance procedures as outlined in this manual could result in equipment damage, personal injury or death. Follow all maintenance procedures and intervals.

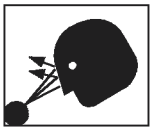
Maintenance must be performed only by trained and qualified personnel, using correct tools, specified torques and approved replacement parts.

All electrical components and cable wiring must be installed and grounded in accordance with NFPA, national electrical codes and applicable state and local codes.

Before removing guards or servicing the compressor, disconnect all power supplies. Display warning signs and lock out electrical circuits.

All guards must be in position and secure before and during operation.

Do not use air from this compressor for breathing or food processing. Air from this compressor will cause severe injury or death if used for breathing or food processing.



Hot oil under pressure can cause severe injury or death. Shut down, let cool and relieve pressure in compressor before servicing.

Do not overfill the compressor with oil. Use correct quantity of manufacturer's lubricant. Repair leaks and clean spills immediately.

Compressors generate high temperatures. Do not touch or otherwise come in contact with hot surfaces. Doing so can cause severe personal injury.

GENERAL INFORMATION

INTRODUCTION

This service bulletin provides installation instructions for the IMT Closed Loop Electronic Idle Control. This Idle Control is designed for use with ’94 and ’97 Ford 7.3 liter Diesel Engines.

Three means are used throughout this service bulletin to gain the attention of operating and service personnel. They are NOTES, CAUTIONS and WARNINGS and are defined as follows:

NOTE

A NOTE IS USED TO EITHER CONVEY ADDITIONAL INFORMATION OR TO PROVIDE FURTHER EMPHASIS FOR A PREVIOUS POINT.

CAUTION

A CAUTION IS USED WHEN THERE IS THE STRONG POSSIBILITY OF DAMAGE TO THE EQUIPMENT OR PREMATURE EQUIPMENT FAILURE.

WARNING

A WARNING IS USED WHEN THERE IS THE POTENTIAL FOR PERSONAL INJURY OR DEATH.

ORDERING INFORMATION

When placing orders or requesting assistance, contact: Iowa Mold Tooling at the address listed on the cover of this service bulletin. Be prepared to provide the model and serial number of your equipment.

TOOLS

Listed below are tools which are known to be used to affect the adjustments illustrated. There may be additional tools required to perform tasks illustrated. If you experience difficulties or find a specific tool which improves performance of task, please communicate same in writing to: Iowa Mold Tooling Co., Inc., Customer Service Department and reference this Service Bulletin Number.

QTY	DESCRIPTION
1	STANDARD PLIERS
1	FLASHLIGHT OR OTHER LIGHT SOURCE
1	ADJUSTABLE WRENCH

NOTE

CAREFULLY READ THROUGH THESE INSTRUCTIONS PRIOR TO STARTING INSTALLATION.

INSTALLATION PROCEDURE

This section describes the installation of the IMT Closed Loop Electronic Idle Control for Ford 7.3 liter Diesel Engine.

The components required for this installation are as follows:

IMT Closed Loop Electronic Idle Controllerfor Automatic Transmissions (IMT# 70733173) QTY: 1
or
IMT Closed Loop Electronic Idle Controllerfor Manual Transmissions (IMT# 70733125) QTY: 1

AMP Tel-Splice Connector-Translucent (IMT# 77040377) QTY: 5

3M Moisture Resistant Splice Tap-Blue (IMT# 77040378) QTY: 1

Economy Type Mounting Ty-Wrap (IMT # 70034151) QTY: 2

CAUTION

BEFORE ATTEMPTING INSTALLATION, DISCONNECT THE TRUCK BATTERY TO ELIMINATE THE POSSIBILITY OF CREATING A SHORT CIRCUIT. FAILURE TO DO SO CAN RESULT IN DAMAGE TO THE ELECTRONIC COMPONENTS USED IN THIS INSTALLATION.

CAUTION

ALL ELECTRICAL WIRING WHICH IS MODIFIED OR INSTALLED DURING THIS PROCEDURE, MUST BE SECURED AWAY FROM CONTACT WITH HOT SURFACES AND SHARP EDGES. FAILURE TO DO SO WILL RESULT IN PREMATURE EQUIPMENT FAILURE.

STEP 1. Locate Mounting Bracket which is above and to the right side of the Throttle Assembly. See Figure 1. Carefully Remove IMT Idle Controller from plastic packaging. Install using two (2) Economy Type Ty-Wraps to Mounting Bracket.

STEP 2. The IMT Idle Controller must be oriented with the Wires to the top and the Power LED's to the bottom.

STEP 3. Refer to Figure 2. Carefully pull back the outside sheathing of tape by 3" to expose the wires routed to the 3-pin connector. Also, expose the wires routed to the 2-pin connector.

STEP 4. Locate the Gray, White, Red and Yellow Wires of the IMT Idle Controller. See Figure 3. Route these wires along the top of the Throttle Assembly, then down, along the side next to the 3-pin and 2-pin connectors on the Throttle Assembly.

STEP 5. Refer to Figure 3. Begin at the top of the 3-pin connector of the Throttle Assembly. Locate the Gray/Red Stripe(94-96) or Black/White (97) Wire. Find the Gray Wire coming from the IMT Idle Controller. Using one (1) AMP Tel-Splice Connector, insert the Gray/Red Stripe (94-96) or Black/White (97) Wire into the side of the AMP Tel-Splice Connector which allows the wire to go completely through the connector. Insert the Gray Wire from the IMT Idle Controller into the side of the Tel-Splice Connector that allows the wire to only go through until it hits the back of the connector.

STEP 6. Using standard pliers, carefully compress the top portion of the connector down until it bottoms out.

CAUTION

DO NOT apply excessive force when compressing the connector. Doing so will damage the plastic connector.

STEP 7. Refer to Figure 3. Locate the Gray/White Stripe Wire connected to the middle position of the 3-pin connector of the Throttle Assembly. Also, locate the White Wire coming from the IMT Idle Controller. Run the Gray/White Stripe Wire through the AMP Tel-Splice Connector which allows the wire to go completely through the connector. Insert the White Wire from the IMT Idle Controller into the side of the Tel-Splice Connector which only permits the wire through until it hits the back of the Tel-Splice Connector.

STEP 8. Repeat STEP 6 to connect the Gray/White Stripe and White Wires together.

STEP 9. The Brown/White Stripe Wire, located at the bottom of the Ford 3-Pin Connector, will not be modified during this installation procedure.

STEP 10. Refer to Figure 3. Locate the Red Wire coming from the Front position of the 2-pin connector of the Thottle Assembly and the Red Wire from the IMT Idle Controller. Insert the Red Wire from the 2-pin connector to the "through" portion of the AMP Tel-Splice Connector. Insert the Red Wire from the Idle Controller into the other position of the Tel-Splice Connector, until it bottoms out.

STEP 11. Repeat STEP 6 to connect the two (2) Red Wires together.

STEP 12. Refer to Figure 3. Locate the Brown Wire (95-96) or Red Wire (94) coming from the rear position of the 2-pin connector of the Throttle Assembly. Find the Yellow Wire from the IMT Idle Controller. Insert the Brown or Red Wire from the 2-pin Connector in the "through" portion of the AMP Tel-Splice Connector. Insert the Yellow Wire from the Idle Controller into the other position of the Tel-Splice Connector until it bottoms out.

STEP 13. Repeat STEP 6 to connect the Brown and Yellow Wires together.

NOTE

THE FOLLOWING STEPS ARE FOR FIELD REPLACEMENT OF TROMBETTA ELECTRONIC/ SOLENOID SPEED CONTROL TO IMT SPEED CONTROL. IF THIS IS AN INITIAL INSTALLATION, PLEASE SKIP TO STEP 16.

STEP 14. Refer to Figure 3. Locate the Purple, Black, and Green Wires coming from the IMT Idle Control Module.

NOTE

IF INSTALLING IMT IDLE CONTROLLER TO DA440/IMT 80 CONFIGURATION, REFER TO FIGURE 7 AND 8.

IF INSTALLING IMT IDLE CONTROLLER TO DA440/4110 WITH 3000 SERIES CRANE CONFIGURATION, REFER TO FIGURE 5 AND 6.

A. Cut wire 12 inches from IMT#77040282 Piggy-Back Connector located on top of Parking Brake. The other end of this wire runs to Pin 85 of Bosch Relay that controls input signals. Take the Green Wire of the IMT Controller and Butt Connector to the 12 inch piece of wire coming from the Parking Brake.

B. Take the other end of the wire that was cut, in two that ran back to Pin 85 of the Bosch Relay and securely terminate to Ground.

C. Locate the Purple Wire and connect directly to Pin 30 of the Bosh Relay that controls input signals. If your system has a Crane/Compressor combination which has two relays connected together, connect the Purple Wire using Butt Connector to wire that was originally terminated to the AUX Terminal of the Trombetta Relay Module.

STEP 15. Remove Trombetta Solenoid from its engine mounting. Remove the Relay Module for the Solenoid and then remove any hardware attachments to the Throttle Assembly.

CAUTION

DO NOT REMOVE ANY ELECTRICAL CONNECTIONS TO THE BOSCH RELAYS UNLESS INSTRUCTED TO IN THE ABOVE INSTRUCTIONS. GO TO STEP 18.

STEP 16. Refer to Figure 3. Locate the Purple Wire coming from the IMT Controller. Connect this wire to the Compressor and/or Crane speed control signals. Reference drawing 93091611, 93091612, 93091617, 93091613, 93091616, or 93091620 for specified arrangement.

STEP 17. Route the Green Wire from the Control Module to the Parking Brake. Remove the OEM connector from the top of the Parking Brake and attach to the Piggy-Back Connector on the end of the Green Wire of the IMT Idle Control Module. To complete the circuit, install the Green Wire to the tab on the top of the Parking Brake.

STEP 18. Locate the Black Wire from the IMT Idle Control Module and route this wire through the firewall of the truck, into the engine compartment, near the Truck's Connector shown in Figure 4.

