



9000 Series

MicroCommander and ClearCommand have been re-engineered and upgraded to our 9000 Series control systems. The qualities that made MicroCommander and ClearCommand two of our best selling product lines remain, while several features have been refined to increase reliability.



9000 Series MicroCommander

MicroCommander is a single-lever electronic control system designed for precise, instant control of mechanical engines and gears on yachts and commercial vessels.

9000 Series ClearCommand

ClearCommand is designed for vessels utilizing mechanical and electronic throttle and shift combinations.

Standard features on both products include an LED display which utilizes self diagnostic software. The LED displays codes for setup or system status, and is easily visible without opening the enclosure. Configuration is achieved by entering codes on the key pad, and the processor makes any necessary adjustments to vessel specifications. All system functions are incorporated on one circuit board, allowing easy customization of features. Communication between processors, in multiple engine applications is achieved using a Controller Area Network (CAN) serial bus.

Increased vessel efficiency is achieved with engine synchronization, standard on every 9000 Series MicroCommander and 9000 Series ClearCommand processor. One lever synchronization is programmed into all processors and allows multi-engine control with one lever.

Troll remains an optional feature on all 9000 Series ClearCommand and 9000 Series MicroCommander control systems.



Installation is trouble free with customized cable lengths and optional plug connectors. Customized kits are available, which include everything needed for installation of these control systems.

The circuit board is conformal coated, to protect against humidity, contamination, dust and dirt. 9000

Series MicroCommander and 9000 Series ClearCommand control systems meet EMC, CE, and current environmental standards as well as UL1500 with built in ignition protection.



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HUMCO ENGINE CONTROLS

ZF Marine 9000 Series



9000 Series

Part Numbering / Identification Guide								
Engine/Throttle		Gear/Clutch		Troll			Part Number	
1	2	1	2	1	2	3	Old	New
Mechanical	Electrical	Mechanical	Solenoid	Mechanical	Solenoid	Autotroll		
X		X					585CE-2P	91102
				X			813CE	90010
X			X				MS556-14407	91202
X			X	X			MS573-14063	91212
X			X		X		MS576-13399	91222
X			X			X	MS575-13230	95232
	X	X					MS565-13050	92102
	X	X		X			MS564-13547	92112
	X		X	X			MS569-13541	92212
	X		X			X	MS570-13231	96232
X							MS550-12458	91000
	X						MS550-12459	92000

TROLL

Servo Troll

Our trolling actuator can be used to control mechanically operated trolling valves as a part of MicroCommander systems. The trolling actuator controls clutch slip while reducing vessel operation to slow speed. Propeller shaft speed from full slip to lockup is available from the same control lever without added switches.

Electronic Troll

For controlling electronic trolling valves, our electronic troll can be specified as an option on ClearCommand systems or comes standard with every CruiseCommand system. Electronic troll software maximizes your options, providing a full range of shaft speeds from any remote station. Electronic troll does not require installation of additional switches or separate actuators.



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PARTS FOR SYNCHRONIZATION AND TROLL	PART NUMBER
SENDER, TACHOMETER DUAL	8902
MAGNETIC PICK-UP, 3/4 X 16	8912
MAGNETIC PICK-UP, 3/4 X 16	2241

BASIC CABLE (NO PLUG CONNECTORS)	PART NUMBER
WIRE HARNESS - 8 CONDUCTOR, SHIELDED, 20 AWG	180
WIRE HARNESS - 8 CONDUCTOR, SHIELDED 20 AWG, 500 FT ROLL	350
WIRE HARNESS - 8 CONDUCTOR, SHIELDED, 20 AWG, 1000 FT	11811
WIRE HARNESS - 2-14GA BLACK & RED WITH VIO-STRIPE, PVC JACKET, VW1	212
WIRE HARNESS - 2 CONDUCTOR, 14 AWG, PVC, (BLACK & RED WITH VIO-STRIPE) 250 FT	349
WIRE HARNESS - 2 CONDUCTOR, 16 AWG, START INTERLOCK, YELLOW WITH RED STRIPE	183
WIRE HARNESS - 2 CONDUCTOR, SHIELDED, YELLOW WITH RED STRIPE, 16 AWG, PVC, 250 FT	355

AUTOMATIC POWER SELECTOR (APS)

Our automatic power selector, available with every ZF Marine Electronics, LLC electronic control system, automatically switches from one DC power source to another, giving a secondary power supply when needed. Operational with 12 or 24 volt batteries.

