



COLOR DIAGRAMS

Section 6

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Notes:

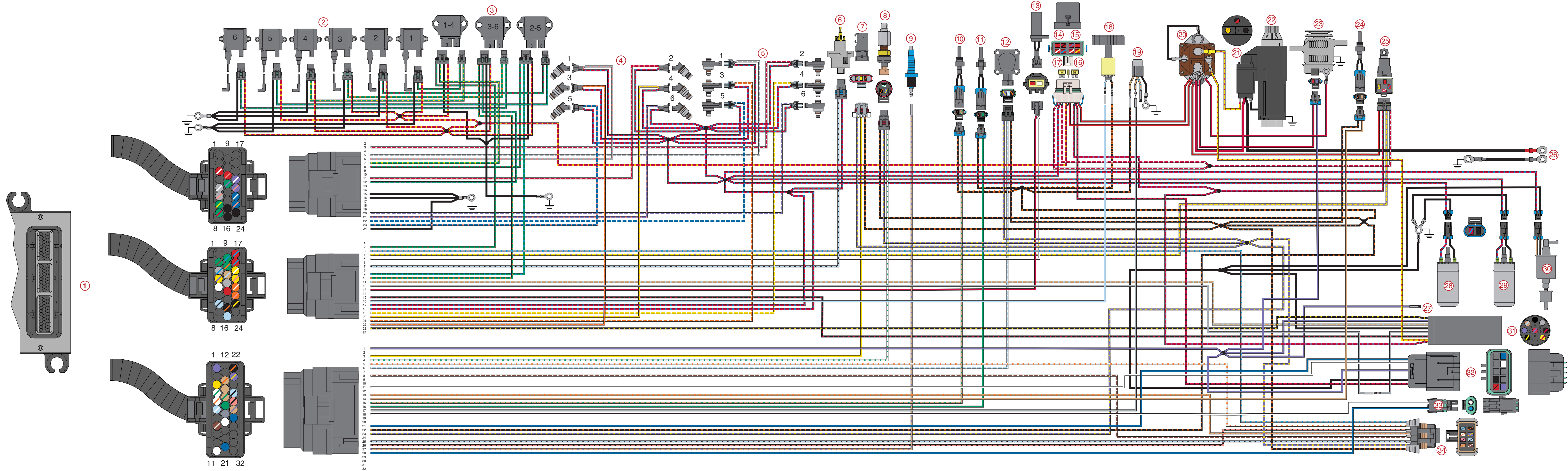


200 OPTIMAX JET DRIVE ENGINE WIRING



200 OPTIMAX JET DRIVE ENGINE WIRING

1. ECM
2. Ignition Coils
3. Coil Drivers
4. Fuel Injectors
5. Direct Injectors
6. Oil Pump
7. MAP Sensor
8. Block Pressure Sensor
9. Water Sensor
10. Starboard Head Temperature Switch
11. Port Head Temperature Switch
12. Throttle Position Sensor (TPS)
13. Crank Position Sensor
14. SmartCraft Data Bus Circuit 15 Ampere Fuse
15. Accessories 20 Ampere Fuse
16. Ignition Coil 20 Ampere Fuse
17. ECM Driver/Oil Pump/Electric Fuel Pump Circuit 20 Ampere Fuse
18. Low Oil Switch
19. Compressor Temperature Switch
20. Slave Solenoid
21. Starter Solenoid
22. Starter Motor
23. 60 Ampere Alternator
24. Air Temperature Sensor
25. Main Power Relay
26. To 12 Volt Battery
27. Accessory Power
28. Fuel Pump #1 (Inside Vapor Separator)
29. Fuel Pump #2 (Outside Vapor Separator)
30. Fuel Lift Pump
31. Engine Harness
32. Data Buss (10 Pin) Control Area Network (CAN)
33. DDT Test Port
34. SmartCraft Data Link Connection



