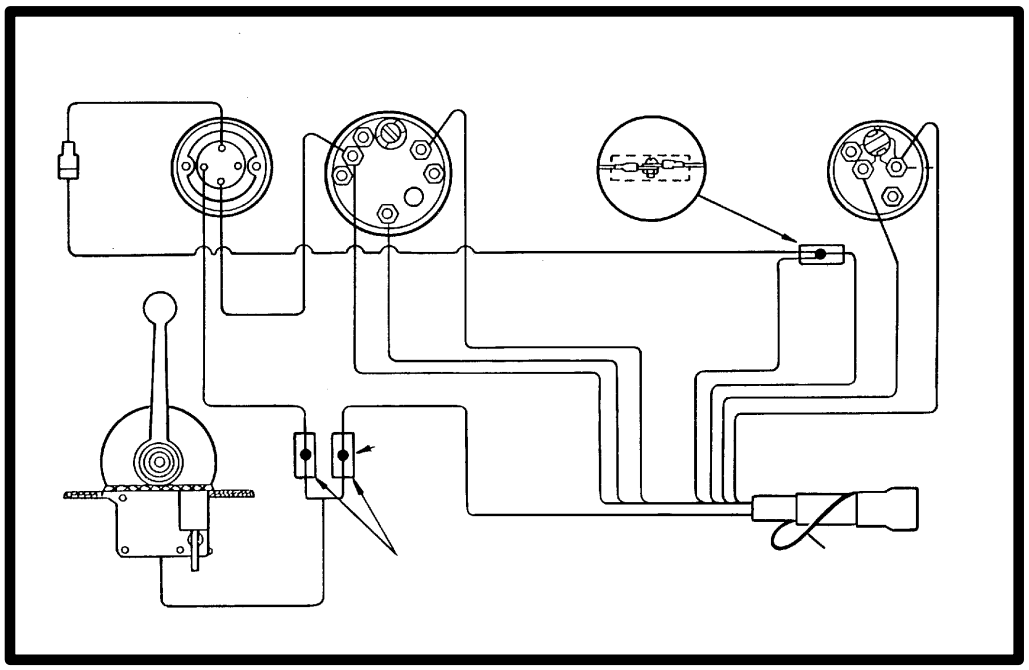
ELECTRICAL SYSTEMS

4

F



WIRING DIAGRAMS

Index

Table of Contents

Wiring Colors for MerCruiser

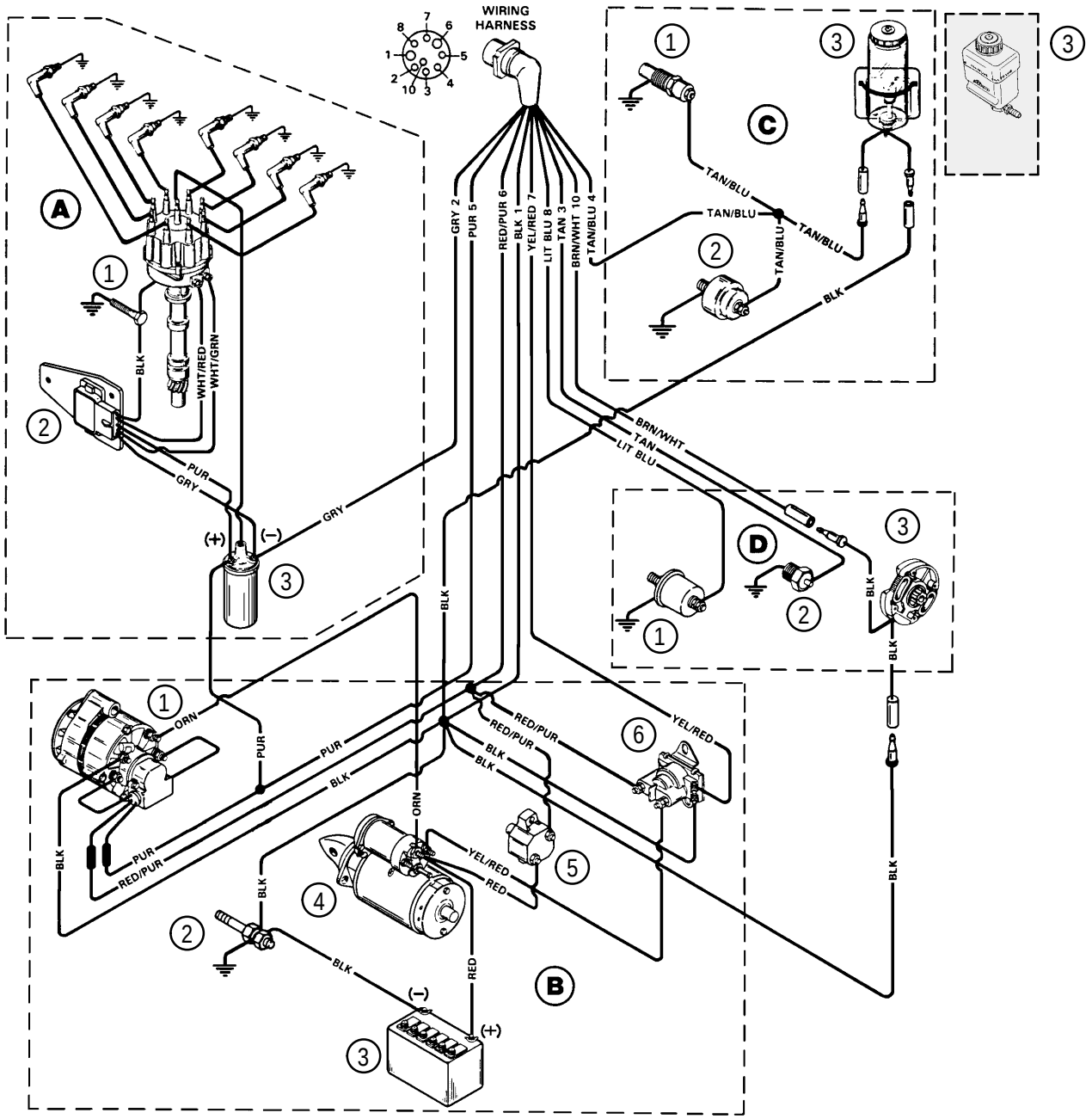
NOTE: *Color codes listed below DO NOT apply to fuel injection system harnesses.*

BIA COLOR CODE AND ABBREVIATIONS	WHERE USED
BLACK (BLK)	All Grounds
BROWN (BLU)	Reference Electrode - MerCathode
ORANGE (ORN)	Anode Electrode-MerCathode
LT. BLUE/WHITE (LT BLU/WHT)	Trim - “Up” Switch
GRAY (GRY)	Tachometer Signal
GREEN/WHITE (GRN/WHT)	Trim - “Down” Switch
TAN (TAN)	Water Temperature Sender to Gauge
LIGHT BLUE (LIT BLU)	Oil Pressure Sender to Gauge
PINK (PNK)	Fuel Gauge Sender to Gauge
BROWN/WHITE (BRN/WHT)	Trim Sender to Trim Gauge
PURPLE/WHITE (PUR/WHT)	Trim - “Trailer” Switch
RED (RED)	Unprotected Wires from Battery
RED/PURPLE (RED/PUR)	Protected (Fused) Wires from Battery
RED/PURPLE (RED/PUR)	Protected (+12V) to Trim Panel
ORANGE (ORN)	Alternator Output
PURPLE/YELLOW (PUR/YEL)	Ballast Bypass
PURPLE (PUR)	Ignition Switch (+12V)
YELLOW/RED (YEL/RED)	Starter Switch to Starter Solenoid to Neutral Start Switch

Engine

MCM (Stern Drive)

THUNDERBOLT IV WITH IGNITION MODULE MOUNTED ON EXHAUST ELBOW



50844

A - Ignition And Choke System

1 - Distributor
2 - Ignition Module
3 - Ignition Coil

B - Starting And Charging System

1 - Alternator
2 - Ground Stud
3 - Battery
4 - Starter Motor
5 - Circuit Breaker
6 - Starter Slave Solenoid

C - Audio Warning System

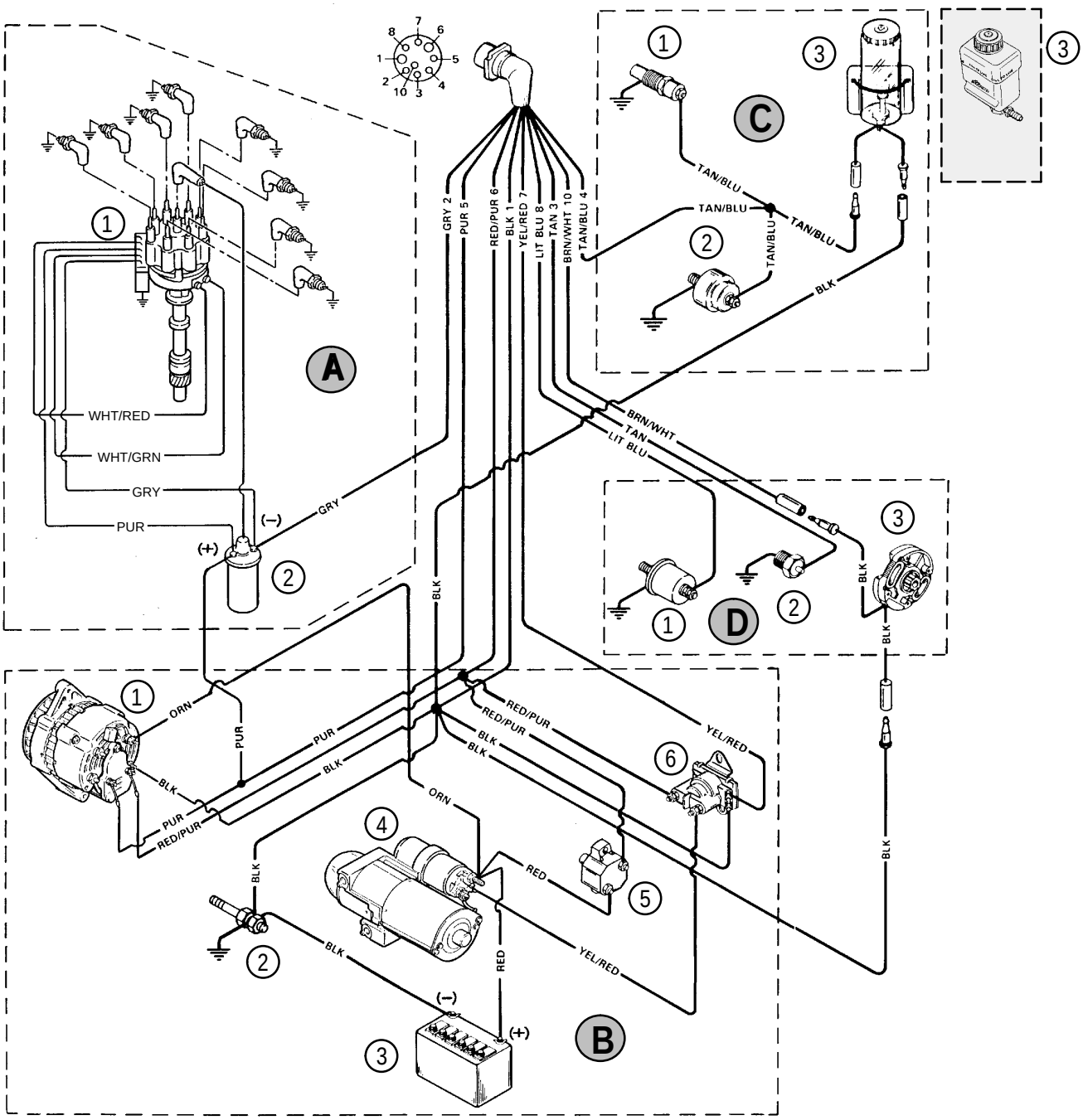
1 - Oil Pressure Sender
2 - Water Temperature Sender
3 - Trim Sender

D - Instrumentation System

1 - Water Temperature
2 - Oil Pressure Switch
3 - Drive Unit Oil Bottle (Old And New Style)

Index

THUNDERBOLT IV WITH IGNITION MODULE MOUNTED ON DISTRIBUTOR



72936

A - Ignition And Choke System

1 - Distributor With Ignition Module
2 - Ignition Module
3 - Ignition Coil

B - Starting And Charging System

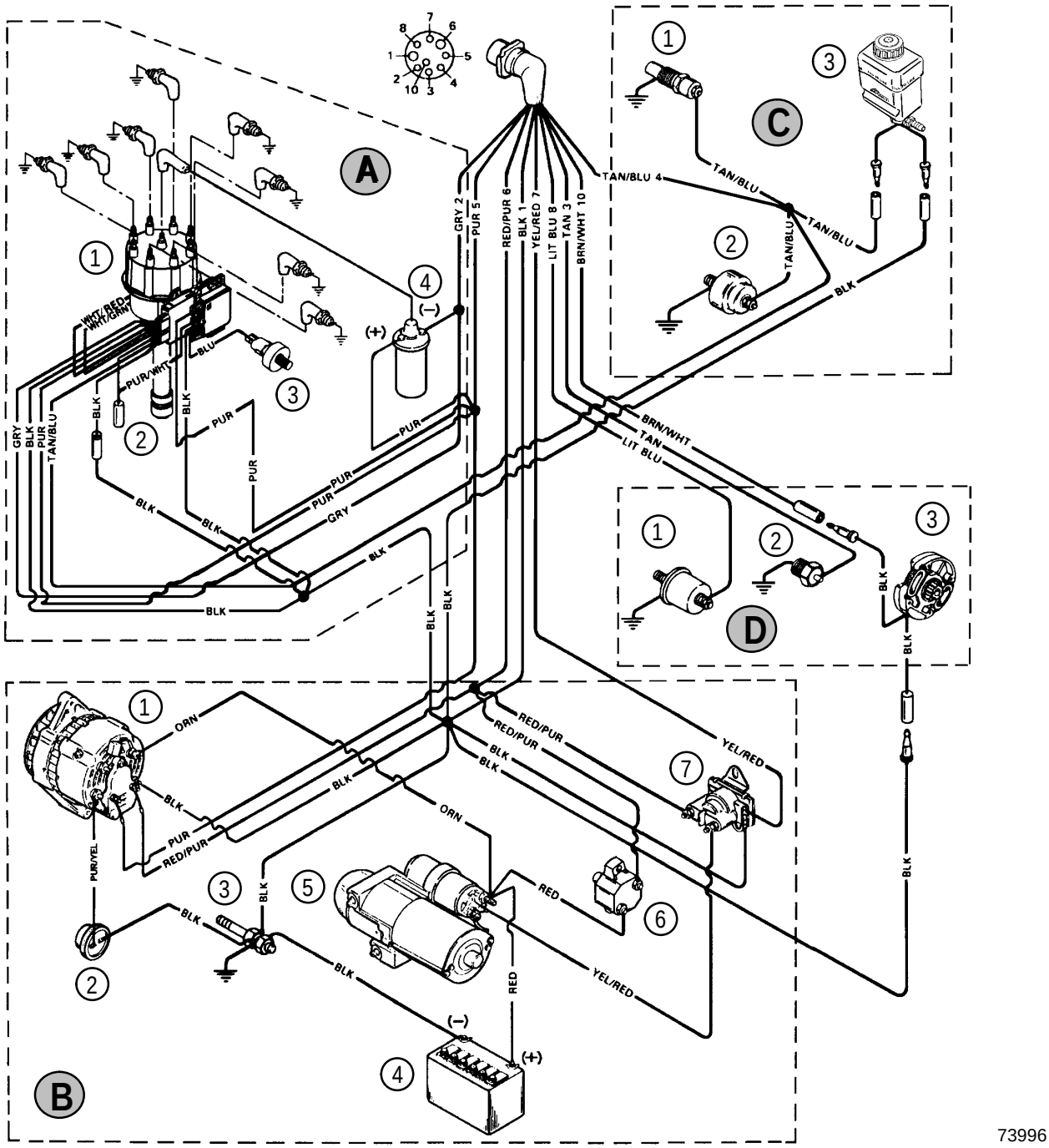
1 - Alternator
2 - Ground Stud
3 - Battery
4 - Starter Motor
5 - Circuit Breaker
6 - Starter Slave Solenoid