AUTOMATIC POWER SELECTOR	PART NUMBER
AUTOMATIC POWER SELECTOR	13505

9000 Series Part Number Key

9XXXX-XXXX

- 1 = Standard Mechanical Throttle
- 2 = Standard Electronic Throttle
- 5 = Premium Mechanical Throttle
- 6 = Premium Electronic Throttle

9XXXX-XXXX

- 1 = Mechanical Gear
- 2 = Solenoid Gear
- 3 = Mechanical Gear / Solenoid 2 Speed
- 4 = Solenoid Gear / Solenoid 2 Speed

9XXXX-XXXX

- 0 = None
- 1 = Mechanical Troll
- 2 = Solenoid Troll
- 3 = Autotroll
- 5 = Mechanical Governed Troll
- 6 = Solenoid Governed Troll

9XXXX-XXXX

Number of Stations

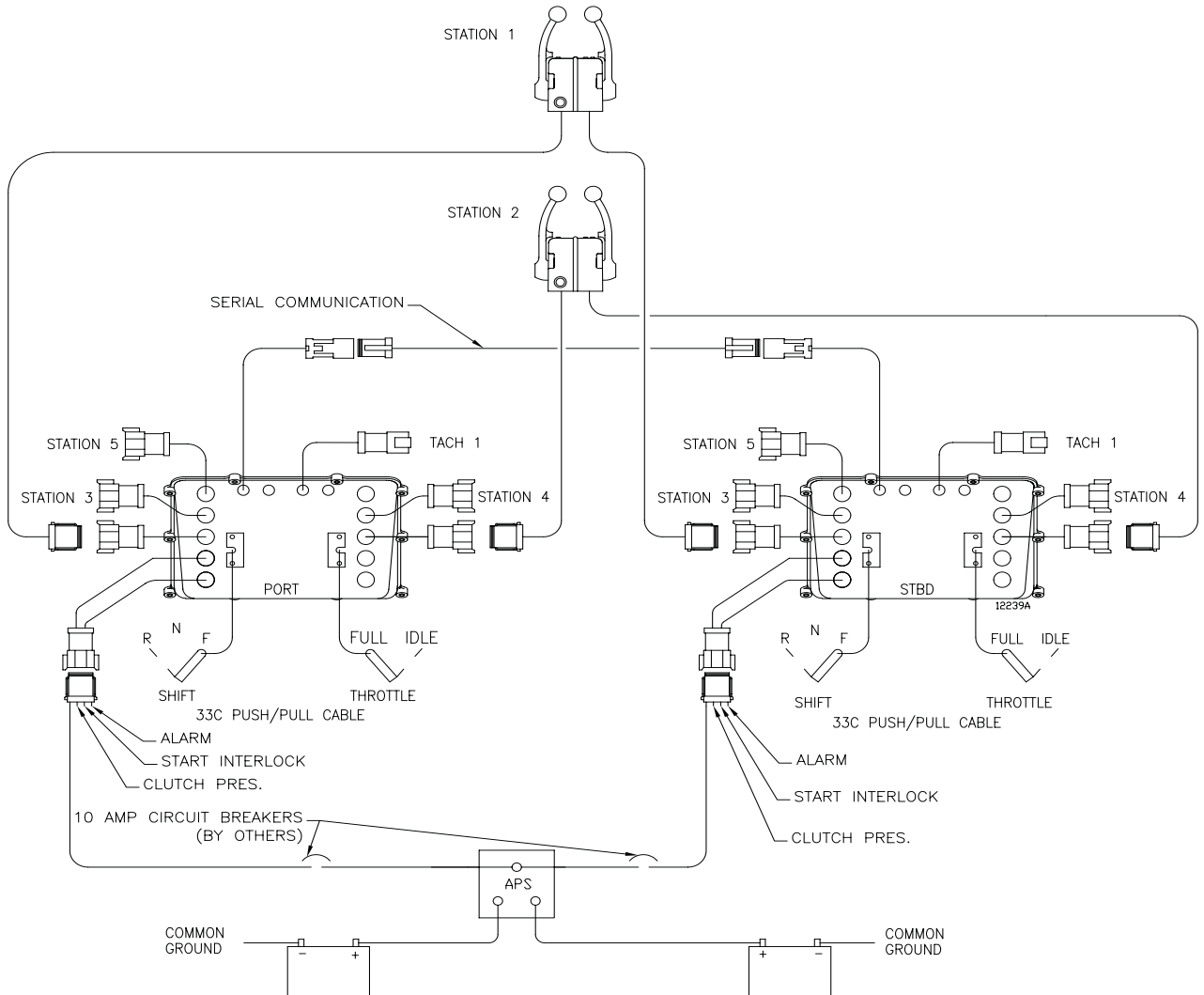
9XXXX-XXXX

Serial Number



9000 Series MicroCommander

Example of Twin Screw - 2 Station 9000 Series MicroCommander pluggable system



REQUIREMENTS:

- (2) POWER / START INTERLOCK WIRE HARNESS
- (4) CONTROL HEAD WIRE HARNESS
- (1) SERIAL CABLE - ON TWIN ENGINE APPLICATIONS
- (2) TACHOMETER FEEDBACK WIRE HARNESS - SYNCH APPLICATIONS ONLY
- (2) 91102 PROCESSORS
- (1) APS
- (2) 10 AMP C.B.
- (4) 33C PUSH-PULL CABLE (SUPPLIES BY OTHERS)



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ZF Marine 9000 Series MicroCommander