STEP 19. To connect the Tachometer Signal, locate the Truck's Connector as shown in Figure 4. Carefully remove the Plastic Boot of the connector by pulling back on four (4) Plastic Retainer Clips, and then by sliding the Plastic Boot forward to expose the Pinouts as shown in Figure 4. Locate Pin 25 and its White/Pink Striped Wire, in the upper right area of the Connector.

NOTE

THE CONNECTOR MAY BE MOUNTED UPSIDE-DOWN ON SOME MODELS WHICH WILL PLACE PIN 25 IN THE LOWER LEFT AREA OF THE CONNECTOR.

Connect the Black Wire located in STEP 18 to the White/Pink Wire by installing a 3M Moisture Resistant Splice Tap (Blue) approximately two (2) inches from the Connector as follows. The White/ Pink Stripe Wire will go "through" the Splice Tap, while the Black Wire from the Idle Control Module will go into the opening which bottoms out.

Replace the Plastic Boot by carefully sliding it onto the Connector.

STEP 20. Repeat STEP 6 to connect the White/Pink Stripe Wire and Black Wire together.

STEP 21. Reconnect the Truck's Battery and check for any tools which may have been left from the installation. All connections have now been made and the IMT Idle Controller may now be tested.

STEP 22. Make certain the Truck's Parking Brake is set and start the engine. Observe the IMT Idle Controller. The MIN/OUT%/MAX light should glow an Orange color, and the POWER LIGHT should glow Red. If nothing lights up, retrace the installation for proper connections.

STEP 23. Being certain the Parking Brake is set, engage the Compressor via the Compressor Switch. The truck engine RPM should increase.

IMPORTANT !

The RPM Potentiometer has six (6) settings; 1150, 1200, 1250, 1300, 1350 and 1400 RPM. Selecting the desired setting is accomplished by slowly rotating the pot. As the pot is rotated, the RPM of the engine will jump to the next setting. When the new setting is reached, turn the pot an additional 1/2 turn to center the setting electrically.When adjusting the pot CLOCKWISE, notice the speed change, and then turn an additional 1/2 turn CLOCKWISE.When adjusting the pot COUNTERCLOCKWISE, notice the speed change, then turn the pot an additional 1/2 turn COUNTERCLOCKWISE.

STEP 24. Adjust the truck engine RPM to provide proper speed at the Compressor or Crane.

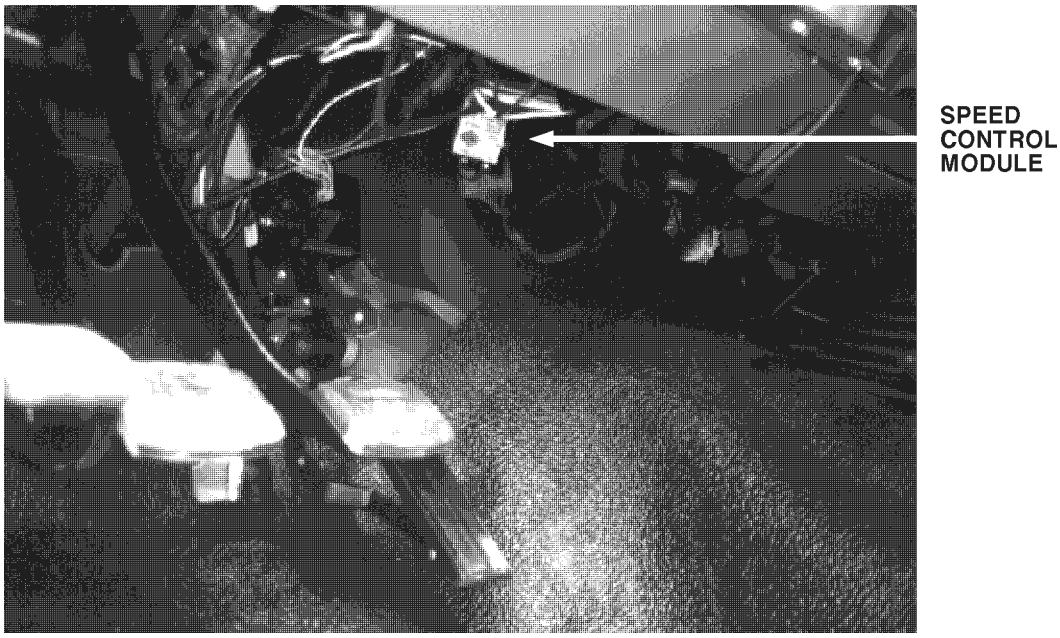


FIGURE 1. REFERENCE PHOTO

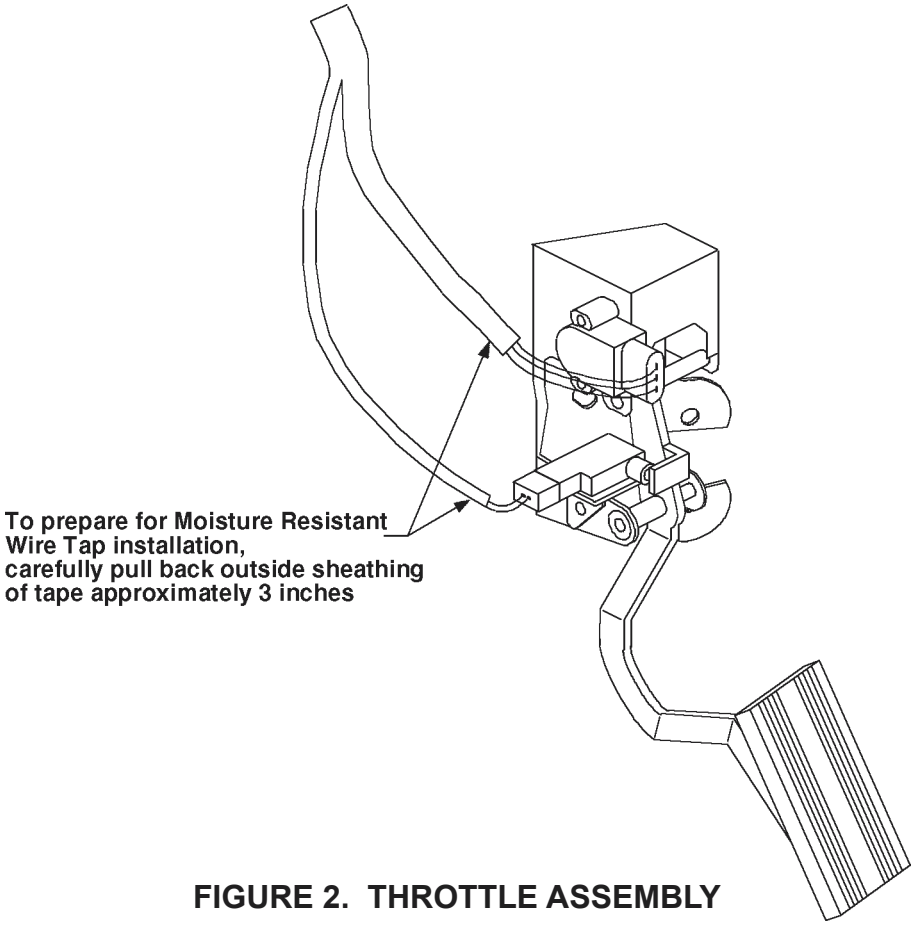
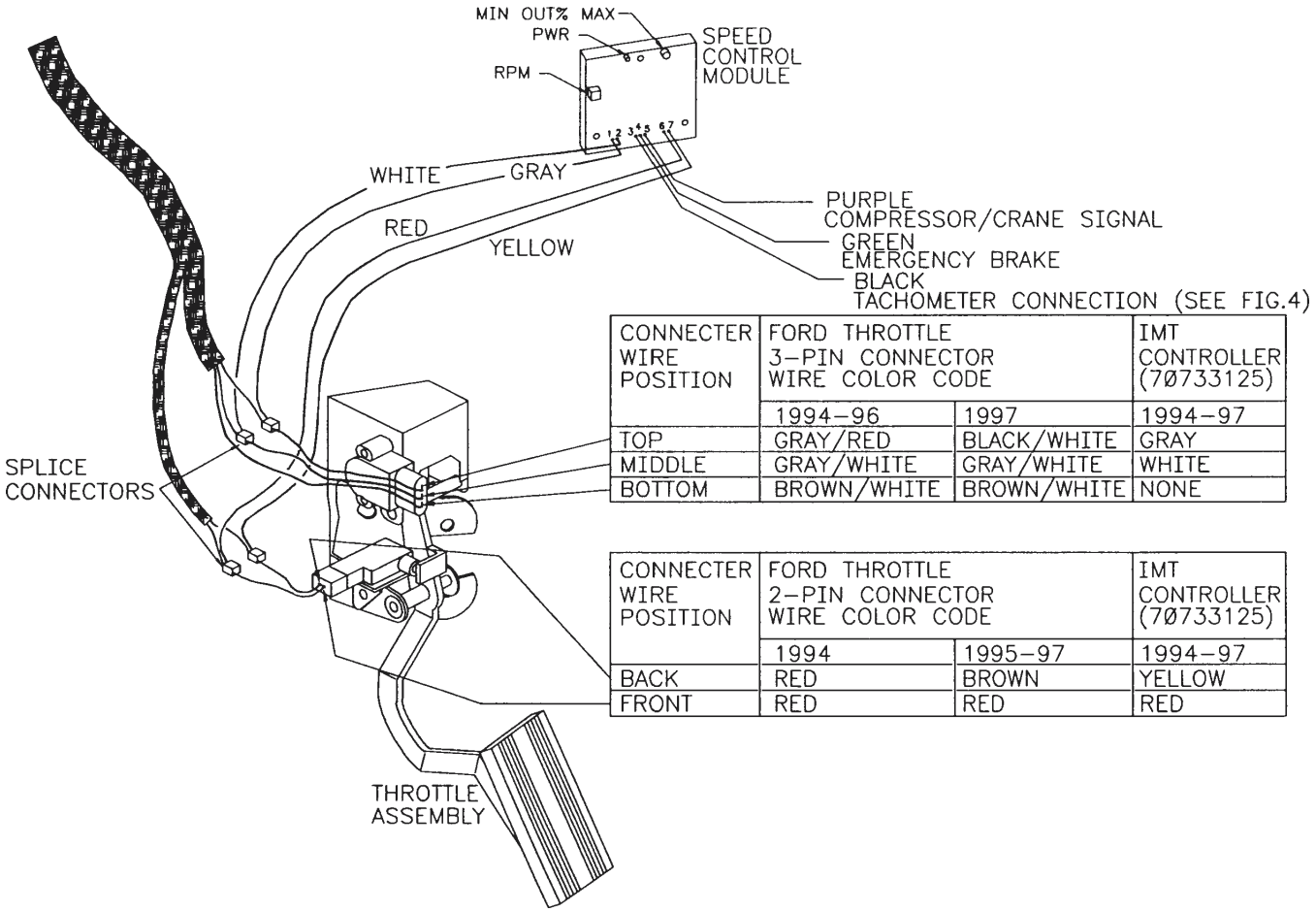