C - Audio Warning System

1 - Oil Pressure Sender
2 - Water Temperature Sender
3 - Trim Sender

D - Instrumentation System

1 - Water Temperature
2 - Oil Pressure Switch
3 - Drive Unit Oil Bottle (Old And New Style)



73996

A - Ignition And Choke System

1 - Distributor With Ignition Module
2 - Timing Lead
3 - Knock Sensor
4 - Ignition Coil

B - Starting And Charging System

1 - Alternator
2 - Electric Choke
3 - Ground Stud
4 - Battery
5 - Starter Motor
6 - Circuit Breaker
7 - Starter Slave Solenoid

C - Audio Warning System

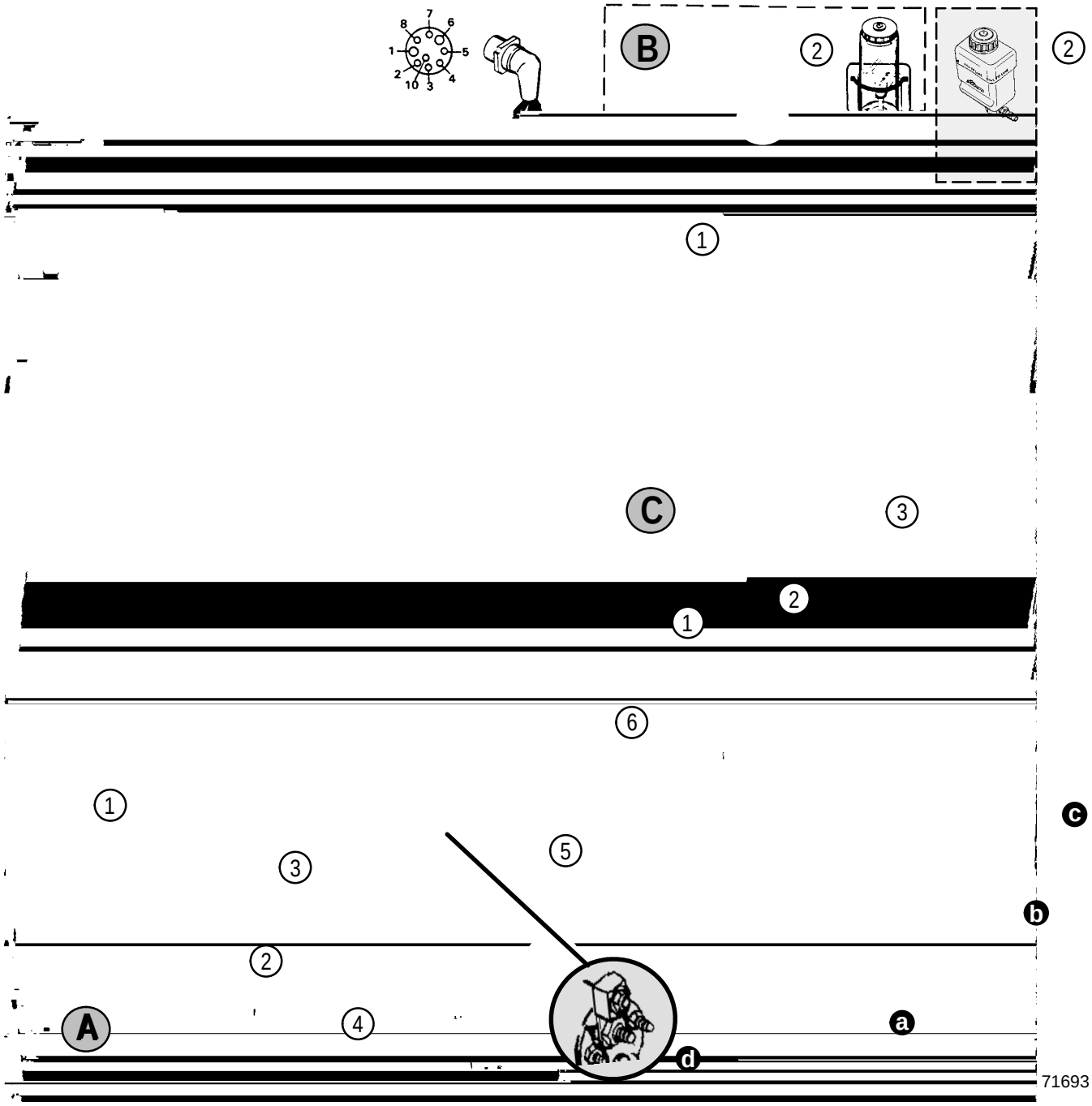
1 - Oil Pressure Sender
2 - Water Temperature Sender
3 - Trim Sender

D - Instrumentation System

1 - Water Temperature
2 - Oil Pressure Switch
3 - Drive Unit Oil Bottle (Old And New Style)

Index

ALL MCM THROTTLE BODY / MULTI-PORT INJECTION STARTING AND CHARGING DIAGRAM



A - Charging And Starting System

1 - Alternator
2 - Ground Stud
3 - Starter Motor
4 - Battery
5 - Circuit Breaker
6 - Starter Slave Solenoid

B - Audio Warning System / Power Reduction Circuit (Not Present On 1996 And Newer Models)

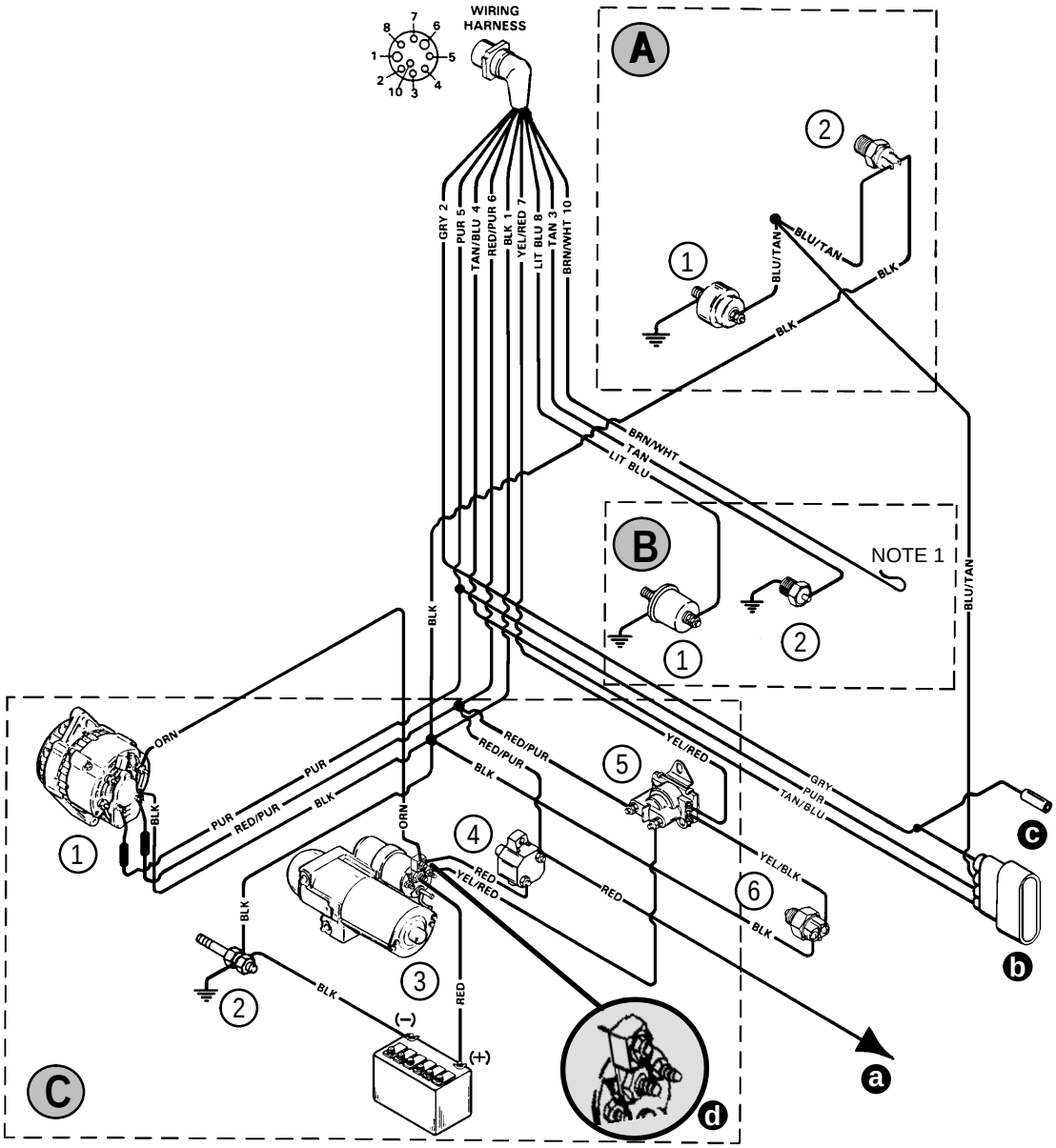
1 - Oil Pressure
2 - Drive Unit Oil Level Bottle (New And Old Style)

C - Instrumentation System

1 - Oil Pressure Sender
2 - Water Temperature Sender
3 - Trim Sender

a - Positive (12V) Power Wire To Furl Injection System Harness
b - Harness Connector To Fuel Injection System Harness
c - Auxiliary Tachometer Lead
d - 90 Amp. Fuse (DO NOT Remove)

ALL THROTTLE BODY / MULTI-PORT INJECTION INBOARD AND SKI ENGINES



NOTE 1: Taped back BROWN and BLACK wire may be used for an accessory. LOAD MUST NOT EXCEED 5 AMPS

A - Audio Warning System

1 - Oil Pressure Switch
2 - Transmission Fluid Temperature

B - Instrumentation System

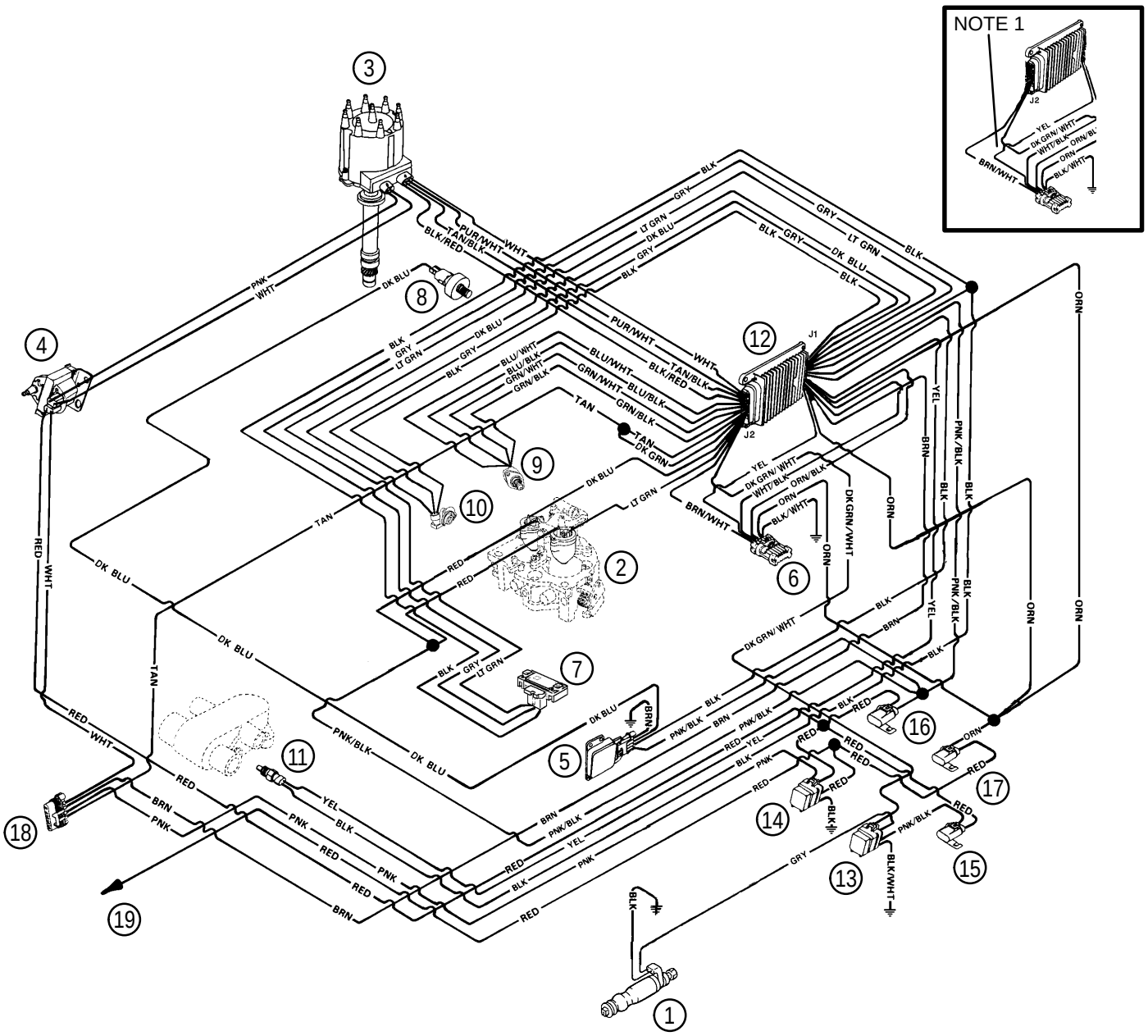
1 - Oil Pressure Sender
2 - Water Temperature Sender

C - Charging And Starting System

1 - Alternator
2 - Ground Stud
3 - Starter
4 - Circuit Breaker
5 - Starter Slave Solenoid
6 - Neutral Safety Switch

a - Positive (12V) Power Wire To Fuel Injection System Harness
b - Harness Connector To Fuel Injection System Harness
c - Auxiliary Tachometer Lead
d - 90 Amp. System Fuse