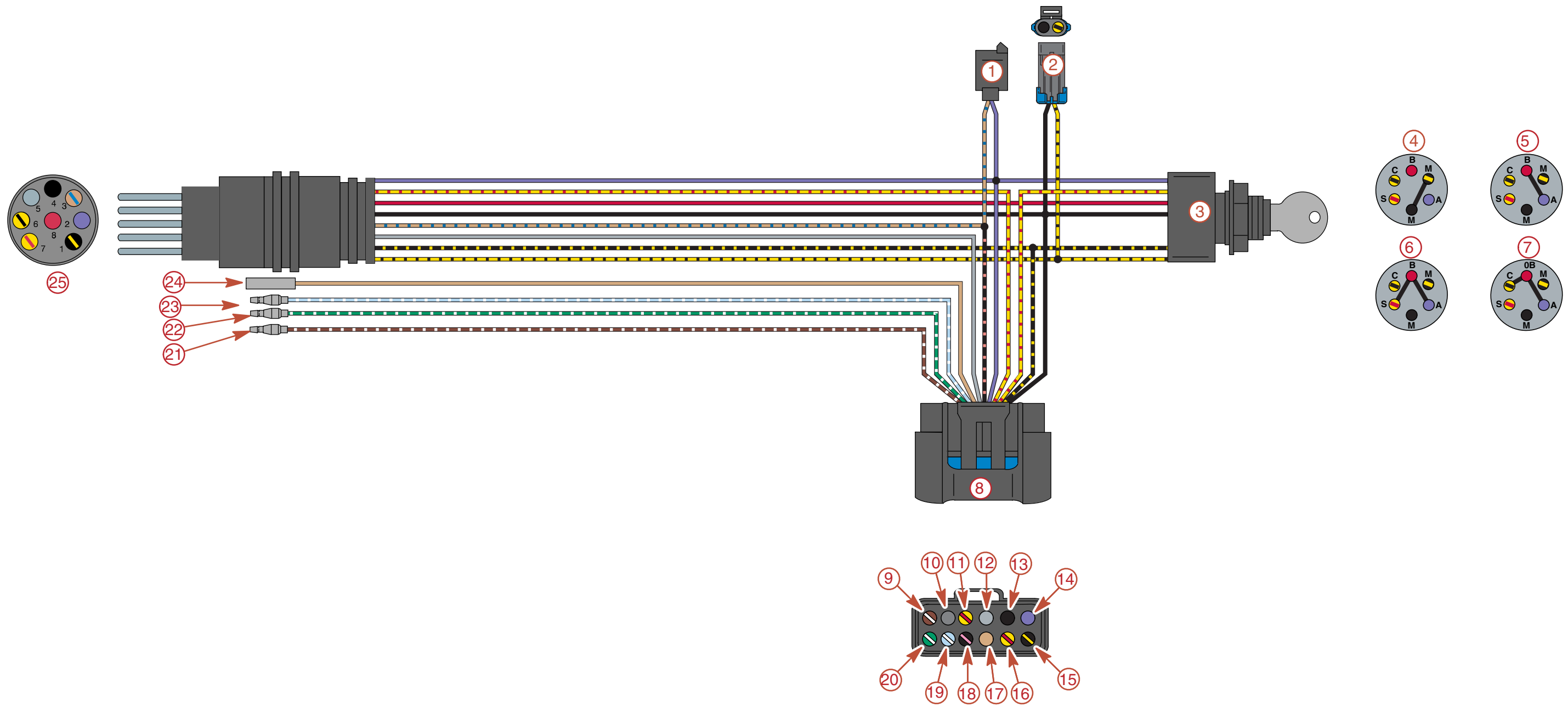


200 OPTIMAX JET DRIVE TYPICAL KEY SWITCH WIRING



200 OPTIMAX JET DRIVE TYPICAL KEY SWITCH WIRING

- 1.Warning Horn
- 2.Connector for Low-Speed Control.
- 3.Key Switch
- 4.Key Switch Connections for OFF Position
- 5.Key Switch Connections for ON Position
- 6.Key Switch Connections for START Position
- 7.Key Switch Connections for CHOKE or PRIME Position
- 8.Harness Connection to Boat Dash
- 9.Not Used
- 10.Blank
- 11.To Neutral-Only Start Switch.
- 12.Provides Tachometer Signal to Tachometer.
- 13.Provides Ground for Dash Gauges and Lanyard Stop Switch.
- 14.Supplies Switched 12 Volt + to Dash Gauges.
- 15.Connects to Lanyard Stop Switch.
- 16.To Neutral-Only Start switch.
- 17.Not used.
- 18.Not used.
- 19.Connects to Oil Level Gauge
- 20.Not used
- 21.Not Used
- 22.Not used
- 23.Connects to Oil Level Sender in Tank
- 24.Not Used
- 25.Key Switch Harness Connection to Engine Harness