FIGURE 2. THROTTLE ASSEMBLY



CONNECTER WIRE POSITION	FORD THROTTLE 3-PIN CONNECTOR WIRE COLOR CODE		IMT CONTROLLER (7Ø733125)
	1994-96	1997	1994-97
TOP	GRAY/RED	BLACK/WHITE	GRAY
MIDDLE	GRAY/WHITE	GRAY/WHITE	WHITE
BOTTOM	BROWN/WHITE	BROWN/WHITE	NONE

CONNECTER WIRE POSITION	FORD THROTTLE 2-PIN CONNECTOR WIRE COLOR CODE		IMT CONTROLLER (7Ø733125)
	1994	1995-97	1994-97
BACK	RED	BROWN	YELLOW
FRONT	RED	RED	RED

FIGURE 3. GENERAL WIRING DIAGRAM

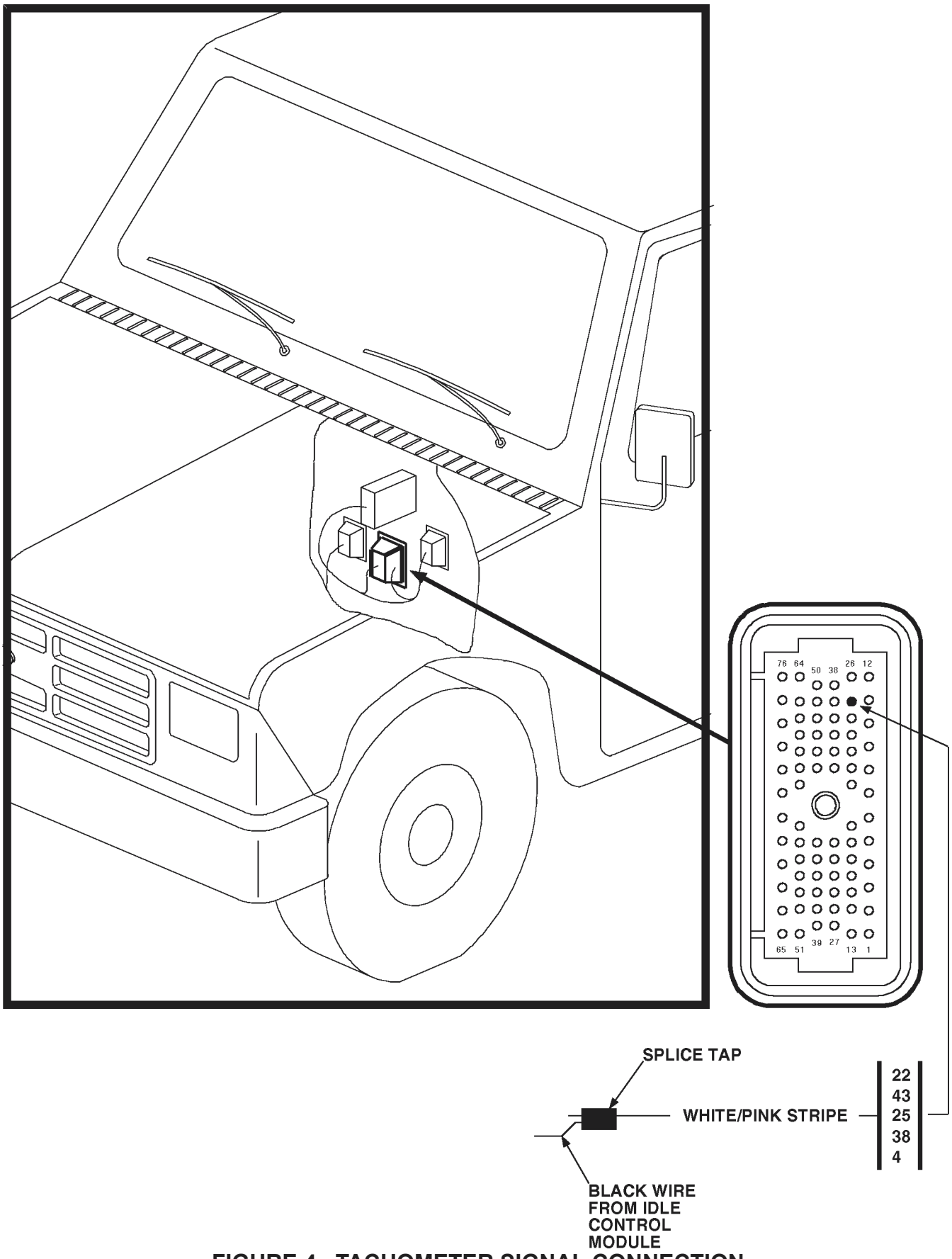


FIGURE 4. TACHOMETER SIGNAL CONNECTION

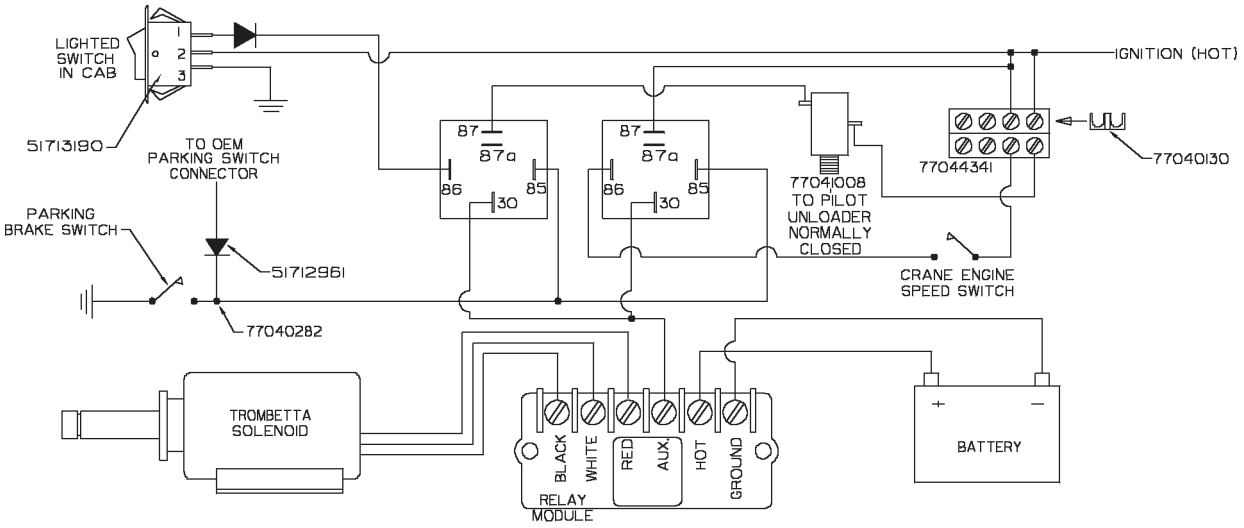


FIGURE 5. BEFORE RETROFIT (REF: 99900851)
3000 SERIES CRANE/DA440/260/4110 AIR COMPRESSOR

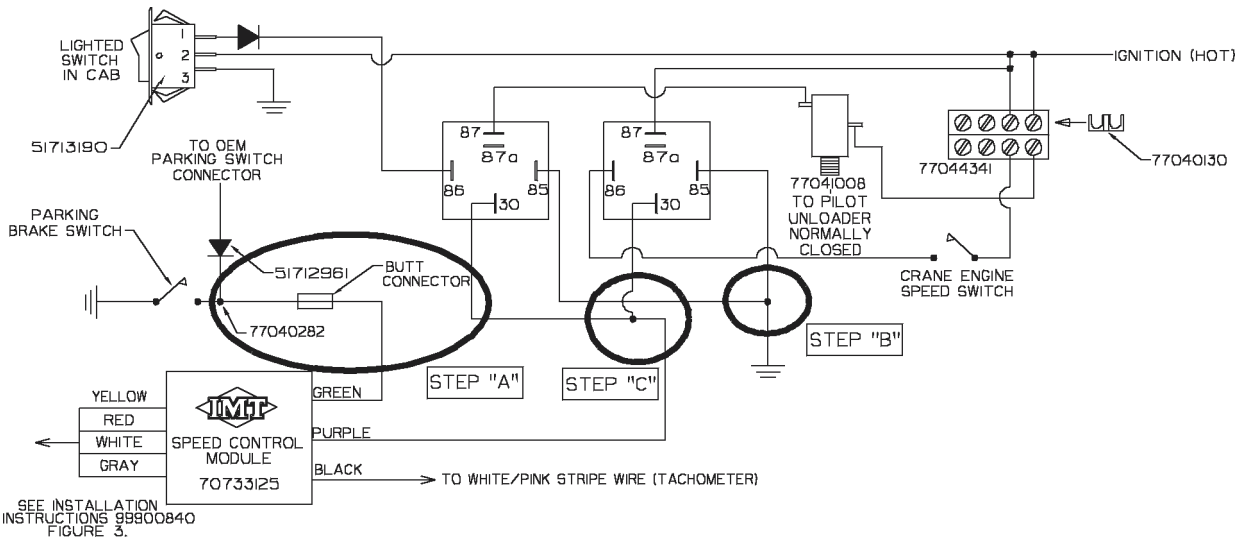


FIGURE 6. AFTER RETROFIT (REF: 99900002)
3000 SERIES CRANE/DA440/260/4110 AIR COMPRESSOR

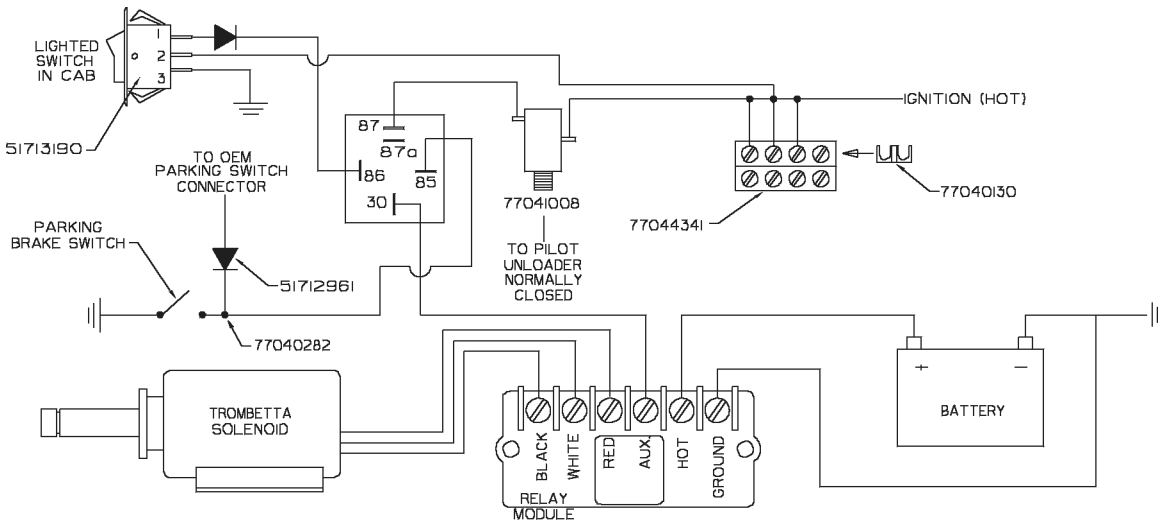


FIGURE 7. BEFORE RETROFIT (REF: 99900769)
DA440/DA260/DA4110 (IMT 80/100/142 AIR COMPRESSORS)
WHEN USED WITH FORD 7.3L TURBO DIESEL/DIRECT INJECTION

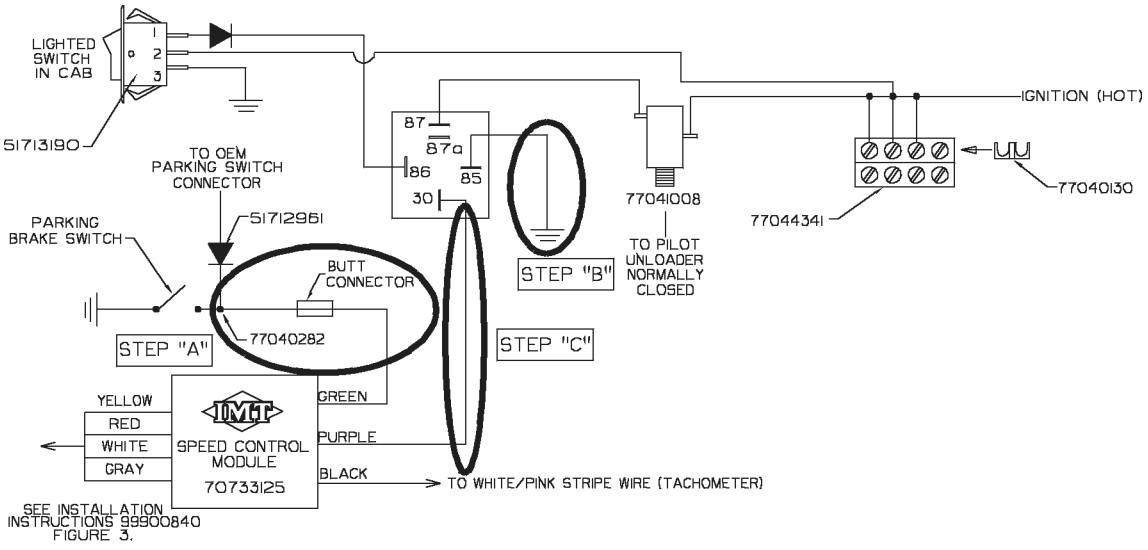


FIGURE 8. AFTER RETROFIT (REF: 99900003)
DA440/DA260/DA4110 (IMT 80/100/142 AIR COMPRESSORS)
WHEN USED WITH FORD 7.3L TURBO DIESEL/DIRECT INJECTION

ETC98: 20000707

IOWA MOLD TOOLING CO., INC.
BOX 189, GARNER, IA 50438-0189
TEL: 641-923-3711
TECHNICAL SUPPORT FAX: 641-923-2424

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Attachment:
Guide to Electronic & Manual Throttle Controls-'99 (99901267)

Service Bulletin

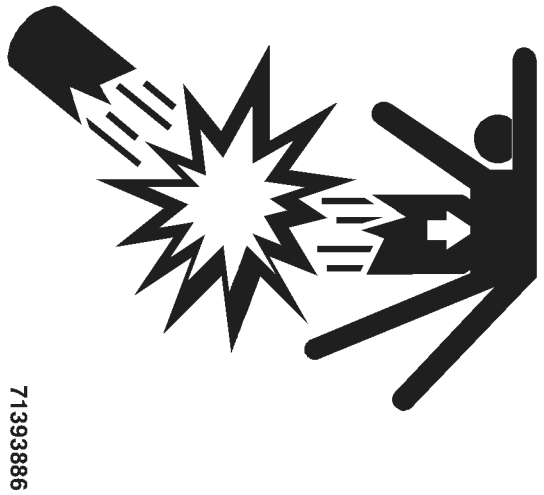
INSTALLATION INSTRUCTIONS

Closed Loop Electronic Throttle Control for 1999 Ford 7.3 Liter Diesel Engines

IOWA MOLD TOOLING CO., INC.
BOX 189, GARNER, IA 50438-0189
TEL: 641-923-3711
TECHNICAL SUPPORT FAX: 641-923-2424
SERVICE BULLETIN PART NUMBER 99901213

PRECAUTIONS

Read before operating your compressor!



⚠ DANGER

EXPLODING TANK WILL CAUSE
DEATH, SERIOUS INJURY
OR PROPERTY DAMAGE

- Drain air tank after each use to prevent moisture build-up and corrosion which leads to tank failure.
- Assure that tank and compressor relief valves work properly, and are at correct pressure settings.
- DO NOT modify or repair air tank.
- NEVER drive vehicle with pressure in air tank.

Failure to follow operating and maintenance procedures as outlined in this manual could result in equipment damage, personal injury or death. Follow all maintenance procedures and intervals.

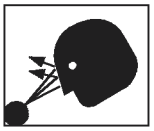
Maintenance must be performed only by trained and qualified personnel, using correct tools, specified torques and approved replacement parts.

All electrical components and cable wiring must be installed and grounded in accordance with NFPA, national electrical codes and applicable state and local codes.

Before removing guards or servicing the compressor, disconnect all power supplies. Display warning signs and lock out electrical circuits.

All guards must be in position and secure before and during operation.