MCM 7.4LX / MIE 7.4L THROTTLE BODY INJECTION



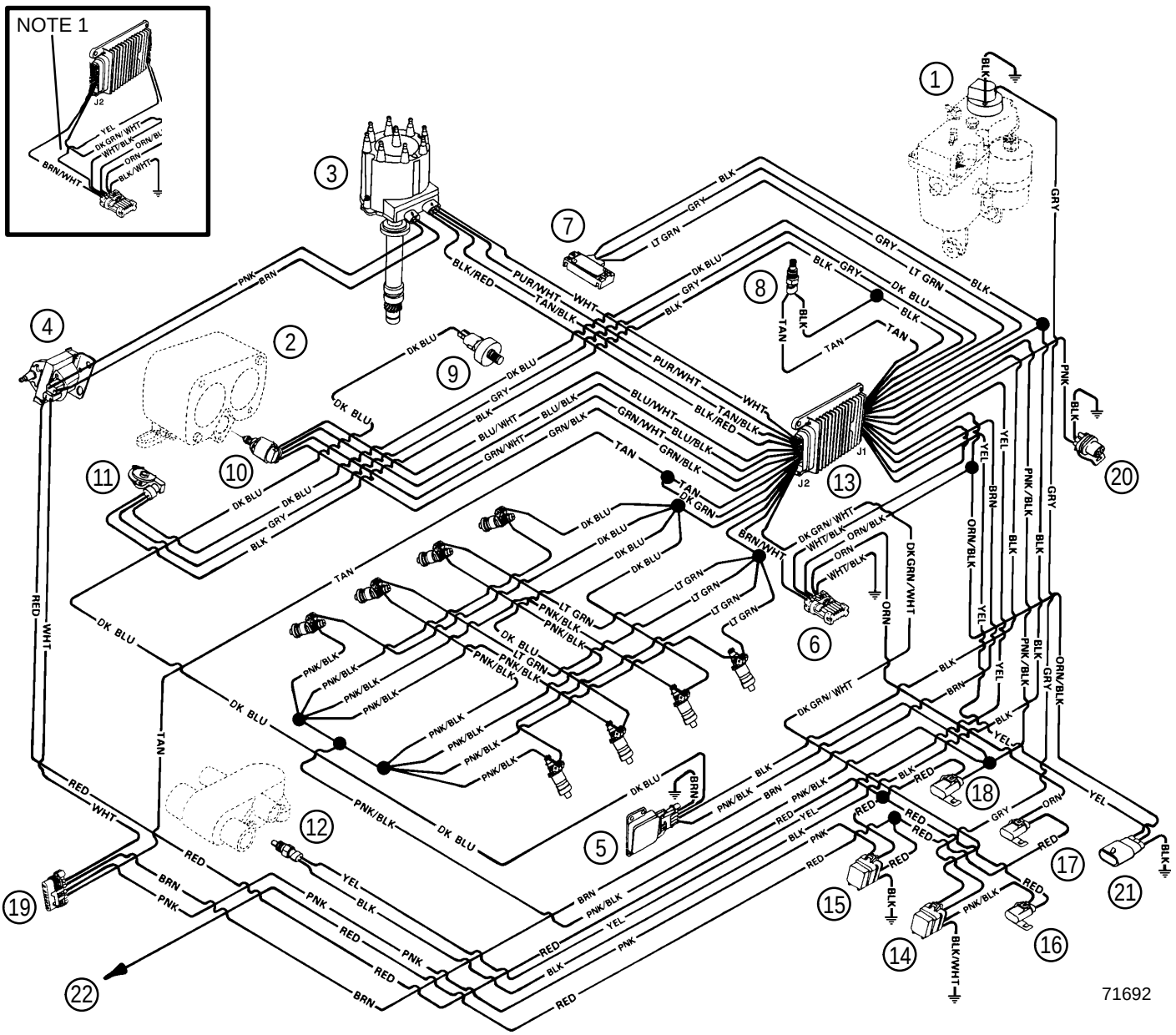
Note: All BLACK Wires With A Ground Symbol Are Interconnected Within The Fuel Injection System Harness.

NOTE 1: As a mid year (96-1/2) model change, the Throttle Body and Multi-Port Injection models have the lanyard stop connector removed from the wiring harness. The dual engine capability is relocated by routing the YEL wire to the Data Link Connector (DLC).

1 - Fuel Pump
2 - Throttle Body
3 - Distributor
4 - Coil
5 - Electronic Spark Control (KS) Module
6 - Data Link Connector (DLC)
7 - Manifold Absolute Pressure (MAP) Sensor
8 - Knock Sensor
9 - Idle Air Control (IAC)
10- Throttle Position (TP) Sensor
11- Engine Coolant Temperature (ECT) Sensor
12- Electronic Control Module (ECM)
13- Fuel Pump Relay
14- Ignition/System Relay
15- Fuse (15 Amp) Fuel Pump
16- Fuse (15 Amp) ECM/DLC/Battery
17- Fuse (10 Amp) ECM/Injector/Ignition/Knock Module
18- Harness Connector To Starting/Charging Harness
19- Positive (+) Power Wire To Engine Circuit Breaker

Index

7.4L / 7.4LX / 454 / 502 MULTI-PORT MAGNUM ENGINE DIAGRAM MODELS WITH VST



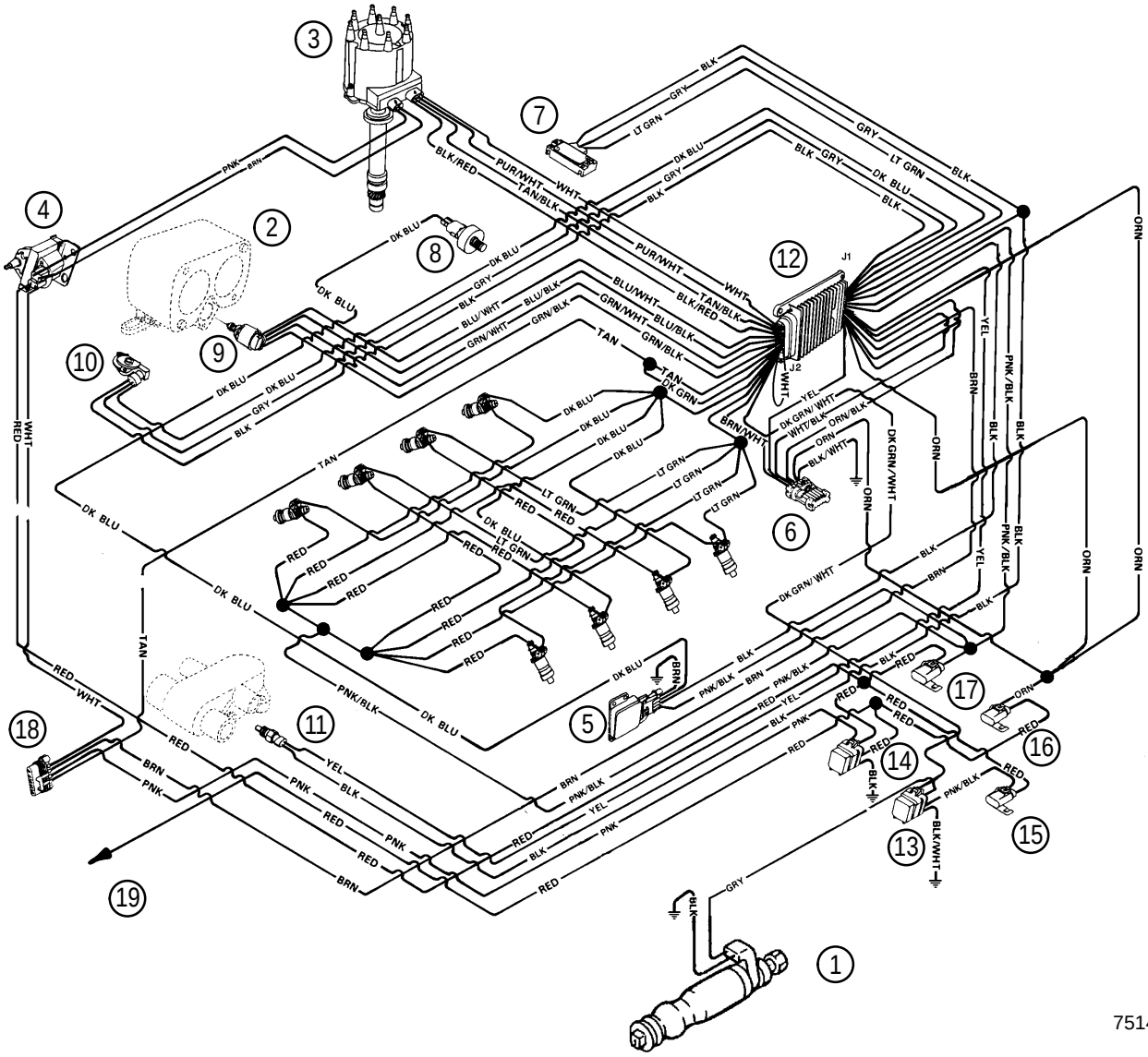
NOTE 1: As a mid year (96-1/2) model change, the Throttle Body and Multi Port Injection models have the lanyard stop connector removed from the wiring harness. The dual engine capability is relocated by routing the YEL wire to the Data Link Connector (DLC).

NOTE 2: All BLACK wires with a ground symbol are interconnected within the fuel injection system harness.

1 - Vapor Separator Tank
2 - Throttle Body
3 - Distributor
4 - Coil
5 - Knock Sensor (KS) Module
6 - Data Link Connector (DLC)
7 - Manifold Absolute Pressure (MAP) Sensor
8 - Intake Air Temperature (IAT) Sensor
9 - Knock Sensor (KS)
10- Idle Air Control (IAC)
11- Throttle Positive Sensor (TP)
12- Engine Coolant Temperature (ECT) Sensor
13- Electronic Control Module (ECM) Sensor
14- Fuel Pump Relay
15- Ignition Relay
16- Fuel Pump Relay (15 Amp)
17- Injector Fuse 15 Amp.) ECM, DLC, Battery
18- ECM Fuse (10 Amp.) ECM, Ignition, Injectors, Knock Sensor Module
19- Harness Connector To Starting / Charging Harness
20- Harness Connector To Lanyard Stop Switch (Optional)
21- Harness Connector For Dual Engine Data Link Cable
22- Positive (+) Power Wire To Engine Circuit Breaker

Index

7.4L / 7.4LX / 454 / 502 MULTI-PORT MAGNUM ENGINE DIAGRAM MODELS WITH COOL FUEL SYSTEM



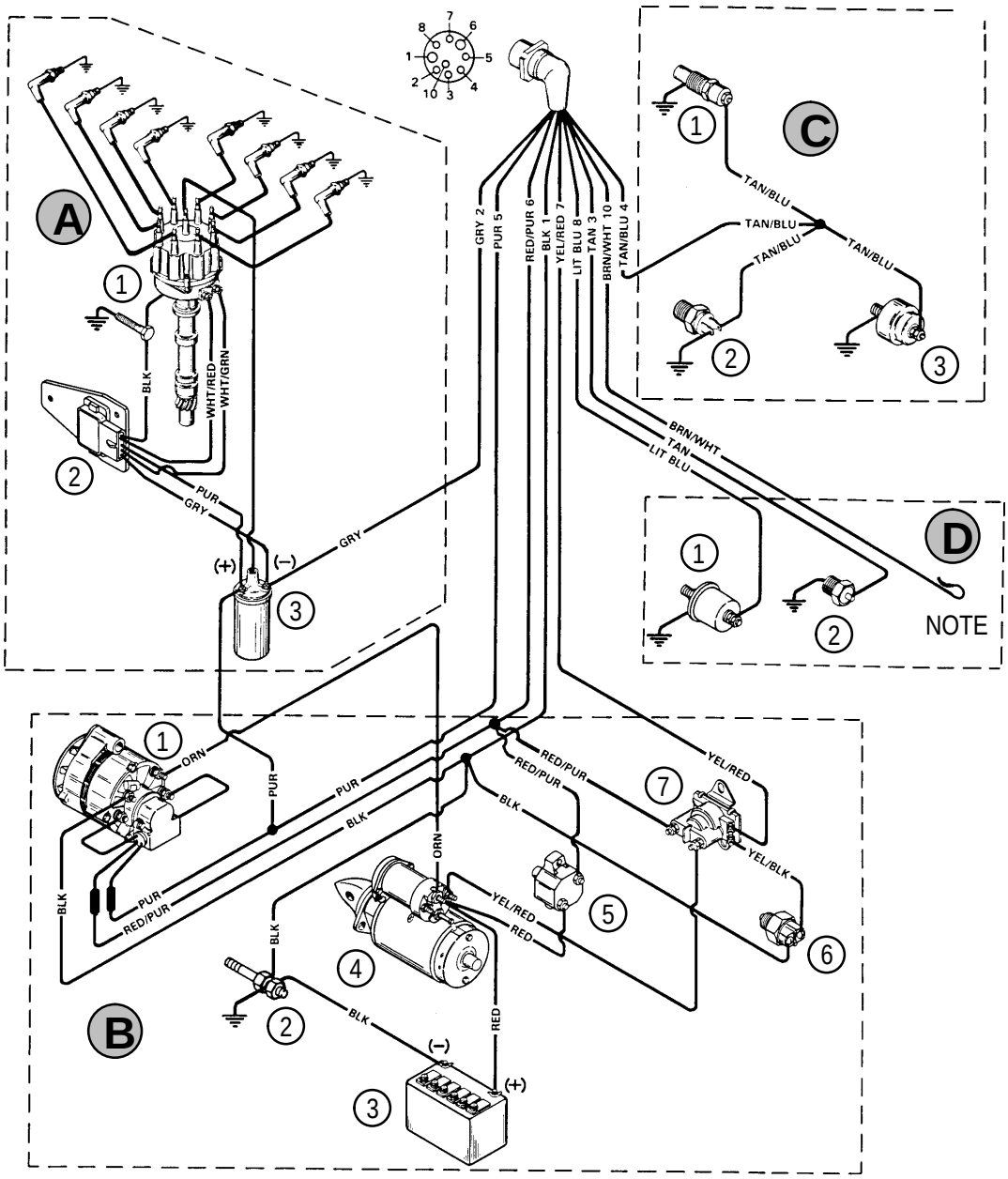
75146

NOTE: *All BLACK wires with a ground symbol are interconnected within the EFI system harness.*

1 - Fuel Pump
2 - Throttle Body
3 - Distributor
4 - Coil
5 - Electronic Spark Control (KS) Module
6 - Data Link Connector (DLC)
7 - Manifold Absolute Pressure (MAP) Sensor
8 - Knock Sensor
9 - Idle Air Control (IAC)
10- Throttle Position (TP) Sensor
11- Engine Coolant Temperature (ECT) Sensor
12- Electronic Control Module (ECM)
13- Fuel Pump Relay
14- Ignition/System Relay
15- Fuse (15 Amp) Fuel Pump
16- Fuse (15 Amp) ECM/DLC/Battery
17- Fuse (10 Amp) ECM/Injector/Ignition/Knock Module
18- Harness Connector To Starting/Charging Harness
19- Positive (+) Power Wire To Engine Circuit Breaker

MIE (Inboard) Models

THUNDERBOLT IV WITH IGNITION MODULE MOUNTED ON EXHAUST ELBOW



50773

NOTE: *Taped Back BROWN-WHITE wire may be used for an accessory. LOAD MUST NOT EXCEED 5 AMPS.*

A - Ignition And Choke System

1 - Distributor
2 - Ignition Module
3 - Ignition Coil

B - Starting And Charging System

1 - Alternator
2 - Ground Stud
3 - Battery
4 - Starter Motor
5 - Circuit Breaker
6 - Neutral Start Safety Switch
7 - Starter Slave Solenoid