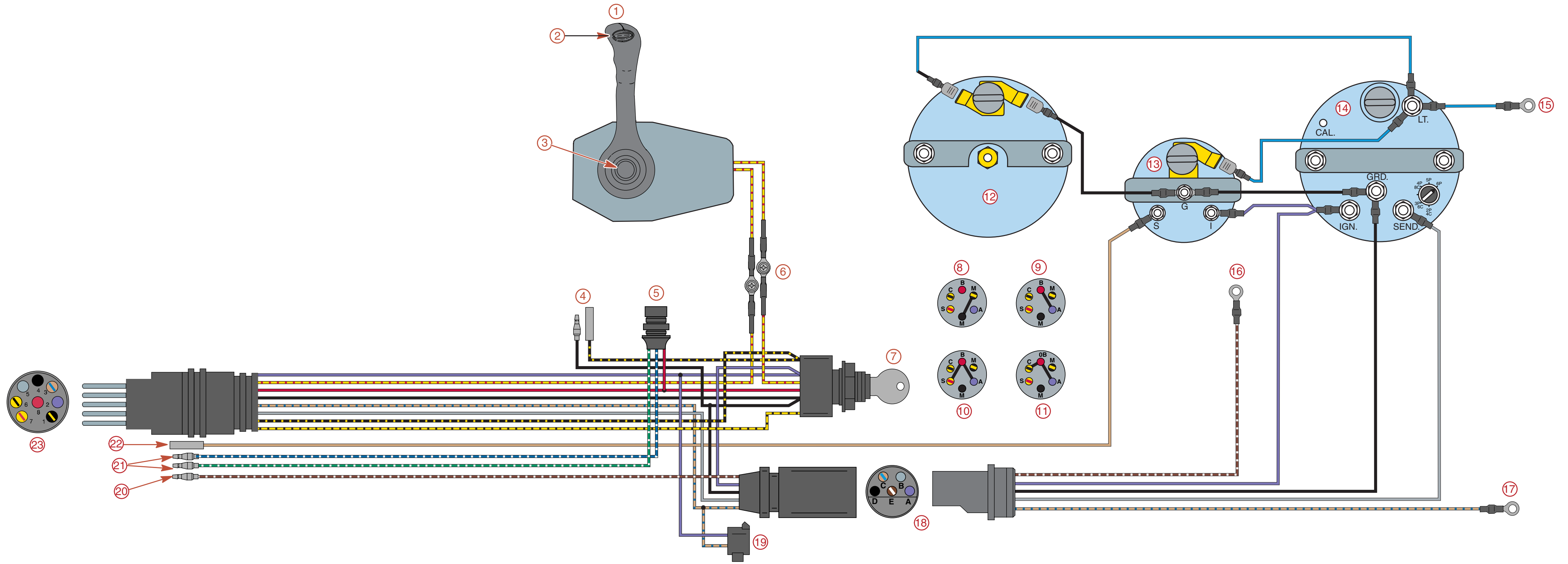


**200 OPTIMAX JET DRIVE
TYPICAL REMOTE CONTROL AND DASH WIRING
NON-SMARTCRAFT**



200 OPTIMAX JET DRIVE TYPICAL REMOTE CONTROL AND DASH WIRING NON-SMARTCRAFT

1. Remote Control meeting ABYC Mini Jet Boat Standard P23
2. Neutral Lock Button
3. Throttle Only Button
4. To Lanyard Stop Switch. Lanyard stop switch leads must be soldered and covered with shrink tube for a water proof connection.
If alternate method of connection is made (use of electrical butt connector) verify connection is secure and seal for moisture proof connection.
5. Not Used
6. To Neutral Start Switch. Connect wires together with screw and hex nut (2 places); apply Quicksilver Liquid Neoprene to connections and slide heat shrink tubing over each connection.
7. Key Switch
8. Key Switch Connections for OFF Position
9. Key Switch Connections for ON Position
10. Key Switch Connections for START Position
11. Key Switch Connections for CHOKE or PRIME Position
12. Speedometer
13. Temperature Gauge
14. Tachometer
15. Light Switch Connection
16. Not Used
17. To Warning Light (if equipped)
18. Tachometer Harness Connection
19. Warning Horn
20. Not Used
21. Not Used
22. To Temperature Sensor (if equipped)
23. Remote Control Harness Connection