Do not use air from this compressor for breathing or food processing. Air from this compressor will cause severe injury or death if used for breathing or food processing.



Hot oil under pressure can cause severe injury or death. Shut down, let cool and relieve pressure in compressor before servicing.

Do not overfill the compressor with oil. Use correct quantity of manufacturer's lubricant. Repair leaks and clean spills immediately.

Compressors generate high temperatures. Do not touch or otherwise come in contact with hot surfaces. Doing so can cause severe personal injury.

GENERAL INFORMATION

INTRODUCTION

This service bulletin provides installation instructions for the IMT Closed Loop Electronic Idle Control. This Idle Control is designed for use with 1999 Ford 7.3 liter Diesel Engines.

Three means are used throughout this service bulletin to gain the attention of operating and service personnel. They are NOTES, CAUTIONS and WARNINGS and are defined as follows:

NOTE

A NOTE IS USED TO EITHER CONVEY ADDITIONAL INFORMATION OR TO PROVIDE FURTHER EMPHASIS FOR A PREVIOUS POINT.

CAUTION

A CAUTION IS USED WHEN THERE IS THE STRONG POSSIBILITY OF DAMAGE TO THE EQUIPMENT OR PREMATURE EQUIPMENT FAILURE.

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A WARNING IS USED WHEN THERE IS THE POTENTIAL FOR PERSONAL INJURY OR DEATH.

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When placing orders or requesting assistance, contact: Iowa Mold Tooling at the address listed on the cover of this service bulletin. Be prepared to provide the model and serial number of your equipment.

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Listed below are tools which are known to be used to affect the adjustments illustrated. There may be additional tools required to perform tasks illustrated. If you experience difficulties or find a specific tool which improves performance of task, please communicate same in writing to: Iowa Mold Tooling Co., Inc., Customer Service Department and reference this Service Bulletin Number.

QTY	DESCRIPTION
1	STANDARD PLIERS
1	FLASHLIGHT OR OTHER LIGHT SOURCE
1	ADJUSTABLE WRENCH

NOTE

CAREFULLY READ THROUGH THESE INSTRUCTIONS PRIOR TO STARTING INSTALLATION.

INSTALLATION PROCEDURE

This section describes the installation of the IMT Closed Loop Electronic Idle Control for Ford 7.3 liter Diesel Engine.

The components required for this installation are as follows:

IMT Closed Loop Electronic Idle Controller for Manual Transmissions (IMT# 70733297) QTY: 1

AMP Tel-Splice Connector-Translucent (IMT# 77040377) QTY: 5

3M Moisture Resistant Splice Tap-Blue (IMT# 77040378) QTY: 1

Economy Type Mounting Ty-Wrap (IMT # 70034151) QTY: 2

CAUTION

BEFORE ATTEMPTING INSTALLATION, DISCONNECT THE TRUCK BATTERY TO ELIMINATE THE POSSIBILITY OF CREATING A SHORT CIRCUIT. FAILURE TO DO SO CAN RESULT IN DAMAGE TO THE ELECTRONIC COMPONENTS USED IN THIS INSTALLATION.