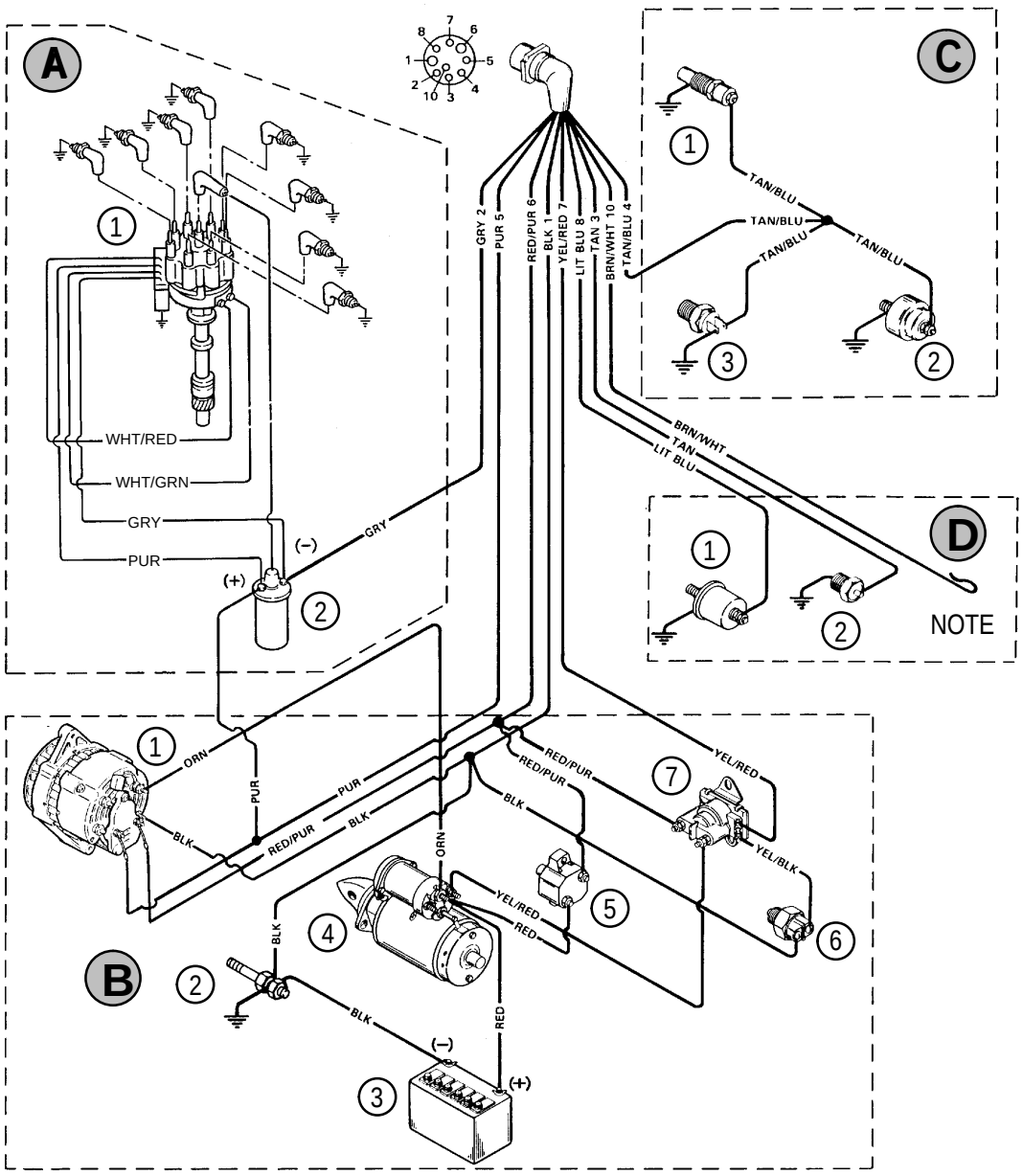
C - Audio Warning System

1 - Water Temperature
2 - Oil Pressure
3 - Transmission Fluid Temperature

D - Instrumentation System

1 - Oil Pressure Sender
2 - Water Temperature Sender

THUNDERBOLT IV IGNITION MODULE MOUNTED ON DISTRIBUTOR



NOTE: *Taped Back BROWN-WHITE wire may be used for an accessory. LOAD MUST NOT EXCEED 5 AMPS.*

A - Ignition And Choke System

1 - Distributor
2 - Ignition Module
3 - Ignition Coil

B - Starting And Charging System

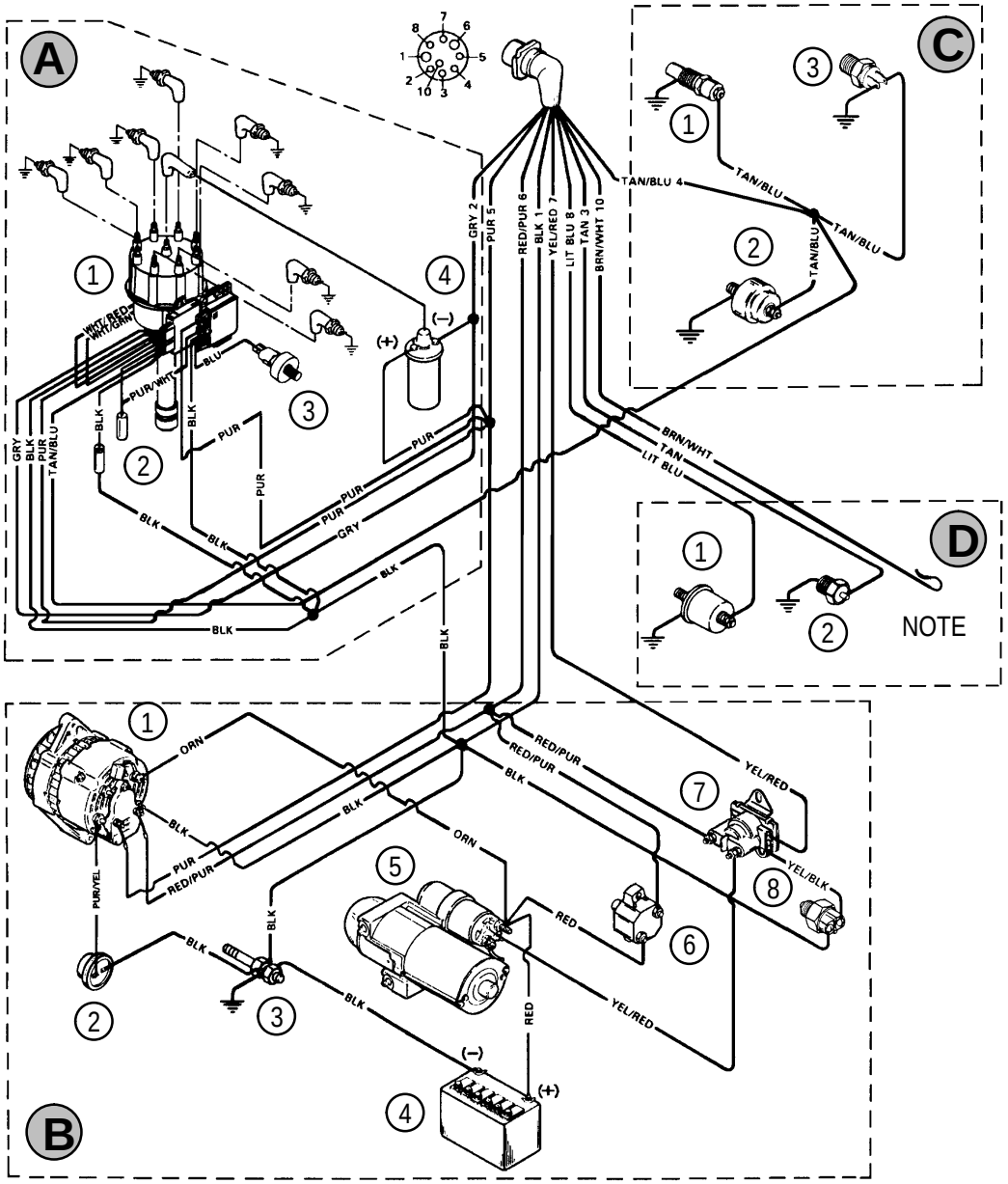
1 - Alternator
2 - Ground Stud
3 - Battery
4 - Starter Motor
5 - Circuit Breaker
6 - Neutral Start Safety Switch
7 - Starter Slave Solenoid

C - Audio Warning System

1 - Water Temperature
2 - Oil Pressure
3 - Transmission Fluid Temperature

D - Instrumentation System

1 - Oil Pressure Sender
2 - Water Temperature Sender



NOTE: *Taped Back BROWN-WHITE wire may be used for an accessory. LOAD MUST NOT EXCEED 5 AMPS.*

A - Ignition And Choke System

1 - Distributor With Ignition Module
2 - Timing Lead
3 - Knock Sensor
4 - Ignition Coil

B - Starting And Charging System

1 - Alternator
2 - Electric Choke
3 - Ground Stud
4 - Battery
5 - Starter Motor
6 - Circuit Breaker
7 - Starter Slave Solenoid
8 - Neutral Start Safety Switch

C - Audio Warning System

1 - Water Temperature Sender
2 - Oil Pressure Sender
3 - Transmission Fluid Temperature

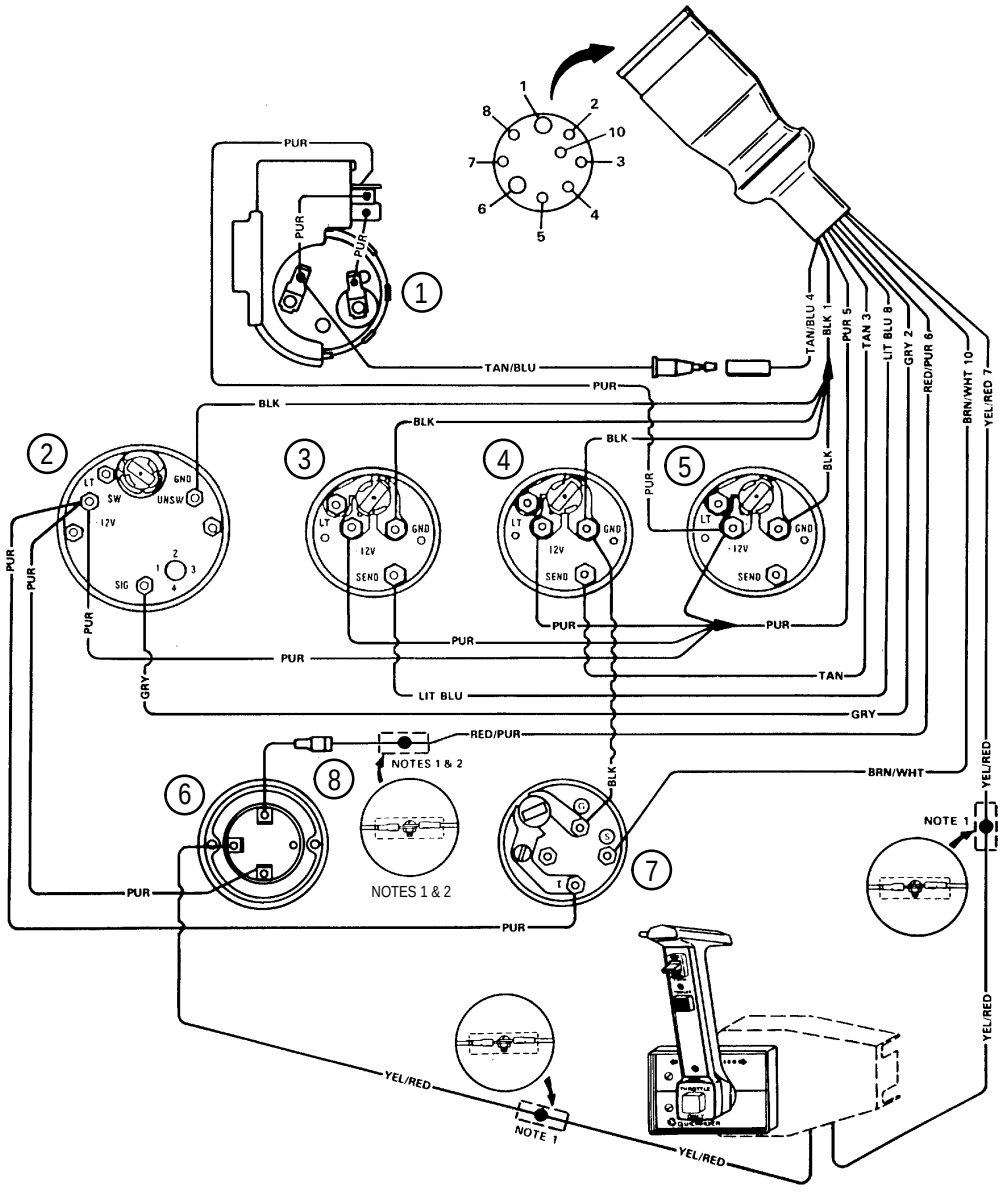
D - Instrumentation System

1 - Water Temperature
2 - Oil Pressure Switch

Quicksilver Instrumentation

MCM (Stern Drive)

EARLIER STYLE CONTROL AND AUDIO WARNING BUZZER



72938

Refer to gauge manufacturer's instructions for specific connections.

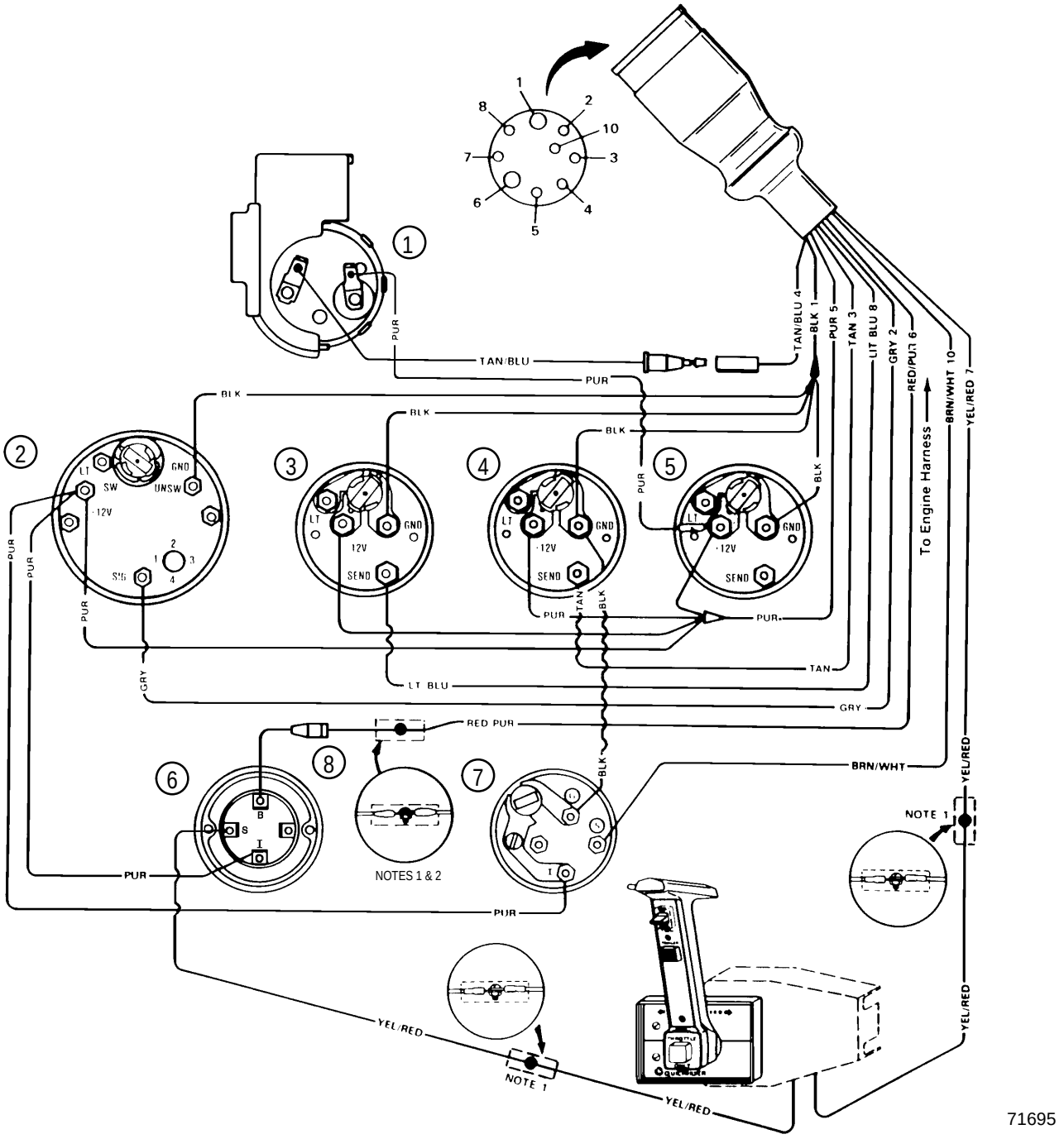
NOTE 1: Connect wires together with screw and hex nut. Apply Liquid Neoprene to connection and slide rubber sleeve over connection.