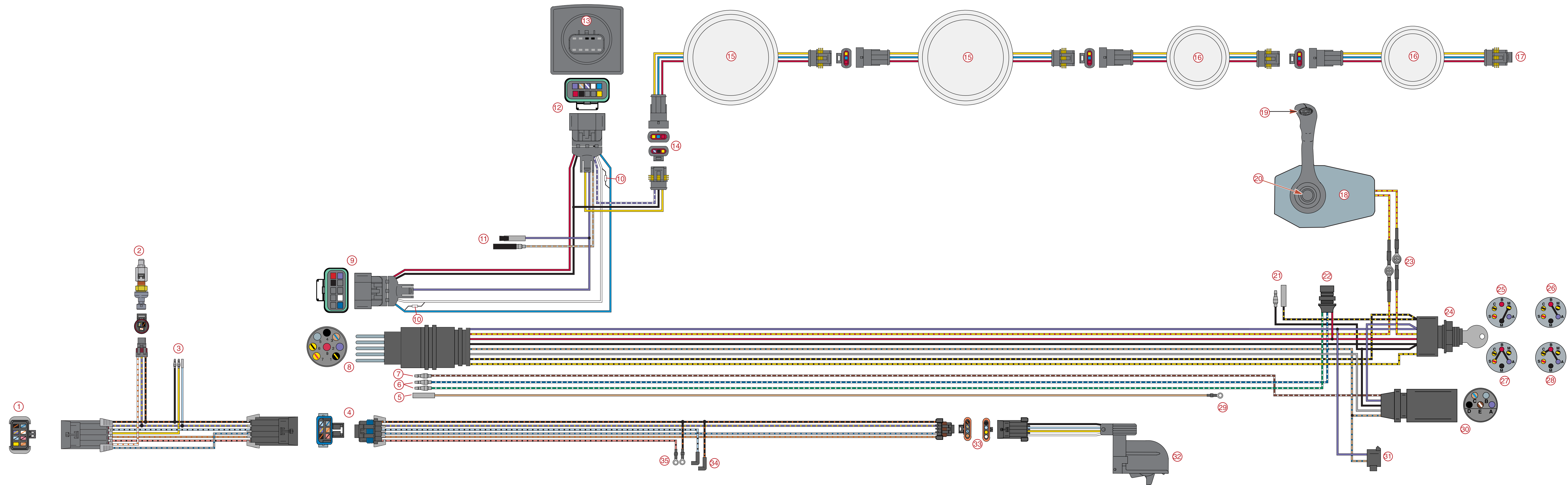


200 OPTIMAX JET DRIVE TYPICAL REMOTE CONTROL AND DASH WIRING WITH SMARTCRAFT



200 OPTIMAX JET DRIVE TYPICAL REMOTE CONTROL AND DASH WIRING WITH SMARTCRAFT

1. 8-Pin Digital Sensor Harness Extension, Connect to 8-Pin SmartCraft Harness on Engine
2. Digital Speedometer Sensor
3. Not used
4. 6-Pin Digital Sensor Harness
5. Not Used
6. Not Used
7. Not Used
8. Remote Control Harness Connects to Engine Harness
9. 10-Pin Control Area Network (CAN) Harness, Connect to Data Buss 10-Pin CAN Harness on Engine
10. Resistors within CAN Harness (120Ω 1/4W 5%)
11. Connections for Auxiliary Warning Horn for Depth Sensor
12. 10-Pin Control Area Network (CAN) Connection to System Monitor
13. System Monitor
14. System Link Series Connections
15. 3-1/4 in. System Link Gauges (Tachometer and Speedometer)
16. 2-1/4 in. Dia. System Link Gauges (Fuel, Temperature, Trim, etc.)
17. Series Connection for Additional System Link Gauges
18. Remote Control meeting ABYC Mini Jetboat Standard P23
19. Neutral Lock Button
20. Throttle Only Button
21. Connections for Lanyard Stop Switch
22. Connections for Power Trim Switch
23. Connections for Neutral Start Safety Switch
24. Ignition Key Switch
25. Key switch connections for OFF position
26. Key switch connections for ON position
27. Key switch connections for START position
28. Key switch connections for CHOKE or PRIME position
29. Analog Temperature Gauge Connection
30. Analog Tachometer Harness (Not Used on CAN Installation)
31. Warning Horn
32. Paddle Wheel/Lake/Sea Water Temperature Sender
33. 4-Pin Digital Sensor Harness Connection to Paddle Wheel
34. Digital Connections to Oil Sender
35. Digital Connections for Fuel Sender