CAUTION

ALL ELECTRICAL WIRING WHICH IS MODIFIED OR INSTALLED DURING THIS PROCEDURE, MUST BE SECURED AWAY FROM CONTACT WITH HOT SURFACES AND SHARP EDGES. FAILURE TO DO SO WILL RESULT IN PREMATURE EQUIPMENT FAILURE.

STEP 1. Locate Mounting Bracket which is above and to the right side of the Throttle Assembly. See Figure 1. Carefully Remove IMT Idle Controller from plastic packaging. Install using two (2) Economy Type Ty-Wraps to Mounting Bracket.

STEP 2. The IMT Idle Controller must be oriented with the Wires to the top and the Power LED's to the bottom.

STEP 3. Refer to Figure 2. Carefully pull back the outside sheathing of tape by 3" to expose the wires routed to the 3-pin connector. Also, expose the wires routed to the 2-pin connector.

STEP 4. Locate the Gray, White, Red and Yellow Wires of the IMT Idle Controller. See Figure 3. Route these wires along the top of the Throttle Assembly, then down, along the side next to the 3-pin and 2-pin connectors on the Throttle Assembly.

STEP 5. Refer to Figure 3. Begin at the top of the 3-pin connector of the Throttle Assembly. Locate the Yellow/White Wire. Find the Gray Wire coming from the IMT Idle Controller. Using one (1) AMP Tel-Splice Connector, insert the Yellow/White Wire into the side of the AMP Tel-Splice Connector which allows the wire to go completely through the connector. Insert the Gray Wire from the IMT Idle Controller into the side of the Tel-Splice Connector that allows the wire to only go through until it hits the back of the connector.

STEP 6. Using standard pliers, carefully compress the top portion of the connector down until it bottoms out.

CAUTION

DO NOT apply excessive force when compressing the connector. Doing so will damage the plastic connector.

STEP 7. Refer to Figure 3. Locate the Gray/White Stripe Wire connected to the middle position of the 3-pin connector of the Throttle Assembly. Also, locate the White Wire coming from the IMT Idle Controller. Run the Gray/White Stripe Wire through the AMP Tel-Splice Connector which allows the wire to go completely through the connector. Insert the White Wire from the IMT Idle Controller into the side of the Tel-Splice Connector which only permits the wire through until it hits the back of the Tel-Splice Connector.

STEP 8. Repeat STEP 6 to connect the Gray/White Stripe and White Wires together.

STEP 9. The Brown/White Stripe Wire, located at the bottom of the Ford 3-Pin Connector, will not be modified during this installation procedure.

STEP 10. Refer to Figure 3. Locate the Red/Green Wire coming from the Front position of the 2-pin connector of the Thottle Assembly and the Red Wire from the IMT Idle Controller. Insert the Red/Green Wire from the 2-pin connector to the "through" portion of the AMP Tel-Splice Connector. Insert the Red Wire from the Idle Controller into the other position of the Tel-Splice Connector, until it bottoms out.

STEP 11. Repeat STEP 6 to connect the two (2) Red Wires together.

STEP 12. Refer to Figure 3. Locate the Red/Yellow Wire coming from the rear position of the 2-pin connector of the Throttle Assembly. Find the Yellow Wire from the IMT Idle Controller. Insert the Red/Yellow Wire from the 2-pin Connector in the "through" portion of the AMP Tel-Splice Connector. Insert the Yellow Wire from the Idle Controller into the other position of the Tel-Splice Connector until it bottoms out.

STEP 13. Repeat STEP 6 to connect the Red/Yellow and Yellow Wires together.

NOTE

THE FOLLOWING STEPS ARE FOR FIELD REPLACEMENT OF TROMBETTA ELECTRONIC/SOLENOID SPEED CONTROL TO IMT SPEED CONTROL. IF THIS IS AN INITIAL INSTALLATION, PLEASE SKIP TO STEP 16.

STEP 14. Refer to Figure 3. Locate the Purple, Black, and Green Wires coming from the IMT Idle Control Module.

NOTE

IF INSTALLING IMT IDLE CONTROLLER TO DA440/IMT 80 CONFIGURATION, REFER TO FIGURE 7 AND 8.

IF INSTALLING IMT IDLE CONTROLLER TO DA440/4110 WITH 3000 SERIES CRANE CONFIGURATION, REFER TO FIGURE 5 AND 6.

A. Cut wire 12 inches from IMT#77040282 Piggy-Back Connector located on top of Parking Brake. The other end of this wire runs to Pin 85 of Bosch Relay that controls input signals. Take the Green Wire of the IMT Controller and Butt Connector to the 12 inch piece of wire coming from the Parking Brake.

B. Take the other end of the wire that was cut, in two that ran back to Pin 85 of the Bosch Relay and securely terminate to Ground.

C. Locate the Purple Wire and connect directly to Pin 30 of the Bosh Relay that controls input signals. If your system has a Crane/Compressor combination which has two relays connected together, connect the Purple Wire using Butt Connector to wire that was originally terminated to the AUX Terminal of the Trombetta Relay Module.

STEP 15. Remove Trombetta Solenoid from its engine mounting. Remove the Relay Module for the Solenoid and then remove any hardware attachments to the Throttle Assembly.

CAUTION

DO NOT REMOVE ANY ELECTRICAL CONNECTIONS TO THE BOSCH RELAYS UNLESS INSTRUCTED TO IN THE ABOVE INSTRUCTIONS. GO TO STEP 18.

STEP 16. Refer to Figure 3. Locate the Purple Wire coming from the IMT Controller. Connect this wire to the Compressor and/or Crane speed control signals. Reference drawing 93091611, 93091612, 93091617, 93091613, 93091616, or 93091620 for specified arrangement.

STEP 17. Route the Green Wire from the Control Module to the Parking Brake. Remove the OEM connector from the top of the Parking Brake and attach to the Piggy-Back Connector on the end of the Green Wire of the IMT Idle Control Module. To complete the circuit, install the Green Wire to the tab on the top of the Parking Brake.

STEP 18. Locate the Black Wire from the IMT Idle Control Module and route this wire through the firewall of the truck, into the engine compartment, near the Truck's Connector shown in Figure 4.

STEP 19. To connect the Tachometer Signal, locate the Truck's Connector as shown in Figure 4. Carefully remove the Plastic Boot of the connector by pulling back on four (4) Plastic Retainer Clips, and then by sliding the Plastic Boot forward to expose the Pinouts as shown in Figure 4. Locate Pin 25 and its White/Pink Striped Wire, in the upper right area of the Connector.

NOTE

THE CONNECTOR MAY BE MOUNTED UPSIDE-DOWN ON SOME MODELS WHICH WILL PLACE PIN 25 IN THE LOWER LEFT AREA OF THE CONNECTOR.

Connect the Black Wire located in STEP 18 to the White/Pink Wire by installing a 3M Moisture Resistant Splice Tap (Blue) approximately two (2) inches from the Connector as follows. The White/Pink Stripe Wire will go "through" the Splice Tap, while the Black Wire from the Idle Control Module will go into the opening which bottoms out.

Replace the Plastic Boot by carefully sliding it onto the Connector.

STEP 20. Repeat STEP 6 to connect the White/Pink Stripe Wire and Black Wire together.

STEP 21. Reconnect the Truck's Battery and check for any tools which may have been left from the installation. All connections have now been made and the IMT Idle Controller may now be tested.

STEP 22. Make certain the Truck's Parking Brake is set and start the engine. Observe the IMT Idle Controller. The MIN/OUT%/MAX light should glow an Orange color, and the POWER LIGHT should glow Red. If nothing lights up, retrace the installation for proper connections.

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IMPORTANT !

The RPM Potentiometer has six (6) settings; 1150, 1200, 1250, 1300, 1350 and 1400 RPM. Selecting the desired setting is accomplished by slowly rotating the pot. As the pot is rotated, the RPM of the engine will jump to the next setting. When the new setting is reached, turn the pot an additional 1/2 turn to center the setting electrically.When adjusting the pot CLOCKWISE, notice the speed change, and then turn an additional 1/2 turn CLOCKWISE.When adjusting the pot COUNTERCLOCKWISE, notice the speed change, then turn the pot an additional 1/2 turn COUNTERCLOCKWISE.

STEP 24. Adjust the truck engine RPM to provide proper speed at the Compressor or Crane.