NOTE 2: Power for a fused accessory panel may be taken from this connection. Load MUST NOT exceed 35-40 amps. Panel ground wire MUST BE connected to instrument terminal that has an 8 gauge BLACK (Ground) harness wire connected to it.

1 - Audio Warning Buzzer (If So Equipped)
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter
6 - Ignition Switch
7 - Trim Indicator
8 - 20 Amp. Fuse

Index

454/502 MAGNUM MULTI-PORT INJECTION WITH EARLIER STYLE CONTROLS AND AUDIO WARNING BUZZER



Refer to gauge manufacturer's instructions for specific connections.

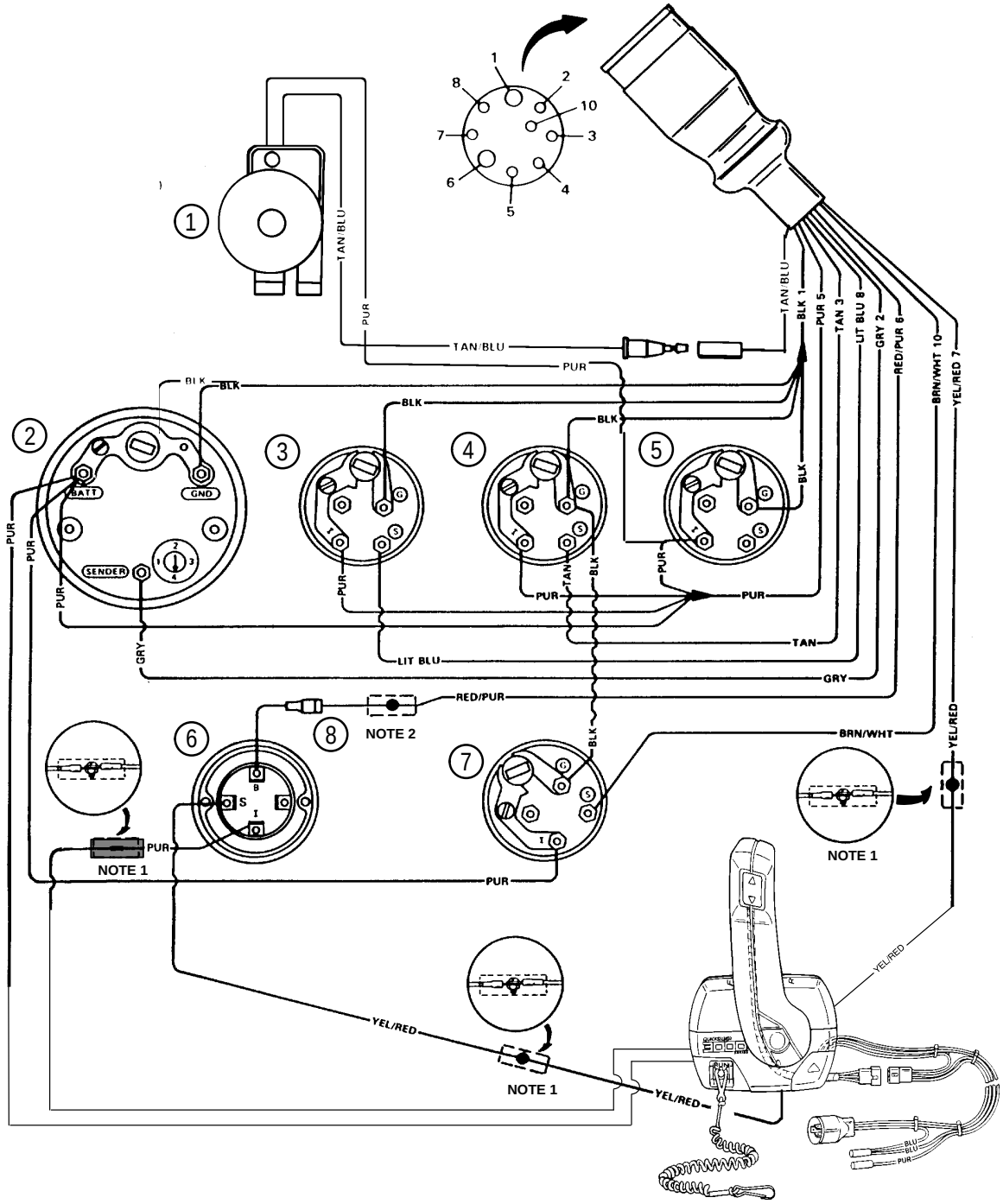
NOTE 1: Connect wires together with screw and hex nut. Apply Liquid Neoprene to connection and slide rubber sleeve over connection.

NOTE 2: Power for a fused accessory panel may be taken from this connection. Load MUST NOT exceed 40 amps. Panel ground wire MUST BE connected to instrument terminal that has an 8 gauge BLACK (Ground) harness wire connected to it.

1 - Audio Warning Buzzer (If Equipped)
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter
6 - Ignition Switch
7 - Trim Indicator
8 - 20 Amp. Fuse

Index

LATER STYLE CONTROLS AND AUDIO WARNING BUZZER



74046

Refer to gauge manufacturer's instructions for specific connections.

NOTE 1: Connect wires together with screw and hex nut. Apply Liquid Neoprene to connection and slide rubber sleeve over connection.

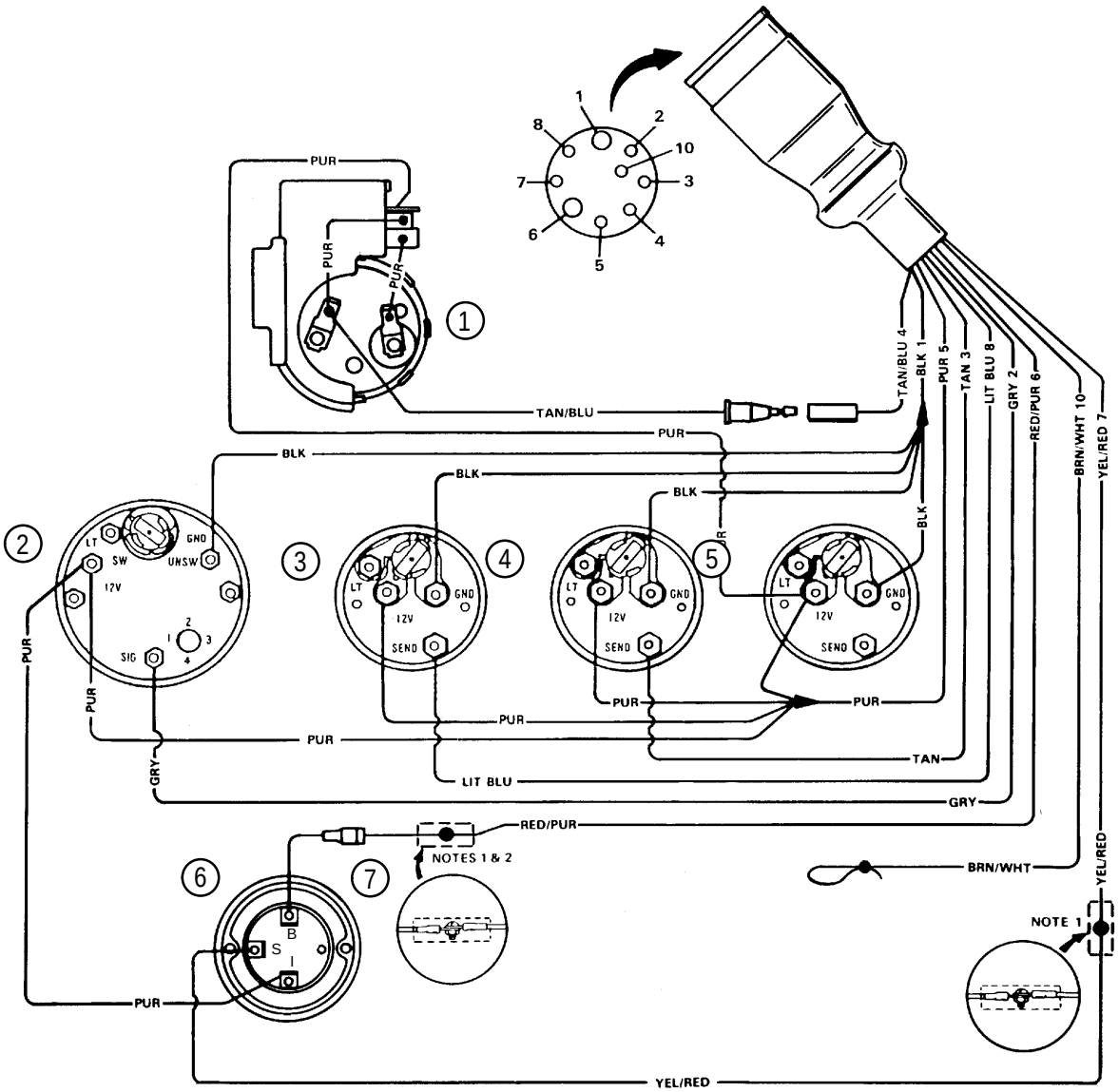
NOTE 2: Power for a fused accessory panel may be taken from this connection. Load MUST NOT exceed 40 amps. Panel ground wire MUST BE connected to instrument terminal that has an 8 gauge BLACK (Ground) harness wire connected to it.

1 - Audio Warning Buzzer (If Equipped)
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter
6 - Ignition Switch
7 - Trim Indicator
8 - 20 Amp. Fuse

Index

MIE (Inboard)

EARLIER STYLE AUDIO WARNING BUZZER



72939

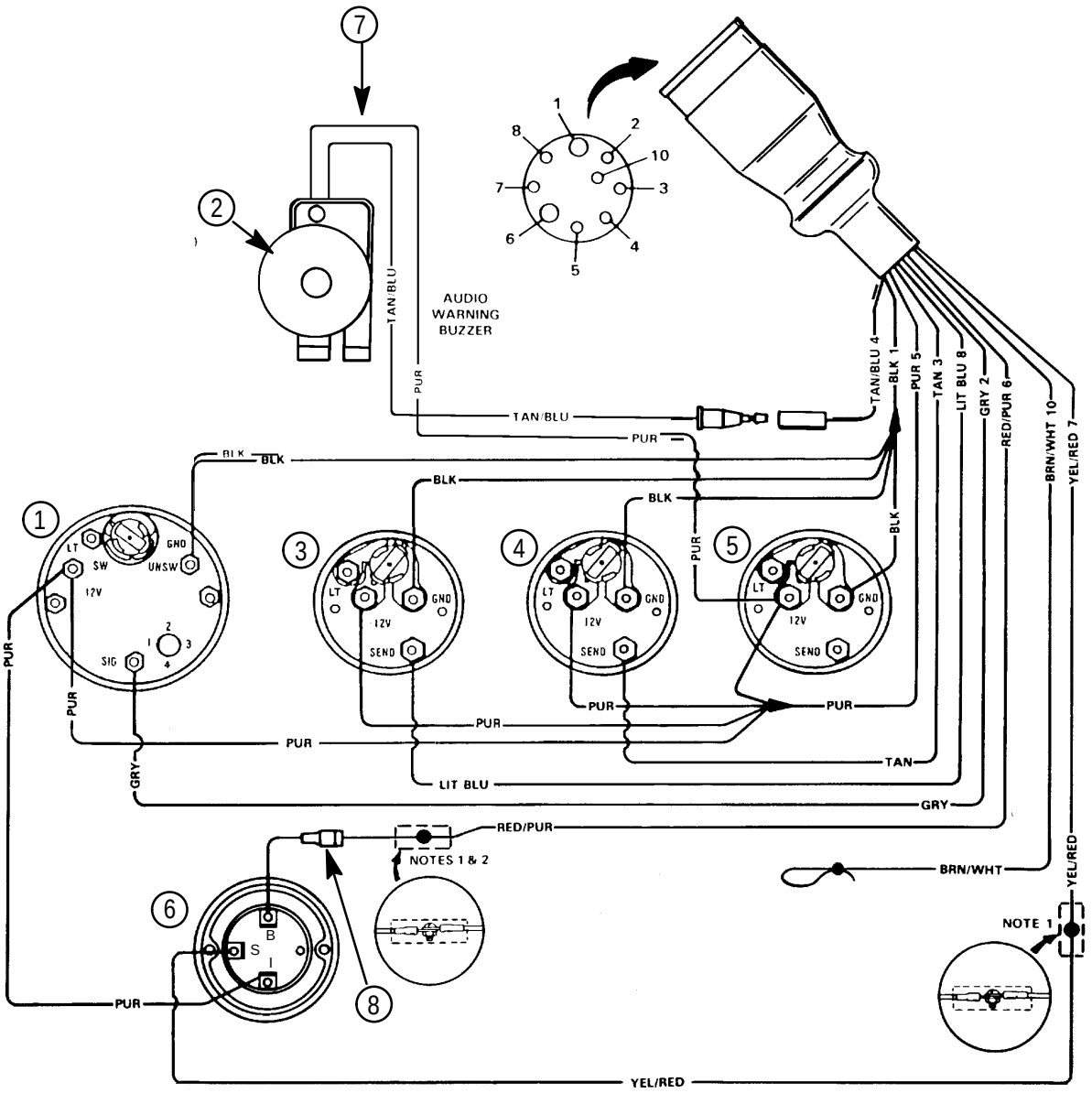
Refer to gauge manufacturer's instructions for specific connections.

NOTE 1: Connect wires together with screw and hex nut. Apply Liquid Neoprene to connection and slide rubber sleeve over connection.