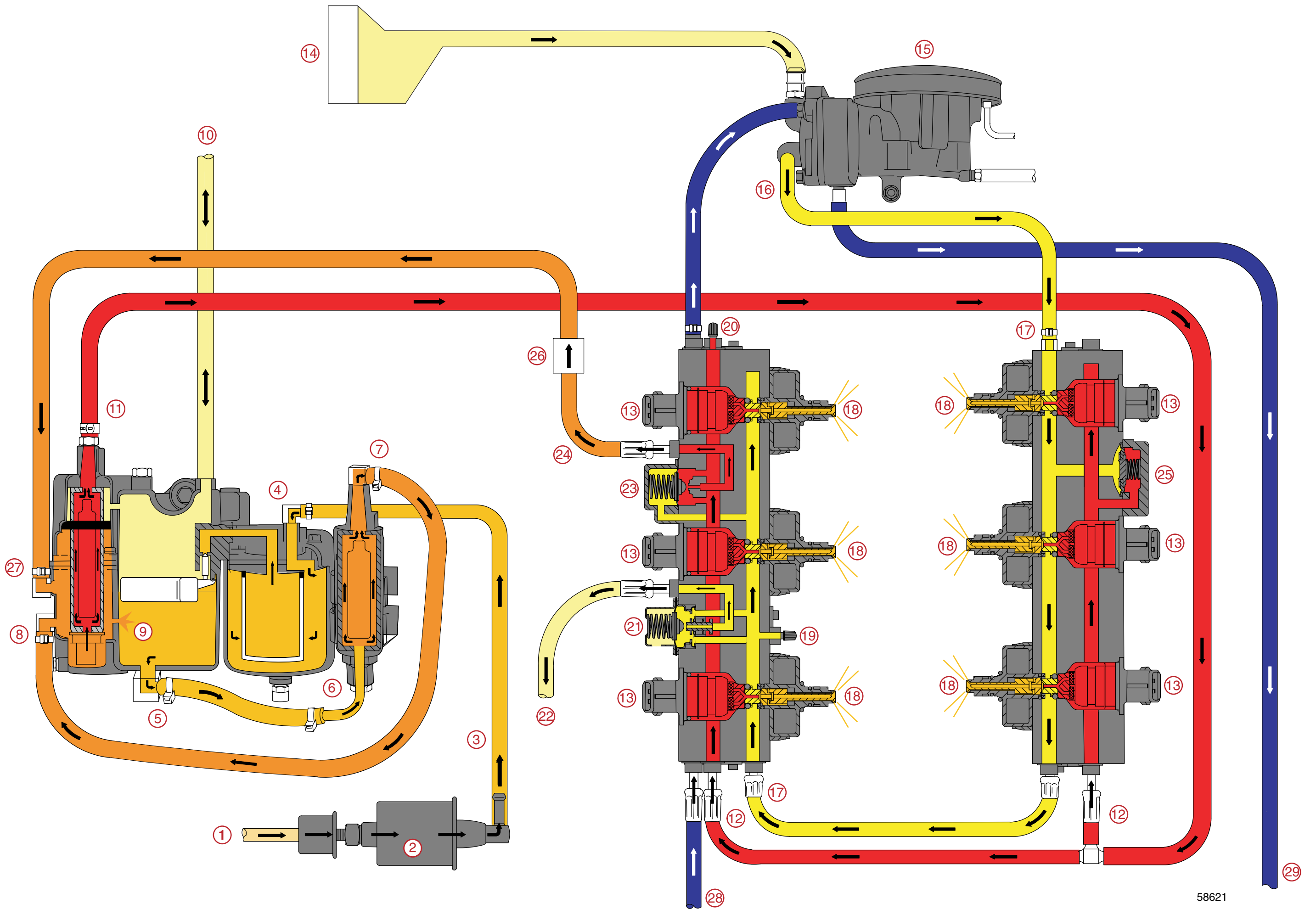


200 OPTIMAX JET DRIVE FUEL & AIR FLOW DIAGRAM



200 OPTIMAX JET DRIVE FUEL & AIR FLOW DIAGRAM

1. Fuel Inlet from Boat Fuel Tank
2. Engine Fuel Lift Pump
3. Fuel Line to Water Separating Fuel Filter – 2-8 psi (14-55 kPa)
4. Water Separating Fuel Filter in Vapor Separator Tank (VST) Assembly
5. Fuel Outlet from VST
6. Fuel Inlet to Low Pressure Electric Fuel Pump
7. Fuel Outlet from Low Pressure Electric Fuel Pump – 7-9 psi (48-62 kPa)
8. Fuel Inlet to High Pressure Electric Fuel Pump.
9. Relief Passage – Unused Fuel Returning to VST
10. Air Vent to Boat Fuel Tank
11. Fuel Outlet from High Pressure Electric Fuel Pump – 90 psi (620 kPa)
12. High Pressure Fuel Inlet to Air/Fuel Rails – 90 psi (620 kPa)
13. Fuel Injector is opened by the ECM, 90 psi (620 kPa) fuel is discharged into a machined cavity inside the air chamber of the air/fuel rail. This mixes the fuel with the air charge.
14. Air Inlet to Air Compressor
15. Air Compressor
16. High Pressure Air Outlet – 80 psi (551 kPa)
17. High Pressure Air Inlet to Air/Fuel Rails – 80 psi (551 kPa)
18. Direct Injector discharges the air/fuel mixture into the combustion chamber
19. Schrader Valve for Testing Air Pressure
20. Schrader Valve for Testing Fuel Pressure
21. Air Pressure Regulator will limit the amount of pressure developed inside the air passages to approximately 10 psi (69 kPa) below the pressure of the fuel inside the fuel passages (i.e. 80 psi [551 kPa] air vs 90 psi [620 kPa] fuel)
22. Bleed Off from Air Pressure Regulator, Routed to the Exhaust Adaptor and Exits thru the Propeller
23. Fuel Pressure Regulator not only regulates fuel pressure but also regulates it at approximately 10 p.s.i. (69 kPa) higher than whatever the air rail pressure is. The fuel regulator diaphragm is held closed with a spring that requires 10 p.s.i. (69 kPa) to force the diaphragm off the diaphragm seat. The back side of the diaphragm is exposed to air rail pressure. As the air rail pressure increases, the fuel pressure needed to open the regulator will equally increase.