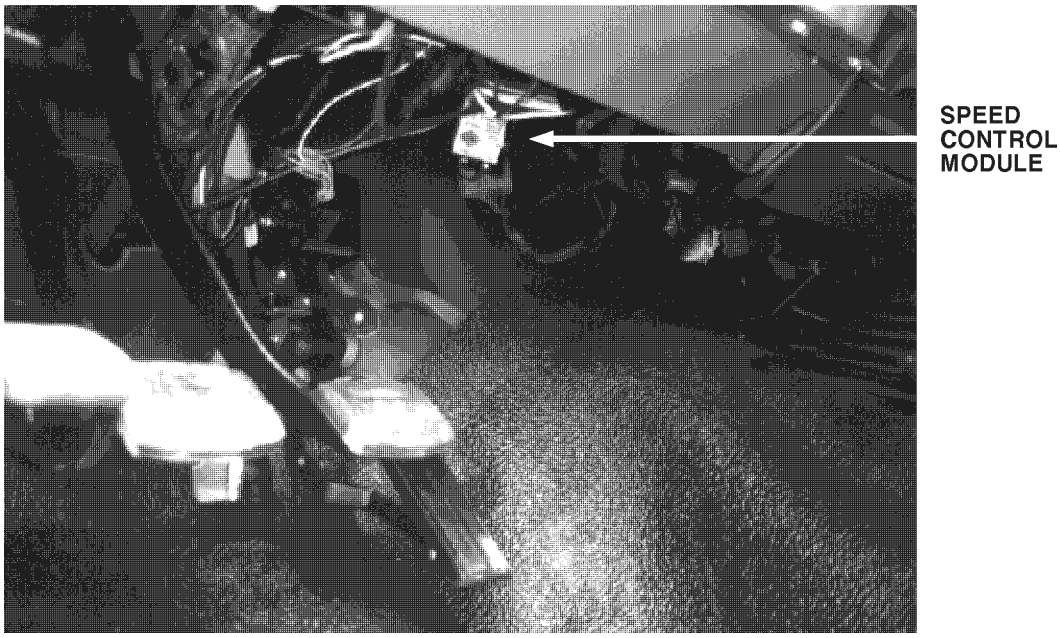


FIGURE 1. REFERENCE PHOTO

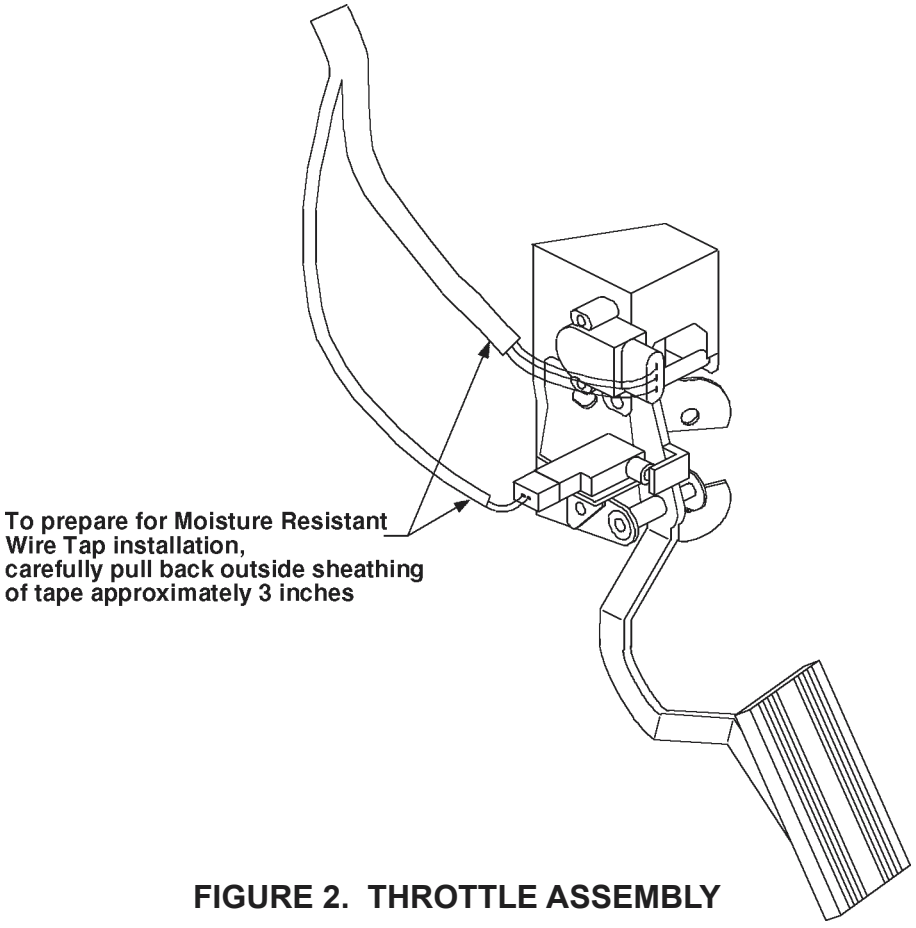
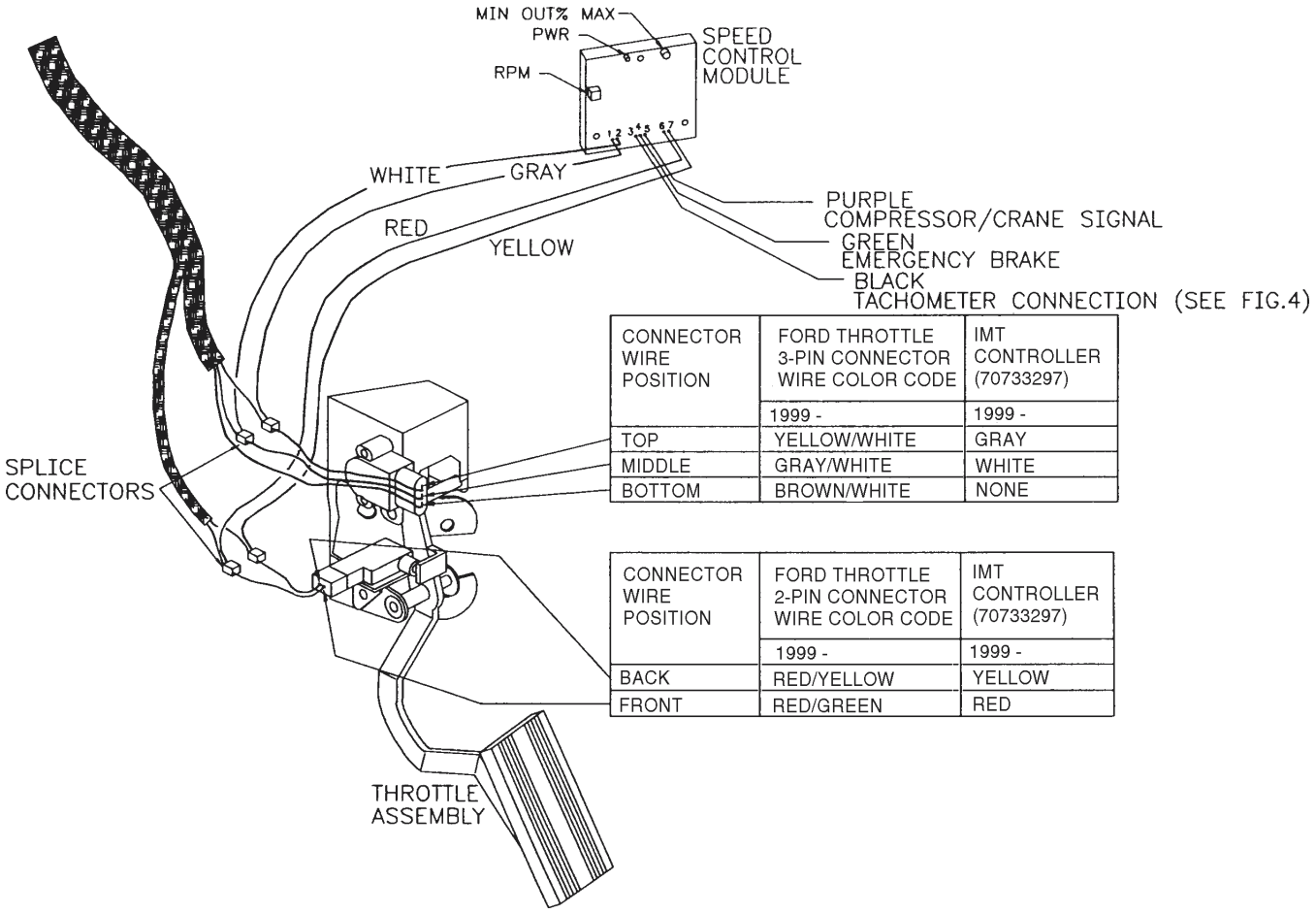


FIGURE 2. THROTTLE ASSEMBLY



CONNECTOR WIRE POSITION	FORD THROTTLE 3-PIN CONNECTOR WIRE COLOR CODE	IMT CONTROLLER (70733297)
	1999 -	1999 -
TOP	YELLOW/WHITE	GRAY
MIDDLE	GRAY/WHITE	WHITE
BOTTOM	BROWN/WHITE	NONE

CONNECTOR WIRE POSITION	FORD THROTTLE 2-PIN CONNECTOR WIRE COLOR CODE	IMT CONTROLLER (70733297)
	1999 -	1999 -
BACK	RED/YELLOW	YELLOW
FRONT	RED/GREEN	RED