NOTE 2: Power for a fused accessory panel may be taken from this connection. Load MUST NOT exceed 40 amps. Panel ground wire MUST BE connected to instrument terminal that has an 8 gauge BLACK (Ground) harness wire connected to it.

1 - Audio Warning Buzzer (If So Equipped)
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter
6 - Ignition Switch
7 - 20 Amp. Fuse

LATER STYLE AUDIO WARNING BUZZER



74274

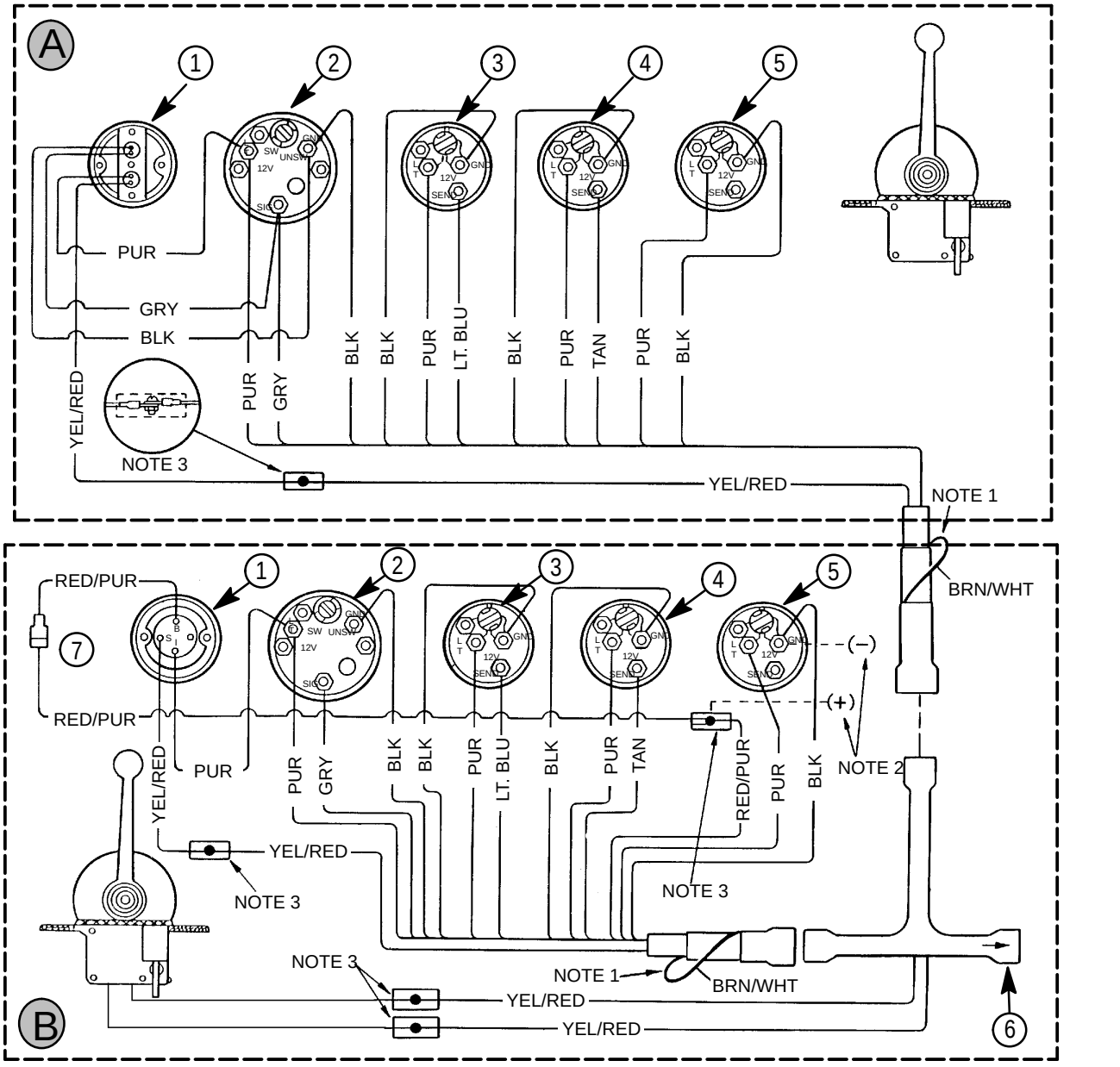
Refer to gauge manufacturer's instructions for specific connections.

NOTE 1: Connect wires together with screw and hex nut. Apply Quicksilver Liquid Neoprene to connection and slide rubber sleeve over connection.

NOTE 2: Power for a second fused accessory panel may be taken from this connection. Load **MUST NOT** exceed 35-40 amps. Panel ground wire **MUST BE** connected to instrument terminal that has an 8 gauge BLACK (ground) harness wire connected to it.

1 - Audio Warning Buzzer (If So Equipped)
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter
6 - Ignition Switch
7 - To 12 Volt Source (PURPLE Wire Connection)
8 - 20 Amp. Fuse

Dual Station Wiring (Using a Neutral Safety Switch in Only One Remote Control)



72940

NOTE 1: BROWN/WHITE wire is taped back at instrument end. If installing on boat that is equipped with MerCruiser stern drive, BROWN/WHITE wire is connected to trim sender terminal block. If installing on MerCruiser Inboard, BROWN/WHITE wire is taped back at engine end, or it may be used for an accessory (limit 5 amperes).

NOTE 2 : An accessory fuse panel may be connected at this location. The combined current draw of the primary station and secondary station **MUST NOT** exceed 35 amperes.

NOTE 3 : Connect wires together with screw and hex nut. Apply Quicksilver Liquid Neoprene to connection and slide rubber sleeve over connection.

B - Secondary Station

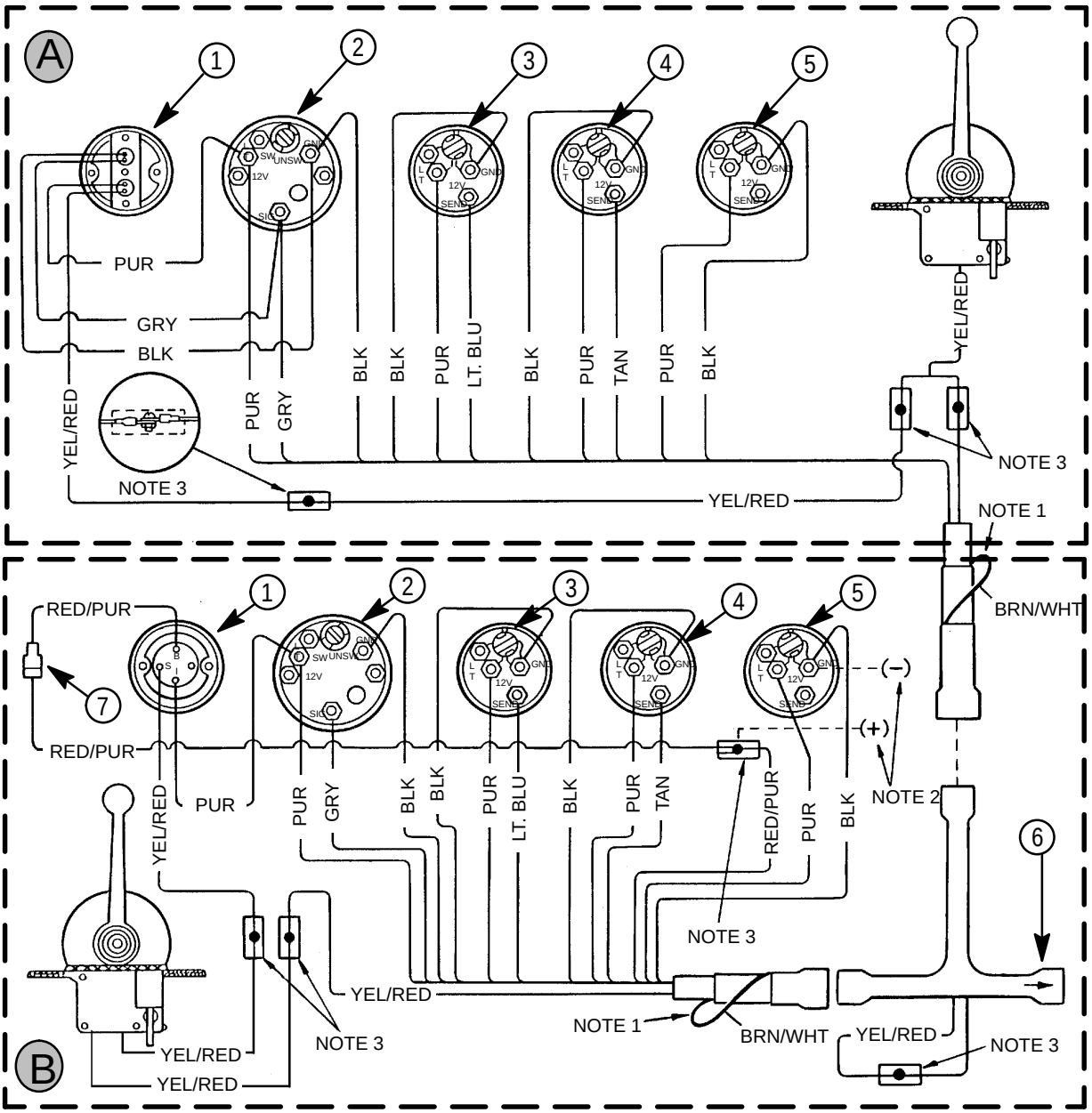
1 - Start - Stop Panel
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter

B - Primary Station

1 - Ignition Switch
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter

Index

Dual Station Wiring (Using A Neutral Safety Switch In Both Remote Controls)



72941

NOTE 1: BROWN/WHITE wire is taped back at instrument end. If installing on boat that is equipped with MerCruiser stern drive, BROWN/WHITE wire is connected to trim sender terminal block. If installing on MerCruiser Inboard, BROWN/WHITE wire is taped back at engine end, or it may be used for an accessory (limit 5 amperes).

NOTE 2 : An accessory fuse panel may be connected at this location. The combined current draw of the primary station and secondary station **MUST NOT** exceed 35 amperes.

NOTE 3 : Connect wires together with screw and hex nut. Apply Quicksilver Liquid Neoprene to connection and slide rubber sleeve over connection.

A - Secondary Station

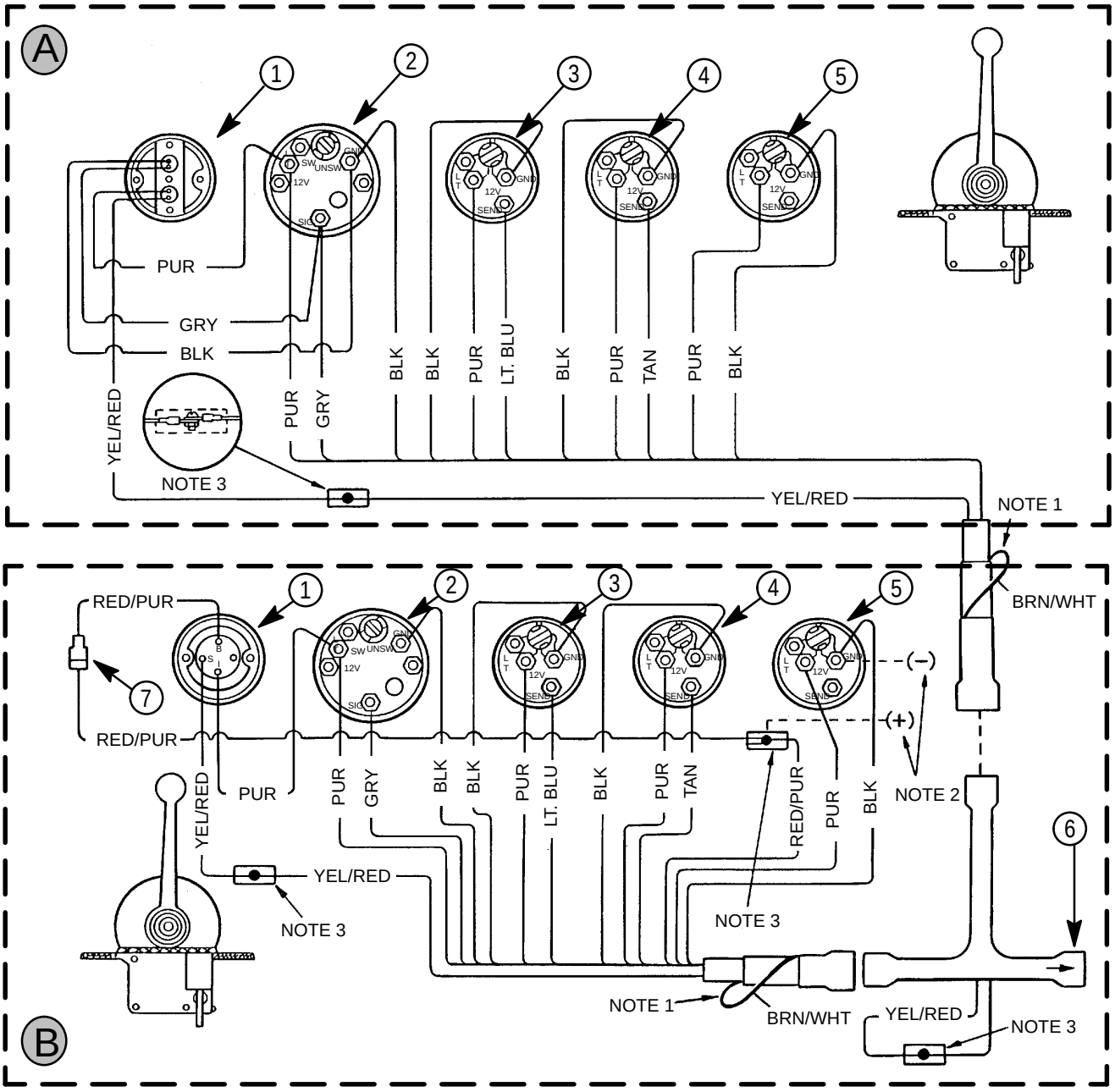
1 - Start - Stop Panel
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter

B - Primary Station

1 - Ignition Switch
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter
6 - To Engine
7 - 20 Ampere Fuse

Index

Dual Station Wiring (Using a Neutral Safety Switch in Engine Wiring Harness)



NOTE 1: BROWN/WHITE wire is taped back at instrument end. If installing on boat that is equipped with Mer-Cruiser stern drive, BROWN/WHITE wire is connected to trim sender terminal block. If installing on MerCruiser Inboard, BROWN/WHITE wire is taped back at engine end, or it may be used for an accessory (limit 5 amperes).

NOTE 2 : An accessory fuse panel may be connected at this location. The combined current draw of the primary station and secondary station **MUST NOT** exceed 35 amperes.

NOTE 3 : Connect wires together with screw and hex nut. Apply Quicksilver Liquid Neoprene to connection and slide rubber sleeve over connection.