24. Bleed Off from Fuel Pressure Regulator, Routed Back to VST
25. Tracker Valve has a rubber diaphragm which expands and retracts to equalize the pulses developed by the pumps (both air and fuel).
26. Check Valve – 40 psi (276 kPa)
27. Fuel return inlet from Fuel Regulator
28. Water Inlet to Cool Port Air/Fuel Rail and Air Compressor
29. Cooling Water from Compressor Routed to Expansion Chamber Exhaust Outlets





200 OPTIMAX JET DRIVE WATER FLOW



200 OPTIMAX JET DRIVE WATER FLOW

Powerhead and Exhaust Cooling Circuit

1. Inlet Cooling Water from Jet Pump.
2. Water Inlet from Flushing Connection.
3. Water Flows from Adapter Plate to Powerhead.
4. Water Fills Center of Powerhead, Flows Over Exhaust Runners, then to Cylinder Jackets
5. Water Pressure Sensor
6. Cooling Water Fills Cylinder Jackets, then flows to Cylinder Heads.
7. Majority of water flows down Cylinder Heads. Cylinder Head Cover has been removed from Head for illustration, it is normally part of Head Casting.
8. Small amount of water flows out top of Cylinder Head to Water By-Pass.
9. Water By-pass – Discharged outside of Boat.
10. Water flows from bottom of Cylinder Head through passage in Cylinder Block to Adapter Plate.
11. Water flows from Cylinder Block through Adapter Plate, Cooling Exhaust Passages.
12. Water flows from Adapter Plate to Expansion Chamber Water Jacket.
13. Cooling Water from Expansion Chamber is emptied back into Adaptor Plate.
14. Cooling Water from Adaptor Plate is exhausted through the Jet Tunnel.

Compressor and Fuel Cooling Circuit

15. Fitting with Strainer
16. Incoming Cooling Water is directed to Fuel Rail.
17. Cooling Water flows through Fuel Rail (port) to Air Compressor.
18. Air Compressor
19. Cooling Water flows from Air Compressor to Expansion Chamber Exhaust Pipes.
20. Cooling Water for Exhaust Tubes is discharged with Exhaust.