FIGURE 3. GENERAL WIRING DIAGRAM

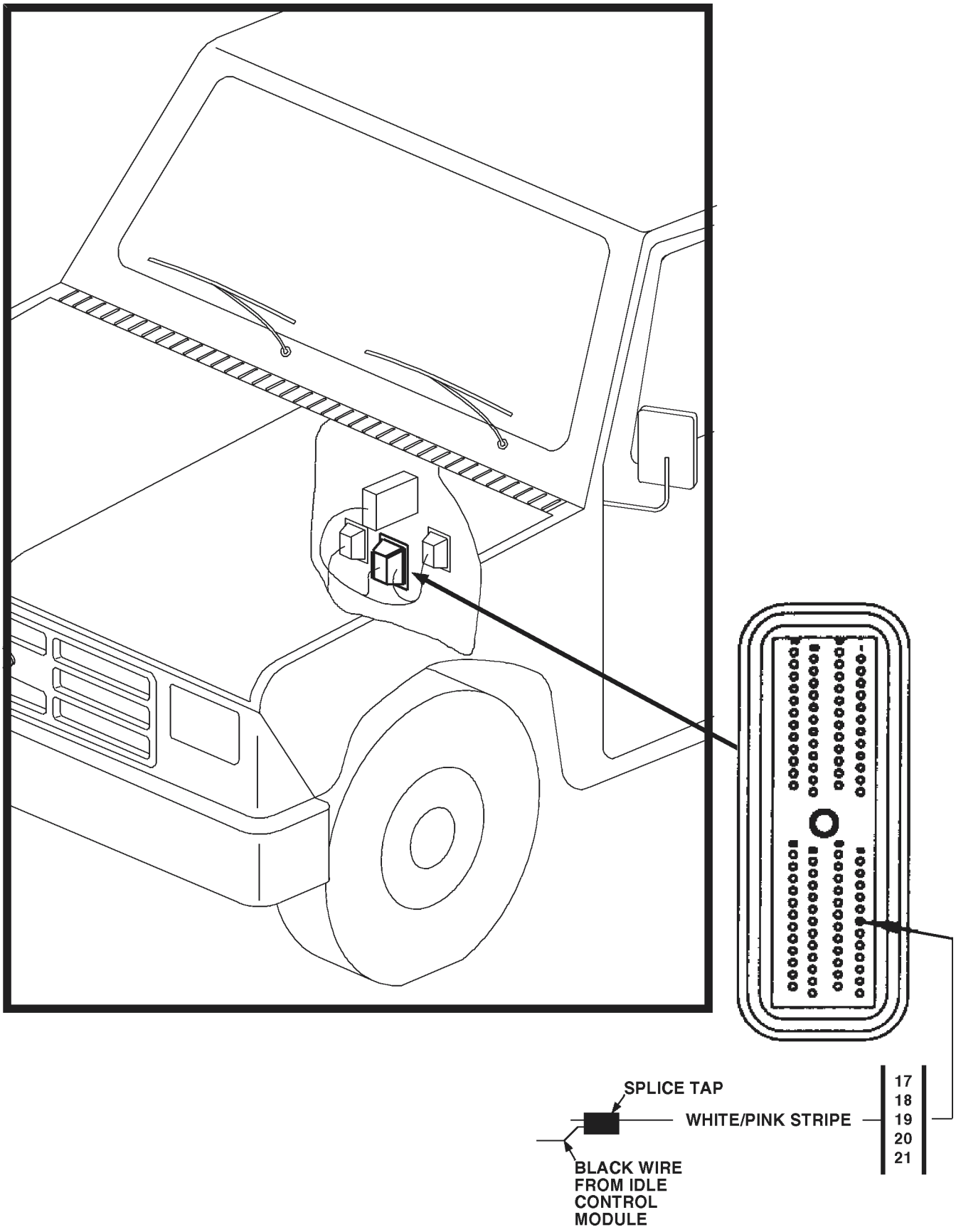


FIGURE 4. TACHOMETER SIGNAL CONNECTION

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Attachment:
Guide to Electronic & Manual Throttle Controls-'99 (99901267)

Service Bulletin

INSTALLATION INSTRUCTIONS

Closed Loop Electronic Throttle Control for 2002 Ford 7.3 Liter Diesel Engines

IOWA MOLD TOOLING CO., INC.
BOX 189, GARNER, IA 50438-0189
TEL: 641-923-3711
TECHNICAL SUPPORT FAX: 641-923-2424
SERVICE BULLETIN PART NUMBER 99901304

PRECAUTIONS

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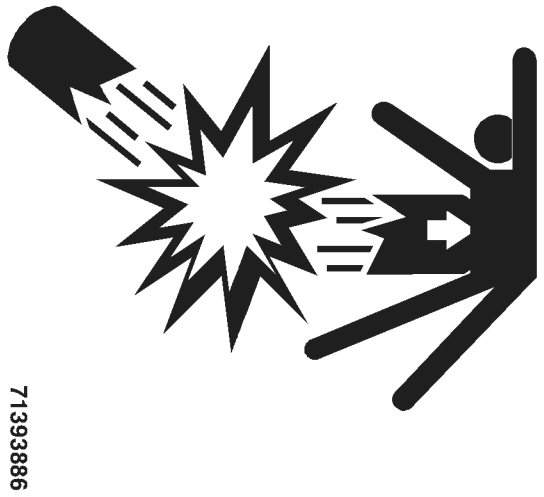

⚠ DANGER

EXPLODING TANK WILL CAUSE
DEATH, SERIOUS INJURY
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- Drain air tank after each use to prevent moisture build-up and corrosion which leads to tank failure.
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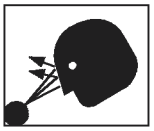

Hot oil under pressure can cause severe injury or death. Shut down, let cool and relieve pressure in compressor before servicing.

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Compressors generate high temperatures. Do not touch or otherwise come in contact with hot surfaces. Doing so can cause severe personal injury.

GENERAL INFORMATION

INTRODUCTION

This service bulletin provides installation instructions for the IMT Closed Loop Electronic Idle Control. This Idle Control is designed for use with 2002 Ford 7.3 liter Diesel Engines.

Three means are used throughout this service bulletin to gain the attention of operating and service personnel. They are NOTES, CAUTIONS and WARNINGS and are defined as follows:

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QTY	DESCRIPTION
1	STANDARD PLIERS
1	FLASHLIGHT OR OTHER LIGHT SOURCE
1	ADJUSTABLE WRENCH

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CAREFULLY READ THROUGH THESE INSTRUCTIONS PRIOR TO STARTING INSTALLATION.

INSTALLATION PROCEDURE

This section describes the installation of the IMT Closed Loop Electronic Idle Control for Ford 7.3 liter Diesel Engine.

The components required for this installation are as follows:

IMT Closed Loop Electronic Idle Controller for Manual Transmissions (IMT# 70733297) QTY: 1

AMP Tel-Splice Connector-Translucent (IMT# 77040377) QTY: 4

Economy Type Mounting Ty-Wrap (IMT # 70034151) QTY: 2

NOTE

ENOUGH COMPONENTS HAVE BEEN INCLUDED SO THAT 1997 - 2002 FORD 7.3 LITER DIESEL ENGINES CAN BE WIRED. DEPENDING ON THE ENGINE MODEL YEAR, SOME COMPONENTS MAY NOT BE UTILIZED.

CAUTION

BEFORE ATTEMPTING INSTALLATION, DISCONNECT THE TRUCK BATTERY TO ELIMINATE THE POSSIBILITY OF CREATING A SHORT CIRCUIT. FAILURE TO DO SO CAN RESULT IN DAMAGE TO THE ELECTRONIC COMPONENTS USED IN THIS INSTALLATION.

CAUTION

ALL ELECTRICAL WIRING WHICH IS MODIFIED OR INSTALLED DURING THIS PROCEDURE, MUST BE SECURED AWAY FROM CONTACT WITH HOT SURFACES AND SHARP EDGES. FAILURE TO DO SO WILL RESULT IN PREMATURE EQUIPMENT FAILURE.

STEP 1. Locate Mounting Bracket which is above and to the right side of the Throttle Assembly. See Figure 1. Carefully Remove IMT Idle Controller from plastic packaging. Install using two (2) Economy Type Ty-Wraps to Mounting Bracket.

STEP 2. Locate the Gray, White, Red and Yellow Wires of the IMT Idle Controller. See Figures 2 and 3. Route these wires along the top of the Throttle Assembly, then down, along the side next to the 5-pin connector on the Throttle Assembly.

STEP 3. Refer to Figures 2 and 3. Begin at the top of the 5-pin connector of the Throttle Assembly. Locate the Red/Yellow Wire. Find the Yellow Wire coming from the IMT Idle Controller. Using one (1) AMP Tel-Splice Connector, insert the Red/Yellow Wire into the side of the AMP Tel-Splice Connector which allows the wire to go completely through the connector. Insert the Yellow Wire from the IMT Idle Controller into the side of the Tel-Splice Connector that allows the wire to only go through until it hits the back of the connector.

STEP 4. Using standard pliers, carefully compress the top portion of the connector down until it bottoms out.

CAUTION

DO NOT APPLY EXCESSIVE FORCE WHEN COMPRESSING THE CONNECTOR. DOING SO WILL DAMAGE THE PLASTIC CONNECTOR.

STEP 5. Refer to Figures 2 and 3. Locate the Red/Green Wire connected to the second position of the 5-pin connector of the Throttle Assembly. Also, locate the Red Wire coming from the IMT Idle Controller. Run the Red/Green Wire through the AMP Tel-Splice Connector which allows the wire to go completely through the connector. Insert the Red Wire from the IMT Idle Controller into the side of the Tel-Splice Connector which only permits the wire through until it hits the back of the Tel-Splice Connector.

STEP 6. Repeat STEP 4 to connect the Red/Green and Red Wires together.

STEP 7. Refer to Figures 2 and 3. Locate the Gray/White Wire coming from the third position of the 5-pin connector of the Thottle Assembly and the White Wire from the IMT Idle Controller. Insert the Gray/White Wire from the 5-pin connector to the "through" portion of the AMP Tel-Splice Connector. Insert the White Wire from the Idle Controller into the other position of the Tel-Splice Connector, until it bottoms out.

STEP 8. Repeat STEP 4 to connect the Gray/White and White Wires together.

STEP 9. Refer to Figures 2 and 3. Locate the Yellow/White Wire coming from the fourth position of the 5-pin connector of the Throttle Assembly. Find the Gray Wire from the IMT Idle Controller. Insert the Yellow/White Wire from the 5-pin Connector in the "through" portion of the AMP Tel-Splice Connector. Insert the Gray Wire from the Idle Controller into the other position of the Tel-Splice Connector until it bottoms out.

STEP 10. Repeat STEP 4 to connect the Yellow/White and Gray Wires together.

STEP 11. The Brown/White Wire, located at the bottom of the Ford 5-Pin Connector, will not be modified during this installation procedure.

STEP 12. Refer to Figure 3. Locate the Purple Wire coming from the IMT Controller. Connect this wire to the Compressor and/or Crane speed control signals. Reference drawing 93091611, 93091612, 93091617, 93091613, 93091616, or 93091620 for specified arrangement.

STEP 13. Refer to Figure 3. Route the Green Wire from the Control Module to the Parking Brake. Remove the OEM connector from the top of the Parking Brake and attach to the Piggy-Back Connector on the end of the Green Wire of the IMT Idle Control Module. To complete the circuit, install the Green Wire to the tab on the top of the Parking Brake.

STEP 14. Refer to Figure 3. Locate the Black Wire from the IMT Idle Control Module and connect this wire to the Clean Tachometer Output (CTO) circuit using Butt Connector. The CTO circuit is designated as circuit number 76, Light Green with White trace (LG/W). It can be found with the customer pass-thru wires found near the parking brake pedal. See Figure 1 for CTO location.

STEP 15. Reconnect the Truck's Battery and check for any tools which may have been left from the installation. All connections have now been made and the IMT Idle Controller may now be tested.

STEP 16. Make certain the Truck's Parking Brake is set and start the engine. Observe the IMT Idle Controller. The MIN/OUT%/MAX light should glow an Orange color, and the POWER LIGHT should glow Red. If nothing lights up, retrace the installation for proper connections.