A - Secondary Station

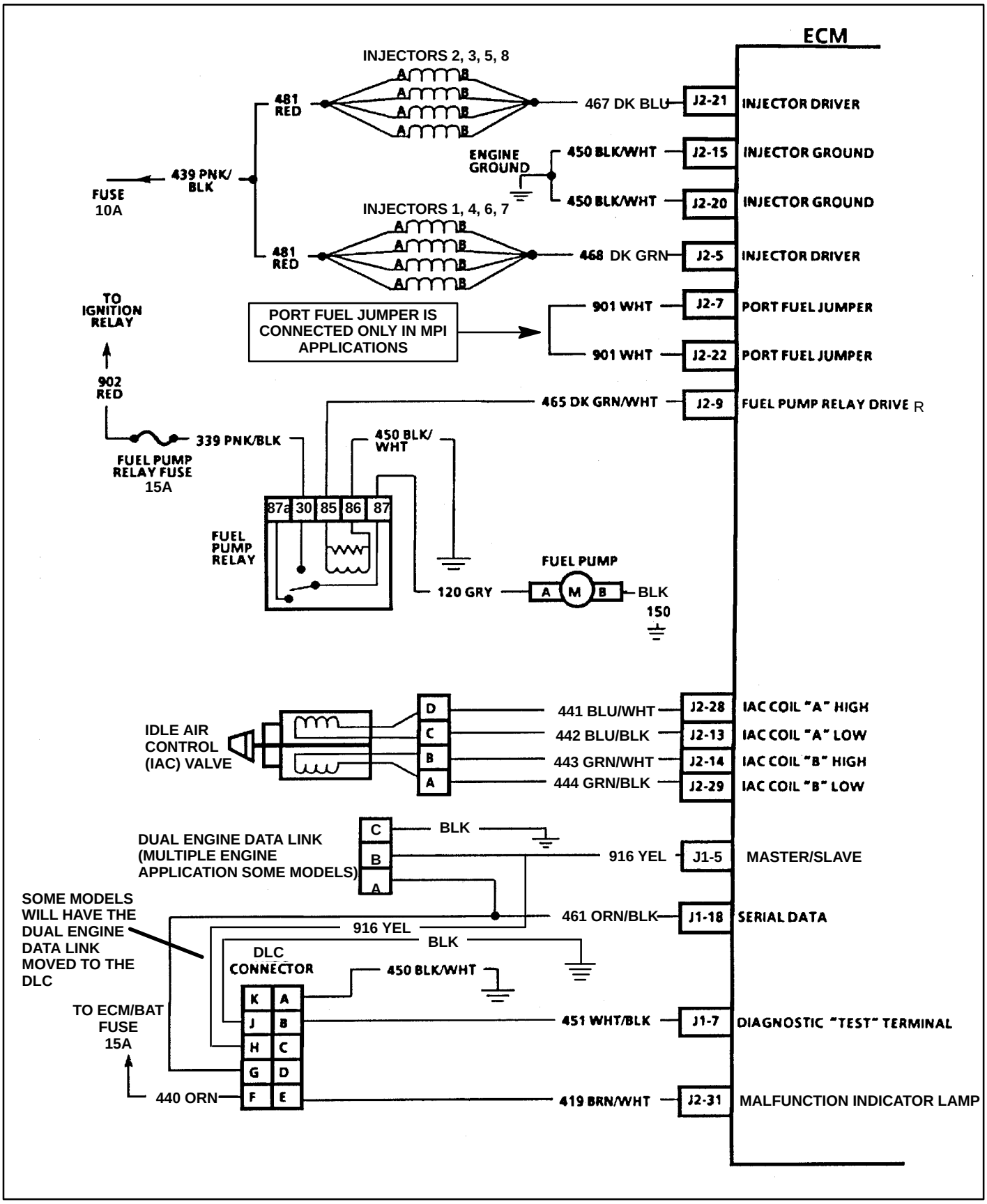
1 - Start - Stop Panel
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter

B - Primary Station

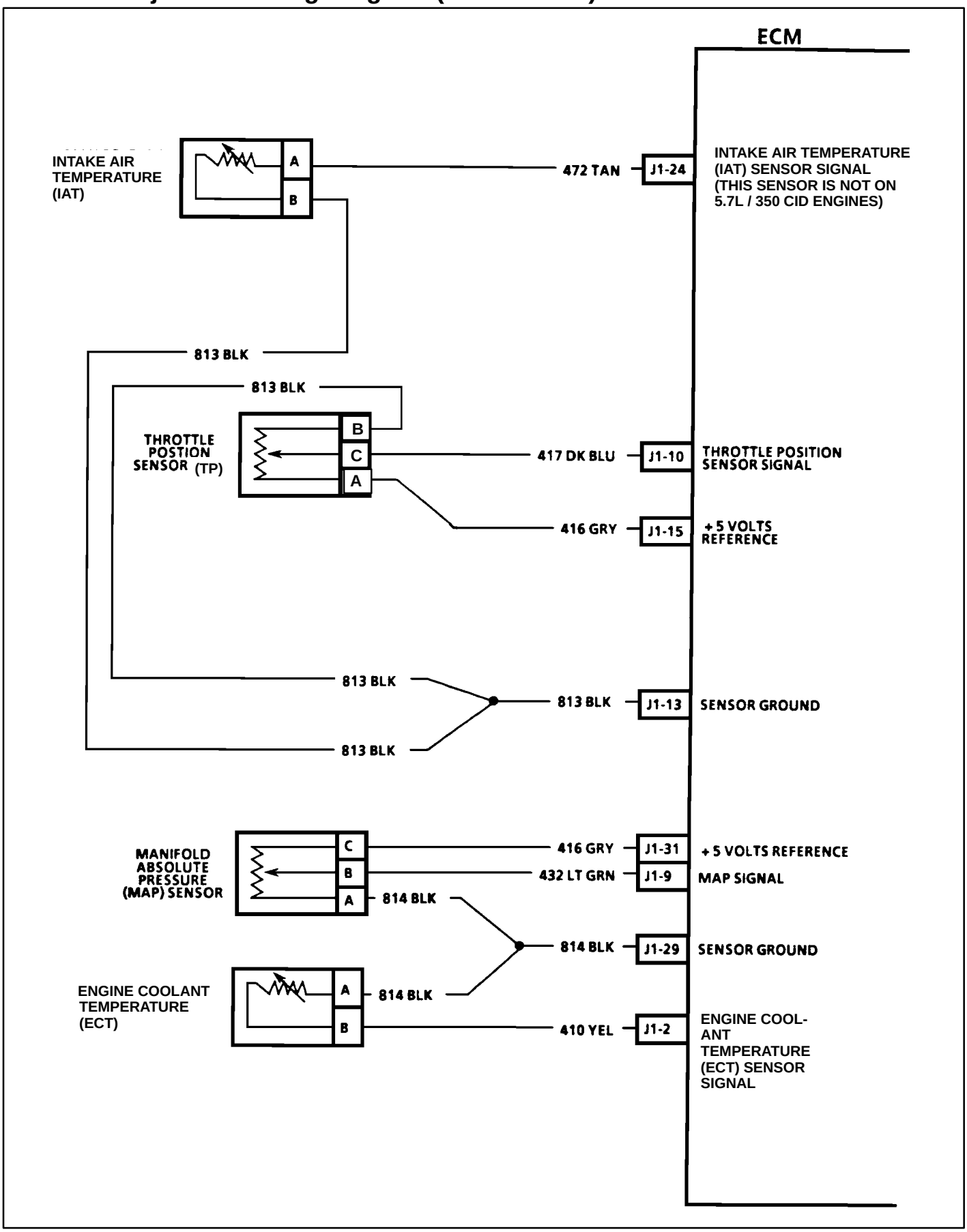
1 - Ignition Switch
2 - Tachometer
3 - Oil Pressure
4 - Water Temperature
5 - Battery Meter
6 - To Engine
7 - 20 Ampere Fuse

Index

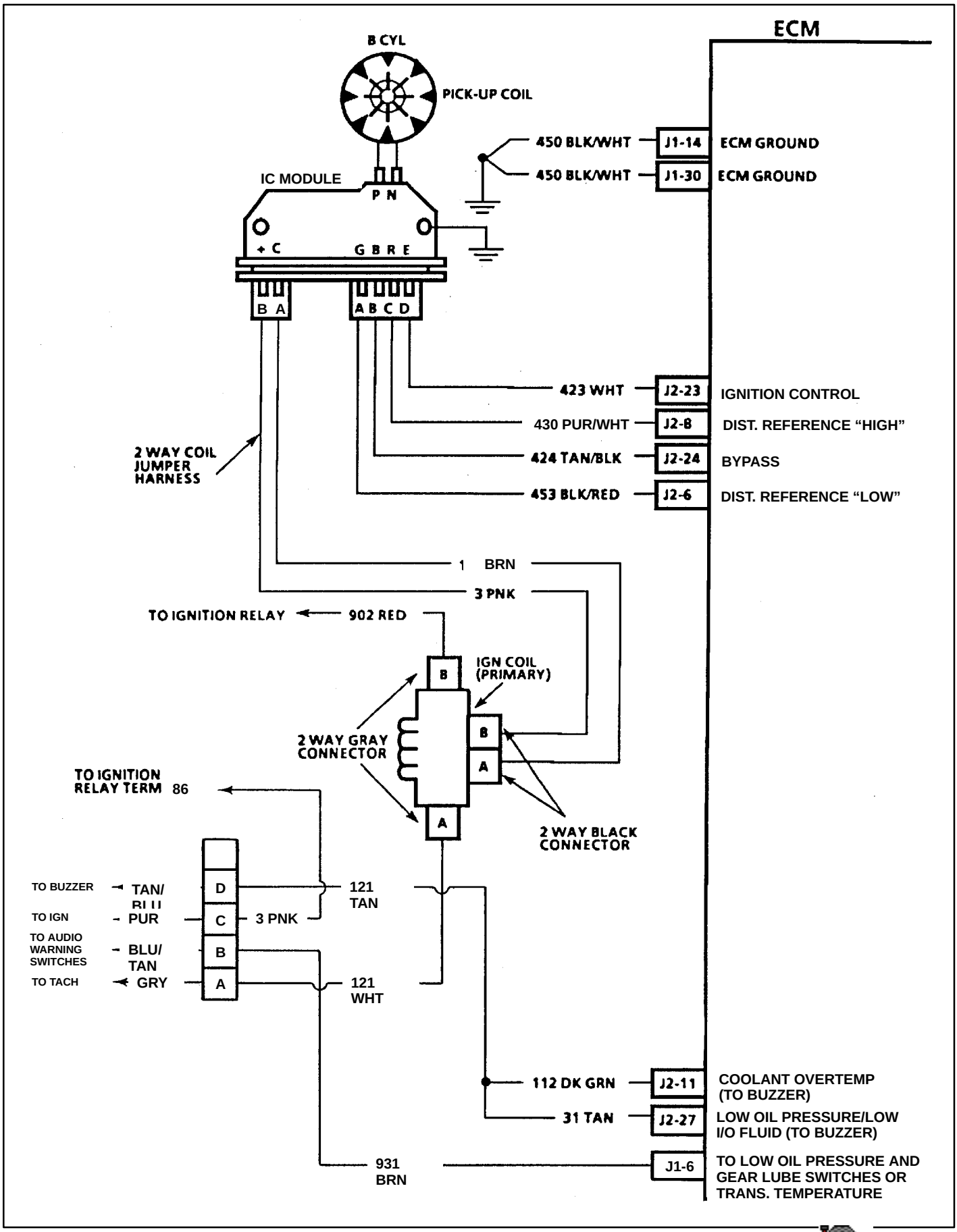
Multi-Port Injection Wiring Diagram (Chart 1 Of 4)



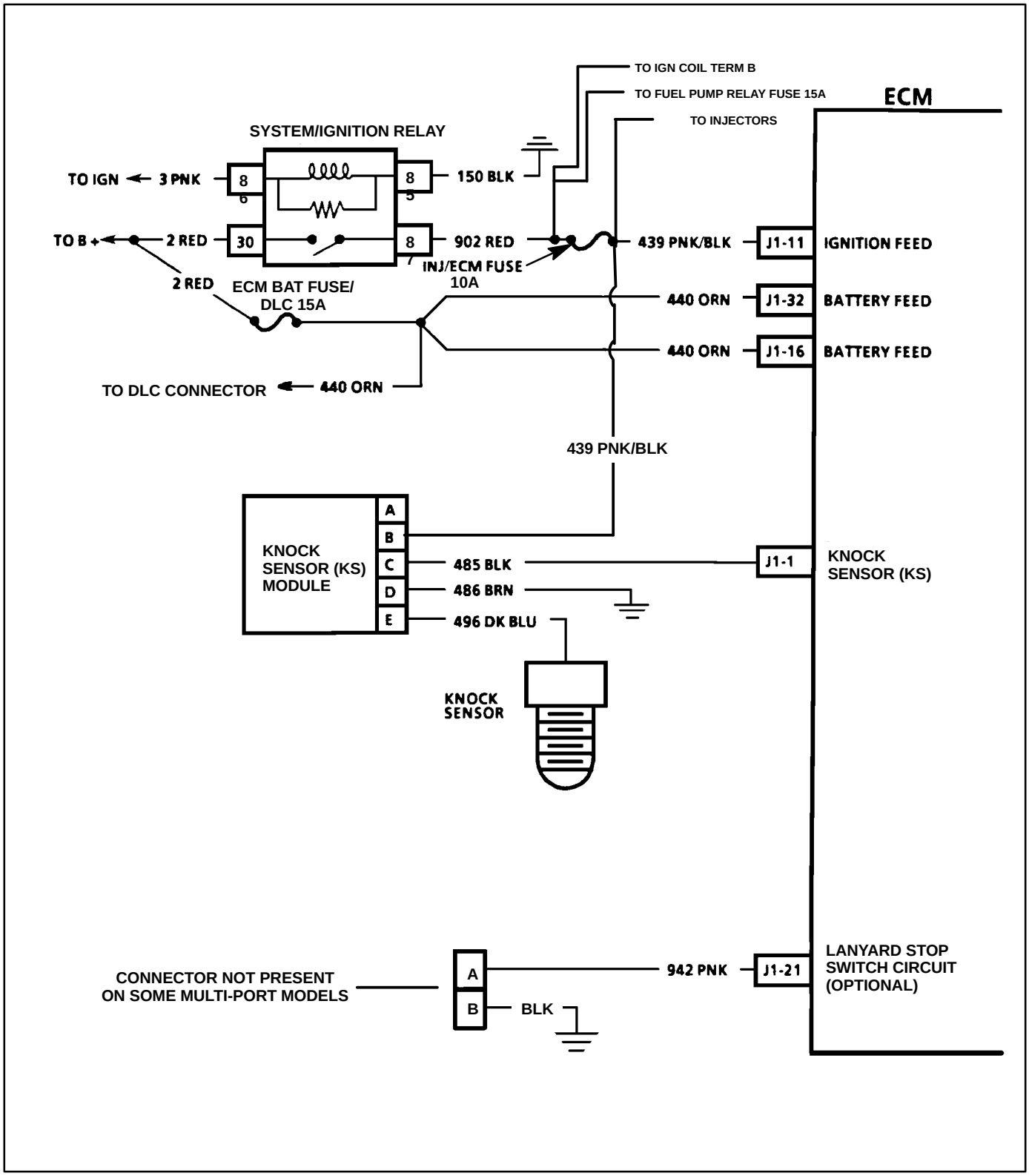
Multi-Port Injection Wiring Diagram (Chart 2 Of 4)