9000 Series MicroCommander

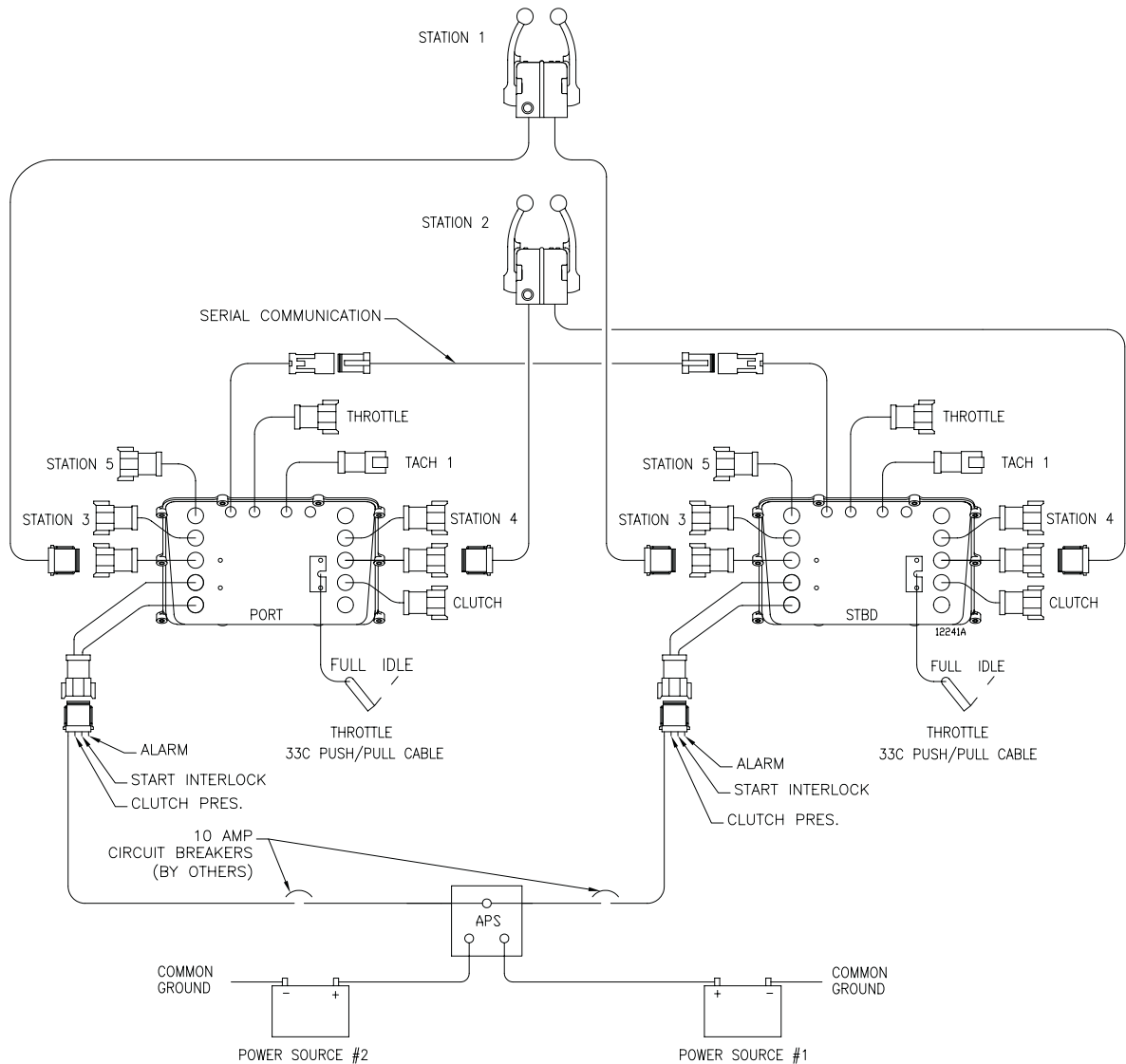
9000 SERIES MICROCOMMANDER	PART NUMBER
MICROCOMMANDER - MECHANICAL THROTTLE, SHIFT	91100
MICROCOMMANDER - MECHANICAL THROTTLE, SHIFT, 2 STATION	91102
MICROCOMMANDER - MECHANICAL THROTTLE, SHIFT, 3 STATION	91103
MICROCOMMANDER - MECHANICAL THROTTLE, SHIFT, 4 STATION	91104
MICROCOMMANDER - MECHANICAL THROTTLE, SHIFT, 5 STATION	91105
MICROCOMMANDER TROLL ACTUATOR	90010

9000 MICROCOMMANDER PROCESSOR OPTIONS	PART NUMBER
WIRE HARNESS - MAG PICKUP, PROCESSOR LEAD	15704
WIRE HARNESS - SERIAL COMMUNICATION, PROCESSOR LEAD	15705
WIRE HARNESS - CONTROL HEAD, PROCESSOR LEAD	15706
WIRE HARNESS - POWER, START INTERLOCK, ALARM, CLUTCH PRESSURE	15710
ACTUATOR INSTALLATION KIT	15878



9000 Series ClearCommand

Example of Twin Screw - 2 Station Mechanical Throttle Solenoid Shift



REQUIREMENTS:

- (2) POWER / START INTERLOCK WIRE HARNESS
- (4) CONTROL HEAD WIRE HARNESS
- (2) CLUTCH WIRE HARNESS
- (1) SERIAL CABLE - ON TWIN ENGINE APPLICATIONS
- (2) TACHOMETER FEEDBACK CABLE - SYNCH APPLICATIONS ONLY
- (2) 91202 PROCESSORS
- (1) APS
- (2) 10 AMP C.B.
- (2) 33C PUSH-PULL CABLE (SUPPLIED BY OTHERS)