STEP 17. Being certain the Parking Brake is set, engage the Compressor via the Compressor Switch. The truck engine RPM should increase.

IMPORTANT !

The RPM Potentiometer has six (6) settings; 1150, 1200, 1250, 1300, 1350 and 1400 RPM. Selecting the desired setting is accomplished by slowly rotating the pot. As the pot is rotated, the RPM of the engine will jump to the next setting. When the new setting is reached, turn the pot an additional 1/2 turn to center the setting electrically.When adjusting the pot CLOCKWISE, notice the speed change, and then turn an additional 1/2 turn CLOCKWISE.When adjusting the pot COUNTERCLOCKWISE, notice the speed change, then turn the pot an additional 1/2 turn COUNTERCLOCKWISE.

STEP 18. Refer to Figure 3. Adjust the truck engine RPM to provide proper speed at the Compressor or Crane.

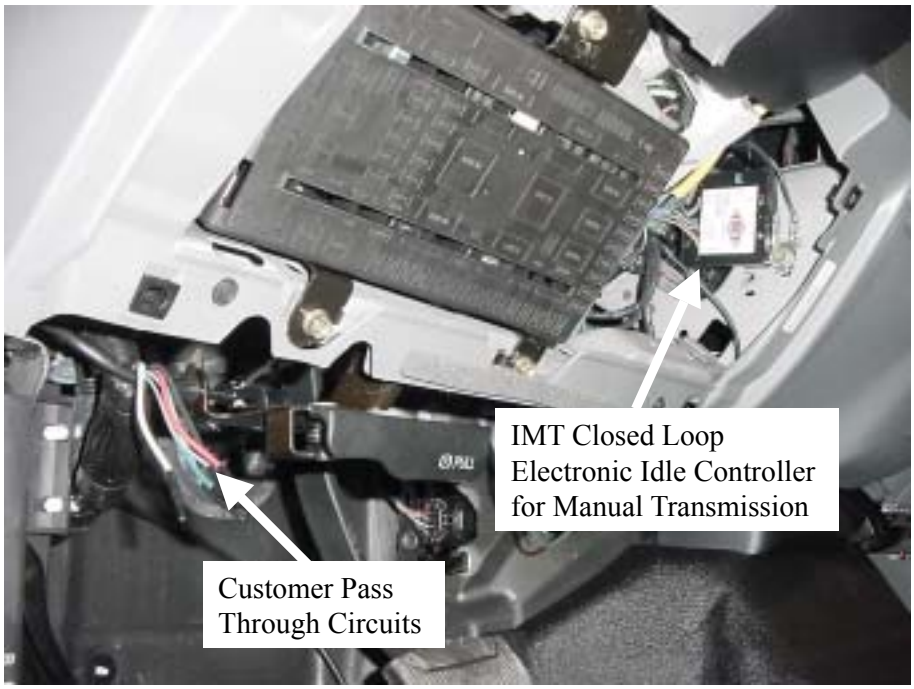
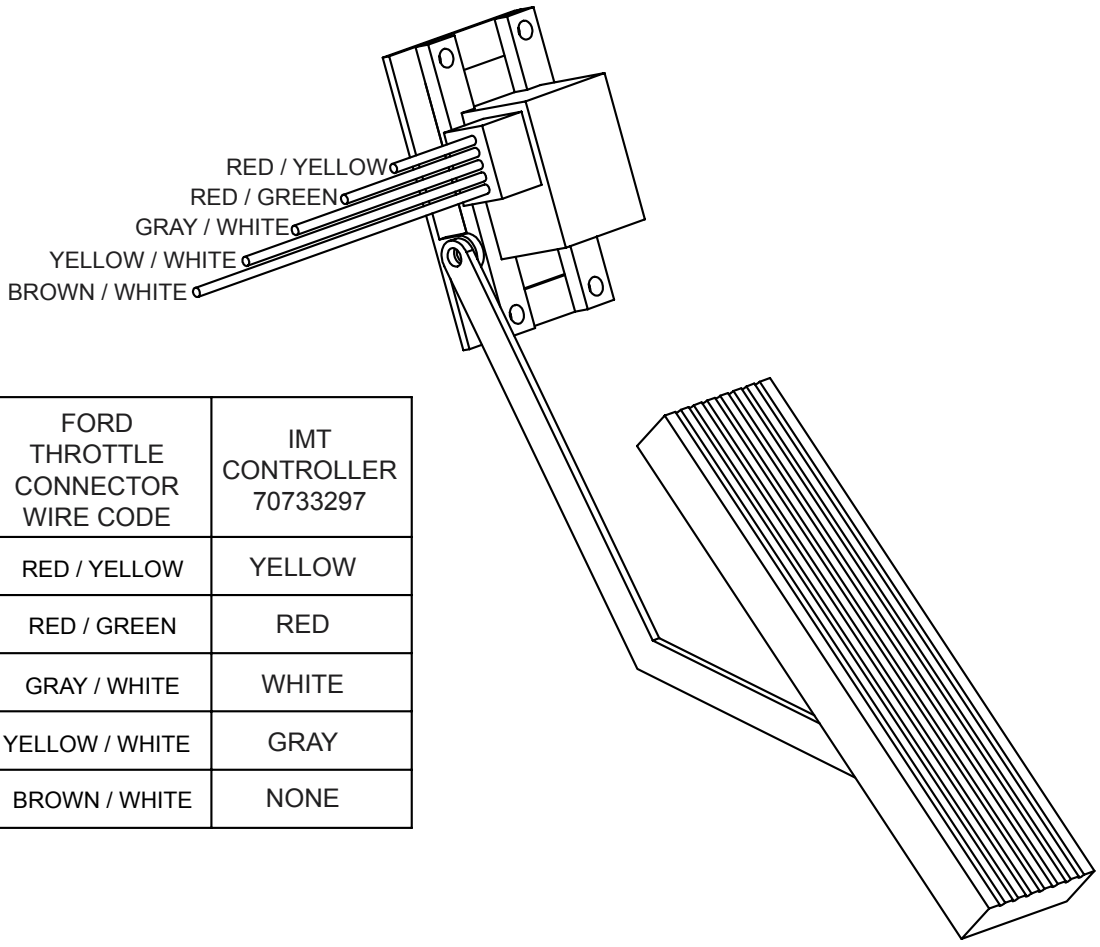


FIGURE 1. REFERENCE PHOTO



CONNECTOR WIRE POSITION	FORD THROTTLE CONNECTOR WIRE CODE	IMT CONTROLLER 70733297
1	RED / YELLOW	YELLOW
2	RED / GREEN	RED
3	GRAY / WHITE	WHITE
4	YELLOW / WHITE	GRAY
5	BROWN / WHITE	NONE

FIGURE 2. GENERAL WIRING DIAGRAM

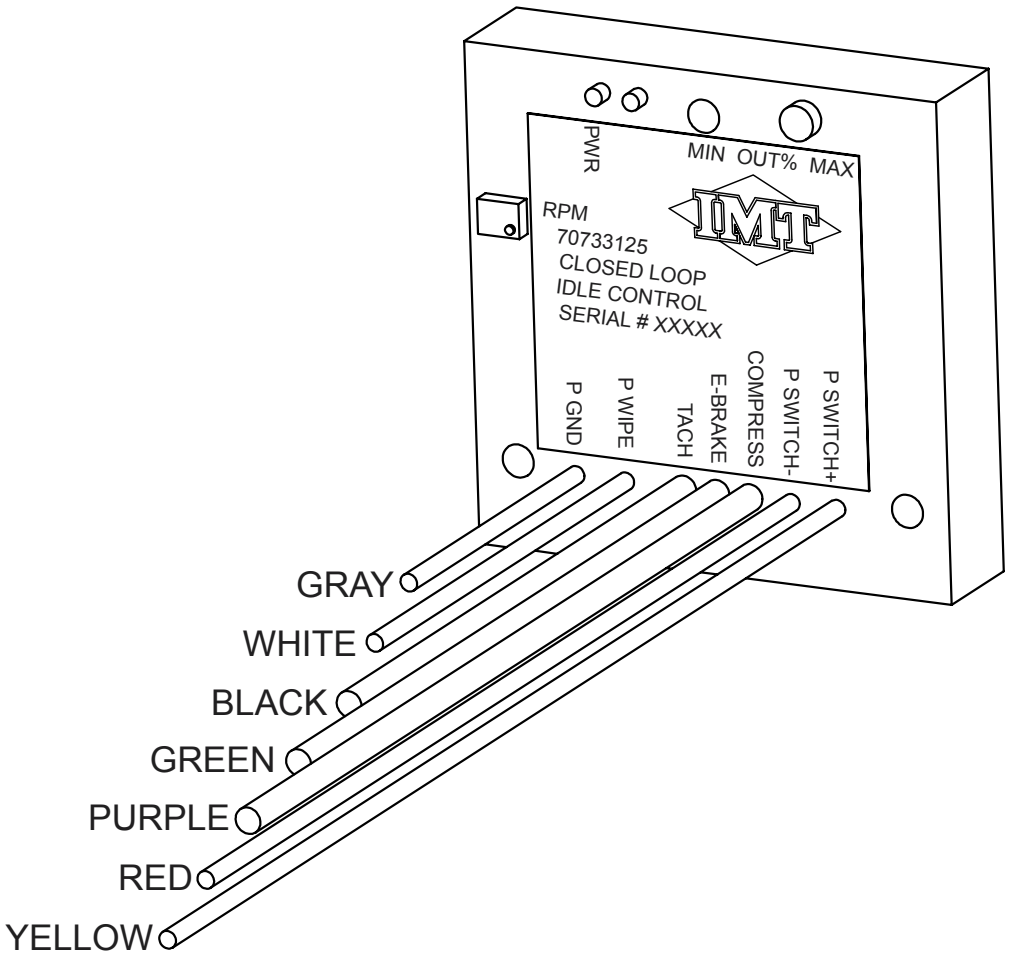


FIGURE 3. GENERAL WIRING DIAGRAM

IOWA MOLD TOOLING CO., INC.
BOX 189, GARNER, IA 50438-0189
TEL: 641-923-3711
TECHNICAL SUPPORT FAX: 641-923-2424