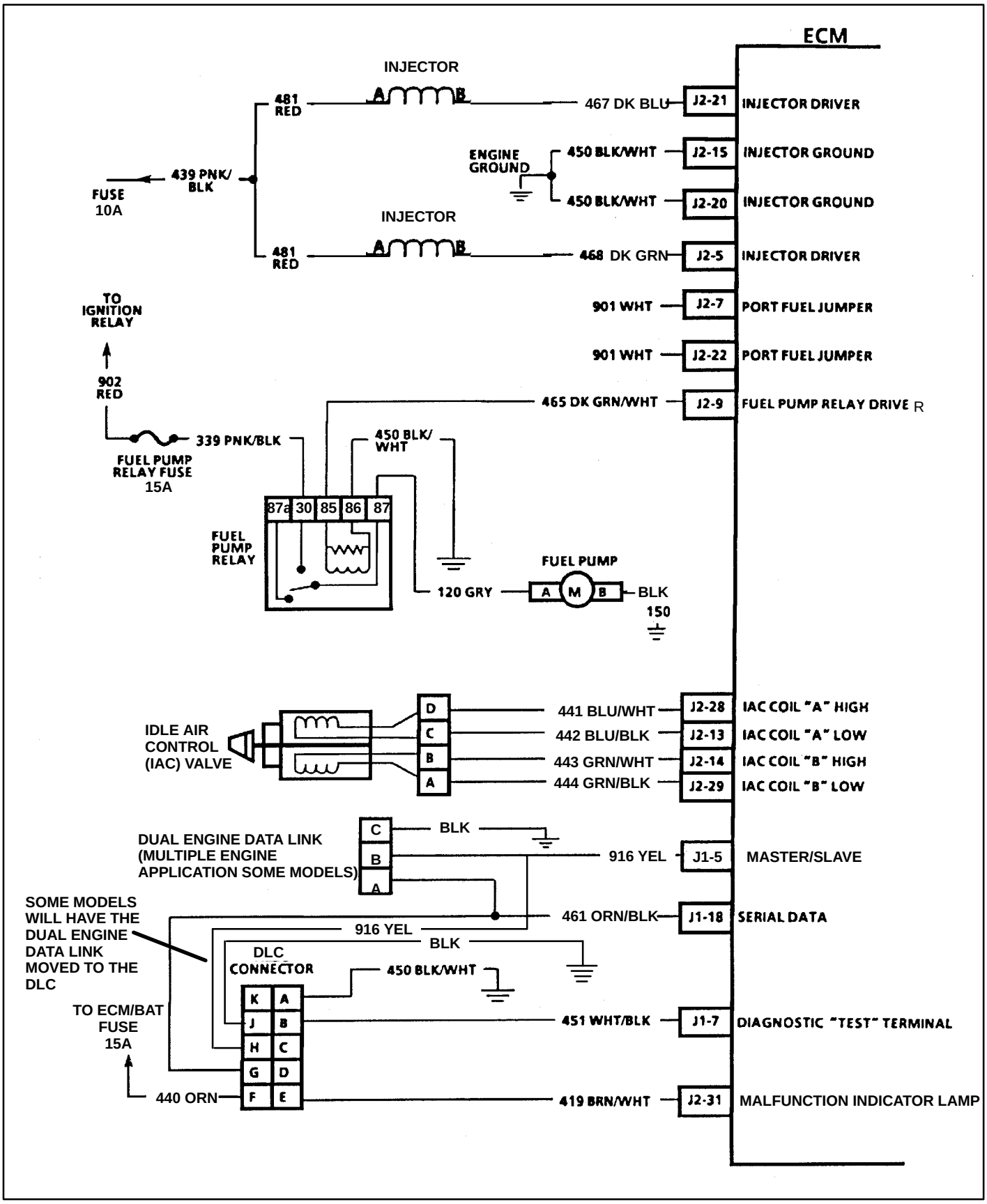
Multi-Port Injection Wiring Diagram (Chart 3 Of 4)



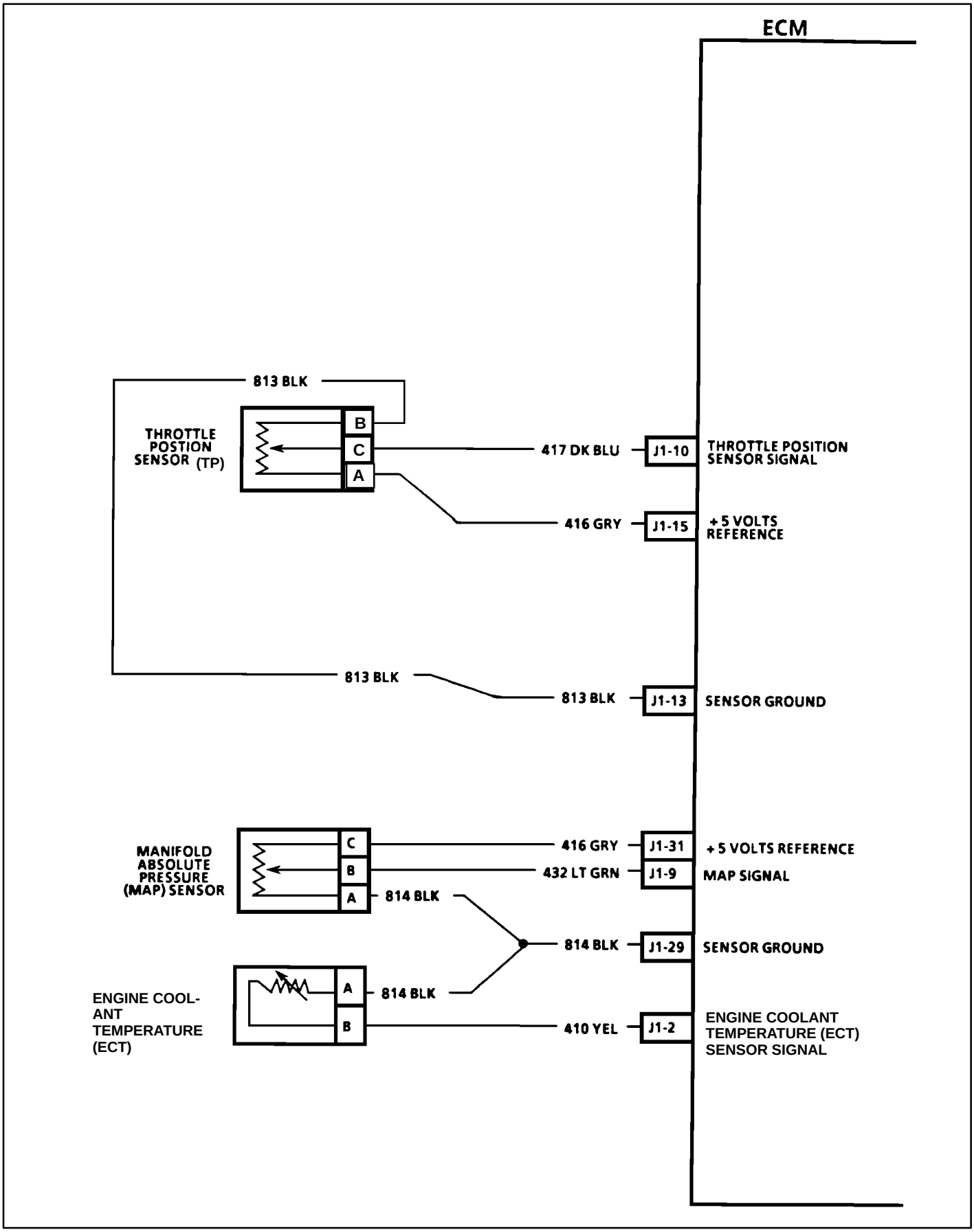
Multi-Port Injection Wiring Diagram (Chart 4 Of 4)



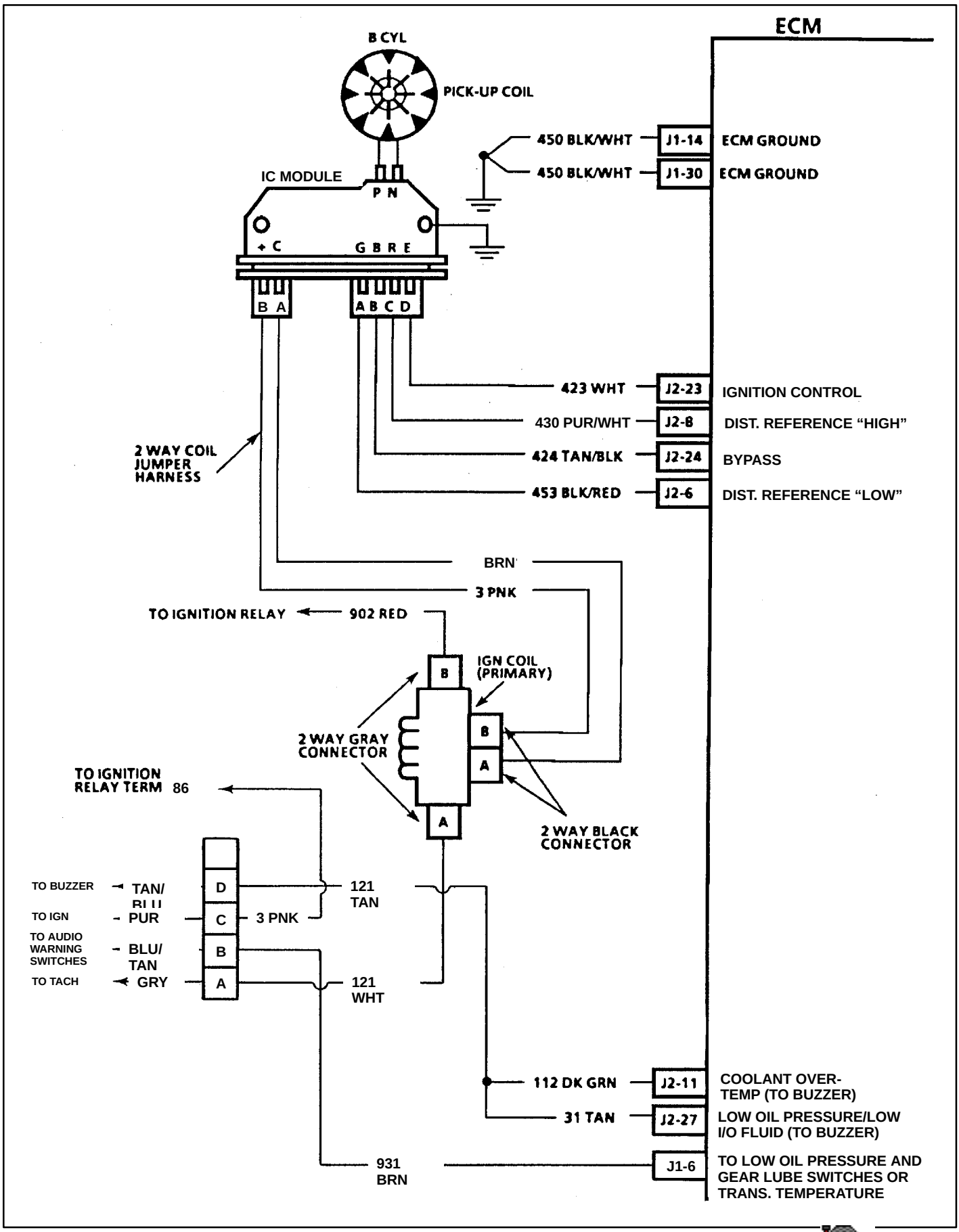
Throttle Body Injection Wiring Diagram (Chart 1 Of 4)



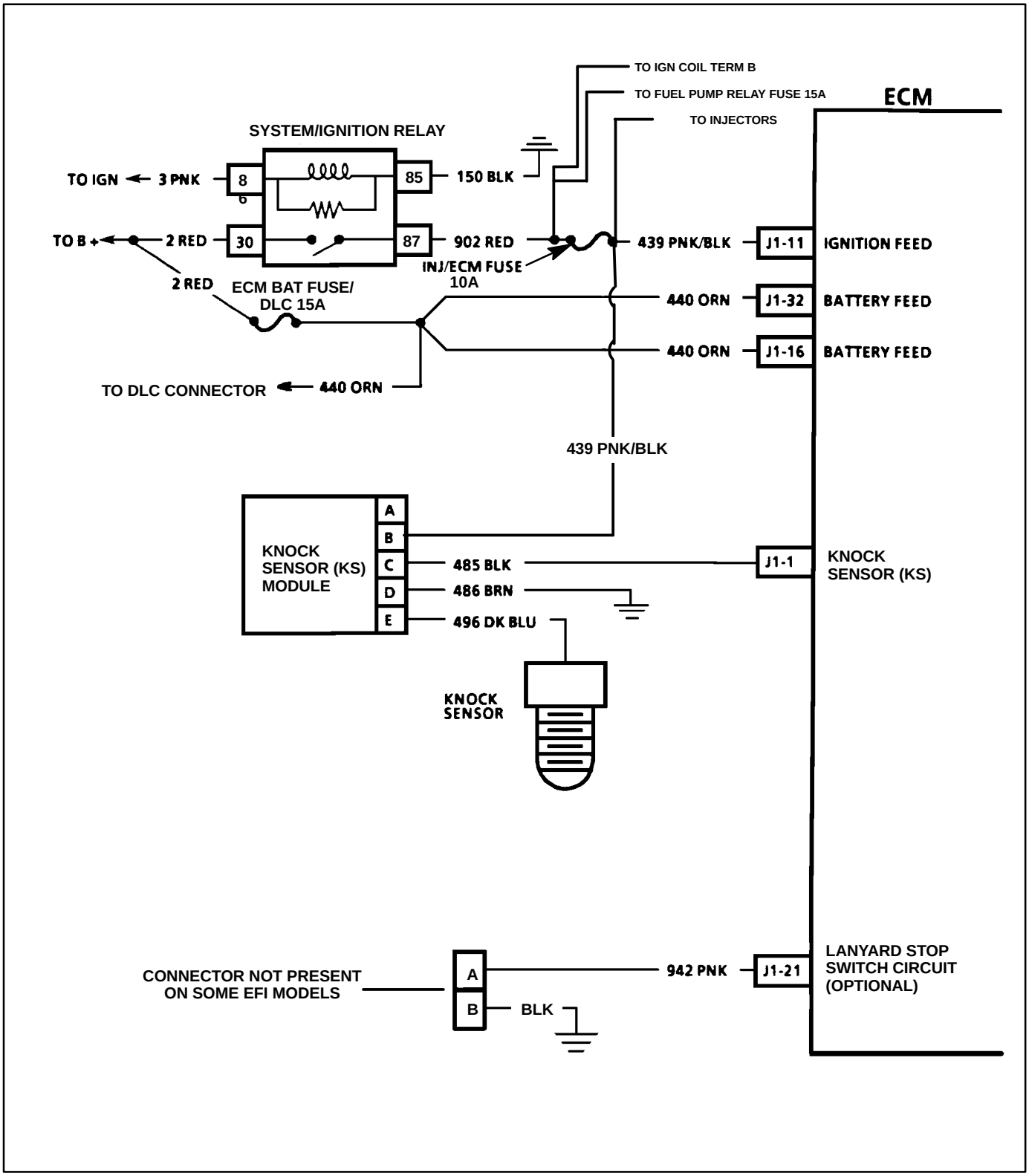
Throttle Body Injection Wiring Diagram (Chart 2 Of 4)



Throttle Body Injection Wiring Diagram (Chart 3 Of 4)



Throttle Body Injection Wiring Diagram (Chart 4 Of 4)



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