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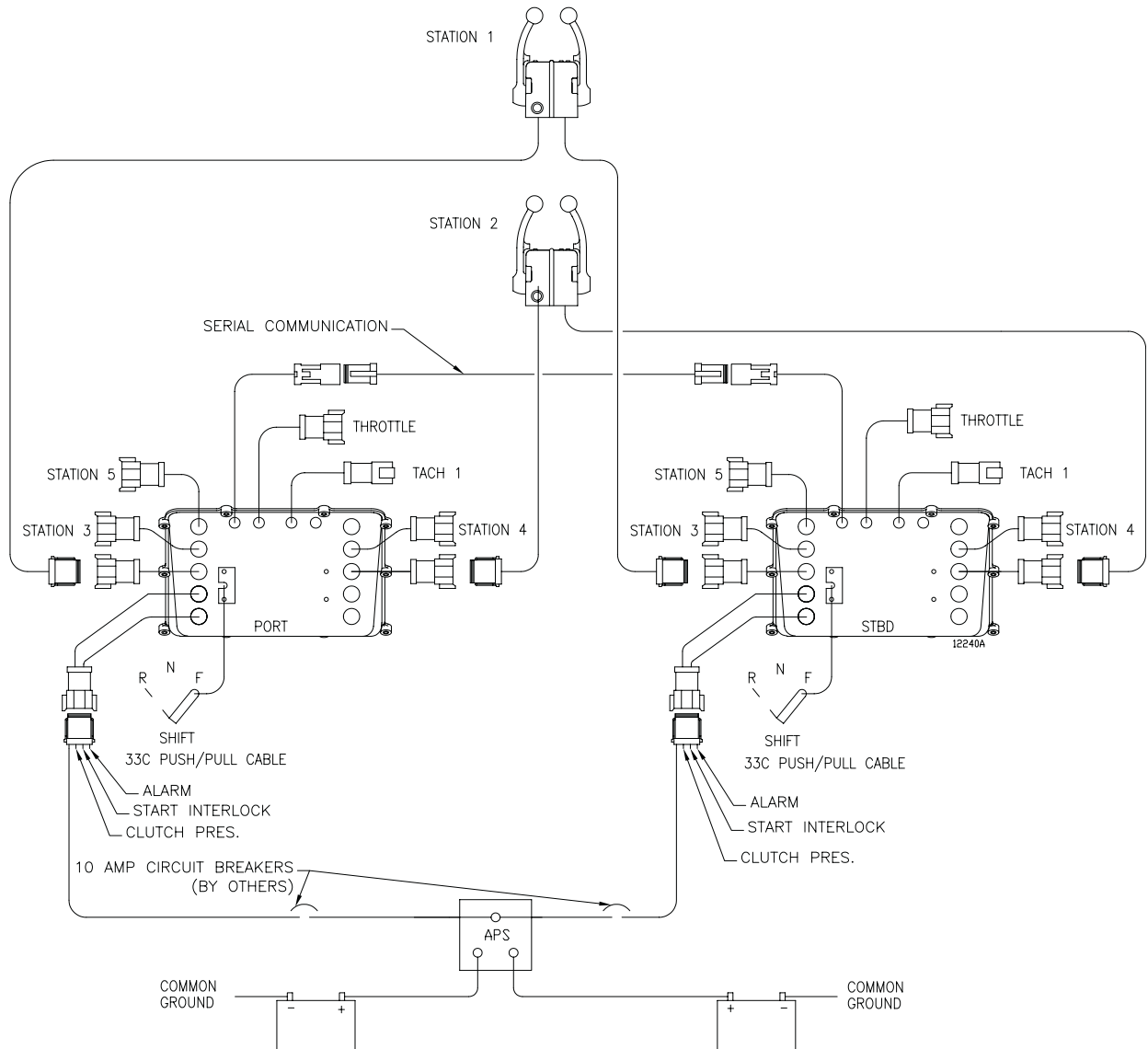


9000 SERIES CLEARCOMMAND	PART NUMBER
CLEARCOMMAND - MECHANICAL THROTTLE, SPEED ONLY	91000
CLEARCOMMAND - MECHANICAL THROTTLE, SPEED ONLY, 2 STATION	91002
CLEARCOMMAND - MECHANICAL ENGINE, SOLENOID SHIFT	91200
CLEARCOMMAND - MECHANICAL ENGINE, SOLENOID SHIFT, 2 STATION	91202
CLEARCOMMAND - MECHANICAL THROTTLE/TROLL, SOLENOID SHIFT	91210
CLEARCOMMAND - MECHANICAL THROTTLE/TROLL, SOLENOID SHIFT, 2 STATION	91212
CLEARCOMMAND - MECHANICAL THROTTLE, SOLENOID SHIFT, TROLL	91220
CLEARCOMMAND - MECHANICAL THROTTLE, SOLENOID SHIFT, TROLL, 2 STATION	91222



9000 Series ClearCommand

Example of Twin Screw - 2 Station Electronic Throttle Mechanical Shift



REQUIREMENTS:

- (2) POWER / START INTERLOCK WIRE HARNESS
- (4) CONTROL HEAD WIRE HARNESS
- (1) Serial CABLE - ON TWIN ENGINE APPLICATIONS
- (2) TACHOMETER FEEDBACK CABLE - SYNCH APPLICATIONS ONLY
- (2) 92102 PROCESSORS
- (1) APS
- (2) 10 AMP C.B.
- (2) 33C PUSH-PULL CABLE (SUPPLIED BY OTHERS)
- (2) THROTTLE HARNESS

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9000 SERIES CLEARCOMMAND	PART NUMBER
CLEARCOMMAND - ELECTRONIC ENGINE, SPEED ONLY	92000
CLEARCOMMAND - ELECTRONIC ENGINE, SPEED ONLY, 2 STATION	92002
CLEARCOMMAND - ELECTRONIC THROTTLE, MECHANICAL SHIFT	92100
CLEARCOMMAND - ELECTRONIC THROTTLE, MECHANICAL SHIFT, 2 STATION	92102
CLEARCOMMAND - ELECTRONIC THROTTLE, MECHANICAL SHIFT, TROLL	92110
CLEARCOMMAND - ELECTRONIC THROTTLE, MECHANICAL SHIFT, TROLL, 2 STATION	92112
CLEARCOMMAND - ELECTRONIC THROTTLE, SOLENOID SHIFT, MECHANICAL TROLL	92210
CLEARCOMMAND - ELECTRONIC THROTTLE, SOLENOID SHIFT, MECHANICAL TROLL, 2 STATION	92212

9000 SERIES CLEARCOMMAND PREMIUM PROCESSORS	PART NUMBER
CLEARCOMMAND - MECHANICAL THROTTLE, SOLENOID SHIFT, AUTOTROLL	95230
CLEARCOMMAND - MECHANICAL THROTTLE, SOLENOID SHIFT, AUTOTROLL, 2 STATION	95232
CLEARCOMMAND - MECHANICAL THROTTLE, CLUTCH, 2 SPEED	95300
CLEARCOMMAND - ELECTRONIC THROTTLE, SOLENOID SHIFT, AUTOTROLL	96230
CLEARCOMMAND - ELECTRONIC THROTTLE, SOLENOID SHIFT, AUTOTROLL, 2 STATION	96232
CLEARCOMMAND - ELECTRONIC THROTTLE, ELECTRONIC CLUTCH, 2 SPEED	96400

9000 CLEARCOMMAND PROCESSOR OPTIONS	PART NUMBER
WIRE HARNESS - SOLENOID CLUTCHES, PROCESSOR LEAD	15701
WIRE HARNESS - THROTTLE, PROCESSOR LEAD	15703
WIRE HARNESS - MAG PICKUP, PROCESSOR LEAD	15704
WIRE HARNESS - SERIAL COMMUNICATION, PROCESSOR LEAD	15705
WIRE HARNESS - CONTROL HEAD, PROCESSOR LEAD	15706
WIRE HARNESS - POWER, START INTERLOCK, ALARM, CLUTCH PRESSURE	15710
ACTUATOR INSTALLATION KIT	15878